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Carbon mitigation of Xanthi periurban Forest

Kitikidou K., Radoglou K., Doukalianou, F., Milios E., Orfanoudakis M., and Lagomarsino, A.

NUOVI APPROCCI PER LA GESTIONE SOSTENIBILE DEL PINO NERO:
biodiversità e mitigazione
MARTEDÌ 14 MAGGIO 2019 | 9.30 - 16.30
Firenze, Sala Giordano - Palazzo Medici-Riccardi

LIFE14 CCM/IT/000905

FoResMit - "Recovery of degraded coniferous Forests for environmental sustainability Restoration and climate change Mitigation"

Recovery of Degraded Coniferous Forests

- **Environmental Sustainability Restoration**
- **Climate Change Mitigation**

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Permanent, circular plots of 13 m radius and 0.0531 ha area.
Six plots for each treatment.

Treatment
September 2016

Control
No thinning

Traditional
Low thinning

Innovative/selective
Intense thinning

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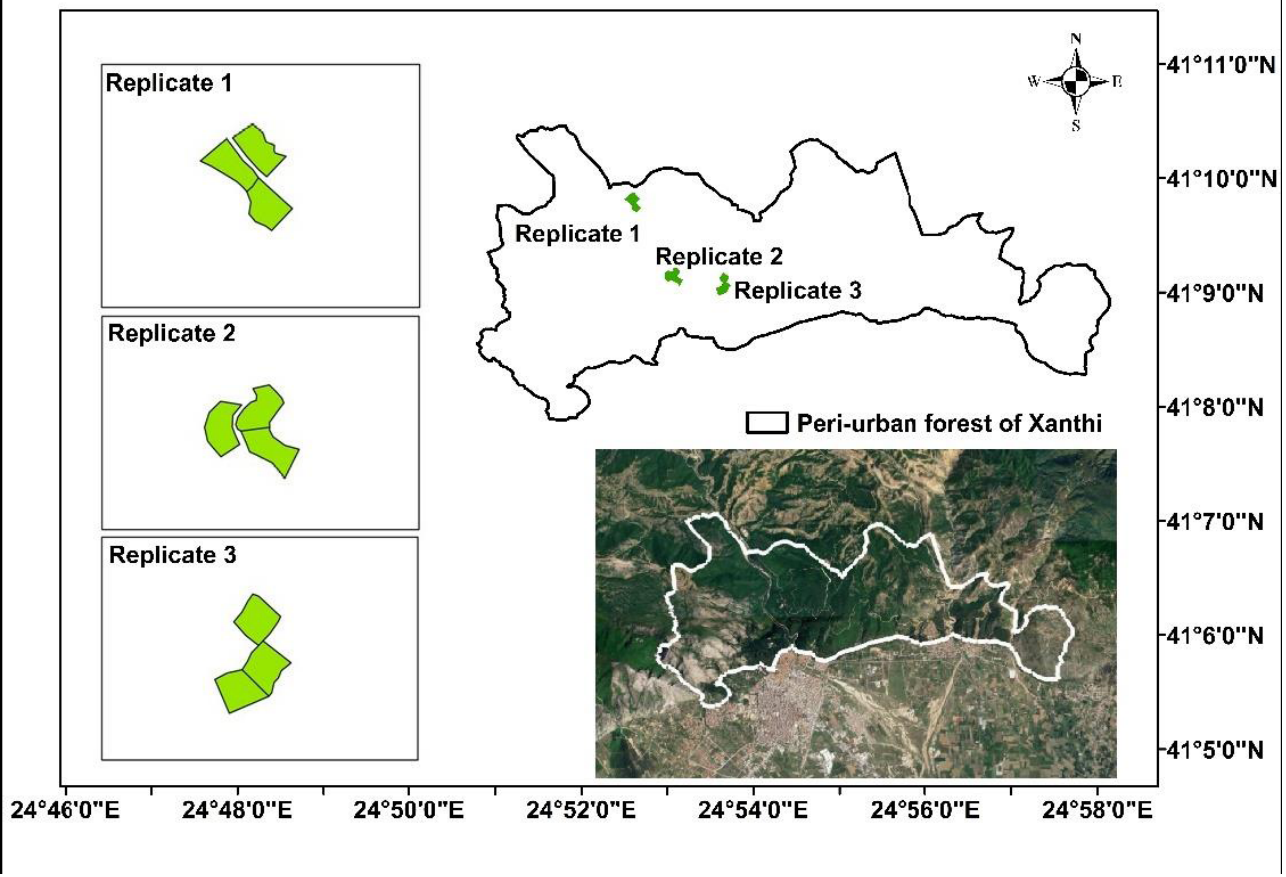

