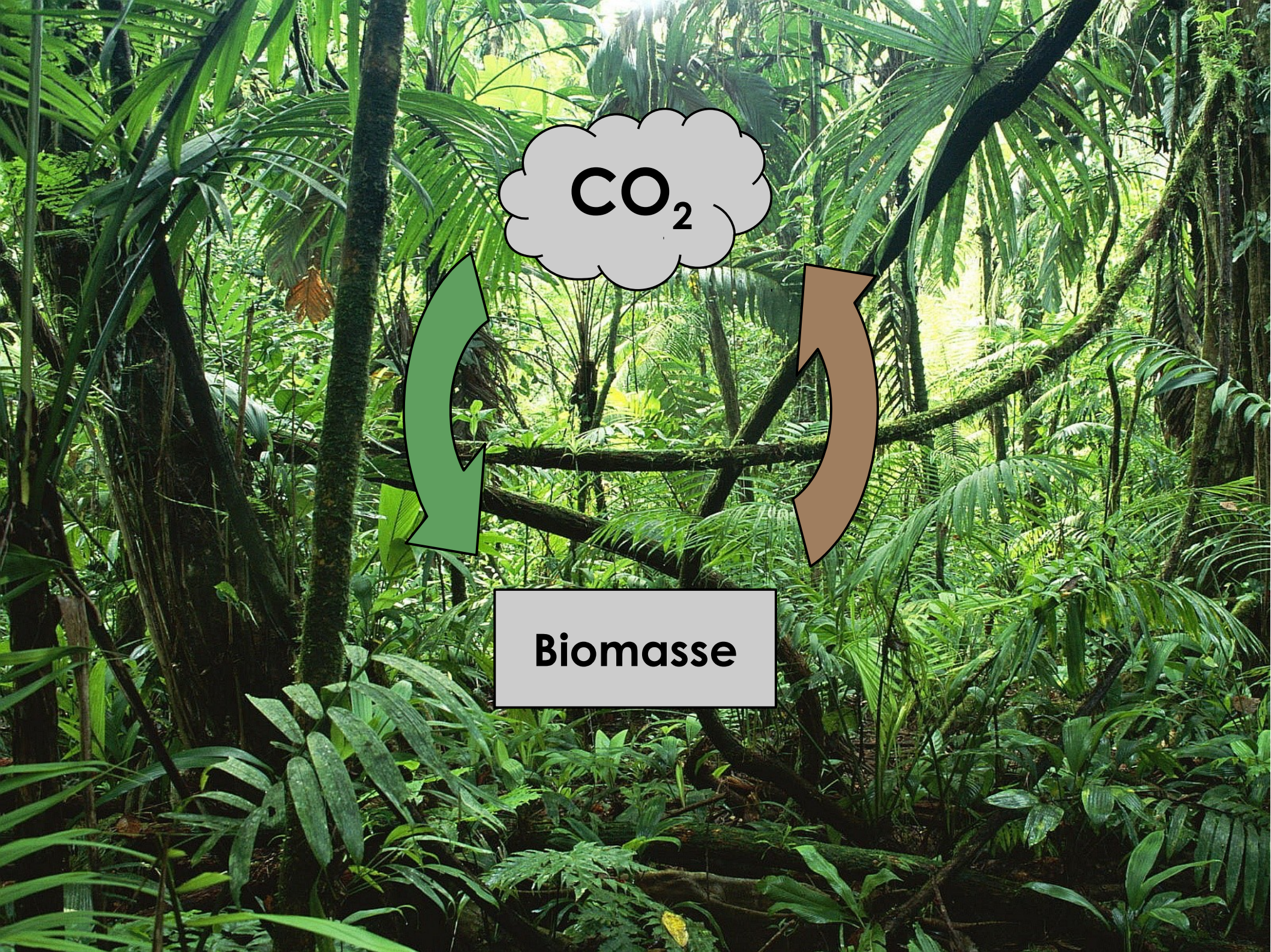
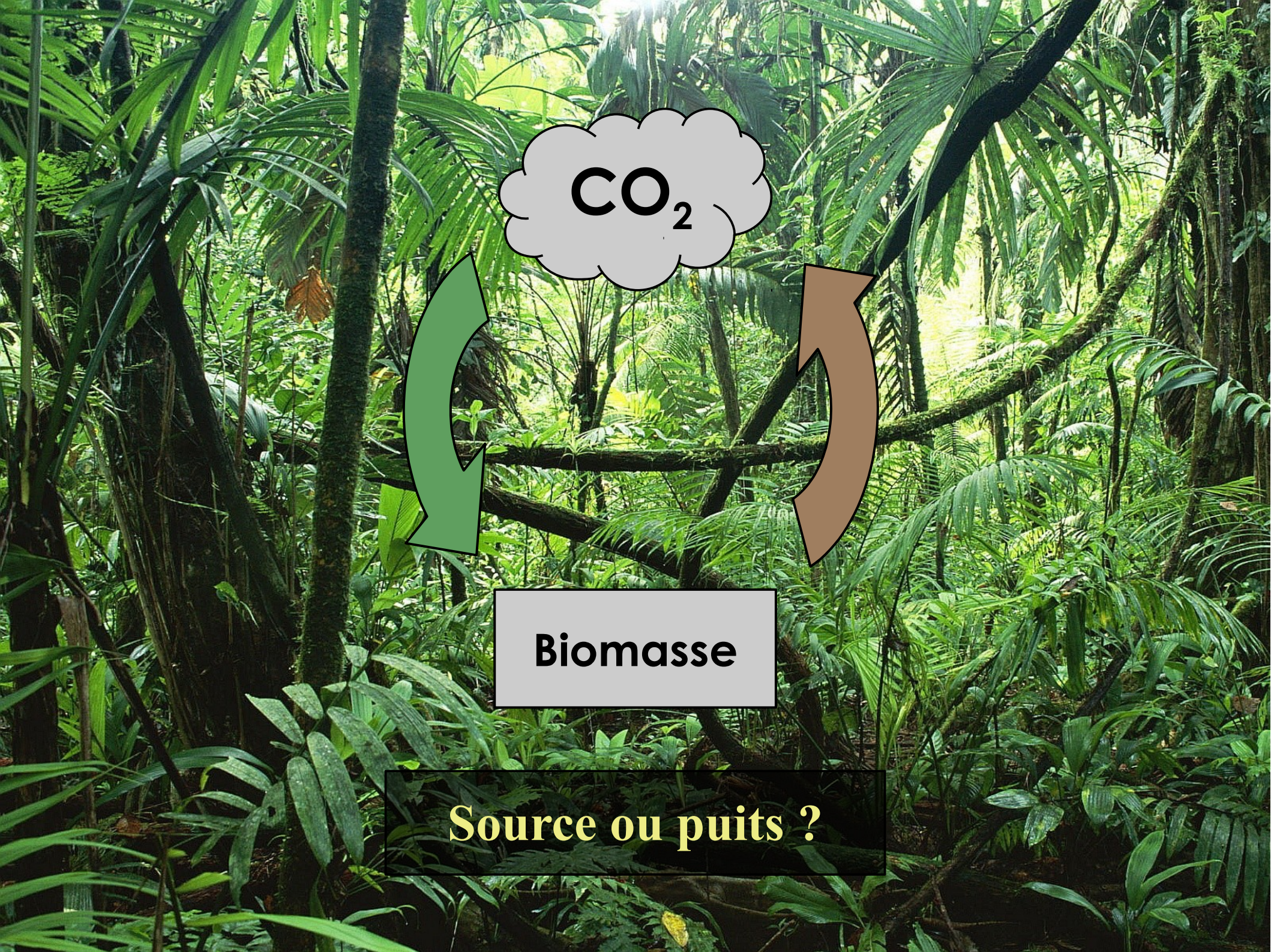
Tropical forests are a net carbon source based on aboveground measurements of gain and loss

