



Carbon mitigation of Xanthi periurban Forest

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SOSTENIBILE DEL PINO NERO:**
biodiversità e mitigazione

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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

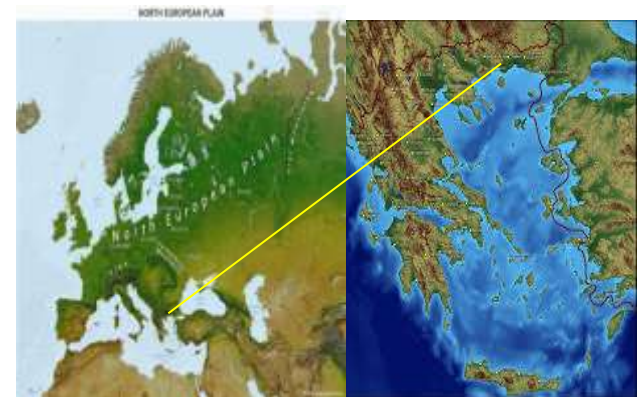
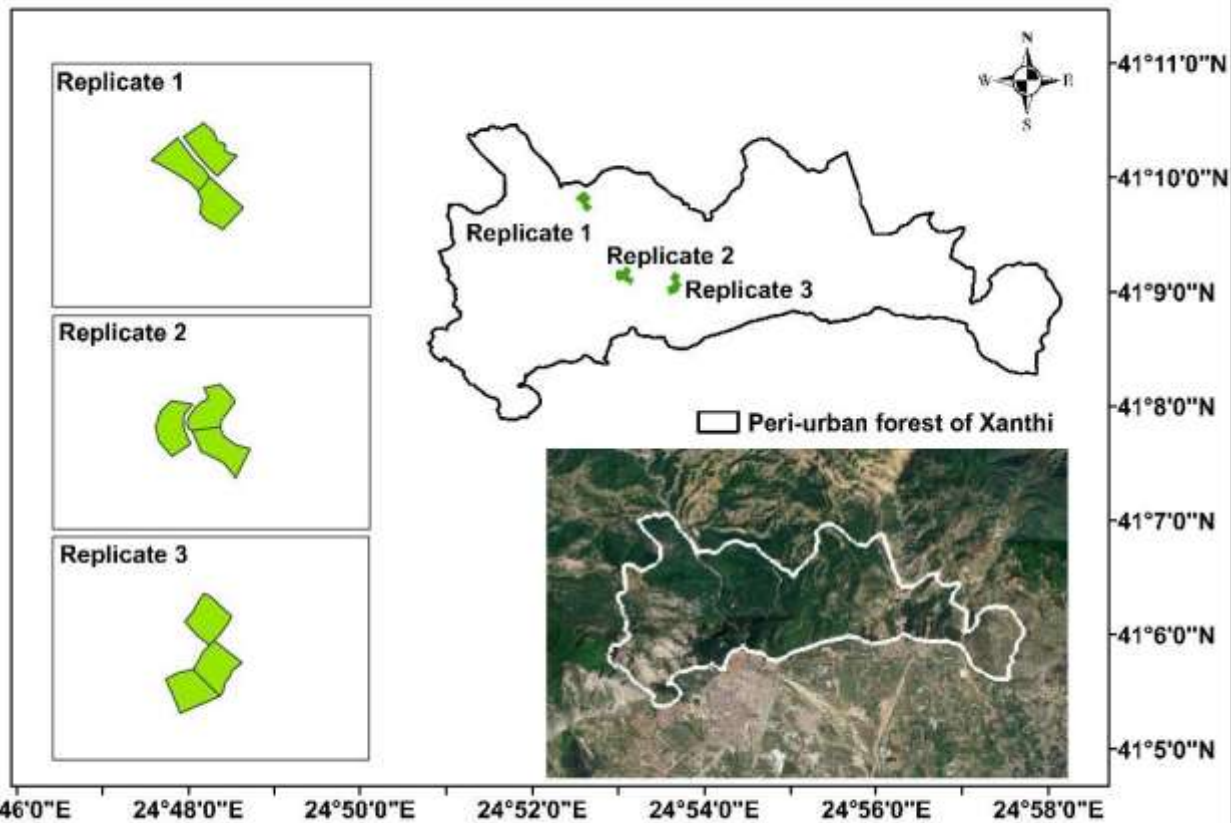