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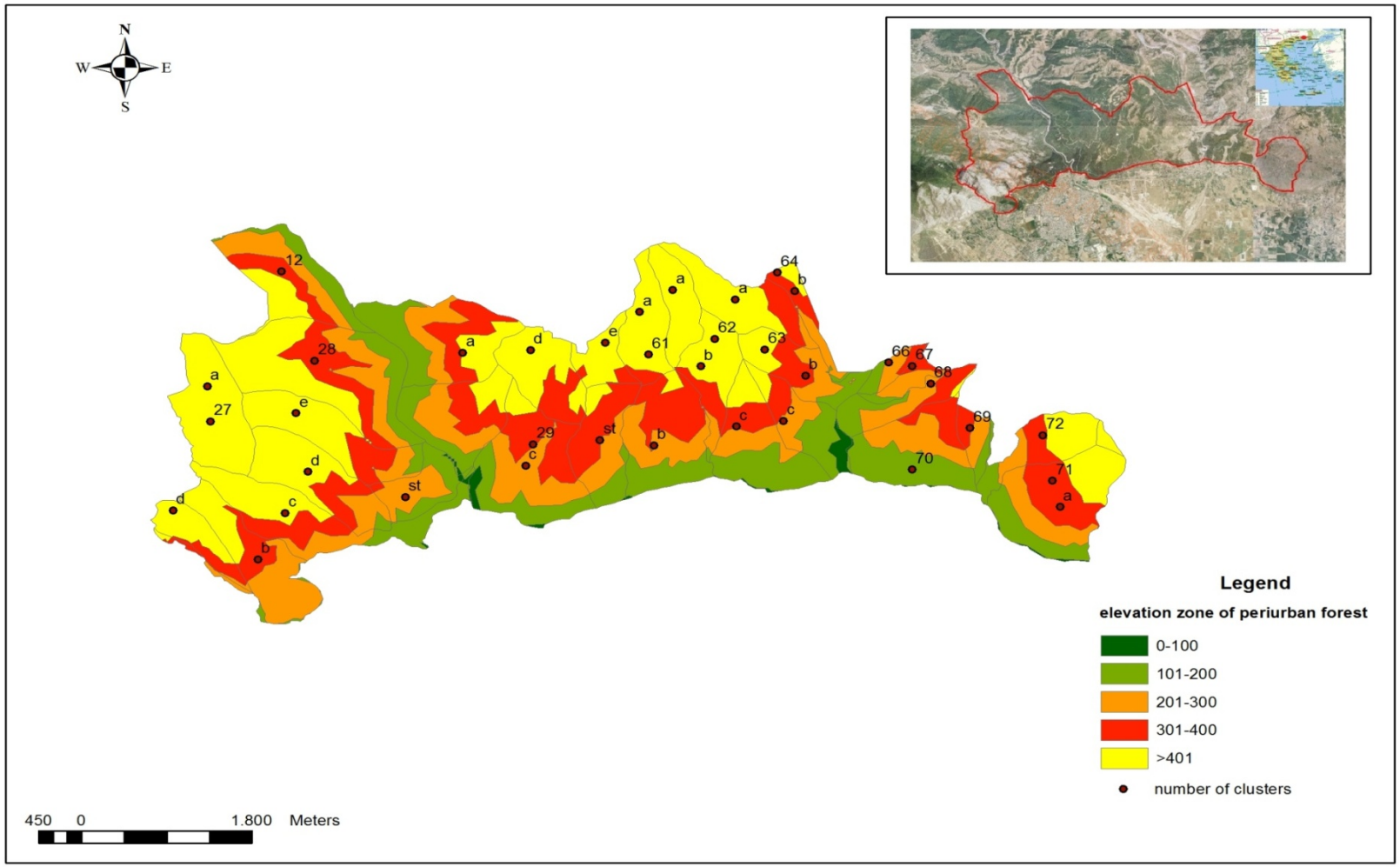
Elevation ranges between 0 and 600 m.



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Basal area % change

Traditional: -21

Selective: -40

Carbon pools

Aboveground biomass /Belowground biomass

Deadwood

Litter traps + Litter floor

Soil carbon

GHGs emissions from forest soil

Methodology

Growing stock (m^3/ha) of each thinning treatment, after thinning, calculated from the plots.

Treatment	Mean Growing Stock (m^3/ha) ± standard deviation		
	conifers	broadleaves	total
control	355.11 ± 64.51	9.32 ± 1.84	**364.43 ± 60.53**
traditional	243.26 ± 34.59	8.79 ± 3.52	**252.05 ± 37.86**
selective	179.88 ± 28.34	19.20 ± 2.22	**199.08 ± 29.35**

Categories of growing stock (m^3/ha), in correspondence with the treatments and plots.

