

# ສິ່ງທ້າທາຍຕໍ່ກັບ ພູມອາກາດ ແລະ ສິ່ງແວດລ້ອມ







**WHAT IS  
CLIMATE CHANGE?**



# ການພັດທະນາສີຂຽວ

- ການເຕີບໂຕທາງດ້ານເສດຖະກິດດ້ວຍຄວາມຍືນຍົງຂອງສິ່ງແວດລ້ອມ.
- ການຕອບສະໜອງຕໍ່ກັບຄວາມຕ້ອງການໃນປັດຈຸບັນ ໂດຍບໍ່ສ້າງຜົນກະທົບໃຫ້ແກ່ ຄົນລຸ້ນໃໝ່ໃນອະນາຄົດ.
- ການນຳໃຊ້ຊັບພະຍາກອນທຳມະຊາດ ຢ່າງມີຄວາມຮັບຜິດຊອບ.
- ທູດຜ່ອນຜົນກະທົບຕໍ່ກັບສິ່ງແວດລ້ອມ.
- ການຈັດການ ຕໍ່ກັບການປ່ຽນແປງຂອງສະພາບດິນຟ້າອາກາດ.
- ສະໜັບສະໜູນການເຕີບໂຕທາງດ້ານເສດຖະກິດ ແລະ ຄວາມກ້າວໜ້າທາງສັງຄົມ.



# **ພາບລວມຂອງ ແຜນຍຸດທະສາດການເຕີບໂຕສີຂຽວ ແຫ່ງຊາດຂອງ ສປປ ລາວ ຫາປີ 2030**



- **ຄວາມສ່ຽງສູງ ຕໍ່ກັບການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ:**

ໃນປີ 2050, ອຸນຫະພູມສະເລ່ຍຄາດວ່າຈະເພີ່ມຂຶ້ນ  $0.5-0.7^{\circ}\text{C}$ , ແລະ ຈະມີປະລິມານນ້ຳຝົນເພີ່ມຂຶ້ນປະມານ 14%. ການເພີ່ມຂຶ້ນຂອງຄວາມຖີ່ ແລະ ຄວາມຮຸນແຮງຂອງໄພພິບັດທາງທຳມະຊາດ.

- **ຍຸດທະສາດການປັບຕົວ ທີ່ສຳຄັນ:**

ນະໂຍບາຍ ແລະ ຍຸດທະສາດເພື່ອປັບຕົວເຂົ້າກັບການປ່ຽນແປງຂອງສະພາບດິນຟ້າອາກາດ ແລະ ການຈັດການພິບັດທາງທຳມະຊາດ: ແຜນປະຕິບັດການປັບຕົວແຫ່ງຊາດ (NAPA), ແຜນຍຸດທະສາດການຄຸ້ມຄອງຄວາມສ່ຽງໄພພິບັດ, ຄະນະກຳມະການຄຸ້ມຄອງພິບັດແຫ່ງຊາດ (NCDM).

**ພາບລວມຂອງ  
ແຜນຍຸດທະສາດການເຕີບໂຕສີຂຽວ  
ແຫ່ງຊາດຂອງ ສປປ ລາວ ຫາປີ 2030**



**ສິ່ງເສີມຄວາມສາມາດໃນການປັບຕົວ ແລະ ການຫຼຸດຜ່ອນຄວາມສ່ຽງ:**

ປັບປຸງການຮັບຮູ້, ຄວາມສາມາດ ແລະ ຄວາມເຂົ້າໃຈຂອງເຈົ້າໜ້າທີ່ ແລະ ອົງການທີ່ມີສ່ວນຮ່ວມໃນການປັບຕົວຕໍ່ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ. ສິ່ງເສີມການປະຕິບັດທີ່ຍືນຍົງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ຄວາມສາມາດໃນການປັບຕົວຕໍ່ກັບໄພພິບັດ.

**ການເຕີບໂຕທາງດ້ານເສດຖະກິດ ໂດຍທີ່ມີ ອາຍກາສ ກາກໂບນິກຕໍ່າ (Low-Carbon):**

ສິ່ງເສີມການເຕີບໂຕທາງເສດຖະກິດ ໂດຍການປ່ອຍກາສ ພາວະເຮືອນແກ້ວຕໍ່າ. ສິ່ງເສີມເທັກໂນໂລຢີທີ່ປະຫຍັດພະລັງງານ ແລະ ຜະລິດຂີ້ເຫຍື້ອໜ້ອຍລົງ ເຊິ່ງຈະຊ່ວຍຫຼຸດຜ່ອນການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ. ການປົກປ້ອງ ແລະ ຂະຫຍາຍຖານກັກເກັບ ອາຍກາກໂບນິກ, ເຊັ່ນ ປ່າໄມ້ ແລະ ດິນ.



# **ພາບລວມຂອງ ແຜນຍຸດທະສາດການເຕີບໂຕສີຂຽວ ແຫ່ງຊາດຂອງ ສປປ ລາວ ຫາປີ 2030**



## **ສະພາບແວດລ້ອມການລົງທຶນ ແລະ ການຄຸ້ມຄອງ:**

ອຳນວຍຄວາມສະດວກໃຫ້ແກ່ການລົງທຶນ ປະກອບສ່ວນເຂົ້າໃນການພັດທະນາແບບຍືນຍົງ. ຫຼຸດຜ່ອນຜົນກະທົບຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຈາກໂຄງການທີ່ໄດ້ຮັບການອະນຸມັດ.

## **ການພັດທະນາຊຸມນະບົດ ແລະ ການຫຼຸດຜ່ອນຄວາມທຸກຍາກ:**

ການເຕີບໂຕທາງເສດຖະກິດແບບກວມລວມ ແລະ ຍຸດຕິທຳ ເພື່ອຫຼຸດຜ່ອນຄວາມທຸກຍາກ, ໂດຍສະເພາະແມ່ນຢູ່ເຂດຊຸມນະບົດ.

## **ບົດບາດທາງເພດ ແລະ ການພັດທະນາແມ່ຍິງ:**

ຮັບປະກັນຄວາມສະເໝີພາບລະຫວ່າງຍິງ-ຊາຍ ຜ່ານການສຶກສາ ແລະ ໂອກາດທາງດ້ານເສດຖະກິດ-ສັງຄົມ ຂອງແມ່ຍິງ. ເອົາໃຈໃສ່ຕໍ່ກັບ ການພິຈາລະນາບົດບາດ ຍິງ-ຊາຍ ເຂົ້າໃນນະໂຍບາຍ ໃນລະດັບທ້ອງຖິ່ນ ແລະ ລະດັບຊາດ.



ສິ່ງທ້າທາຍຕໍ່  
ກັບສິ່ງແວດ  
ລ້ອມ ແລະ  
ການປ່ຽນແປງ  
ສະພາບດິນຟ້າ  
ອາກາດ ຢູ່ໃນ  
ສປປ ລາວ.



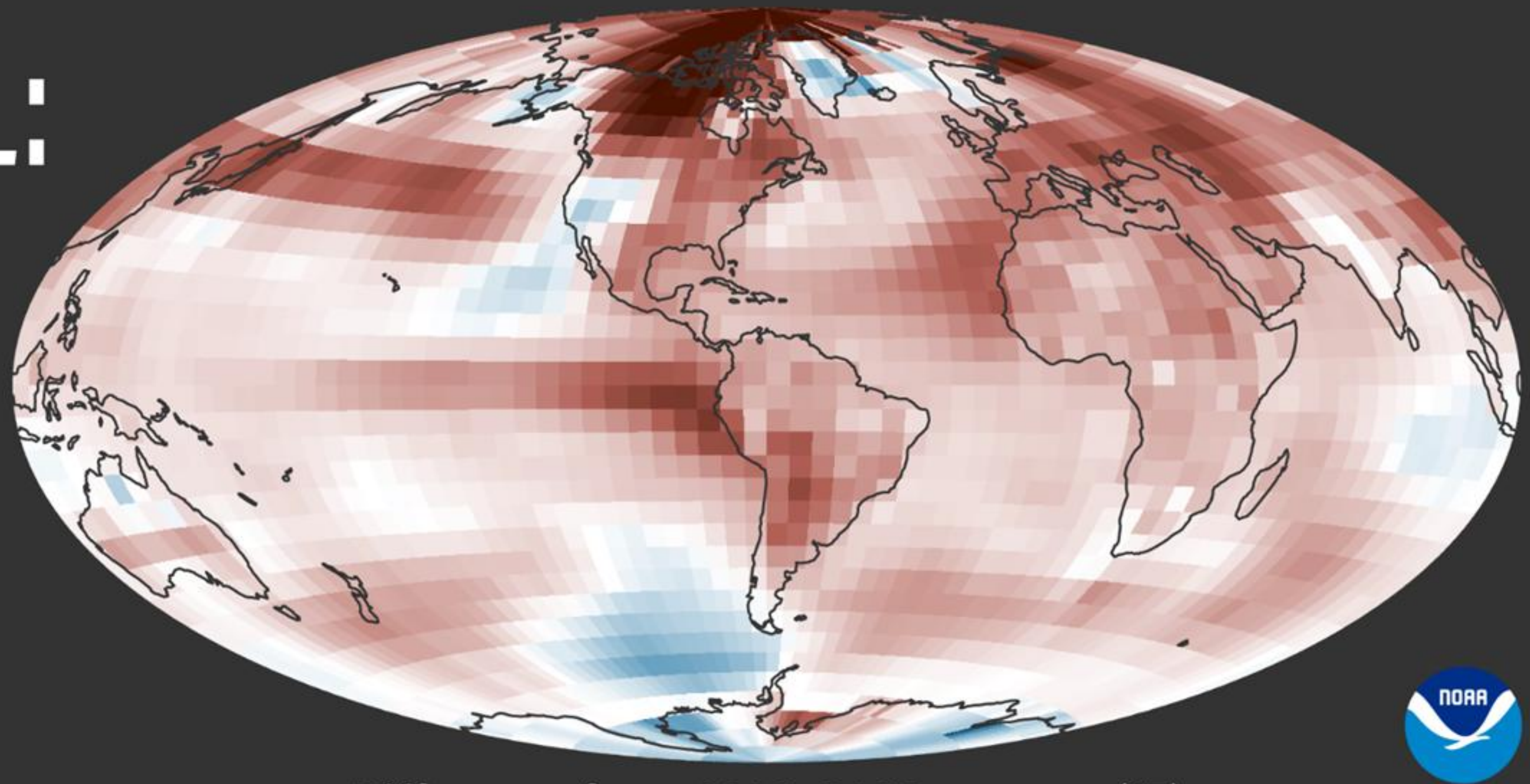
ໃນໄລຍະທີ່ດຣາວັດທີ່ຜ່ານມາ, ກິດຈະວັດຂອງມວນມະນຸດເປັນສາເຫດທີ່ມາໃຫ້ສະພາບຂອງໂລກນັບມື້ນັບເສຍຄວາມສົມດຸນ.



