The European Commission's science and knowledge service

Joint Research Centre

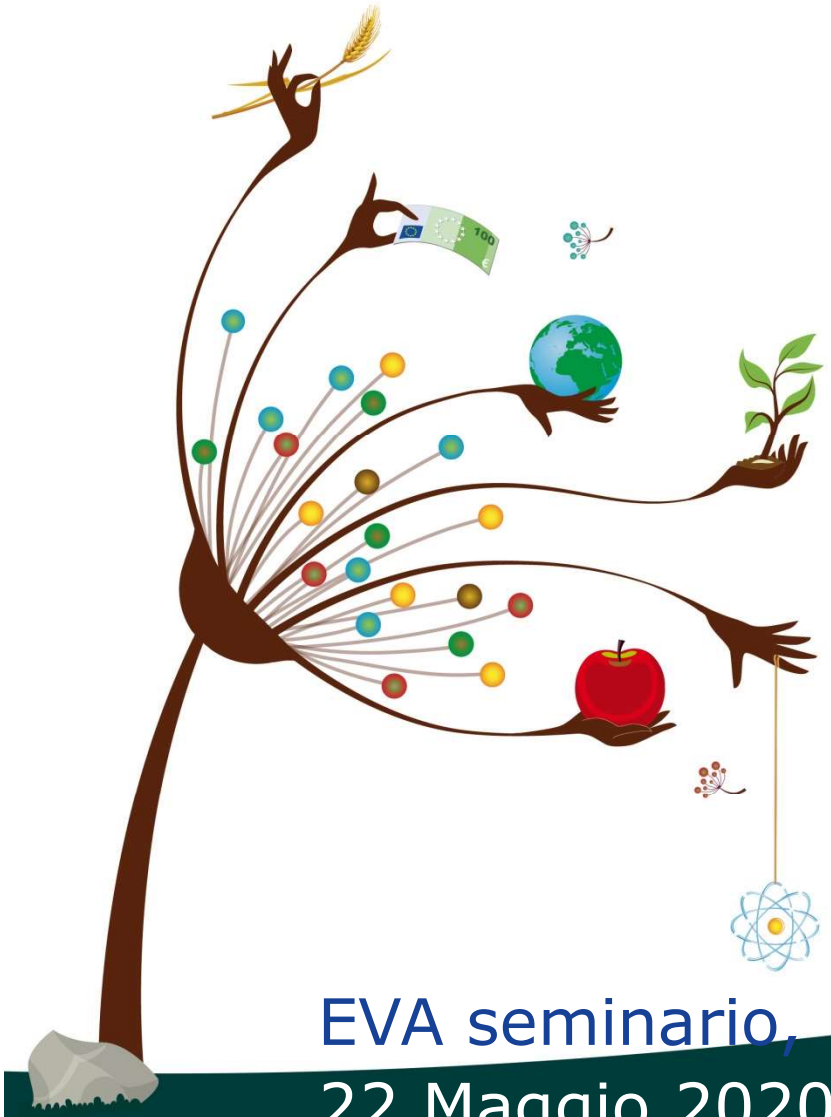


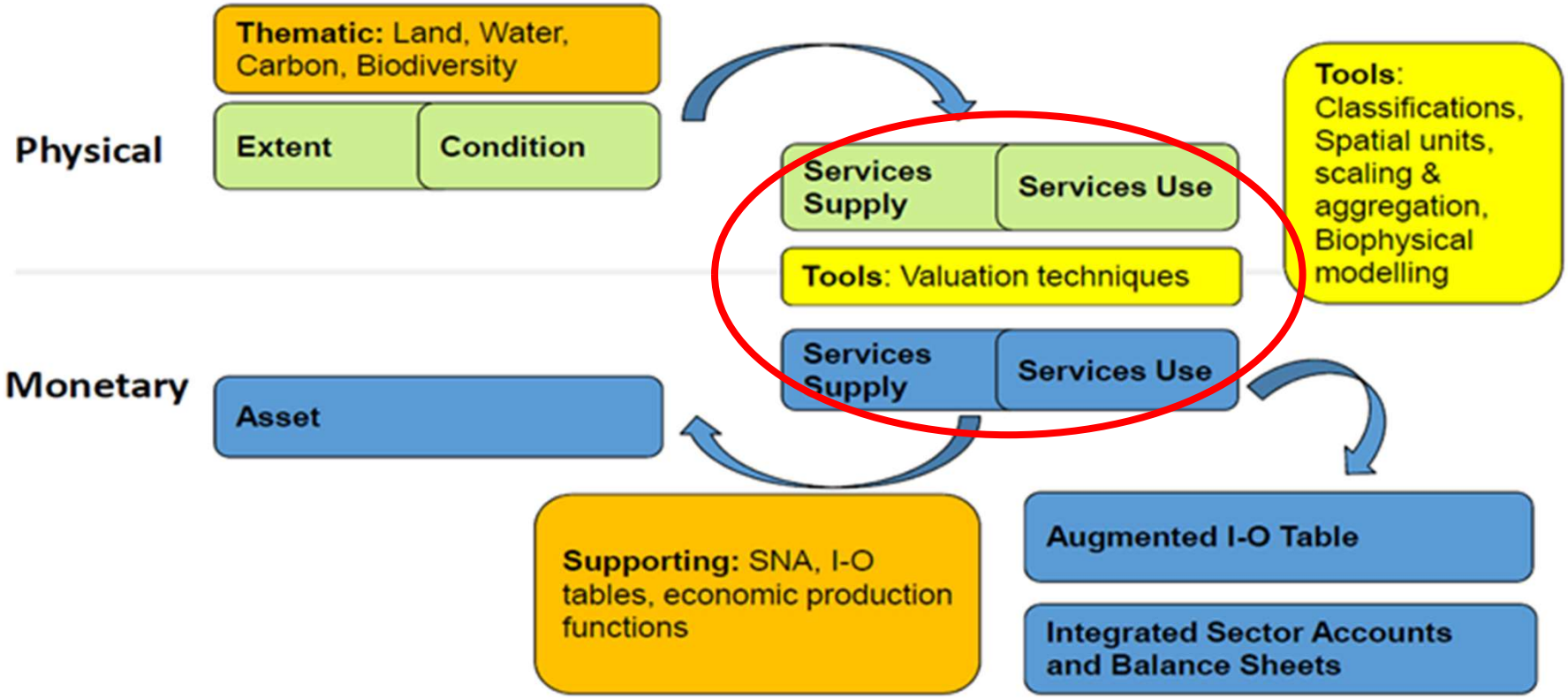
Tabelle Impieghi-Risorse sui servizi ecosistemici: esempi e applicazioni

Alessandra La Notte

EVA seminario,
22 Maggio 2020

European Commission

La struttura del SEEA EEA



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Procedura adottata dal JRC per INCA

1. Quantificazione in termini fisici
2. Traduzione in termini monetari
3. Costruzione delle tabelle Impieghi-Risorse

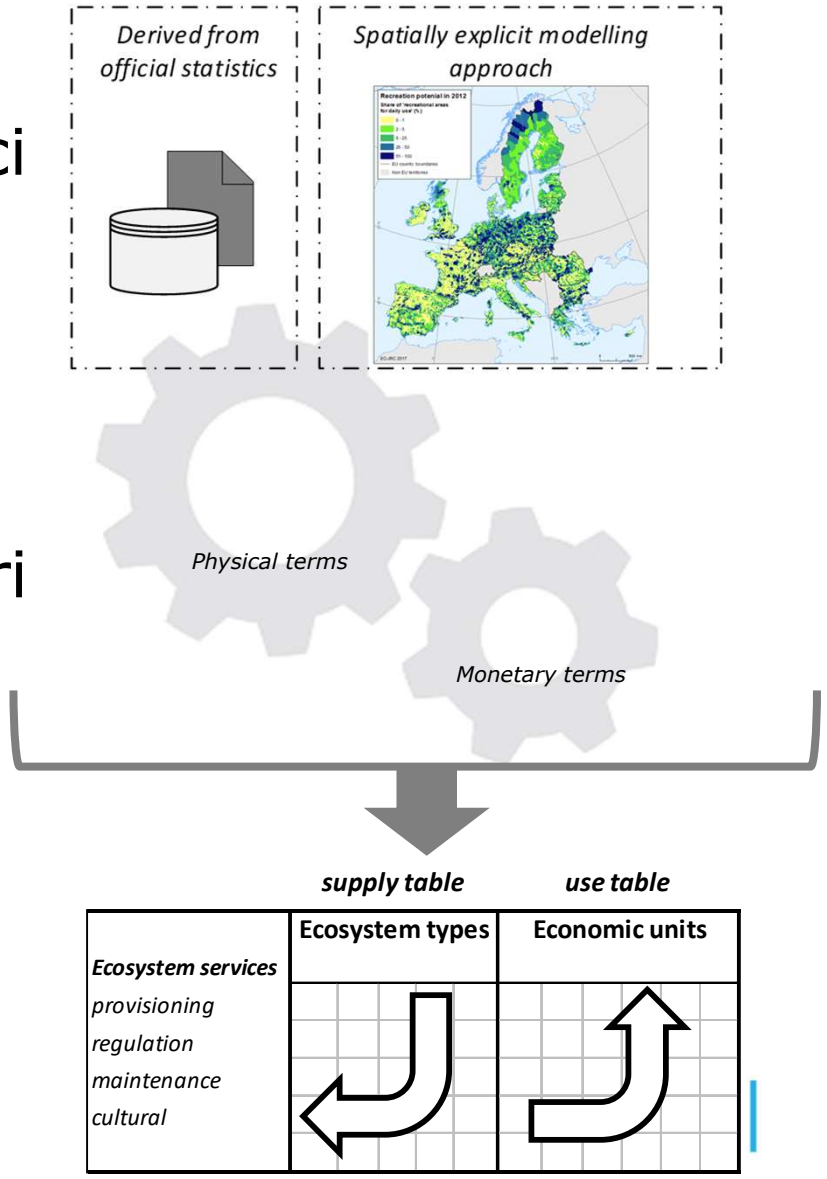

Tavola riassuntiva

Conti biofisici e monetari	Quantificazione biofisica	Valuazione monetaria
PROVISIONING		
Generazione biomassa agricola	Semplificato	Prezzo di mkt
Generazione biomassa forestale	Semplificato	Prezzo di mkt
REGULATING AND MAINTENANCE		
Impollinazione	Modellizzazione	Prezzo di mkt
Ritenzione del suolo	Modellizzazione	Costo di surrogazione
Purificazione dell'acqua	Modellizzazione	Costo di surrogazione
Regolazione dei gas serra	Semplificato	Carbon rates (OECD)
Mantenimento degli habitat	Modellizzazione	Choice experiment
Riduzione del rischio d'inondazione	Modellizzazione	Costo del danno evitato
CULTURAL		
Ricreazione (basata sulla natura)	Modellizzazione	Costo del viaggio

Tabella Risorse

Year 2012, EUR/km^2	Ecosystem type								
Ecosystem service	Urban	Cropland	Grassland	Heathland and shrub	Woodland and forest	Sparsely vegetated land	Wetlands	Rivers and lakes	Coastal and intertidal areas
Crop provision		27,670							
Timber provision					10,820				
Global climate regulation*	0	0	0	0	8,380	0	0	Not available	
Flood control	430	630	6,170	1,990	7,160	0	3,370	Not available	
Crop pollination		6,050							
Nature-based recreation	380	2,530	14,750	17,170	19,320	22,980	23,510	9,360	14,590
Value (EUR/km^2)	810	22,000	20,930	19,160	44,010	22,980	26,890	9,360	14,590

Values rounded to the nearest tens

*Net ecosystem flows (in Vallecillo et al. 2019a gross flows are also reported)

Tabella Impieghi

Year 2012, million EUR	Economic units						TOTAL
Ecosystem service	Agriculture	Forestry	Industry	Services	Households	Global society	
Crop provision	20,560						**20,560**
Timber provision		14,550					**14,550**
Global climate regulation						14,400	**14,400**
Flood control	800	0	2,400	1,380	11,730		**16,310**
Crop pollination	9,720						**9,720**
Nature-based recreation					50,390		**50,390**
Total	31,080	14,550	2,400	1,380	62,120	14,400	**125,930**

Values rounded to the nearest tens

Approccio basato su modellizzazione

Recap: dalla mappatura alla contabilizzazione

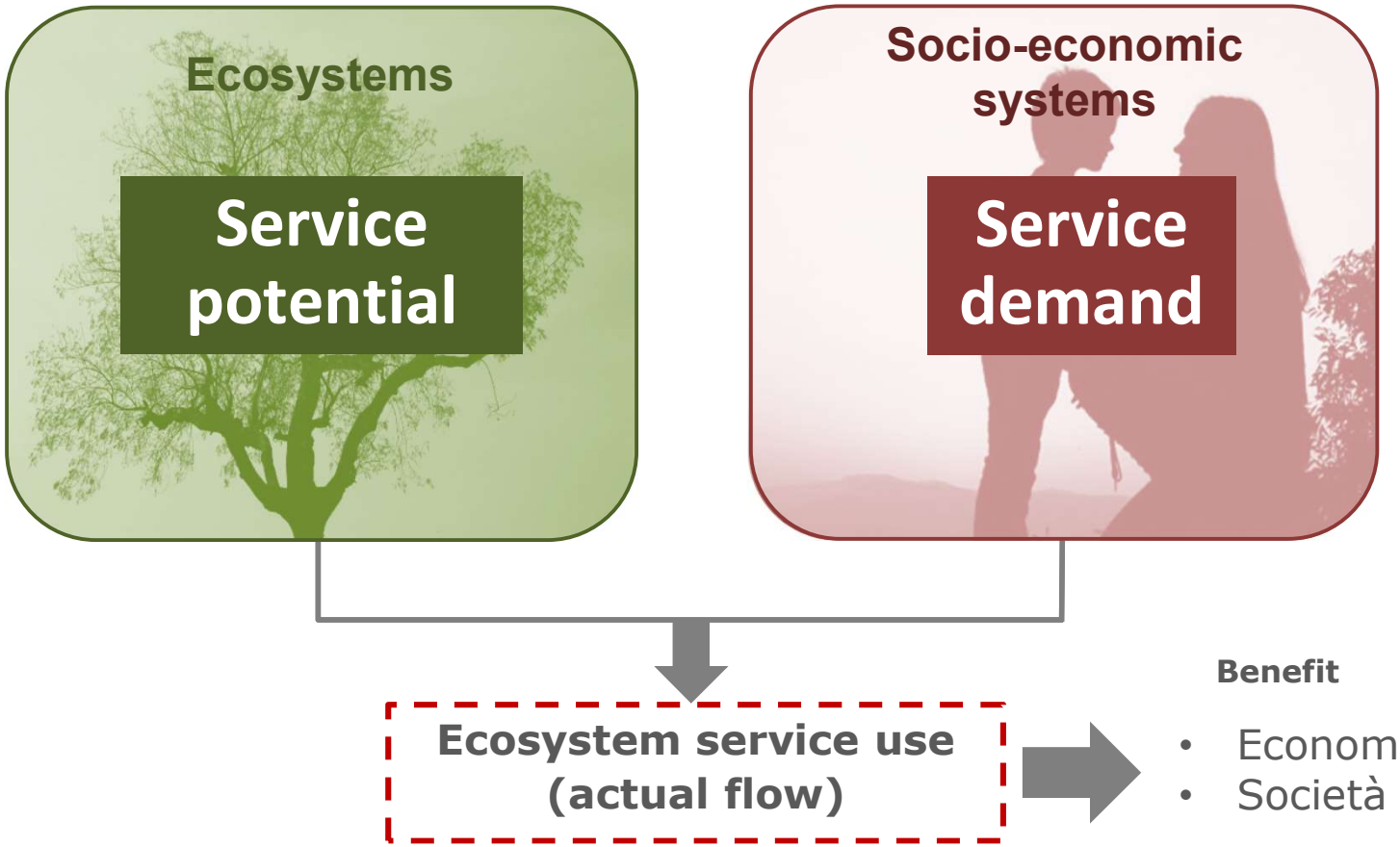

Tabelle Impieghi-Risorse

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Nature-based local outdoor recreation

+

Land cover, water quality, protected areas)

Proximity (roads, urban areas)

Potential
('Areas for daily recreation')

Demand

SEEA EEA accounting tables

Use (actual flow)

Benefits

Opportunities for business

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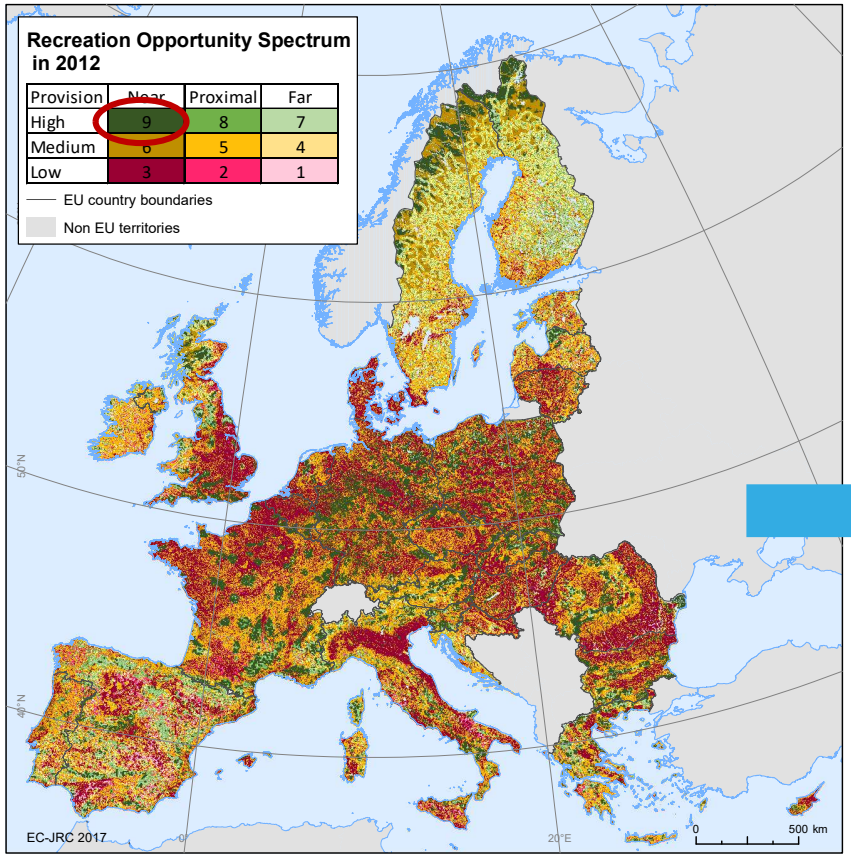
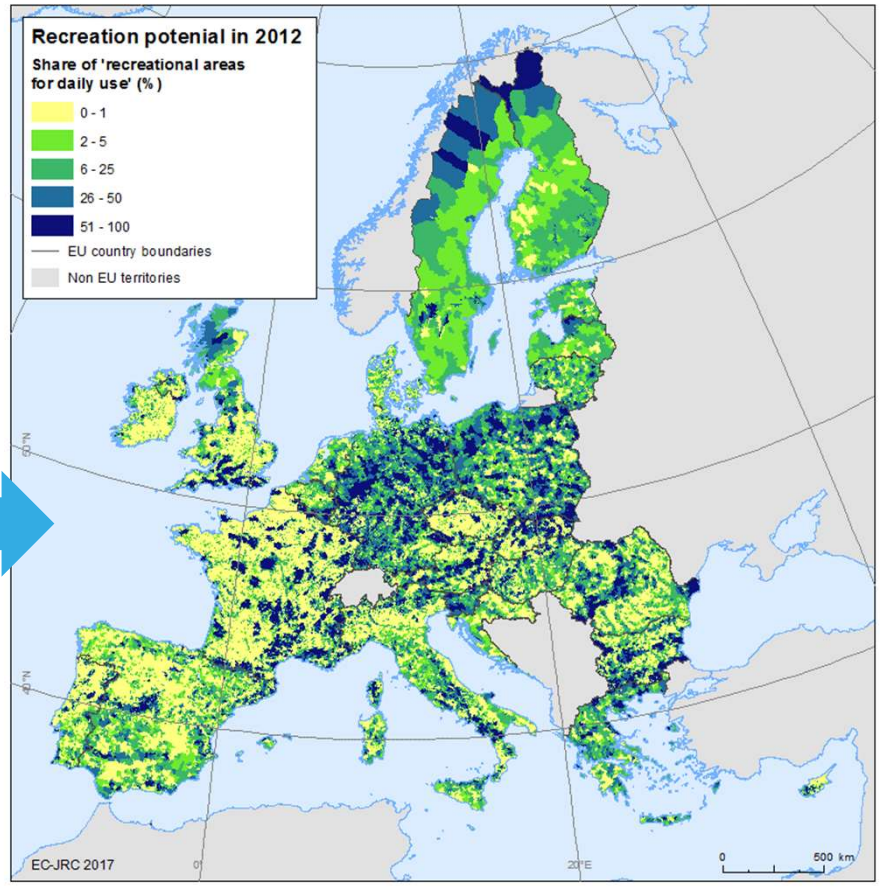
Nature based recreation Potential