Innovative/selective
Intense thinning



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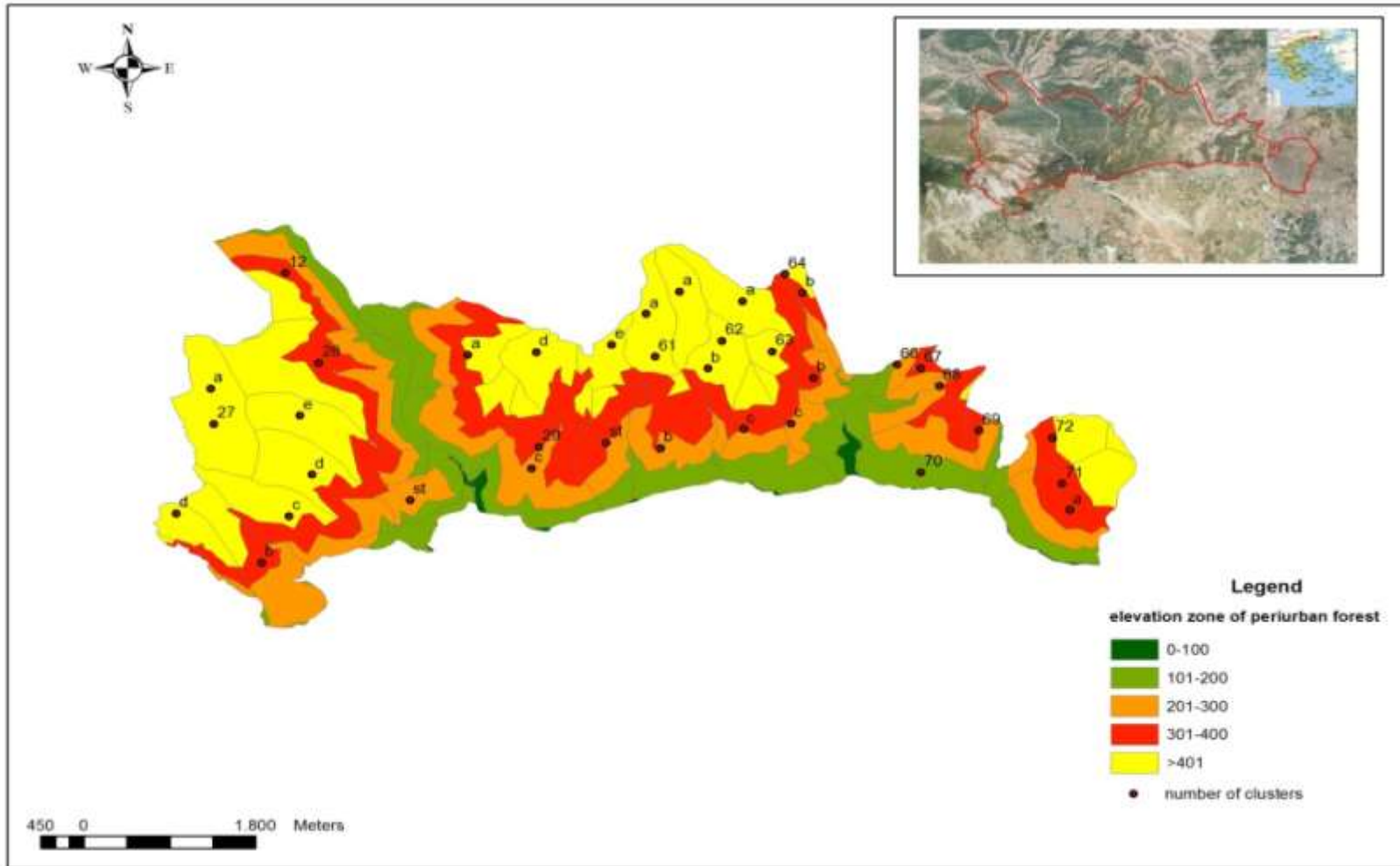
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Elevation ranges between 0 and 600 m.



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Basal area % change

Traditional: -21

Selective: -40



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Carbon pools

Aboveground biomass /Belowground biomass



Deadwood



Litter traps + Litter floor



Soil carbon



GHGs emissions from forest soil



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Methodology

Growing stock (m³/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 (m³/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



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Methodology (continued)