A. Baccini et al. *Science*


CO_2
Biomasse


CO_2
Biomasse
Source ou puits ?

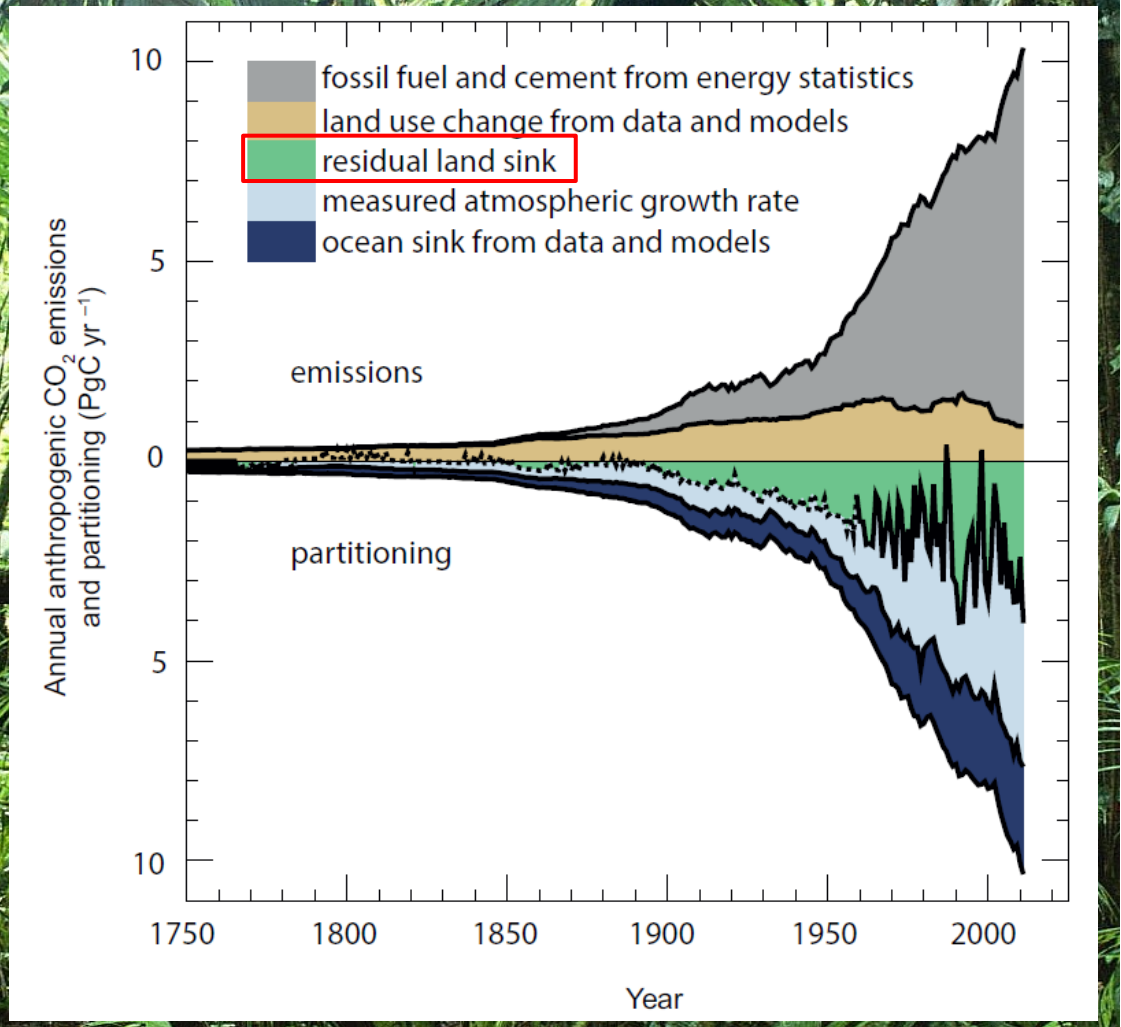
