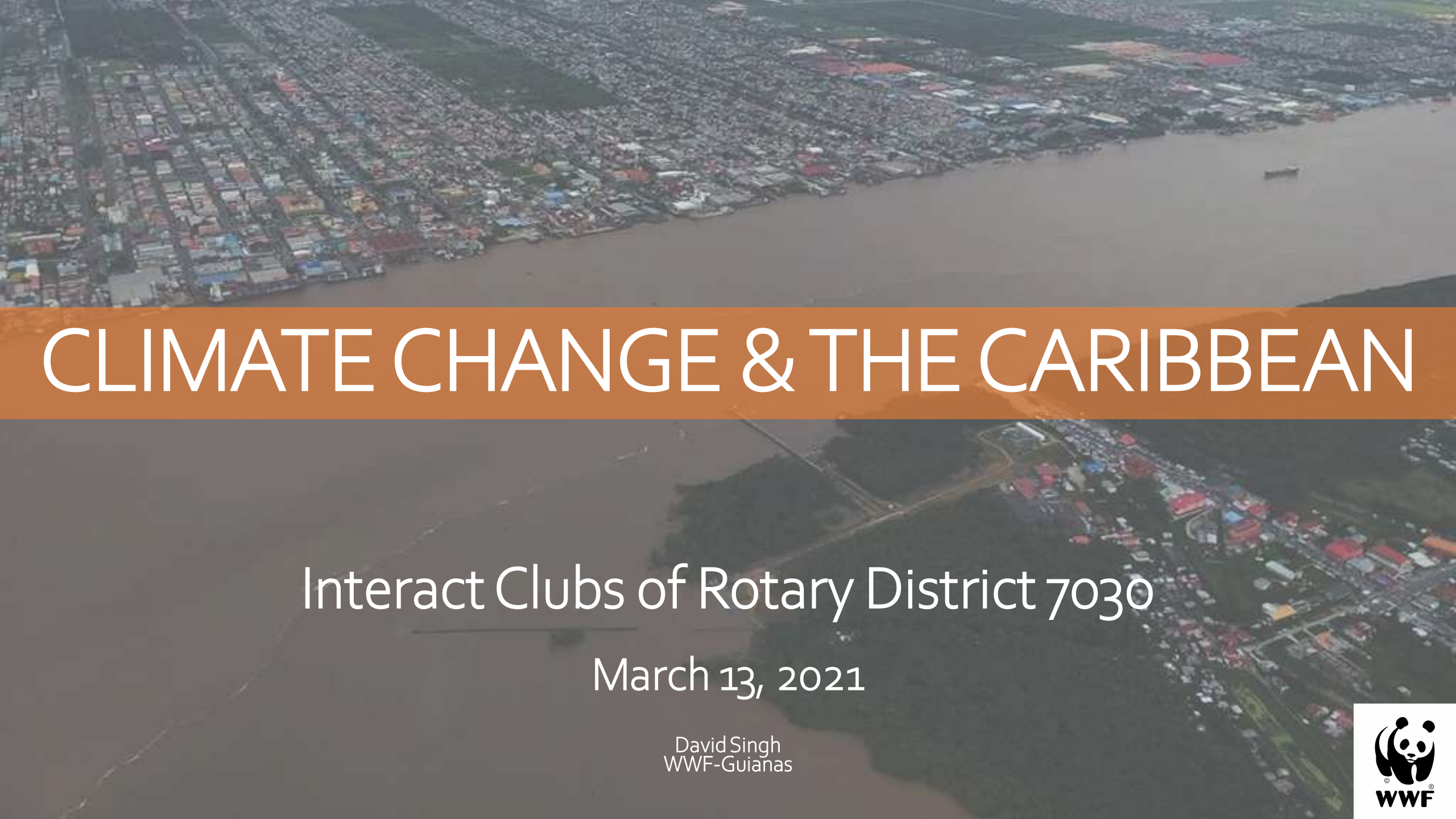




CLIMATE CHANGE & THE CARIBBEAN

Interact Clubs of Rotary District 7030

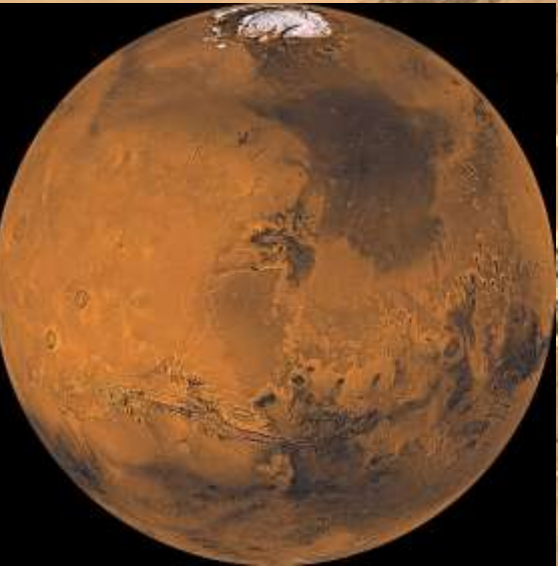
March 13, 2021

David Singh
WWF-Guianas





<https://earthobservatory.nasa.gov/images/565/earth-the-blue-marble>



<https://www.space.com/mars-2020-perseverance-rover-search-for-life.html>



<https://edition.cnn.com/2021/02/18/world/gallery/mars-perseverance-rover-scen/index.html>

- The Greenhouse Effect
- What causes Climate Change and how do we feel these effects?
- Where and who will we feel these effects most?
- When will all of this happen?
- What can we do?

