Zoning organic management of Maquí(*Aristotelia chilensis*) in the region of Los Ríos, Chile

by Julio Gerding Vargas[1] and Milton Serpa de Meira Junior[2]

[1]*Laboratory of Geomatic, Austral University, Valdivia, campus Isla Teja s/n, Chile*

E-mail: jgerdingv@gmail.com

[2] *Department of Forest Engineering, University of Brasilia, Brasilia, campus Darcy Ribeiro, Brazil*

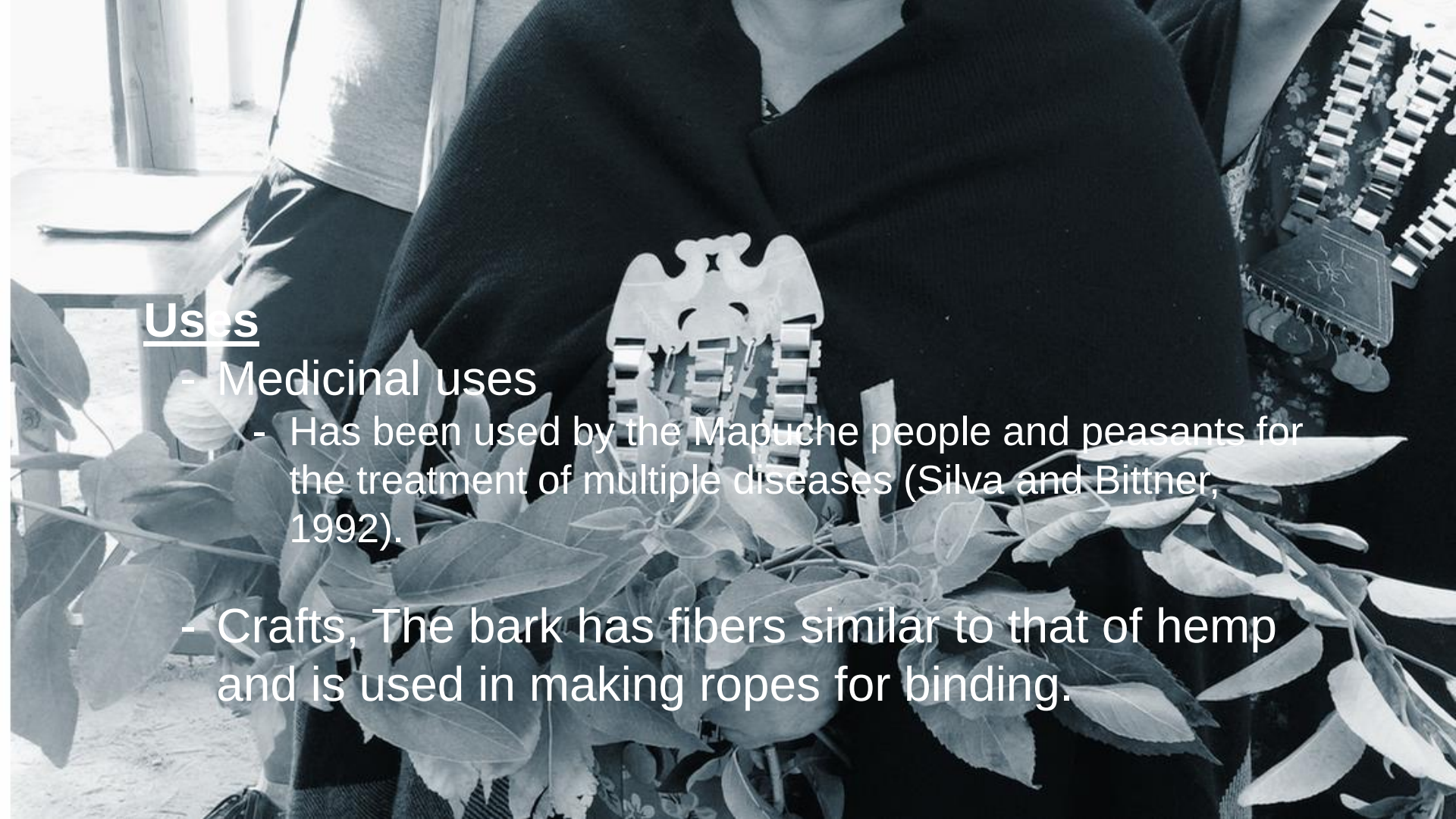
E-mail: milton.serpa@gmail.com

Introduction

General features

- Maqui (*Aristotelia chilensis Mol. (Stuntz)*) is a small tree (4 or 5 m) native specie of forest ecosystems.
- In Chile it's grows from Limarí (IV region) to Aysén (XII region) both in the Central Valley and in both Mountain range, from sea level to 2500 m.s.n.m. (Rodriguez et al., 1983).