Équilibre vs Residual Land Sink

CO_2
800 GtC

110 + 2
GtC.an^{-1}

110 + 1
GtC.an^{-1}

Biomasse
600 GtC



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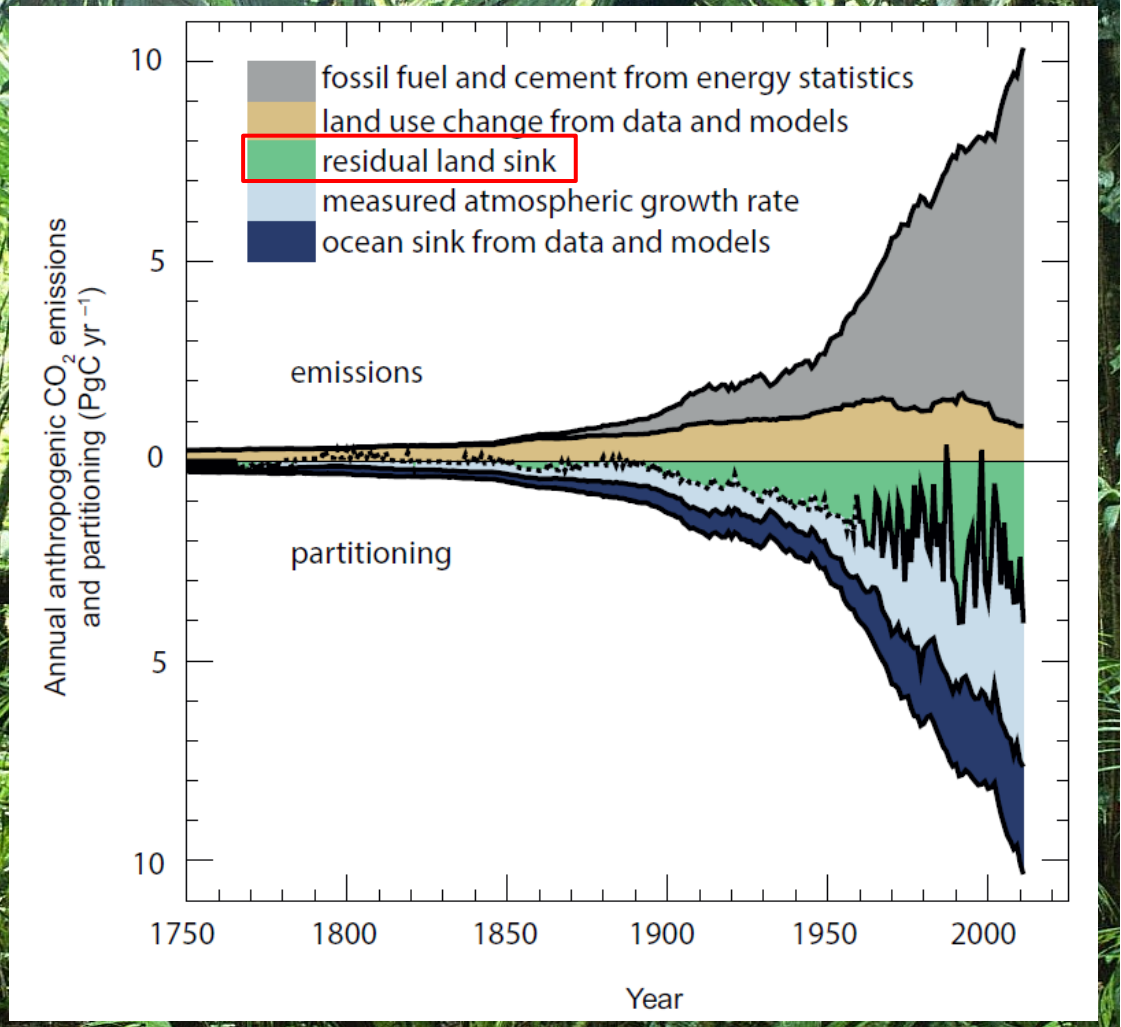
