THE TRANSFORMATION OF PASTORAL LANDSCAPE IN MONTESINHO NATURAL PARK (1995 – 2021)

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This work expresses gratitude to FCT by the PASTOpraxis project and to IPB for all the support received.

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MAIN OBJECTIVE

- Investigate the evolution of the land use and occupation of traditional pastoral landscape within Montesinho Natural Park (MNP).

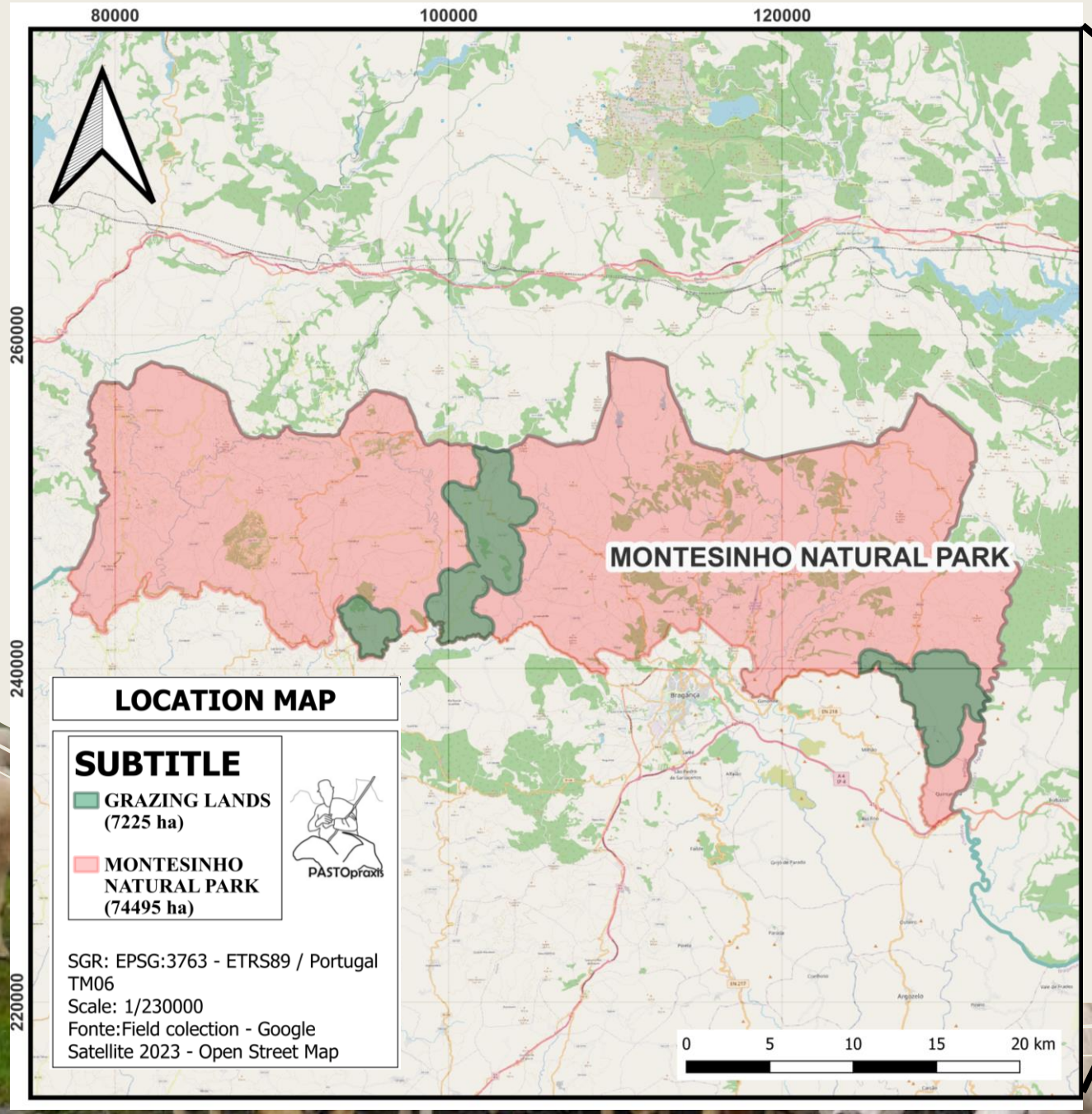
STEPS OF MY WORK:

- Rectify (1995) and update (2021) the cartography of natural and semi-natural vegetation in grazed lands of MNP;
- Analyze land use changes (1995-present);
- Project a future scenario (2047);
- Discuss and conclude for future management.

