

Cork oak forests' ecosystem services: Economic Valuation and contribution to rural income Case study of Ain-Snoussi (North Tunisia)

Coordinator



Partners



Forestas

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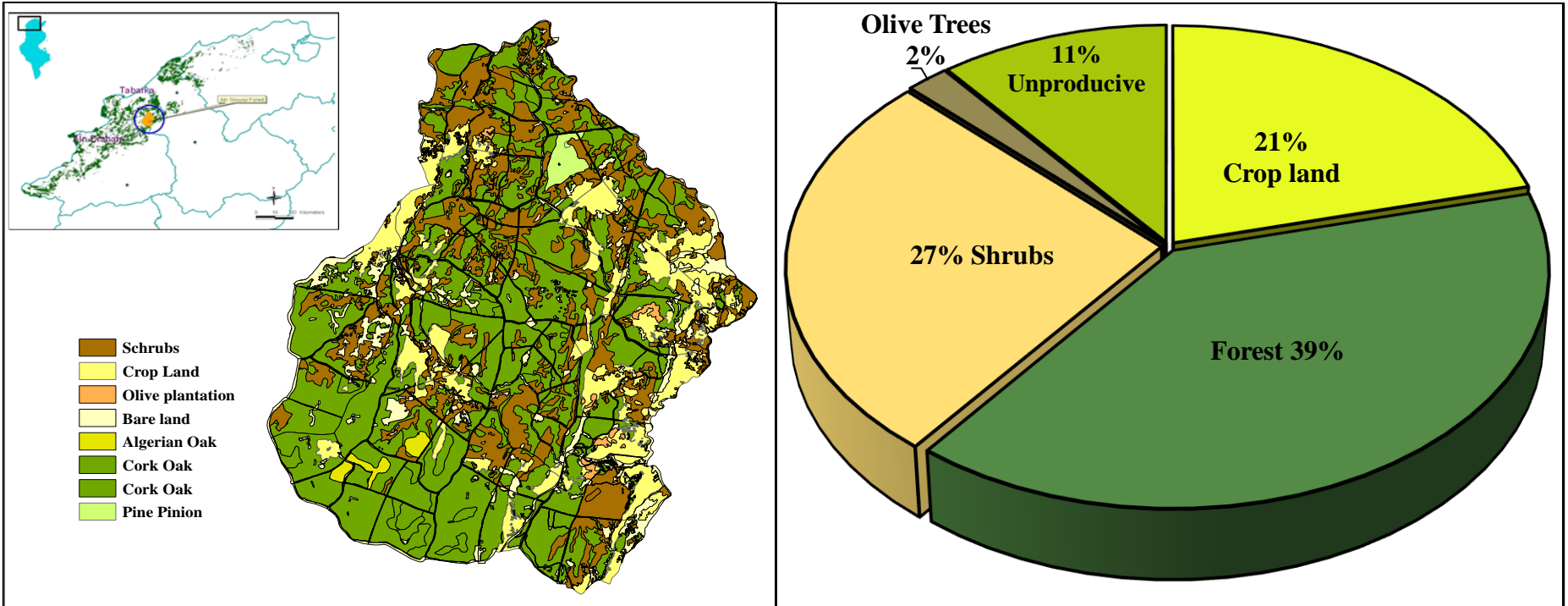