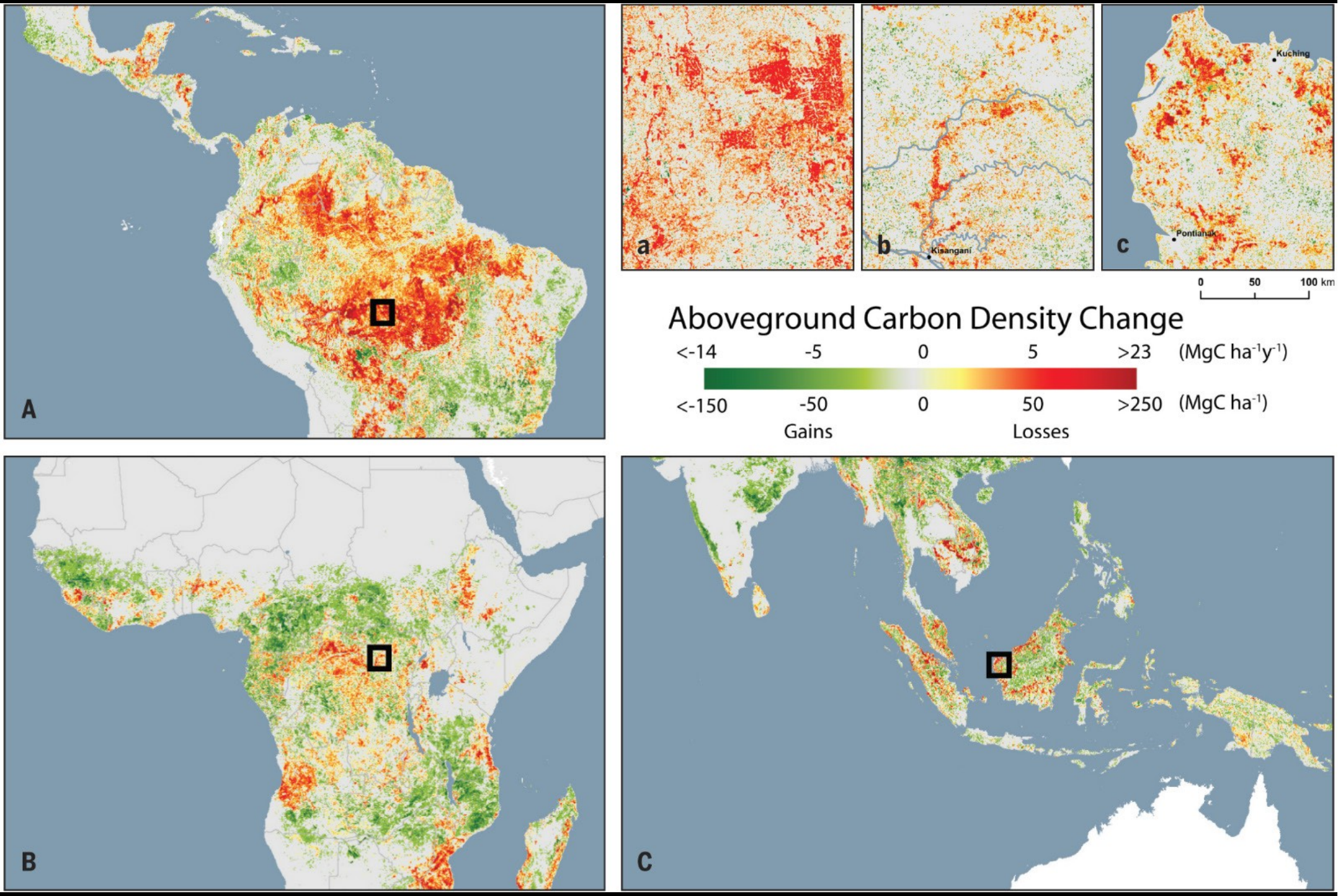
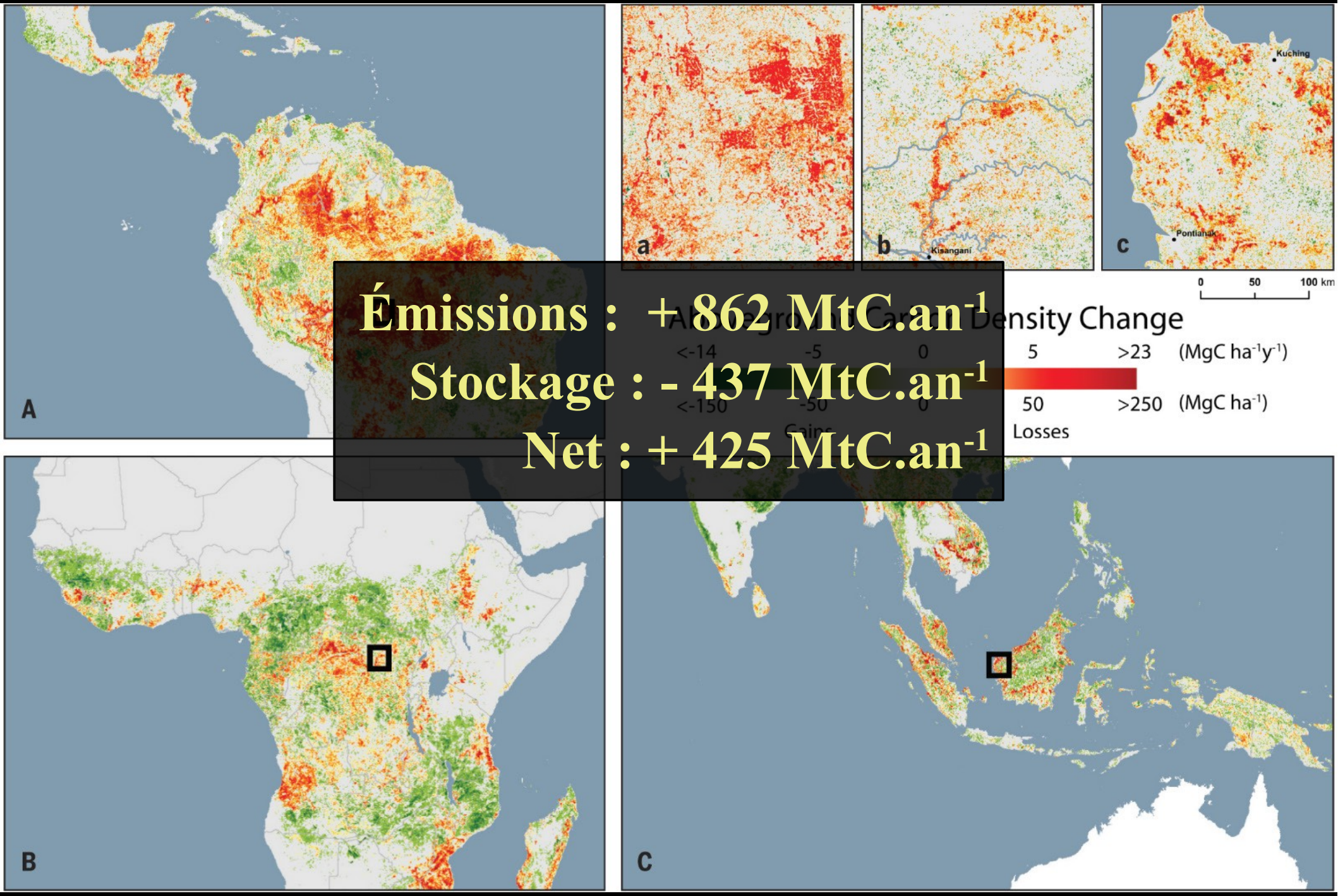


