

# Mappatura dei servizi ecosistemici nelle aree forestali del Trentino

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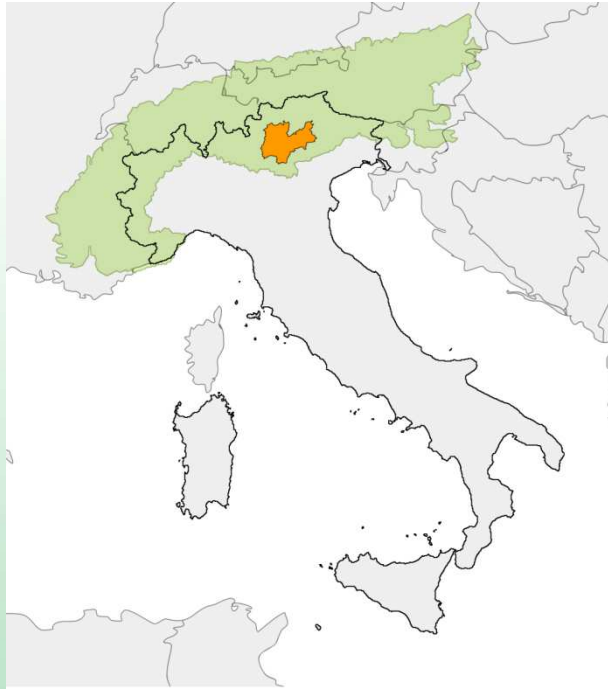
- Identificazione
- Valutazione
- Strumenti per la valorizzazione

Data source: Inventario provinciale del carbonio (2007), Centro di Ecologia Alpina



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# Study region: **The Province of Trento in Italy**



- **variegated system**
- **Multiple ESs**
- **inhabitants heavily use ecosystems and their services to ensure their wellbeing**



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# 18 types of forest's Ecosystem Services



ESs themes	ESs classes	ESs type
<b>Provisioning</b>	Food supply	Agriculture products
		<b>Hunting products</b>
		Fishing products
		<b>Mushroom</b>
		<b>Honey</b>
	Raw material supply	Inorganic matter
		<b>Timber</b>
	Energy supply	<b>Fuel wood</b>
	Water supply	Superficial network
		Groundwater

ESs themes	ESs classes	ESs type
<b>Regulating</b>	Water cycle regulation	Water quality
		Water flow
	Atmosphere components regulation	<b>Air quality</b>
		<b>Microclimate</b>
		<b>Macroclimate</b>
	Natural hazard regulation	<b>Flood, debris flow and avalanches</b>
		<b>Flood</b>

ESs themes	ESs classes	ESs type
<b>Cultural</b>	Opportunities for tourism	<b>Tourism</b>
		<b>Scenic beauty</b>
	Opportunities for downtime activities	<b>Hunting</b>
		<b>Fishing</b>
		<b>Mushroom harvesting</b>
		<b>Honey collecting</b>
		<b>Sporting</b>
		<b>Relaxing</b>

Classification framework: CICES (Haines-Young & Potschin, 2010)

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# Biophysical mapping of forests' Ecosystem Service

## Characteristics of ESs indicators:

- real supply
- in terms of stock and flow
- regional scale
- mapped over specific spatial units
- biophysical, economic and socio-cultural information
- for the first decade of 2000

