

06-10-2023

IL QUARTIERE - P.ZZA MONTEBELLO, 1 - SALUZZO (CN)

# Foreste e servizi ecosistemici

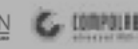
Dalla teoria alla pratica

UN EVENTO DI



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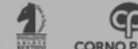
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## Servizi ecosistemici e *Nature-based solutions*: concetti e modelli di *business*

Davide Pettenella

# Organizzazione

- Servizi ecosistemici e *Nature-Based Solutions*: di cosa parliamo?
- Gli strumenti economici per stimolare le NBS
- Modelli di *business* e ruolo delle istituzioni: l'esempio dei crediti di carbonio

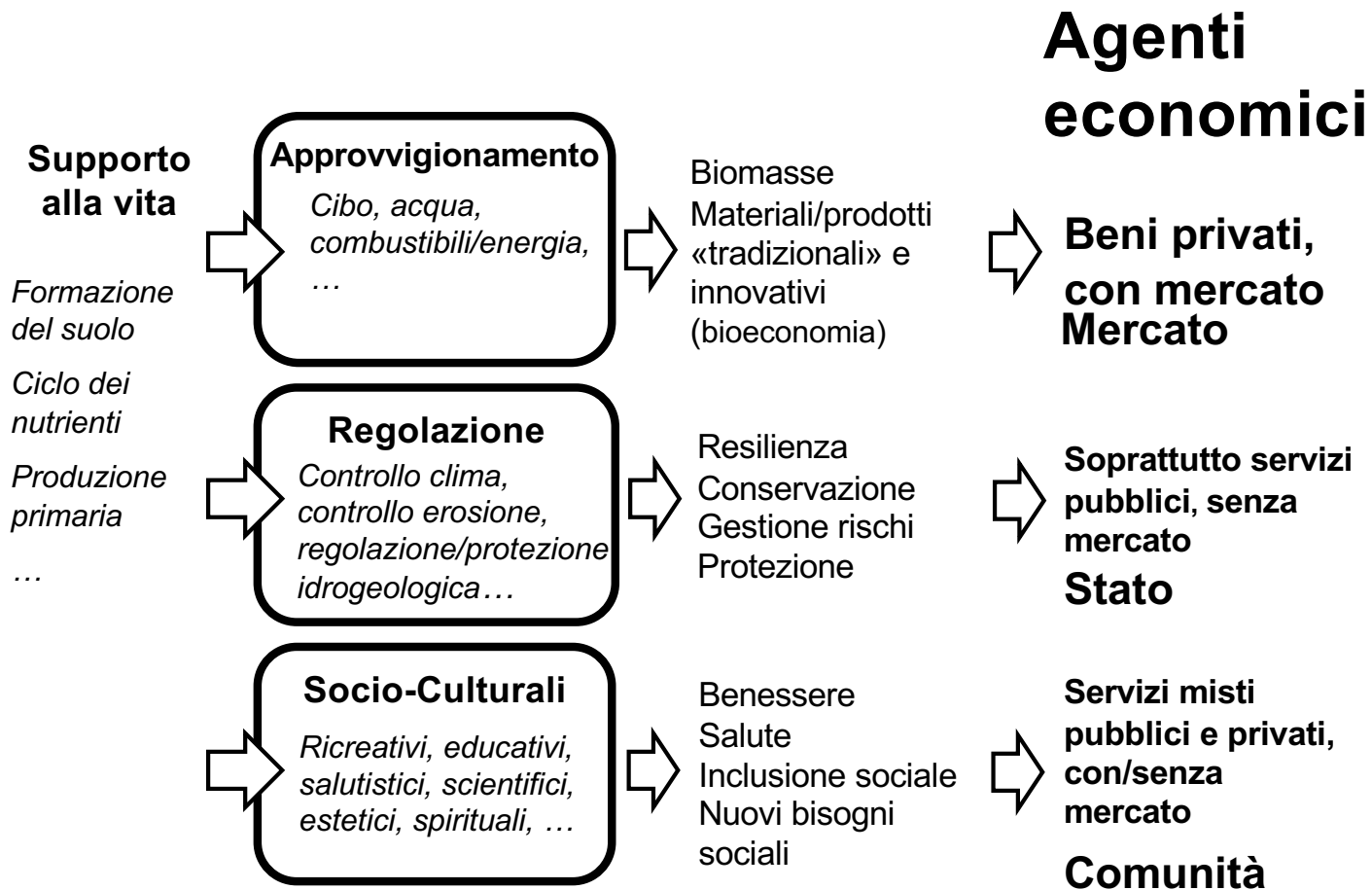
Le *slides* sono disponibili sul web. Cerca "Pettenella"

# Organizzazione

- **Servizi ecosistemici e *Nature-Based Solutions*: di cosa parliamo?**
- Gli strumenti economici per stimolare le NBS
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# I Servizi Ecosistemici

Fonte: MEA, 2005 (modif.)