Growing stock (m³/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			

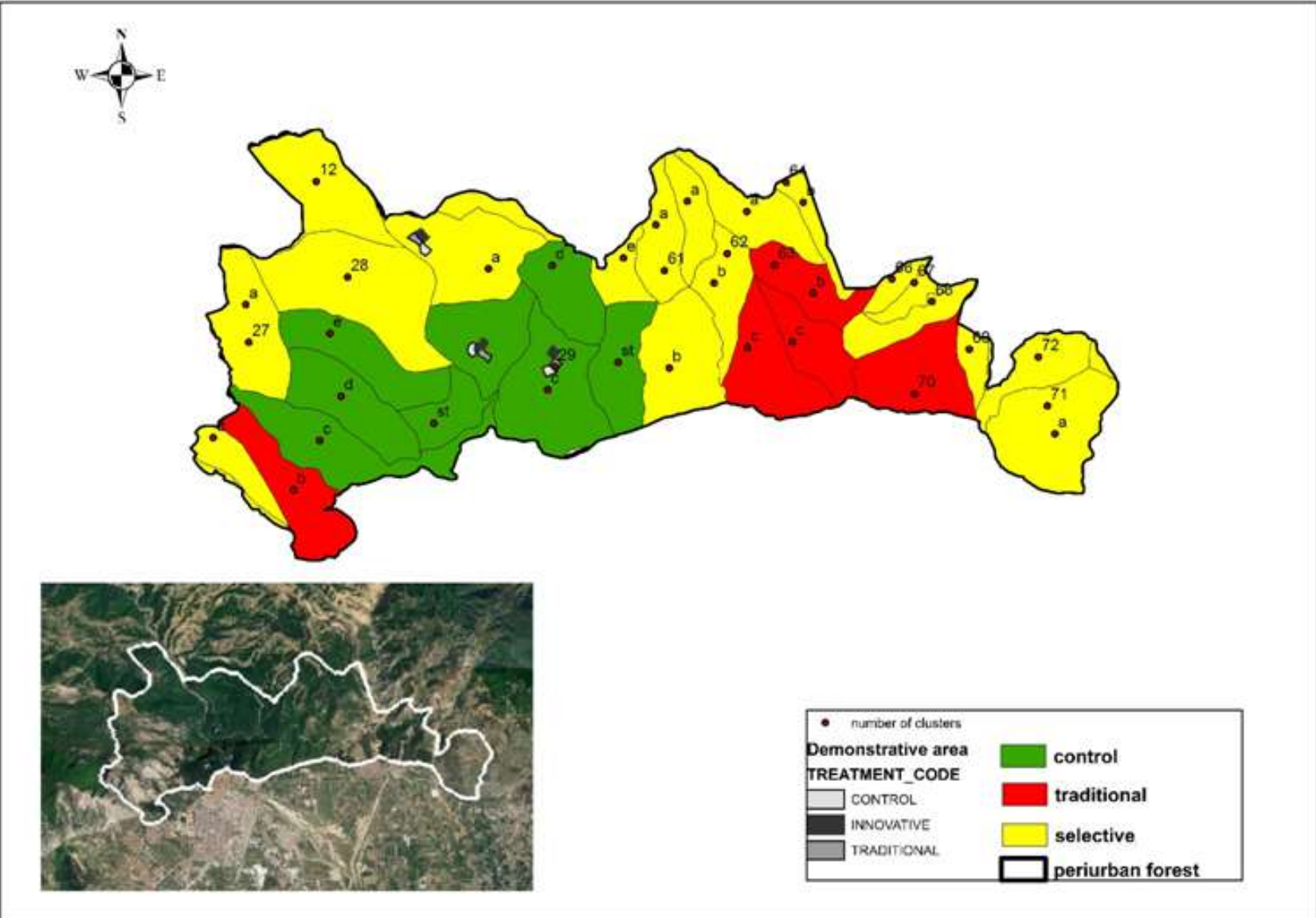


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