INTRODUCTION

- In MNP, the traditional herding involves the daily guidance of the herd through the hills, aiming to satisfy the nutritional needs of the livestock;

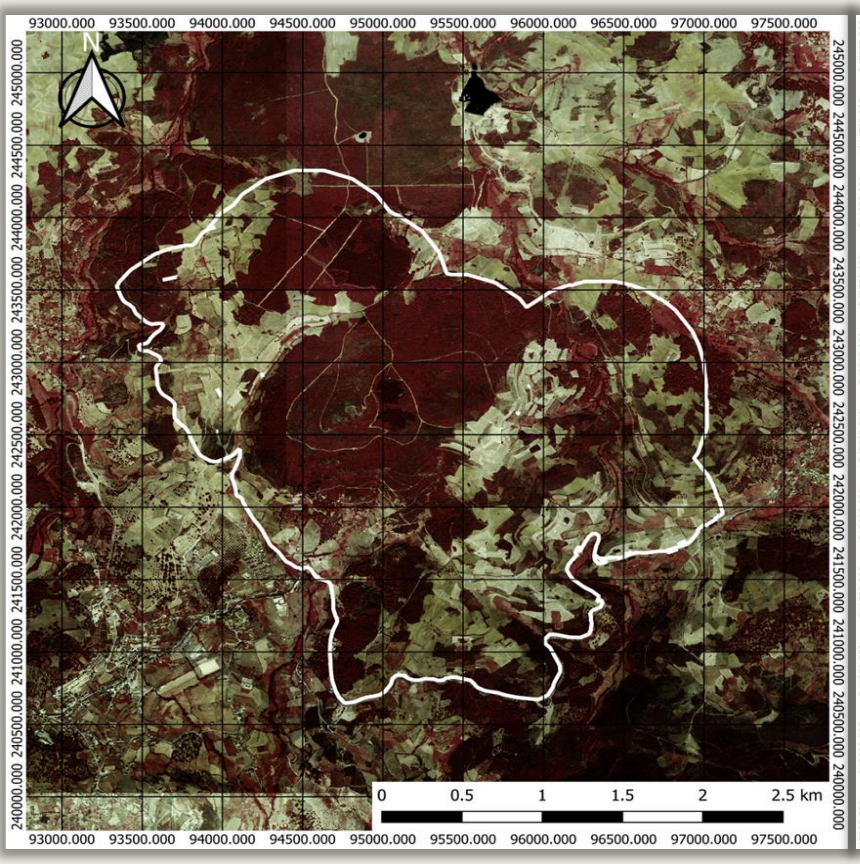
- The grazing zones in MNP are the result of mapping made by GPS devices installed on the collars of the animals;


80000
100000
120000
260000
240000
220000
MONTESINHO NATURAL PARK
LOCATION MAP
SUBTITLE
GRAZING LANDS (7225 ha)
MONTESINHO NATURAL PARK (74495 ha)
PASTOpraxis
SGR: EPSG:3763 - ETRS89 / Portugal TM06
Scale: 1/230000
Fonte:Field colection - Google Satellite 2023 - Open Street Map
0 5 10 15 20 km

