



PROT-NORTE
PROGRAMA REGIONAL DE ORDENAMENTO DO TERRITÓRIO

PROT-NORTE

Discussão Pública

ABC – Água, Biodiversidade e Carbono

Porto

28 de outubro de 2024, 14:30h

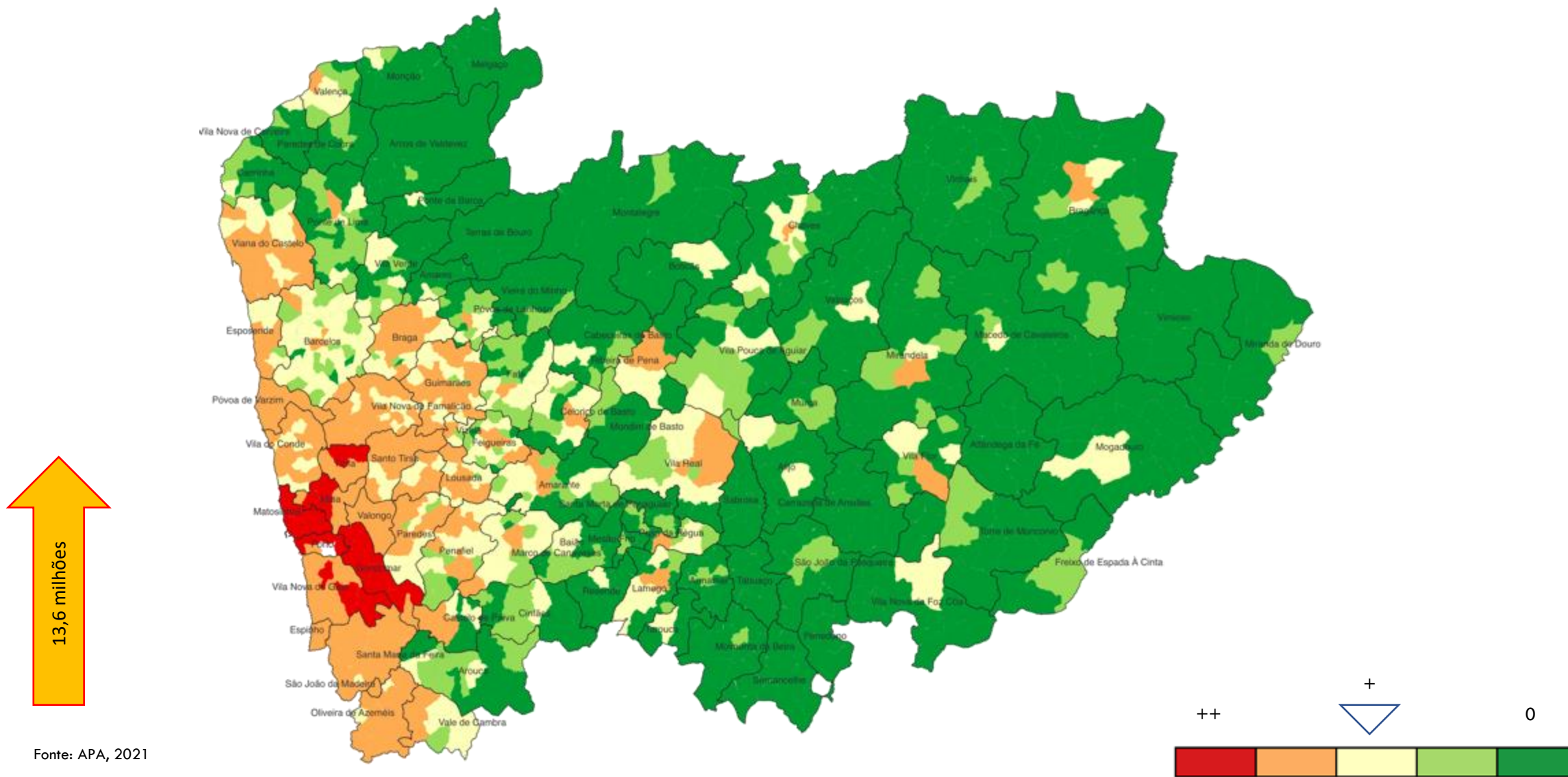
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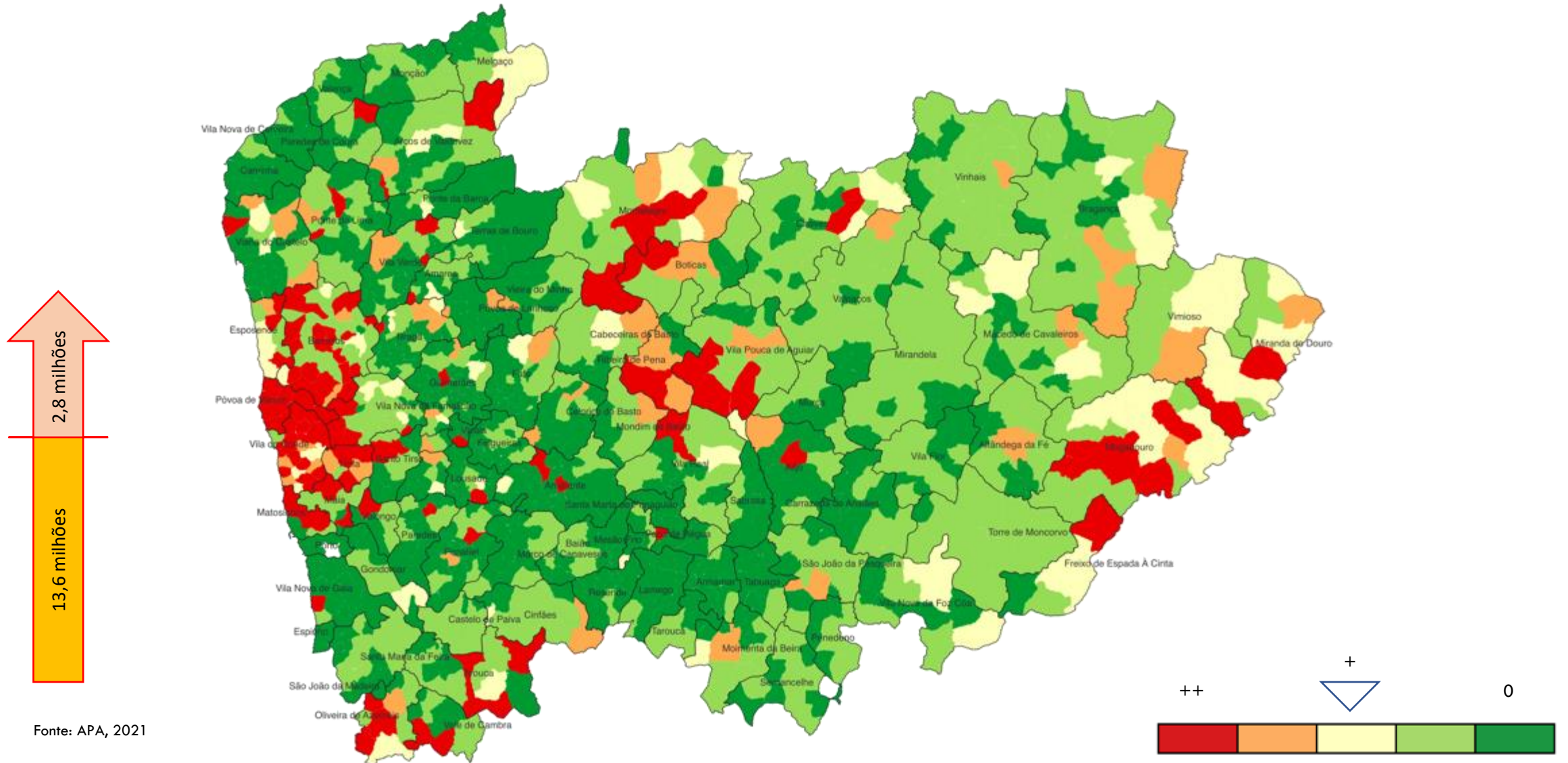
PROT-NORTE
**ABC – Água, Biodiversidade e
Carbono**

Rui Ribeiro – Centro de Engenharia e Desenvolvimento (CEiA)