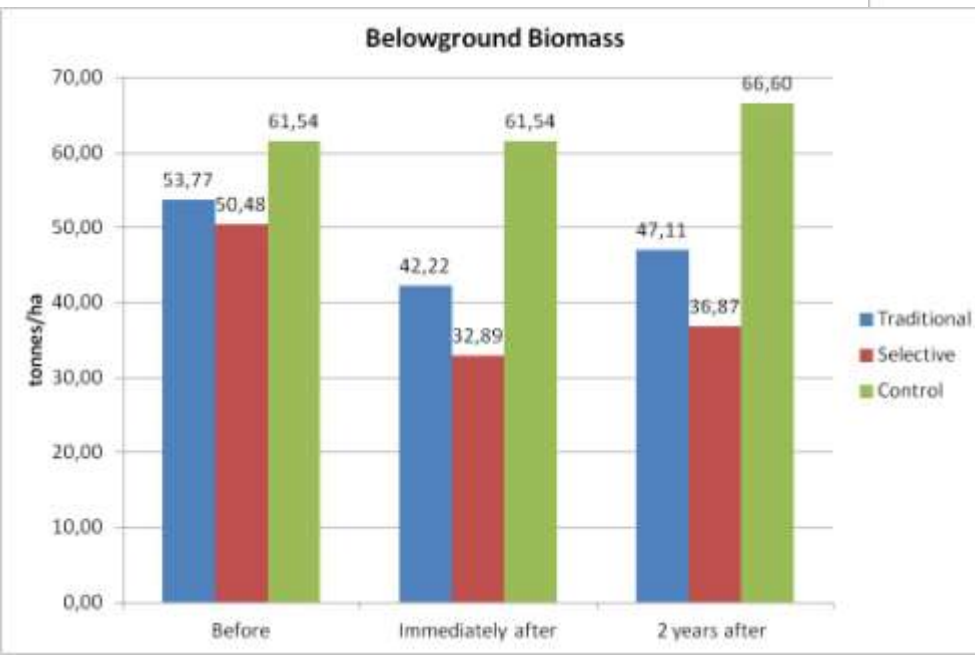
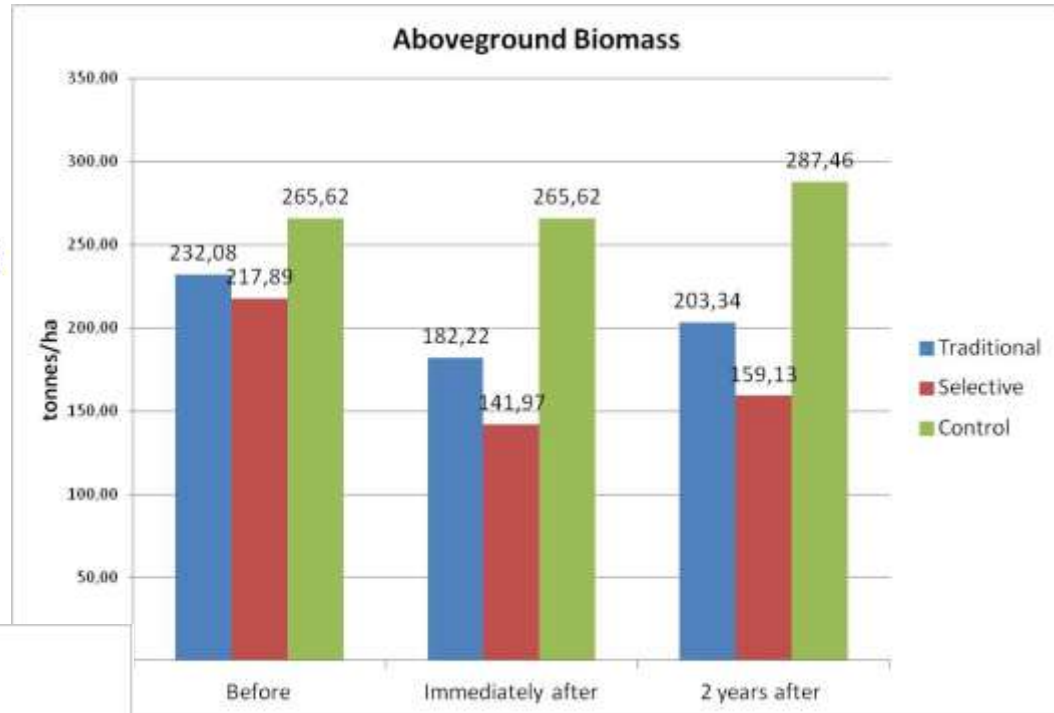
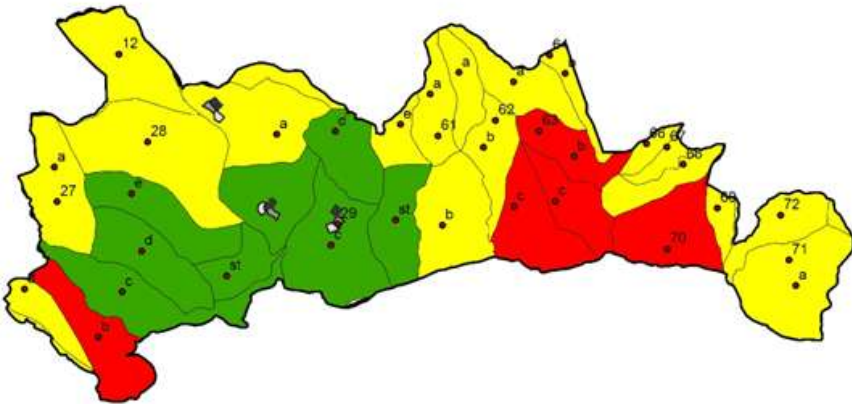