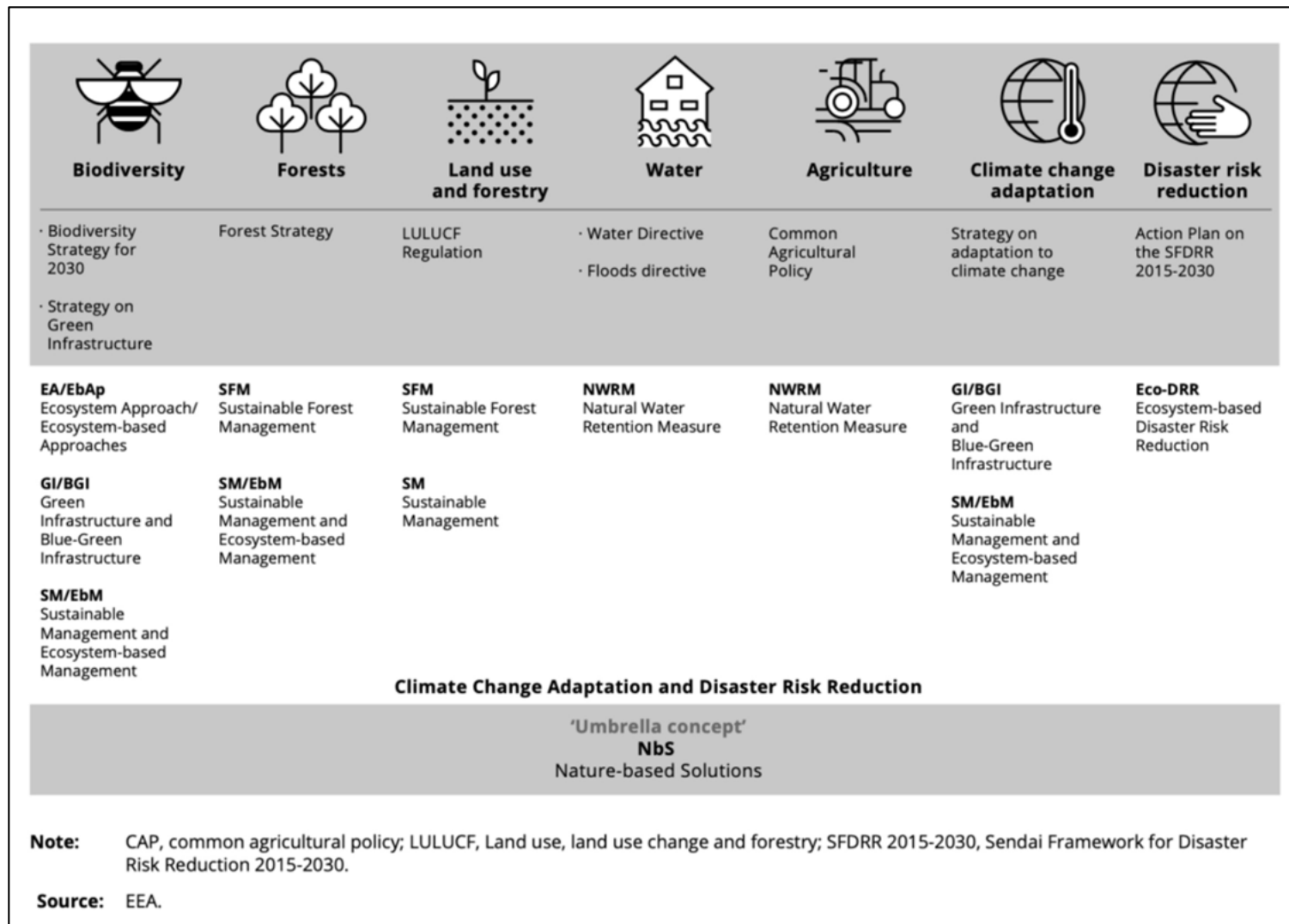
# ***Nature-Based Solutions***



***“Living solutions inspired by, supported by or copied from nature and which aim to help societies address a variety of environmental, social and economic challenges in sustainable ways” (EC, 2015)***



# Nature-Based Solutions: un concetto-ombrello (non originale: rinaturalizzazione, *greening*, restauri verdi, ...)



# I benefici delle NBS



## Pollution removal & CO<sub>2</sub> sequestration

(Abhijith *et al.*, 2017)



## Temperature mitigation

(Koc *et al.*, 2018; Aram *et al.*, 2019, Stewart and Oke, 2021)



## Water security and treatment

(Nika *et al.*, 2020; Boano *et al.*, 2020; Song *et al.*, 2019)



## Disaster risk reduction

(Naumann *et al.*, 2014; Potschin *et al.*, 2014; Terton, 2017 (Ozment *et al.* 2019)



## Habitat and biodiversity protection

(Griscom *et al.*, 2017; Parker *et al.*, 2020, Lavorel *et al.*, 2020; Maes and Jacobs, 2017; Chausson *et al.*, 2020, MG Hutchins *et al.*, 2021)



## Mental and physical health and wellbeing

(Bratman *et al.*, 2015; Park *et al.*, 2007, Cervinka *et al.*, 2014; Lee *et al.*, 2017; O'Brien *et al.*, 2018; Gidlow *et al.*, 2016, Milligan and Bingley, 2007; Jane, 2009; Corraliza *et al.*, 2012; Gill, 2014; Lubans *et al.*, 2016; McCracken *et al.*, 2016; McCormick, 2017; (Furuyashiki *et al.*, 2019; Kotera, 2020; Doimo *et al.*, 2021, Faccioli and Bateman, 2018



## Increase sociability and active lifestyle

(Pretty *et al.*, 2007, 2010, White *et al.*, 2019, Roe and Aspirall, 2011...)