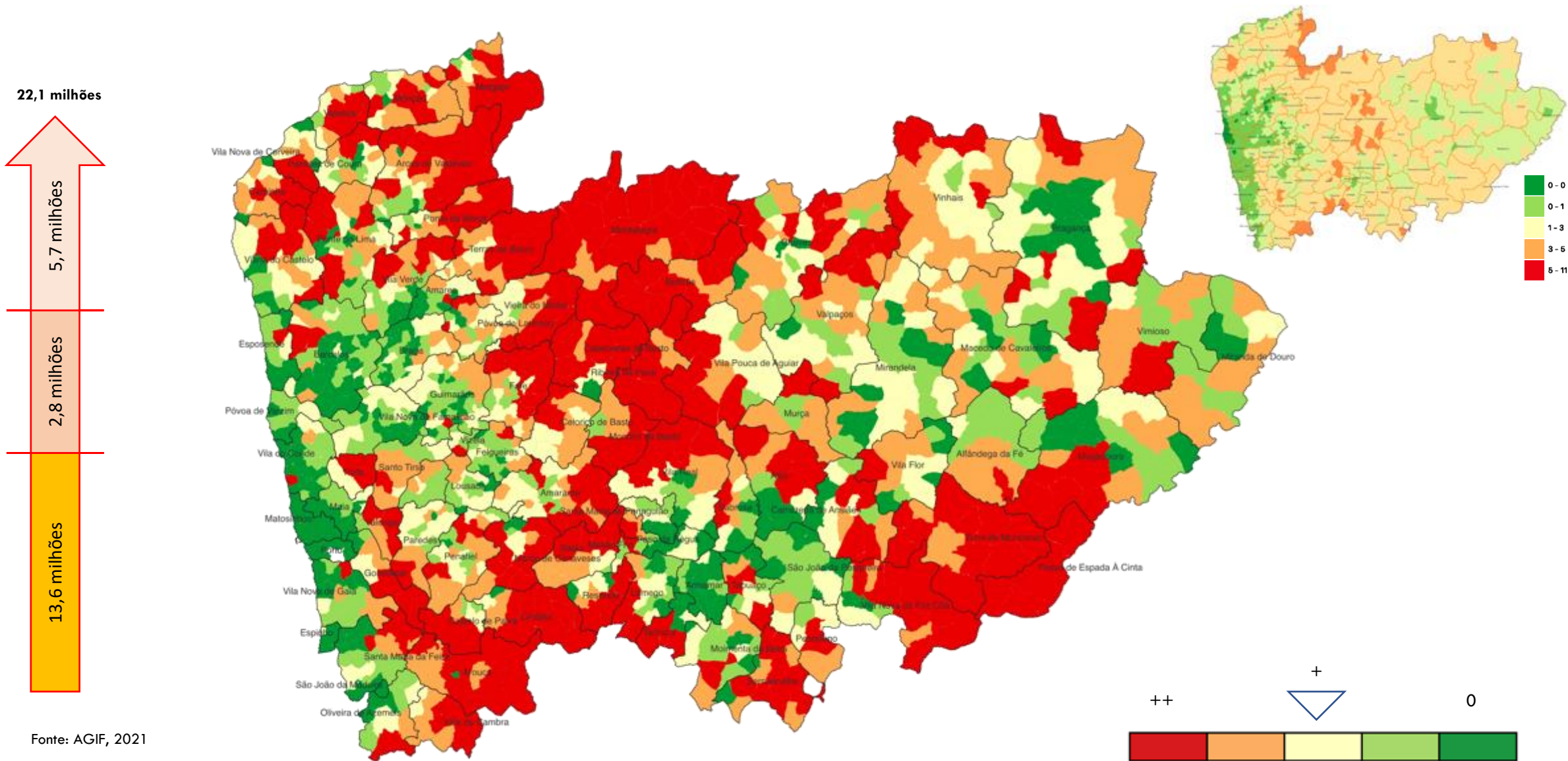
Emissões de base “essencialmente urbana” (ton CO₂eq. /ano)



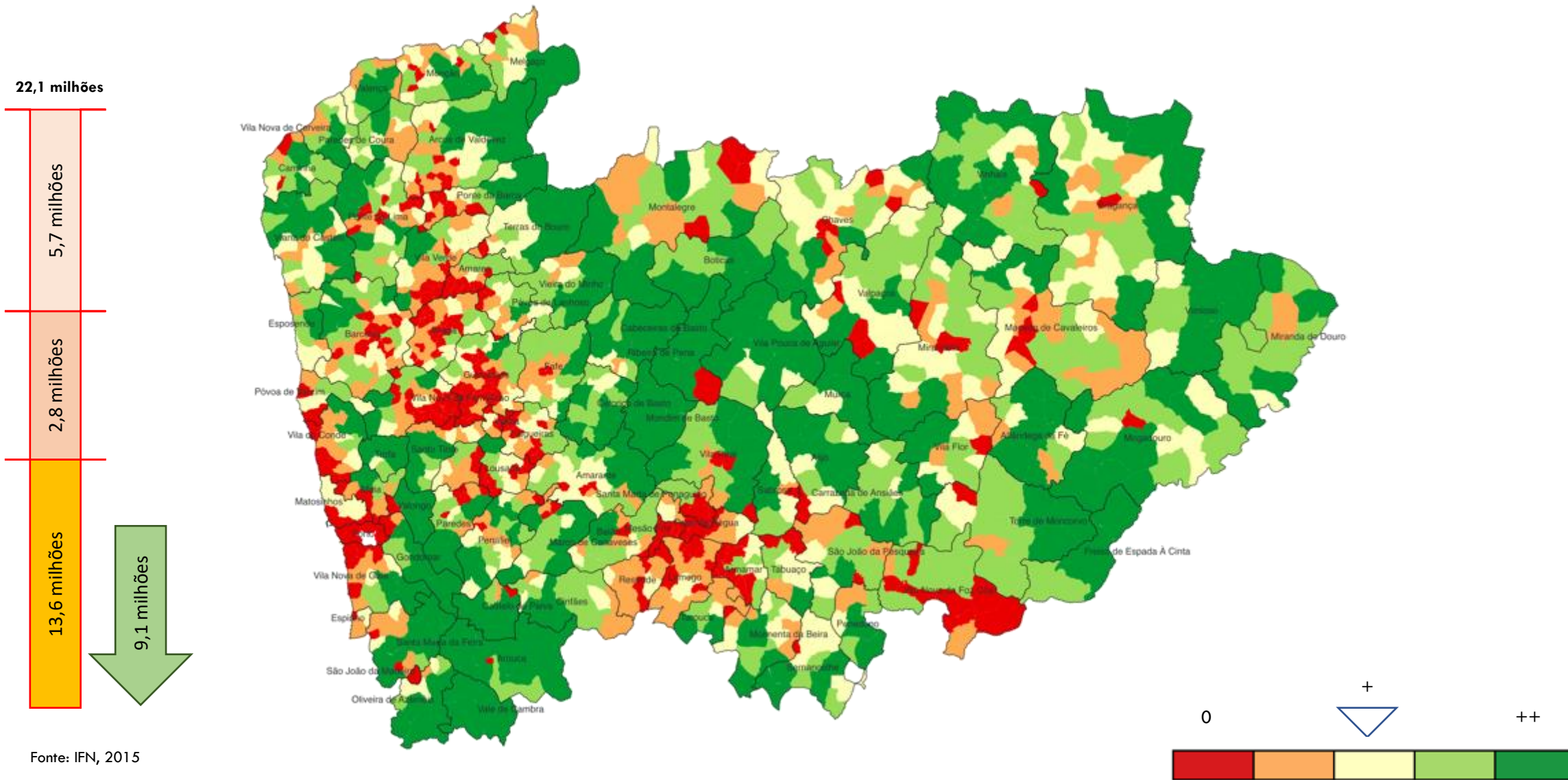
Emissões da agricultura (ton CO₂eq. /ano)



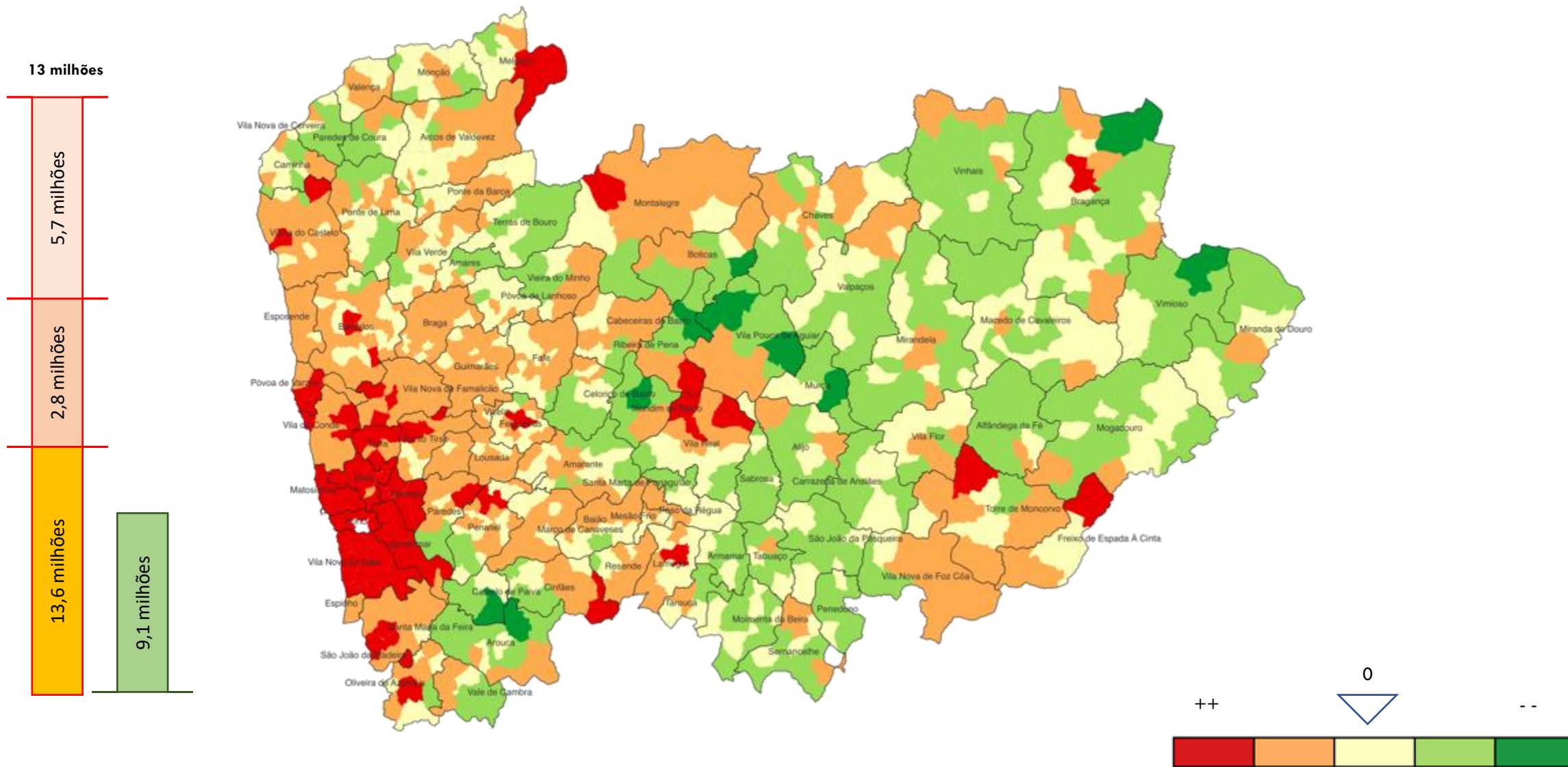
Emissões dos incêndios (ton CO₂eq. /ano)