- It grows associated with other species on forests edges, in humid places, easily colonizes lands that have lost their vegetation cover, is a pioneer species of newly burned or exploited soils (Silva, F. 2016)

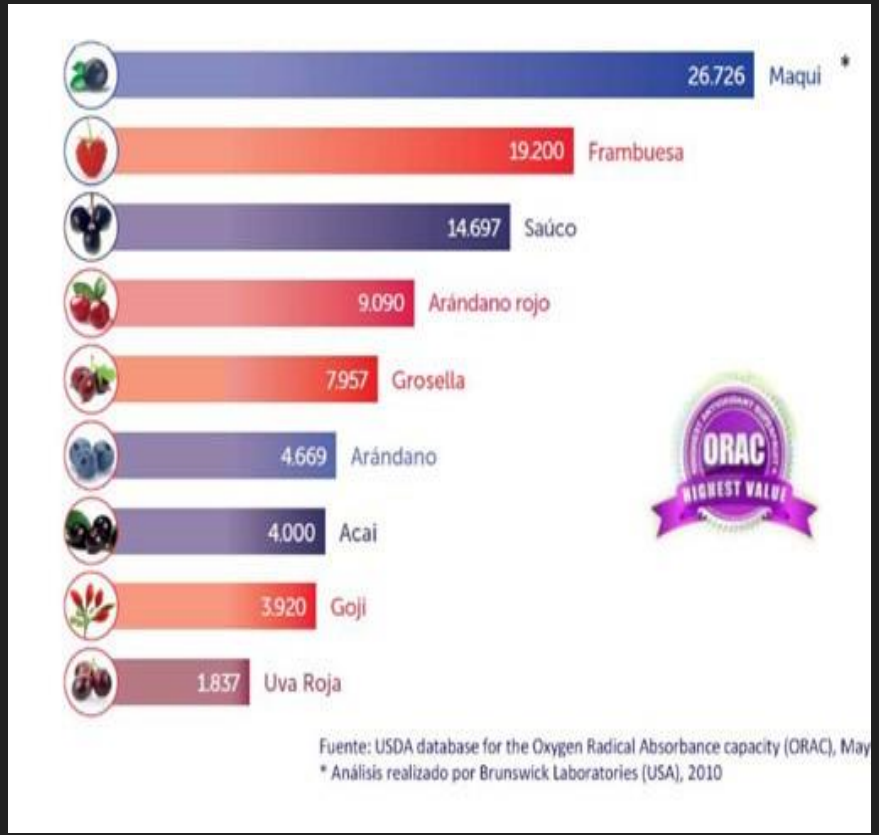
- The fruit is a small fleshy edible berry (green when immature and purple black when ripe), which is also food for some birds, who disperse it.



Uses

- Medicinal uses
  - Has been used by the Mapuche people and peasants for the treatment of multiple diseases (Silva and Bittner, 1992).

- Crafts, The bark has fibers similar to that of hemp and is used in making ropes for binding.



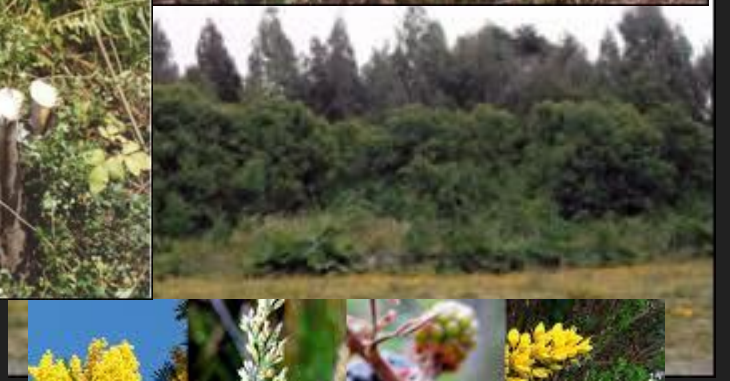
Health benefits:

- Cancer prevention
- To balance your glucose levels after meals for diabetics
- Anti-Inflamatory
- Anti-Bacterian
- Prevent cardiovascular diseases
- Alzheimer control
- etc, etc, etc….