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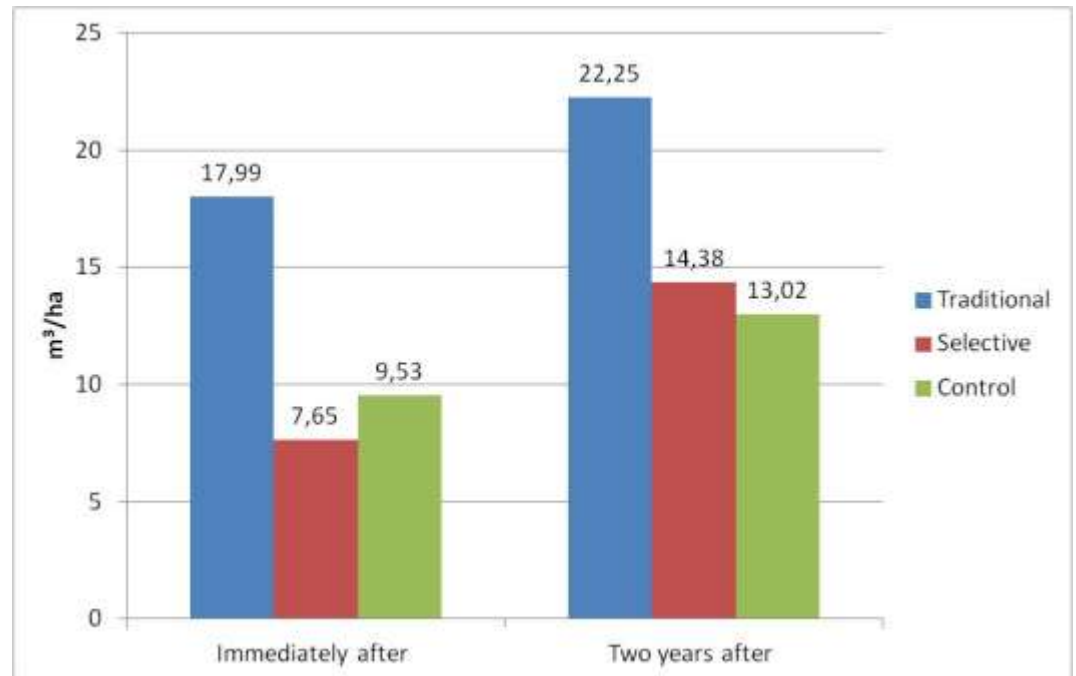
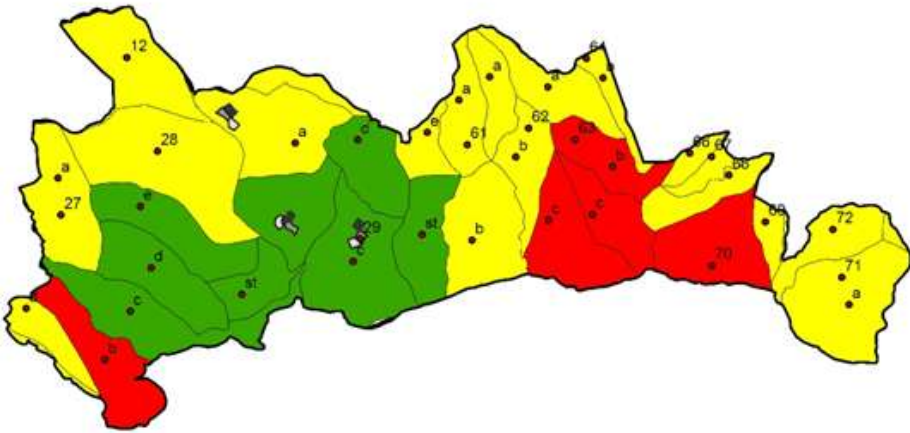
Results 1 – Mapping in GIS environment