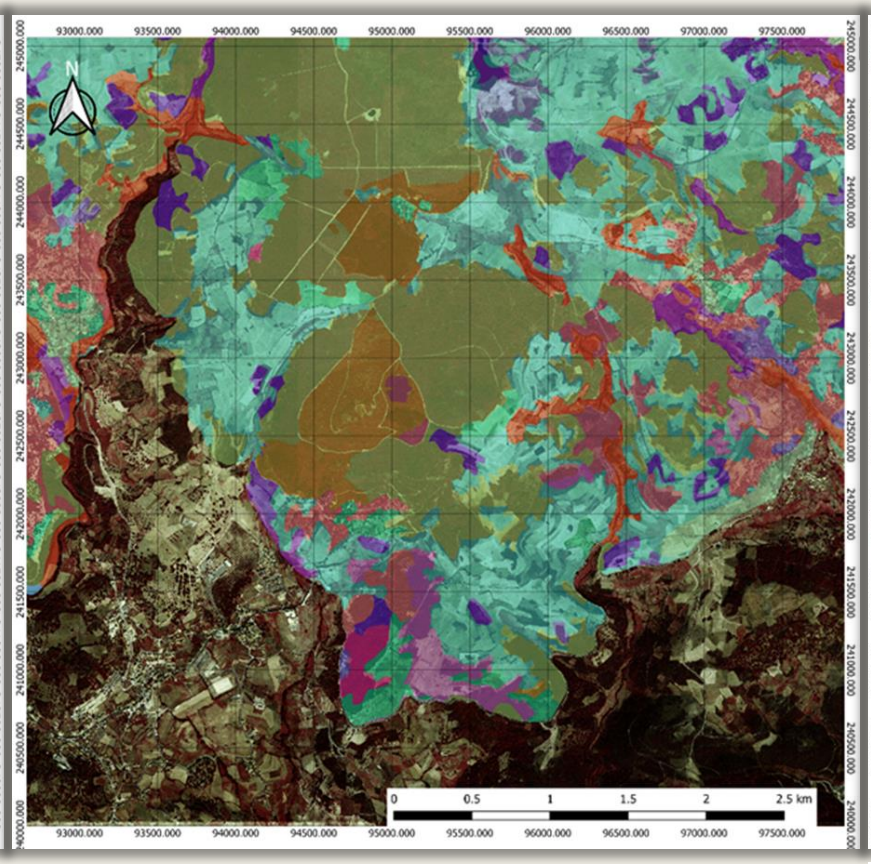

0
200000
400000
600000
400000
200000
0
-200000
SPAIN
PORTUGAL

RECTIFICATION 1995 CARTOGRAPHY

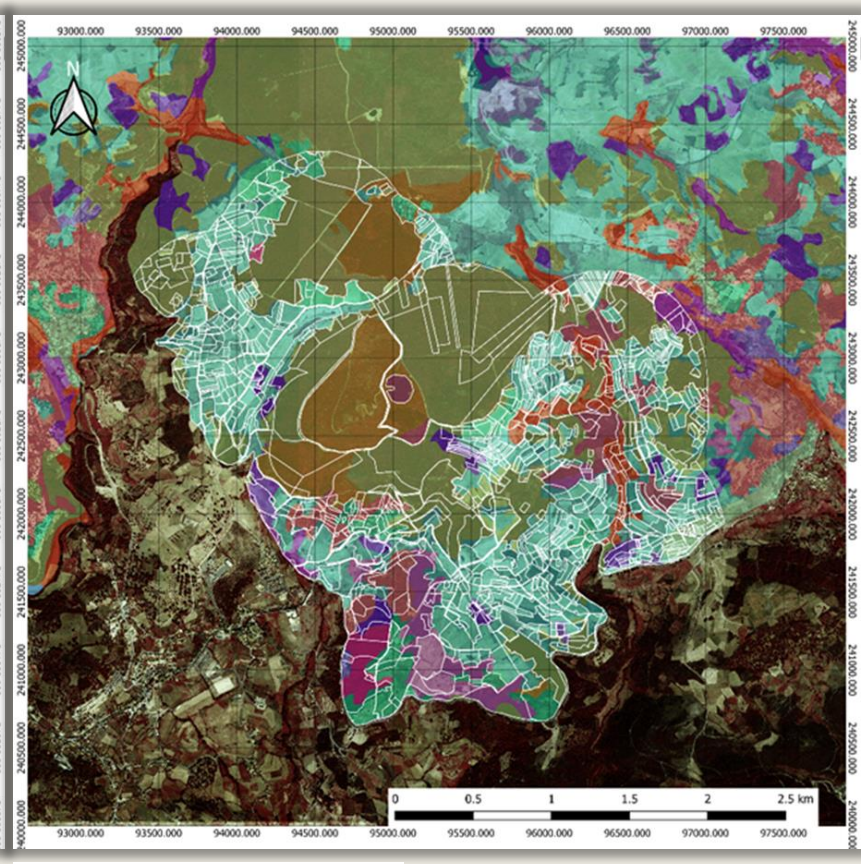
AEROFOTOGRAPHY 1995