Economic Potential

Treaths:

- Increased pressure on native forest.
-
- Uncontrol harvest, without ecological considerations.
-
- Increased exotic plant colonization.
-
- Degradation of resource in the wild.
-
- Increase of maqui conventional agricultural plantations, increasing the use of pesticides.
-
- Resource patent conflicts. (Convention of Biological Diversity, 1992. art 8j)



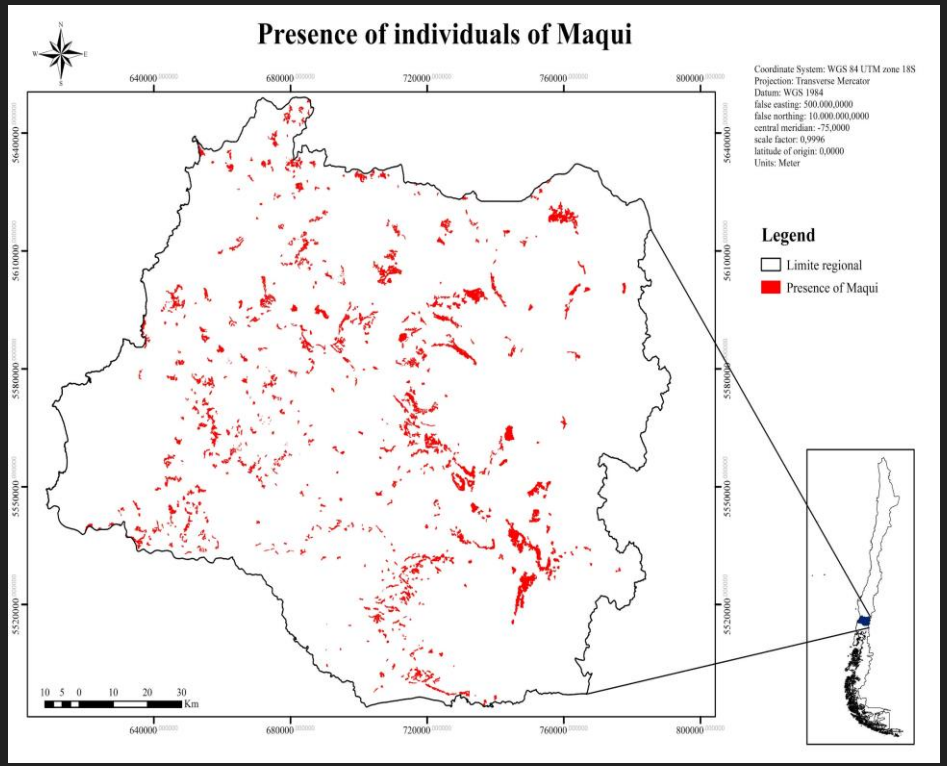
DATA

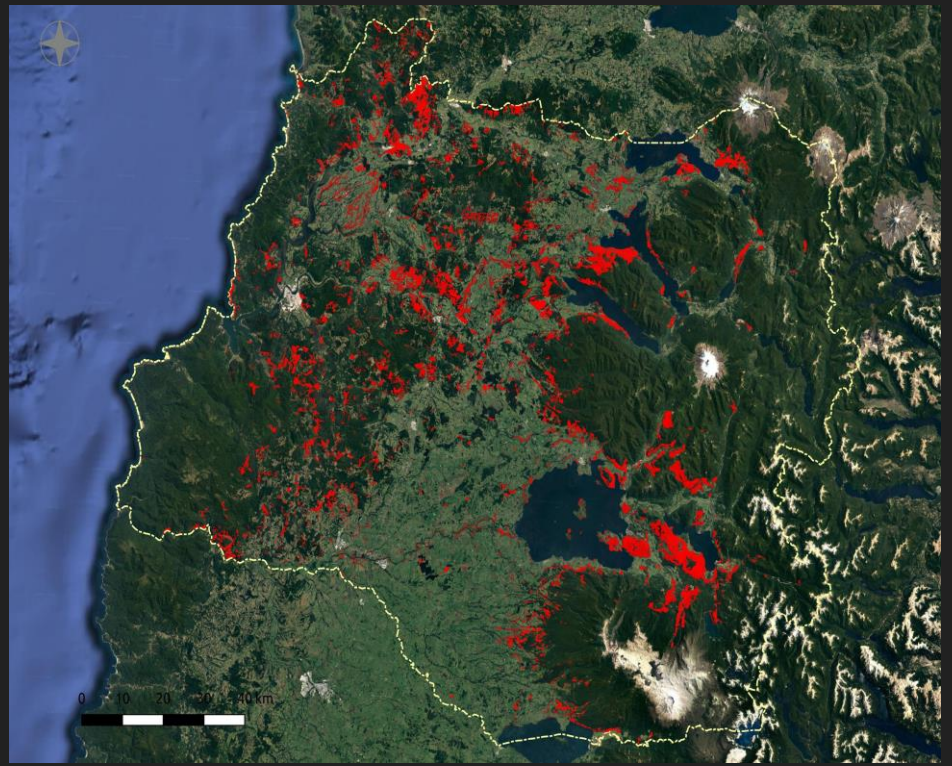
Data	Type	File name	Projected Coordinate System
Altitude	Raster	DEM_XIV	WGS 1984 UTM Zone 18S
Lakes	Vector	MOP DGA - cuerpos de agua	WGS 1984 UTM Zone 18S
Rivers	Vector	MOP DGA - red hidrica	WGS 1984 UTM Zone 18S
Spatial location of Maqui	Vector	Maqui	WGS 1984 UTM Zone 18S