For accounting: **'recreational areas for daily use'**





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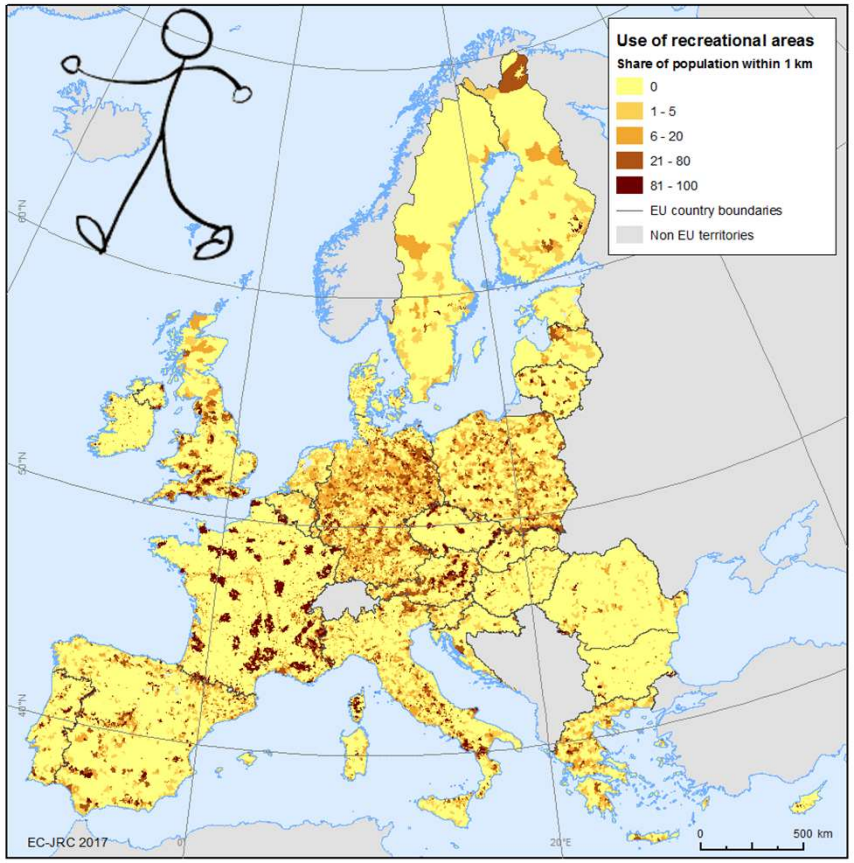
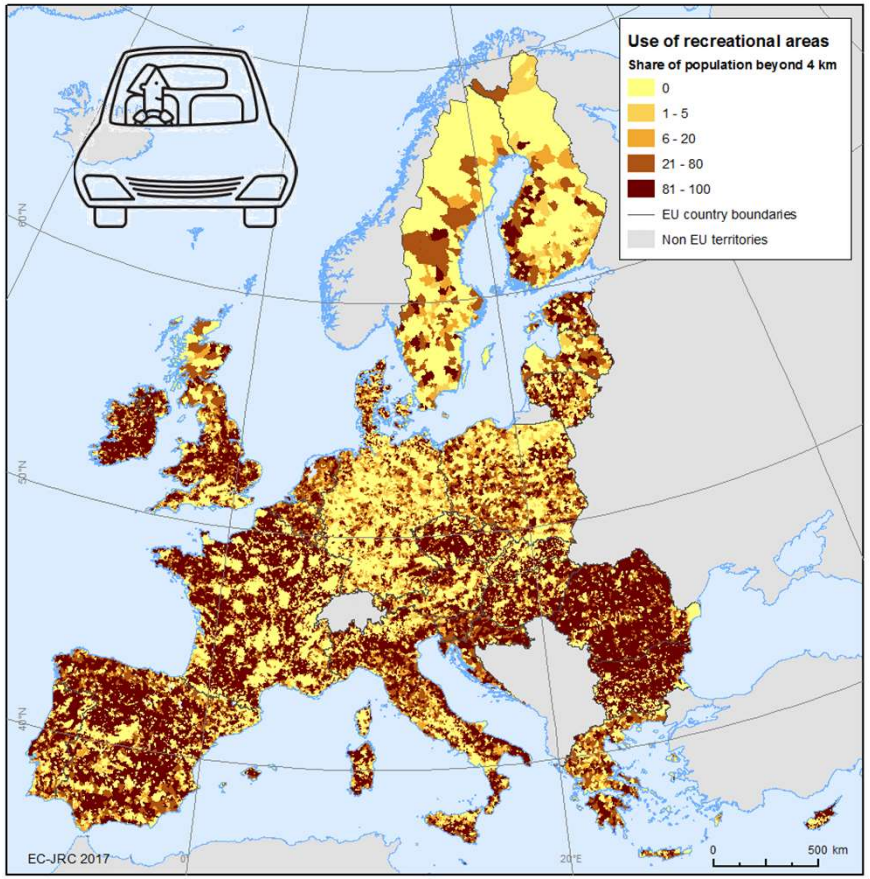
Nature based recreation demand





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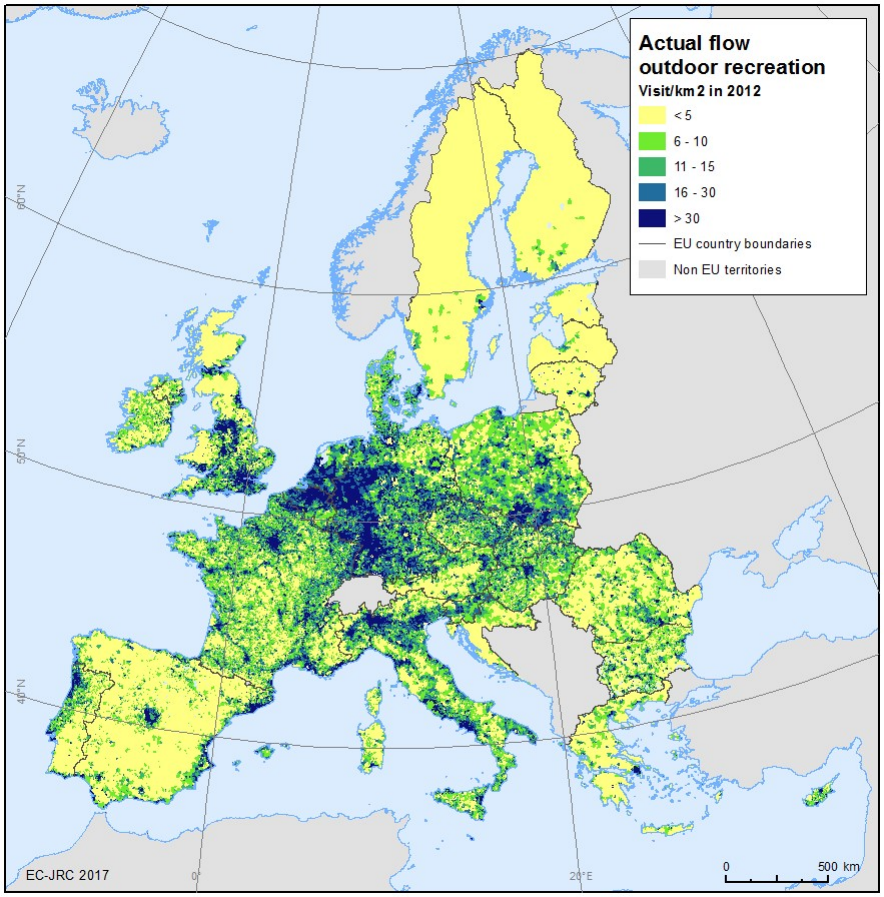
Nature based recreation actual flow

Potential users
(within 4 km)

How often do they use recreational areas?

Potential visits
(flow)

Mobility model
(in cooperation with Silvia Ferrini-CSERGE)



Esempio di tabelle Impieghi-Risorse in termini monetari

Type of economic unit					Type of ecosystem unit								
outdoor recreation *mlln euro year 2000*	Primary sector	Secondary sector	Tertiary sector	Households	Rest of the world - exports	Green urban areas	Cropland	Grassland	Heatland and shrub	Woodland and forest	Sparsely vegetated land	Wetlands	Rivers and lakes	Coastal and intertidal areas
AT						0.74	24.43	68.44	25.95	336.23	77.63	5.80	-	-
BE						2.67	71.68	65.39	23.47	404.24	2.72	18.04	0.91	2.39
BG						0.19	5.61	24.14	10.12	179.06	10.18	1.75	0.14	0.02
CY						0.22	0.45	0.22	3.74	34.74	1.11	0.12	0.47	-
CZ						0.48	78.38	60.56		490.42	0.14	4.31	-	-
DE						37.40	1,033.7	1,973.66		9,027.35	32.25	125.86	22.19	7.50
DK						12.16	125.57	92.26		457.36	17.66	134.57	52.67	2.27
EE						0.30	2.03	8.72		84.97	1.09	38.60	0.37	0.11
EL						0.07	76.14	129.13		551.05	39.85	9.82	15.22	1.31
ES						0.68	232.18	269.92		1,228.37	94.40	14.89	21.28	3.63
FI						0.02	1.34	2.47		440.52	21.08	128.33	0.46	-
FR						1.37	371.85	714.20		2,295.20	182.88	37.22	29.08	8.16
HR						0.31	11.91	19.68		157.86	3.10	7.98	0.24	0.02
HU						0.89	51.68	201.91		678.91	2.3	66.89	-	-
IE						0.08	3.53	13.21				89.47	0.88	1.70

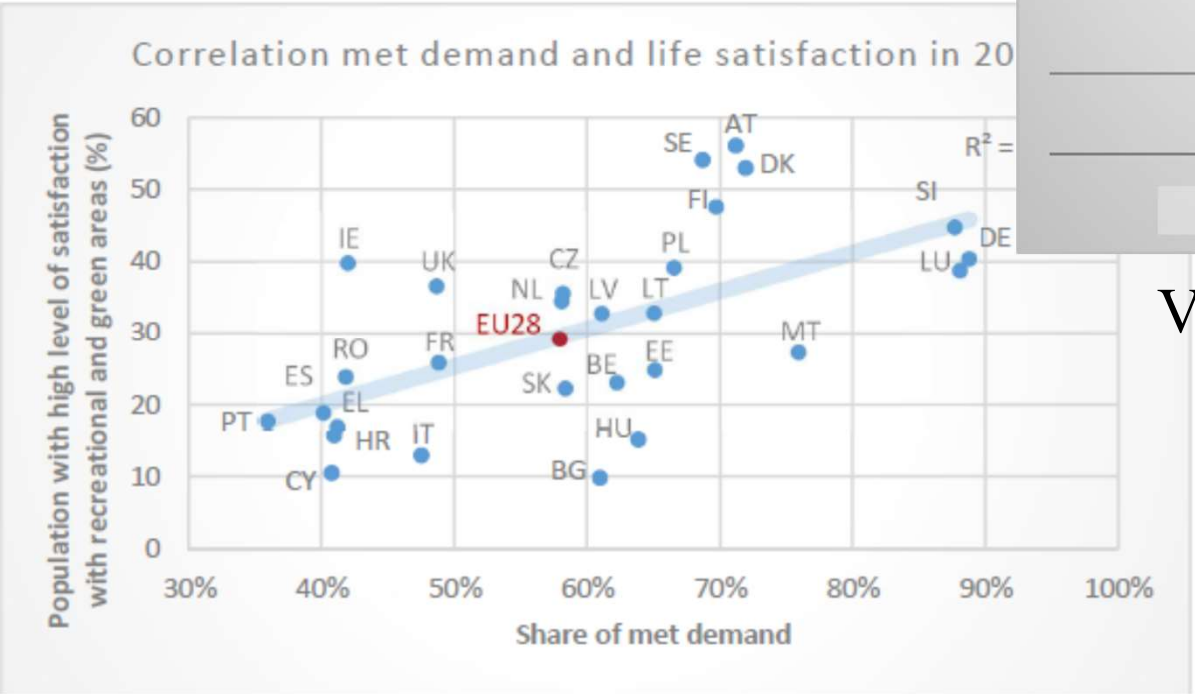
Type of economic unit						Type of ecosystem unit								
outdoor recreation *mlln euro year 2000*	Primary sector	Secondary sector	Tertiary sector	Households	Rest of the world - exports	Green urban areas	Cropland	Grassland	Heatland and shrub	Woodland and forest	Sparsely vegetated land	Wetlands	Rivers and lakes	Coastal and intertidal areas
AT				539.22										
BE				591.51										
BG				231.21										
CY				41.07										
CZ				635.13										
DE				2,347.81										
DK				1,000.79										
EE				137.67										
EL				1,035.25										
ES				2,367.35										
FI				682.62										
FR				3,771.81										
				207.15										
				1,002.62										
IE				141.30										

Uso diretto dell'info contabile

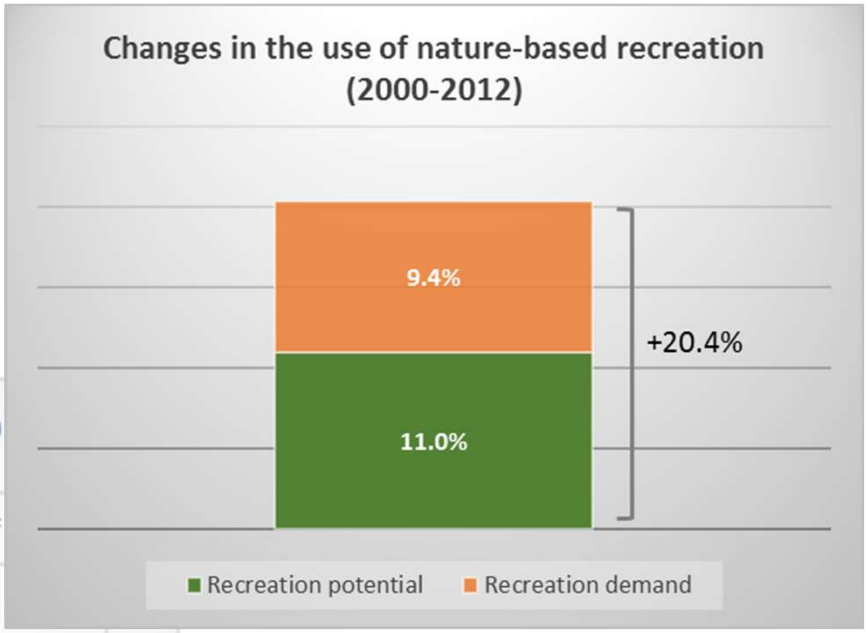
Qual'è il valore del servizio ricreativo (quotidiano) in EU?

~ 50 mld euro (2012)

Importante per il benessere:
life satisfaction index



Come è cambiato nel tempo?



Variazione annuale +1.7%

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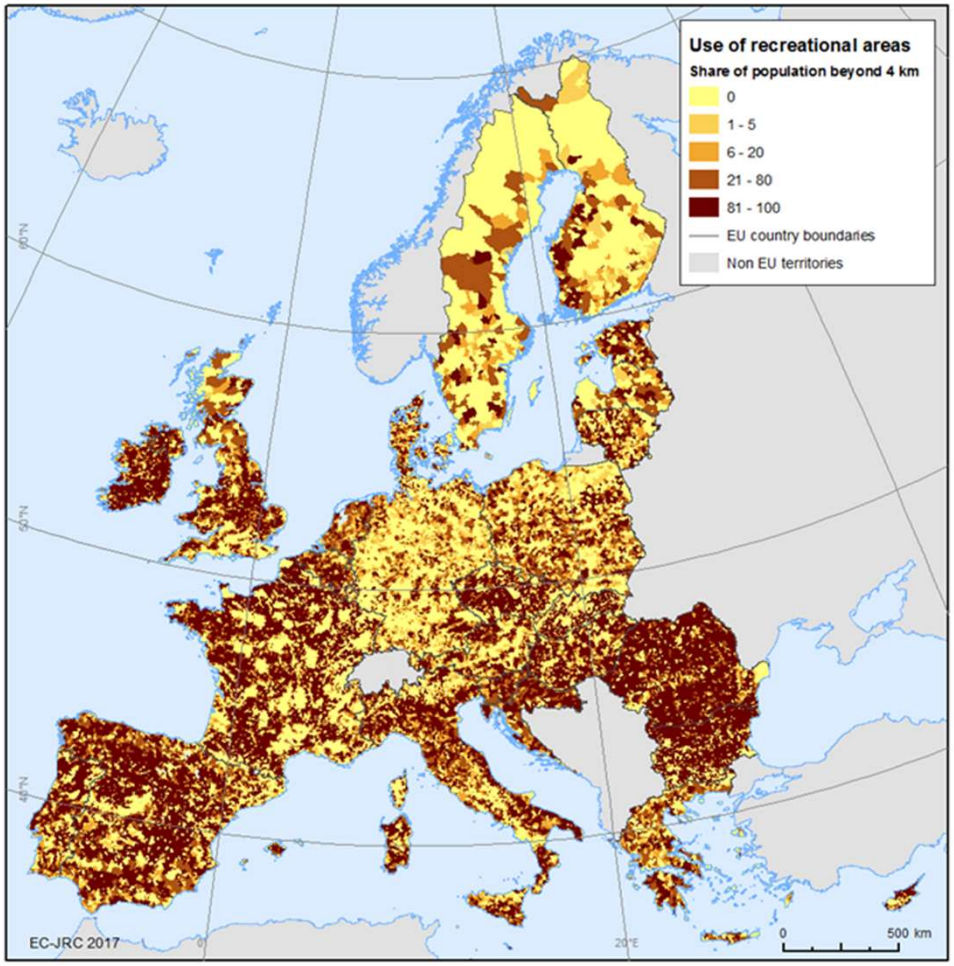
Uso diretto dell'info contabile

Come può essere migliorato?