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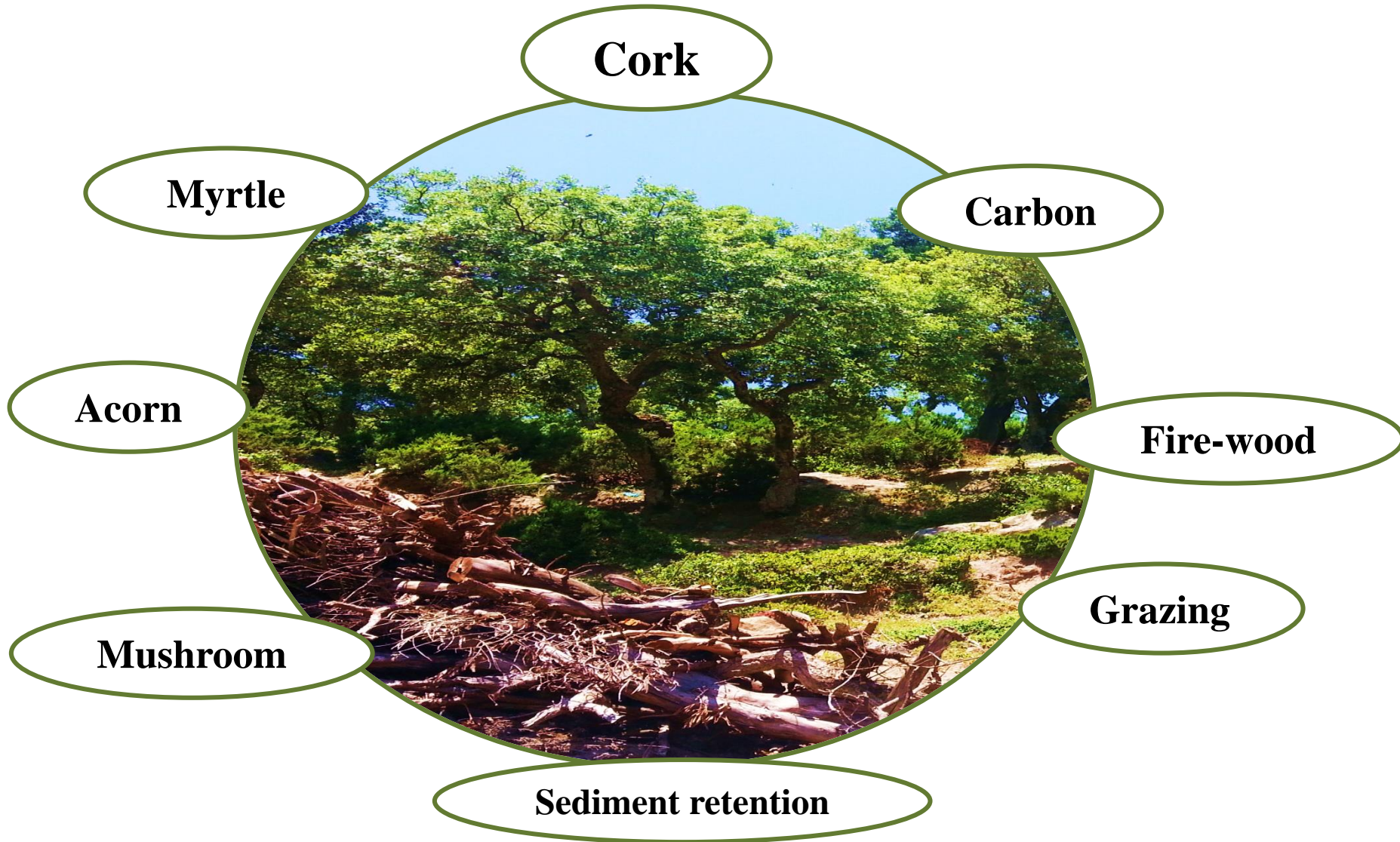
- Study Area
- Total Economic Valuation
 - Methodology
 - Results
- Local Households Income
 - Methodology
 - Results
- Conclusion

Case Study : Ain snoussi – Tunisia



- Surface Area: 3792ha
- Average annual rainfall: 1000 mm
- Population: 1700 inhabitants