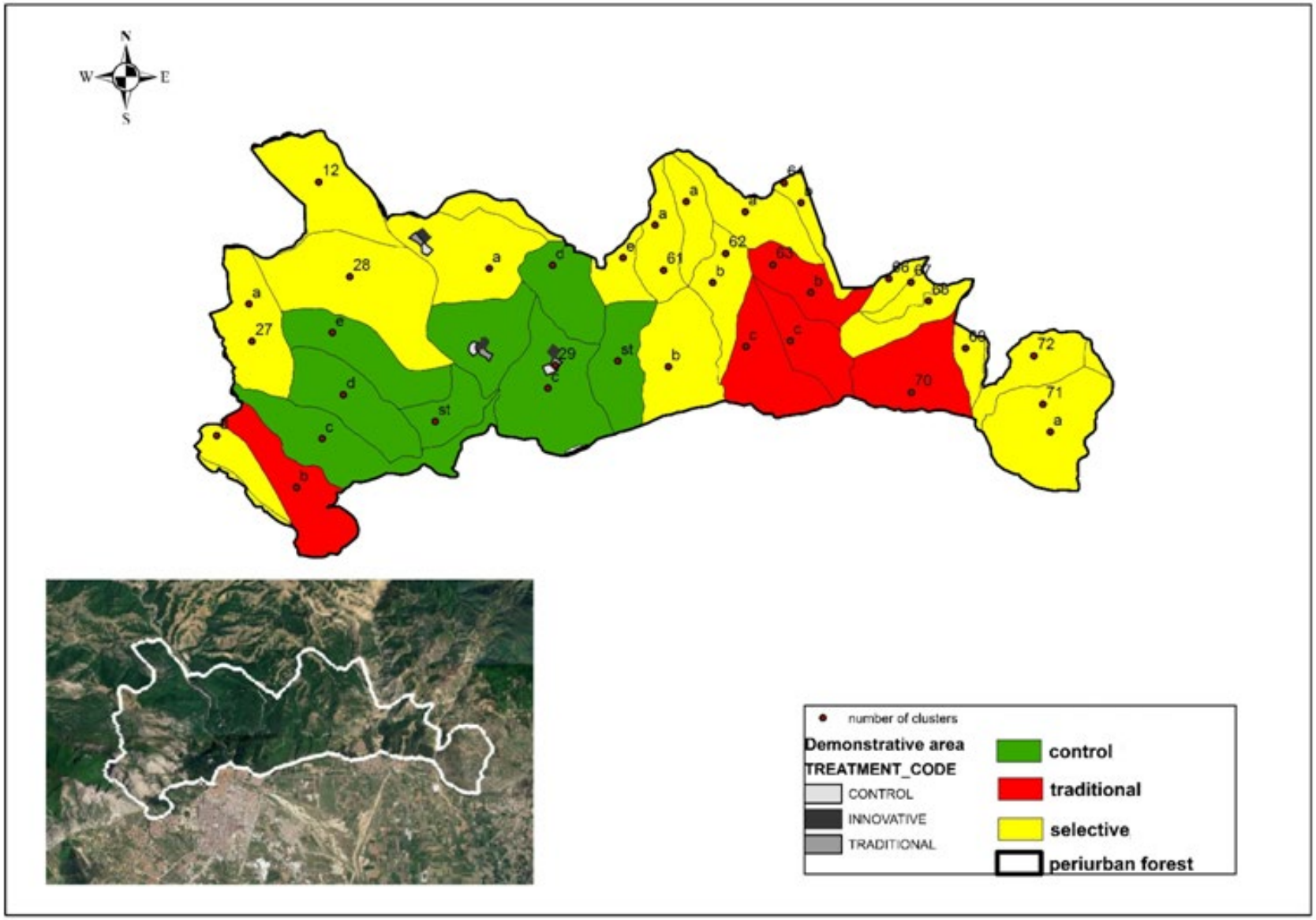
Treatment	Growing Stock (m^3/ha)	
	min	max
control	303.90	424.96
traditional	214.19	289.90
selective	169.73	228.43

Methodology (continued)

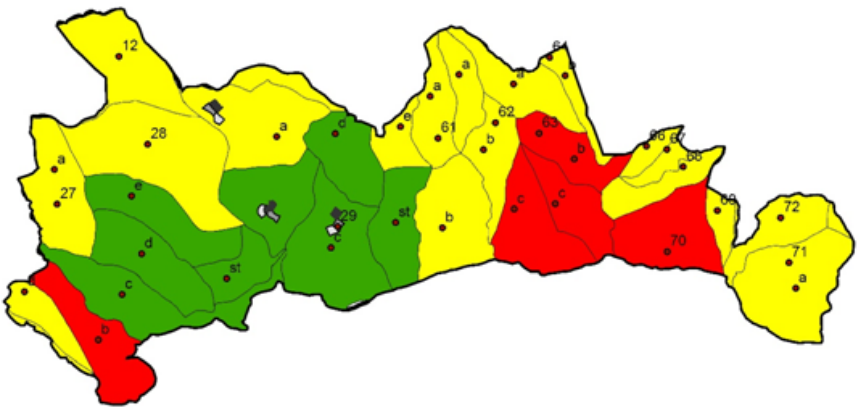
Growing stock (m^3/ha) of each cluster of the periurban forest, calculated from the Management Study of the public forestry division of "Xanthi-Geraka-Kimmerion (Xanthi Forest Directorate), falls into one of the three categories.