Applicazione di policy

Ripristino dell'ecosistema:
Misure per garantire equità di accesso ad aree ricreative (SDG 11)

'Green planning' nelle aree peri-urbane

41% della populazione nel 2012 non può gioire della ricreazione in aree naturali su base quotidiana

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Crop pollination by wild insects

Wild bees

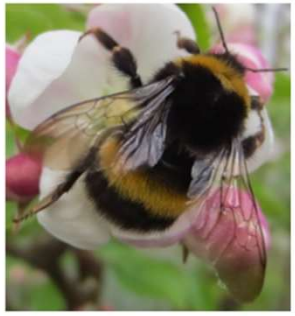
Pollination **POTENTIAL**

Pollinator-dependent crops

DEMAND for pollination

SEEA EEA accounting tables

USE of crop pollination



BENEFIT

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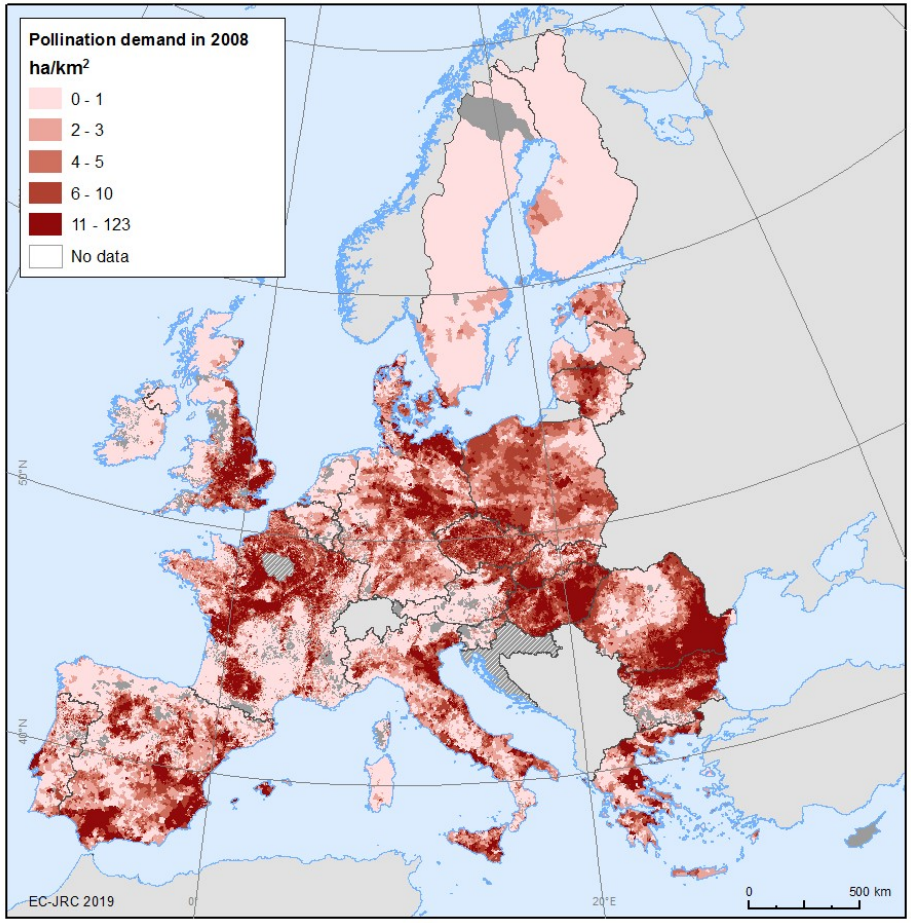
Offerta potenziale dall'ecosistema

Domanda: coltivazioni che hanno bisogno di impollinazione



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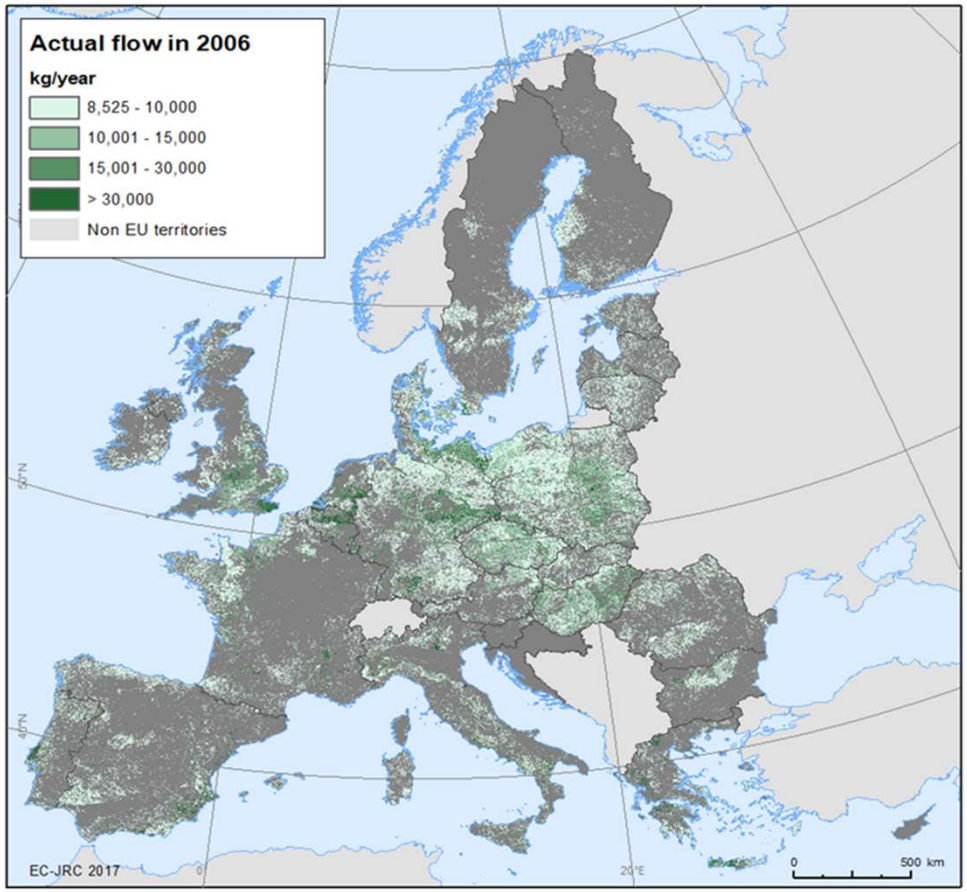
Flusso di impollinazione utilizzato dal settore agricolo



Domanda del settore agricolo rimasta insoddisfatta

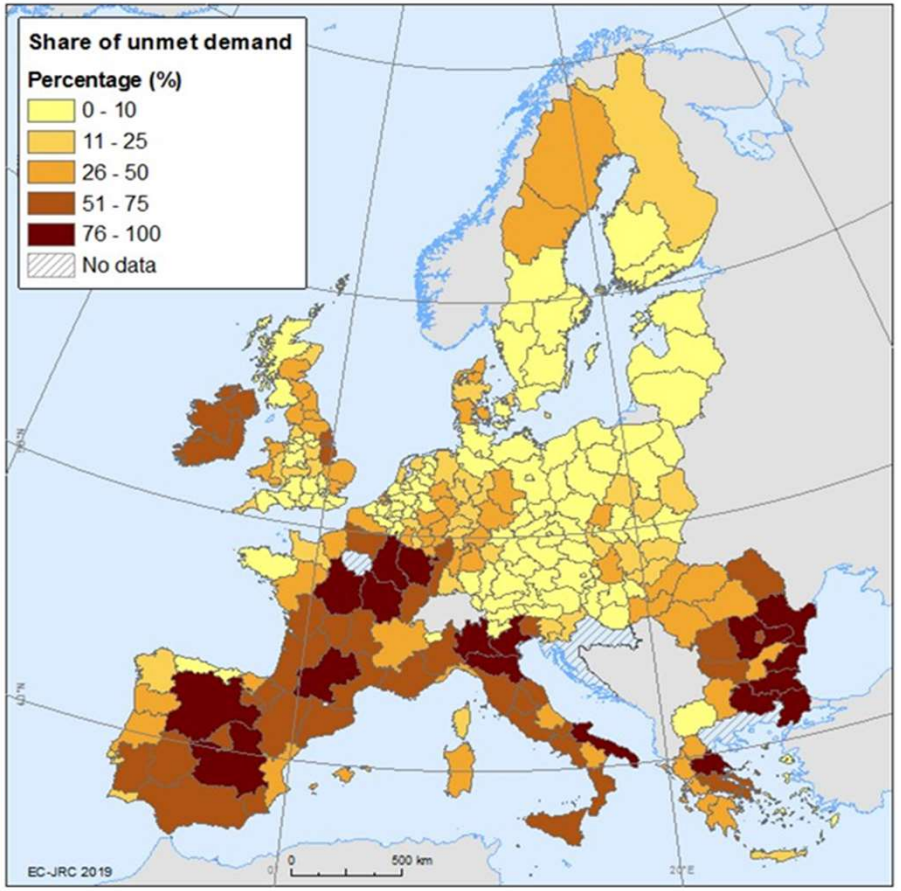


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Tabella Impieghi-Risorse per l'impollinazione

	Agriculture										
	Apple,pear and peaches	Other fruits	Citrus	Protein crops	Oilseeds	Rape and rape seeds	Soya	Sunflower	Fibre plants	Tomatos	Other
EU 28, mlln euro											
SNA product											
2000	1,958	5,024	2,995	1,256	238	3,794	503	1,844	1,550	5,210	
2006	2,241	5,923	3,238	884	155	4,177	287	1,585	1,135	5,928	
2012	2,367	7,176	3,418	916	246	8,475	391	3,285	927	6,109	

	Type of economic unit											Type of ecosystem unit			
	Agriculture														
	Apple,pear and peaches	Other fruits	Citrus	Protein crops	Oilseeds	Rape and rape seeds	Soya	Sunflower	Fibre plants	Tomatos	Other	Green urban areas	Cropland	Grassland	Other
EU 28, mlln euro															
Supply table															
crop pollination															
2000													2,668		
2006													3,130		
2012													4,357		
SNA met demand															
2000	588	1,941	1,142	673	148	1,845	69	348	191	2,696					
2006	682	2,343	1,217	436	106	2,124	66	410	155	2,932					
2012	712	2,946	1,240	466	170	4,323	106	807	110	3,221					
SNA unmet demand															
2000	703	2,045	1,795	548	60	1,374	414	1,399	1,350	2,376					
2006	761	2,313	1,960	425	28	1,390	201	1,057	972	2,845					
2012	823	2,604	2,115	426	46	2,805	253	2,249	812	2,721					
Use table															
crop pollination															
2000	667	1,037	58	35	30	575	20	97	10	139					
2006	797	1,267	62	23	22	663	20	118	8	151					
2012	833	1,626	63	24	30	1,348	32	229	6	166					

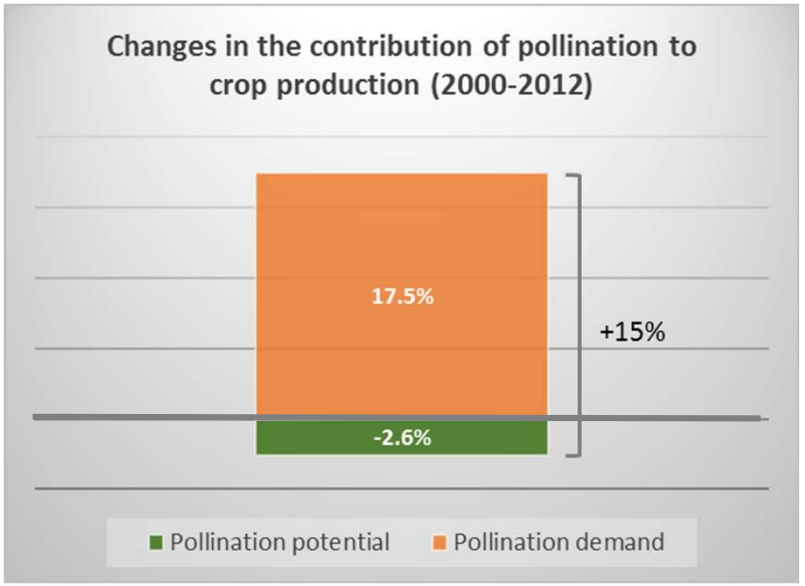
Uso diretto dell'info contabile

Qual'è il valore del servizio dell'impollinazione Agricola in EU?

~10 mld EUR (2012)

11% della produzione totale di coltivazioni (fra quelle che hanno bisogno di impollinazione)

Come è cambiato nel tempo?



Aumento annuale del 1.2%

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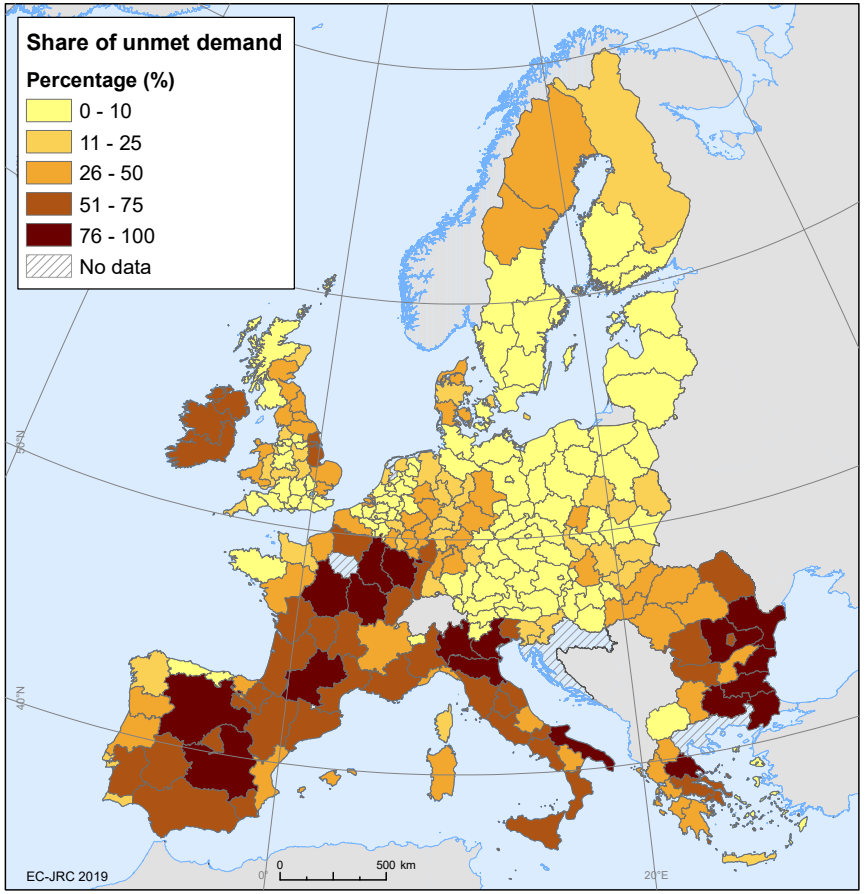
Uso diretto dell'info contabile

Come può essere migliorato?



Ripristino di habitat favorevoli agli impollinatori selvatici

45% delle coltivazioni che dipendono dagli impollinatori non presentano habitat favorevoli

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Flood control

Runoff retention by ecosystems

Economic assets in flooding areas

Flood control **POTENTIAL**

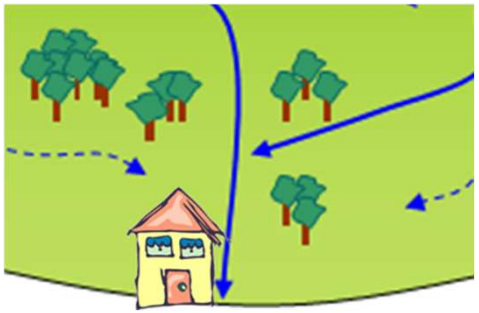
Service Providing Areas (SPA)

DEMAND for flood regulation

Service Benefiting Areas (SBA)

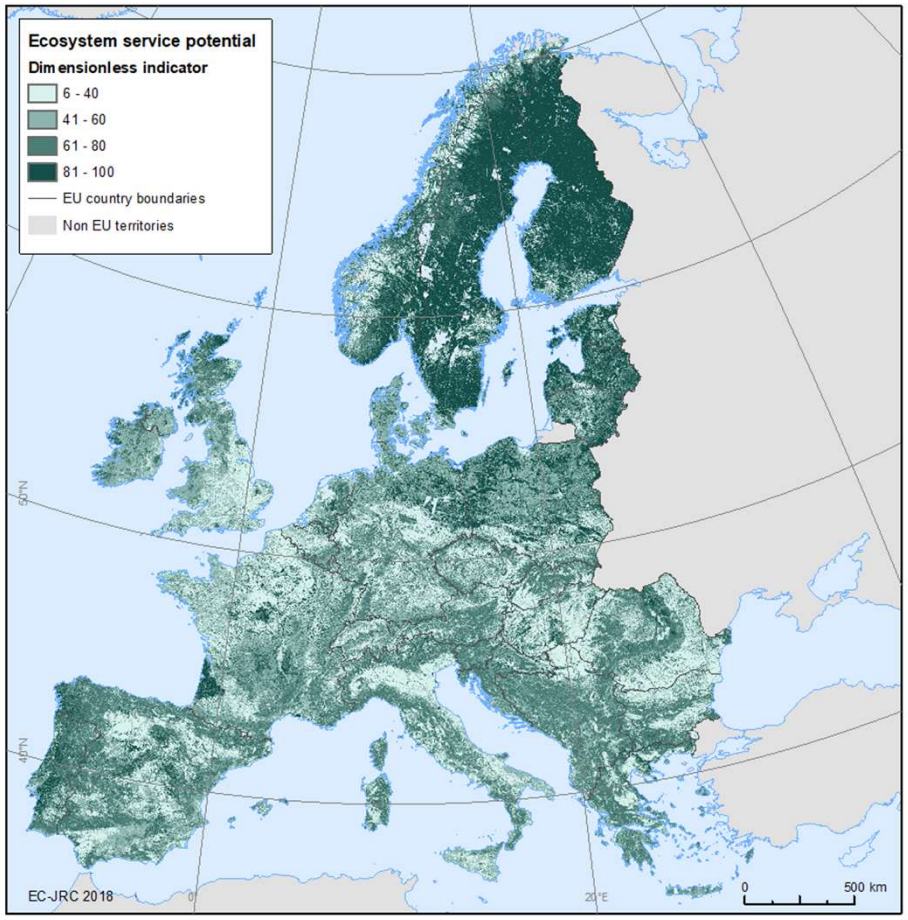
SEEA EEA accounting tables

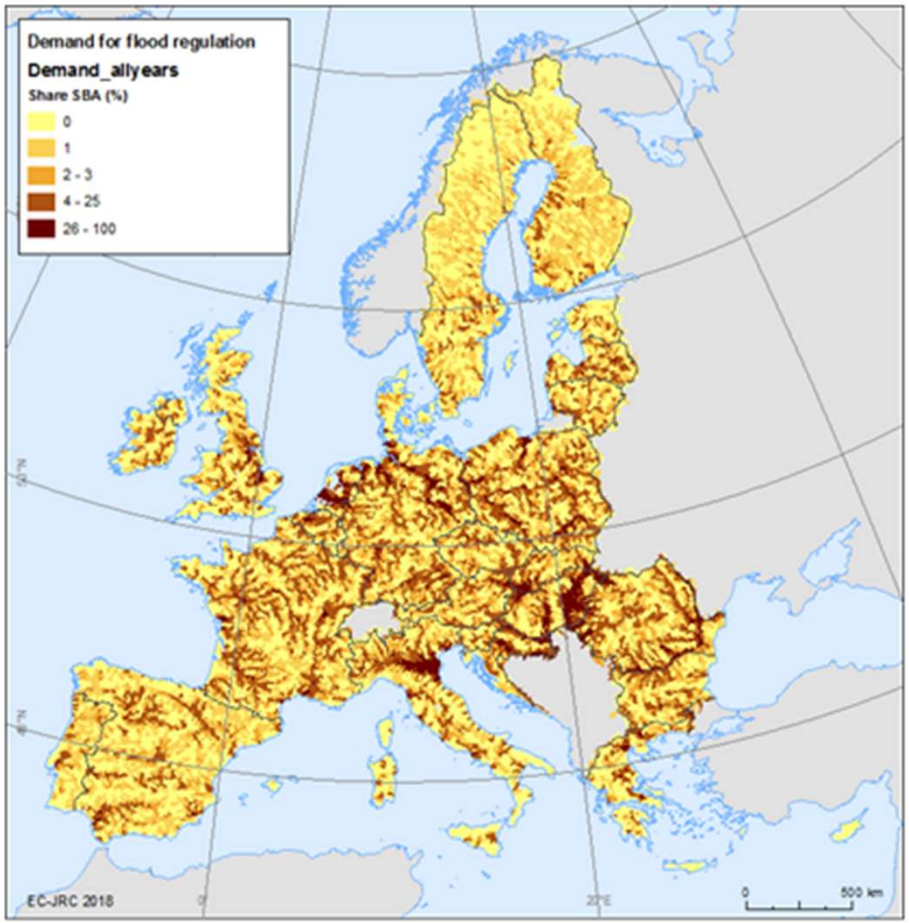
USE of flood control



Offerta potenziale dell'ecosistema (SPA)