## Aesthetic improvement



## Energy saving



## Economic growth and development

(Kabish *et al.*, 2017, Cook *et al.*, 2020)

# Organizzazione

- Servizi ecosistemici e *Nature-Based Solutions*: di cosa parliamo?
- **Gli strumenti economici per stimolare le NBS**
- Modelli di *business* e ruolo delle istituzioni: l'esempio dei crediti di carbonio



# Un *trend* generale (?): dagli strumenti di **Comando e Controllo (C&C)** ai ***Market Based Instruments (MBI)***

C&C      Tasse, permessi, vincoli,  
            obiettivi minimi, obblighi, ...  
            “*non to be done*”

MBI        Strumenti economici utilizzati per  
            sostenere scelte ritenute opportune  
            “*to be done*” (su base volontaria)

Fonte: OECD 1994, Stavins 2001, Windle et al. 2005

# Come attivare le NBS?

	Tools	Direct costs for the public sector	Transaction costs for the public sector	Approach	Participation by the privates		
Passive: Command and control	Thresholds, limitations, constraints	Relatively low	Relatively low	Top down	Compulsory	sticks	
	Tax deductions, tax exemption	Relatively high			Voluntary or imposed by the State		
Active: creation of new sources of income	Fixed compensation						Voluntary
	Marked-based instruments	- PES schemes	Zero costs	Relatively high	Bottom up	Voluntary	
		- PES-like schemes	Very low	Low	Mixed	Compulsory for some parties	
		- PPP	Relatively high	Low	Top down	Voluntary	
		- Land acquisition by public authorities or large companies (lease, concessions, ...)		Low		Normally voluntary	
		- Tradable permits (cap & trade schemes)	Relatively low	Low	Mixed	Compulsory for some parties	
		- Certification and labelling (premium price)	Zero costs	Zero costs	Bottom up	Voluntary	
		- Sponsoring, donations (philanthropy)					
- Information, provision of services, goods free of charge or a low prices	Relatively high	Low	Mixed				
Soft tools						sermons	

In effetti la società civile e le imprese hanno negli ultimi decenni sviluppato molti strumenti innovativi volontari per promuovere, monitorare, comunicare e certificare gli impatti delle proprie attività sulle risorse ambientali e sulla società

... spesso con grande capacità innovative, limitati costi di transazione, trasparenza ed efficacia.

Molte organizzazioni hanno fatto significativi investimenti in questi strumenti

<b>Area di azione</b>	<b>Iniziative private che in precedenza hanno riguardato il settore dell'azione politica dell'UE</b>
Origine sostenibile del legno e relativa Catena di custodia	CoC standards di FSC, PEFC, Naturaland, Plockhugget, ...
Finanza sostenibile	Iniziative dei network GABV, FEBEA e INAISE; Basilea 1 e 2
Uso sostenibile delle biomasse a fini energetici	Better Biomass, ISCC, SBP, ... (vd. <a href="https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en">https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en</a> )
Origine legale di 7 materie prime naturali e loro Catena di custodia	GFP, Rainforest Alliance, RTRS, RSB, RSPO, SAN, SBP + organizzazioni forestali già menzionate
Reporting di sostenibilità o impatto	GRI, CDP, SASB, ISO 14001 EMS, SASCB, Carbon Trust Standard, Greenhouse Gas Protocol del WRI e del WBCSD,...
Generazione di crediti di carbonio	Sistemi nazionali e sistemi e standard di certificazione privati

CDP: Carbon Disclosure Project, CoC: Chain of Custody, EMS: Environmental Management System, GCP: Global Coffee Platform, GRI: Global Reporting Initiative, ISCC: International Sustainability and Carbon Certification, RSB: Roundtable on Sustainable Biomaterials, RTRS: Round Table on Responsible Soy Association, RSPO: Roundtable on Sustainable Palm Oil, SAN: Sustainable Agriculture Network, SBP: Sustainable Biomass Program, SASB: Sustainability Accounting Standards Board, SASCB: Sustainability Accounting, Standards and Certification Board, WBCSD: World Business Council for Sustainable Development, WRI: World Research Institute.