CARTOGRAPHY OF NATURAL AND SEMI-NATURAL VEGETATION



CADASTRAL BOUNDARY - iSIP

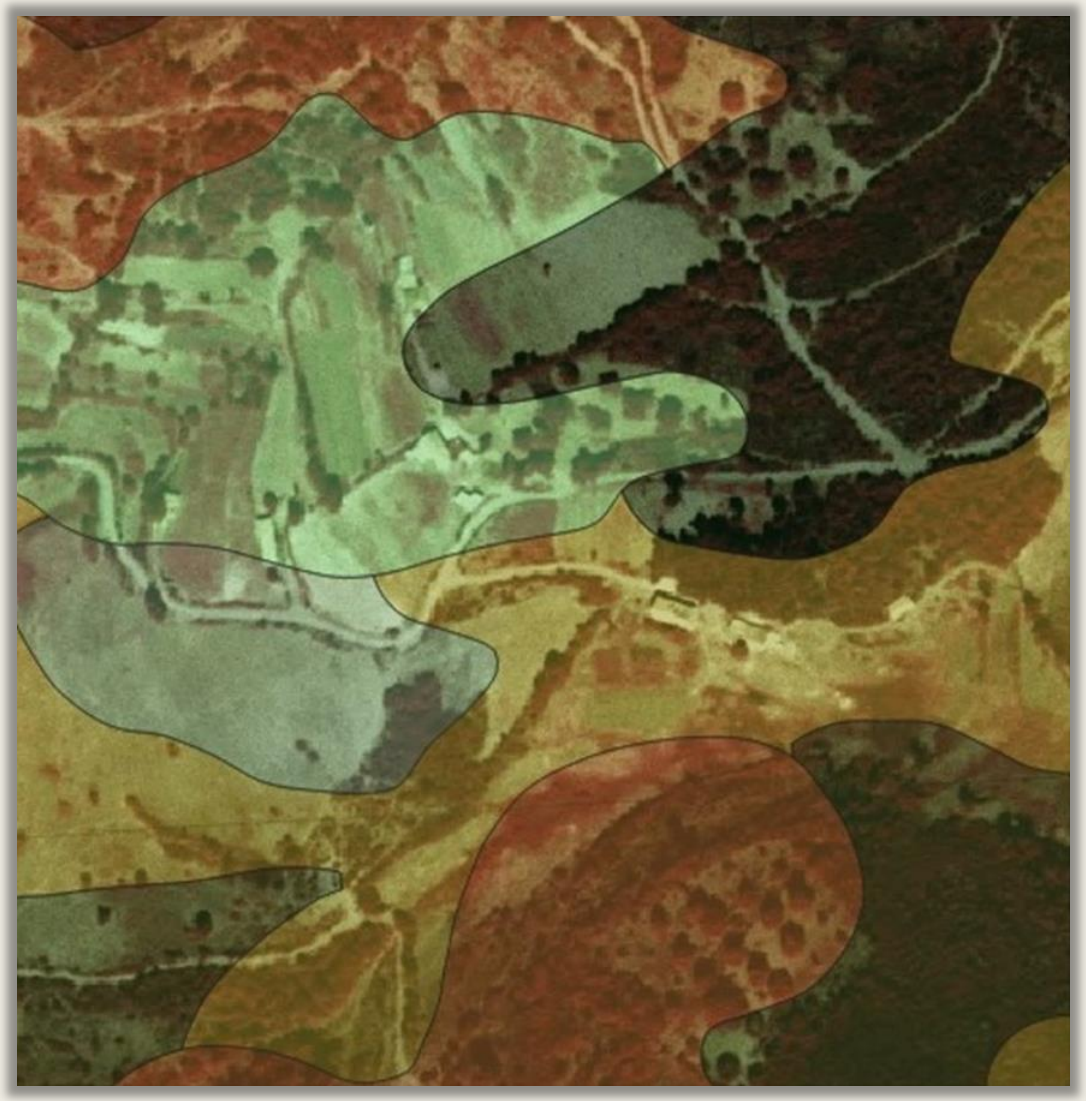


IFAP
Instituto de Financiamento da Agricultura e Pescas, I.P.

