

Climate Change Opportunity or ...?

Pierre Ozer

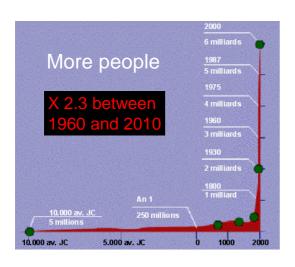
Département des Sciences et Gestion de l'Environnement



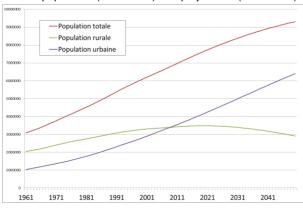
The Hugo Observatory

IHECS, Brussels, 25 November 2016





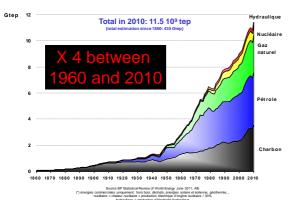
World population (1961-2015) and projections (2016-2050)



48% of the world population lives within 200 km of the coast



With more energy needs



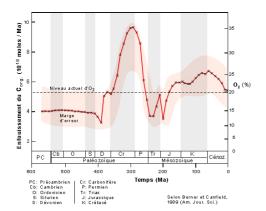
... with a potentially exponential growth

Produced before 2000	2000– 2025	
2025-2050		2050–2075
This amount of gas must be discovered and produced between the years 2075 and 2100 if the world's gas consumption continues to grow at the current rate of 2.8 percent per year.		

Human is oil addicted



... And burns fossil fuel reserves





Accord décisif sur le climat entre la Chine et les Etats-Unis

L'accord sur le climat signé mercredi entre la Chine et les Etats-Unis constitue une avancée décisive pour permettre aux négociations climatiques d'aboutir en 2015 à Paris. En marge du forum de Coopération économique de l'Asie-Parifique réuni à Pékin sous un ciel nettroyè de sa pollution, le président américain Barack Obama et le président chinos XI Jinping se sont engagés, mercredi 12 novembre, à de nouvelles réductions d'émissions pour Washington et à l'adoption pour la première fois par la Chine d'un pic de ses émissions de gaz à effet de serre « autour de 2030 » et « si possible avant ».

L'Europe se fixe un cap ambitieux sur le climat



Les trois engagements du G20 : croissance, transparence fiscale et climat

Le Monde fr | 16.11.2014 à 09h30 • Mis à jour le 16.11.2014 à 12h11 |
Par Claire Guélaud

Abonnazeum

Apparazeum

Réagir ★ Classer 🖨 💆 Pertager 👔 🖸 🐼 📆 🔮



Climat : l'Europe en avance sur ses objectifs de réduction de gaz à effet de serre





Nouveau record des émissions de CO2 en 2013

de.fr | 21.09.2014 à 19h29 • Mis à jour le 12.11.2014 à 16h02 | Par Stéphane Foucart

Partager 👔 🗾 🌃 in 👰

Recommander Partager 834 personnes recommandent ça. Soyez le premier parmi vos amis.

La hausse des émissions de dioxyde de carbone (CO2) se poursuit à un rythme effréné et coincide avec le plus pessimiste des quatre grands scénarios de développement imaginés par la communauté scientifique.

Dimanche 21 septembre au soir, le Global Carbon Project (GCP), un consortium d'organismes de recherche internationaux de référence, a rendu public le bilan des émissions anthropiques de $\rm CO_2$ pour l'année 2013 et confirme que celles-ci sont hors de contrôle.

En 2013, la combustion des ressources fossiles (pétrole, gaz, charbon) et les cimenteries, ont émis 36 milliards de tonnes de CO₂ (GRCO₂), en hausse de 2,3 % paraport à l'année précédente. Quant à la déforestation, elle a conduit à l'émission de 3,3 GRCO₂. Soit un total de prés de 39,3 milliards de tonnes du principal gaz à effet de serre émis en 2013 par l'homme. C'est un nouveau record qui est battu, en dépit d'une augmentation en deçà du niveau moyen des années 2000, soit 3,3 %.