<b>Area di azione</b>	<b>Iniziative private che in precedenza hanno riguardato il settore dell'azione politica dell'UE</b>	<b>Iniziative di regolazione dell'UE</b>
Origine sostenibile del legno e relativa Catena di custodia	CoC standards di FSC, PEFC, Naturaland, Plockhugget, ...	EUTR – European Union Timber Regulation
Finanza sostenibile	Iniziative dei network GABV, FEBEA e INAISE; Basilea 1 e 2	Taxonomy
Uso sostenibile delle biomasse a fini energetici	Better Biomass, ISCC, SBP, ...	REDII and REDIII (draft)
Origine legale di 7 materie prime naturali e loro Catena di custodia	GFP, Rainforest Alliance, RTRS, RSB, RSPO, SAN, SBP + organizzazioni forestali già menzionate	EUDR – European Union Deforestation and forest degradation Regulation
Reporting di sostenibilità o impatto	GRI, CDP, SASB, ISO 14001 EMS, SASCB, Carbon Trust Standard, Greenhouse Gas Protocol by the WRI and WBCSD,...	CSRD (Corporate Sustainability Reporting Directive) e NFRD (Non-Financial Reporting Directive)
Generazione di crediti di carbonio	Sistemi nazionali e sistemi e standard di certificazione privati	CRC – Carbon Removal Certification Regulation (draft)

# Strumenti della società civile per le NBS: non sempre privi di limiti ed errori



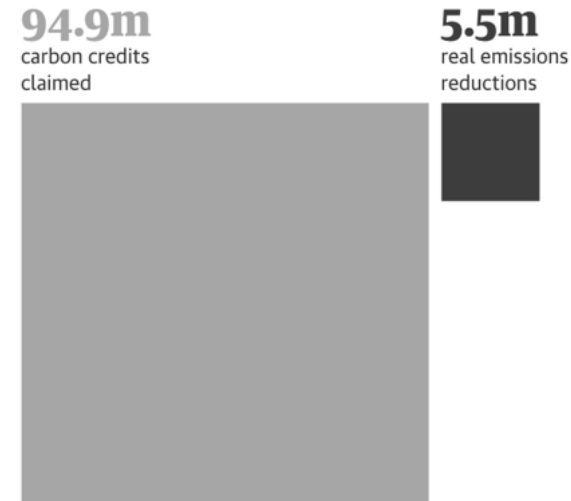
**Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows**

**Investigation into Verra carbon standard finds most are 'phantom credits' and may worsen global heating**

- **'Nowhere else to go': Alto Mayo, Peru, at centre of conservation row**
- **Greenwashing or a net zero necessity? Scientists on carbon offsetting**
- **Carbon offsets flawed but we are in a climate emergency**

**Based on a new analysis at least 90% of Verra's rainforest carbon credits do not represent real emission reductions**

Each credit is equal to one metric tonne of CO2 equivalent



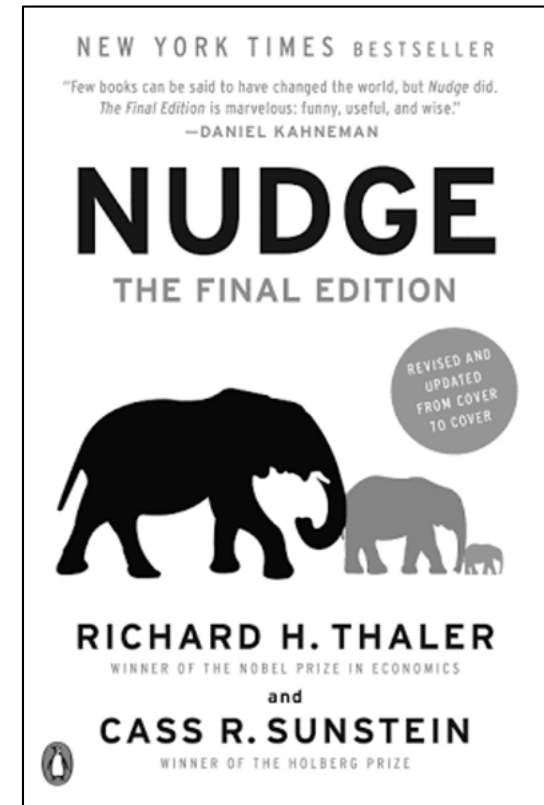
The investigation found that:

- Only a handful of Verra's rainforest projects showed evidence of deforestation reductions, according to two studies, with further analysis indicating that 94% of the credits had no benefit to the climate.
- The threat to forests had been overstated by about 400% on average for Verra projects, according to analysis of a 2022 University of Cambridge study.
- Gucci, Salesforce, BHP, Shell, easyJet, Leon and the band Pearl Jam were among dozens of companies and organisations that have bought rainforest offsets approved by Verra for environmental claims.

**“Il mercato ogniqualvolta è possibile,  
lo Stato quando necessario”**

Le istituzioni pubbliche  
definiscono il quadro generale  
delle regole (indicatori, soglie,  
procedure, attori istituzionali, sistemi  
M&V, ...) per la gestione delle  
risorse ambientali (forestali)

Un approccio coerente con i  
principi della "*Nudges economics*"  
(economia della spintarella)



# Organizzazione

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# Compliance

Mandatory  
(institutional)

## ERU-CER

### Emission Reduction Unit Certified Emission Reduction

UN and Government Standards:



Clean Development Mechanism  
(CDM)



Joint Implementation (JI)

# Voluntary

(OTC - Over the  
Counter)