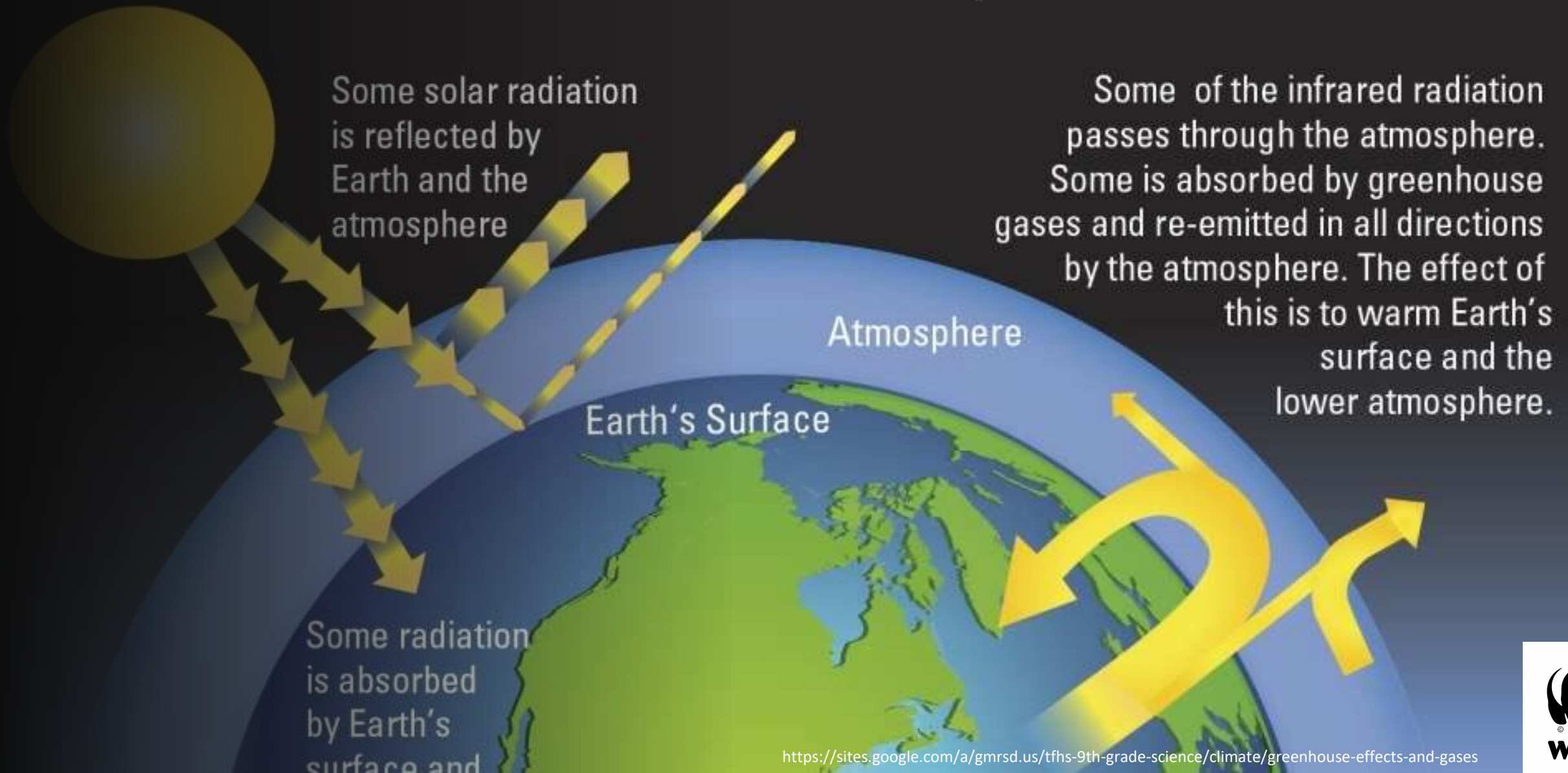


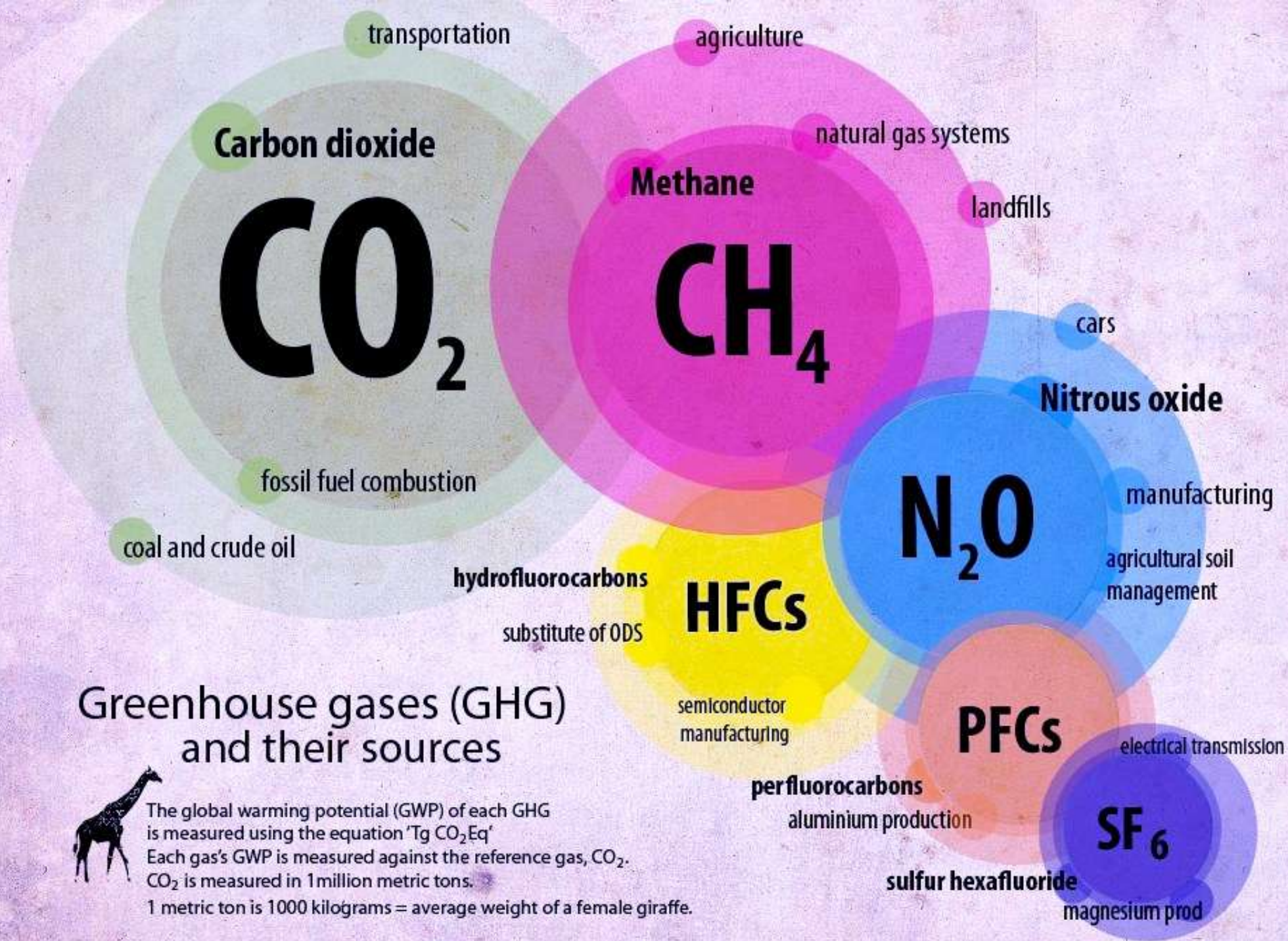
WHAT IS A GREENHOUSE

<https://www.ecowatch.com/couple-builds-greenhouse-around-home-to-grow-food-and-keep-warm-1882128131.html>



THE GREENHOUSE EFFECT



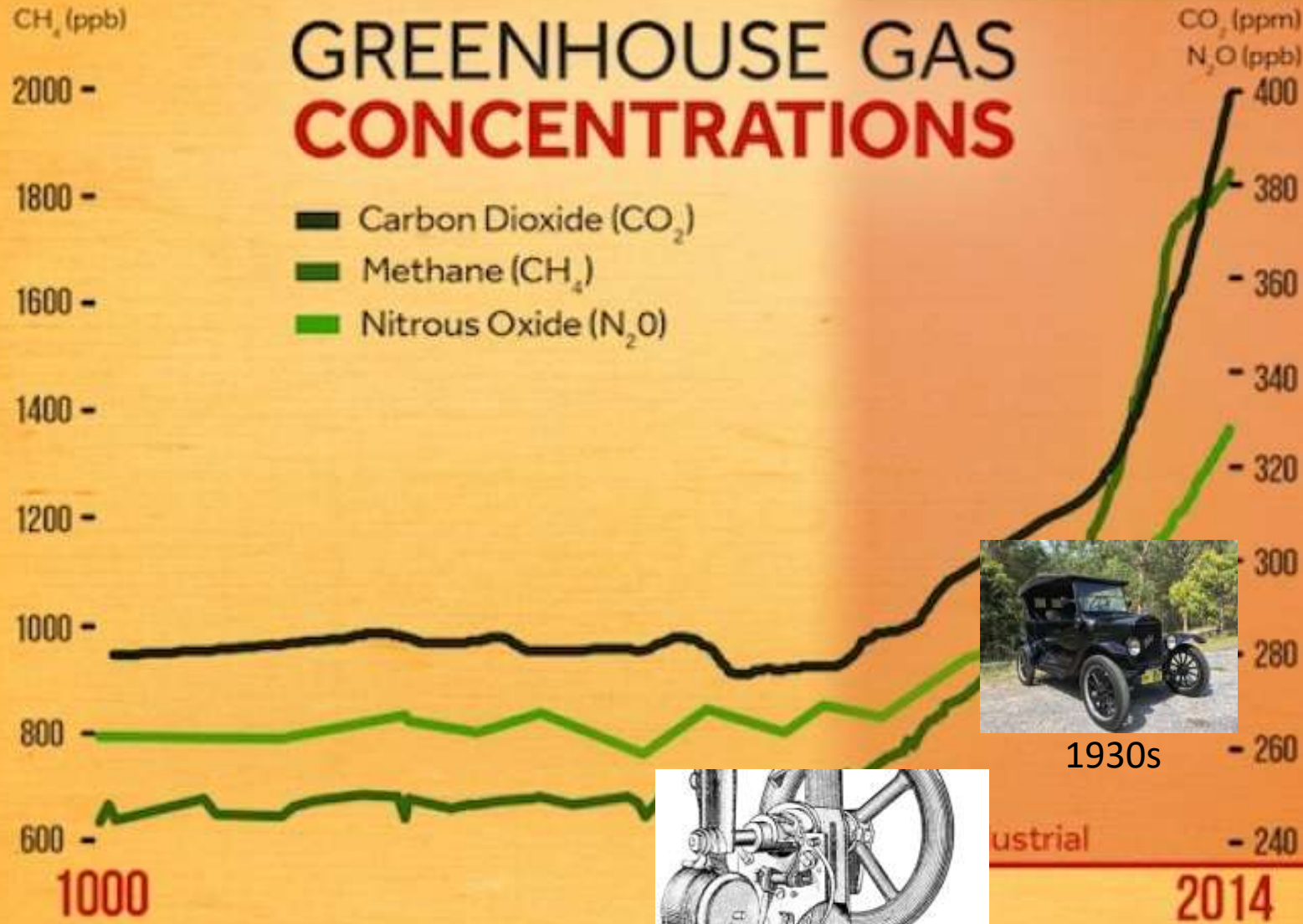


Greenhouse gases (GHG) and their sources

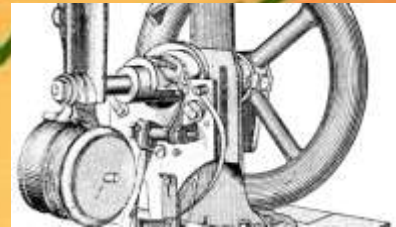


The global warming potential (GWP) of each GHG is measured using the equation 'Tg CO_2Eq '. Each gas's GWP is measured against the reference gas, CO_2 . CO_2 is measured in 1 million metric tons. 1 metric ton is 1000 kilograms = average weight of a female giraffe.