# IT'S OFFICIAL:

2023 was the  
world's warmest  
year on record

(1850–2023)



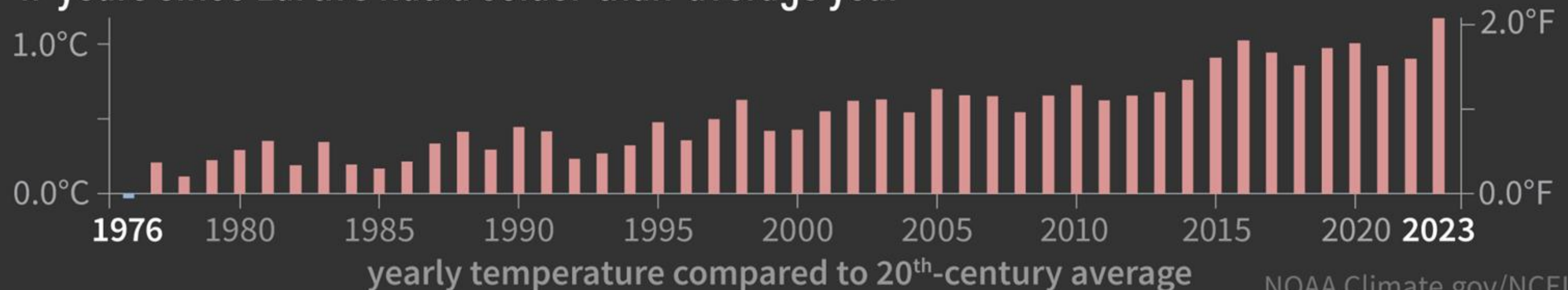
Difference from 1991–2020 average (°F)

-5

0

5

47 years since Earth's had a colder-than-average year

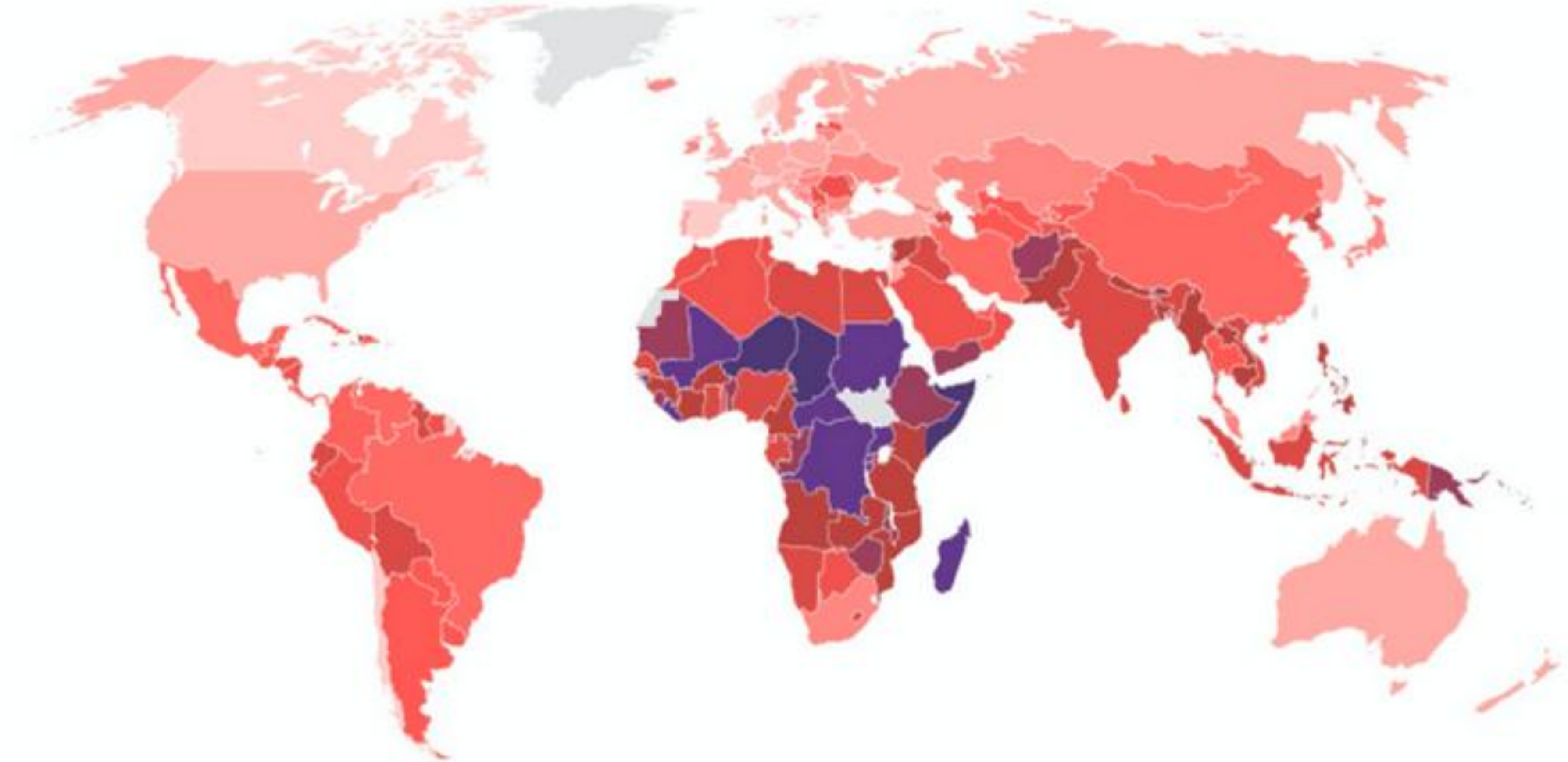


NOAA Climate.gov/NCEI



ພື້ນທີ່ ທີ່ມີ  
ຄວາມສ່ຽງຕໍ່  
ກັບການ  
ປ່ຽນແປງຂອງ  
ສະພາບດິນຟ້າ  
ອາກາດ.

The Notre Dame Global Adaptation Initiative measures overall vulnerability to climate change by considering exposure, sensitivity, and ability to adapt across six life-supporting sectors – food, water, health, ecosystem service, human habitat, and infrastructure



Vulnerability to climate change



Darker colors reflect greater vulnerability,  
gray indicates no data available



# Annual CO<sub>2</sub> emissions, 2022

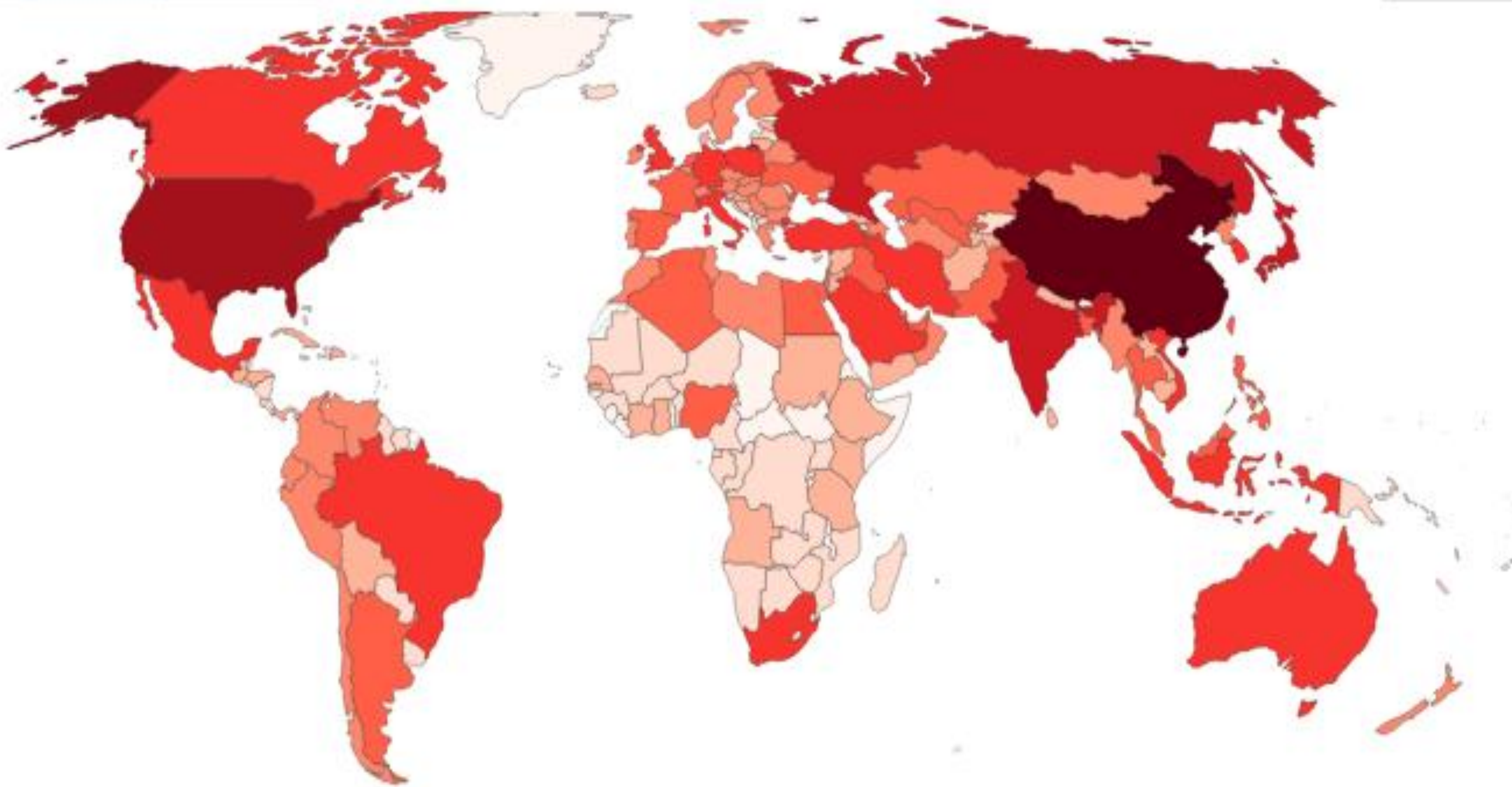
Carbon dioxide (CO<sub>2</sub>) emissions from fossil fuels and industry. Land-use change is not included.