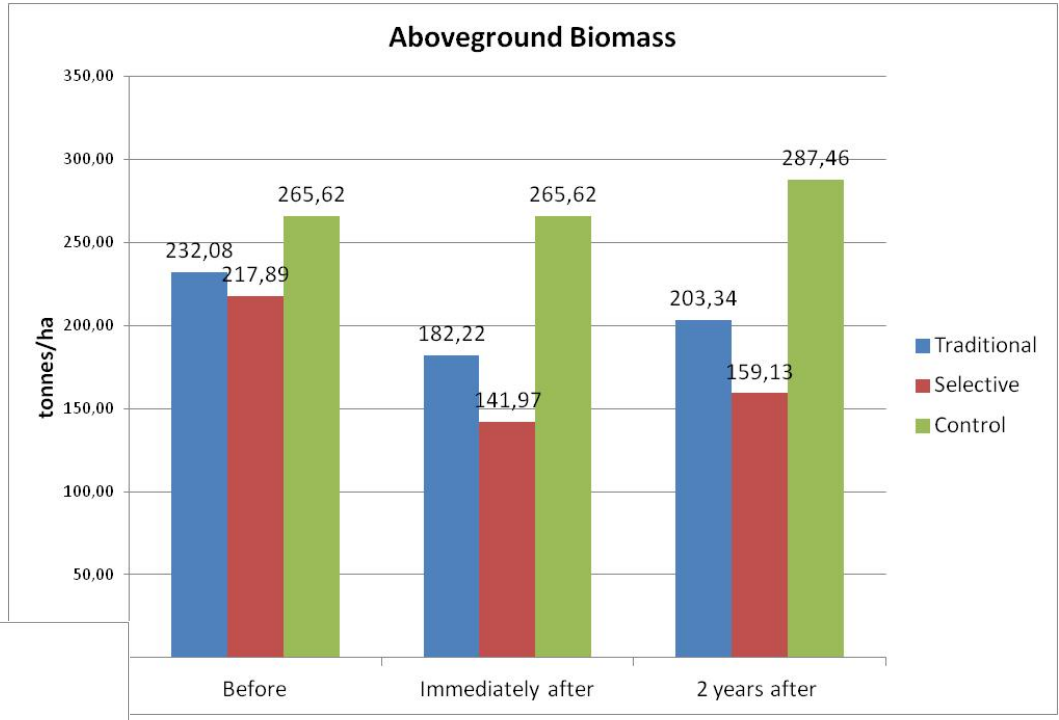
cluster	growing stock	treatment	cluster	growing stock	treatment
12-	135.83	selective	29f	737.43	control
27a	41.69	selective	61a	20.29	selective
27b	292.02	selective	63a	42.83	selective
27c	769.36	traditional	62a	39.04	selective
27d	769.35	control	62c	292.01	traditional
27e	769.33	control	63b	292.03	traditional
27f	769.36	control	63c	291.96	selective
28-	108.01	control	66-	13.56	selective
29a	248.29	selective	67-	149.15	selective
29b	496.18	selective	68-	178.56	selective
29c	737.4	control	70-	292.01	selective
29d	307.65	control	72-	148.12	selective
29e	182.26	control			