GREENHOUSE GAS CONCENTRATIONS



Post-Industrial defined as 1750 and beyond
Source: US EPA's Climate Change Indicators



1830s



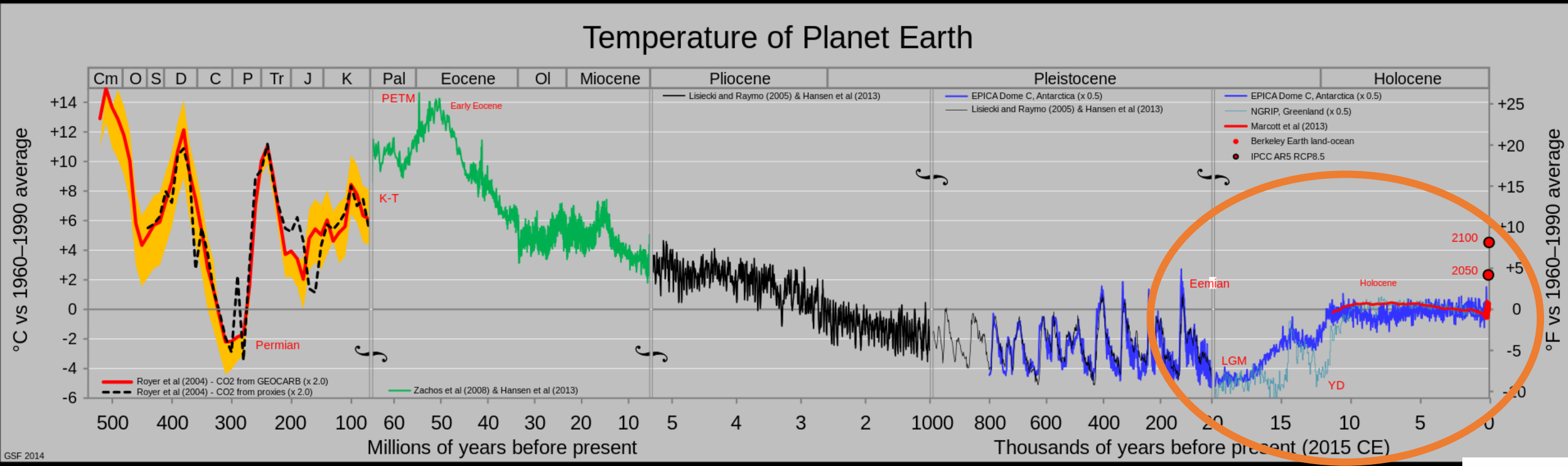
1930s

CLIMATE CENTRAL

CLIMATE CHANGE = GLOBAL WARMING

THE EARTH IS HEATING UP

THIS IS HAPPENING FASTER AS GREENHOUSE GASES KEEP ON BUILDING UP



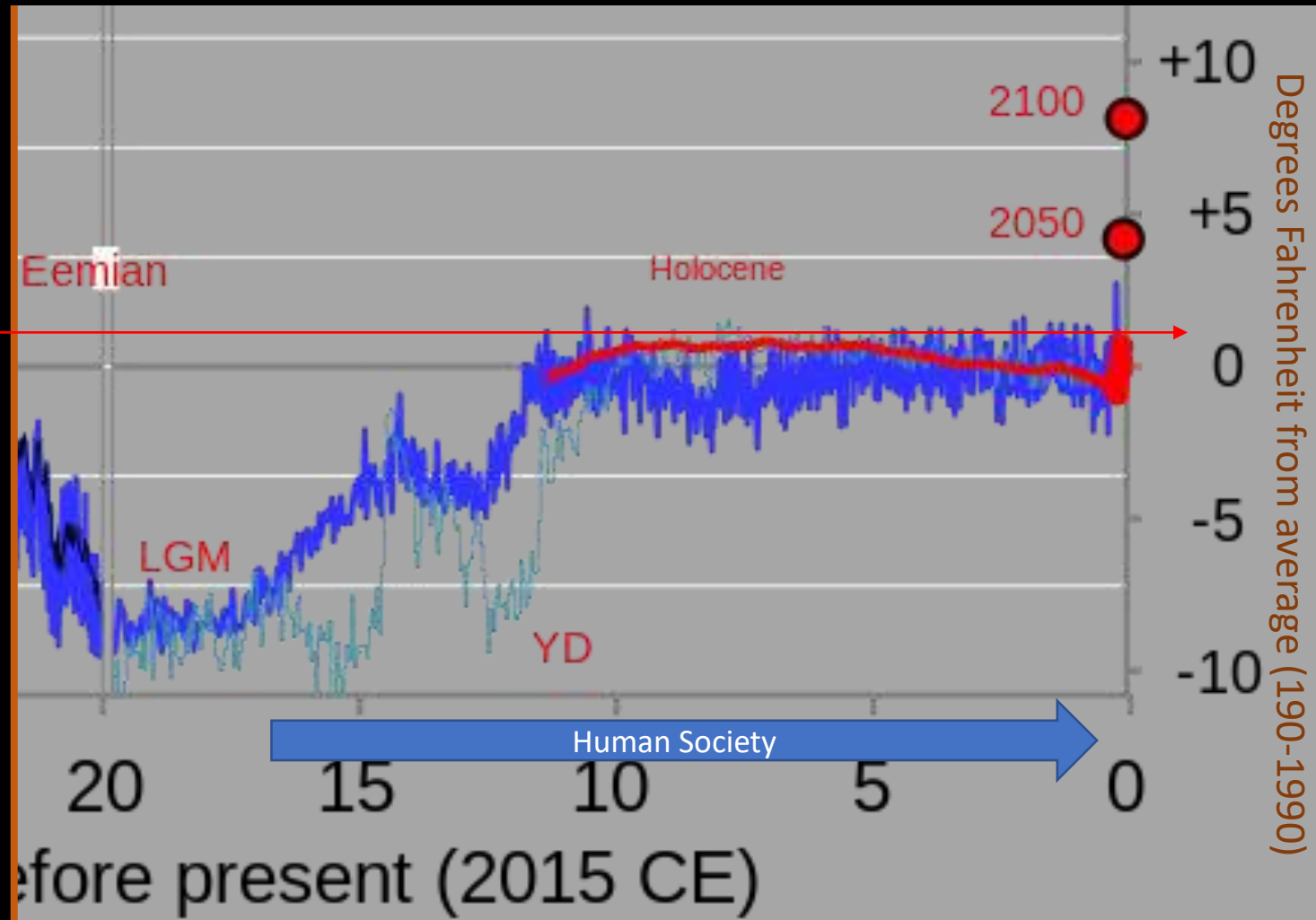
GSF 2014