Table

Map

Chart

World



ການປ່ອຍ  
ອາຍກາກໂບນິກ  
ໃນປີ 2022.

No data

0 t

3 million t

10 million t

30 million t

100 million t

300 million t

1 billion t

3 billion t

10 billion t

▶

1750

●

2022



# ການປະຊຸມ EARTH SUMMIT

UNCED, Brazil 1992

- ຄວາມສໍາເລັດທີ່ສໍາຄັນ: ອະນຸສັນຍາ ອົງການສະຫະປະຊາຊາດ ວ່າດ້ວຍການປ່ຽນແປງຂອງສະພາບດິນຟ້າອາກາດ (UNFCCC):

- ໄດ້ກ່າວໄວ້ວ່າ ກິດຈະກຳຂອງມະນຸດມີສ່ວນຕໍ່ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ.
- ໄດ້ກ່າວໄວ້ວ່າ ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ ແມ່ນຄວາມກັງວົນໃນທົ່ວໂລກ.
- ມີຜົນບັງຄັບໃຊ້ໃນປີ 1994.
- ບໍ່ໄດ້ຜູກມັດບັນດາປະເທດຢ່າງຖືກຕ້ອງຕາມກົດໝາຍ ເພື່ອຫຼຸດຜ່ອນການປ່ອຍອາຍຜິດ.
- ບໍ່ໄດ້ກຳນົດເປົ້າໝາຍ ຫຼື ໄລຍະເວລາ.
- ຮຽກຮ້ອງໃຫ້ມີກອງປະຊຸມເປັນປົກກະຕິ (Conference of the Parties, COP).



**United Nations**  
Framework Convention on  
Climate Change



# ສັນທິສັນຍາ ກຽວໂຕ

## Kyoto Protocol

ສ້າງຂຶ້ນໃນປີ 1997.

ເປັນຂໍ້ຕົກລົງທາງດ້ານກົດໝາຍ ເພື່ອຫຼຸດຜ່ອນ ອາຍກາສ ເຮືອນ ແກ້ວ.

ຄໍາໝັ້ນສັນຍາເດີມທີ່ຈະຫຼຸດການ ປ່ອຍອາຍຜິດ ໂດຍລວມຫຼຸດລົງ 5% ຈາກລະດັບໃນປີ 1990.










ມີພຽງແຕ່ປະເທດທີ່ພັດທະນາ ແລ້ວເທົ່ານັ້ນ ທີ່ຕ້ອງການໃຫ້ ຫຼຸດຜ່ອນການປ່ອຍອາຍຜິດ.

ມີການກຳນົດເປົ້າໝາຍ, ແຕ່ບໍ່ມີ ກອບເວລາທີ່ຊັດເຈນ.



# The UN Climate Agreements

## Kyoto Protocol & Paris Agreement

Kyoto Protocol	Paris Agreement
<div><p>Was created in 1997 and ratified in 2005. Had two periods from 1997-2020.</p></div>	<div><p>Signed in November of 2016. New commitments are due every 5 years</p></div>
<div><p>Legally binding agreement to decrease GHG</p></div>	<div><p>Not legally binding commitment to reduce emissions, increase accountability</p></div>
<div><p>Original commitment to decrease overall emissions by 5% from 1990 levels</p></div>	<div><p>Overall goal to limit global temperatures to 1.5 degrees celcius above pre-industrial levels</p></div>
<div><p>Only required developed nations to reduce emissions</p></div>	<div><p>Asked all nations to reduce emissions</p></div>
<div><p>Targets are set but no determined time frame</p></div>	<div><p>New set of targets declared after 5 years (these are now due in 2020)</p></div>

# ສັນຍາປາຣີ

## Paris Agreement

ເຊັນໃນປີ 2016.

ບໍ່ໄດ້ຜູກມັດທາງດ້ານກົດໝາຍ.

ເປົ້າໝາຍແມ່ນຈະຈຳກັດການ ເພີ່ມຂຶ້ນຂອງອຸນຫະພູມໂລກ ໄວ້ ທີ່ 1.5 °C ໃຫ້ສູງກວ່າລະດັບ ກ່ອນຍຸກອຸດສາຫະກຳ.

ຂໍໃຫ້ທຸກປະເທດຫຼຸດຜ່ອນການ ປ່ອຍອາຍຜິດ.

ກຳນົດເປົ້າໝາຍໃໝ່ຫຼັງຈາກ 5 ປີ.



# WHAT IS THE PARIS AGREEMENT?

## AND HOW DOES IT WORK?





**ການປ່ຽນແປງສະພາບດິນຟ້າ  
ອາກາດ / ສິ່ງແວດລ້ອມ ຢູ່ໃນ  
ສປປ ລາວ.**





ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

# ພູມອາກາດ ບໍ່ແມ່ນ ອາກາດ

1

Climate is not  
weather



Climate and weather are not the same. Weather is local and temporary. A thunderstorm, for example, is a typical weather event. Climate, however, reflects regional and long-term patterns in temperature, rainfall and wind. It is therefore measured as an average over time. For example, average rainfall in 2011 in Laos was approximately 1,800 mm.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ອຸນຫະພູມ  
ສະເລ່ຍ  
ກຳລັງເພີ່ມຂຶ້ນ  
ໃນທົ່ວໂລກ.

2

Average  
temperatures are  
rising worldwide



Climate worldwide is changing faster and faster. Over the past 50 years, the average air temperature near the earth has increased between 0.15 – 0.3°C every ten years. This effect is called global warming.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ພາວະໂລກຮ້ອນ ແລະ  
ການປ່ຽນແປງດິນຟ້າ  
ອາກາດ ເກີດຂຶ້ນໂດຍ  
ການກະທຳຂອງມະນຸດ  
ເຊັ່ນກັນ.

3

Global warming and  
climate change are  
caused by human  
activities, too



The increase of average temperatures on earth is called global warming. Human activities like the extraction and burning of coal or oil, rice field cultivation and livestock rearing or deforestation all add to global warming. In Laos, it is mainly agricultural activities and deforestation which contribute to global warming.