En 2013, les catastrophes naturelles ont déplacé trois fois plus de personnes que les conflits

Par Laetitia Van Eeckhout















2015 et 2016 annoncées parmi les années les plus chaudes
Le Monde frave AFP | 14.09.2015 à 11h11 + Mis à jour le 14.09.2015 à 11h14

Abonnez vous à partir de 1 c Réagir & Classer A S Partager (219) Verecler

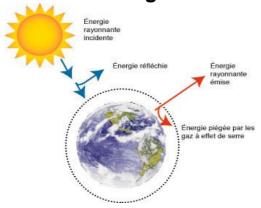
2015, année de tous les records climatiques

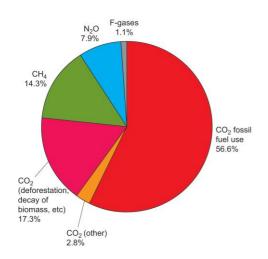
Le Monde.fr | 09.11.2015 à 21h03 • Mis à jour le 10.11.2015 à 06h05 |
Par Stéphane Foucart



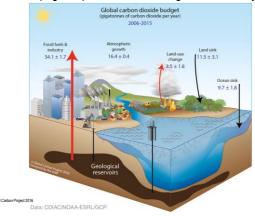


Greenhouse is good for life

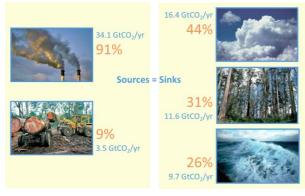




Anthropogenic perturbation of the global carbon cycle

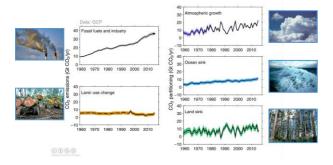


Fate of anthropogenic CO₂ emissions (2006-2015)



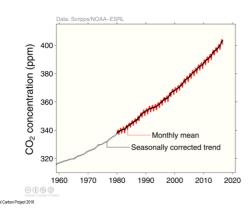
Clohal Carbon Project 201

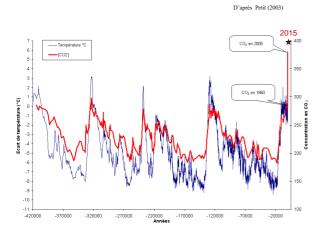
Changes in the carbon budget over time (1960-2015)

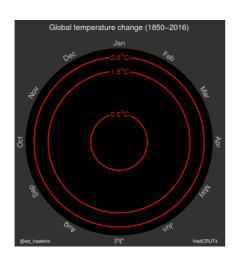


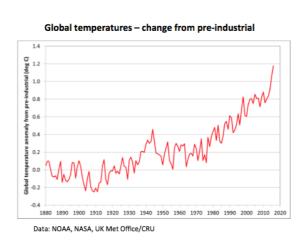
Global Carbon Project 2016

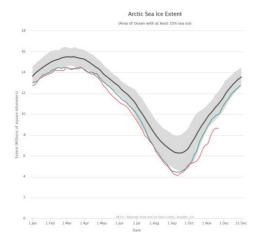
Atmospheric concentration



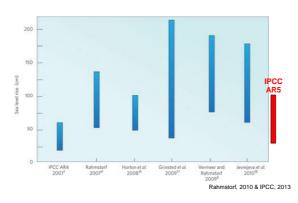


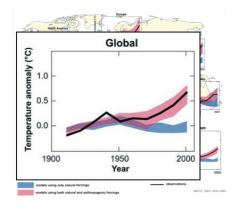






Estimations of the sea-level rise by 2100





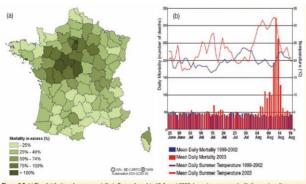
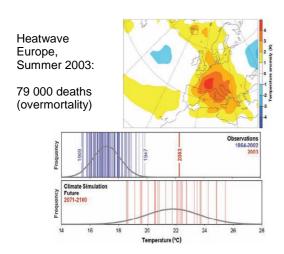
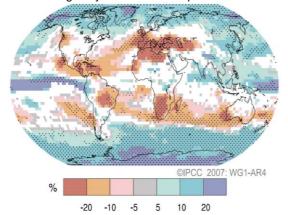