Domanda: zone residenziali, coltivazioni, siti produttivi, infrastrutture





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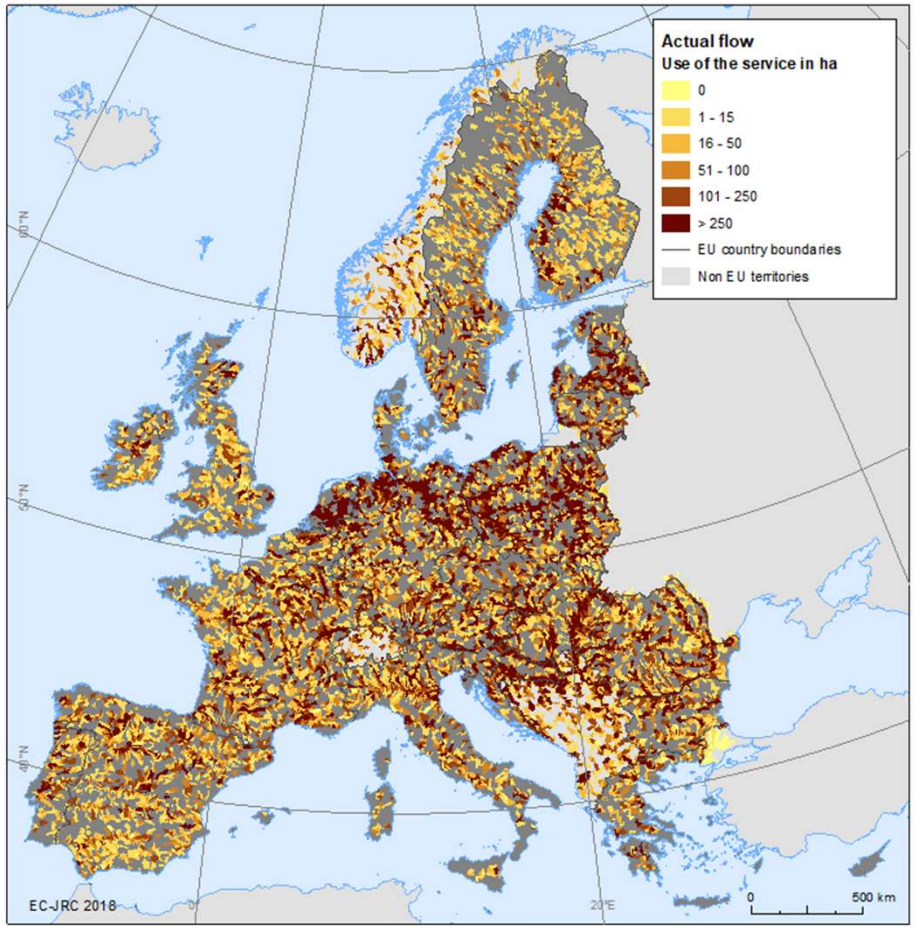
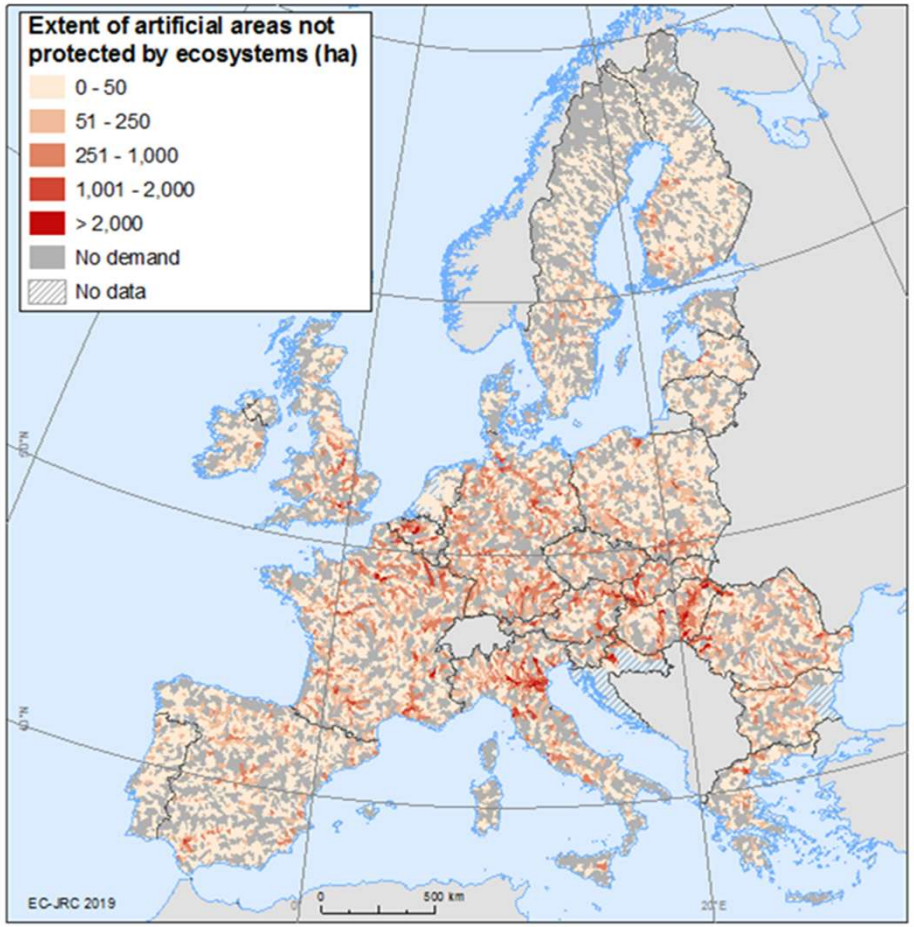
Flusso di riduzione del rischio di inondazione utilizzato



Domanda rimasta insoddisfatta



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Uso diretto dell'info contabile

Qual'è il valore della riduzione del rischio di inondazione in EU?

~ 16 mld euro (2012)

Aree costruite

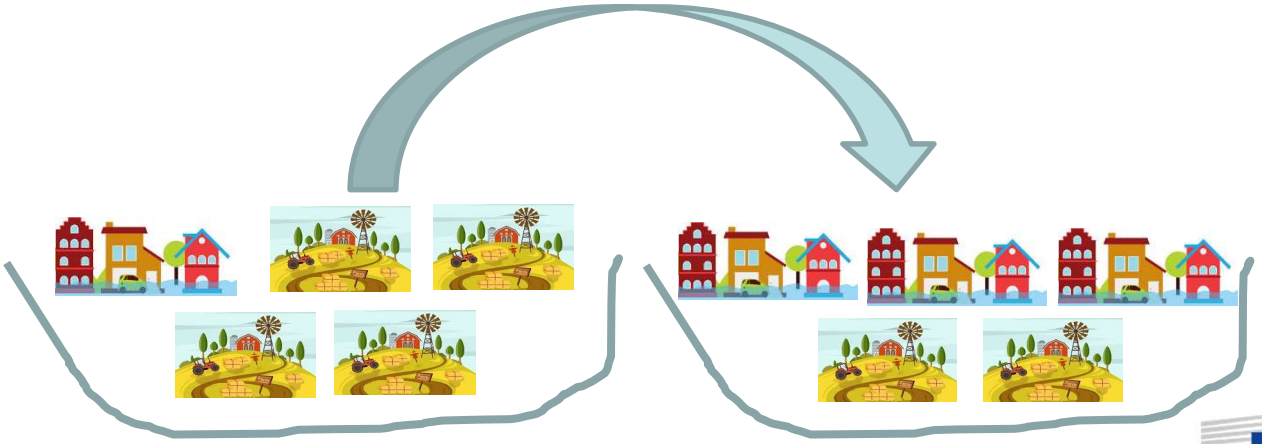
823 k EUR/km^2

Aree agricole

6 k EUR/km^2

Come è cambiato nel tempo?

Il valore è aumentato del 2%



Floodplain -2006

Floodplain -2012

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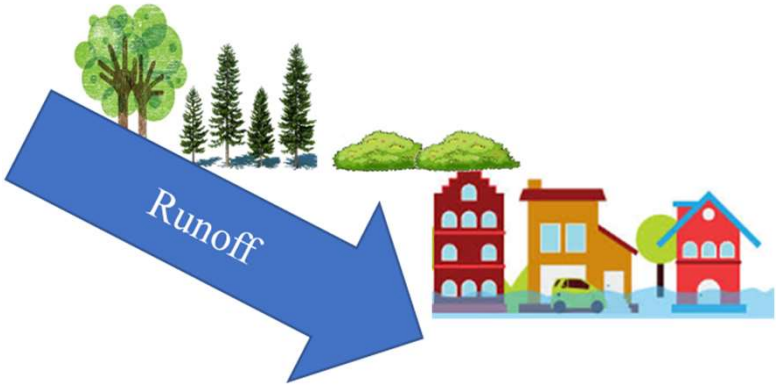
Uso diretto dell'info contabile

Come può essere migliorato?

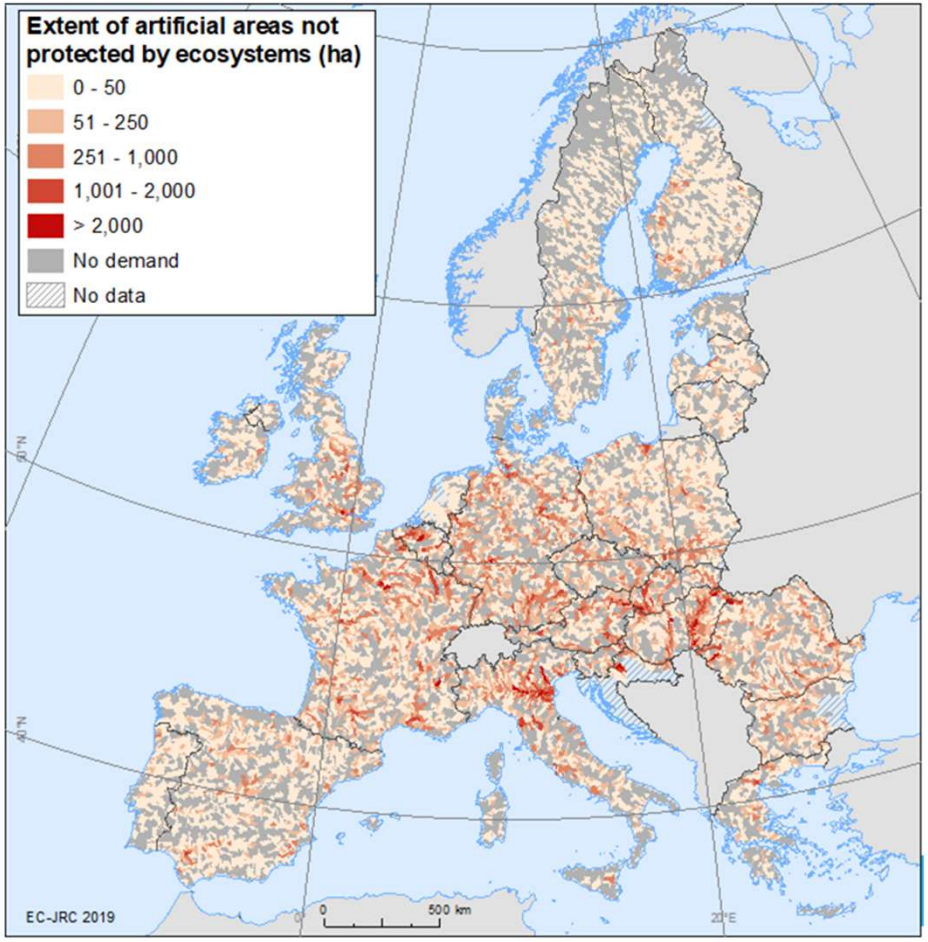
Soluzioni Basate sulla Natura (NBS)

Ripristino dell'ecosistema

Perdita dovuta alla coversione d'uso del suolo

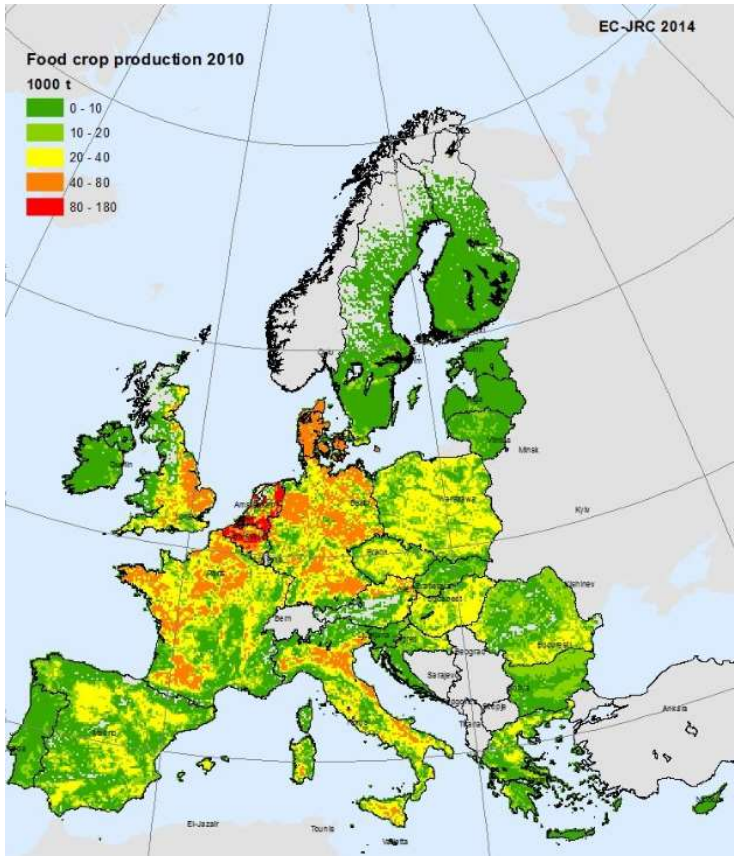


7% di aree artificiali

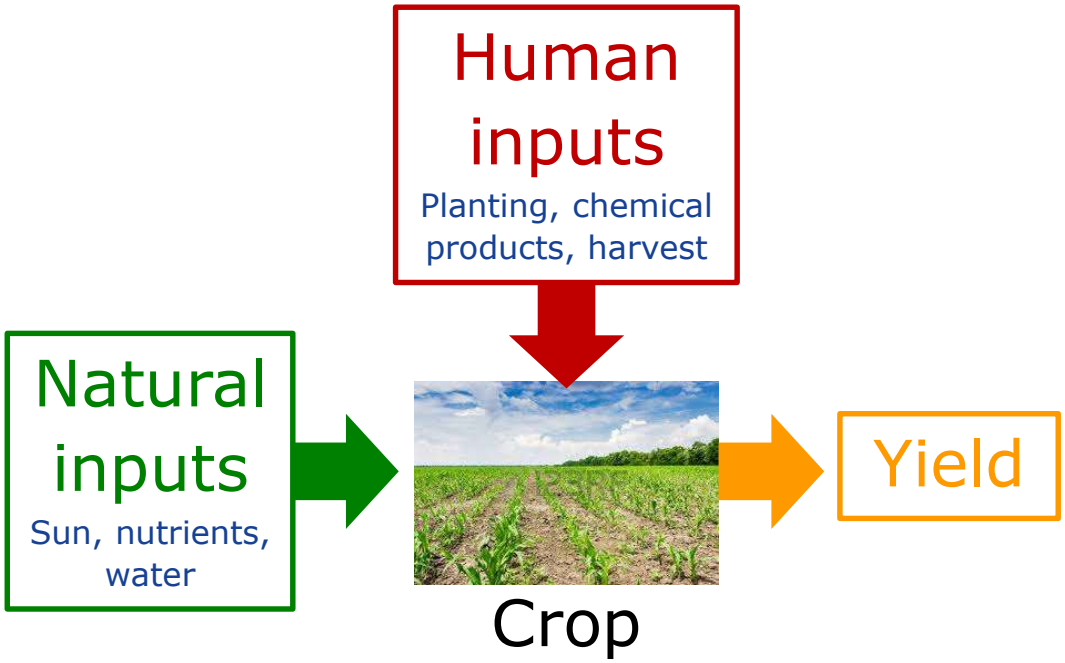


Approccio semplificato

Generazione di biomassa agricola e forestale



Produzione agricola



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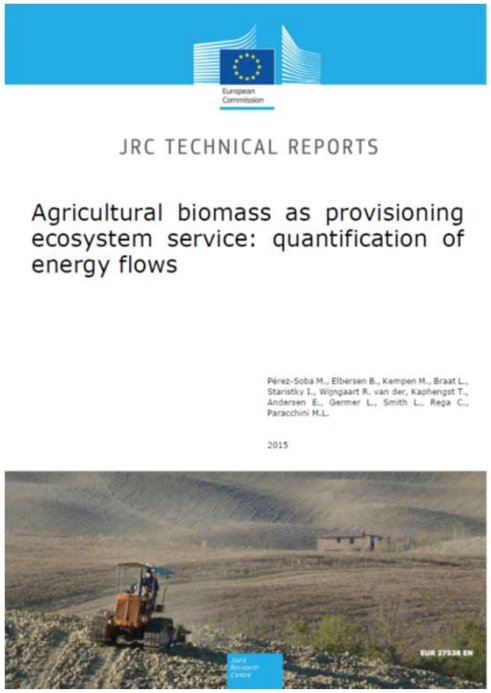
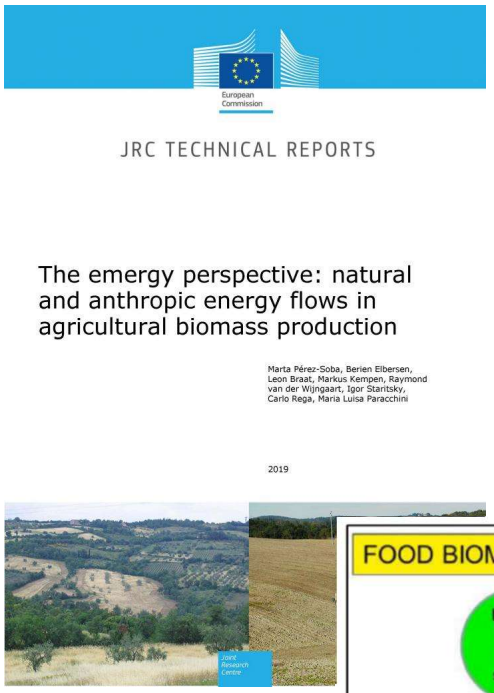
Generazione di biomassa agricola come contributo dell'ecosistema