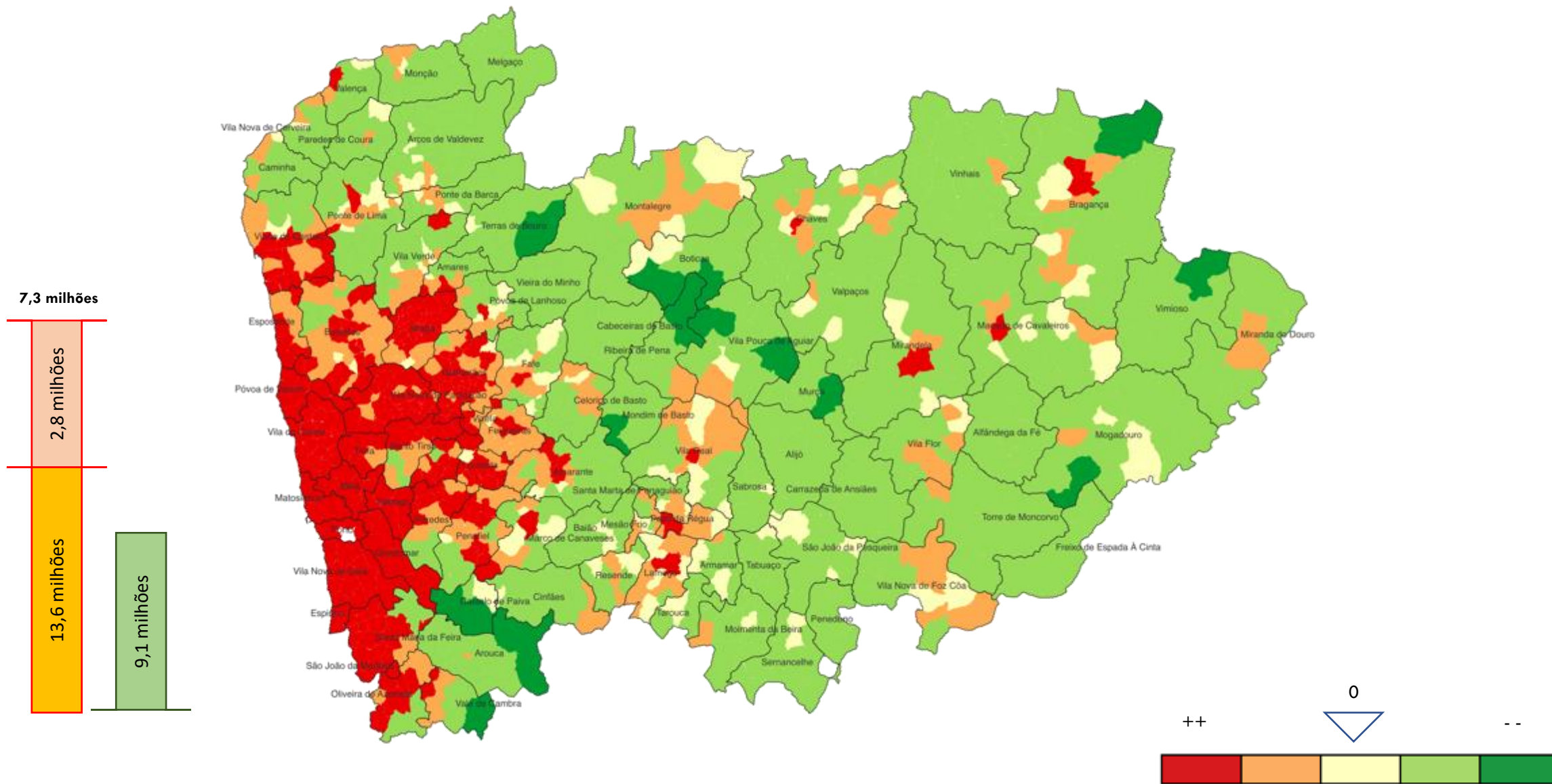
Sequestro pelo crescimento anual da biomassa florestal (ton CO₂eq. /ano)

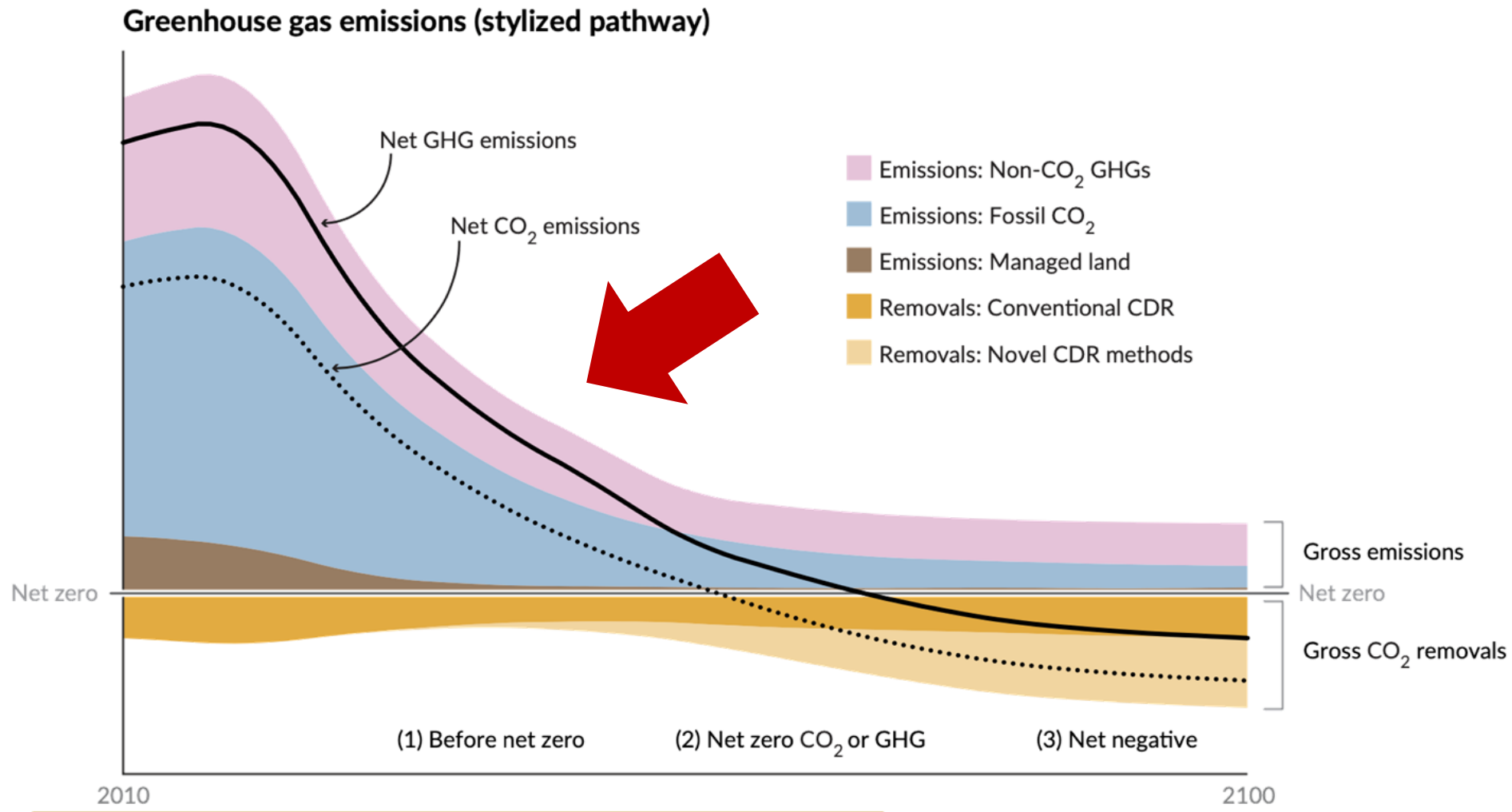


Balanço de emissões (ton CO₂eq. /ano)