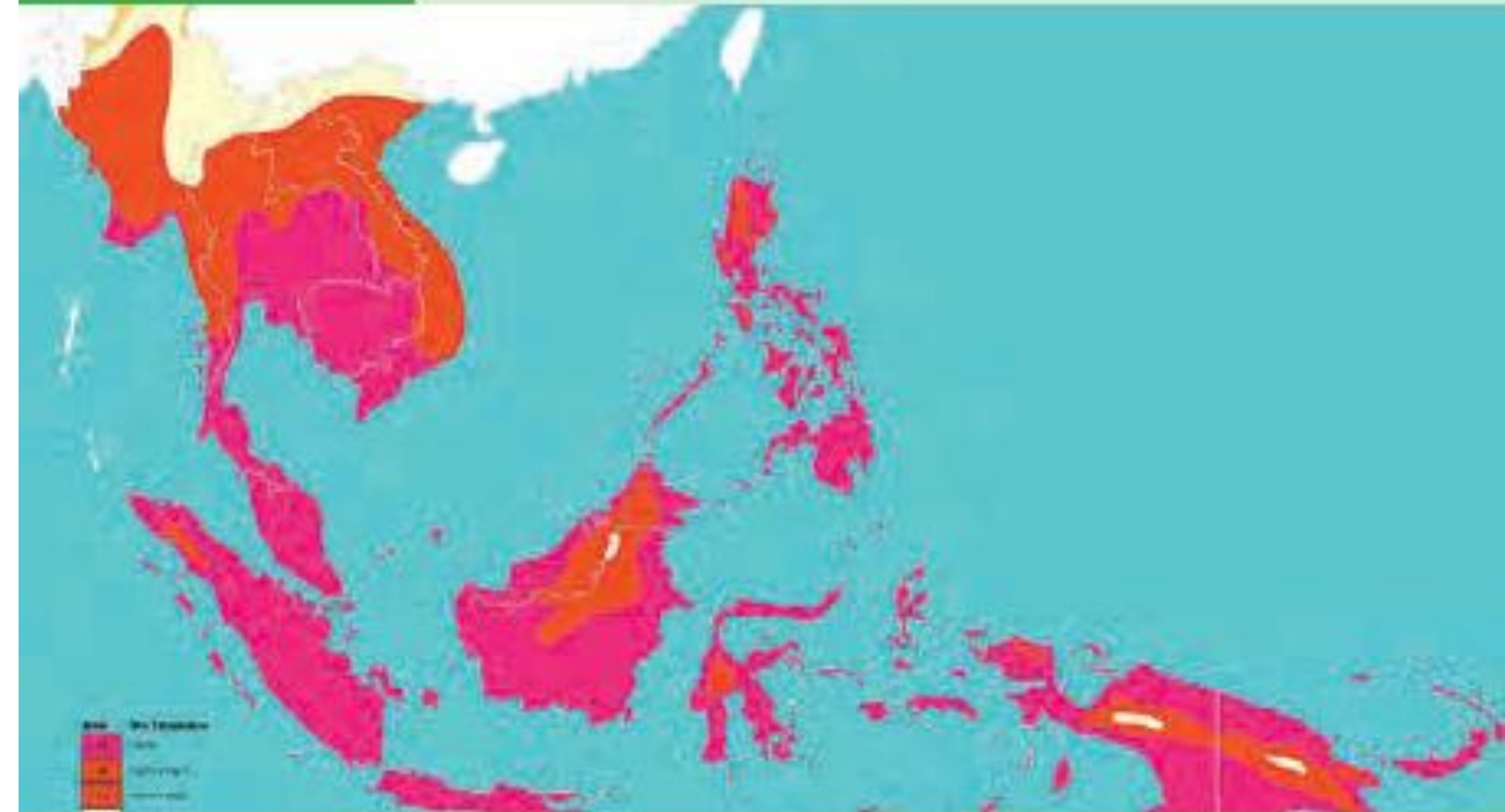
ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ /  
ບັນຫາສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ການປ່ຽນແປງ  
ສະພາບດິນຟ້າ  
ອາກາດບໍ່ຢຸດຢູ່ທີ່ຂອບ  
ເຂດຂອງປະເທດໃດ  
ປະເທດໜຶ່ງເທົ່ານັ້ນ.

Credit: GIZ

4

**Climate change does  
not stop at countries'  
borders**



Warmer temperatures are affecting the world's climate and its marine, river, land and forest ecosystems. Climate change does not stop at the border of Lao PDR. Being a land-locked country does not protect Laos from the effects of global warming. The regional climate in South East Asia will change as a whole, and this includes Laos.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ /  
ບັນຫາສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

# ພູມອາກາດ ໃນປະເທດລາວ ກຳລັງມີການ ປ່ຽນແປງ.

Credit: GIZ

5

Climate in Laos is  
changing



Climate change is happening globally and affects all countries. Changes in climate can be identified at the national level, too. For Laos, scientists predict that temperatures will continue to rise and that dry seasons will get longer. Rainfall, storms, droughts and floods will become more severe and frequent. Rainfall will become more erratic and weather events such as droughts or floods will become more extreme.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ /  
ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ການປ່ຽນແປງ  
ສະພາບດິນຟ້າ  
ອາກາດ ມີຜົນ  
ກະທົບຕໍ່ການດຳລົງ  
ຊີວິດຂອງຜູ້ຄົນ.

Credit: GIZ

6

Climate change  
affects people's lives



Vulnerability towards climate change is high when a country like Laos depends on natural resources for its development. Some of Laos' major forms of natural resource utilization such as rain-fed rice cultivation and hydro-power generation are very vulnerable to the negative effects of climate change. The northern and north-western parts of Laos are vulnerable to drought. Along the Mekong River, plains in the central and southern provinces are vulnerable to flood.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ປະເທດລາວໄດ້ປະເຊີນຕໍ່  
ຄວາມສ່ຽງຈາກການ  
ປ່ຽນແປງສະພາບດິນຟ້າ  
ອາກາດໃນທັນທີ.

Credit: GIZ

7

Laos faces immediate  
climate change risks



The effects of climate change can have serious impacts on the livelihoods and living conditions of people in Laos. Floods and storms can destruct infrastructure by washing away streets, damaging buildings or interrupting electricity supply. Floods and droughts can cause crop failure, a lack of drinking and irrigation water or waterborne diseases and infectious diseases such as malaria or dengue.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ການປ່ຽນແປງສະພາບ  
ດິນຟ້າອາກາດ ຈະມີຜົນ  
ກະທົບຕໍ່ການພັດທະນາ  
ໃນໄລຍະຍາວຂອງ ສປປ  
ລາວ.

Credit: GIZ

8

Climate change will  
affect the long-term  
development  
of Lao PDR



Climate change will affect economic growth in Laos as key industrial sectors depend on natural resources: mining, hydropower and wood processing. Farming, animal husbandry, forestry and fisheries rely on land, appropriate temperature and rainfall. Water shortage and groundwater depletion can lead to reduced agricultural production. This may cause food insecurity and an increase of poverty as the livelihood of most Lao people relies on agriculture.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ  
/ ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ການປັບຕົວຕໍ່ກັບການ  
ປ່ຽນແປງສະພາບດິນ  
ຟ້າອາກາດແມ່ນສິ່ງສໍາ  
ຄັນ ສໍາລັບ ສປປ ລາວ.

Credit: GIZ

9

The adaptation to  
climate change is  
crucial for Laos



Adapting to climate change will enable Laos to minimize the negative effects of climate change. Adaptation incorporates the adjustments in human and natural systems in response to expected climate change impacts. Sector policies and action plans related to key sectors such as agriculture, forestry, water resources, energy or industry need to incorporate climate change adaptation measures. This will safeguard the long-term sustainability of the country's development and growth.



ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ /  
ສິ່ງແວດລ້ອມ ຢູ່ໃນ ສປປ ລາວ.

ການຫຼຸດຜ່ອນຜົນ  
ກະທົບຂອງການ  
ປ່ຽນແປງສະພາບດິນ  
ຟ້າອາກາດ ຕ້ອງໄດ້ຮັບ  
ການພິຈາລະນາ.

Credit: GLZ

10

The mitigation of  
climate change  
needs to be taken  
into account

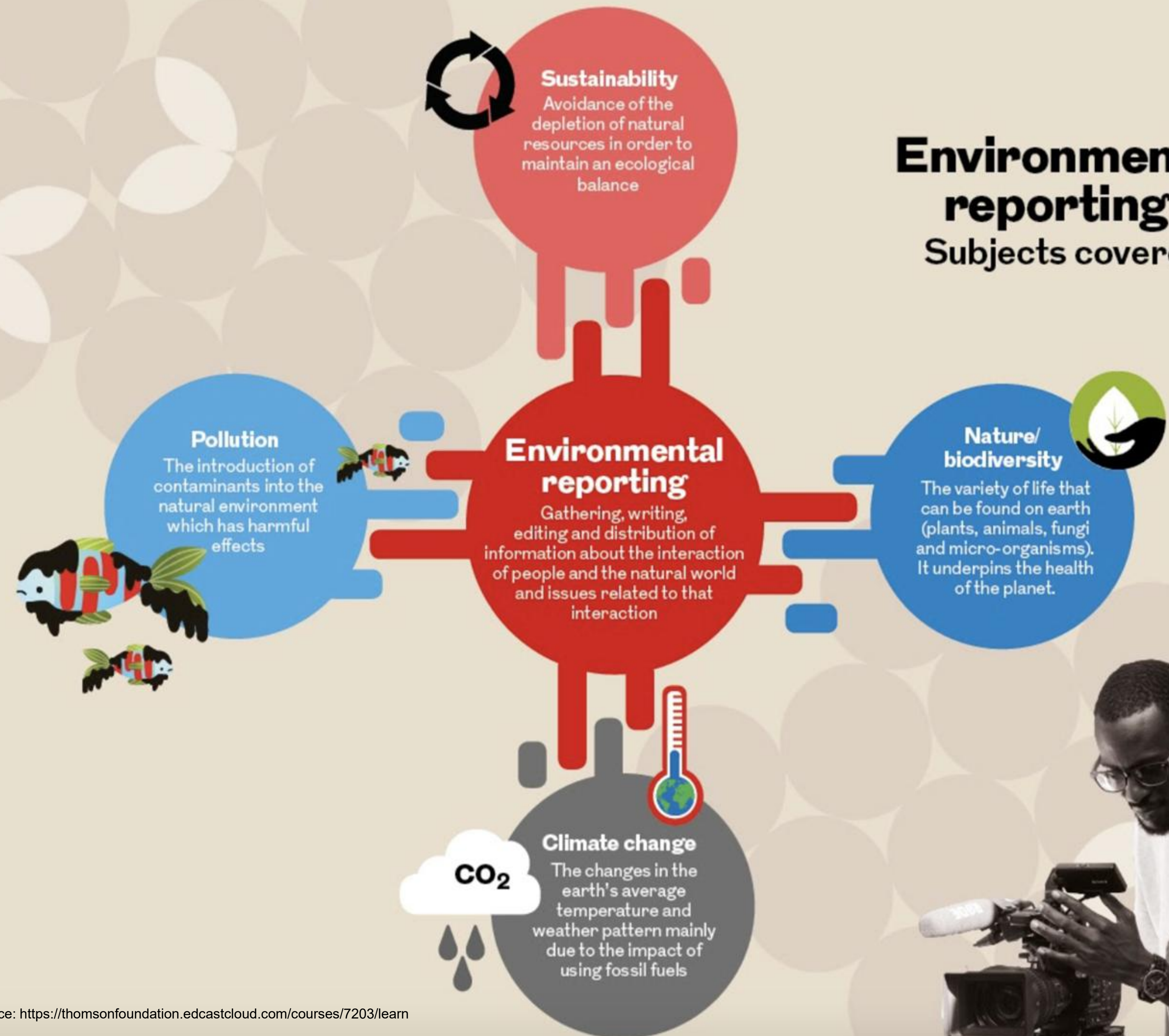


In order to mitigate or limit climate change, global warming by human activities needs to be reduced. Laos' economy is continuously growing, mainly based on exports of natural resources. Mitigation measures need to be taken regarding growth in the mining and timber sectors and in processing industries such as garments or cement. Setting a national framework for limiting global warming and climate change today supports the development of Lao industries tomorrow.