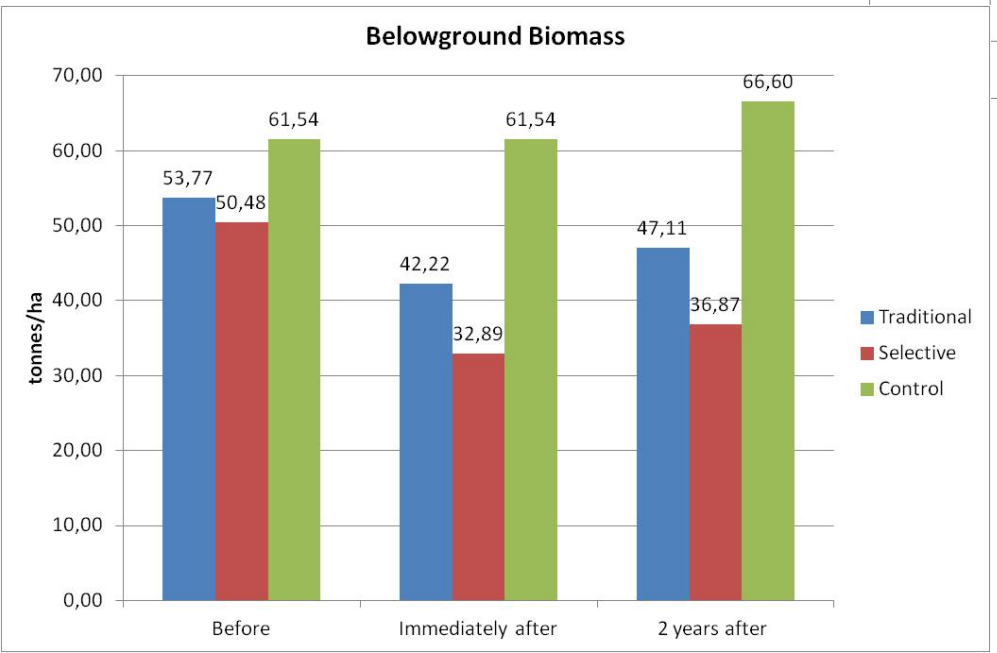
Results 1 – Mapping in GIS environment



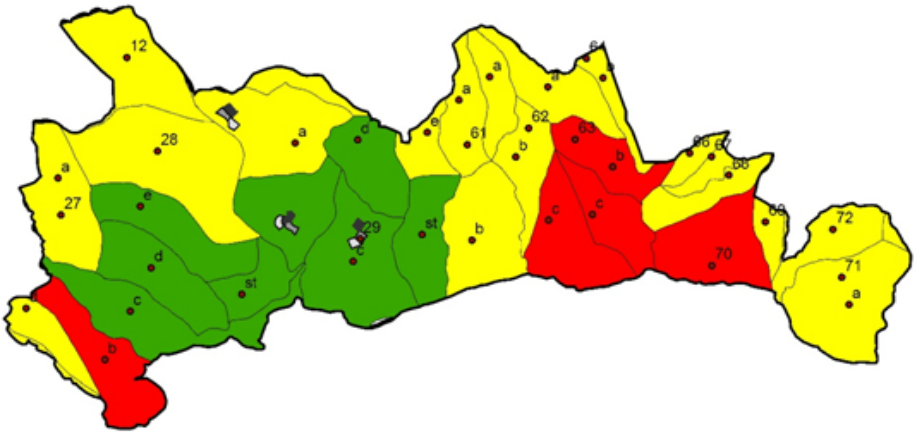
Results 2 - Biomass

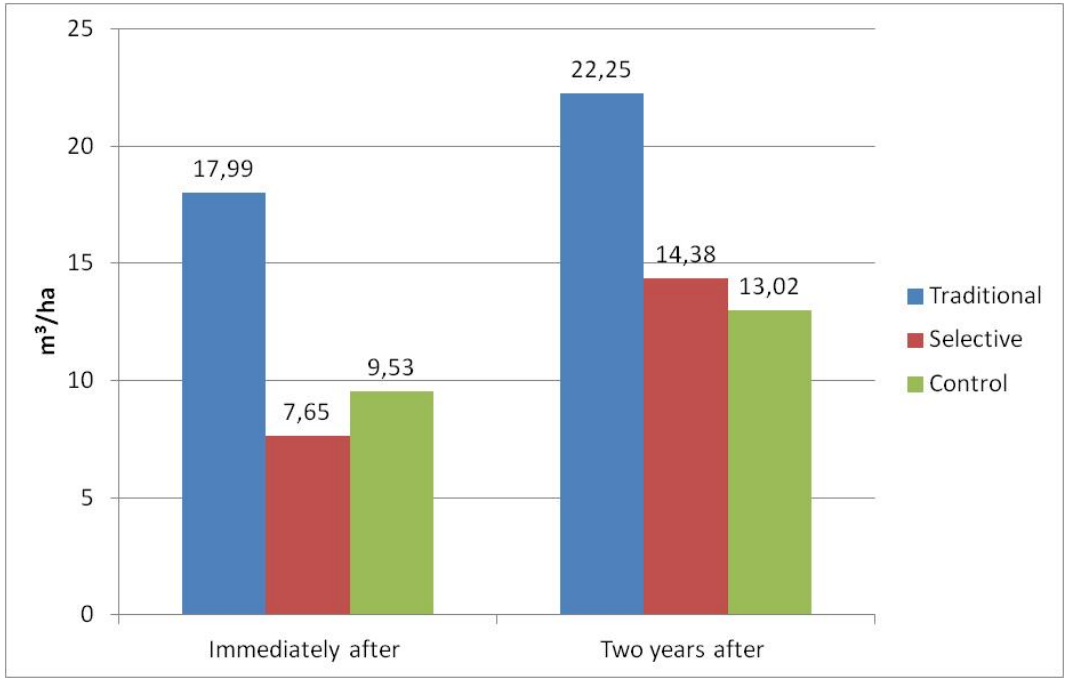




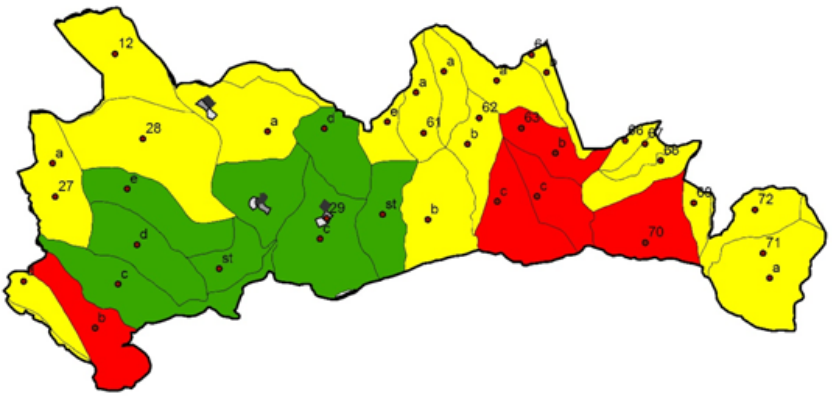


