

Meat, dairy and rice production will bust 1.5C climate target, shows study

Level 3: Advanced

1 Warmer

- a. Would you change your diet to help the planet? What would you change? Why? Give reasons for your answer.

2 Key words

- a. Fill the gaps in the sentences using these key words from the text.

associated	consistent	consumption	curbs	disproportionate
dominant	emissions	equivalent	incompatible	model
projected	surpasses	sustain	threshold	urgency

1. Things, usually gases, that go into the air are called _____.
2. _____ is how much someone eats, drinks, or smokes.
3. _____ information has been calculated to find out how big something will be in the future using information that is available now.
4. A person or thing that is more important, powerful, or successful than others of the same type is _____.
5. When people, things, or ideas are _____, there is a connection between them.
6. To _____ something, you must provide the right conditions so something can happen or exist.
7. If something is not _____ with something else, those two things can't exist together.
8. A _____ is the level or limit when something different happens.
9. When you need to deal with something quickly, there is an _____ to do it.
10. Things with the same size, value, importance, or meaning as others are _____.
11. A data _____ shows the relationships and connections within the information.
12. When something goes beyond its expectations, it _____ them.

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13. If something is _____ with something else, those ideas, systems or machines cannot work together because of the differences between them.
14. When a rule limits or stops something, it _____ it.
15. If something is _____, it is bigger or smaller than it should be in comparison to something else.

b. Choose five of the words from task a and write five personalised sentences using them.

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Emissions from food system alone will drive the world past target, unless high-methane foods are tackled

Damian Carrington

06 March, 2023

- 1 Emissions from the food system alone will drive the world past 1.5C of global heating, unless high-methane foods are tackled.
- 2 Climate-heating emissions from food production, dominated by meat, dairy and rice, will by themselves break the key international target of 1.5C if it is not controlled, a detailed study has shown.
- 3 The analysis estimated that if today's level of food emissions continued, they would result in at least 0.7C of global heating by the end of the century, on top of the 1C rise already seen. This means emissions from food alone, ignoring the huge impact of fossil fuels, would push the world past the 1.5C limit.
- 4 The study showed that 75 per cent of this food-related heating was driven by foods that are high sources of methane, i.e. those coming from livestock such as cattle, and rice paddy fields. However, the scientists said the temperature rise could be cut by 55 per cent by cutting meat consumption in rich countries to medically recommended levels, reducing emissions from livestock and their manure, and using renewable energy in the food system.
- 5 Previous studies have shown the huge impact of food production on the environment, particularly meat and dairy, but the new study provides estimates of the temperature rises their emissions could cause. These could be a significant underestimate, however, as the study assumed animal product consumption would remain level in the future but it was projected to rise by 70 per cent by 2050.
- 6 "Methane has this really dominant role in driving the warming associated with the food systems," said Catherine Ivanovich, at Columbia University in the US, who led the research. "Sustaining the pattern of food production we have today is not consistent with keeping the 1.5C temperature threshold. That places a lot of urgency on reducing the emissions, especially from the high-methane food groups."
- 7 "We have to make the goal of sustaining our global population consistent with a climate-safe future," she said.
- 8 The contribution of global food production to the climate crisis is complex because it involves several important greenhouse gases, all of which have different abilities to trap heat and stay in the atmosphere for different amounts of time. Previous studies have converted the impact of methane and other gases into an equivalent amount of carbon dioxide (CO₂) over 100 years, but this underplayed the high potency of methane over shorter timescales.
- 9 The research, published in the journal *Nature Climate Change*, treated each greenhouse gas separately for 94 key types of food, enabling their impact on climate over time to be better understood. Feeding this emissions data into a widely used climate model showed that the continuation of today's food production would lead to a rise of 0.7C by 2100 if global population growth was low, and a 0.9C rise if population growth was high.
- 10 "As we had already reached more than 1C warming above pre-industrial levels by 2021, this additional warming from food production alone is enough to surpass the 1.5C global warming target," the scientists concluded. "Our analysis clearly demonstrates that current dietary production and consumption patterns are incompatible with sustaining a growing population while pursuing a secure climate future."
- 11 Food-related temperature rise could be curbed, the researchers said. If people adopted the healthy diet recommended by Harvard Medical School, which allows a single serving of red meat a week, the rise could be cut by 0.2C. Such a diet would mean a big cut in meat eating in rich nations but could mean an increase in some poorer countries.
- 12 Cutting methane emissions from cattle using certain types of feed and better management of manure could avoid another 0.2C, the researchers said, while switching to green energy in the food system would cut 0.15C. Ivanovich said the emissions-reductions options included in the study were those possible today but that future technological advances might be able to reduce emissions further.

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- 13 “We already know that livestock production has a disproportionate contribution to climate change – even using traditional metrics, in 2021, we showed that 57 per cent of emissions from the food system arises from animal agriculture,” said Prof Pete Smith, at the University of Aberdeen, UK. “This very neat study uses a simple climate model to show the disproportionate impact of methane emissions from agriculture on temperature increases and throws light on the importance of reducing methane emissions from the food system.”
- 14 Only a third of the world’s countries have included policies to cut emissions from agriculture in the climate plans they have submitted under the UN Paris Agreement. The researchers said their work was aimed at increasing the understanding of the impact of global food consumption on future global heating. Ivanovich also said policies to cut emissions had to protect access to food and livelihoods for vulnerable populations.

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First published in *The Guardian*, 06/03/2023

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3 Comprehension check

a. Answer the questions using information from the article.

1. What will increase global warming by 1.5 degrees Celsius?
2. What three areas of food production cause the most emissions?
3. If food emissions stay the same, how much hotter will the world be by the end of the century?
4. What is the name of the gas driving most of this change?
5. What three actions scientists say would cut the temperature rise by 55 per cent?
6. What is the difference between this new study and previous ones?
7. Why are greenhouse gases dangerous for the environment?
8. How much would the rise be cut if people ate just one serving of red meat per week?
9. What percentage of emissions comes from animal agriculture?
10. What proportion of countries have policies to cut emissions in agriculture?

4 Key language

a. Use the prefixes in the word pool to make words from the article. One prefix is used twice.

pre dis under re in

1. _____ played
2. _____ compatible
3. _____ -industrial
4. _____ proportionate
5. _____ newable
6. _____ estimate

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b. What does each prefix mean? Match the prefix to its definition. Two prefixes have the same meaning.

- | | |
|-----------|---------------|
| 1. pre- | a. again |
| 2. in- | b. not enough |
| 3. re- | c. not |
| 4. dis- | d. before |
| 5. under- | |

5 Discussion

a. Discuss these statements.

- “Eating meat once a week is a sustainable solution to the food emissions problem.”
- “We should not change what we eat because someone will invent technology to fix the emissions problem for us.”
- “More countries should adopt policies to cut emissions from agriculture.”

6 In your own words

a. Use an internet search engine to learn more about how climate change and food are connected.

- In what ways are they connected?
- What changes can people or governments make to fix this?

b. Report your findings to the class.