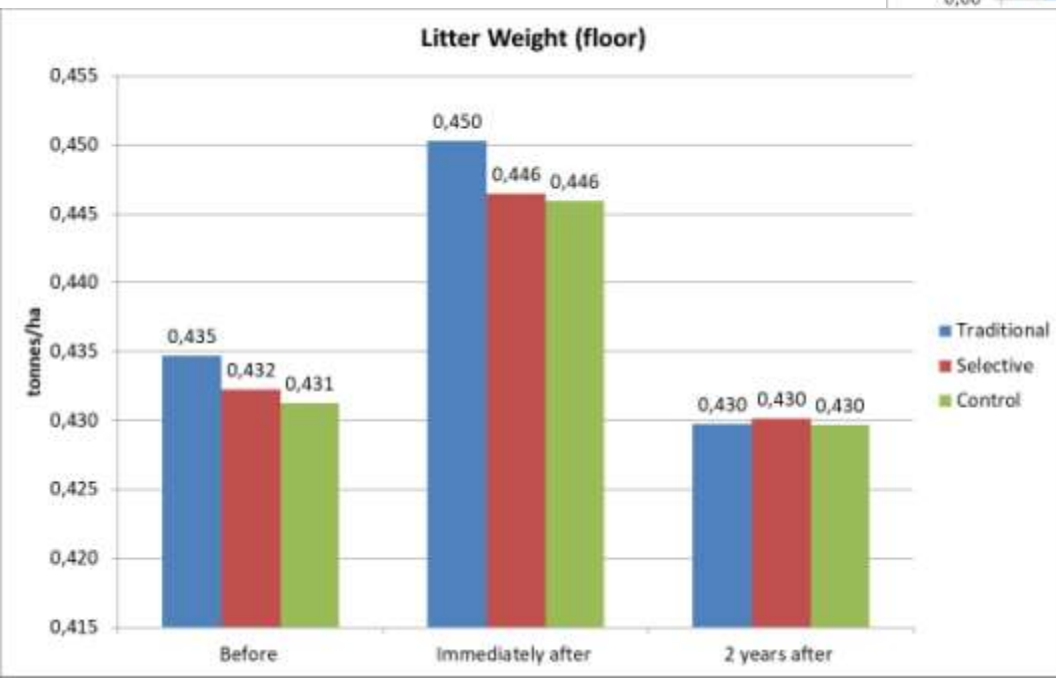
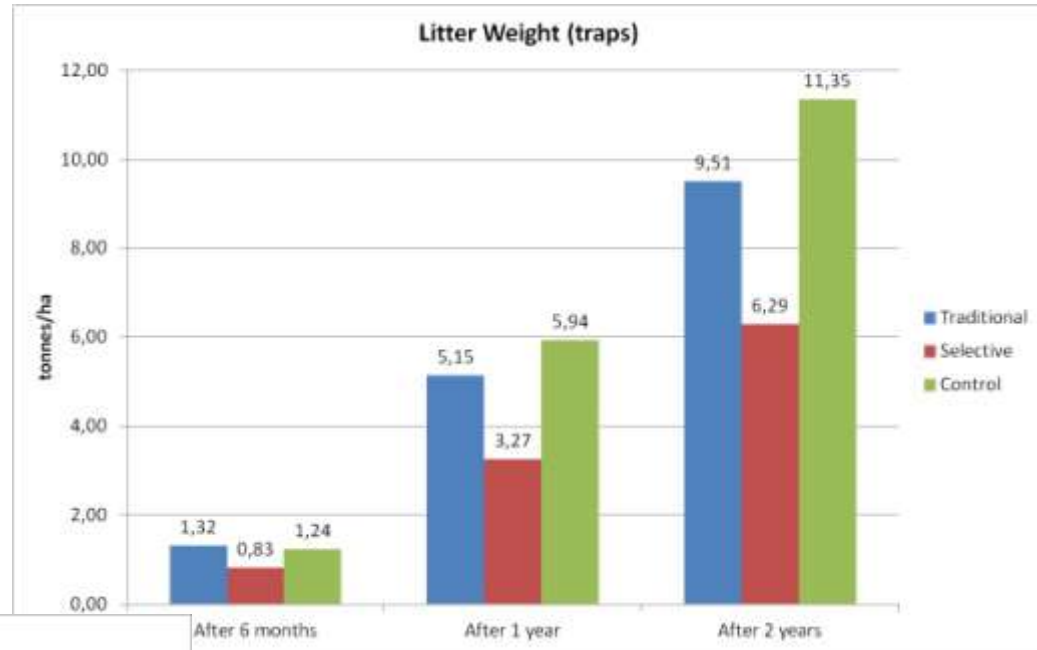
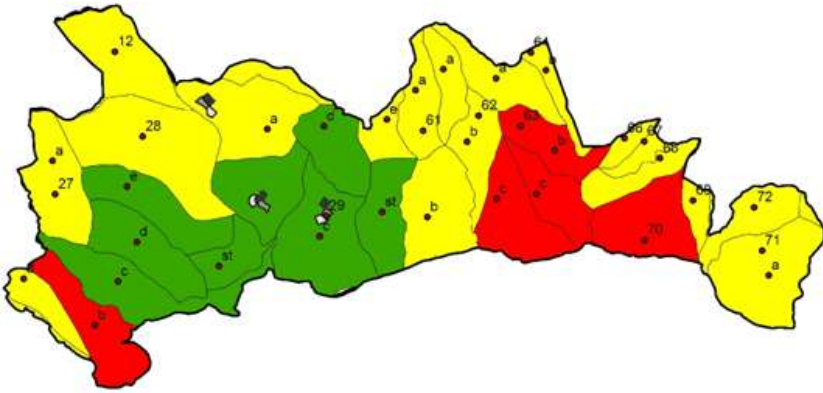
Results 2 - Biomass