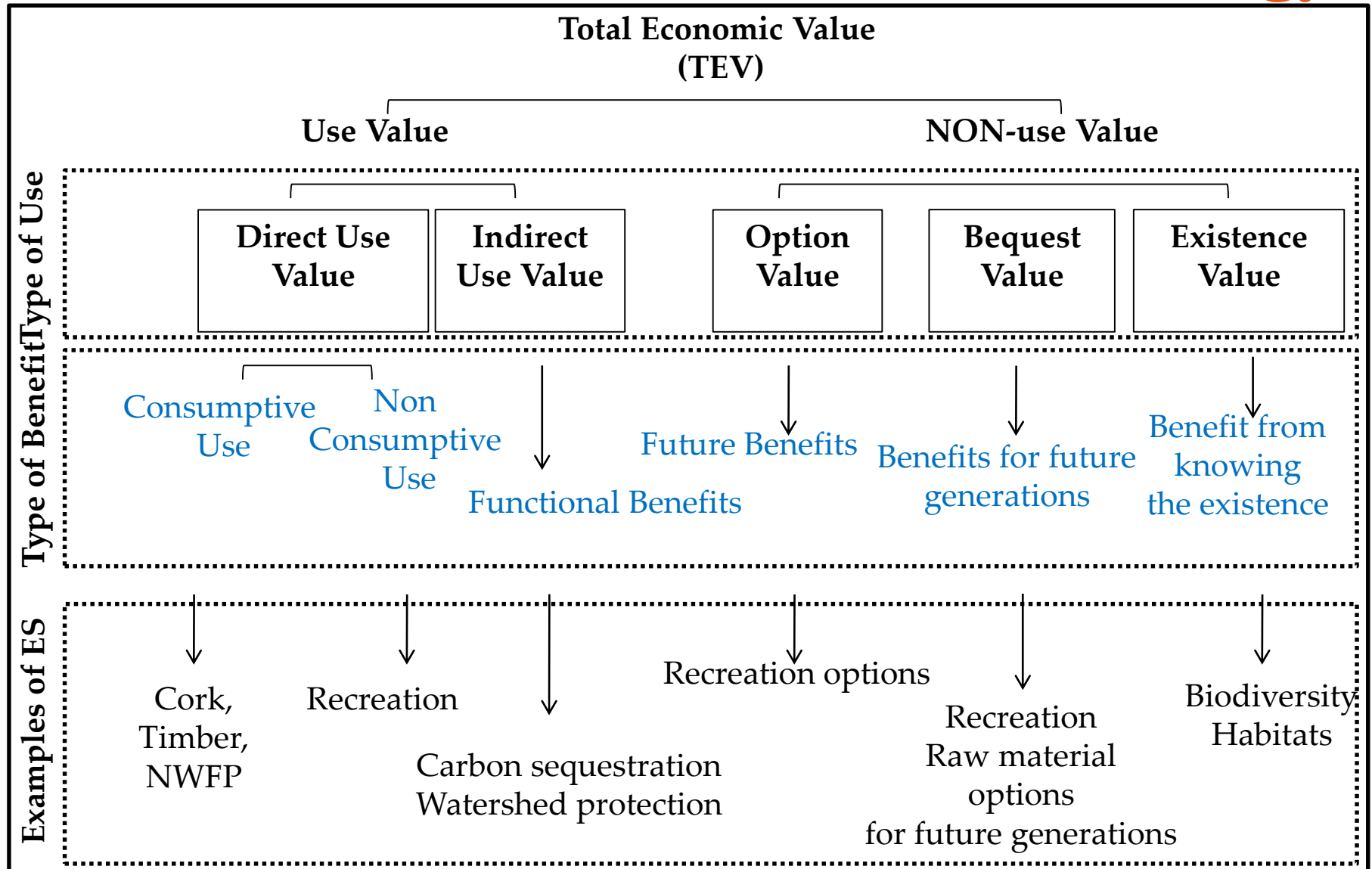
Coak Oak Forests are complex Ecosystems



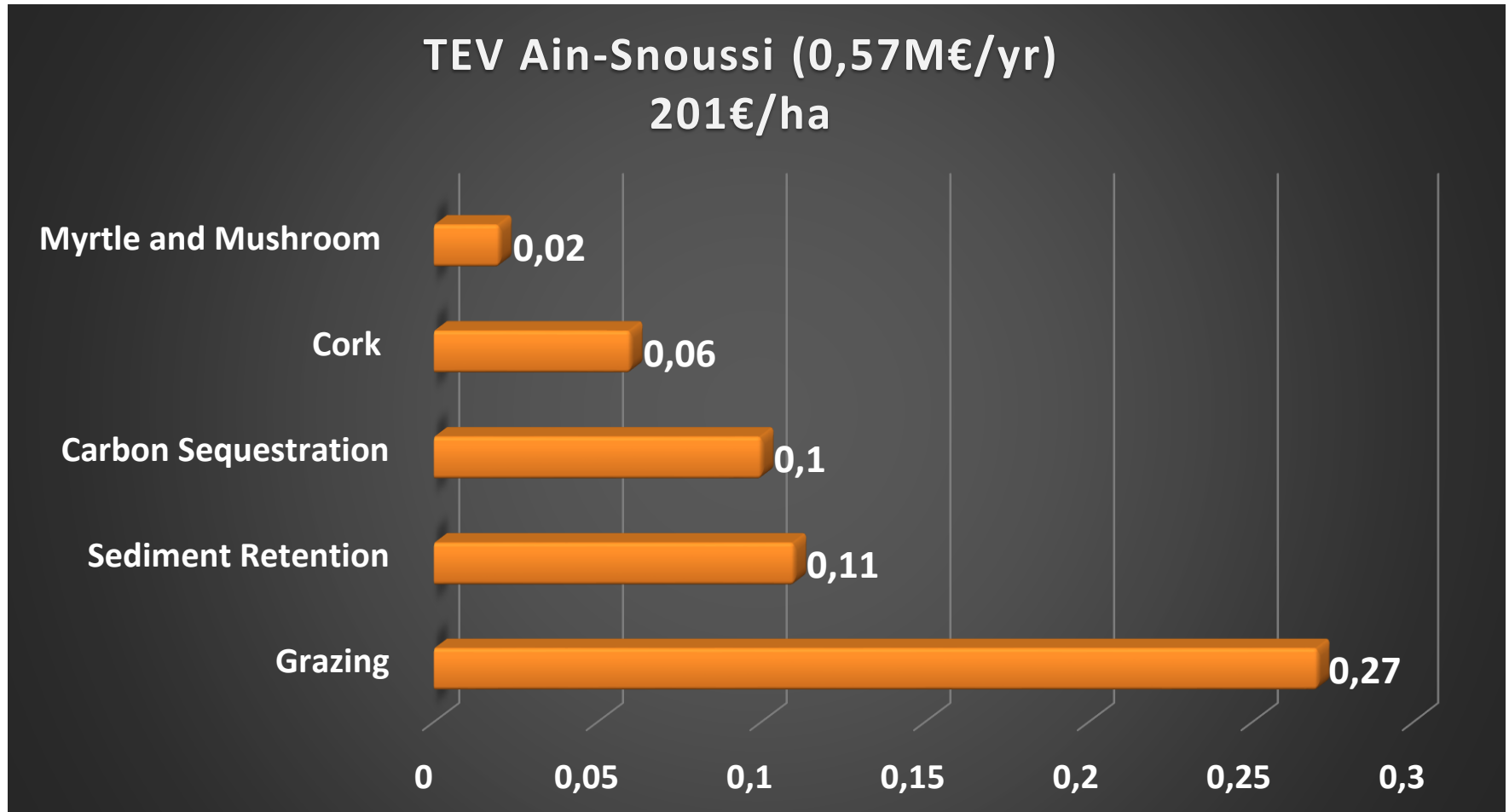
Ecosystem services' average quantities (per ha and per year)

		Unit	Average quantity		
			Shrubs	Clear Forest	Dense Forest
Sediment retention		m ³	5.23	9.10	7.07
Carbon sequestration		T	0.11	1.24	2.16
Grazing		FU	639	550	363
Cork	Reproductive	Ql		0.81	1.17
	Virgin			0.02	0.05
	Miscellaneous			0.03	0.09
Surface Area		ha	920.00	816.38	1095.56