CLIMATE CHANGE = GLOBAL WARMING

THE EARTH IS HEATING UP

THIS IS HAPPENING FASTER AS GREENHOUSE GASES KEEP ON BUILDING UP

+1.5° C

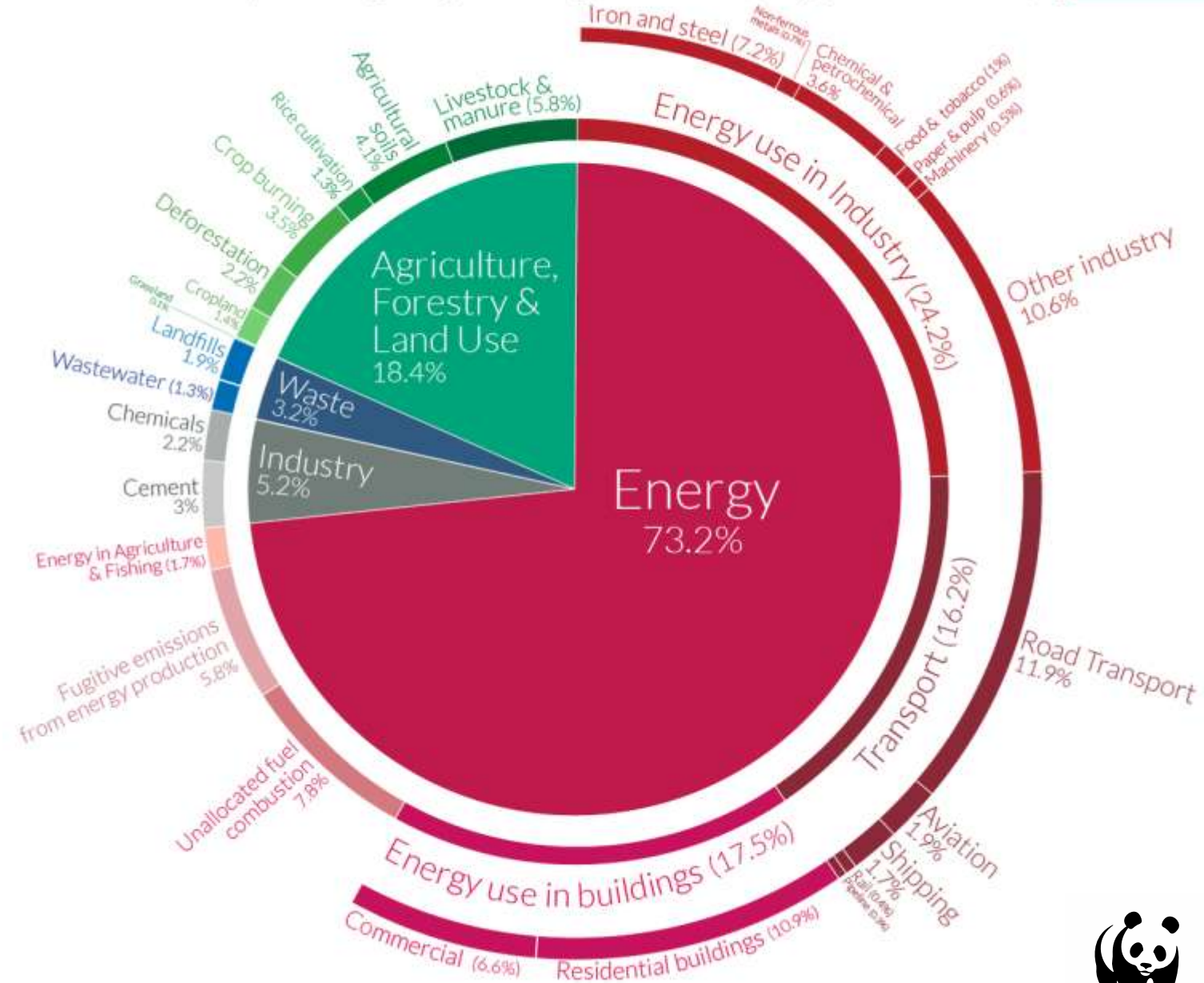


Sources of Greenhouse Gas Emissions

Global greenhouse gas emissions by sector

Our World in Data

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.



OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020).