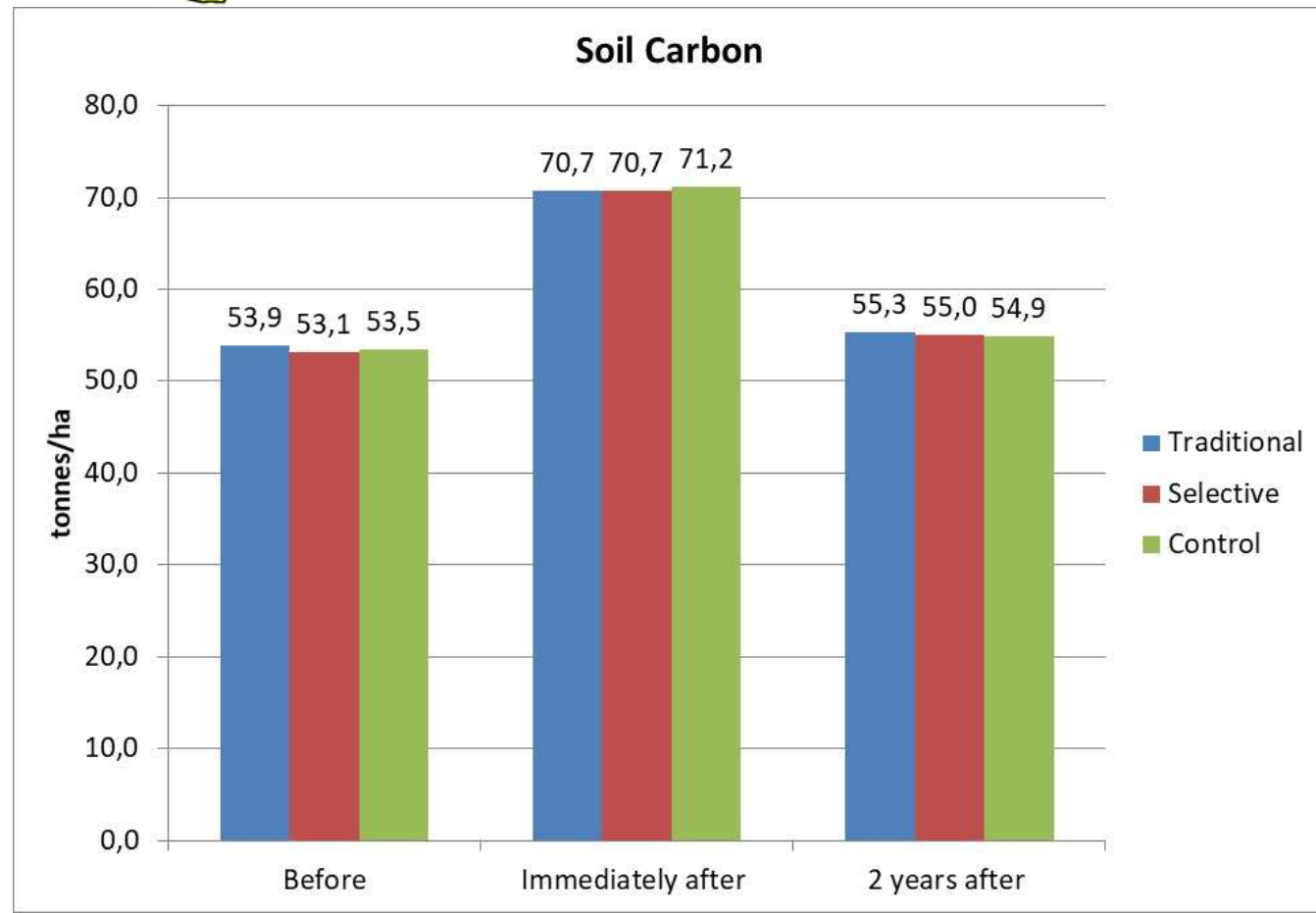
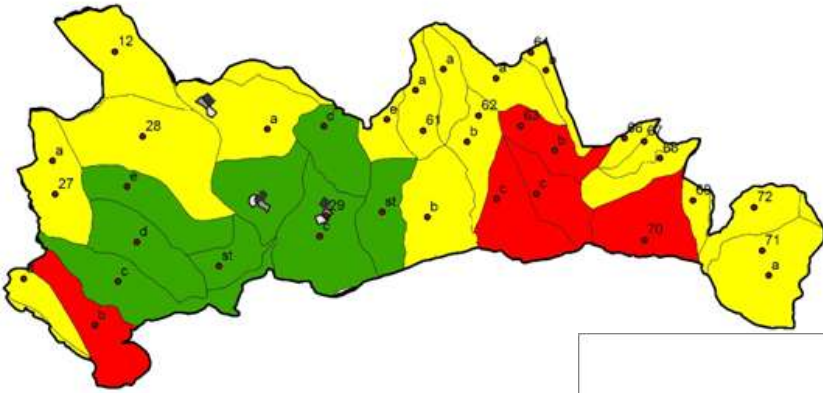
Results 3 - Deadwood