# Environmental reporting:

## Subjects covered



Source: <https://thomsonfoundation.edcastcloud.com/courses/7203/learn>





# ພູມອາກາດ ຫຼື ສິ່ງແວດລ້ອມ?

## 'There is no escape': Nairobi's air pollution sparks Africa health warning

Pollution in the Kenyan capital is 'beyond imagination'. With Africa's predicted rise in population - and a constant stream of dirty secondhand cars from Europe and Japan - this urban health crisis could kill 1.5 million within a generation



ບໍ່ມີທາງໃຫ້ຫຼີກລ່ຽງໄດ້: ມົນ  
ລະຜິດທາງອາກາດ ໃນເມືອງ  
ນິວຣໍບີ ສ້າງຄວາມກັງວົນ  
ດ້ານສຸຂະພາບໃນ ອາຟຣິກາ.

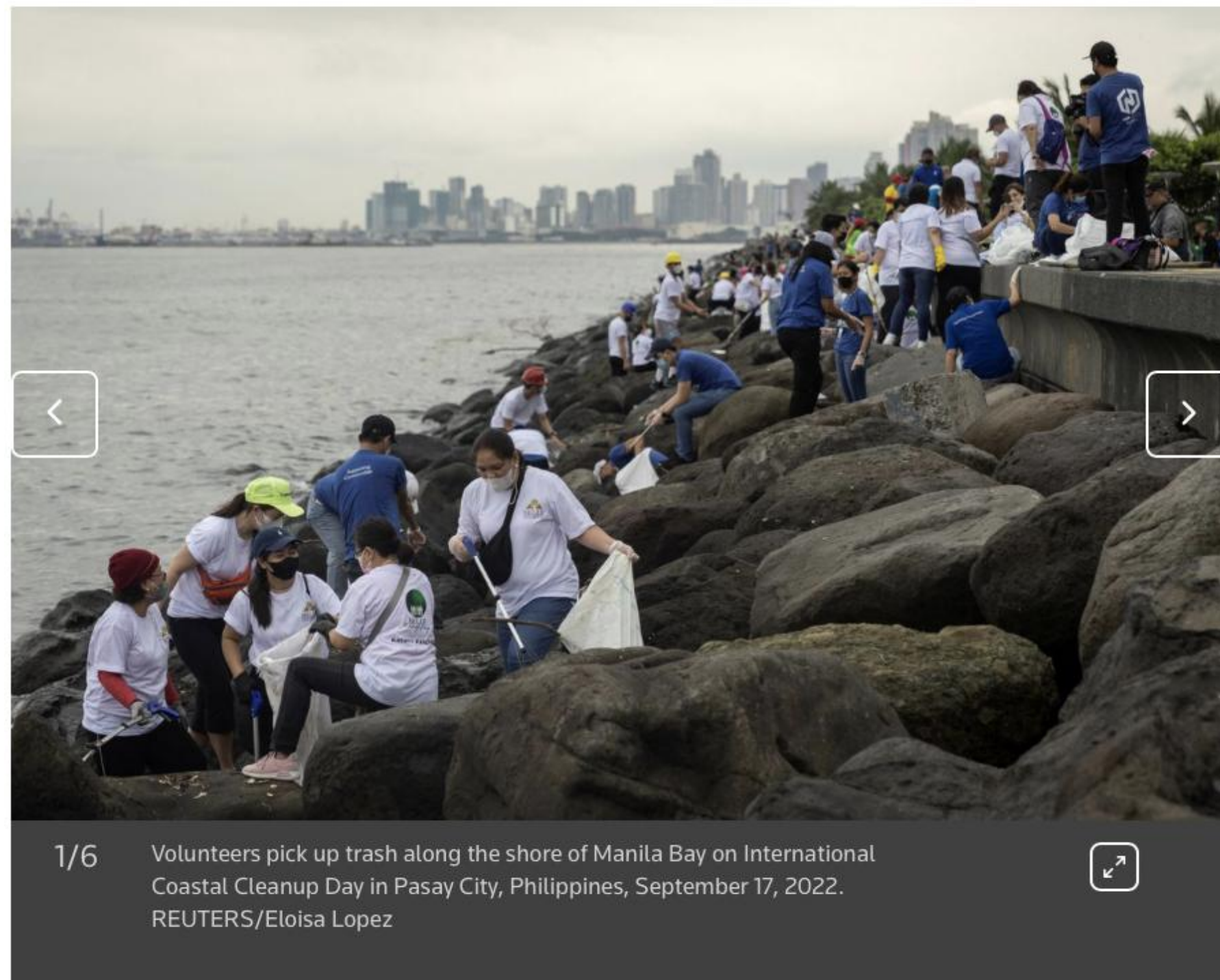
<https://www.theguardian.com/cities/2016/jul/10/no-escape-nairobi-air-pollution-sparks-africa-health-warning>



# ພູມອາກາດ ຫຼື ສິ່ງແວດລ້ອມ?

## Cleanup day comes to Philippine capital's polluted bay

By Peter Blaza and Jay Ereño



MANILA, Sept 17 (Reuters) - Hundreds of volunteers joined a mass cleanup drive along the coast of the polluted Manila Bay in the Philippine capital to mark International Coastal Cleanup Day on Saturday.

<https://www.reuters.com/world/asia-pacific/cleanup-day-comes-philippine-capitals-polluted-bay-2022-09-17/>

ວັນອະນາໄມ ແຄມອ່າວ ທີ່ມີ  
ມົນລະຜິດ ໃນເມືອງຫຼວງ  
ປະເທດຟີລິບປິນ.



# ພູມອາກາດ ຫຼື ສິ່ງແວດລ້ອມ?

NEWS BUSINESS SE ASIA OPINION LIFESTYLE TRAVEL MULTIMEDIA

NEWS > CITY

## Dozens of Jakarta neighborhoods flooded after Sunday night rain

News Desk

The Jakarta Post

Jakarta / Mon, October 5, 2020 / 12:11 pm

Entire neighbourhoods in the capital Jakarta and its satellite cities, home to about 30 million people, [were submerged last week by floodwaters](#). The deluge was the heaviest in the capital since record-keeping began in the 19th century. Located in the equatorial belt, Indonesia with its tropical climate often suffers from flash floods and landslides, mainly triggered by monsoon rainfall between October and April.

<https://www.thejakartapost.com/news/2020/10/05/dozens-of-jakarta-neighborhoods-flooded-after-sunday-night-rain.html>

ຊຸມຊົນຫລາຍແຫ່ງໃນ ເມືອງ  
ຈາກາຕ້າ ໄດ້ຖືກນໍ້າຖ້ວມຫຼັງ  
ຈາກຝົນຕົກໃນຄືນວັນອາທິດ.



# ພູມອາກາດ ຫຼື ສິ່ງແວດລ້ອມ?

## Sugar and Salt Shortage Worsens Philippines Food Supply Woes

- Country also purchases corn, rice and wheat from overseas
- Increasing food costs are helping fan inflation in the nation



Flooded salt ponds a day after Typhoon Dante passed through in Cavite province, in June 2021. *Photographer: Veejay Villafranca/Bloomberg*

By Ditas B Lopez and Andreo Calonzo

7. September 2022, 02:00 MESZ *Updated on 7. September 2022, 08:28 MESZ*

ການຂາດແຄນນໍ້າຕານ ແລະ ເກືອ ເຮັດໃຫ້ການສະໜອງ ສະບຽງອາຫານ ໃນປະເທດ ຟີລິບປິນ ຮ້າຍແຮງຂຶ້ນ.

<https://www.bloomberg.com/news/articles/2022-09-07/sugar-and-salt-shortage-worsens-philippines-food-supply-woes>