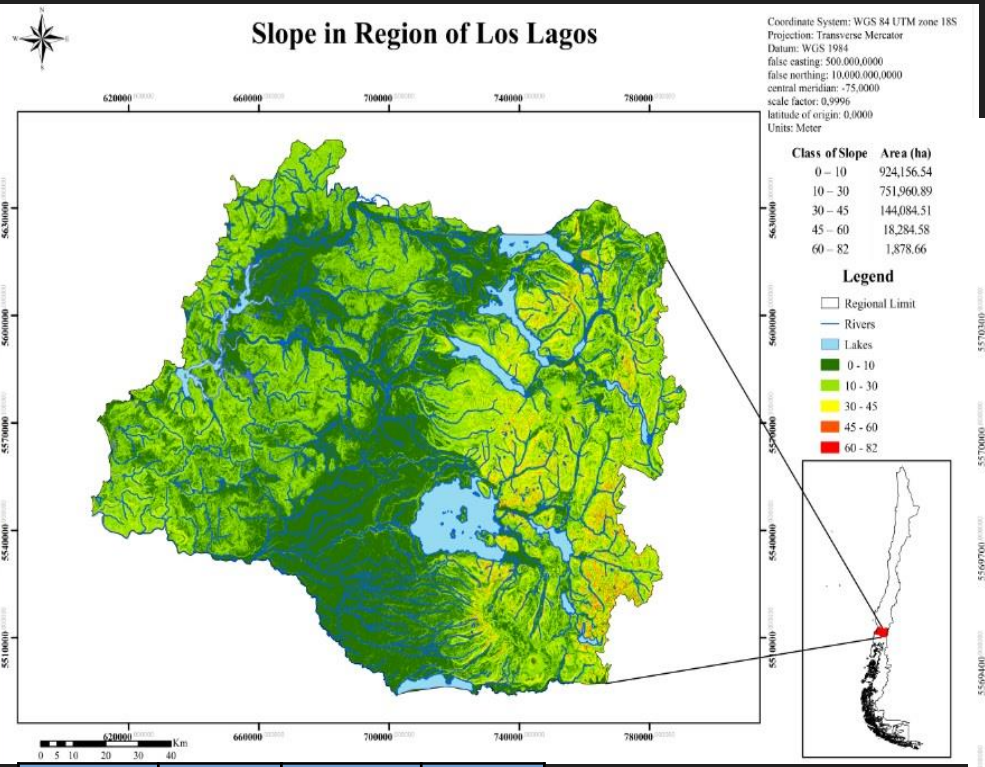
Class	Criterion	Use	Harvest of fruit
A	Sites in edges of rivers and lakes with 15 meters	No management	No harvest
B	Sites with slope less than 10%	No restrictions, it allows timber management plans and non-timber	70%
C	Sites with slopes between 10 and 30%	Allows conservation management. It is suggested to maintain no less than 50% coverage, trails with slope less than 10%	50%
D	Sites with slopes between 30 and 45%	Conservation and protection. Coverage should remain above 70% and not allowed the entry of animals, only sanitary thinning allowed	30%
E	Sites with slopes between 45 and 60%	Just manual harvesting is allowed.	30%
F	Sites with slopes greater than 60%	Preservation and no use: intangible Maqui	No harvest