Units of energy: MJ/ha

$$EC = \frac{Natural\ Inputs}{Yield}$$

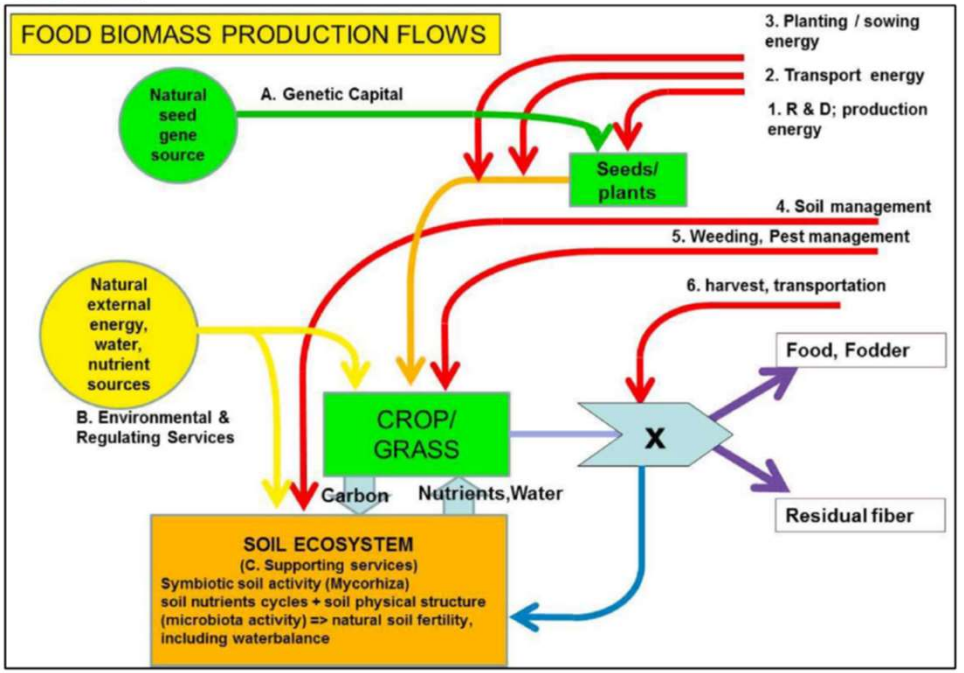


Tabella Impighi-Risorse

	Agriculture													
	soft wheat	durum wheat	barley	oats	maize	other cereals	rape	sunflower	protein crops	sugar beet	fodder maize	other forage	potatoes	Other
EU 28, mlln euro														
SNA product														
2000	16,838	2,747	8,870	1,522	8,260	1,138	3,780	1,820	1,251	5,172	3,622	14,149	8,261	
2006	14,917	2,203	7,390	1,463	7,633	1,243	4,161	1,561	878	4,773	3,660	14,647	8,388	
2012	24,059	2,252	9,446	1,751	11,858	1,867	8,435	3,229	910	4,000	4,637	19,152	10,349	

	Type of economic unit													Type of ecosystem unit			
	Agriculture																
	soft wheat	durum wheat	barley	oats	maize	other cereals	rape	sunflower	protein crops	sugar beet	fodder maize	other forage	potatoes	Other	Green urban areas	Cropland	Grassland	Other
EU 28, mlln euro																		
Supply table																		
crop provision																		
2000																18,352		
2006																17,687		
2012																25,270		
other factors																		
2000	13,309	2,253	6,582	1,002	6,871	878	2,810	1,305	916	4,247	2,630	9,105	7,169					
2006	11,723	1,811	5,425	965	6,322	942	3,042	1,065	639	3,918	2,646	9,427	7,305					
2012	18,761	1,867	6,927	1,147	9,710	1,403	6,115	2,151	667	3,280	3,357	12,362	8,928					
Use table																		
crop provision																		
2000	3,530	494	2,288	520	1,389	260	969	515	334	925	992	5,043	1,092					
2006	3,194	392	1,965	498	1,311	300	1,119	496	240	856	1,014	5,220	1,083					
2012	5,298	385	2,519	603	2,149	463	2,321	1,078	243	720	1,280	6,790	1,421					

European Commission

Uso diretto dell'info contabile

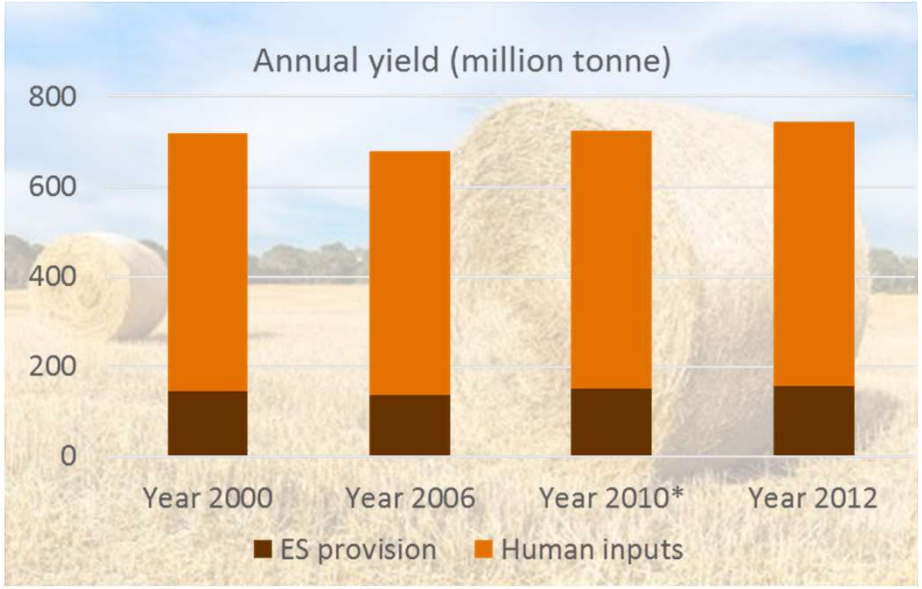
Qual'è il valore della generazione di biomassa agricola in EU?

Contributo dell'ecosistema

~ 20 mld euro (2012)

21% del valore totale della produzione

Com'è cambiato nel tempo?

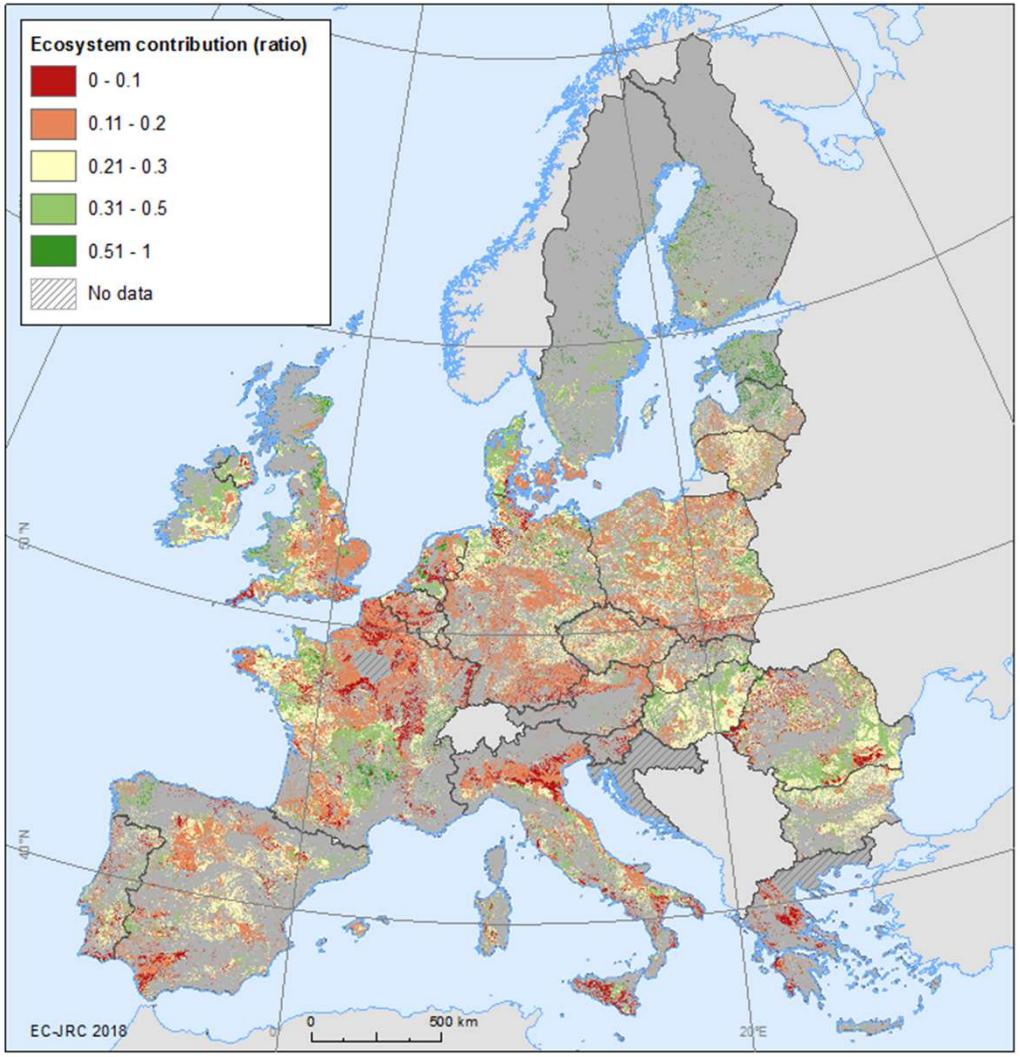


Aumento per decennio del 7%

European Commission

Uso diretto dell'info contabile

Come può essere migliorato?



- ✓ Diminuire l'uso dei fertilizzanti
- ✓ Promozione di pratiche Agricole estensive
- ✓ Aumento dell'agricoltura biologica

European Commission

Uso diretto dell'info contabile

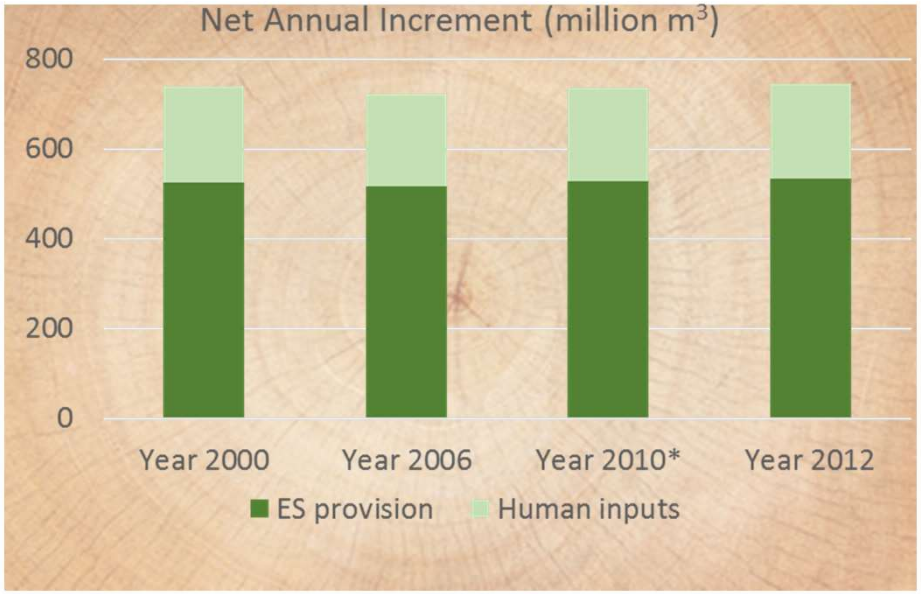
Qual'è il valore della generazione di biomassa forestale in EU?

Contributo dell'ecosistema

~ 15 mld euro (2012)

73 % della crescita totale

Come è cambiato nel tempo?



Aumento per decennio del 1%

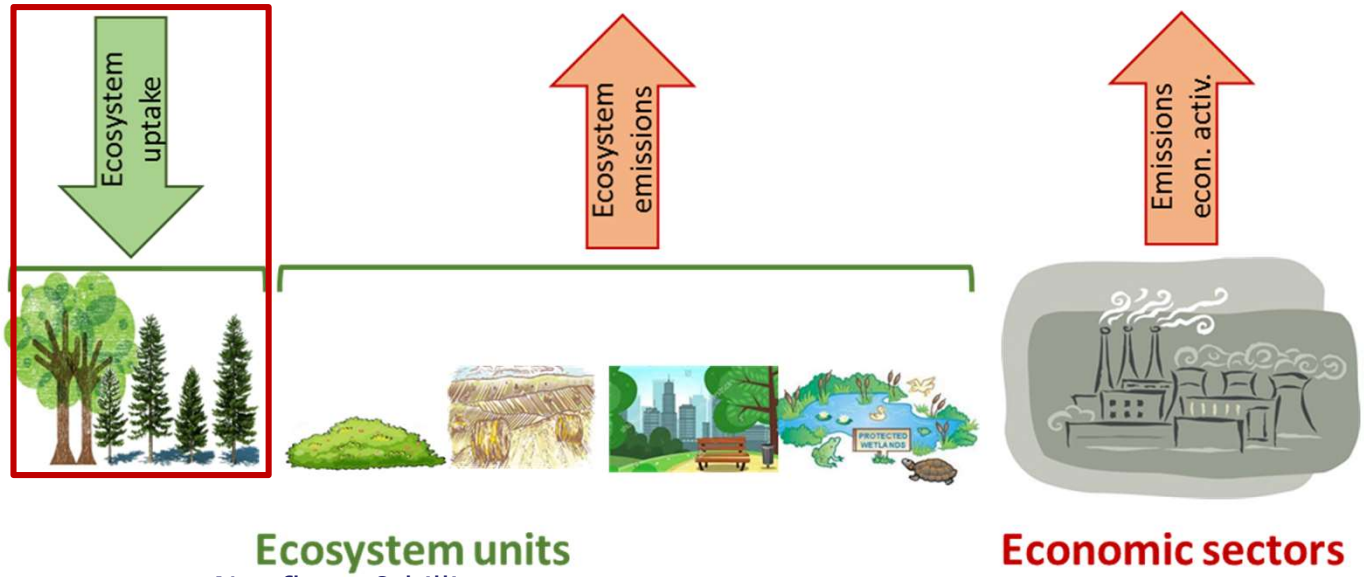
European Commission

Uso diretto dell'info contabile

Qual'è il valore della regolazione dei GHG in EU?

CO_2 sequestration (proxy) Anno 2012

Gross flow: 14 billion euro



Mitigazione da parte dell'ecosistema: 7% delle emission di CO_2

Fonte dati: LULUCF

European Commission

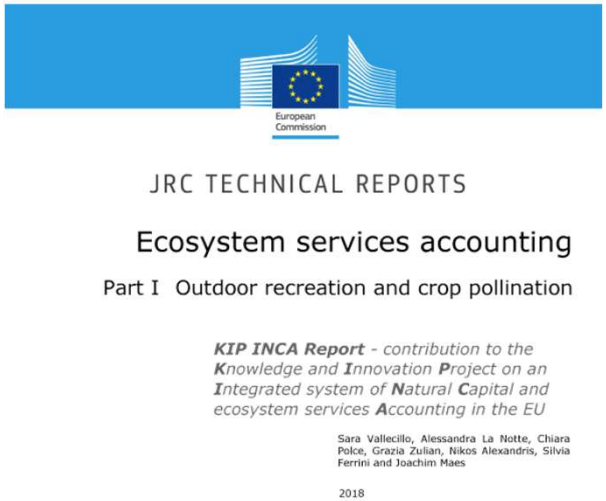
Contents lists available at ScienceDirect

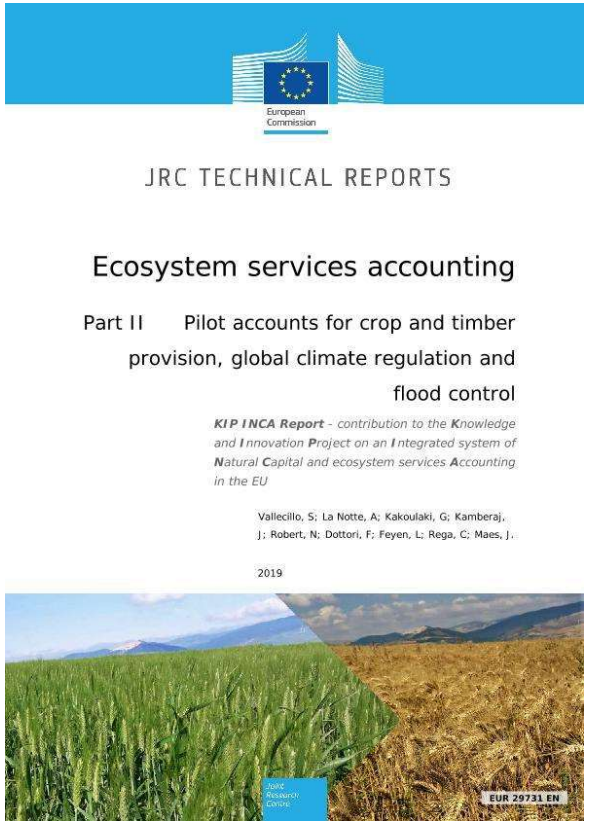
Ecosystem Services

journal homepage: www.elsevier.com/locate/ecoser

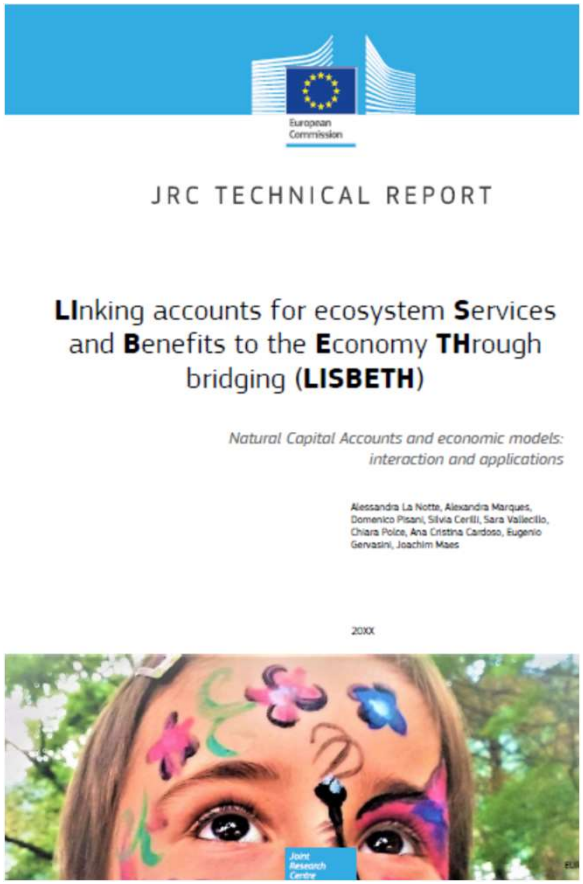
How ecosystem services are changing: an accounting application at the EU level

Sara Vallecillo[a,*], Alessandra La Notte[a], Silvia Ferrini[b,c], Joachim Maes[a]





https://data.jrc.ec.europa.eu/dataset?q=INCA&sort=score+desc&ext_bbox=&ext_prev_extent=-57.6562499999999%2C-21.2893743558604 24%2C97.03125%2C75.67219739055291&page=1