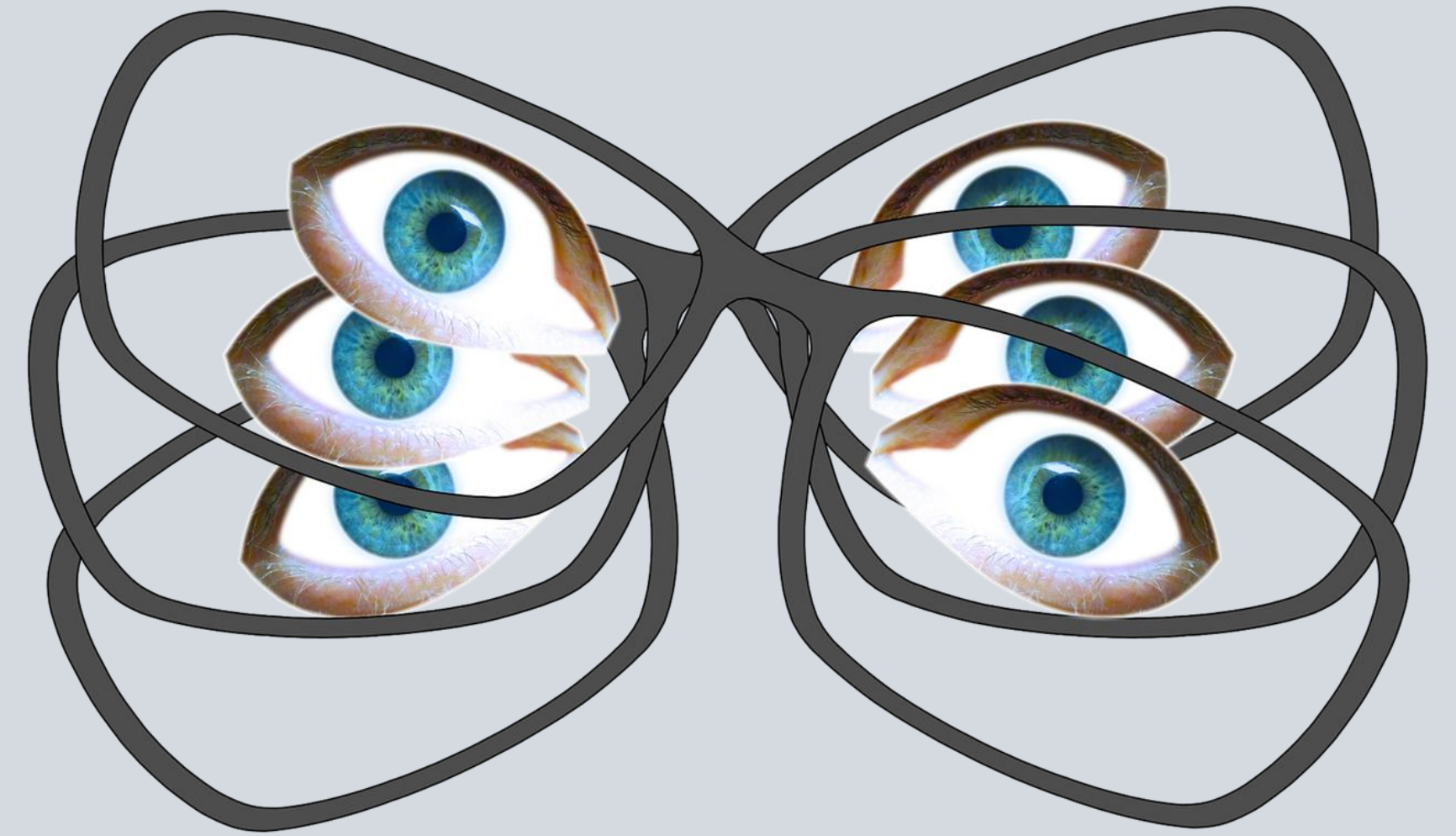
## ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດແມ່ນ ບັນຫາທີ່ ຕ້ອງໄດ້ເອົາໃຈໃສ່

ໃສ່ແວ່ນຕາ ການປ່ຽນແປງຂອງສະພາບດິນຟ້າອາກາດຂອງ  
ທ່ານ ແລະ ລາຍງານເລື່ອງຈາກມຸມມອງໃໝ່ ໃຫ້ກັບເພື່ອນ  
ຮ່ວມງານ ທີ່ມາຈາກຫຼາຍພາກສ່ວນ ເພື່ອໃຫ້ພວກເຂົາໄດ້  
ເລີ່ມຄິດກ່ຽວກັບສະພາບອາກາດ.

ຫົວຂໍ້: ສຸຂະພາບ, ທຸລະກິດ, ເທັກໂນໂລຊີ, ອາຫານ, ວັດທະນະທຳ, ກິລາ,  
ການທ່ອງທ່ຽວ, ສາສະໜາ, ການເມືອງ – ຫຼື ຫົວຂໍ້ໃດກໍໄດ້.

### ຄໍາຖາມ

- X ມີຜົນກະທົບແນວໃດຕໍ່ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ?
- ການປ່ຽນແປງສະພາບດິນຟ້າອາກາດ ມີຜົນກະທົບຕໍ່ X ໄດ້ແນວໃດ?





ແບ່ງຂໍ້ມູນນັ້ນເຊື່ອຖືໄດ້ ຫຼື ບໍ່?



# Safety and



Parents + friends

ADS

TikTok

YouTube

Wikipedia

FB posts

blogs

anonymous posts

unknown websites

gov't agencies

well-known news organizations

experts

reference books

Police

Court records  
legal docs

educational institutions

academic journals

official press releases

eyewitness

NGOs



ການອ່ານຕາຕະລາງຂໍ້ມູນ

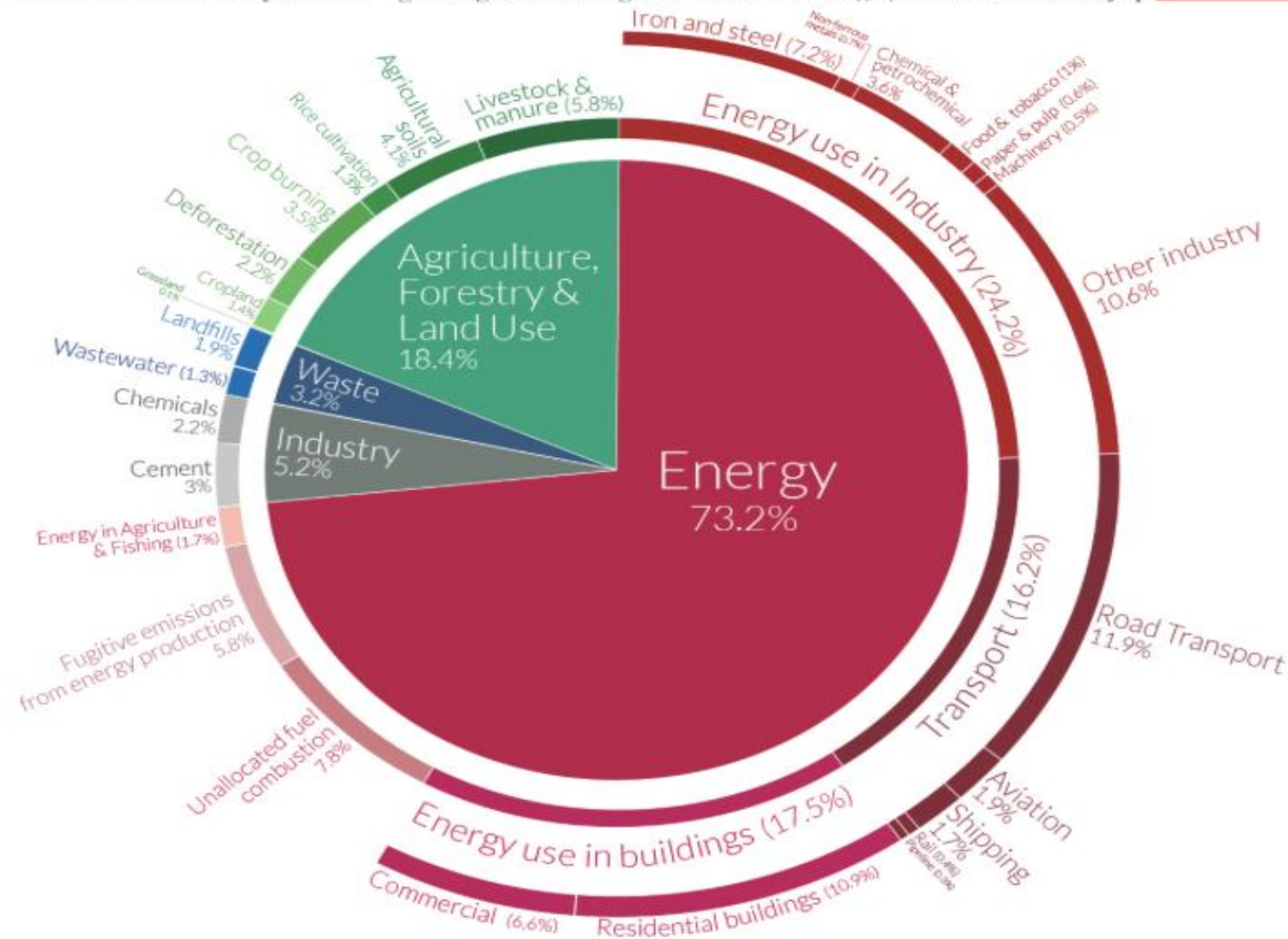


ການປ່ອຍອາຍ  
ຜິດເຮືອນແກ້ວ  
ໃນທົ່ວໂລກຕາມ  
ຂະແໜງການ.