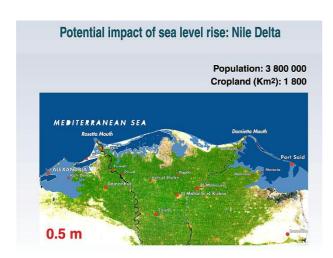
Figure 8.2. (a) The distribution of excess mortality in France from 1 to 15 August 2003, by region, compared with the previous three years (INVS, 2003); (b) the increase in daily mortality in Paris during the heatwave in early August (Vandentorren and Empereur-Bissonnet, 2005).

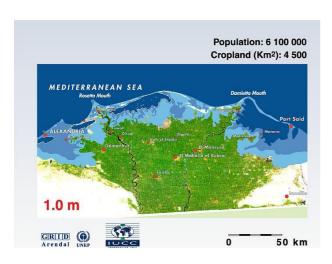


Rainfall changes by 2090-2099 compared to 1980-1999



Crop yields evolution in a warmer climate (a) Maize, mid- to high-latitude (b) Maize, low latitude (c) Maize, low latitude (b) Maize, low latitude (c) Wheat, low latitude (d) Wheat, low latitude (d) Wheat, low latitude





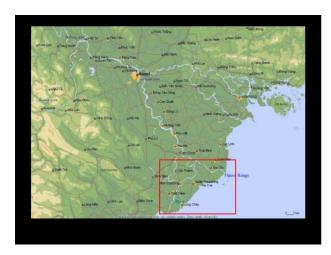


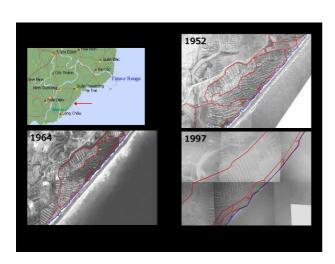




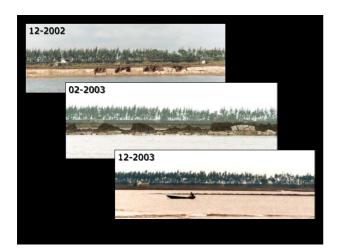
Vietnam - Red River Delta







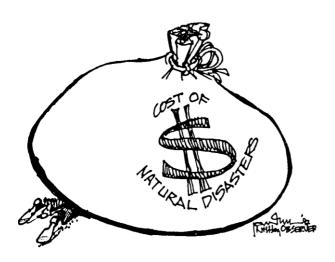


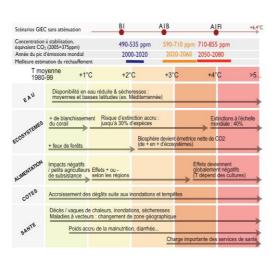


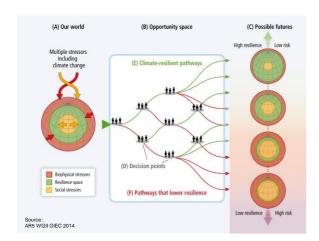
Vulnérability of the large deltas

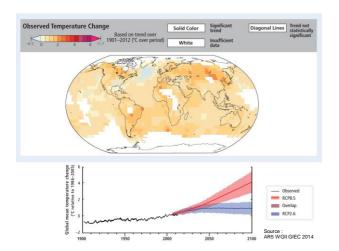


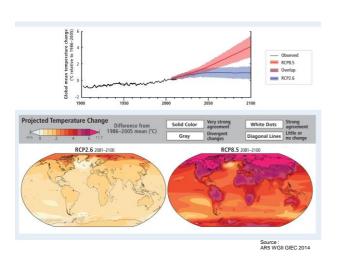