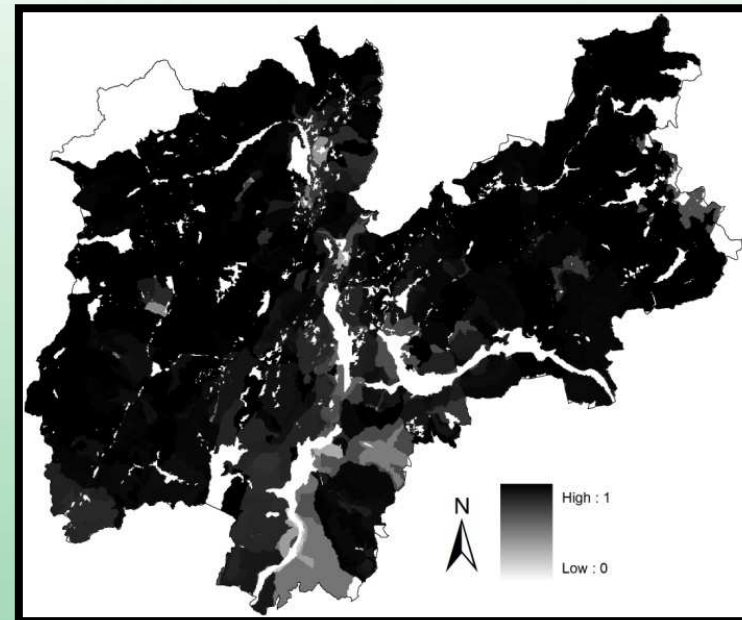
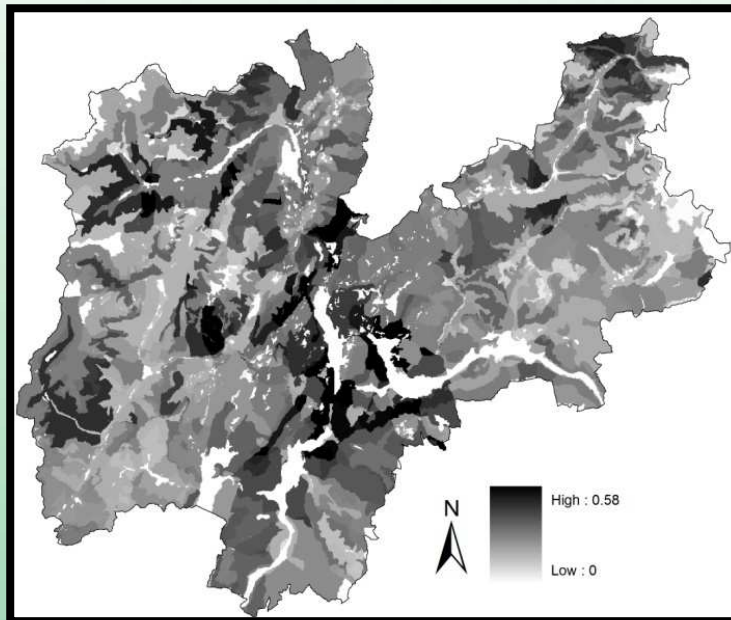


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# Biophysical mapping of forests' Ecosystem Service

## Provisioning services: Hunting products

<i>STOCK</i>	<i>FLOW</i>		
Density of animals available for hunting	Meat of hunted animals	Nutritive value of hunted animals	Ratio of hunted animals belonging to ungulates
[n. of animals * ha <sup>-1</sup> ]	[kg * ha <sup>-1</sup> * year <sup>-1</sup> ]	[kcal * ha <sup>-1</sup> * year <sup>-1</sup> ]	[n. of hunted ungulates*n. of hunted animals <sup>-1</sup> * year <sup>-1</sup> ]



Data source: Servizio foreste e fauna; Associazione cacciatori trentini

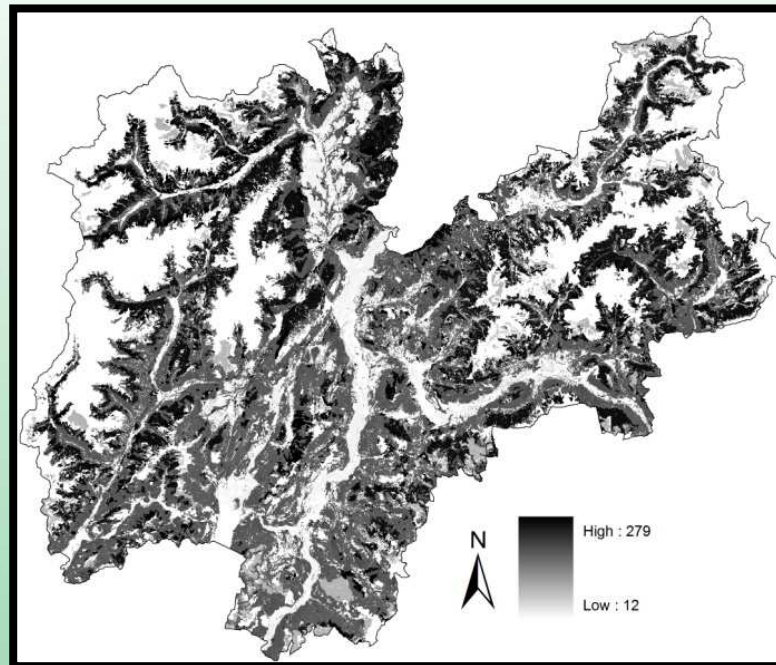
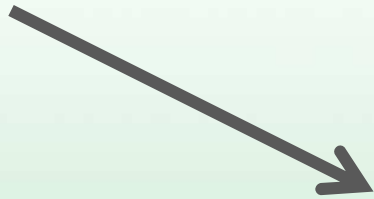