Da INCA a LISBETH

European Commission

Ecological Economics
Volume 124, April 2016, Pages 145-152

Survey

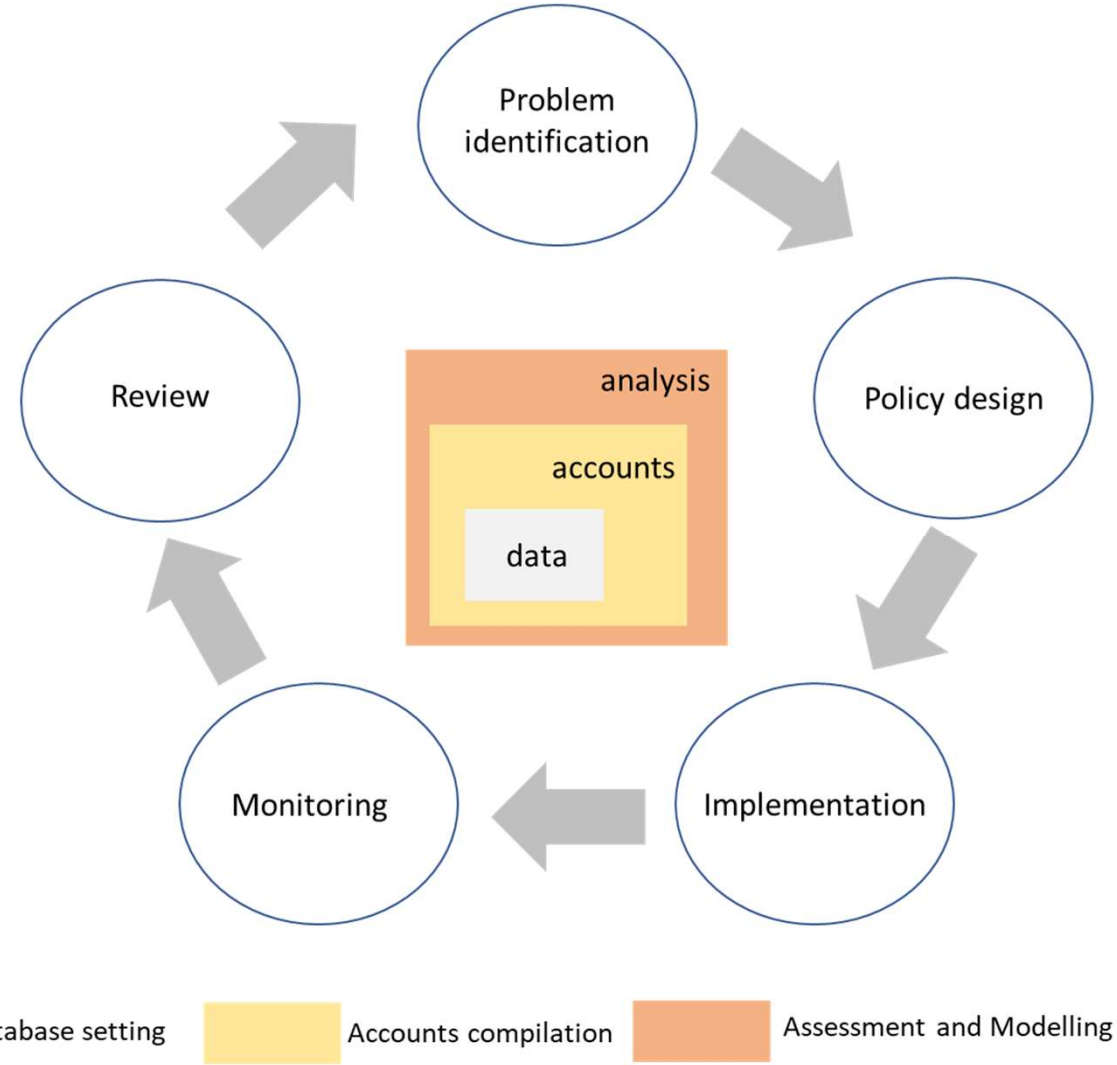
The accounting push and the policy pull: balancing environment and economic decisions

Michael Vardon [a, b], Peter Burnett [c], Stephen Dovers [a]

Environmental Science & Policy
Volume 89, November 2018, Pages 83-92

How the System of Environmental-Economic Accounting can improve environmental information systems and data quality for decision making

Michael Vardon [a], Juan-Pablo Castaneda [b], Michael Nagy [c], Sjoerd Schenau [d]



wavespartnership.org/en/policy-forum-natural-capital-accounting-better-decision-making

WAVES

Wealth Accounting and the Valuation of Ecosystem Services

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Policy Forum on Natural Capital Accounting for Better Decision Making

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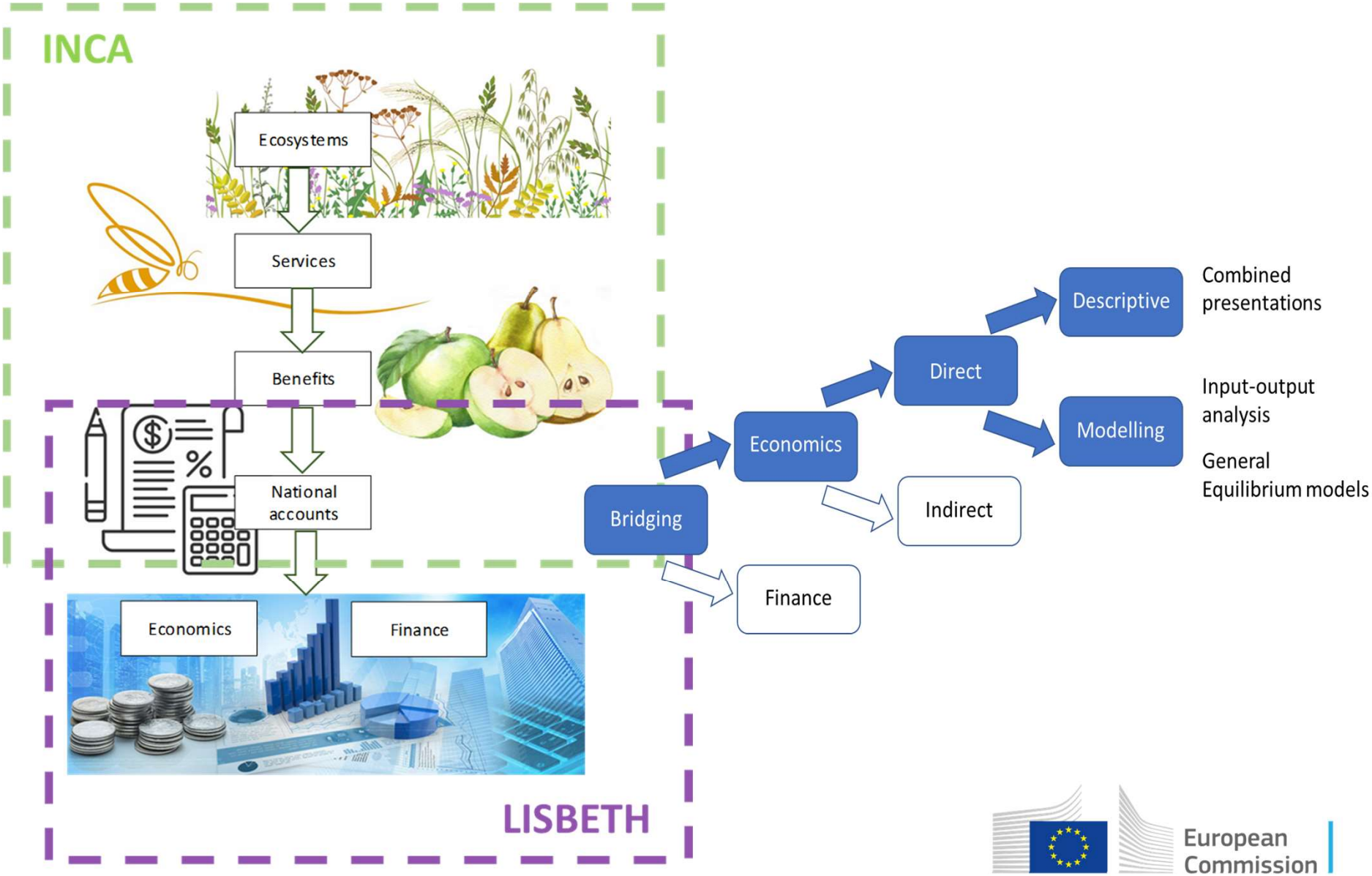
Global Program on Sustainability

GPS Global Program on Sustainability

LInking accounts for ecosystem **S**ervices and **B**enefits to the **E**conomy **TH**rough bridging



European Commission

Costruzione di Combined Presentations

Selected products*	Ecosystem Types EC	Other	Type of economic unit*		Flows from the rest of the world		Food Availability	
			Supply	Use				
	Cropland E (t)		Agricultural Industry (ISIC A 01)	Crop processed (t)	Imports (t)	Exports (t)	Food (t)	Food supply (Kcal/capita/day)
Wheat								
Barley								
Oats								
Maize (corn)								
Potatoes								
Sugar beet								
Rapeseed or colza seed								
Sunflower seed								

Natural Capital Input component

Market component

Nutrition component

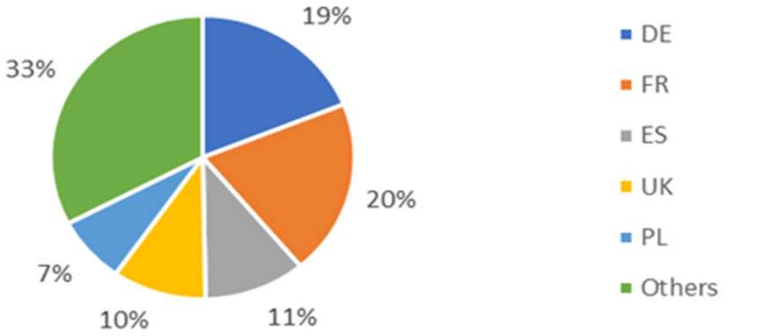
ECOSYSTEM **ECONOMY** **SOCIETY**

Combined presentation: es. orzo

Countries		Ecosystem Type: cropland	Economic sector: Agriculture		Flows from and to the rest of the world		Food Availability	
		supply from ecosystem to agriculture (t)	Use from ecosystem and human input to agriculture (t)	Use from agriculture to manufacturing (t)	Imports (t)	Exports (t)	Food (t)	Food supply (Kcal/pc/day)
AT	Austria	170,916	662,466	120,000	162,746	75,722	2,897	2
BE	Belgium	54,942	359,100	341,000	1,774,768	342,001	1,148	1
BG	Bulgaria	148,935	661,932	133,000	614	325,128	7,761	6
CZ	Czechia	436,446	1,616,467	381,000	28,912	362,154	2,000	1
DE	Germany	2,234,130	10,391,300	1,825,000	1,408,889	1,534,747	25,720	2
DK	Denmark	1,201,375	4,058,700	127,000	83,210	1,041,699	114	0
EE	Estonia	141,640	341,300	49,000	8,137	84,909	7,393	39
EL	Greece	38,357	336,461	108,000	70,448	2,021	4,909	3
ES	Spain	1,232,954	5,956,300	700,000	276,184	71,113	2,351	0
FI	Finland	466,395	1,581,000	130,000	4,081	93,206	26,963	33
FR	France	11,341,189	11,341,189	26,000	96,518	4,657,446	61,998	6
HU	Hungary	368,561	996,110	101,000	68,642	299,476	653	1
IE	Ireland	279,875	1,260,700	179,000	198,305	69,465	3,288	4
IT	Italy	177,704	940,234	251,000	497,731	6,220	30,408	3
LT	Lithuania	241,118	741,900	55,000	34,548	101,609	24,931	55
LU	Luxembourg	5,799	37,900	8,000	4,675	13,592	989	15
LV	Latvia	110,876	248,600	30,000	110,983	113,927	49,235	151
NL	Netherlands	63,421	205,912	405,000	1,546,509	84,630	25,965	8
PL	Poland	1,329,304	4,180,200	780,000	197,035	320,873	251,104	34
PT	Portugal	5,457	21,151	150,000	225,471	4,560	15,000	9
RO	Romania	282,099	986,361	378,000	138,024	688,075	22,115	7
SE	Sweden	507,107	1,701,700	77,000	61,023	494,457	15,049	11
SI	Slovenia	16,522	84,727	35,000	15,897	8,600	3,967	13

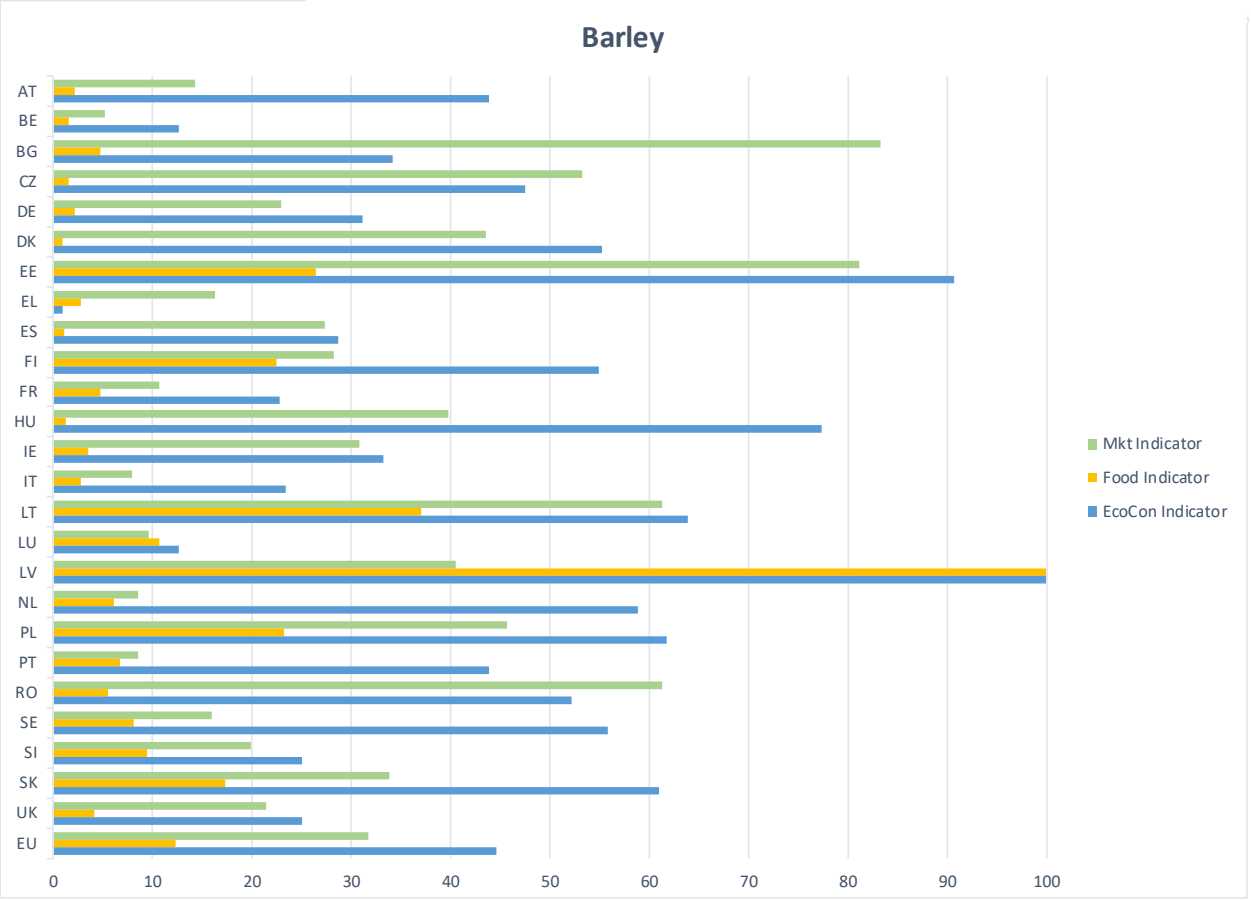
Sustainability scoreboard (es. orzo)

Statistiche Agricole (fonte: ESTAT)



Sustainability scoreboard (fonte JRC-FAO)

	Mkt Indicator	Food Indicator	EcoCon Indicator
Austria	14.37	2.20	43.94
Belgium	5.20	1.54	12.63
Bulgaria	83.35	4.82	34.10
Czechia	53.33	1.54	47.52
Germany	22.94	2.20	31.12
Denmark	43.53	1.00	55.27
Estonia	81.18	26.48	90.76
Greece	16.29	2.85	1.00
Spain	27.29	1.17	28.73
Finland	28.20	22.54	54.97
France	10.70	4.82	22.77
Hungary	39.78	1.26	77.34
Ireland	30.78	3.51	33.20
Italy	7.92	2.85	23.36
Lithuania	61.38	36.99	63.92
Luxembourg	9.64	10.73	12.63
Latvia	40.56	100.00	100.00
Netherlands	8.52	6.13	58.85
Poland	45.77	23.20	61.83
Portugal	8.60	6.79	43.94
Romania	61.24	5.48	52.29
Sweden	15.94	8.10	55.87
Slovenia	19.97	9.42	25.15
Slovakia	33.89	17.29	60.94
United Kingdom	21.45	4.17	25.15
EU	31.67	12.28	44.69



Conti basati sul consumo: esempio del servizio di «purificazione dell'acqua»

Water Purification
POTENTIAL FLOW

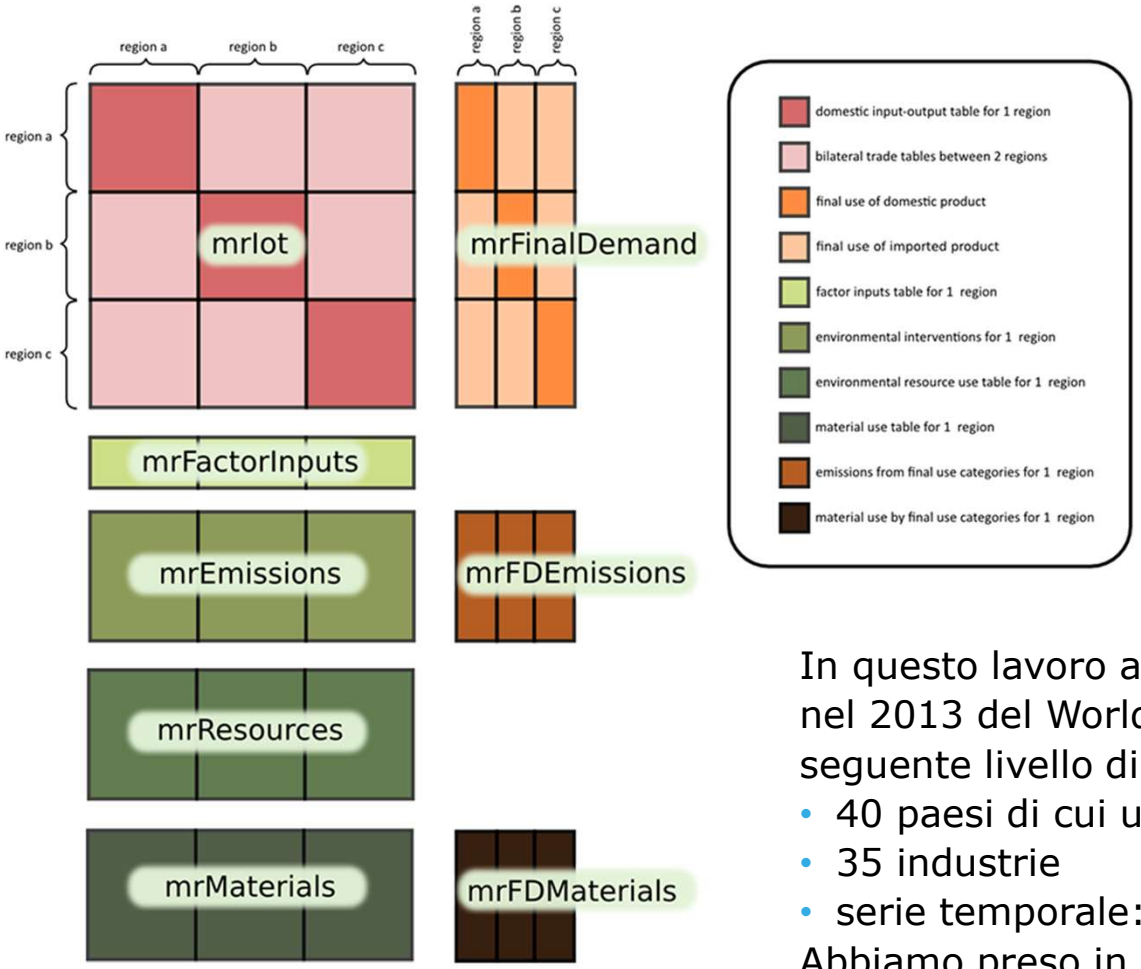
DEMAND for
Water Purification

SEEA EEA supply and use tables

Use (Actual flow)