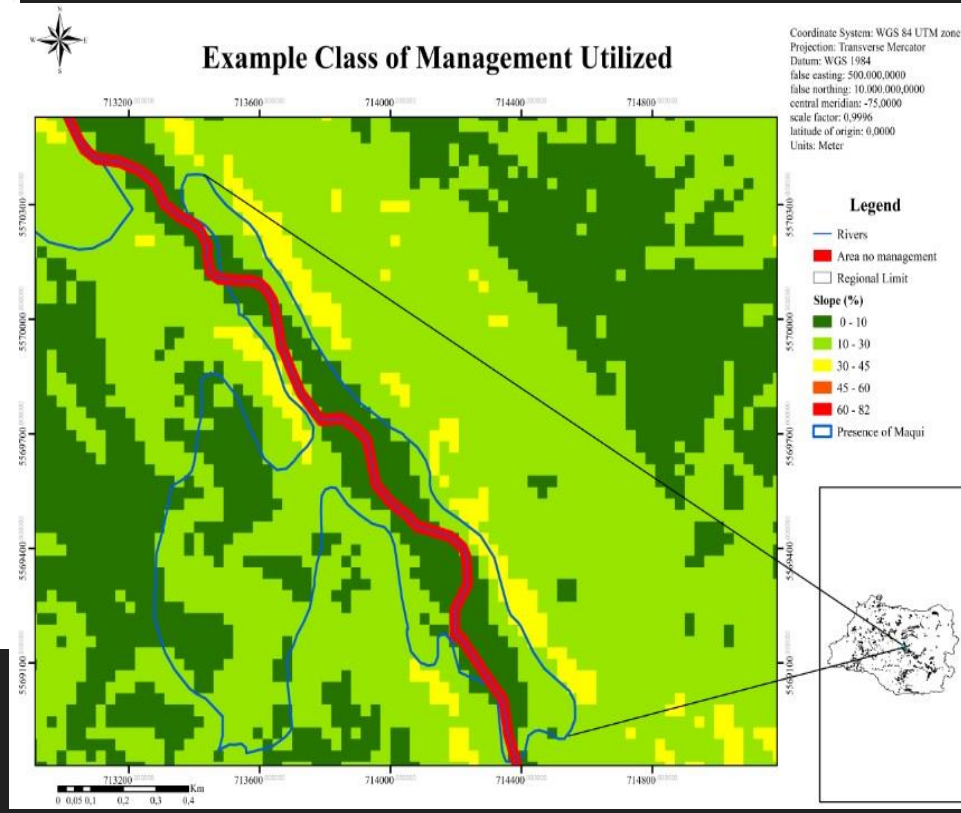
Silva, Fernan. 2016. Propuesta de norma de manejo orgánico del maqui, personal communication.