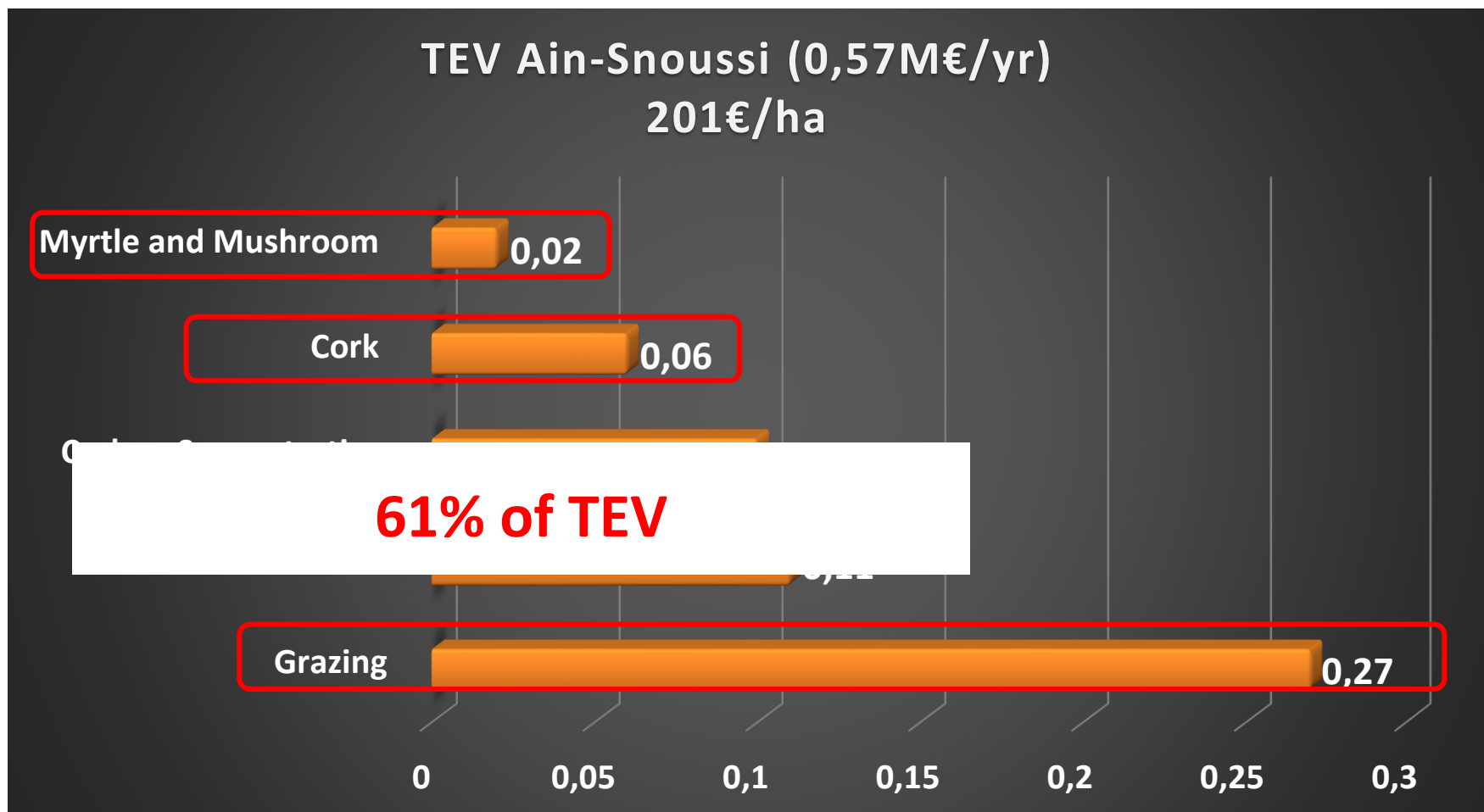
Economic Valuation for ES: Methodology



Economic Valuation for ES: Results