## VER

### Verified Emission Reduction


Standard	Sito internet	Logo
VCS-Verra	<a href="https://verra.org/">https://verra.org/</a>	
The Gold Standard	<a href="https://www.goldstandard.org/">https://www.goldstandard.org/</a>	
CCB	<a href="http://www.climate-standard.org">www.climate-standard.org</a>	
Plan Vivo	<a href="http://www.planvivo.org">www.planvivo.org</a>	
Carbon Fix	<a href="http://www.carbonfix.org">www.carbonfix.org</a>	
Social Carbon	<a href="http://www.socialcarbon.org">www.socialcarbon.org</a>	
Climate action reserve	<a href="http://www.climateactionreserve.org">www.climateactionreserve.org</a>	

Source: <https://www.icroa.org/>

# Principali standard nel mercato volontario del C

Standard	Web site	Logo
VCS-Verra	<a href="https://cosystem/verra.org/">https://cosystem /verra.org/</a> <b>&gt; 80% DEL MERCATO</b>	
The Gold Standard	<a href="https://www.goldstandard.org/">https://www.goldstandard.org/</a>	
CCB	<a href="http://www.climate-standard.org">www.climate-standard.org</a>	
Plan Vivo	<a href="http://www.planvivo.org">www.planvivo.org</a>	
Carbon Fix	<a href="http://www.carbonfix.org">www.carbonfix.org</a>	
Social Carbon	<a href="http://www.socialcarbon.org">www.socialcarbon.org</a>	
Climate action reserve	<a href="http://www.climateactionreserve.org">www.climateactionreserve.org</a>	


# Impegni (“Commitments”) di diversi gruppi di organizzazioni verso la neutralità



**Business Ambition for 1.5°C**

Business Ambition for 1.5°C is an urgent call to action from a global coalition of UN agencies, business and industry leaders. It calls on companies to commit to an ambitious science-based emissions reduction targets. By setting a net-zero target in line with a 1.5°C future business can make their critical contribution to limiting the worst impacts of climate change.


[VIEW MORE](#)



**The Climate Pledge**

The Climate Pledge is a call to collective action on the world's greatest crisis and to work together to build towards a safe and healthy planet for the next generations.


[VIEW MORE](#)



**Certified B Corporation**

B Lab is transforming the global economy to benefit all people, communities, and the planet. A leader in economic systems change, our global network creates standards, policies, tools, and programs for business, and we certify companies—known as B Corps—who are leading the way. To date, our community includes over 4,000 B Corps in over 70 countries and 190 industries, and over 100,000 companies manage their impact with the B Impact Assessment and the SOC Action Manager.


[VIEW MORE](#)



**Exponential Roadmap Initiative**

The Exponential Roadmap Initiative is for innovators, transformers and disruptors taking action in line with 1.5°C, with the mission to have emissions before 2030 through exponential climate action and solutions. It is an accredited partner of United Nations Race to Zero, T12 Countdown and a founding partner of the 1.5°C Supply Chain Leaders and the SME Climate Hub. It is a non-profit, independent actor anchored in the latest climate science.


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**SME Climate Hub**

The SME Climate Hub provides small and medium-sized businesses with a one-stop-shop to make a climate commitment and access best-in-class tools and resources to mitigate their environmental impact and build business resilience. Taking climate action through the SME Climate Hub helps small businesses accelerate business growth, build supply chain resilience, align with shifting governmental policy and consumer expectations, and strengthen marketing and branding efforts.


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**Business Declares**

Business Declares is a not-for-profit organization formed by senior leaders with a vast range of experience from the SME, B Corp and FTSE300 sectors. We are official members of the UN Race to Zero team for COP26. We believe that business has a major part to play in tackling the climate, ecological and social emergency.


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**Pledge to Net Zero**

The Pledge to Net Zero has therefore been established to commit organisations from the environmental sector to take a leadership role in the transition to a Net Zero carbon economy. Pledge signatories commit to set and commit to deliver a greenhouse gas target in line with either a 1.5°C (encouraged) or well below 2°C climate change scenario – covering buildings and travel as a minimum.


[VIEW MORE](#)



**CBN Expert community**

CBN Expert gives business the tools and insight they need to calculate, measure and track their carbon footprint.


[VIEW MORE](#)



**Planet Mark**

Planet Mark is a sustainability certification for every type of organisation, for real estate and for products. The certification recognises continuous improvement, encourages action and builds an empowered community of like-minded individuals who make a world of difference.


[VIEW MORE](#)



**Tech Zero**

Tech Zero is a group of innovative UK tech companies, working together to fight the climate crisis, accelerate progress to net zero and help consumers make greener choices.


[VIEW MORE](#)



**United Nations Environment Programme Finance Initiative (UNEP FI)**

UNEP FI is a partnership between UNEP and the global financial sector to mobilize private sector finance for sustainable development. UNEP FI works with more than 400 members—banks, insurers, and investors—and over 100 supporting institutions—to help create a financial sector that serves people and planet while delivering positive impacts.


[VIEW MORE](#)



**UN-Covenanted Net Zero Banking Alliance**

The industry-led, UN-covenanted Net-Zero Banking Alliance brings together over 50 banks representing almost a quarter of global banking assets, which are committed to aligning their lending and investment portfolios with net-zero emissions by 2050.