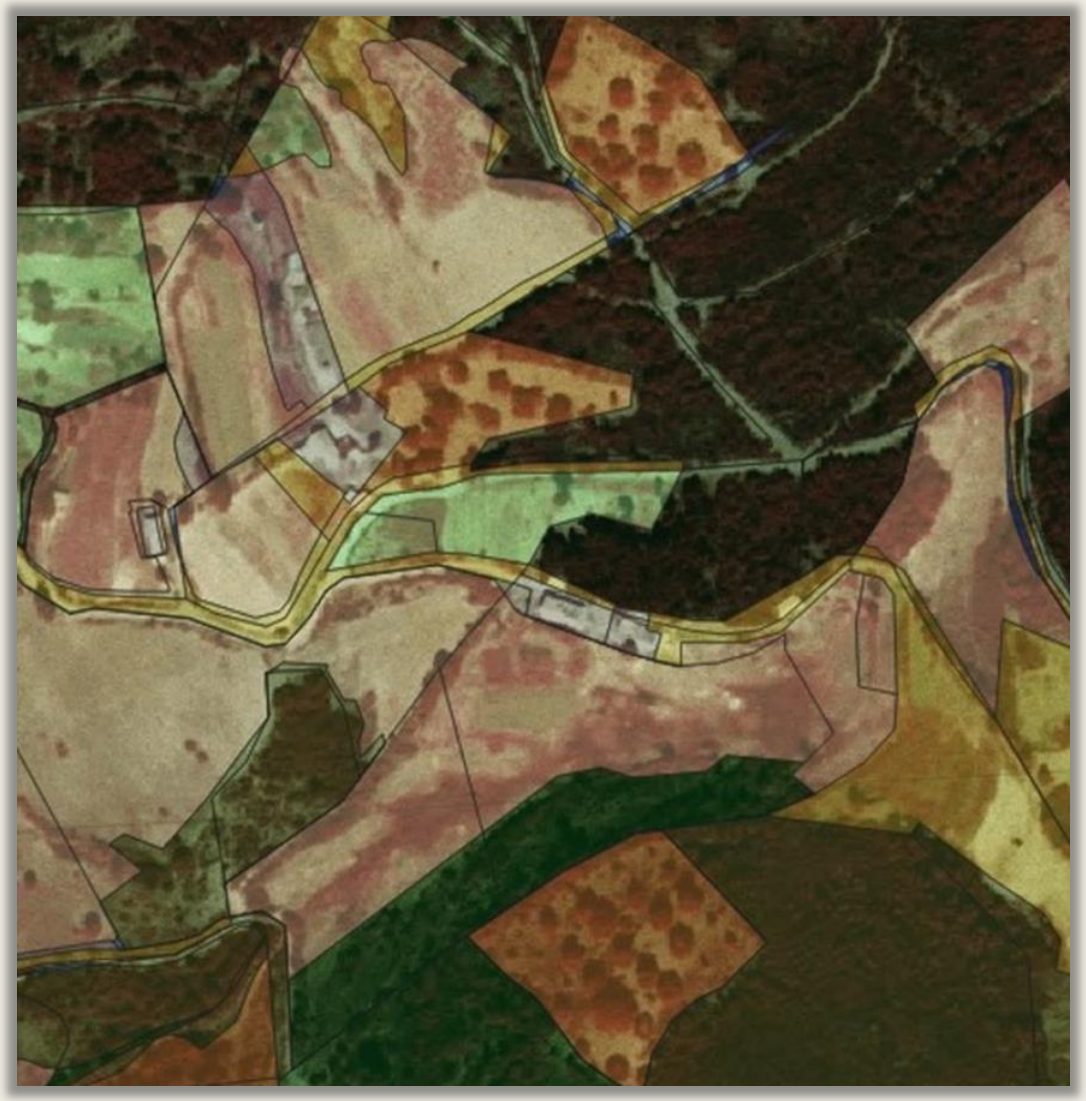
iSIP Público

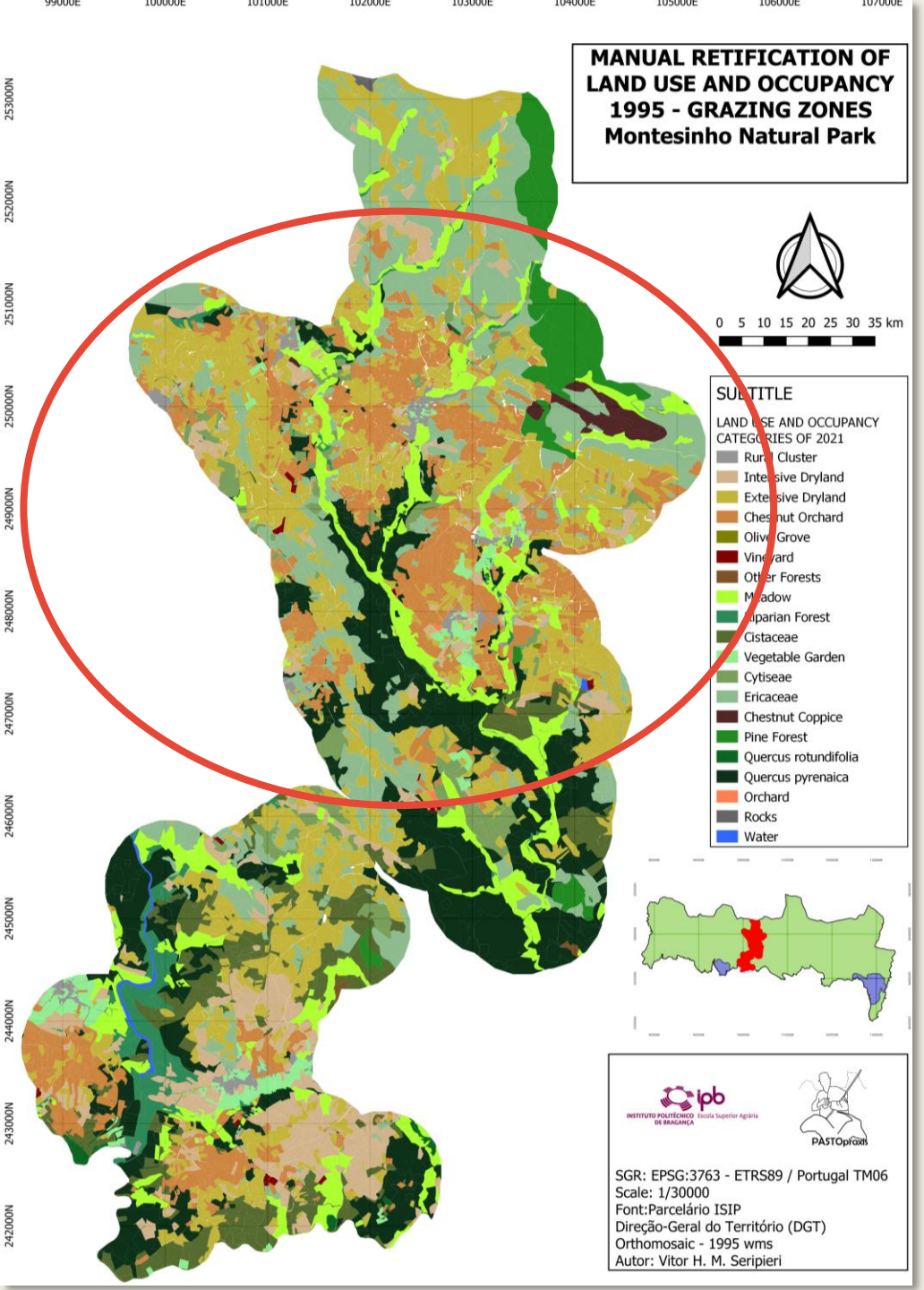
RECTIFICATION 1995 CARTOGRAPHY

BEFORE RECTIFICATION

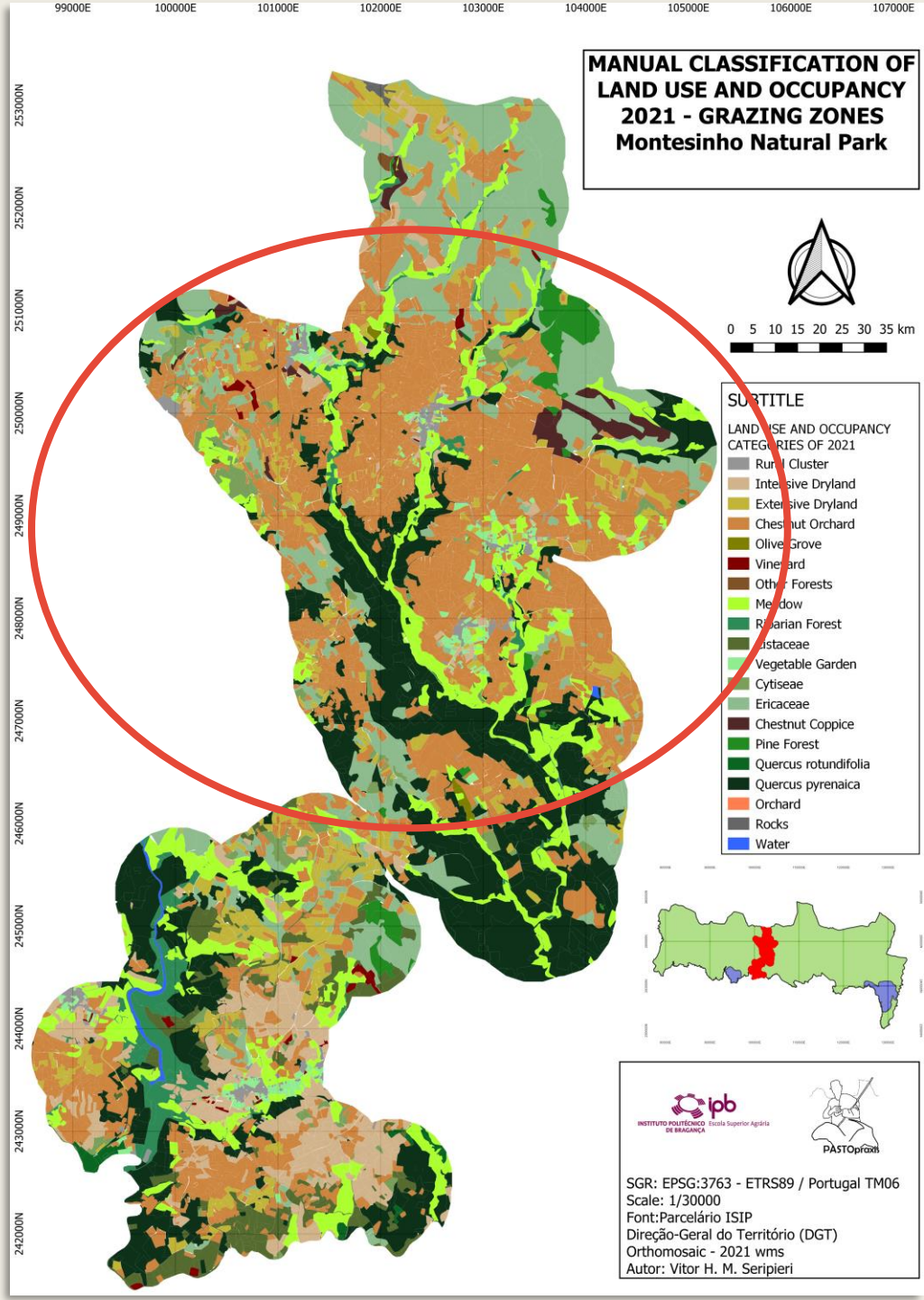


AFTER CADASTRAL BOUDARY iSIP RECTIFICATION




MANUAL RETIFICATION OF LAND USE AND OCCUPANCY 1995 - GRAZING ZONES Montesinho Natural Park
99000E 100000E 101000E 102000E 103000E 104000E 105000E 106000E 107000E
253000N 252000N 251000N 250000N 249000N 248000N 247000N 246000N 245000N 244000N 243000N 242000N
0 5 10 15 20 25 30 35 km
SUBTITLE
LAND USE AND OCCUPANCY CATEGORIES OF 2021
Rural Cluster
Intensive Dryland
Extensive Dryland
Chestnut Orchard
Olive Grove
Vineyard
Other Forests
Meadow
Riparian Forest
Cistaceae
Vegetable Garden
Cytiseae
Ericaceae
Chestnut Coppice
Pine Forest
Quercus rotundifolia
Quercus pyrenaica
Orchard
Rocks
Water
ipb
INSTITUTO POLITÉCNICO DE BRAGANÇA Escola Superior Agrária
PASTOpraxis
SGR: EPSG:3763 - ETRS89 / Portugal TM06
Scale: 1/30000
Font:Parcelário ISIP
Direção-Geral do Território (DGT)
Orthomosaic - 1995 wms
Autor: Vitor H. M. Seripieri