2,130 fragment with presence of Maqui



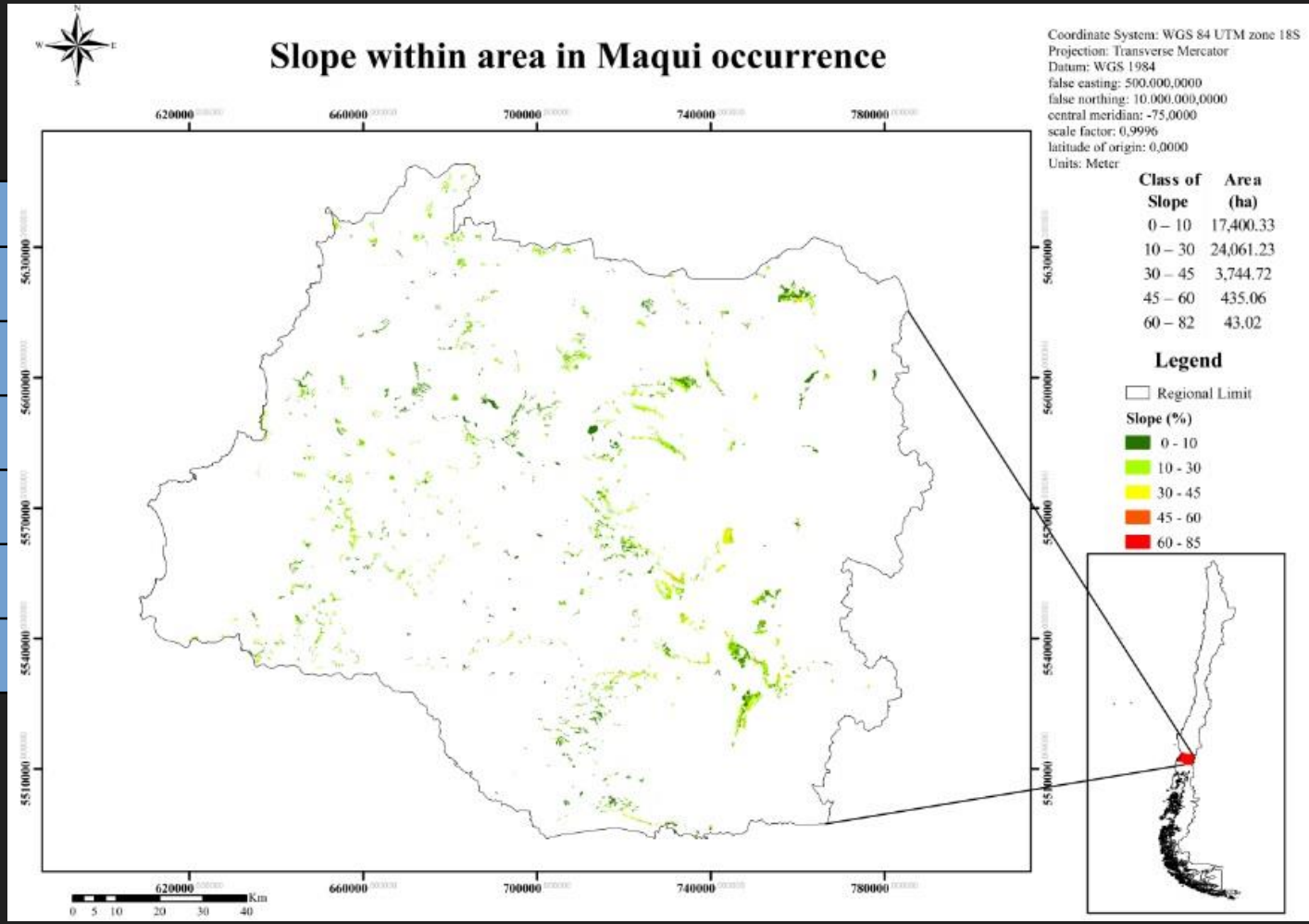


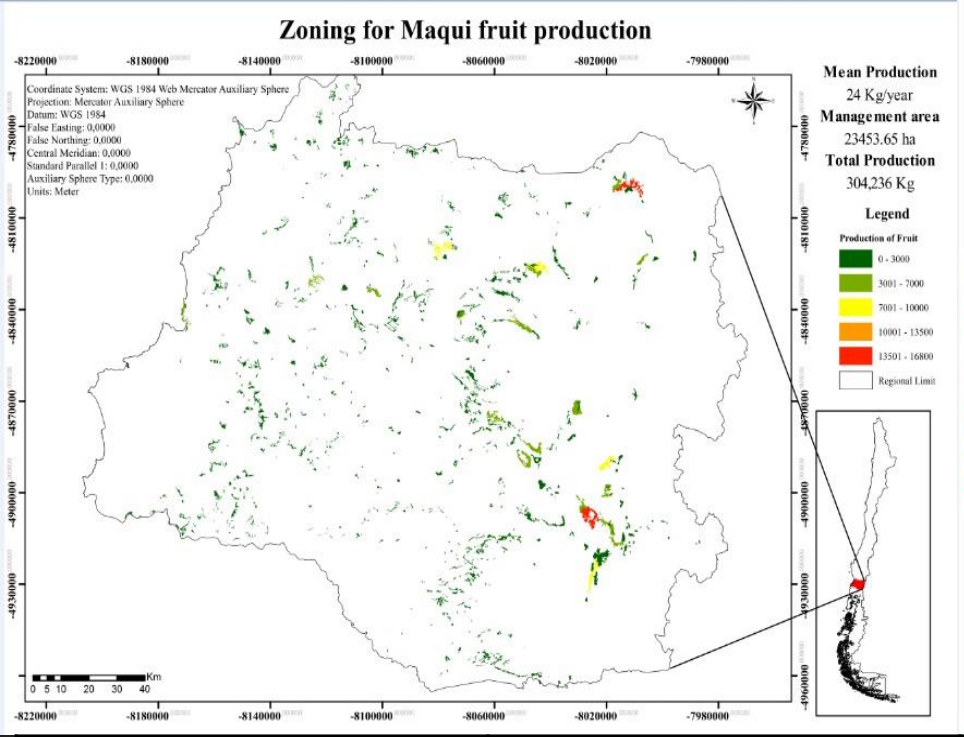


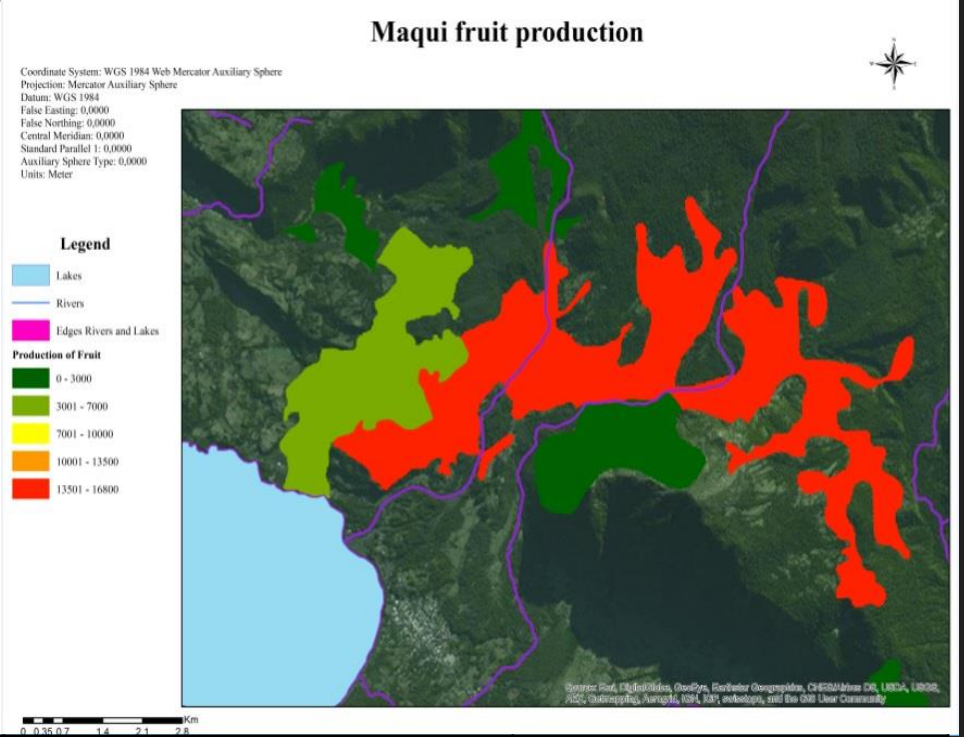


Class	(%)	Class	(%)
A	7.41	D	7.42
B	45.22	E	0.99
C	38.86	F	0.10

Class	Area (ha)	(%)
A	1,205.984	2.52
B	17,400.33	38.09
C	24,061.23	50.33
D	3,744.72	8.02
E	435.06	0.95
F	43.02	0.09