BENEFIT

Struttura dell'analisi IO multiregionale



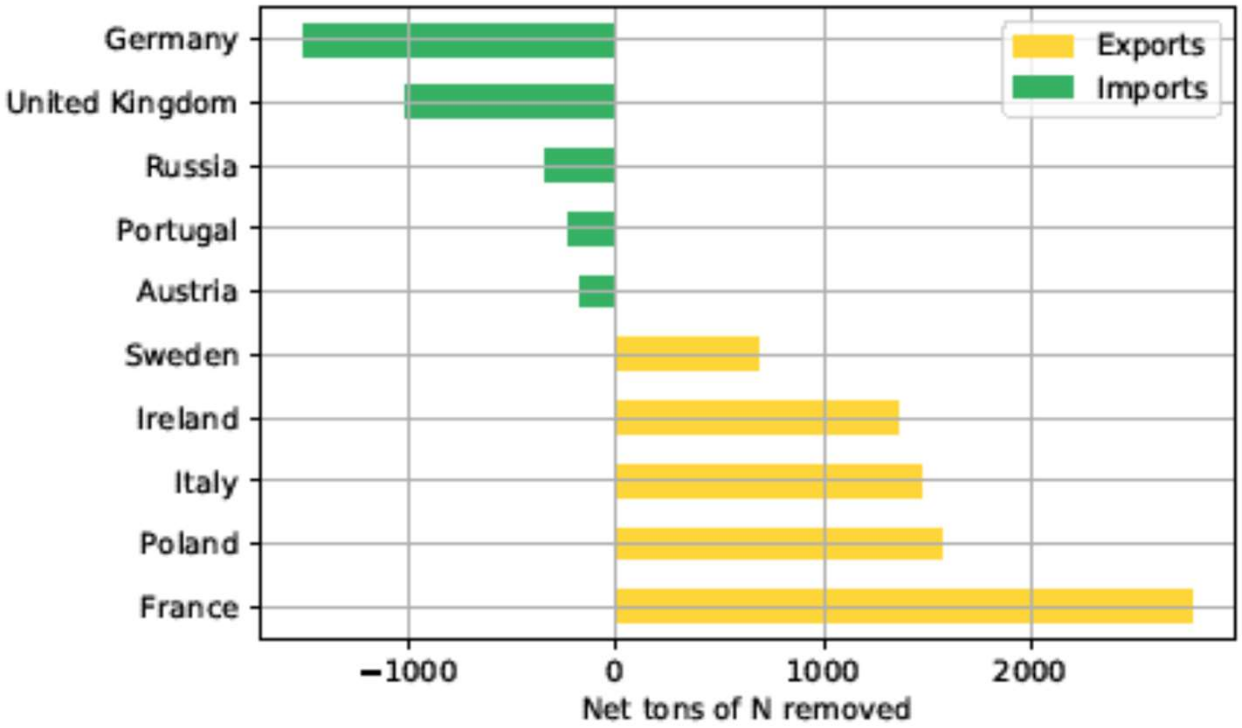
Imagine tratta da www.exiobase.eu

In questo lavoro abbiamo usato il database pubblicato nel 2013 del World Input-Output database (WIOD), con il seguente livello di disaggregazione:

- 40 paesi di cui uno "resto del mondo",
- 35 industrie
- serie temporale: 1995-2011

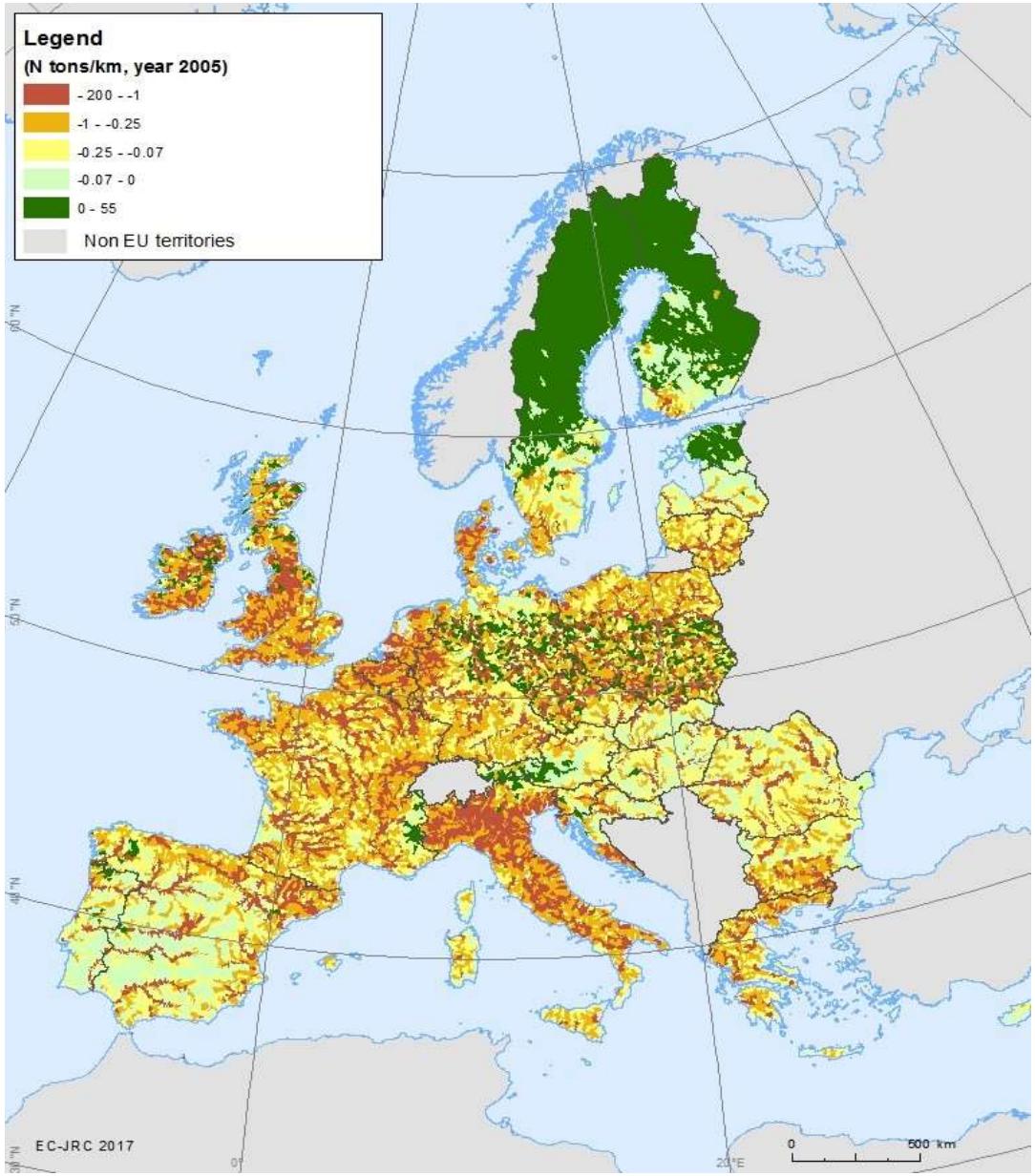
Abbiamo preso in considerazione la puriricazione dell'acqua solo nei paesi europei

Importatori ed esportatori netti del servizio di «purificazione dell'acqua»



I maggiori importatori del servizio ecosistemico di depurazione dell'acqua stanno importando questi servizi da paesi i cui corpi idrici sono fortemente inquinati dall'azoto

Quali sono i bacini che registrano «overuse»

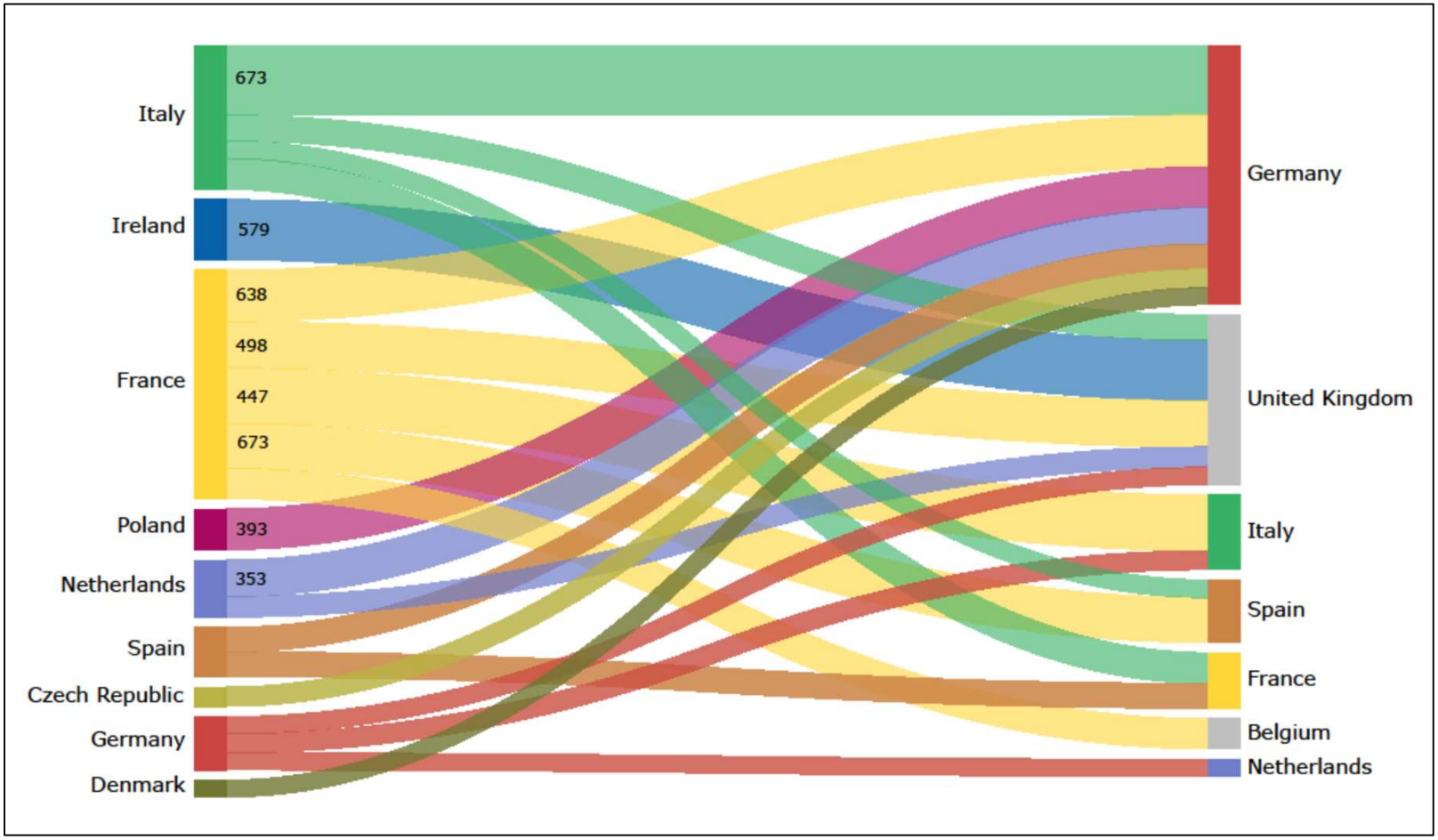


La maggior parte delle azioni per migliorare lo stato ecologico dei corpi idrici è pianificato a livello di bacino

Nuove alternative per affrontare il degrado dei corpi idrici dovrebbero essere considerate alla luce di queste informazioni

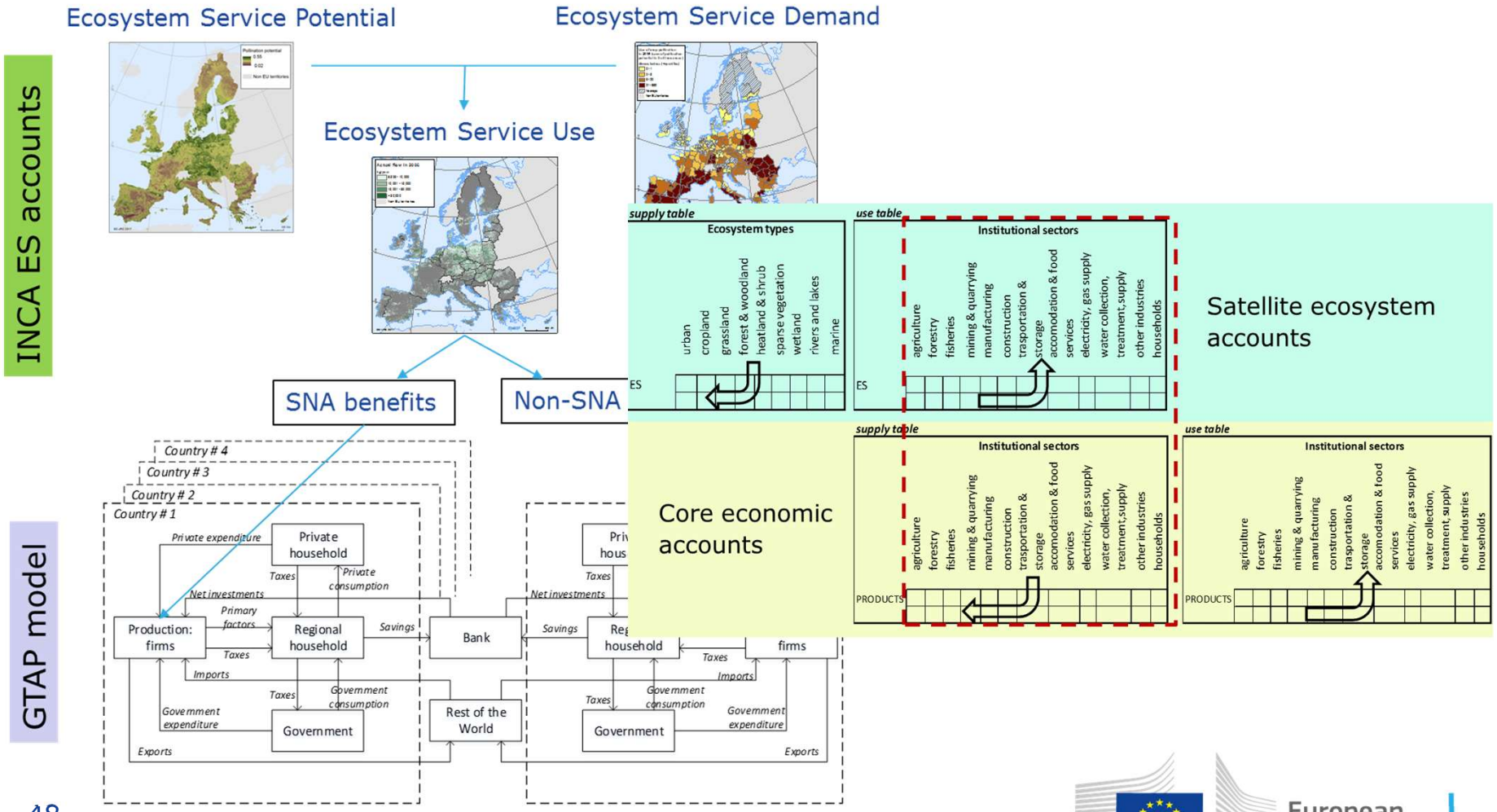
European Commission

Flussi interregionali di «purificazione dell'acqua» contenuta nei prodotti agricoli



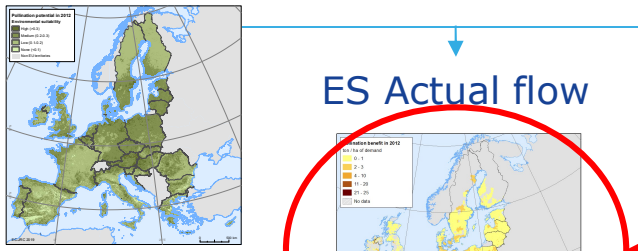
Una prospettiva di sistema dovrebbe considerare non solo flussi di servizi ecosistemici generati in loco ma anche il loro contenuto nei prodotti commercializzati