26 YEARS


MANUAL CLASSIFICATION OF LAND USE AND OCCUPANCY 2021 - GRAZING ZONES Montesinho Natural Park
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253000N 252000N 251000N 250000N 249000N 248000N 247000N 246000N 245000N 244000N 243000N 242000N
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Orthomosaic - 2021 wms
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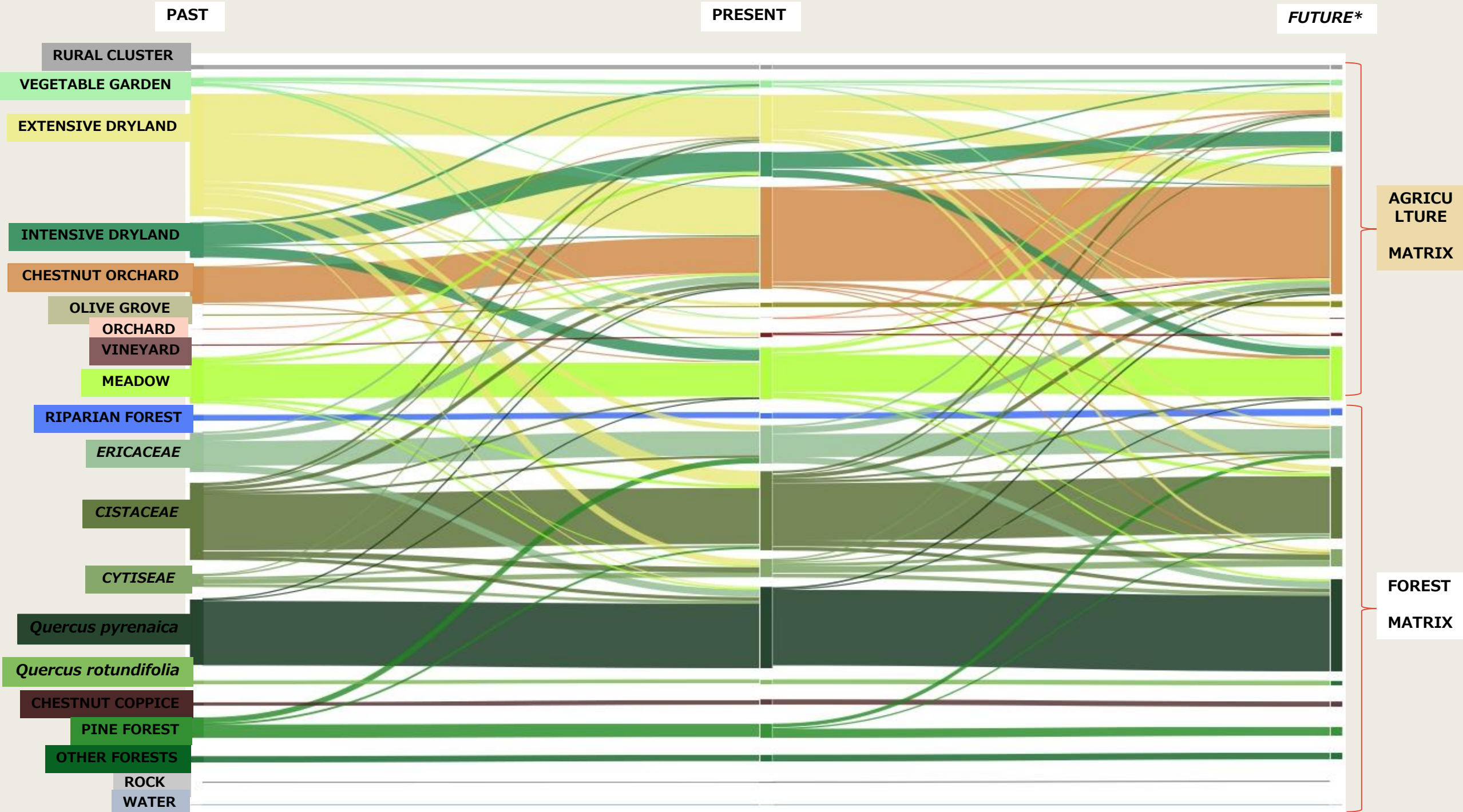
RESULTS: 1995 → 2021 → *2047**

LAND USE CLASSES AGRICULTURE MATRIX	PAST (ha)	PRESENT (ha)	*FUTURE** (ha)
Rural Cluster	71	78	*83*
Vegetable Garden	161	111	*94*
Extensive Dryland	1691	674	*360*
Intensive Dryland	501	359	*294*
Chestnut Orchard	556	1410	*1772*
Olive Grove	10	81	*119*
Orchard	2	3	*2*
Vineyard	45	84	*69*
Meadow	664	732	*767*

LAND USE CLASSES FOREST MATRIX	PAST (ha)	PRESENT (ha)	*FUTURE** (ha)
Riparian Forest	81	96	*111*
Ericaceae	588	552	*477*
Cistaceae	1074	1100	*1029*
Cytiseae	215	278	*254*
Quercus pyrenaica	944	1111	*1264*
Quercus rotundifolia	60	76	*92*
Chestnut Coppice	71	80	*82*
Pine Forest	310	209	*152*
Other Forests	88	94	*99*
Rock	2	3	*3*
Water	9	9	*9*

***FUTURE**: Results from the transition matrix between 1995 and 2021 data. Projecting the next 26 years.


PAST
PRESENT
FUTURE*
RURAL CLUSTER
VEGETABLE GARDEN
EXTENSIVE DRYLAND
INTENSIVE DRYLAND
CHESTNUT ORCHARD
OLIVE GROVE
ORCHARD
VINEYARD
MEADOW
RIPARIAN FOREST
ERICACEAE
CISTACEAE
CYTISEAE
Quercus pyrenaica
Quercus rotundifolia
CHESTNUT COPPICE
PINE FOREST
OTHER FORESTS
ROCK
WATER
AGRICULTURE MATRIX
FOREST MATRIX

CONCLUSIONS

- The main changes observed were within the matrices, not from one matrix to another.
- The work of the shepherds its essential to the landscape due the control of vegetative fuel and nutritional cycling;
- If the trends of changes remains the same, the results from the transition matrix may be true at the next 26 year;

THANK YOU!

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