Qu'en est-il pour la zone intertropicale ?


A
a
b
Kisangani
c
Kuching
Pontianak
0 50 100 km
Aboveground Carbon Density Change
<-14 -5 0 5 >23 (MgC ha-1y-1)
<-150 -50 0 50 >250 (MgC ha-1)
Gains
Losses
B
C


Émissions : + 862 MtC.an-1
Stockage : - 437 MtC.an-1
Net : + 425 MtC.an-1
A
B
C
a
b
c
Kisangani
Pontianak
Kuching
0 50 100 km
Aboveground Biomass Carbon Density Change
<-14 -5 0
<-150 -50 0
Gains
5 >23 (MgC ha-1y-1)
50 >250 (MgC ha-1)
Losses

Déforestation : 31 %

Dégradation : 69 %

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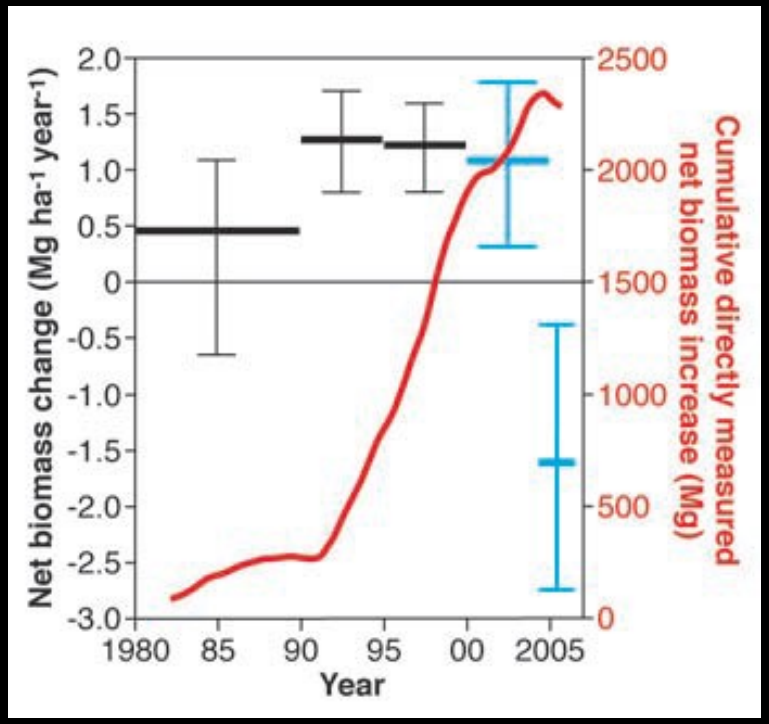
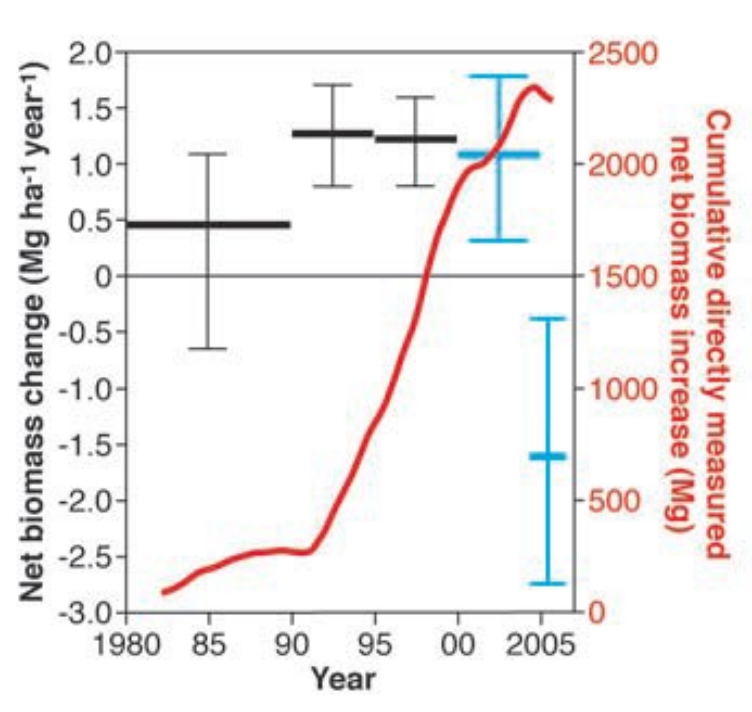
Anthropique ou « naturelle » ?