# 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 CO<sub>2</sub>eq.



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

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

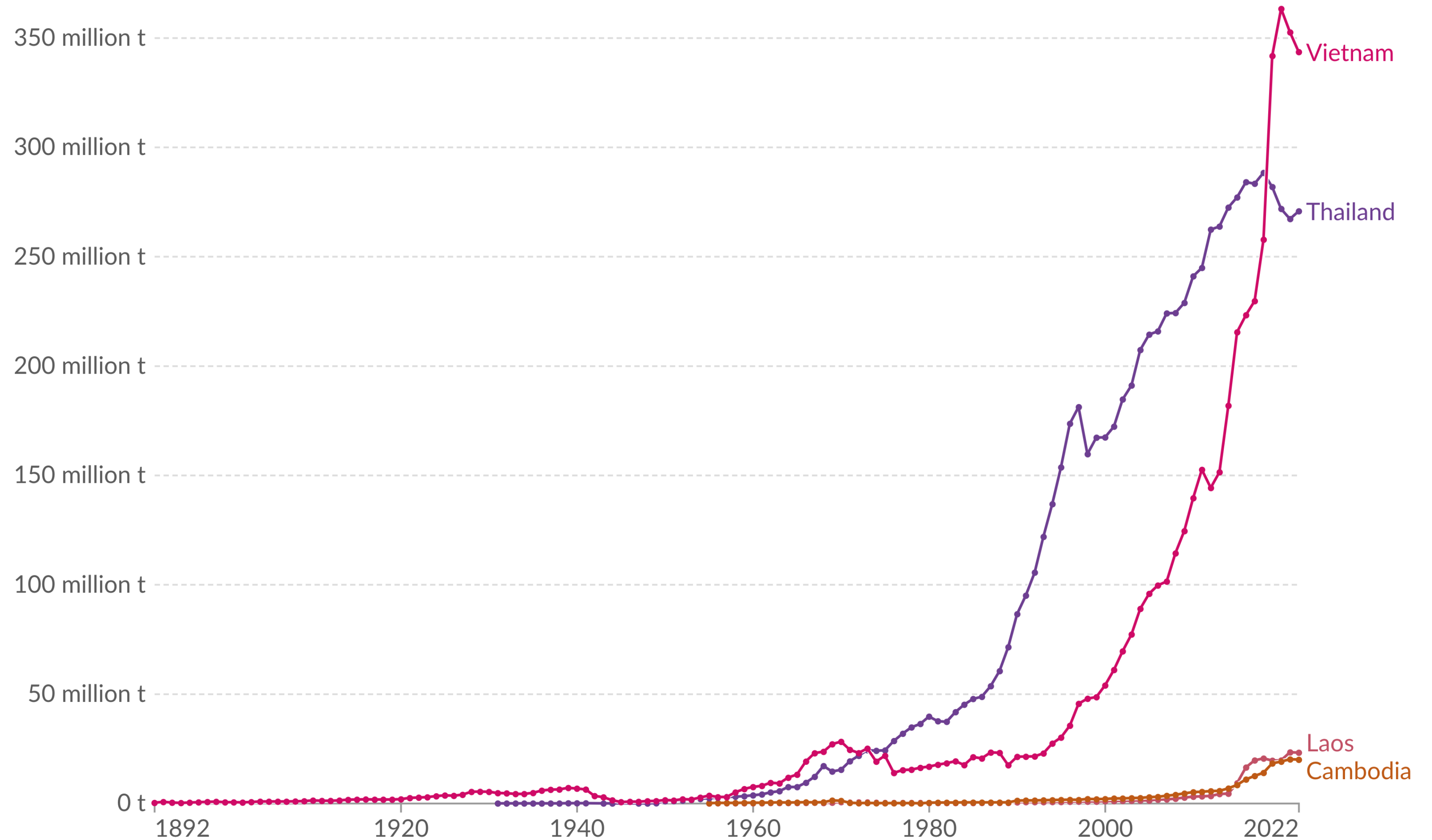
Licensed under CC-BY by the author Hannah Ritchie (2020).



# Annual CO<sub>2</sub> emissions

Carbon dioxide (CO<sub>2</sub>) emissions from fossil fuels and industry<sup>1</sup>. Land-use change is not included.

ການປ່ອຍ  
ອາຍກາກໂບນິກ  
ປະຈຳປີ.



Data source: Global Carbon Budget (2023)

OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY

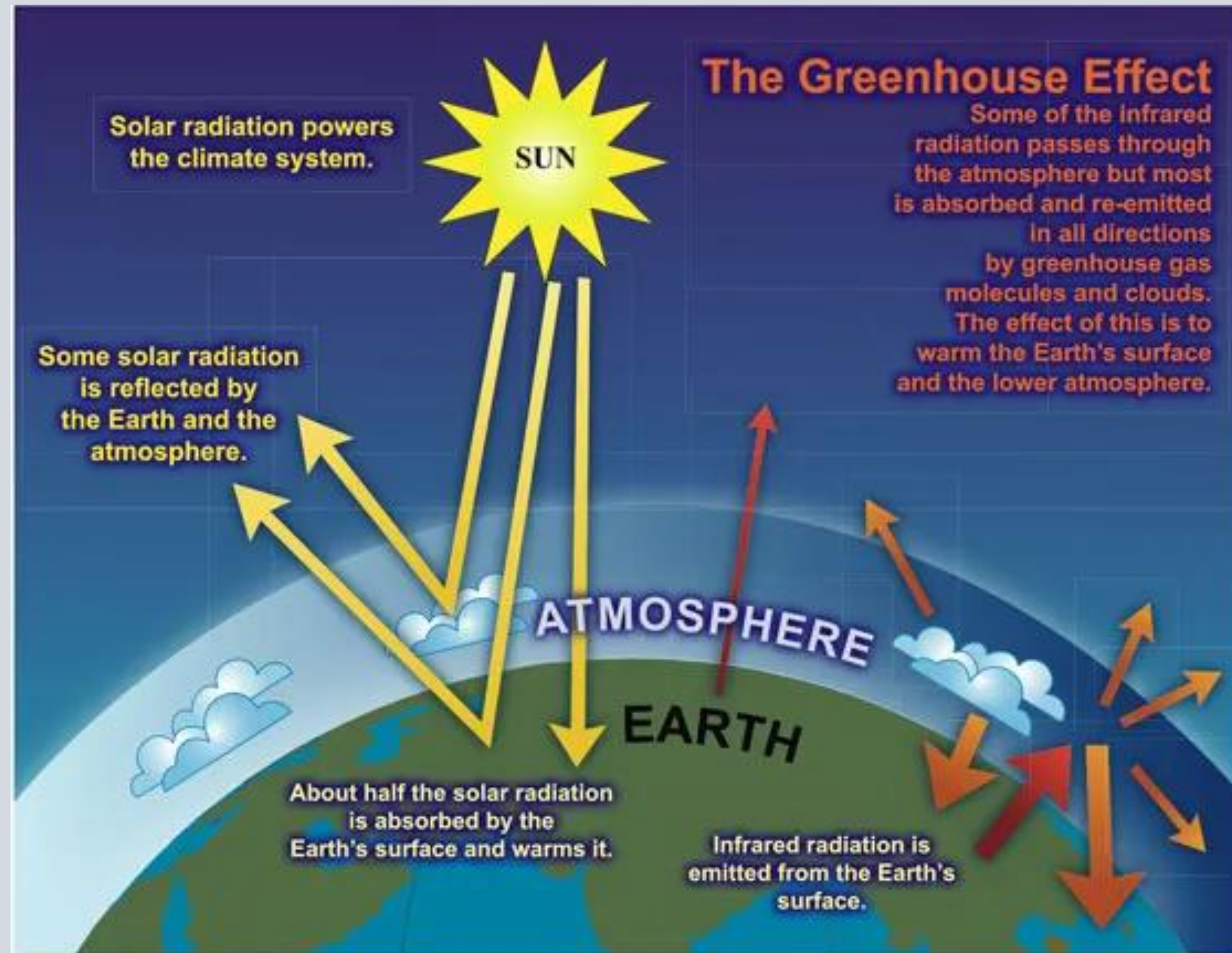
**1. Fossil emissions:** Fossil emissions measure the quantity of carbon dioxide (CO<sub>2</sub>) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO<sub>2</sub> includes emissions from coal, oil, gas, flaring, cement, steel, and other industrial processes. Fossil emissions do not include land use change, deforestation, soils, or vegetation.



Earth's average land and ocean surface temperature in 2021 was 1.51 degrees F (0.84 of a degree C) above the 20th-century average.

It also marked the 45th consecutive year (since 1977) with global temperatures rising above the 20th-century average. The years 2013-2021 all rank among the ten-warmest years on record.

ຜົນກະທົບ  
ຈາກພາວະ  
ເຮືອນແກ້ວ.