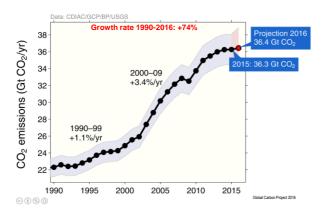




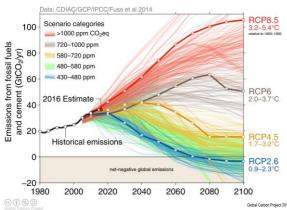


Are WE ready to CHANGE?

Emissions from fossil fuel use and industry

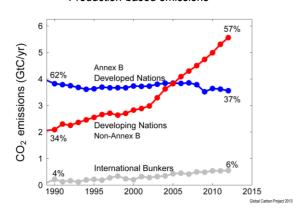


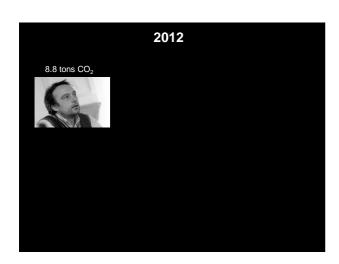
Observed emissions and emissions scenarios



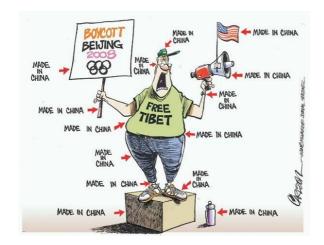


Production-based emissions

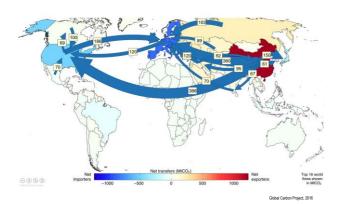


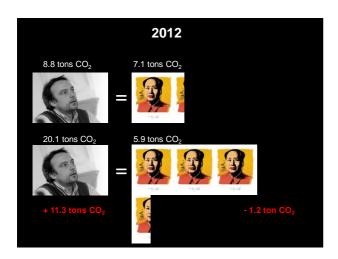




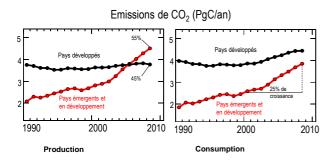


Major flows from production to consumption (2011)

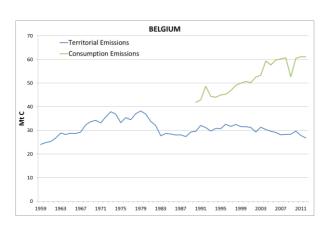


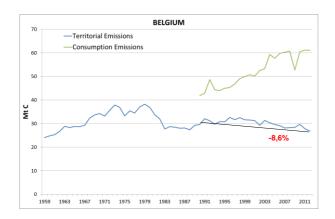


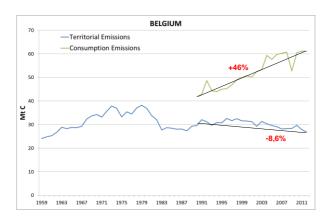
Consumption-based emissions (carbon footprint)

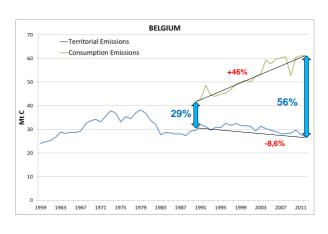


Global Carbon Project 2009; Le Quéré et al. 2009, Nature Geoscience; Data: Peters & Hetwich 2009; Peters et al. 2008; Weber et al 2008; Guan et al. 2008; CDIAC 2009

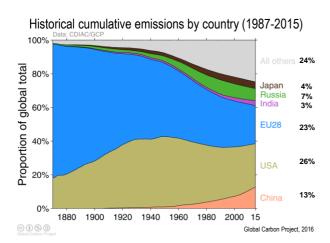








Historical cumulative responsability ?