Net biomass change (Mg ha-1 year-1)
2.0
1.5
1.0
0.5
0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
2500
2000
1500
1000
500
0
Cumulative directly measured net biomass increase (Mg)
1980
85
90
95
00
2005
Year


Net biomass change (Mg ha-1 year-1)
2.0
1.5
1.0
0.5
0
-0.5
-1.0
-1.5
-2.0
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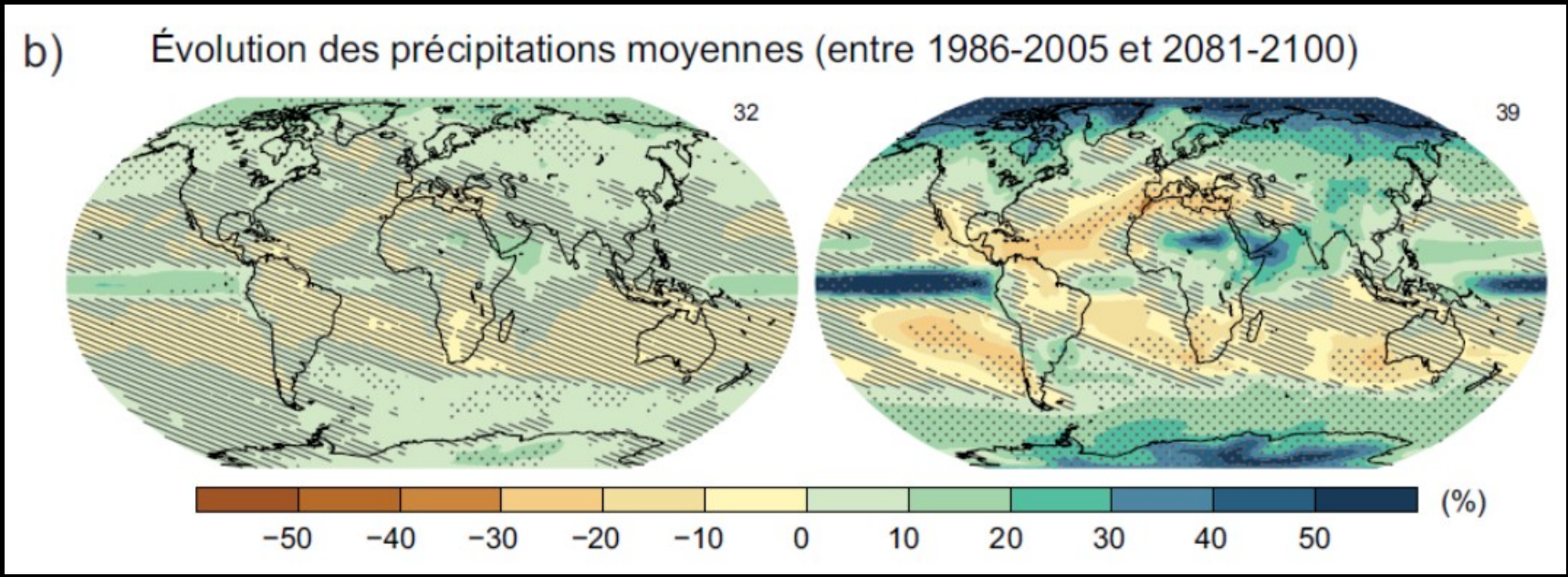
b)
Évolution des précipitations moyennes (entre 1986-2005 et 2081-2100)
32
39
−50
−40
−30
−20
−10
0
10
20
30
40
50
(%)