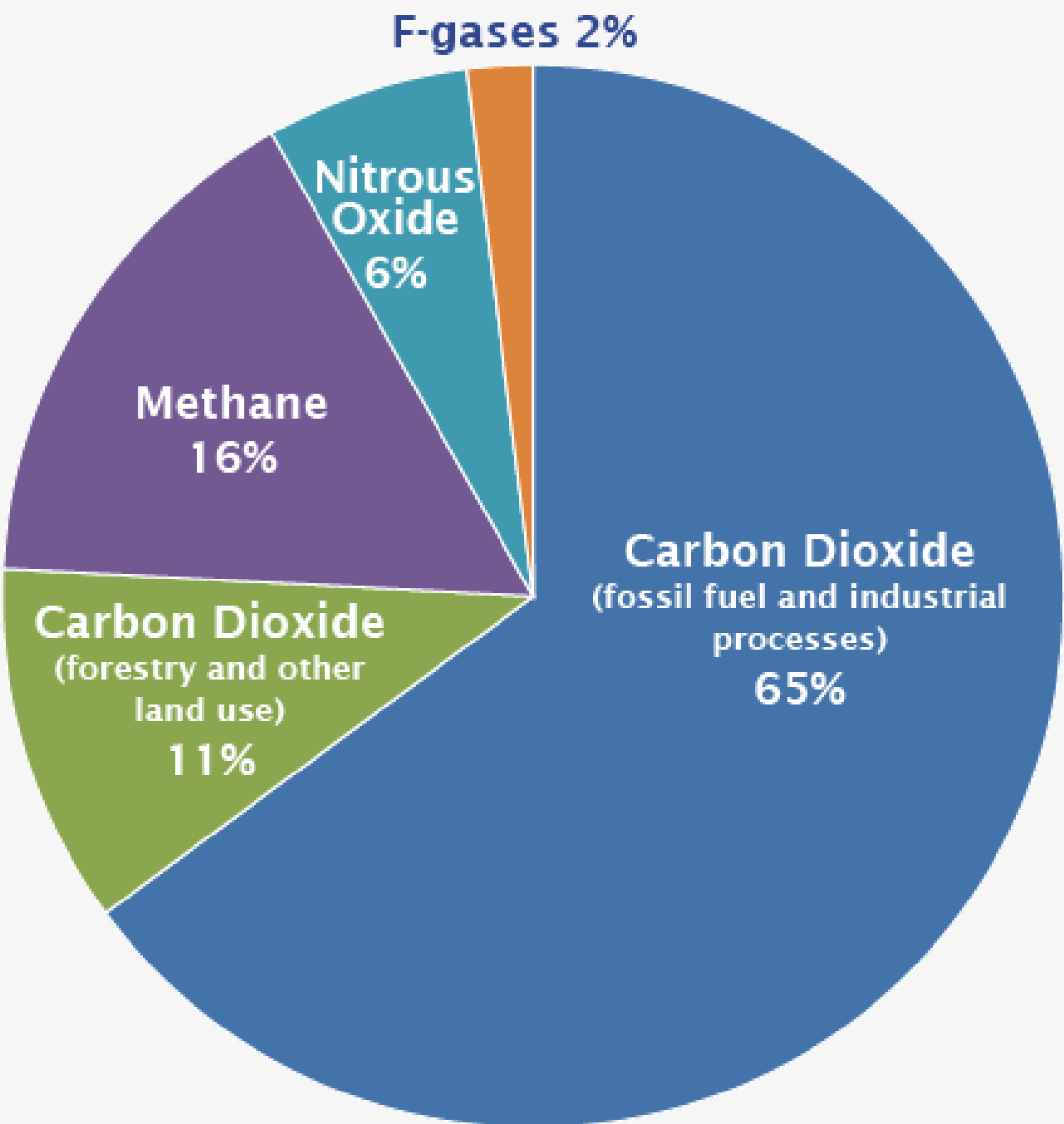
ຂໍຂອບໃຈ

*Thank  
you*





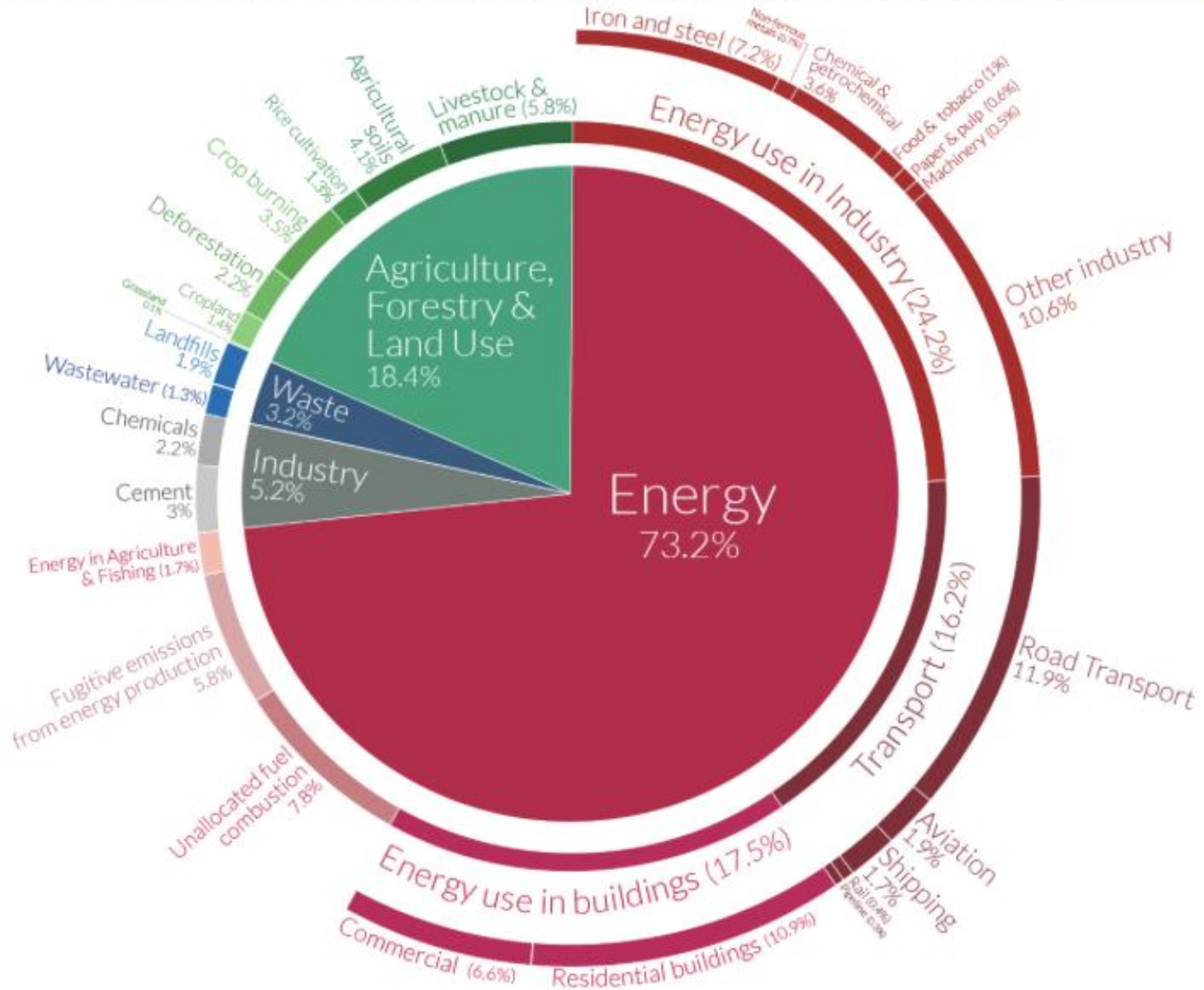
# Global Greenhouse Gas Emissions by Gas



# Global greenhouse gas emissions by sector

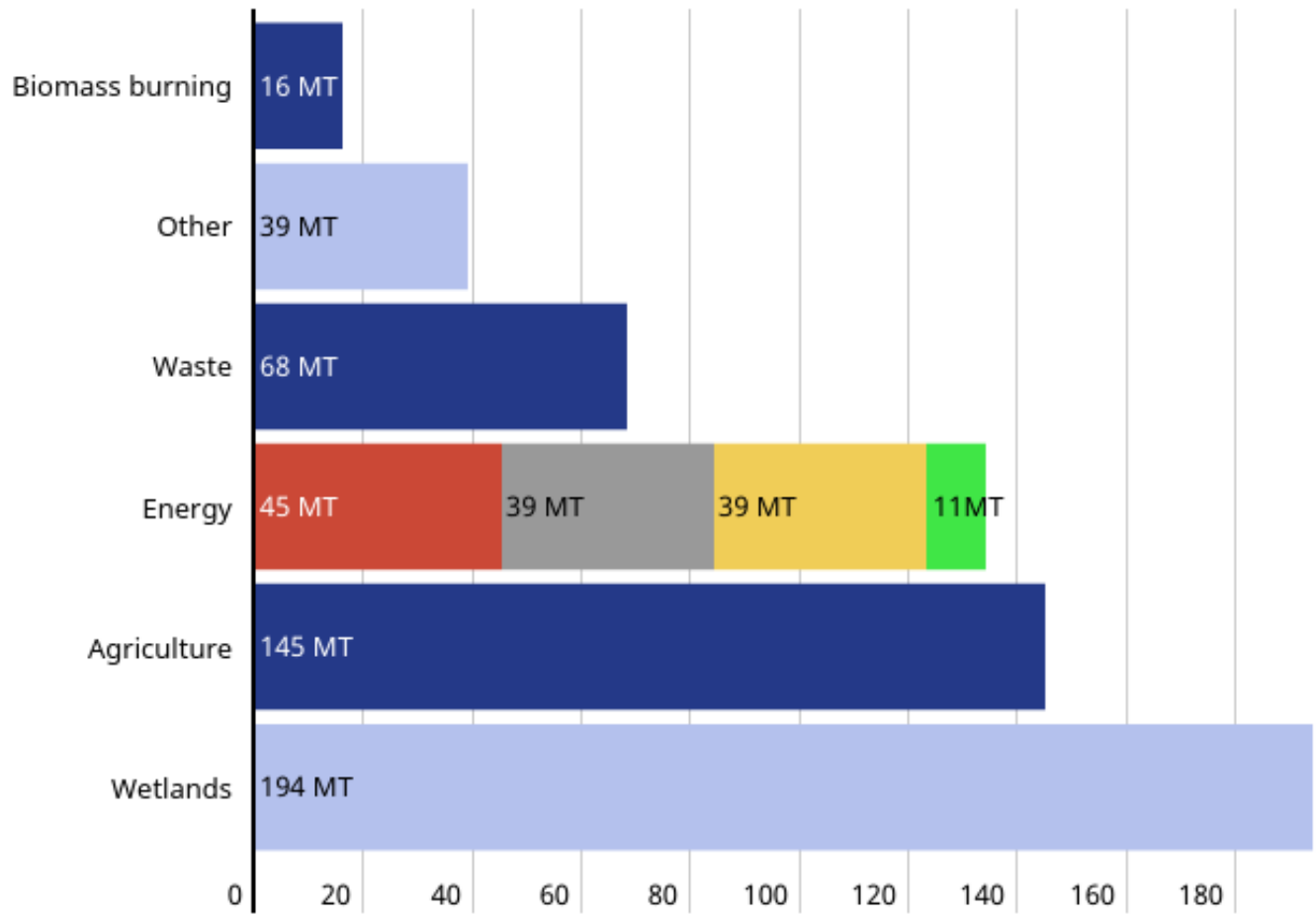
This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO<sub>2</sub>eq.

Our World in Data



OurWorldinData.org – Research and data to make progress against the world's largest problems.  
Source: Climate Watch, the World Resources Institute (2020).  
Licensed under CC-BY by the author Hannah Ritchie (2020).

# SOURCES OF METHANE EMISSIONS



Legend: Natural (light blue), Human-caused (dark blue), Gas (red), Coal (grey), Oil (yellow), Bioenergy (green)

MT = Million metric tons

Source: International Energy Agency, Methane Tracker 2020.

CGTN EUROPE