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Causes and Effects of Climate Change

Causes

- Rapid industrialization
- Energy use
- Agricultural practices
- Deforestation
- Consumer practices
- Livestock
- Transport
- Resource extraction
- Pollution



Effects

- Rising temperatures
- Rising sea levels
- Unpredictable weather patterns
- Increase in extreme weather events
- Land degradation
- Loss of wildlife and biodiversity

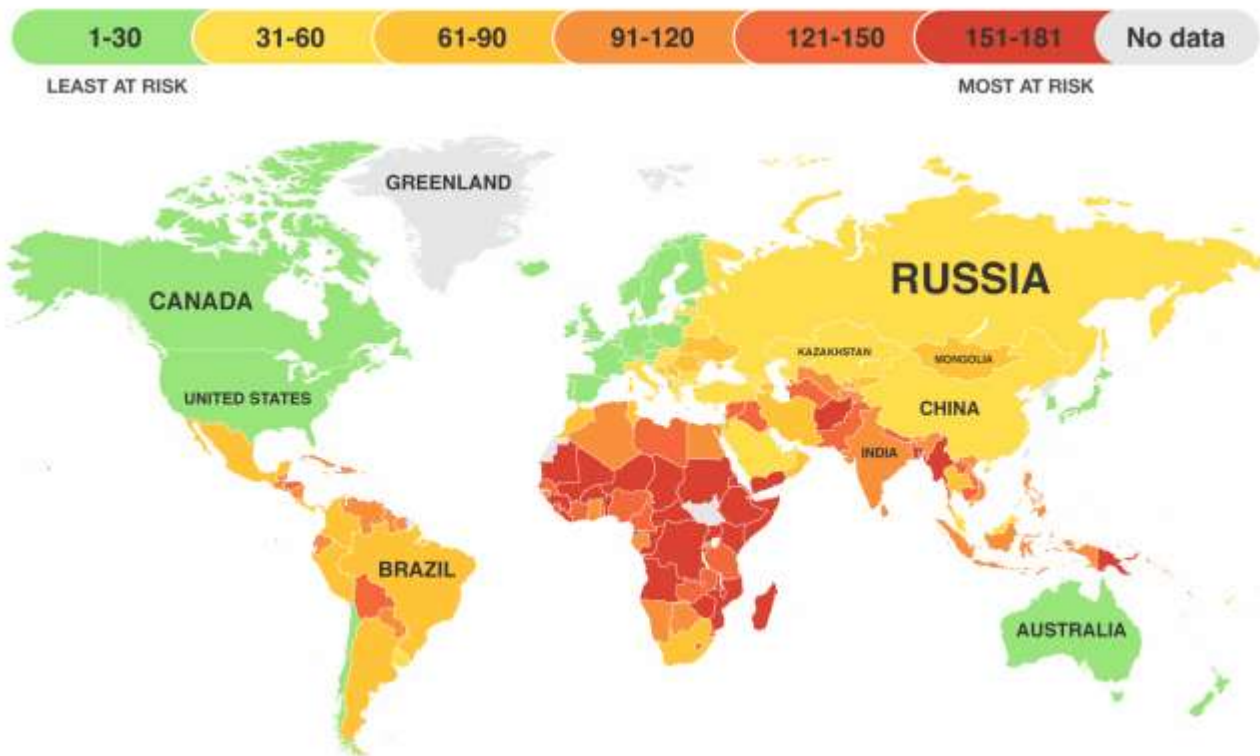
What are the social impacts of climate change?

Displaced people. Poverty. Loss of livelihood. Hunger. Malnutrition.
Increased risk of diseases. Global food and water shortages.