[VIEW MORE](#)



**Net Zero Asset Managers Initiative**

The Net Zero Asset Managers Initiative is an international group of asset managers committed to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5 degrees Celsius, and to supporting investing aligned with net zero emissions by 2050 or sooner. The initiative is global, both in the six founding network partners—the four regional investor networks, AIGCC, Ceres, IGCC and IGCC, as well as PFI and COP—and its signatories.


[VIEW MORE](#)



**UN-Covenanted Net-Zero Asset Owner Alliance**

Founded in September 2019 at the UN Secretary-General's Climate Action Summit by Allianz, Caisse des Dépôts, La Caisse de dépôt et placement du Québec (CDPQ), Folsom Group, PensionDanmark, and SwissLife, the Net Zero Asset Owner Alliance is convened by UNEP's Finance Initiative and the Principles for Responsible Investment.


[VIEW MORE](#)



**Paris Aligned Investment Initiative (PAII)**

The Paris Aligned Investment Initiative is a collaborative investor-led global forum enabling investors to align their portfolios and activities to the goals of the Paris Agreement. The initiative is supported by four regional investor networks—AIGCC (Asia), Ceres (North America), IGCC (Europe) and IGCC (Australia).

[VIEW MORE](#)



**Under 2 Coalition**

The Under2 Coalition is a global community of state and regional governments committed to ambitious climate action in line with the Paris Agreement. It brings together over 220 governments representing more than 1.3 billion people and 42% of the global economy.

[VIEW MORE](#)




<https://climatechampions.unfccc.int>



**Japan Climate Initiative**

JCI is a network committed to strengthening communication and exchange of strategies and solutions among all actors that are implementing climate actions in Japan.


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**Race to Zero for Universities and Colleges**

Race to Zero for Universities and Colleges is a collaboration between UNEP, EAUC and Second Nature. By joining the Race to Zero, Universities and Colleges demonstrate both the higher and further education sector's commitment to the net zero agenda as well as their institution's leadership on a global level at COP26.

[VIEW MORE](#)



**Fashion Industry Charter for Climate Action**

Under the auspices of UN Climate Change, fashion stakeholders worked during 2018 to identify ways in which the broader textile, clothing and fashion industry can move towards an holistic commitment to climate action.

[VIEW MORE](#)



**Healthcare Without Harm**

Health Care Without Harm works to transform health care worldwide so that it reduces its environmental footprint, becomes a community anchor for sustainability and a leader in the global movement for environmental health and justice.


[VIEW MORE](#)



**Water UK**

As a sector that is rooted in the environment, the water industry is committed to playing its part in tackling the threat of climate change and limiting the rise of global temperatures to 1.5°C. Water UK will help companies navigate that net zero journey.


[VIEW MORE](#)



**International Wineries for Climate Action (IWCA)**

International Wineries for Climate Action (IWCA) is a collaborative working group of environmentally committed wineries focused on a science-based approach to reducing carbon emissions across the wine industry. Each member within IWCA takes responsibility to hold ourselves and each other accountable to build a cleaner, more resilient wine community for future generations.


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**Cities Race to Zero**

Cities Race to Zero has a goal of recruiting 1000 cities to the Race to Zero, in support of the COP26 Roadmap of Local Governments and Municipal Authorities (LGMA) Constituency to the UNFCCC.

[VIEW MORE](#)



**UN Environment Programme Finance Initiative**

**Net Zero Insurance Alliance**

The UN-covenanted Net-Zero Insurance Alliance (NZIA) brings together eight of the world's leading insurers and reinsurers to play their part in accelerating the transition to net zero emissions economies. They are committing to individually transition their underwriting portfolios to net-zero greenhouse gas (GHG) emissions by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels by 2100.

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# Generazione di crediti forestali anche da parte di aziende forestali

## WEYERHAEUSER ANNOUNCES APPROVAL OF FIRST FOREST CARBON PROJECT

>> PRINT NEWS RELEASE

Sep 20, 2023

Company partnering with Carbon Direct to deliver scientifically robust, high-quality forest carbon credits

SEATTLE, Sept. 20, 2023 /PRNewswire/ -- Weyerhaeuser Company (NYSE: WY) today announced it has received approval from the American Carbon Registry for its Improved Forest Management (IFM) carbon credit project in Maine. Covering approximately 50,000 acres and verified through a third-party auditor, the Kibby Skinner IFM Project is the first issuance of credits for Weyerhaeuser through the voluntary carbon market. The project has an estimated initial credit issuance of nearly 32,000 mtCO<sub>2</sub>e, with one credit equal to one metric ton of carbon dioxide equivalent. Over the lifetime of the project, it is expected to generate 475,000 credits.

"Forests represent one of the largest and most readily available opportunities to remove carbon dioxide from the atmosphere and help address the impacts of climate change," says Russell Hagen, senior vice president and chief development officer for Weyerhaeuser. "Since launching our Natural Climate Solutions business, we have been working to develop forest carbon projects that can generate meaningful carbon additionality with measurable climate benefits. This initial project is an important milestone for Weyerhaeuser and demonstrates our commitment to offering only the highest-quality credits to the market."