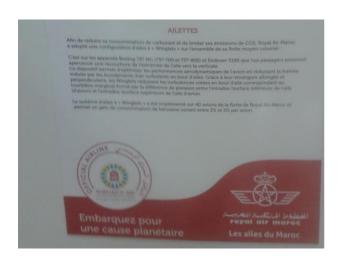












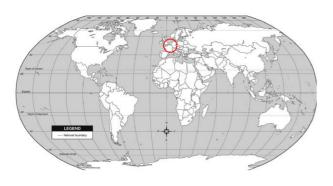


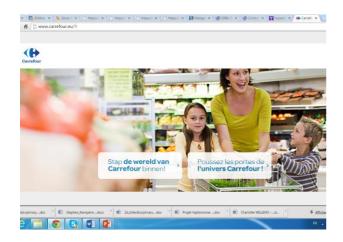


What about US ?...









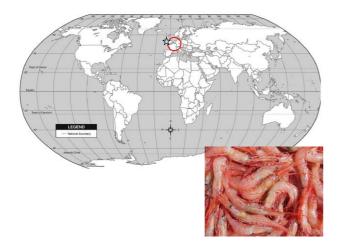


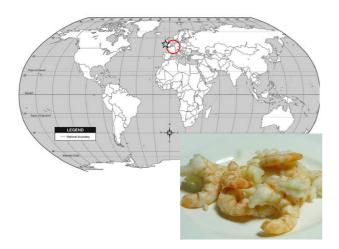


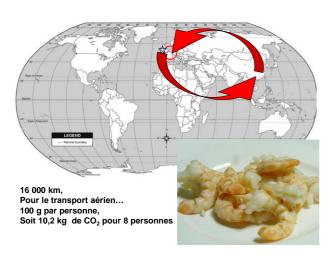


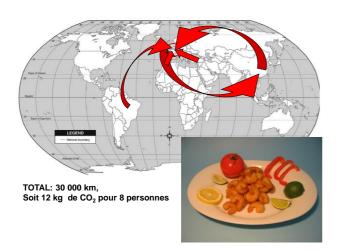






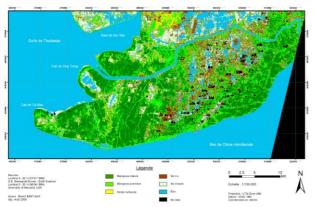








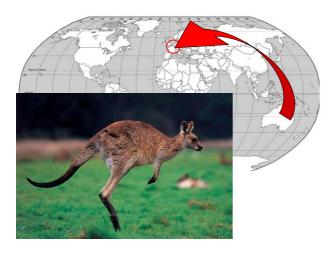
Land use in 1989



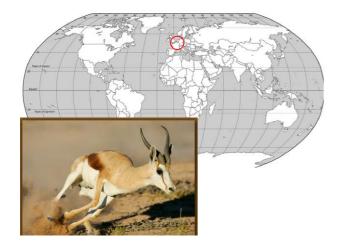
Land use in 2009

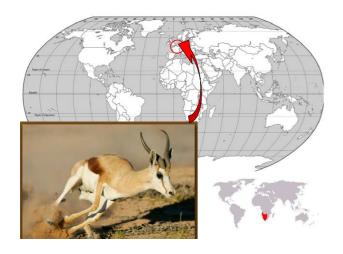
***Control of Thomas and the state of t

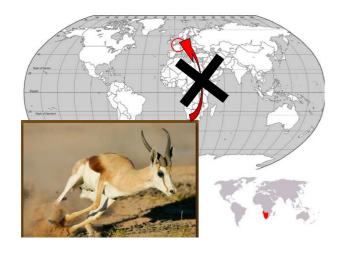
Plat de consistance

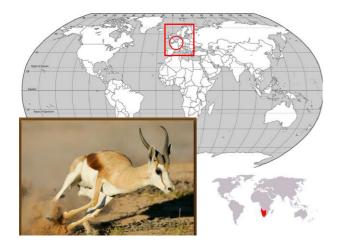


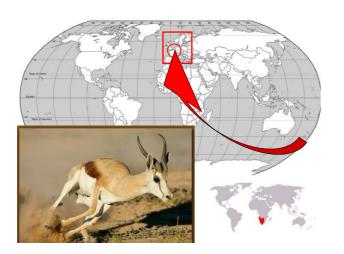








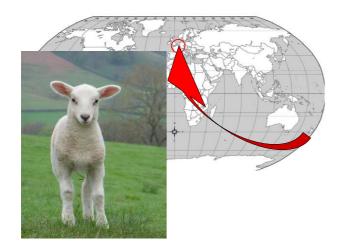


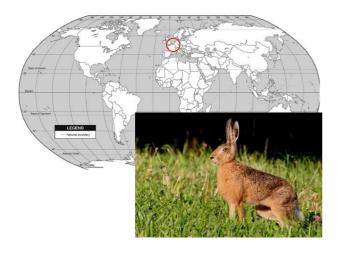