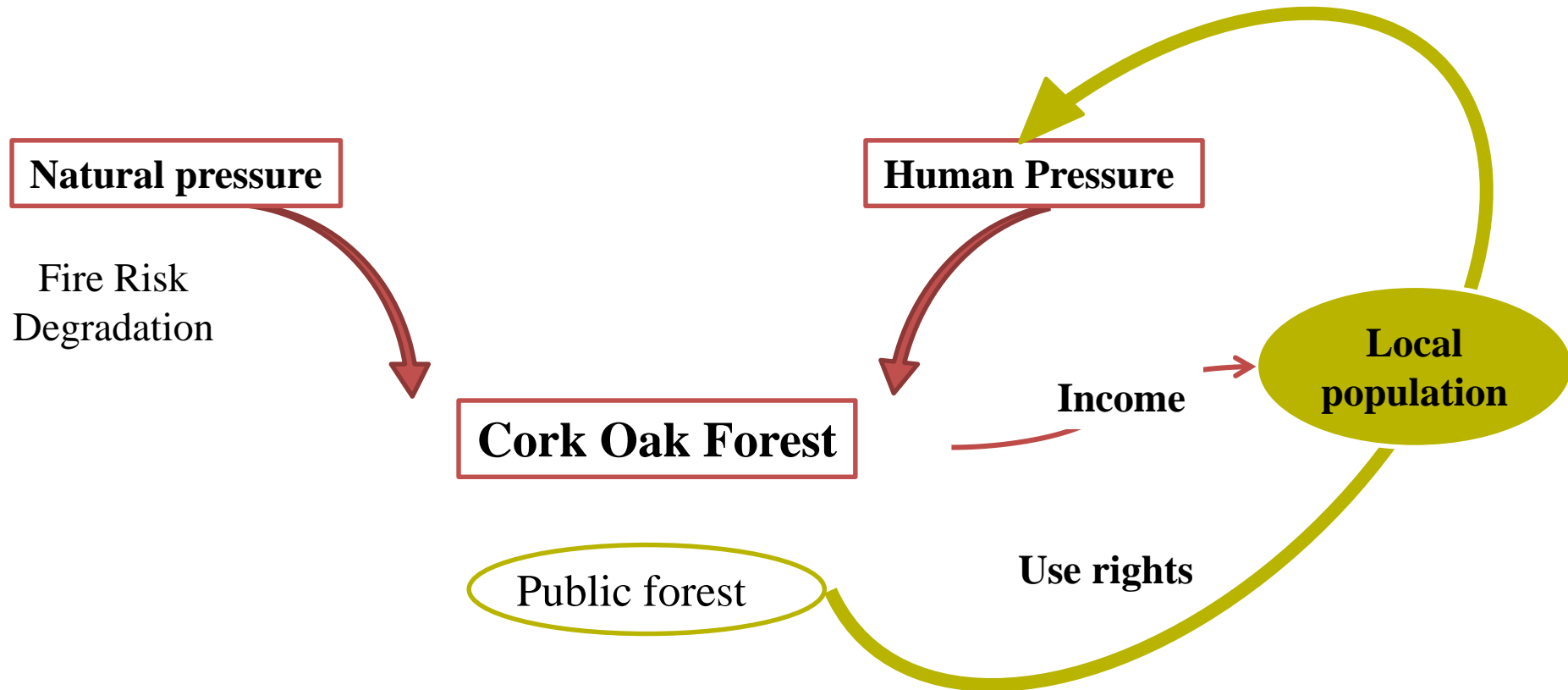


Economic Valuation for ES: Results



What about local Population?