Weyerhaeuser is currently in the early stages of developing several IFM projects on select areas within its 11-million-acre land base in the U.S., including two in the South slated for completion in late 2023 or early 2024. As it develops these projects, the company is working with experts at Carbon Direct to ensure that all credits offered will generate real, additional carbon absorbed and stored in project areas. Carbon Direct will provide advisory and marketing services and evaluate Weyerhaeuser projects against the **Criteria for High-Quality Carbon Dioxide Removal**, which provides science-based benchmarks to drive effective, equitable climate action at scale.

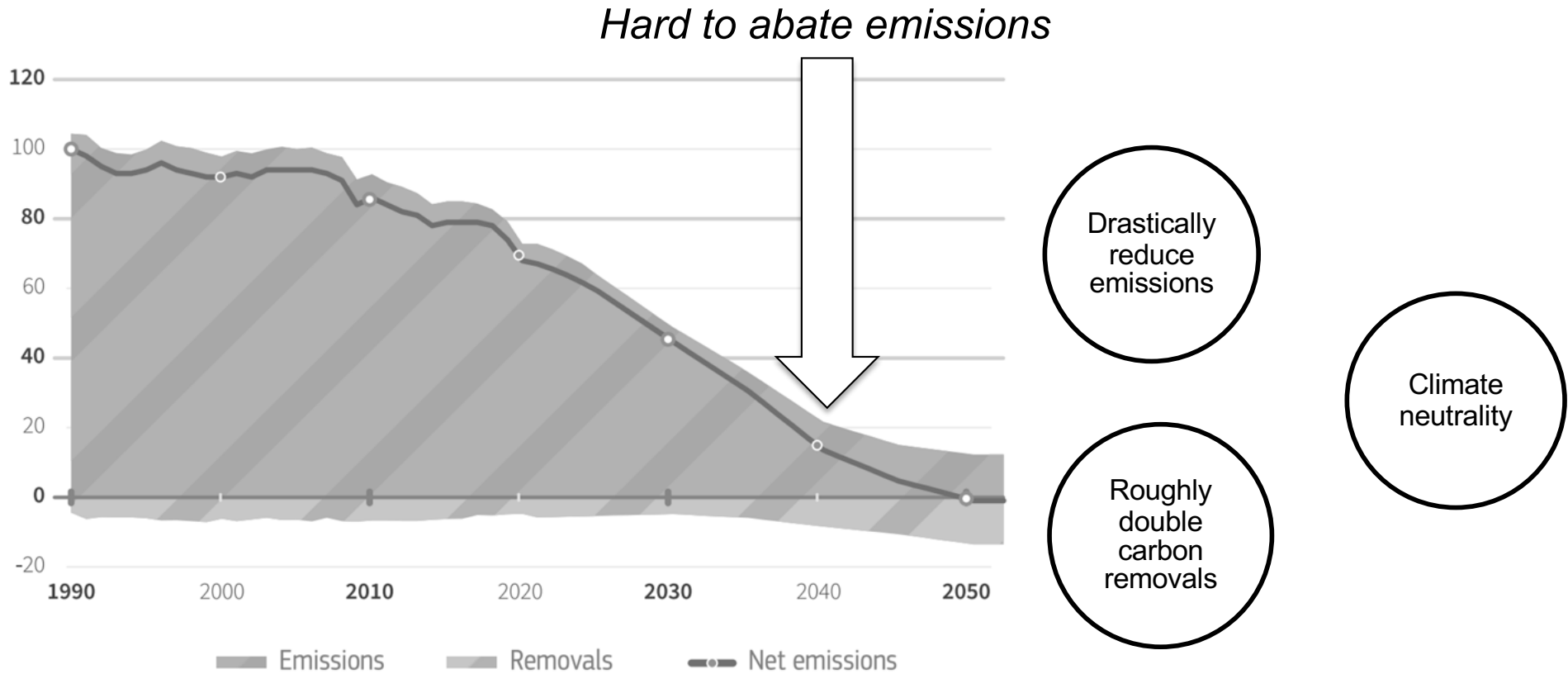


Weyerhaeuser:  
da 20 200 ha  
→ 30 000 mtCO<sub>2</sub>e

Nel lungo periodo, dalla  
stessa area, 475 000  
crediti programmati

<https://investor.weyerhaeuser.com/2023-09-20-Weyerhaeuser-Announces-Approval-of-First-Forest-Carbon-Project>

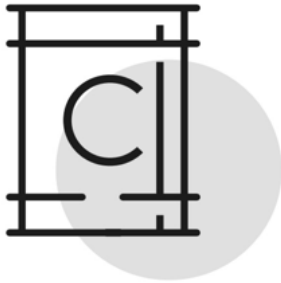
# Motivazioni



*GHG projections for climate neutrality 1990 GHG emissions = 100*  
*Source: EU 2030 Climate Target Plan*

Fonte: *slides* sulla CRC della DGENv

# The 3 sectors considered by the CRC (former “*Carbon Framing Initiative*”)



## PERMANENT STORAGE

*E.g. Bioenergy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCS)*

Incluso il Bio-char



## CARBON FARMING

*E.g. Af-/re-forestation, improved forest management, agroforestry, soil carbon sequestration, peatland restoration*