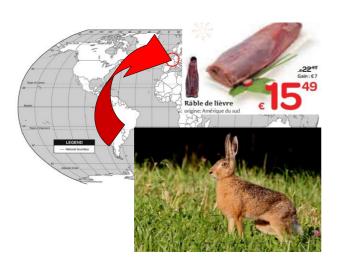




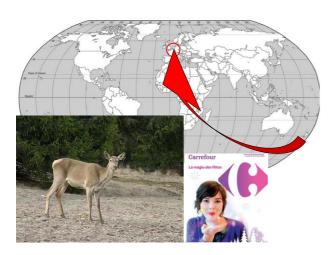




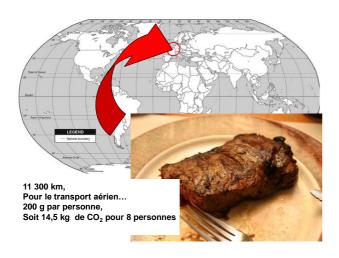


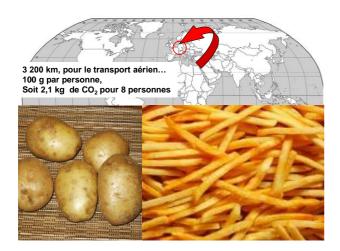


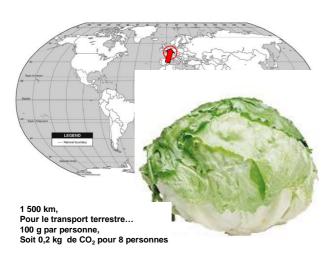


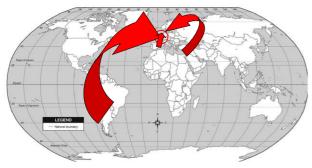








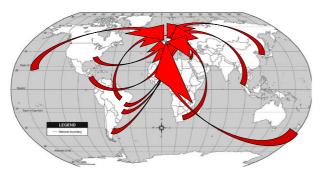




PLAT PRINCIPAL : 16 000 km cumulés: 16,9 kg de CO₂

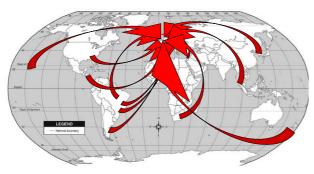
Dessert Salade de fruits





SALADE DE FRUITS
DISTANCE TOTALE CUMULEE ENTRE PRODUCTION ET ASSIETTE :





SALADE DE FRUITS
CHAQUE FRUIT = 100 g, soit une salade de fruits de 1200 g :
9,3 kg de CO₂





Entrée - plat - dessert: 5,4 kg de nourriture ou 38,2 kg de CO₂

Soit les émissions de CO₂ d'une voiture sur 210 km, soit 13 litres d'essence





IDEE N°1

Rééduquer la population: les saisons, cela existe...