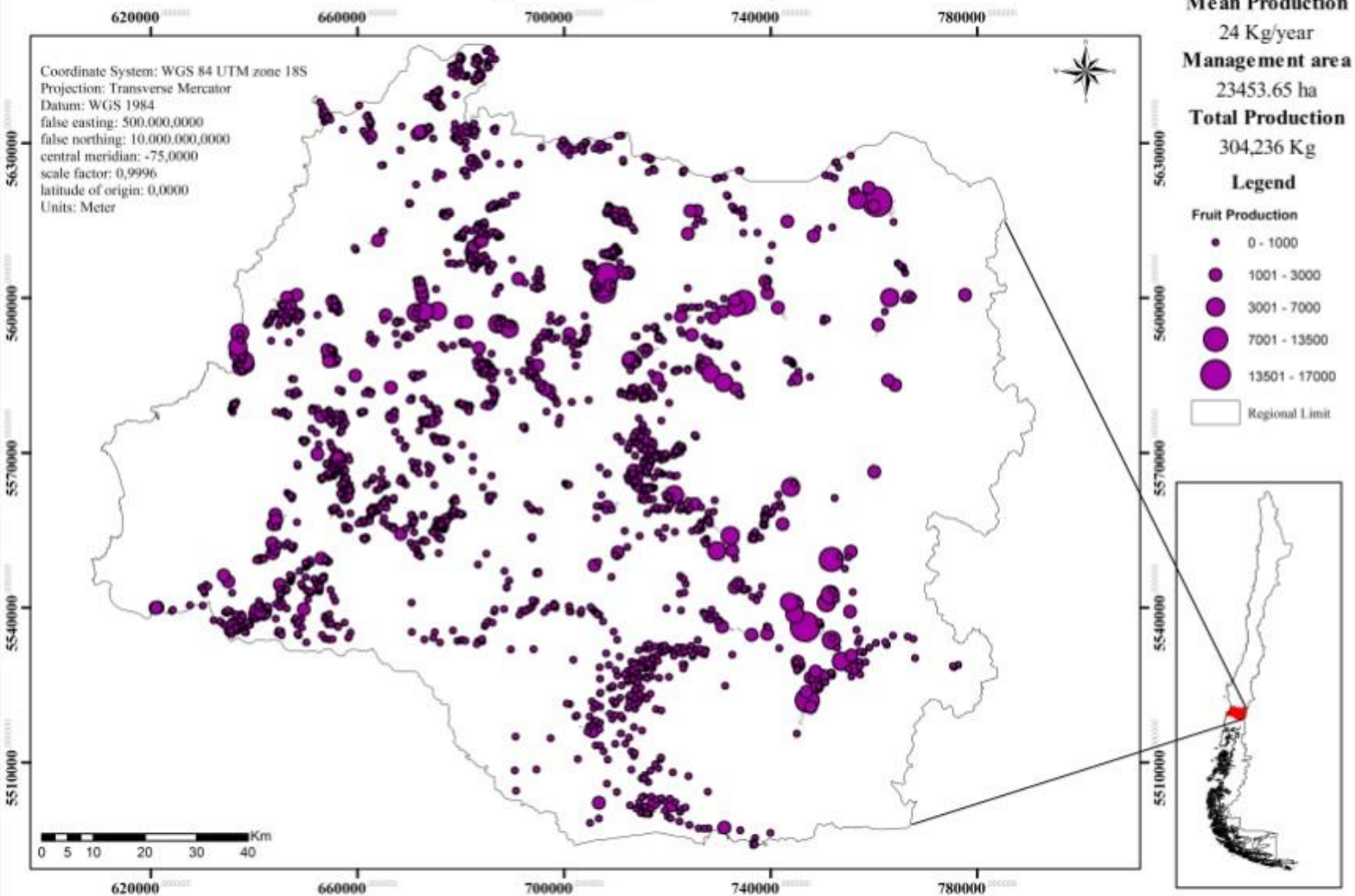






Class	Production of fruit (kg.year^{-1})	Class	Production of fruit (kg.year^{-1})
A	No harvest	D	18,721.8
B	249,763.9	E	1,693.1
C	34,057.4	F	No harvest
TOTAL	304,236	**productivity of 24 kg by hectare (Valdebenito, 2003)**	

Zoning for Maqui fruit production



CONCLUSION

- The region of Los Rios – Chile, has high potential for Maqui fruit production.

- Therefore, the sustainable management of Maqui is an excellent income for small local farmers.

Thank you for your attention and patience