## CARBON STORAGE IN PRODUCTS

*E.g. Use of wood-based materials in construction, long-lasting Carbon Capture and Utilisation (CCU)*

Un compito ambizioso: 3 gruppi di interesse con obiettivi contrastanti riuniti nello stesso quadro di regole

# I 3 settori considerati dal Regolamento CRC (prima “*Carbon Framing Initiative*”)



## PERMANENT STORAGE

*E.g. Energy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCS)*

Incluso il Bio-char  
(dopo 2030)



## CARBON FARMING

*E.g. Af-/re-forestation, improved forest management, agroforestry, soil carbon sequestration, peatland restoration*



## CARBON STORAGE IN PRODUCTS

*E.g. Use of wood-based materials in construction, long-lasting Carbon Capture and Utilisation (CCU)*

Nella attuale discussione in Parlamento questo 3° settore è posto in forte discussione

# I 3 settori considerati dal Regolamento CRC (prima “*Carbon Framing Initiative*”)



## PERMANENT STORAGE

*E.g. Energy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCS)*

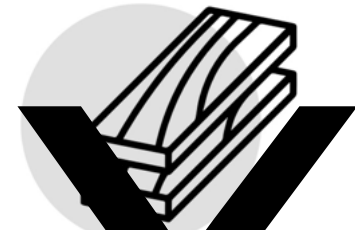
Incluso il Bio-char  
(dopo 2030)



## CARBON FARMING

*E.g. Af-/re-forestation, improved forest management, agroforestry, soil carbon sequestration, peatland restoration*

In questa situazione:  
**estensivazione** gestione forestale (t lunghi, > stock, conversione cedui, ...)



## CARBON STORAGE IN PRODUCTS

*E.g. Use of wood-based materials in construction, long-lasting Carbon Capture and Utilisation (CCU)*

Fonte: EC DGEnv

**+ stock**



# I 3 settori considerati dal Regolamento CRC (prima “*Carbon Framing Initiative*”)



## PERMANENT STORAGE

*E.g. Energy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCS)*

Incluso il Bio-char  
(dopo 2030)



## CARBON FARMING

*E.g. Af-/re-forestation, improved forest management, agroforestry, soil carbon sequestration, peatland restoration*



## CARBON STORAGE IN PRODUCTS

*E.g. Use of wood-based materials in construction, long-lasting Carbon Capture and Utilization (CCU)*

In questa situazione: **intensivazione** gestione forestale: aumentare la produttività producendo più biomassa per impieghi extraboschivi

Fonte: EC DGEnv

**+ flow**

**+ stock**

## ... e quindi diversi *business model*:

***Business as Usual***: il mercato dei crediti è effimero e incerto. Proseguiamo come nel passato: la domanda di prodotti legnosi e di attività ricreative, sportive, culturali, salutistiche, ... sono in espansione

Gestire le foreste per **produrre crediti dall'incremento degli *stock***; possibilità anche di **crediti da biodiversità**

Gestiamo la filiera **producendo crediti forestali e da prodotti a lungo ciclo. Co-benefici** da mantenere nei **livelli minimi consentiti**

# **In ogni caso...**

Diamoci una mossa  
perché presto il settore  
forestale si troverà a  
competere con quello  
energetico...

### CLIMATE CHANGE AND ENERGY

## The US just invested more than \$1 billion in carbon removal

The move represents a big step in the effort to suck CO<sub>2</sub> out of the atmosphere—and slow down climate change.

By James Temple

August 11, 2023

The US Department of Energy announced today that it's providing \$1.2 billion to develop regional hubs that can draw down and store away at least 1 million metric tons of carbon dioxide per year as a means of combating climate change.

The move represents a major step forward in the effort to establish a market for removing the planet-warming greenhouse gas from the atmosphere, using what are known as direct air capture (DAC) machines.

<https://www-technologyreview-com.cdn.ampproject.org/>



PRESS RELEASES 09/27/23

## Trace Carbon Solutions and Molpus Woodlands Group Announce the Evergreen Sequestration Hub in Louisiana

- *Evergreen Sequestration Hub is strategically located near significant industrial emissions sources in Southwest Louisiana and Southeast Texas*
- *Estimated total sequestration capacity of over 250 million metric tons of CO<sub>2</sub>*

### **FOR IMMEDIATE RELEASE September 27, 2023**

Trace Carbon Solutions, LLC (Trace) and Molpus Woodlands Group (Molpus), on behalf of a client, announced today that they have signed a servitude agreement providing Trace with exclusive rights to develop and operate a carbon sequestration site, to be called the Evergreen Sequestration Hub (Evergreen Hub), on approximately 20,000 acres in Calcasieu and Beauregard parishes in Louisiana. Trace will use the site to permanently sequester industrial CO<sub>2</sub> in underground geologic formations, while Molpus will continue to manage the aboveground acreage as a sustainably managed working forest.

# In ogni caso...

Diamoci una mossa  
perché presto il settore  
forestale si troverà a  
competere con quello  
energetico ...

... e non è difficile  
immaginare chi sia più a  
rischio di soccombere!