Calendrier (de la	saisonnalité	des	fruits
--------------	-------	--------------	-----	--------

Cerises	J	F	М	A	N	J	J	A	S	0	N	D
Fraises	J	F	М	A	N	J	J	A	S	0	N	D
Framboises	J	F	М	A	M	J		A	S	0	N	D
Groseilles	J	F	М	A	N	J	J	A	S	0	N	D
Kiwi	J	F	М	A	N	J	J	A	S	0	N	D
Mures	J	F	М	A	N	J		A	S	0	N	D
Nectarines	J	F	М	A	N	J	J	A	S	0	N	D
Pêches	J	F	М	A	N	J	J	A	S	0	N	D
Poires		F	М	A	N	J	J	A	S	0	N	D
Pommes	J	F	М	A	N	J	J	A	S	0	N	D
Prunes	J	F	М	A	N	J		A	S	0	N	D
		-				-				_		

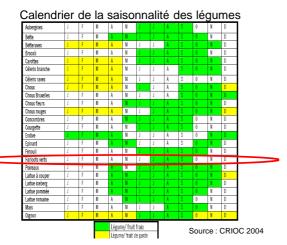
Légume/ fruit frais Légume/ fruit de garde

Source : CRIOC 2004

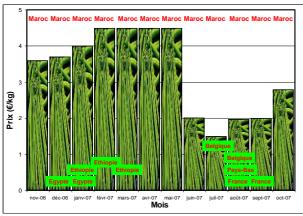
Calendrier de la saisonnalité des légumes

Aubergines	J	F	М	A	M	J	J	Ā	S	0	N	D	
Bette	J	F	М	A	М	J	J	Ā	S	0	N	D	
Betteraves	J	F	М	A	M	J	J	Ā	S	0	N	D	
Brocoli	J	F	М	A	M	J		A	S	0	N	D	
Carottes	J	F	М	A	M		J	A	S	0	N	D	
Céleris branche	J	F	М	A	М	J	J	A	S	0	N	D	
Céleris raves	J	F	М	A	M	J	J	A	S	0	N	D	
Choux	J	F	М	A	M	J	J	A	S	0	N	D	
Choux Bruxelles	J	F	М	A	M	J	J	A	S	0	N	D	
Choux fleurs	J	F	М	Α	М	J	J	A	S	0	N	D	
Choux rouges	J	F	М	Α	М	J	J	A	S	0	N	D	
Concombres	J	F	М	A	М	J	J	A	S	0	N	D	
Courgette	J	F	М	A	M	J	J	A	S	0	N	D	
Endive	J	F	М	A	М	J	J	A	S	0	N	D	
Epinard	J	F	М	A	М	J	J	A	S	0	N	D	
Fenouil	J	F	М	A	M		J	A	S	0	N	D	
Haricots verts	J	F	М	A	M	J		A	S	0	N	D	
Poireaux	J	F	М	A	М		J	A	S	0	N	D	
Laitue à couper	J	F	М	A	М	J	J	A	S	0	N	D	
Laitue iceberg	J	F	М	A	M	J	J	A	S	0	N	D	
Laitue pommée	J	F	М	A	M	J	J	A	S	0	N	D	
Laitue romaine	J	F	М	A	M	J	J	A	S	0	N	D	
Mais	J	F	М	A	M	J	J	Ā	S	0	N	D	
Oignon	J	F	М	A	M	J	J	A	S	0	N	D	
				Légume/ fruit frais Légume/ fruit de garde				Source : CRIOC 20					C 20

43	



Origine et prix des haricots princesse (vrac) chez CARREFOUR Belgique



IDEE N°2

Imposer aux
distributeurs une
information correcte
sur la provenance des
aliments...
(Obligation légale!!!)