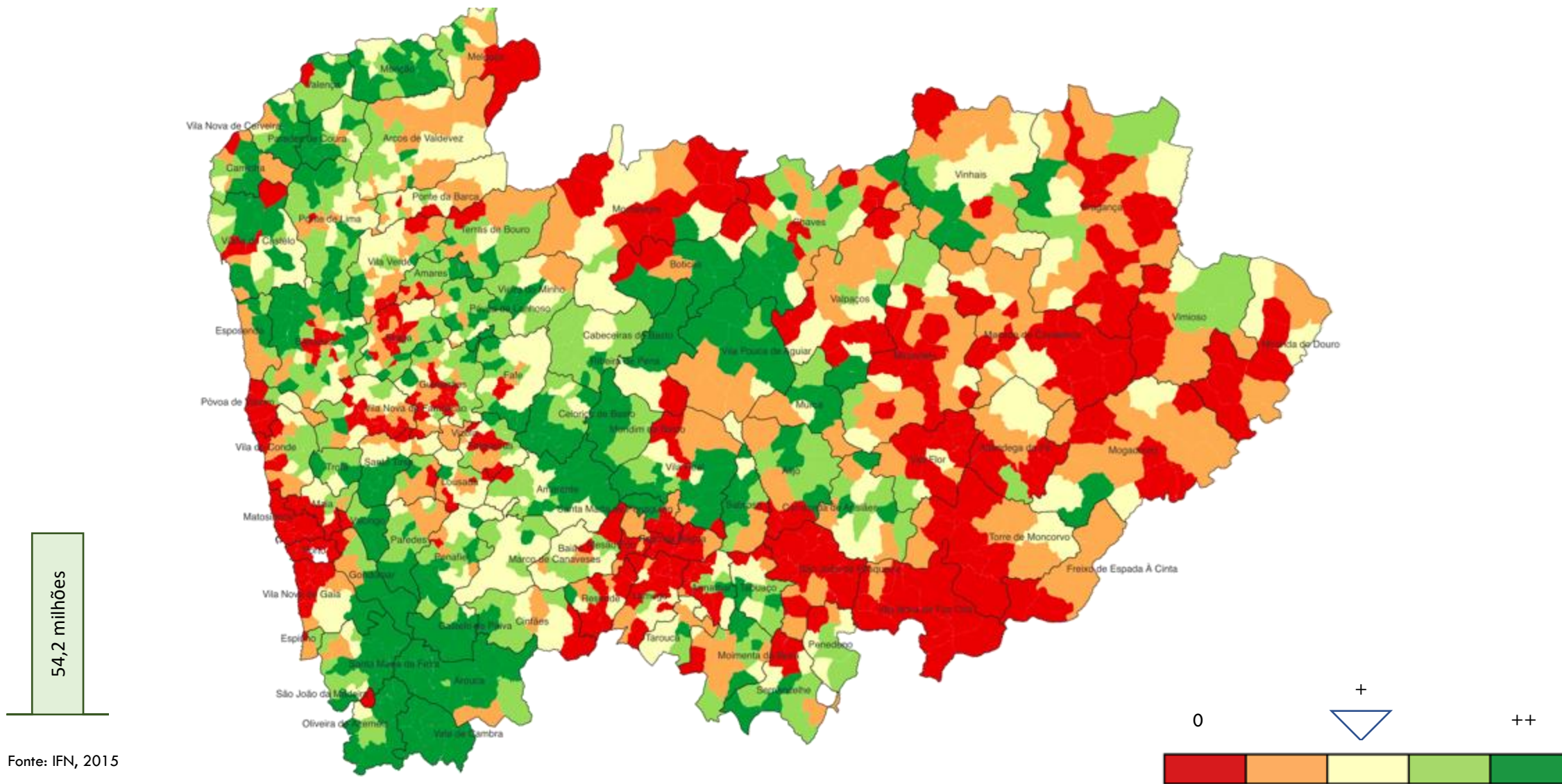


Balanço de emissões, sem incêndios (ton CO₂eq. /ano)

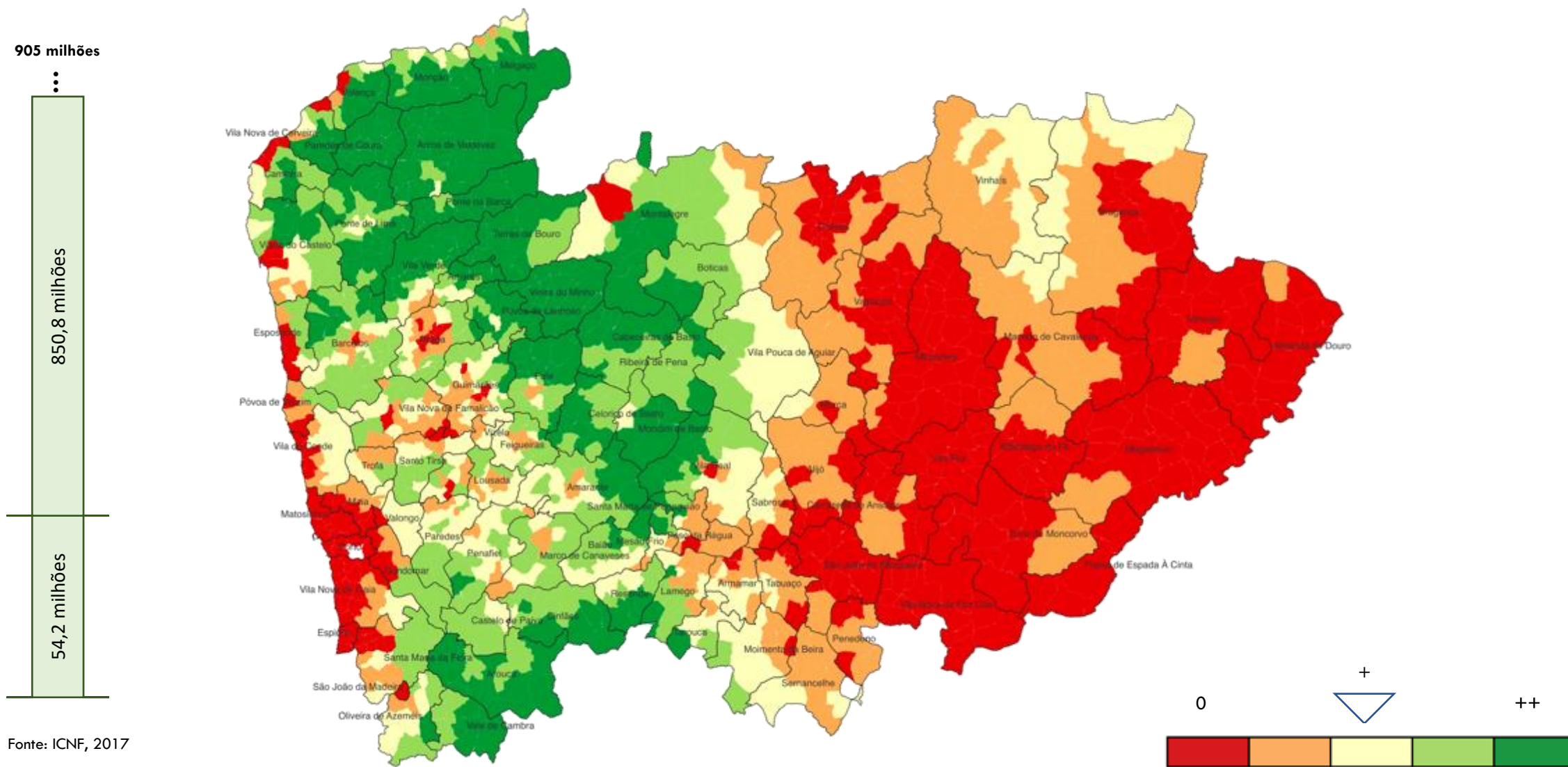




Stock da biomassa (ton CO₂eq.)

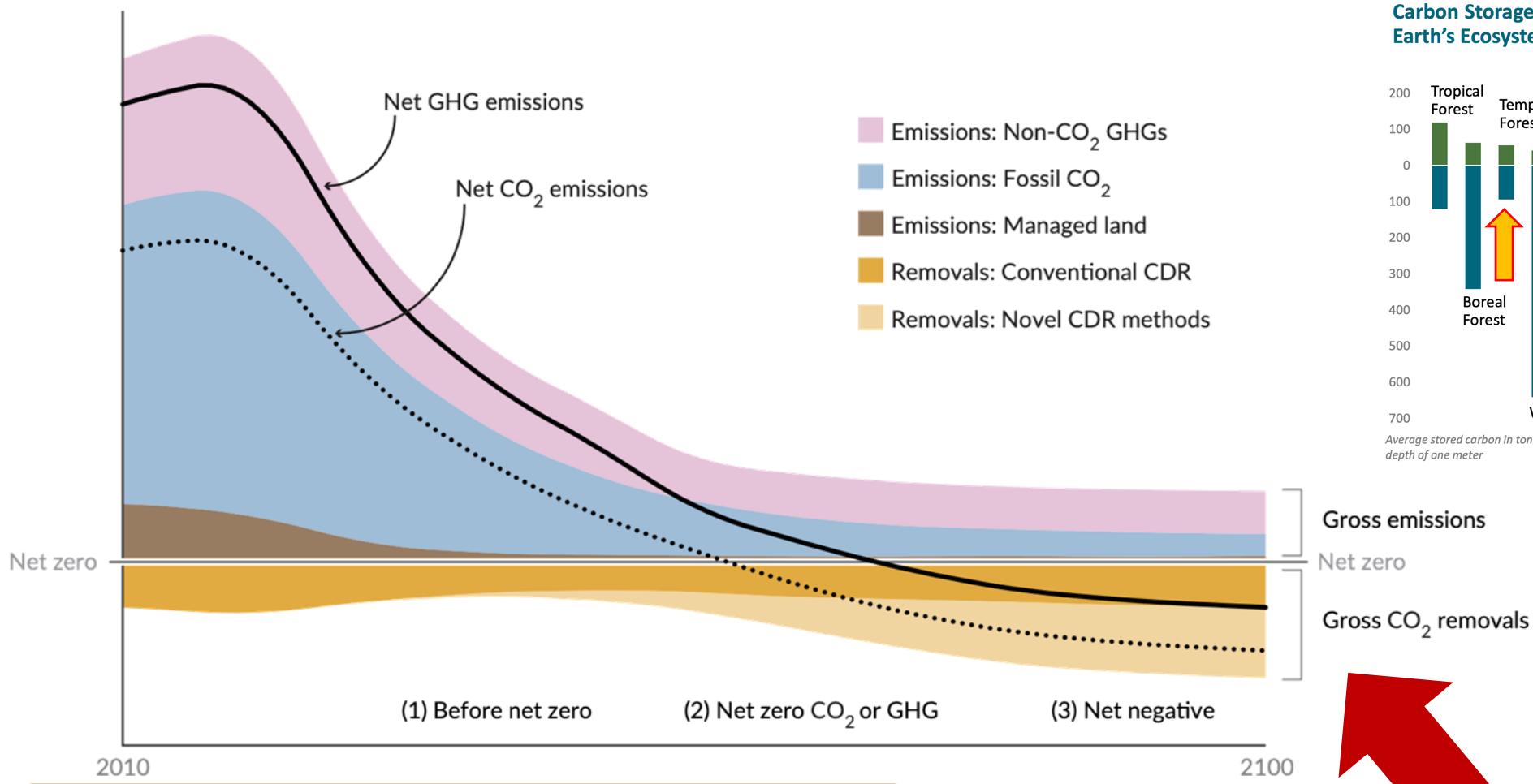


Stock na matéria orgânica do solo (ton CO₂eq.)