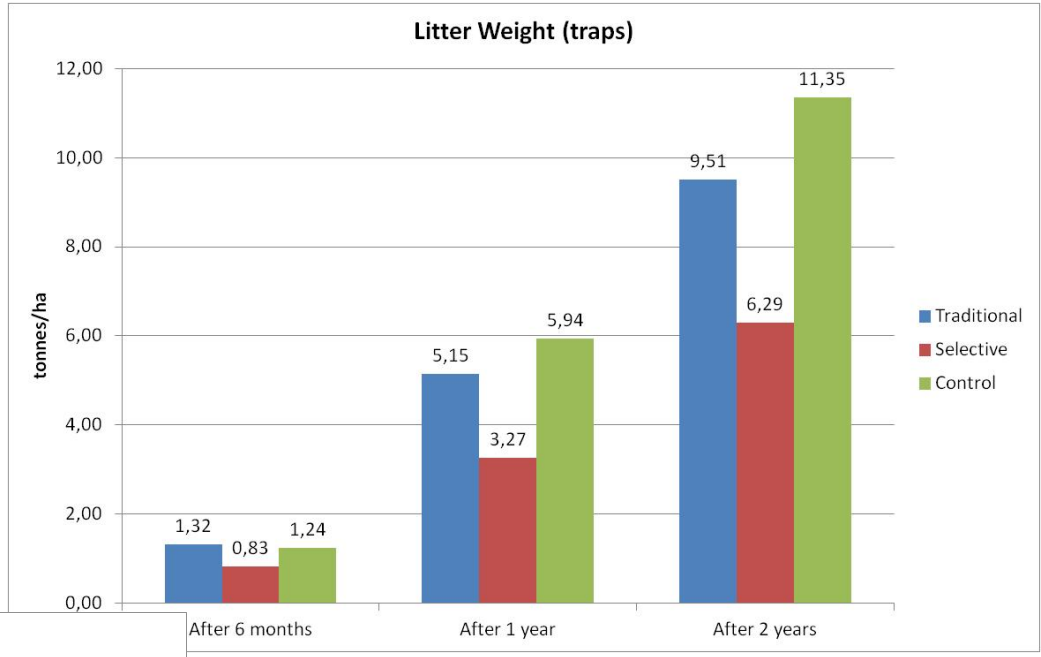
Results 3 - Deadwood

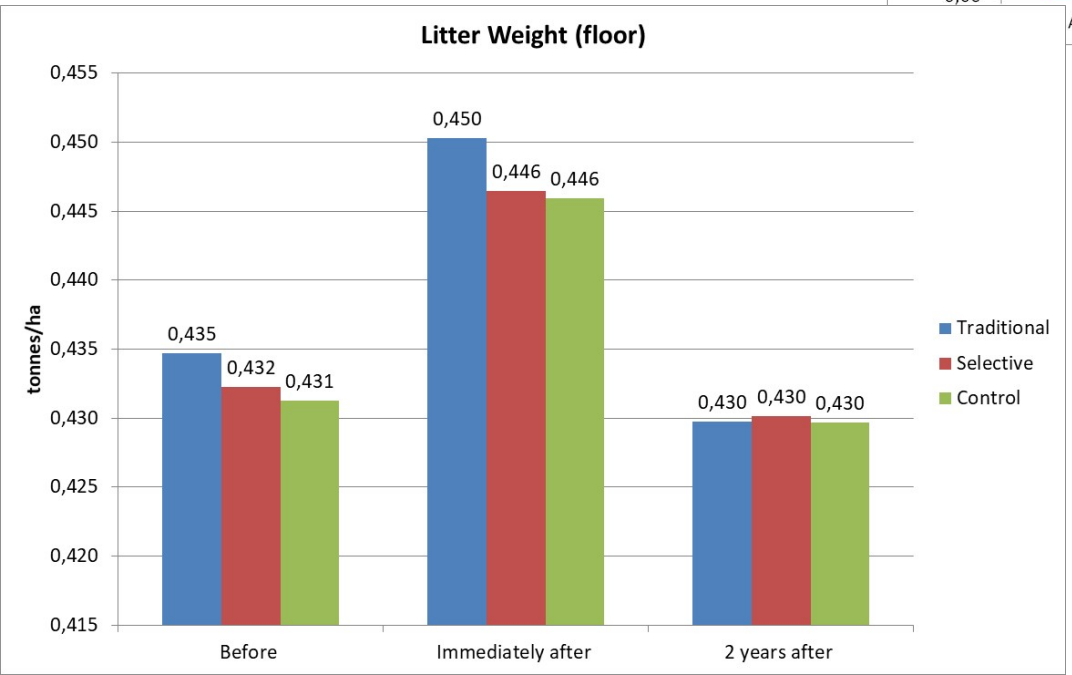




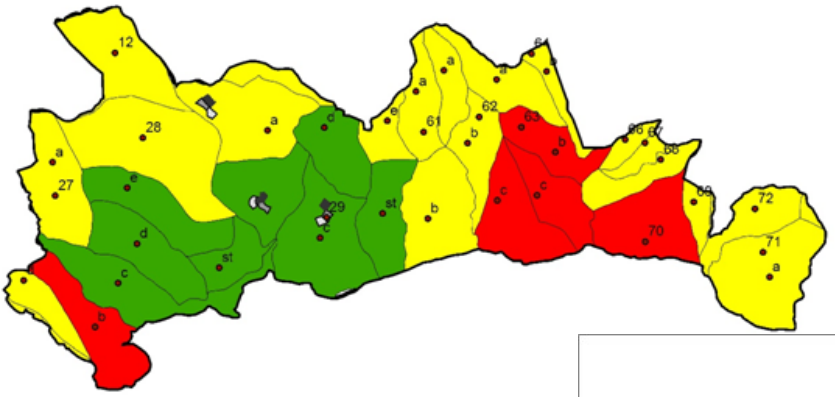
Results 4 - Litter

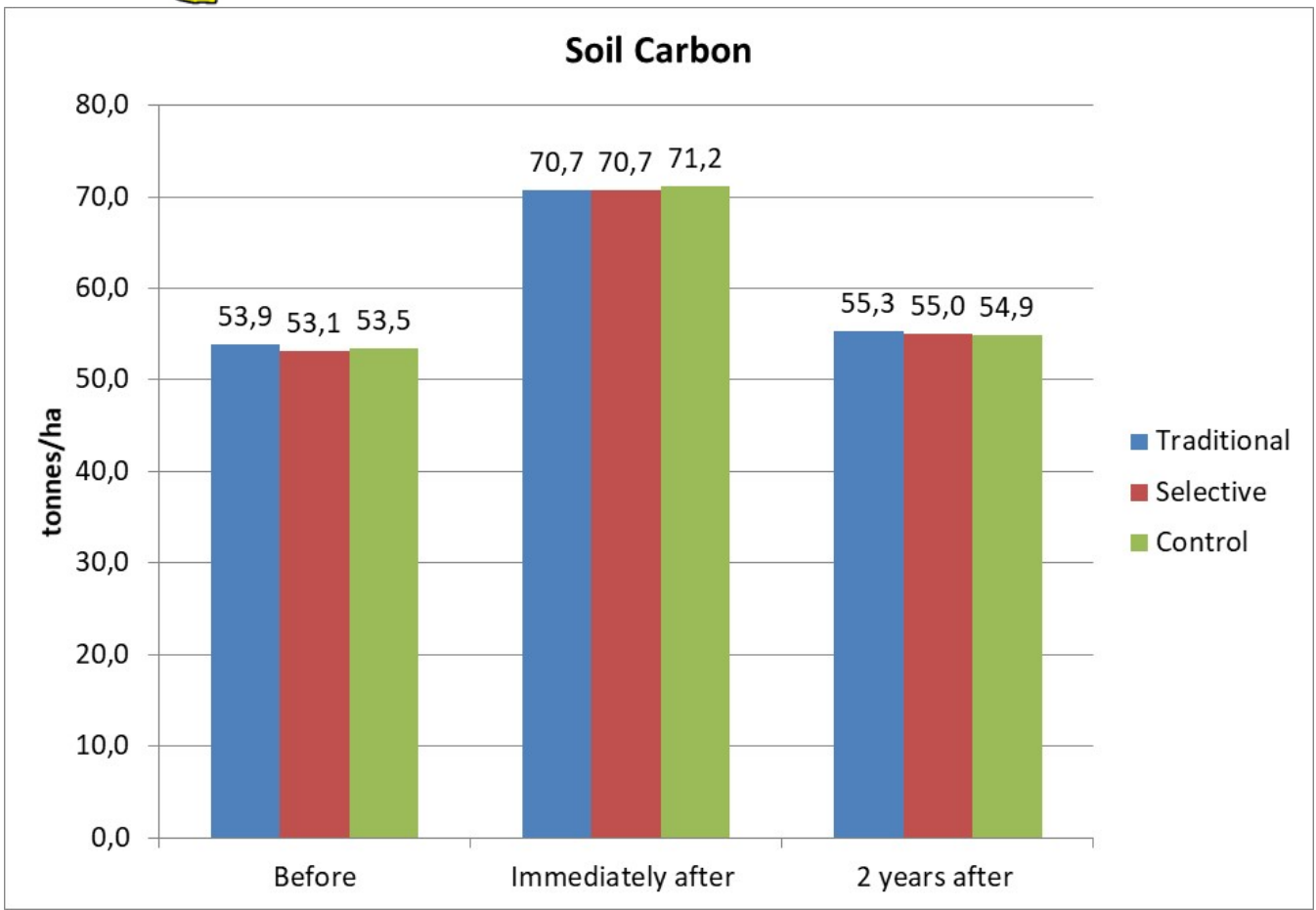




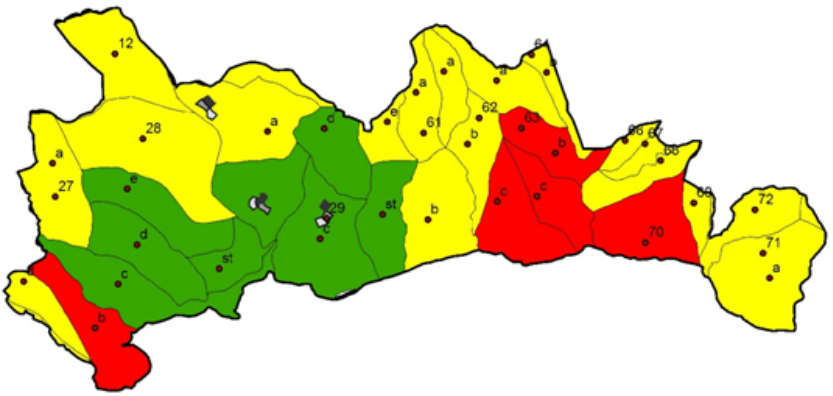