Dynamics between the population and the forest



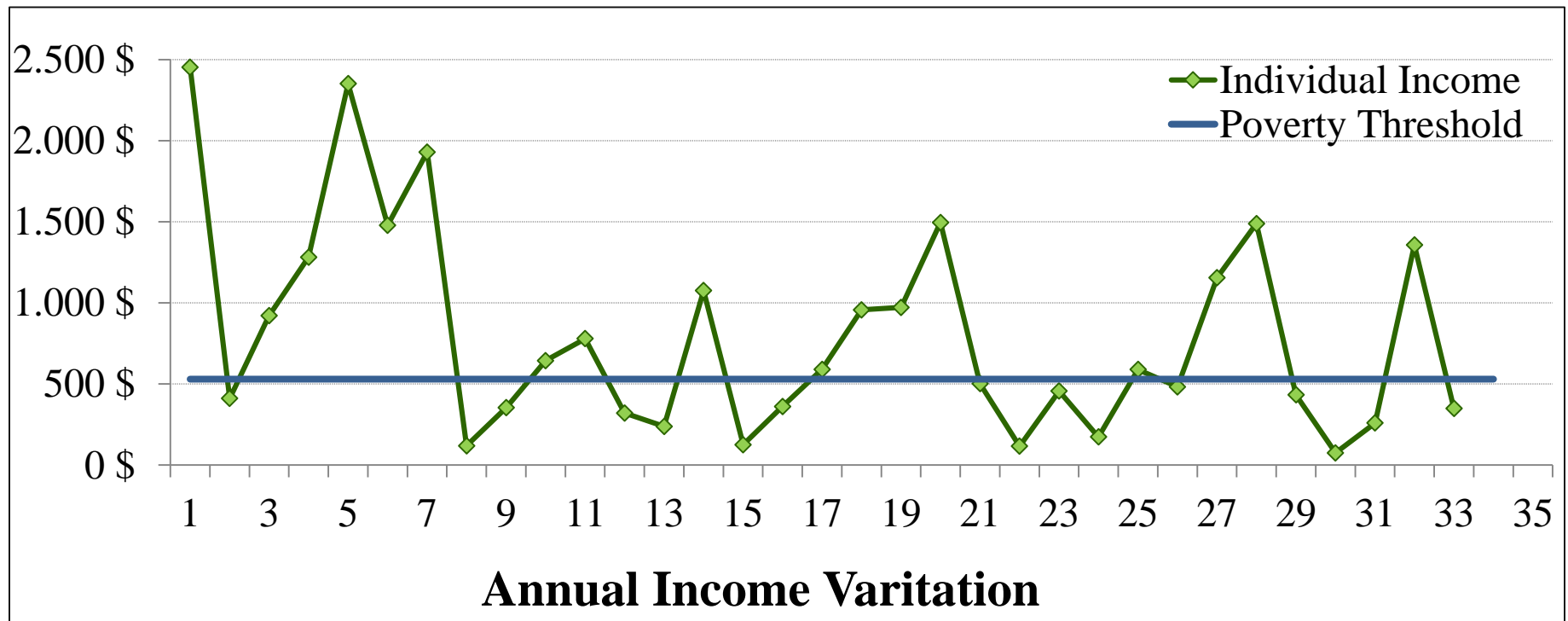
Local population Income: Methodology

- Income Estimation: The gross margin (All inputs except family labor were deducted from gross income)
- Self consumption and cash income were calculated for the different goods and income sources.
- The local market prices were used for all the income generator product except grazing
- The grazing resources were estimated as residual value

Local population Income: Results

Annual income varies between 600\$ and 12261\$ with an average income of 3236\$ per year in 2015.

Referring to the National Statistic institute threshold (530\$ per year and per inhabitant) 50% of the population are below the poverty line



Local population Income: Results

Annual Household Income

21%

Crop production

- Non profitable activity
- Practiced by 68% of the population for self-consumption and animal feeding, which also explains the crops choice (wheat, barley, oat, bean,...)
- The average agricultural surface area is 2.5ha per household

Households have additional income coming either from permanent employment (11%) and governmental financial support or family members (10%)

26%

Livestock production

- The most profitable activity
- Practiced by 91% of the population
- A household owns an average of 1.8 cattle, 6.3 sheep and 4.5 Goats.
- Livestock's expenditures are based on self production and grazing.
- The average grazing time is 5h per day in the forest and 2h in the shrubs.
- The correlation coefficient between the livestock income and the nutritional value covered by grazing is 0.7.
- The estimation of the grazing value based on value-equivalent substitutes, shows that in case the household has to pay for supplementary feed instead of grazing, the activity becomes unprofitable for 65% of the households.

54%

NWFP

- The collection of diverse goods in the forest like mushrooms, myrtle, and acorns is usually carried by women and children's.
- Selling of these products generates up to 15% of the households income.

The occasional employment

Activities related to cork stripping and management activities generates 39% of the average income

Dependence on Forest resources

Conclusion

An effective forest management strategy should manage the dilemma between the sustainability of natural resources and the subsistence of the forest population

- ➔ Increase the productivity of the forest
- ➔ Insure a better quality to the industry
 - ➔ Higher value provided by the forest
- ➔ Insure a better income to the local population
 - ➔ Guaranty their subsistance
 - ➔ Enhance the preservation

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