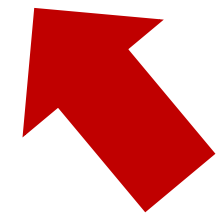
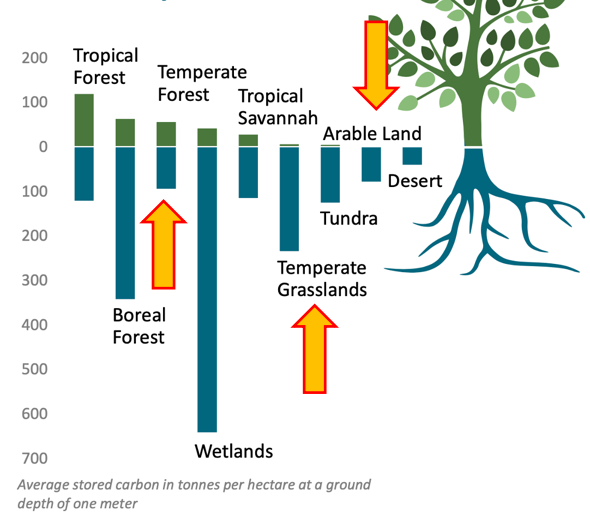


Fonte: ICNF, 2017

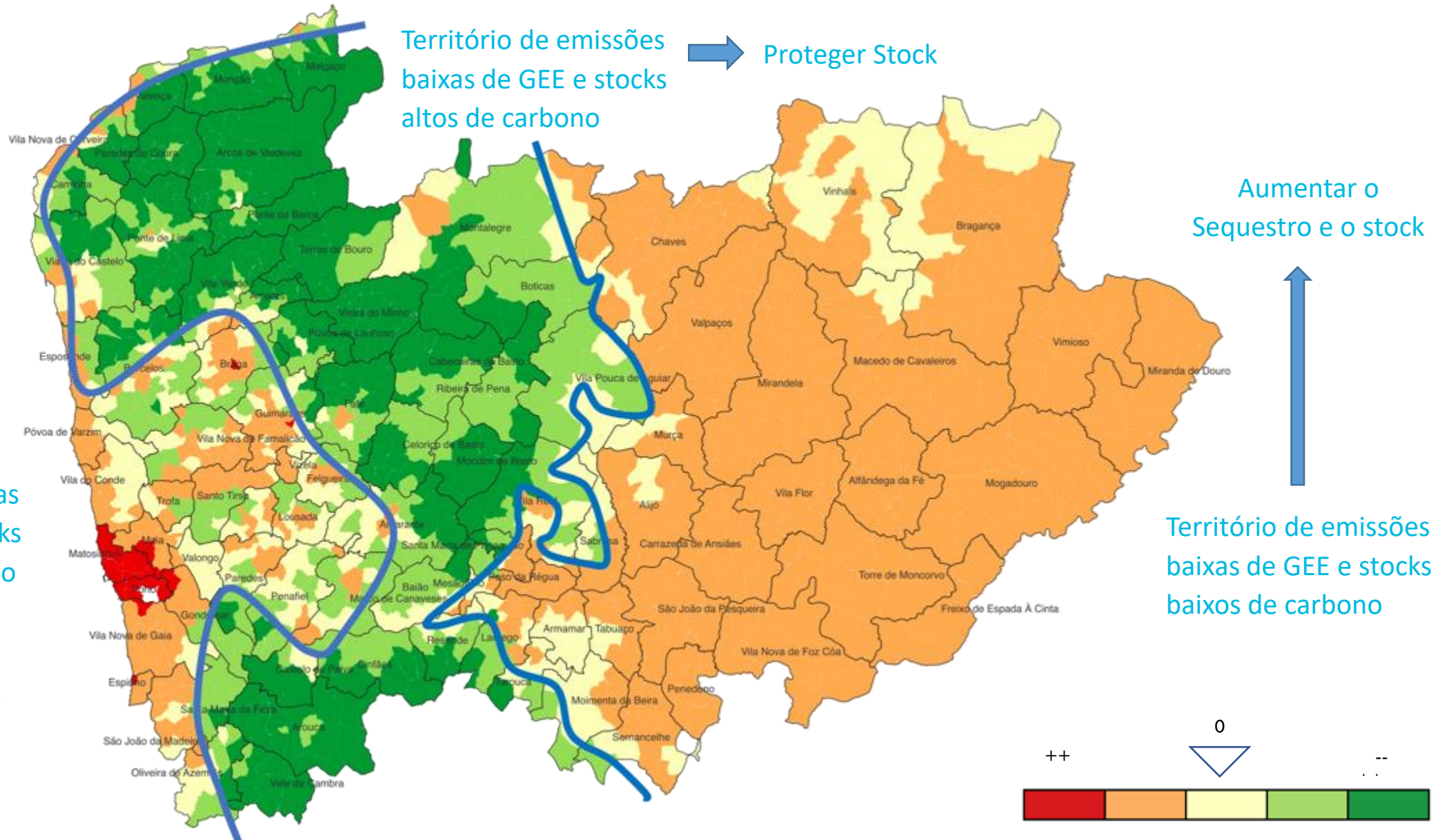
Greenhouse gas emissions (stylized pathway)

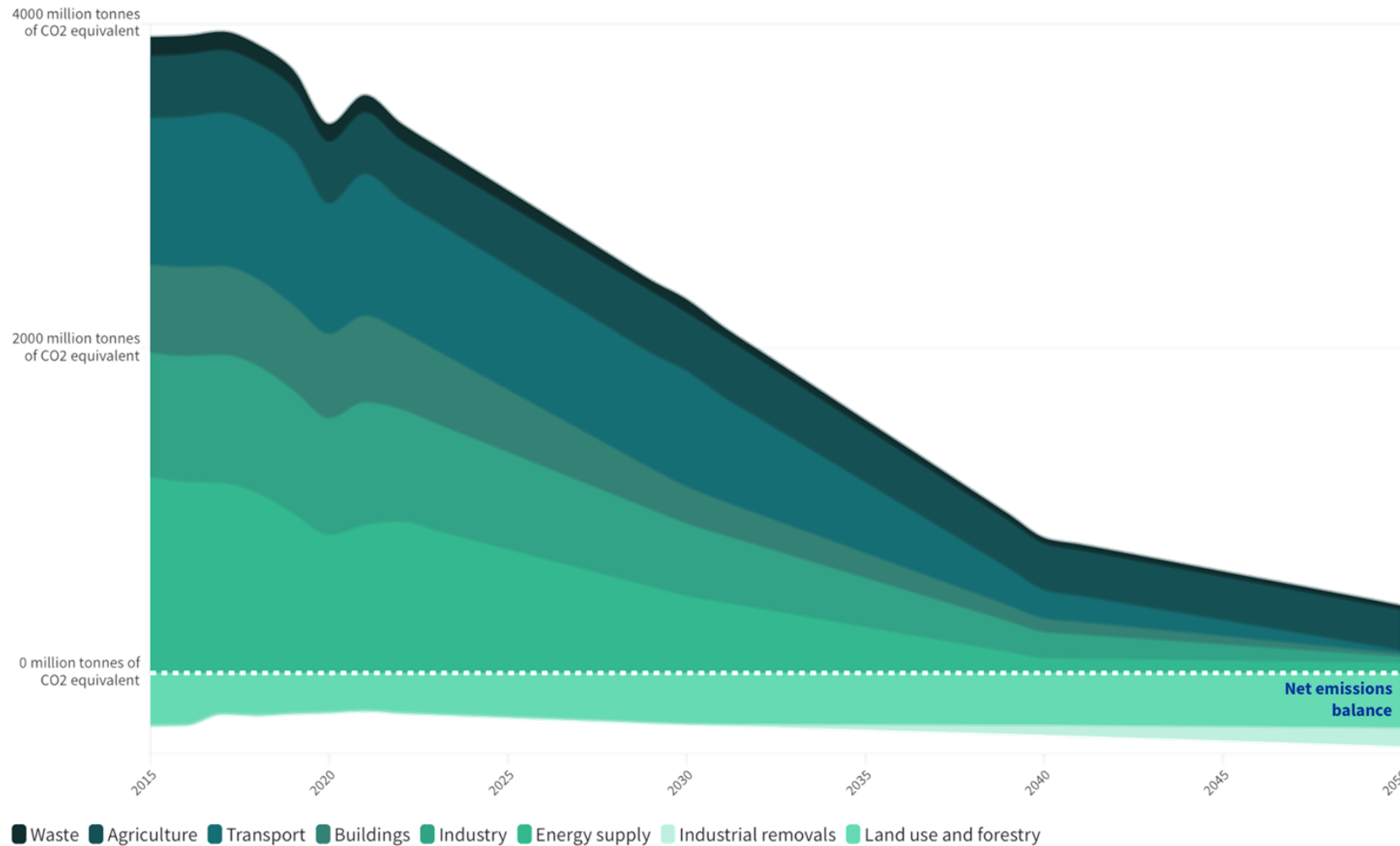


Carbon Storage in Earth's Ecosystems



Fonte: Smith et al. 2024, The State of Carbon Dioxide Removal 2024 - 2nd Edition. Oxford University