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# Biophysical mapping of forests' Ecosystem Service

## Regulating services: Macroclimate regulation

<i>STOCK</i>	<i>FLOW</i>
Carbon storage	Carbon increment
[t of carbon * ha <sup>-1</sup> ]	[t of carbon * ha <sup>-1</sup> * year <sup>-1</sup> ]



Data source: Inventario provinciale del carbonio (2007), Centro di Ecologia Alpina

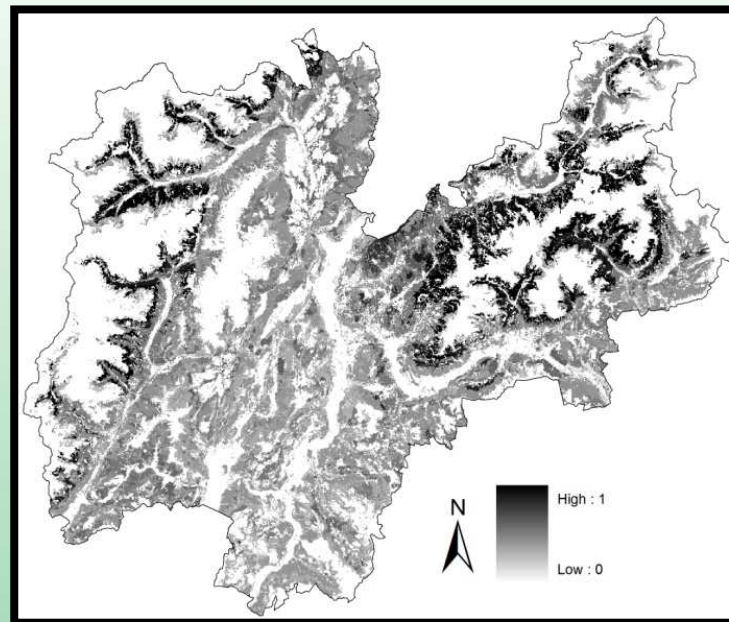
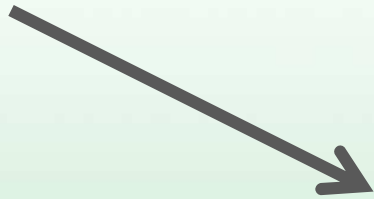




# Biophysical mapping of forests' Ecosystem Service

## Cultural services: Mushroom harvest

<i>STOCK</i>	<i>FLOW</i>
Availability of mushrooms of good quality	Gain by harvesting authorizations
[-]	[€* ha <sup>-1</sup> * year <sup>-1</sup> ]



Data source: Dipartimento foreste

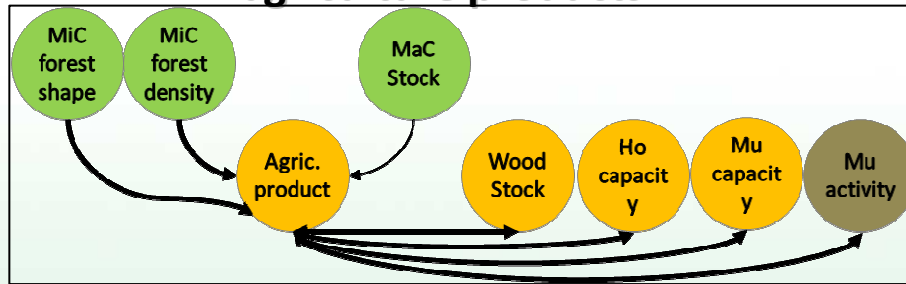


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# Identifying synergies and tradeoffs among ESs