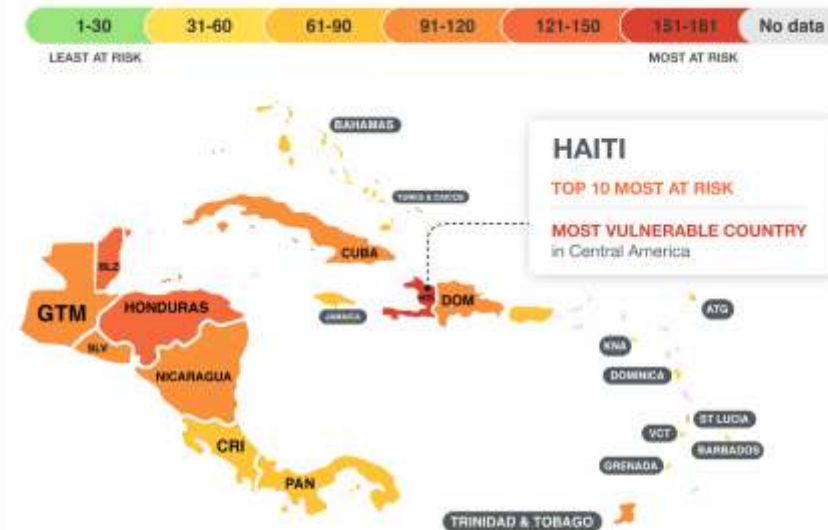
WHERE AND WHO? THE COUNTRIES MOST AT RISK FROM CLIMATE CHANGE



WORLD MAP



CENTRAL AMERICA



SOUTH AMERICA







HAITI



FLORIDA



GUYANA



BARBADOS

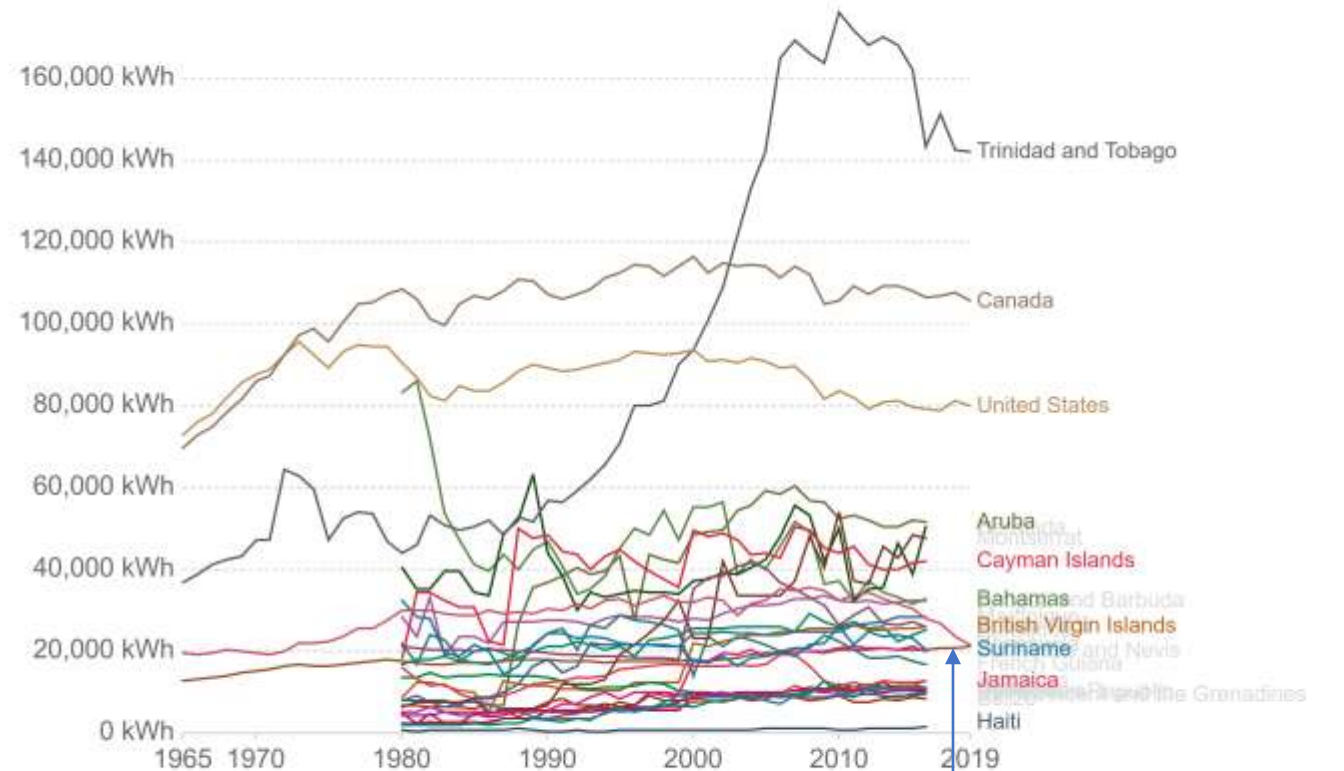
2030
1.5 TO STAY
ALIVE!



WHAT CAN WE DO?

- Energy Consumption (fossil fuel)
- Waste Generation & Use of Plastics
- Protecting Forests and Nature
- What plans are being made for 2050 (when you will be 35-50 years old); for 2100 (when your children will be adults)

Energy use per person



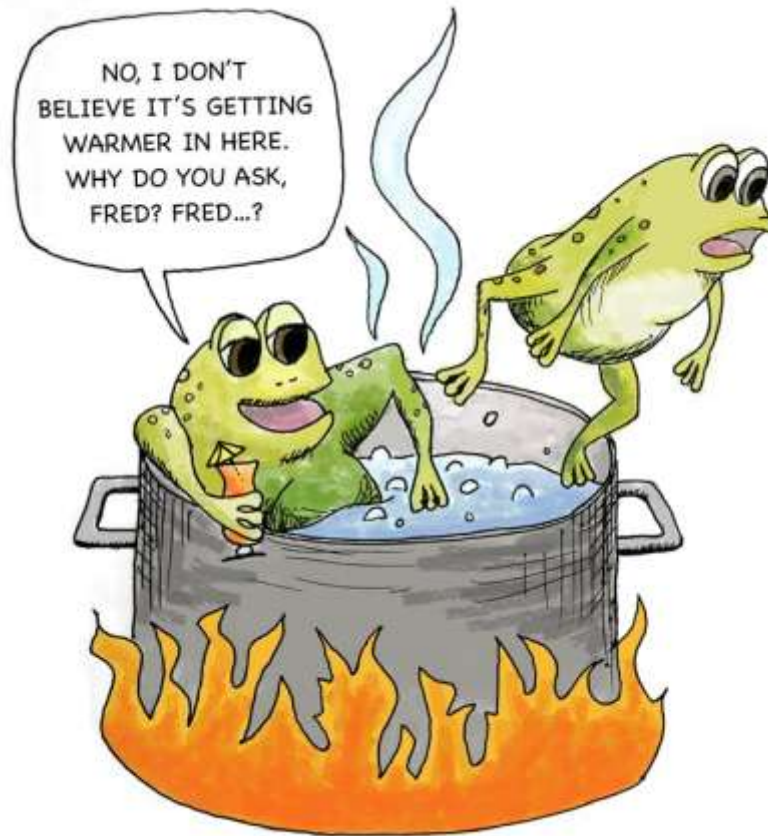
Source: Our World in Data based on BP & Shift Data Portal

Note: Energy refers to primary energy – the energy input before the transformation to forms of energy for end-use (such as electricity or petrol for transport).