The European Green Deal

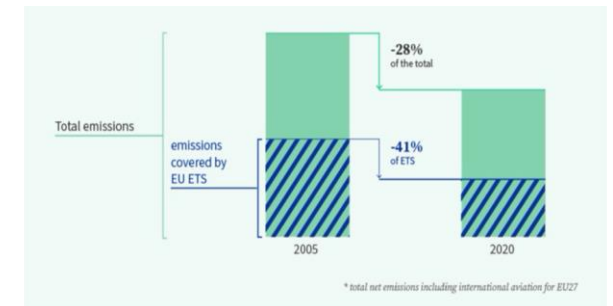
Striving to be the first climate-neutral continent

Key figures

The first climate-neutral continent by 2050

At least 55% less net greenhouse gas emissions by 2030, compared to 1990 levels

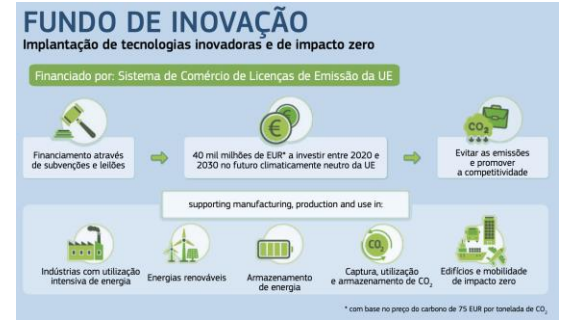
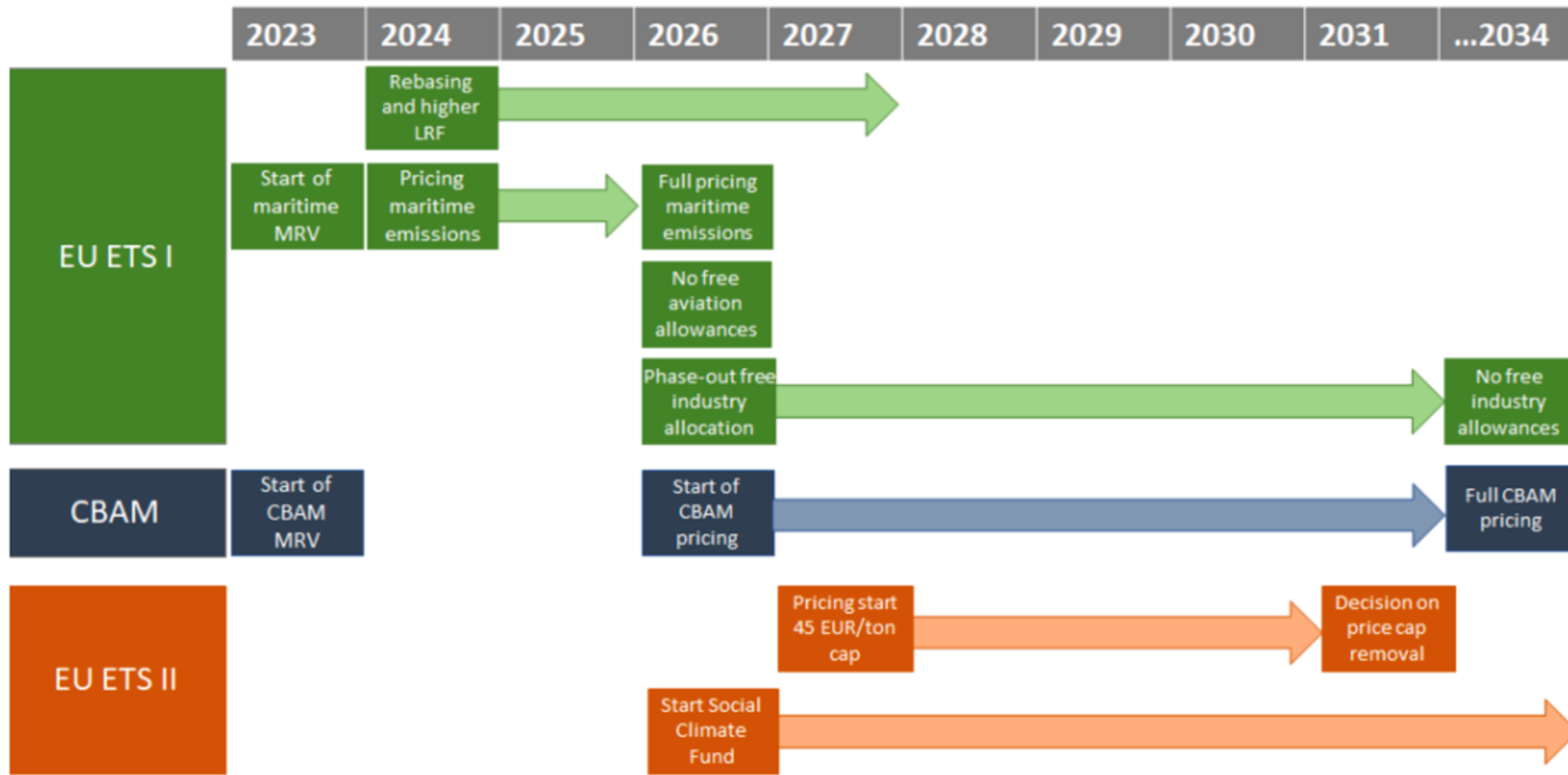
3 billion additional trees to be planted in the EU by 2030



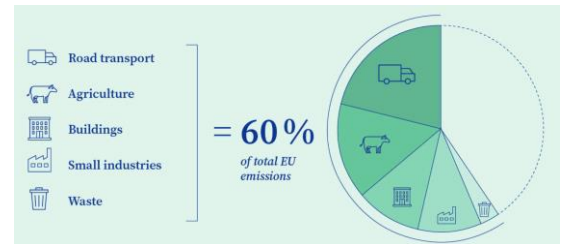
EU Carbon Permits (EUR) 73.310 4.070 (+5.88%)



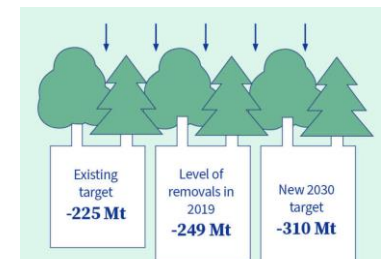
Mitigar as emissões no litoral urbano da Região Norte



Effort Sharing Segulation (ESR)



Land Use, Land Use Change and Forestry (LULUCF)



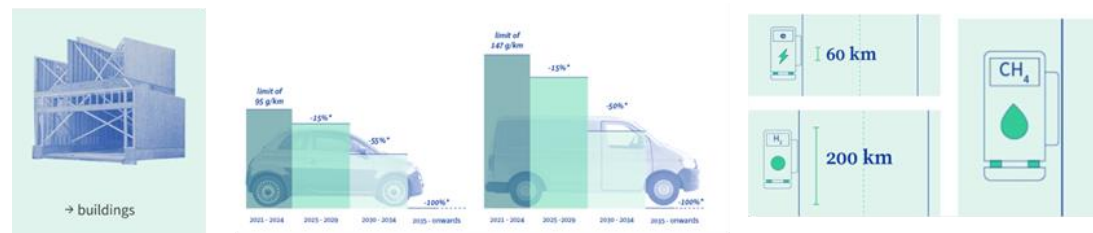
Two-phase approach

- Phase 1 until 2025: the current system remains largely in place, with the obligation for each member state to balance emissions and removals.
- Phase 2 from 2026-2030: a new EU-level target for net removals of 310 Mt, with member states' targets for net removals contributing to the increased ambition.

Devex Dish: Lessons from Denmark's carbon tax on livestock farming

Denmark leads the charge with a world-first tax on agricultural greenhouse gases. Plus, Latin America leads on food warning labels, and preparing for the Nutrition for Growth Summit.