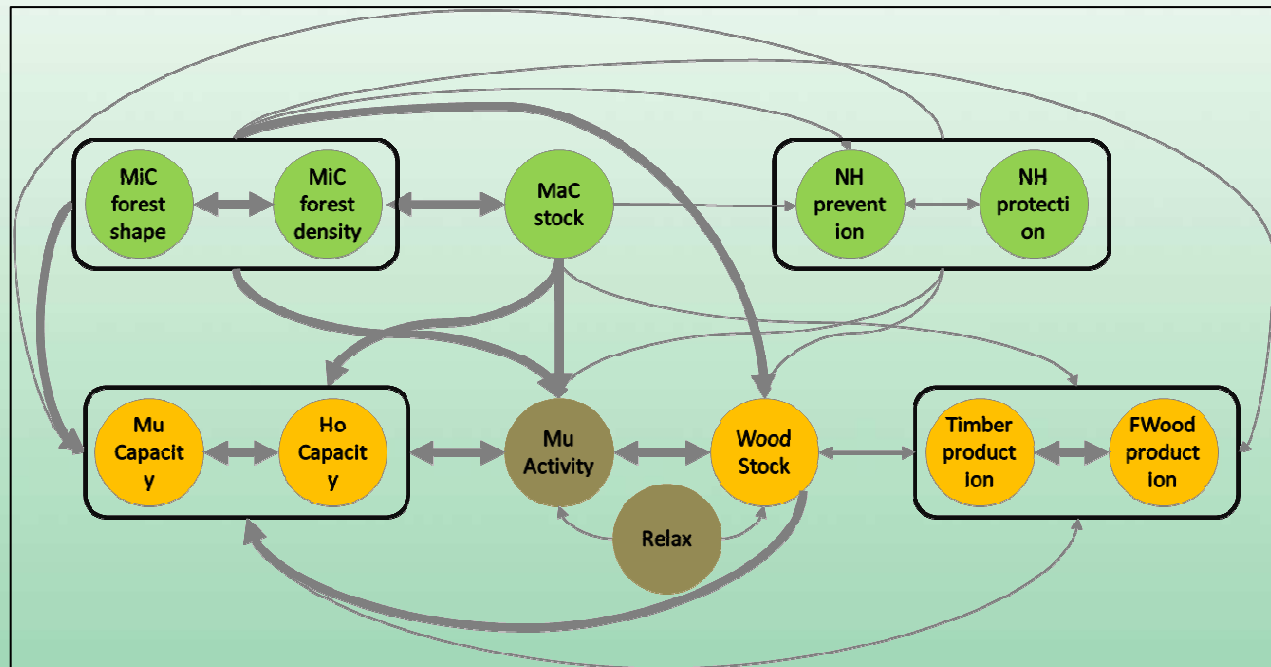
## Tradeoffs of forest's Ecosystem Services with agriculture products



Synergies ( $\rho > 0$ )  
 Tradeoffs ( $\rho < 0$ )

Regulating  
 Provisioning  
 Cultural

## Synergies among forests' Ecosystem Services



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# CONCLUSIONI

- **Identificazione dei servizi ecosistemici**

18 Servizi ecosistemici che interessano il territorio provinciale

- **Valutazione**

Mappatura in termini biofisici e su unità spaziali forestali dello stock e del flusso della capacità realide degli ecosistemi forestalie di fornire dei servizi

- **Strumenti per la valorizzazione**

Identificazione di quali servizi sono in sinergia e in tradeoff negli ecosistemi forestali e in quelli agricoli

Data source: Inventario provinciale del carbonio (2007), Centro di Ecologia Alpina



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MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE



Provincia Autonoma  
di Trento

THE ALPINE CONVENTION IS THE FIRST INTERNATIONAL TREATY FOR THE PROTECTION AND PROMOTION OF THE SUSTAINABLE DEVELOPMENT OF A CROSS-BORDER MOUNTAINOUS REGION  
italian presidency 2013-2014  
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# Il ruolo dei servizi ecosistemici alpini per uno sviluppo sostenibile

## GRAZIE PER L'ATTENZIONE

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