OurWorldInData.org/energy • CC BY

WORLD







ENGLISH	FRENCH
CLIMATE CHANGE & THE CARIBBEAN Mr David Singh	LE CHANGEMENT CLIMATIQUE ET LES CARAÏBES Mr David Singh
• What is Climate Change? • What causes Climate Change and how do we feel these effects? • Where and who will we feel these effects most? • When will all of this happen? • What can we do?	• Qu'est-ce que le changement climatique ? • Qu'est-ce qui cause le changement climatique et comment en ressentons-nous ces effets ? • Où et qui ressentira-t-on le plus ces effets ? • Quand tout cela va-t-il arriver ? • Qu'est-ce qu'on peut faire ?
The greenhouse effect Some of the infrared radiation passes through the atmosphere. Some is absorbed by greenhouse gases and re-emitted in all directions by the atmosphere. The effect of this is to warm Earth's surface and the lower atmosphere. Some solar radiation is reflected by earth and the atmosphere	L'effet de serre Une partie du rayonnement infrarouge traverse l'atmosphère. Une partie est absorbée par les gaz à effet de serre et réémise dans toutes les directions par l'atmosphère. Cela a pour effet de réchauffer la surface de la Terre et la basse atmosphère. Une partie du rayonnement solaire est réfléchi par la terre et l'atmosphère.
Greenhouse gases and their sources	Les gaz à effet de serre et leurs sources
Greenhouse gas concentrations For centuries, atmospheric carbon dioxide had never been above this line Carbon dioxide, methane, nitrous oxide Post industrial	Concentrations de gaz à effet de serre Pendant des siècles, le dioxyde de carbone atmosphérique n'a jamais dépassé cette limite. Dioxyde de carbone, méthane, oxyde nitreux Post industriel



ENGLISH	FRENCH
CLIMATE CHANGE = GLOBAL WARMING THE EARTH IS HEATING UP THIS IS HAPPENING FASTER AS GREENHOUSE GASES KEEP ON BUILDING UP Temperature of planet earth	CHANGEMENT CLIMATIQUE = RÉCHAUFFEMENT DE LA PLANÈTE LA TERRE SE RÉCHAUFFE CE PHÉNOMÈNE S'ACCÉLÈRE AVEC L'ACCUMULATION DES GAZES À EFFET DE SERRE. Température de la planète Terre
CLIMATE CHANGE = GLOBAL WARMING THE EARTH IS HEATING UP THIS IS HAPPENING FASTER AS GREENHOUSE GASES KEEP ON BUILDING UP	CHANGEMENT CLIMATIQUE = RÉCHAUFFEMENT DE LA PLANÈTE LA TERRE SE RÉCHAUFFE CE PHÉNOMÈNE S'ACCÉLÈRE AVEC L'ACCUMULATION DES GAZ À EFFET DE SERRE.
Causes and effects of climate change Causes: Rapid industrialization, energy use, agricultural practises, deforestation, consumer practices, livestock, transport, Resource extraction, pollution Effects: Rising temperatures, rising sea levels, unpredictable weather patterns, increase in extreme weather events, land degradation, loss of wild life and biodiversity What are the social impacts of climate change? Displaced people, poverty, loss of livelihood, hunger, malnutrition, increased risk of diseases, global food and water shortages	Causes et effets du changement climatique Causes : Industrialisation rapide, utilisation de l'énergie, pratiques agricoles, déforestation, pratiques de consommation, élevage, transport, extraction de ressources, pollution. Effets : Augmentation des températures, élévation du niveau des mers, schémas météorologiques imprévisibles, augmentation des phénomènes météorologiques extrêmes, dégradation des sols, perte de la vie sauvage et de la biodiversité. Quels sont les impacts sociaux du changement climatique ? Personnes déplacées, pauvreté, perte des moyens de subsistance, faim, malnutrition, risque accru de maladies, pénurie mondiale de nourriture et d'eau.



ENGLISH	FRENCH
The countries most at risk from climate change	Les pays les plus menacés par le changement climatique
World map, central America, south America	Carte du monde, Amérique centrale, Amérique du Sud
Haiti, Florida, Guyana, Barbados	Haïti, Floride, Guyane, Barbade
Sources of Greenhouse Gas Emissions	Sources d'émissions de gaz à effet de serre
Global greenhouse gas emissions by sector	Émissions mondiales de gaz à effet de serre par secteur
This is shown for the year 2016-global greenhouse gas emissions were 49.4 billion tons CO2 eq	C'est ce que montre l'année 2016 - les émissions mondiales de gaz à effet de serre étaient de 49,4 milliards de tonnes d'équivalent CO2.
Energy use per person	Consommation d'énergie par personne
Energy Consumption (fossil fuel)	Consommation d'énergie (combustible fossile)
Waste Generation & Use of Plastics	Production de déchets et utilisation des plastiques
Protecting Forests and Nature	Protéger les forêts et la nature
What plans are being made for 2050 (when you will be 35 -50years old); for 2100 (when your children will be adults)	Quels sont les projets pour 2050 (lorsque vous aurez 35 à 50 ans) et pour 2100 (lorsque vos enfants seront adultes) ?
No I don't believe its getter warmer in here. Why do you ask Fred? Fred?	Non, je ne crois pas qu'il fasse plus chaud ici. Pourquoi tu demandes ça à Fred ? Fred ?



ENGLISH	FRENCH
How can Civil Society Contribute to the Solution? ➤ Addressing Marine Plastics: A Roadmap to a Circular Economy (Wang et al 2019) ▪ Develop effective consumer campaigns to encourage consumers to demand sustainable options and act at individual level to reduce plastics usage (short-term)	Comment la société civile peut-elle contribuer à trouver la Solution ? ➤ S'attaquer aux plastiques marins : Une feuille de route vers une économie circulaire (Wang et al 2019) ▪ Développer des campagnes efficaces auprès des consommateurs pour les encourager à exiger des options durables et à agir au niveau individuel pour réduire l'utilisation des plastiques (court terme).
How can Civil Society Contribute to the Solution? ▪ Raise awareness, and provide reliable sustainability information to consumers (medium – long term) ▪ Volunteer monitoring protocols for measuring marine debris (Marine Debris Monitoring Toolkit)	Comment la société civile peut-elle contribuer à trouver la solution ? ▪ Sensibiliser les consommateurs et leur fournir des informations fiables sur la durabilité (moyen et long terme). ▪ Protocoles de surveillance volontaire pour mesurer les déchets marins (Marine Debris Monitoring Toolkit)
QUESTIONS ?	DES QUESTIONS ?