Integrare i conti ecosistemici con i modelli economici



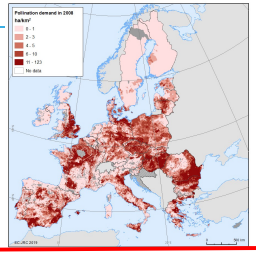
European Commission

Invasione della vespa asiatica (*Vespa Velutina)* lato INCA



ES Potential

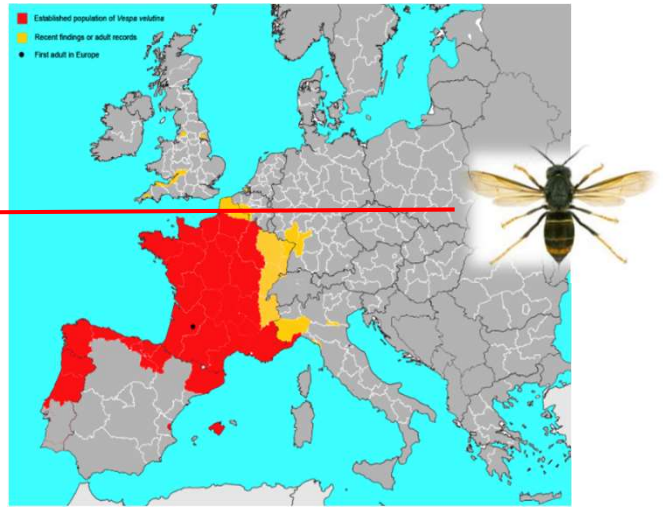
ES Actual flow

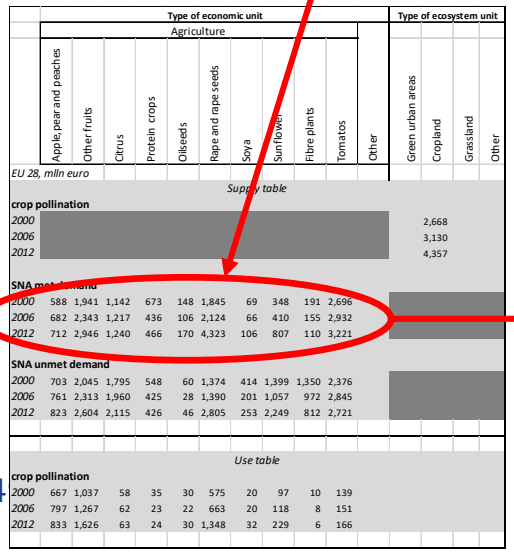


ES Demand

SNA benefits

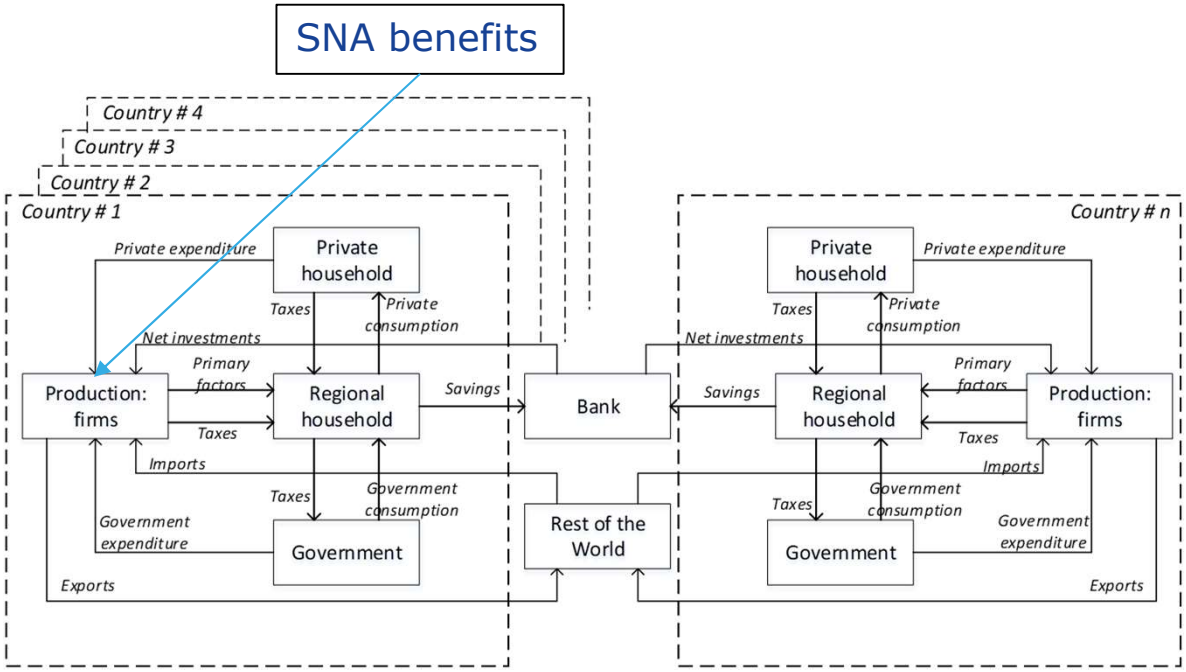
Non-SNA benefits

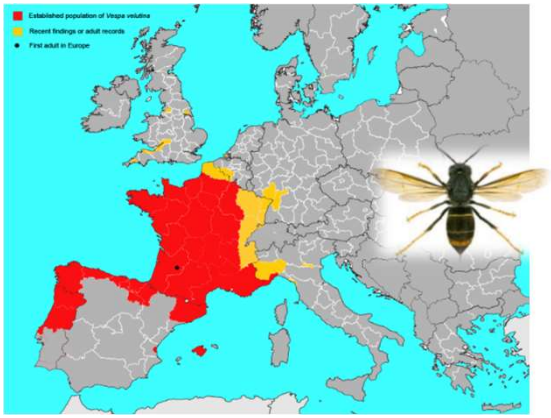




	France	Italy	Spain	Portugal	Germany	Belgium	Netherlands
Apples, pear and peaches	502.86	562.79	486.59	185.97	681.01	298.35	324.54
Citrus fruits	1.34	52.46	114.45	8.26	-	-	-
Other fruits	155.21	349.93	612.64	42.26	153.42	121.87	117.88
Other oilseeds	2.56	0.01	1.11	0.15	0.71	0.35	0.07
Pulses	12.71	1.27	1.63	0.25	11.77	0.23	0.25
Rapeseeds	209.13	2.02	1.74	-	1,037.68	14.59	2.05
Soya	3.12	4.87	0.10	-	0.40	-	-
Sunflower	57.41	13.49	12.47	0.39	12.39	-	0.63
Flax and hemp	13.24	0.04	0.37		0.60	2.38	0.68
Tomatoes	18.93	98.10	63.78	35.99	2.99	10.65	37.49

Invasione della vespa asiatica (*Vespa Velutina)* lato GTAP





Due domande di policy

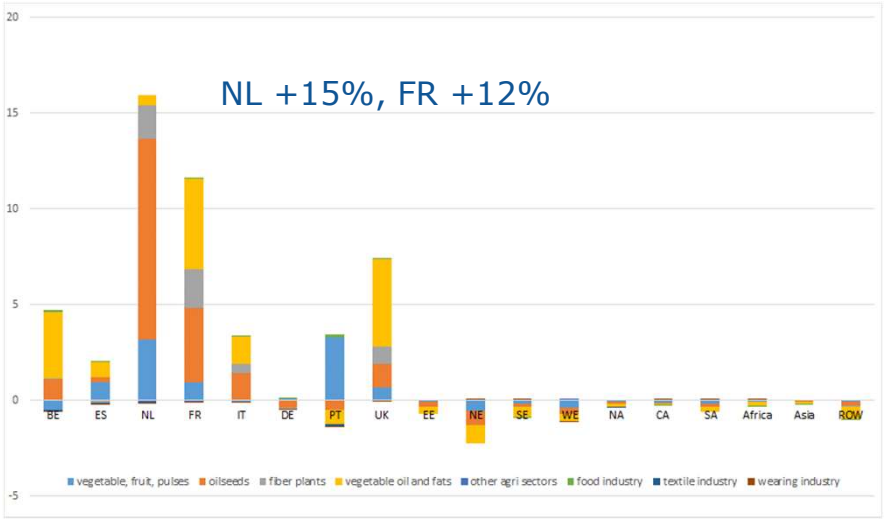
	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain	UK
Vegetables, fruits, pulses	0.10	0.82	0.34	0.26	1.45	2.65	0.74	0.71
Oil seeds	0.37	1.42	0.07	0.56	4.23	0.01	0.18	0.81
Vegetables oils & fats	0.78	1.20	0.12	0.54	0.44	0.01	0.49	1.18
Plant based fibers	0.05	0.98	0.03	0.16	1.26	0.00	0.001	0.33

Cosa sarebbe successo se la vespa asiatica non avesse invaso i paesi Europei?

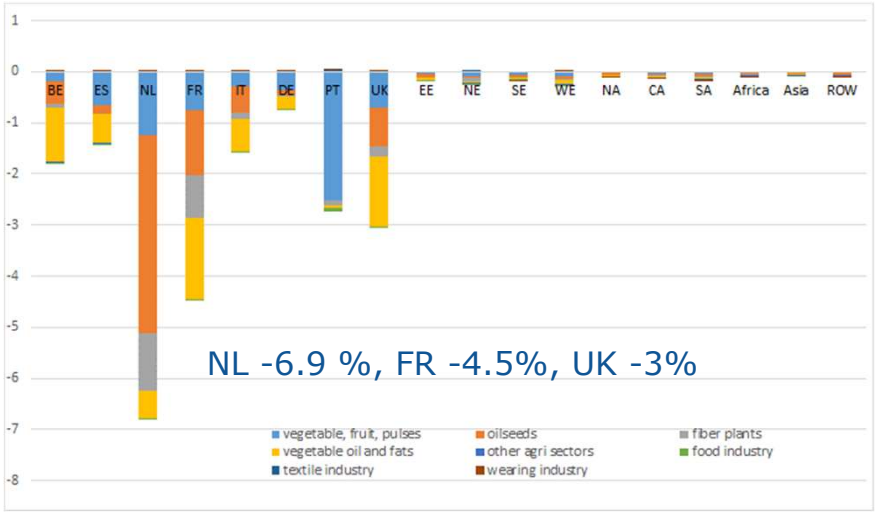
	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain	UK
Vegetables, fruits, nuts	5.58	0.01	3.49	0.70	3.81	0.62	0.74	5.00
Oil seeds	1.51	0.00	1.37	0.88	1.11	0.74	0.27	3.35
Vegetables oils & fats	5.13	0.00	5.19	0.78	8.01	1.11	0.74	4.71
Plant based fibers	6.77	-	7.91	0.60	0.22	-	0.08	1.02

Cosa succederebbe se la vespa asiatica invadesse le alter regioni?

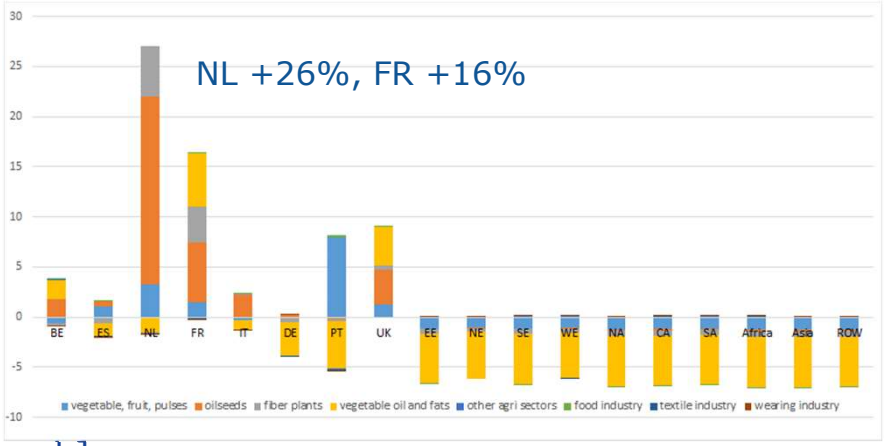
Domanda 1: assenza vespa asiatica



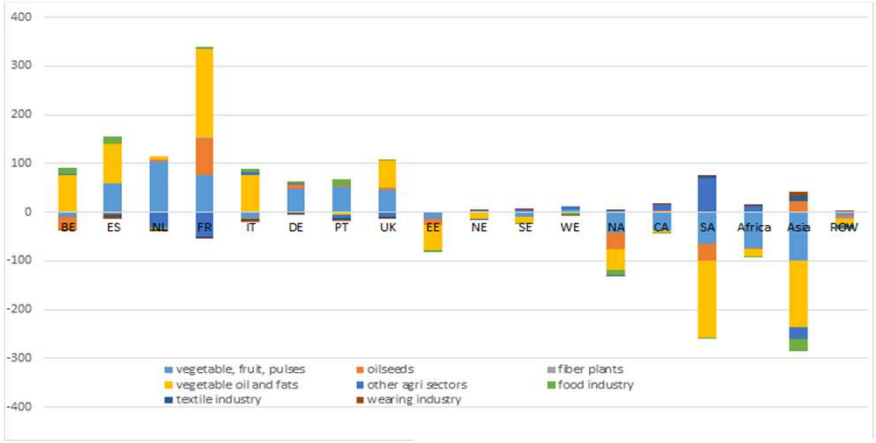
Production quantity



Import prices

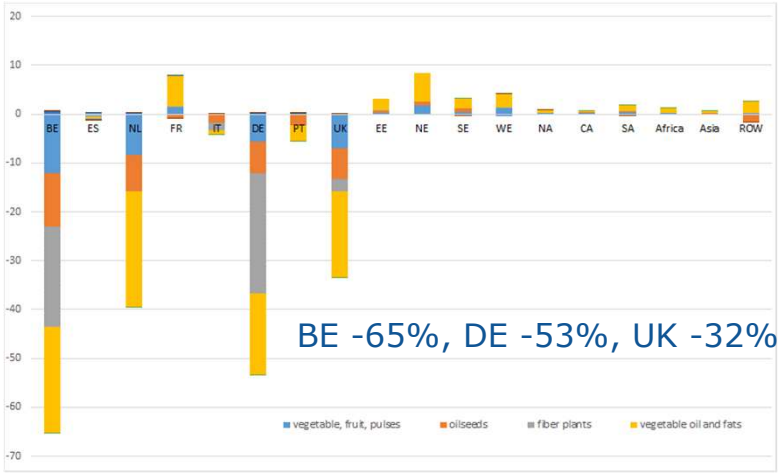


Export quantity

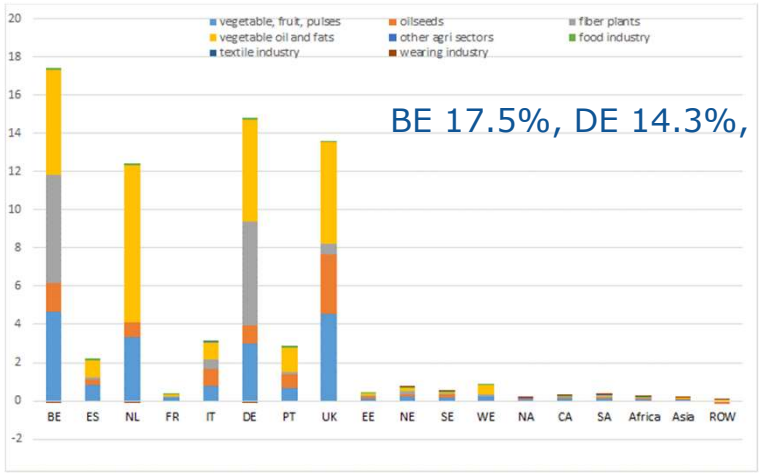


Balance of payments

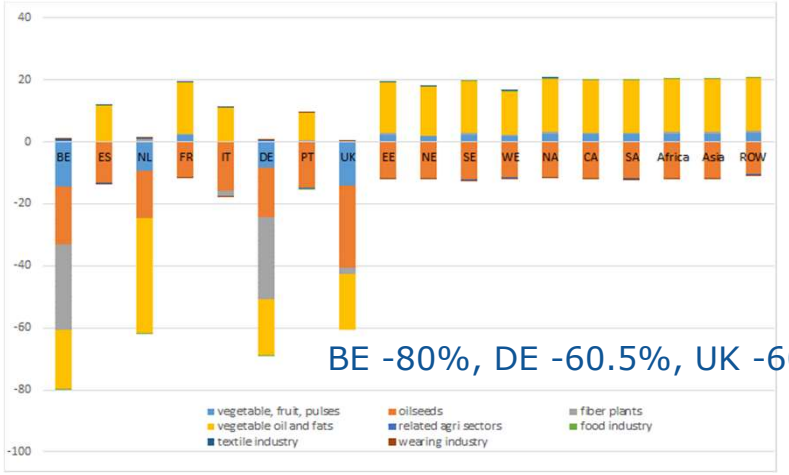
Domanda 2: diffusione vespa asiatica



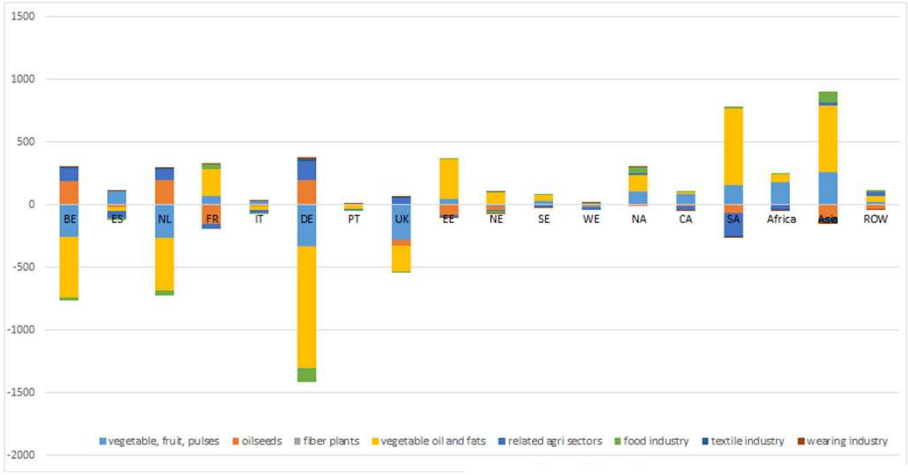
Production quantity



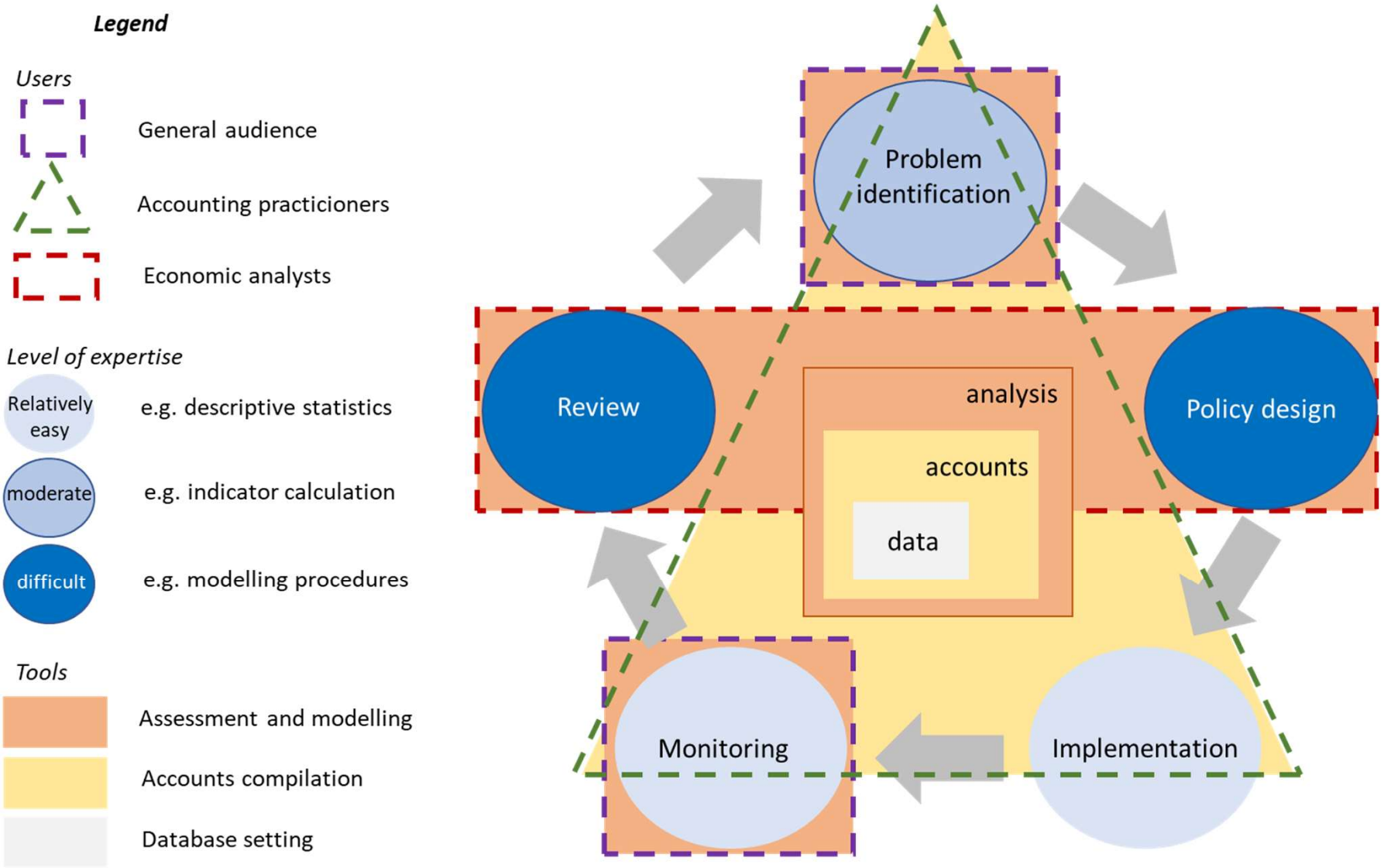
Import prices



Export quantity



Balance of payments


Legend
Users
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Economic analysts
Level of expertise
Relatively easy
e.g. descriptive statistics
moderate
e.g. indicator calculation
difficult
e.g. modelling procedures
Tools
Assessment and modelling
Accounts compilation
Database setting
Problem identification
Review
analysis
accounts
data
Policy design
Monitoring
Implementation

Possibili legami con i SDGs/1

1.5 -> unmet demand

2.4 -> unsustainable flow

2.4 -> unmet demand

6.3, 6.6 -> unsustainable flow

1.5 -> enabling pressure

8.4 -> unsustainable flow

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Possibili legami con i SDGs/2

11.7 -> unmet demand

12.2, 12a -> MRIO analysis

13.2 -> enabling pressure

15.1, 15.2, 15.3, 15.4, 15.8 -> ES potential and ES sustainable flow

17.14, 17.19 -> bridging economic models

Grazie per l'attenzione

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