Août 2007, Delhaize







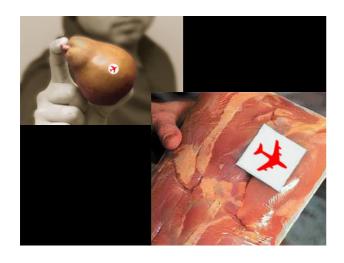
IDEE N°3

... et pourquoi pas aussi un logo indiquant le mode de transport utilisé!

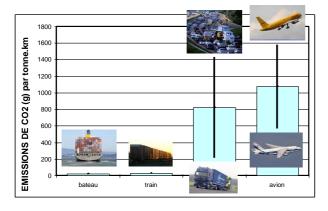








Coût CO₂ des transports



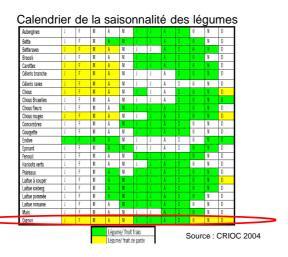
En Suisse... Cela évolue...





IDEE N°4

Communiquer sur le cliché « consommer des produits du Sud, c'est toujours bien! »







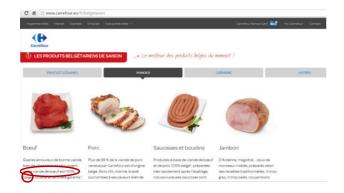




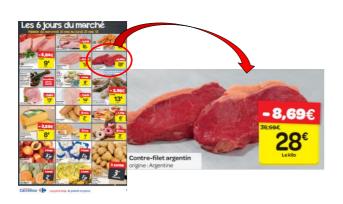


















redessinée en fonction de la population (2006)

redessinée en fonction des importations de fruits















Le transport? Accro au pétrole!







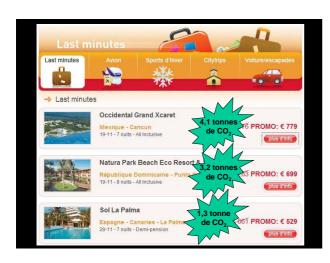




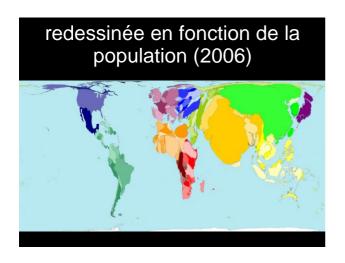












redessinée en fonction du nombre de passagers aériens



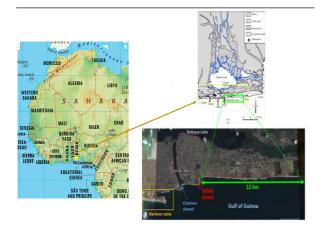
Nouakchott







C	\cap	t.	\cap	n	\cap	11
\sim	v	L	v		v	ч





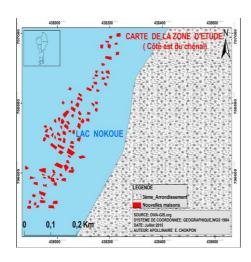


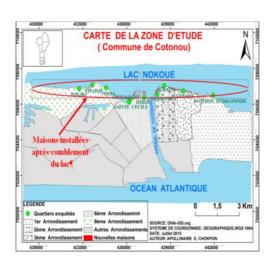




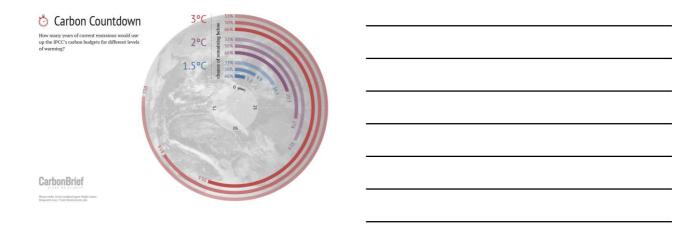












Pierre Ozer

pozer@ulg.ac.be http://labos.ulg.ac.be/hugo



The Hugo Observatory