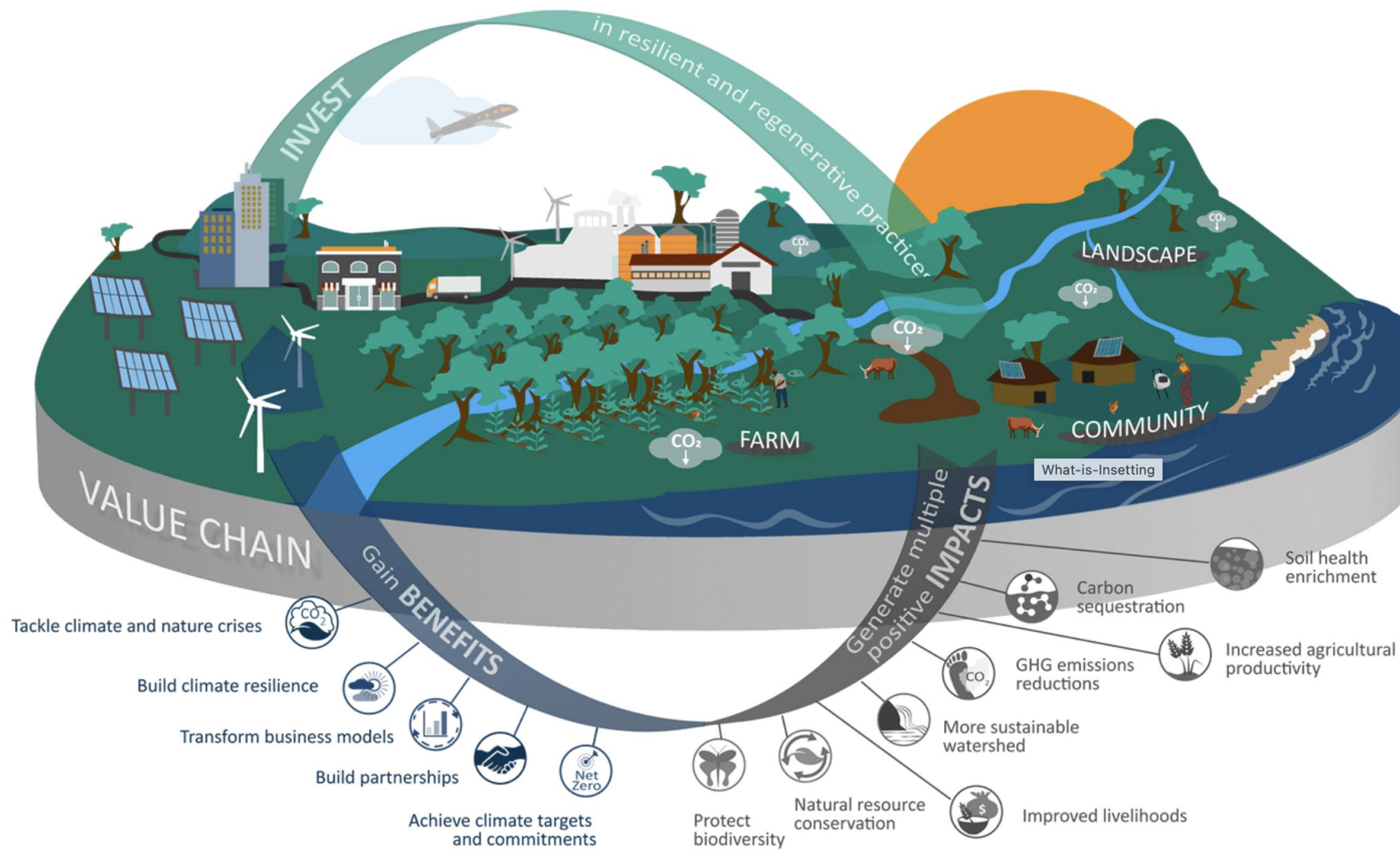
By *Tamia Karas* // 10 July 2024



Processo no qual o dióxido de carbono (CO₂) é removido da atmosfera pela **efetiva atividade humana** e armazenado de forma **adicional, permanente** (ou pelo menos de forma duradoura) e **sem impactos negativos** nos ecossistemas e comunidades locais (preferencialmente com impactos positivos nos ecossistemas e comunidades locais), **em reservatórios geológicos e pedológicos, terrestres ou oceânicos, ou em produtos**. Este processo também é conhecido como **remoção de carbono, remoção de gases de efeito estufa** ou **emissões negativas**.

Inclui o aumento antrópico existente e potencial de sumidouros biológicos ou geoquímicos de CO₂ e captura e armazenamento direto de dióxido de carbono do ar (DACCS), mas **exclui** a absorção natural de CO₂ não causada diretamente por atividades humanas

Fonte: Adaptado de IPCC 2021: Climate Change – The Physical Science Basis (AR6) e EU Certification on Carbon Removals – Green Deal





Carbon Farming

Including carbon storage and emission reduction from soil management

carbon naturally stored on land through activities that **enhance carbon capture in soils and forests** (e.g. agro-forestry, forest restoration, better soil management), and/or **reduce the release of carbon from soils to the atmosphere** (e.g. restoration of peatland)



Permanent Storage

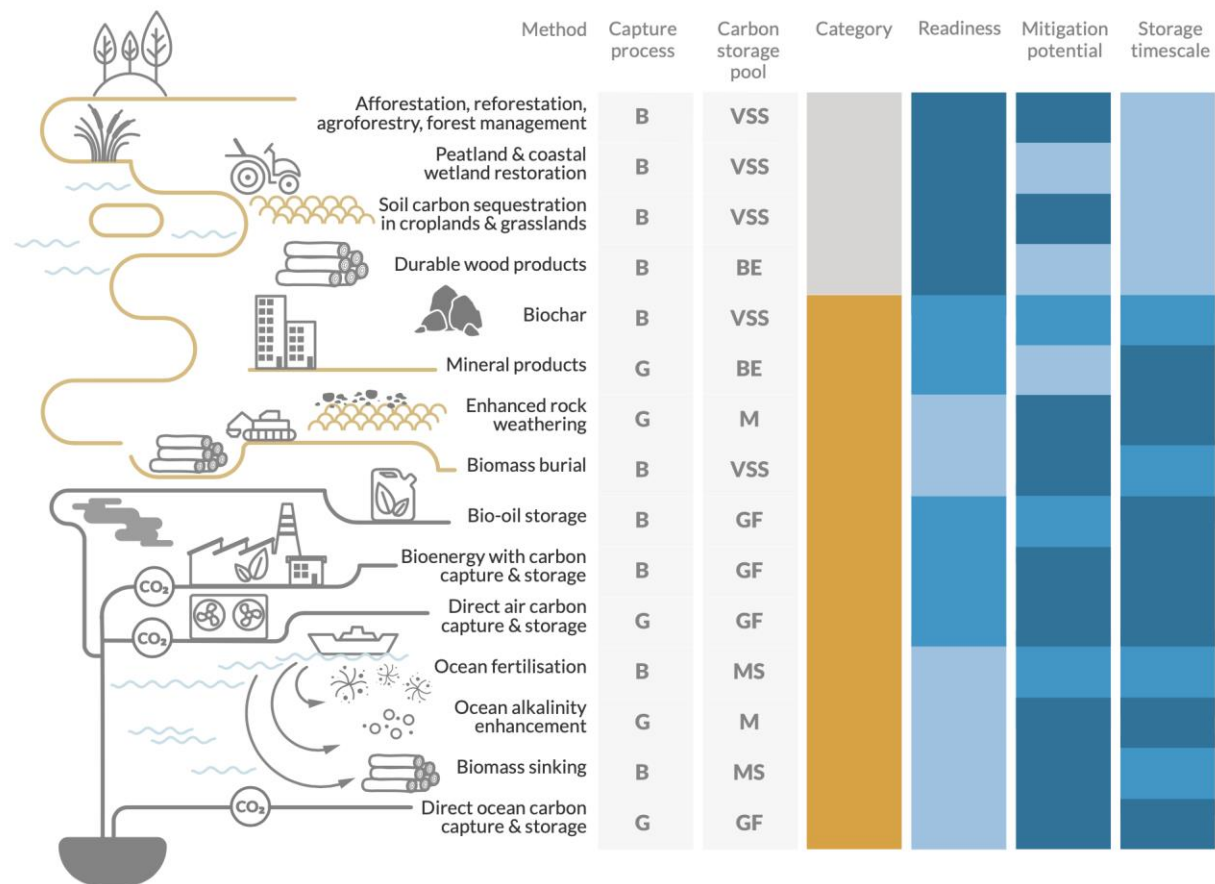
industrial technologies such as **BECCS** (bio-energy with carbon capture and storage) or **DACCS** (Direct Air Capture with Capture and Storage), **capture carbon** from the air either **indirectly** (through the processing of biomass in the case of BECCS) or **directly** (in the case of DACCS) and **store it in a stable form**



Carbon storage in products

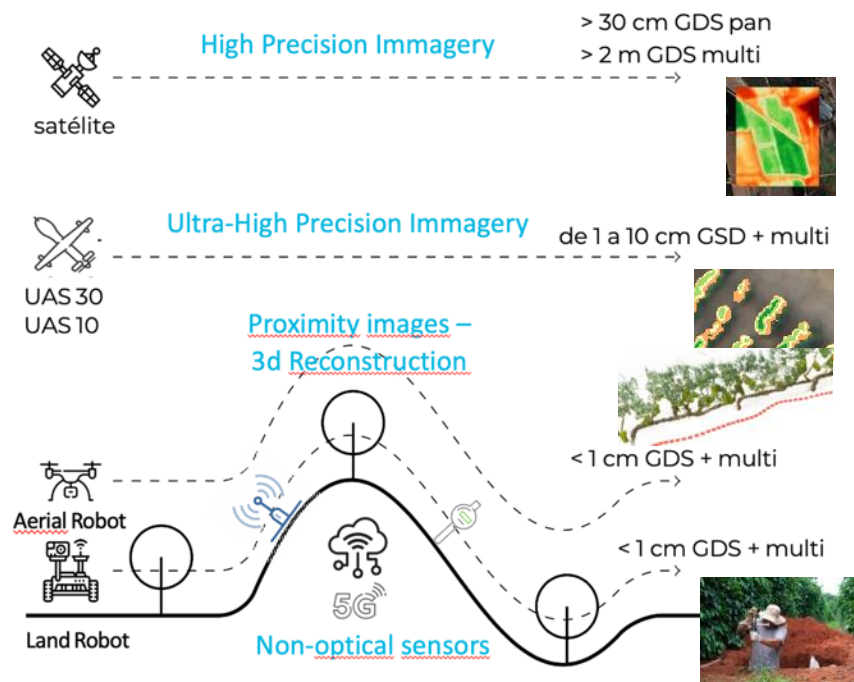
atmospheric carbon captured by trees or industrial technologies can also be used and stored in **long-lasting products and materials**, such as wood-based or carbonate-bonded construction materials.