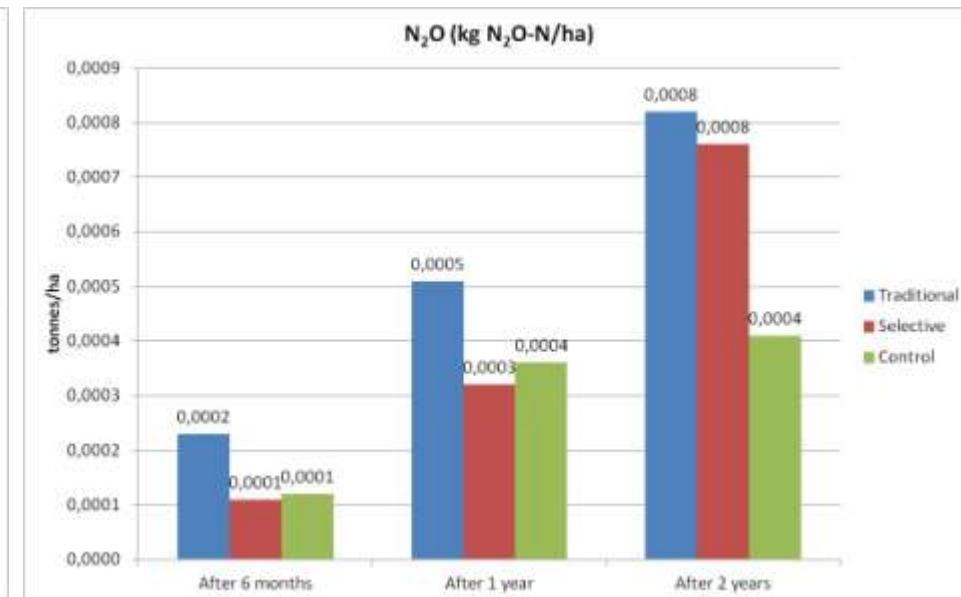
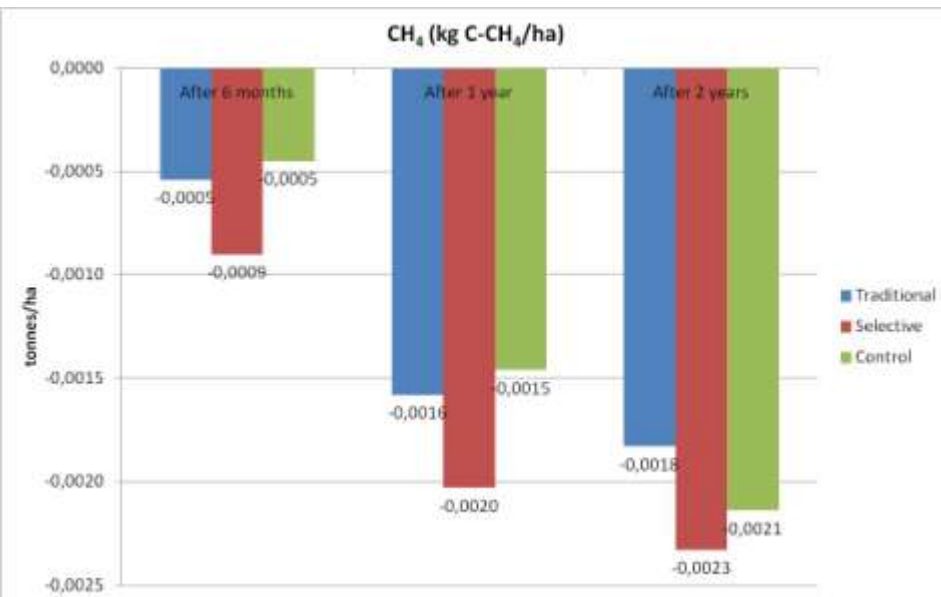
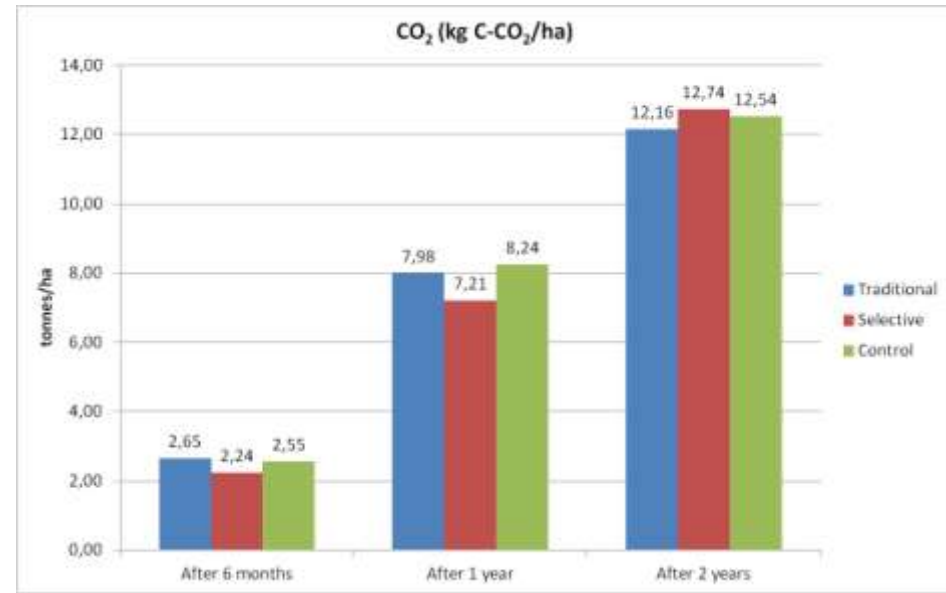
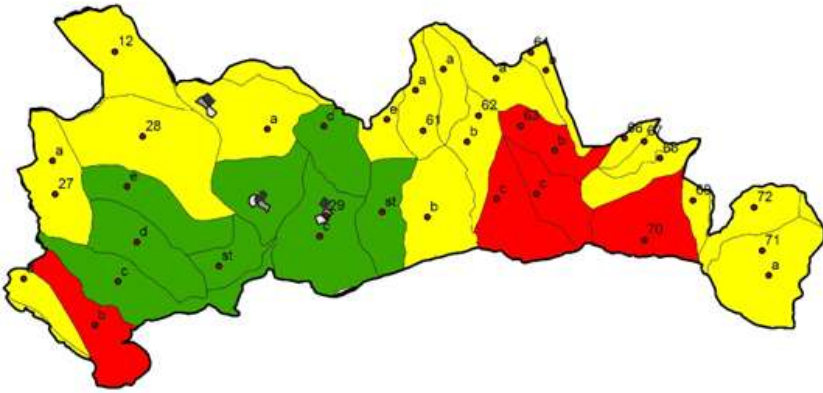
Results 4 - Litter



Results 5 – Soil Carbon



Results 6 – GHGs



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.



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