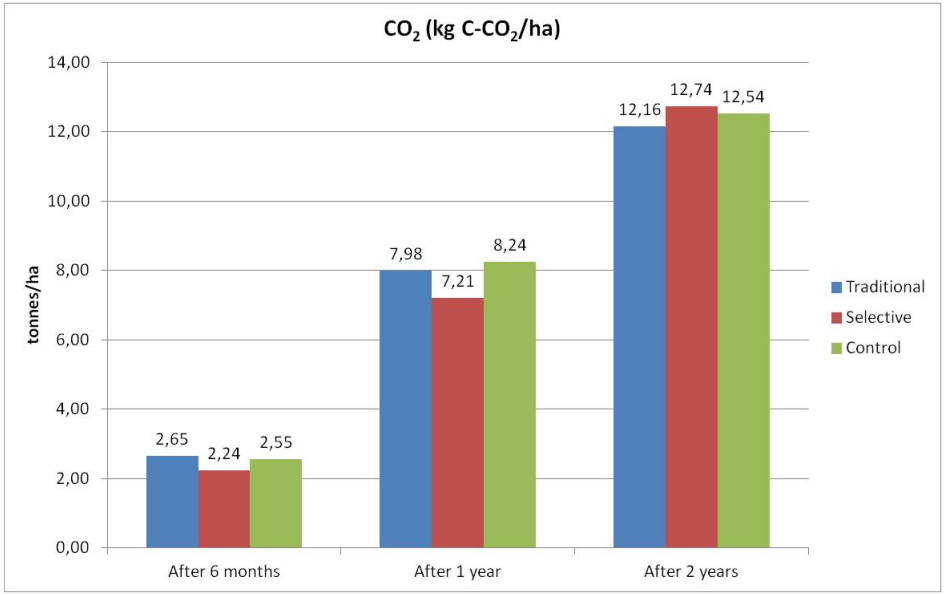
Results 5 – Soil Carbon

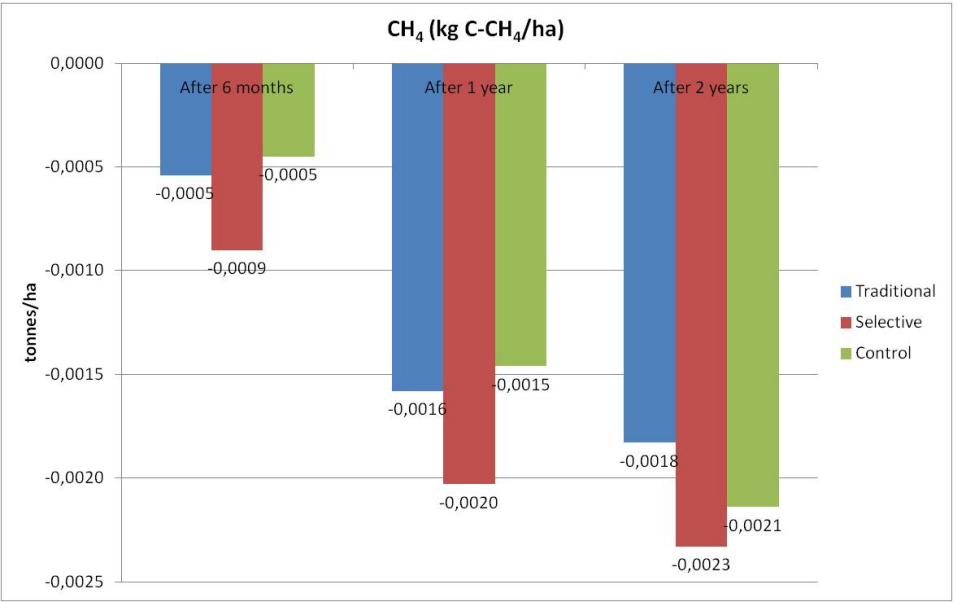


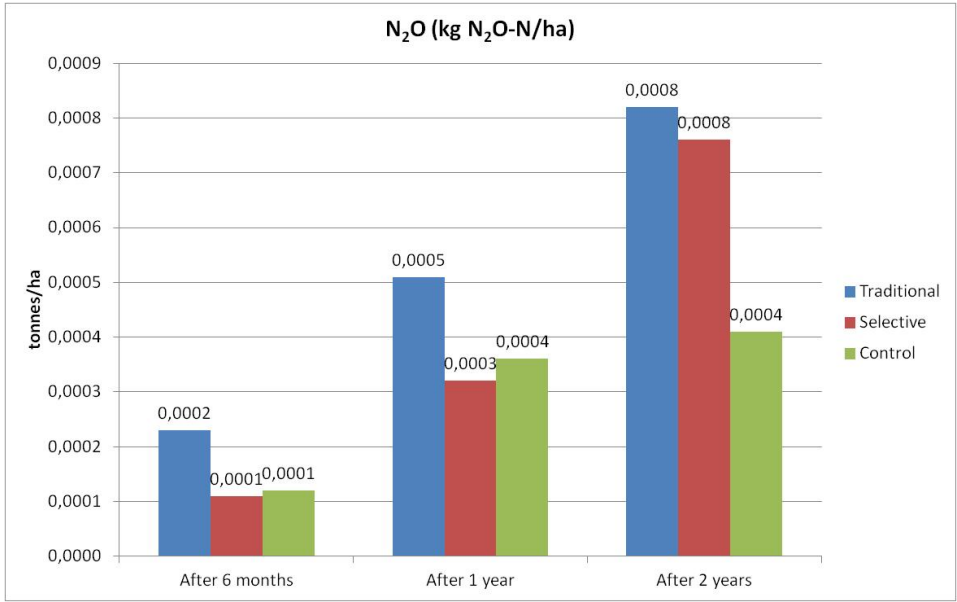


Results 6 – GHSs









Conclusions

We estimated variables' values beyond the observation range (plots) (**extrapolation**).

Mapping helps in data visualization, and makes it easier for the local decision – makers to implement strategies for the area.

Contact

Kalliopi RADOGLOU

Democritus University, Greece

<kradoglo@fmenr.duth.gr>