On 10 April 2024, the European Parliament adopted the **provisional agreement on the Carbon Removals and Carbon Farming (CRCF) Regulation**, which created the first EU-wide voluntary framework for certifying carbon removals, carbon farming and carbon storage in products across Europe.



Legend:

B Biological	VSS Vegetation, soils and sediments	■ Conventional	■ High	■ Large	■ > Ten millennia
G Geochemical	BE Built environment	■ Novel	■ Medium	■ Moderate	■ Centuries to millennia
	GF Geological formations		■ Low	■ Small	■ Decades to centuries
	MS Marine sediments				
	M Minerals				



Medir o impacto de projetos que têm um efeito de remoção de carbono ou proteção de estoque é crítico para fornecer evidências do sucesso dessas iniciativas. Para que sejam aceitos como tendo um impacto, eles terão que garantir a medição e a evidência de:



QUANTIFICAÇÃO



SEM DUPLA CONTAGEM



ARMAZENAMENTO
DURÁVEL



COM CO-BENEFÍCIOS



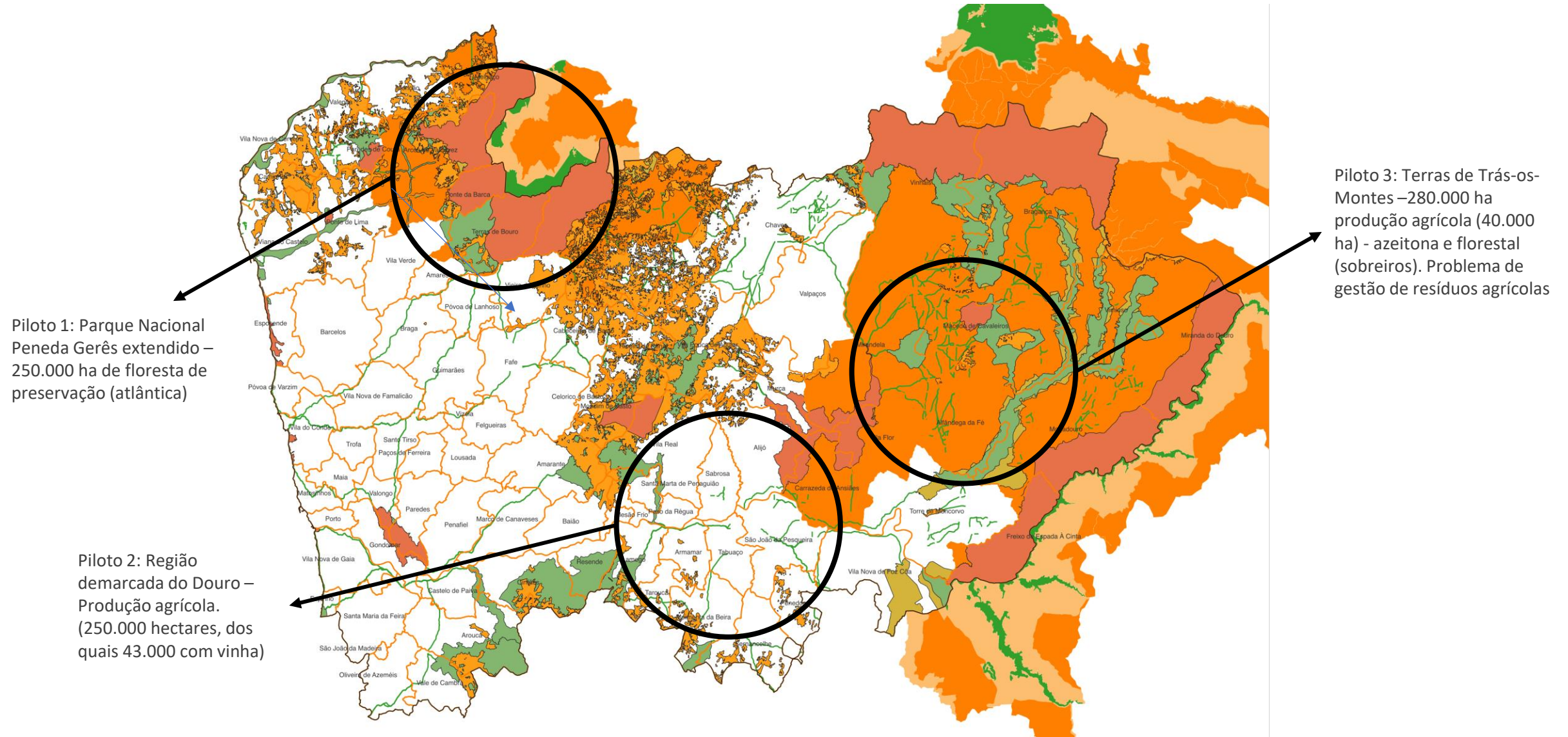
ADICIONAL

Princípio 1: O CO₂ removidos deve vir da atmosfera, não de fontes fósseis

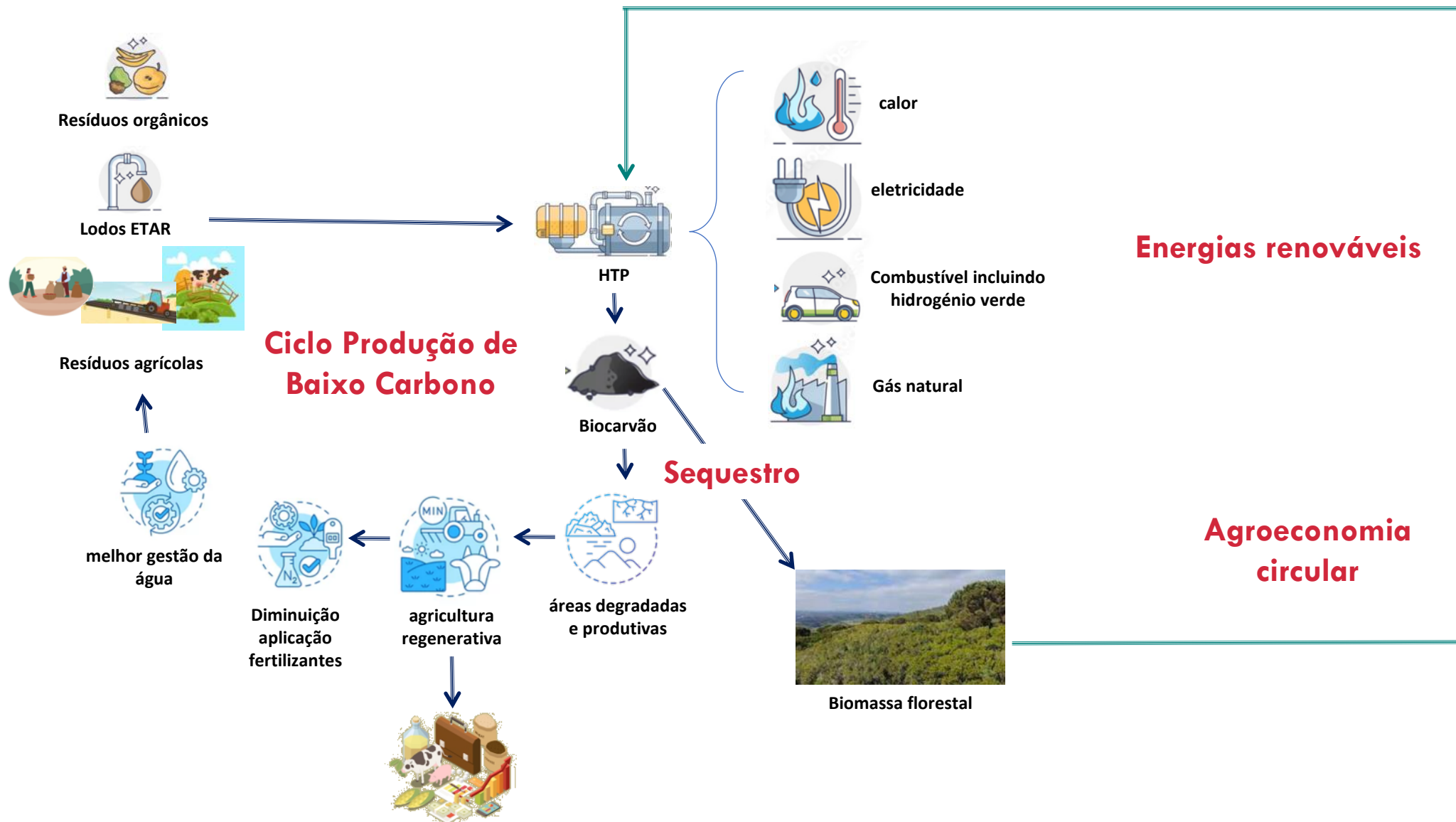
Princípio 2: O armazenamento subsequente deve ser durável, de modo que o CO₂ não seja reintroduzido na atmosfera em breve

Princípio 3: A remoção deve ser resultado de intervenção humana, adicional aos processos naturais da Terra

Observatório de medição de stock e impacto de pilotos



Projetos de Impacto Integrados



Um PROT do Norte, com o Norte,
para um Norte mais coeso.

Obrigad@!

PROT com (o) NORTE