The Nexus Thinking in Multilateral Forums: A Focus on G7 and G20 Summits

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Abstract

The world's major multilateral organizations constructed since 1944–45 have clearly failed to control or cope with the expanding, even existential crises and threats of climate change and their closely connected consequences and causes of food and military security. Effective global governance thus requires regular collective action by the most powerful leaders of the world's most powerful countries who have a mandate and responsibility to address all these subjects and others in comprehensive, integrated ways, for the benefit of all. Such action has and can come only from the summits of the G7 major democratic powers since their star^t in 1975 and those of the G20 systemically significant states since their start in 2008. Both these leading plurilateral summit institutions increasingly produce consensus conclusions and collective commitments on climate change, food and agriculture and military security. But their members' subsequent implementation of those commitments has been modest. And only very recently have the commitments in each of these three subject silos explicitly connected with those in the other two, and even then, only in a very limited way. With their members having to deal with escalating climate, food and military threat and now an unpredictable US president at their next G7 summit, in Kananaskis, Canada, on June 15–17, and their next G20 one in Johannesburg, South Africa, on November 22–23, what can leaders do at these summits to produce the synergistic solutions that the world so badly needs?

Introduction

How many of you are from each of the G7 members?
The United States?
Japan?
Germany?
France?
United Kingdom?
Italy?
Canada?
Other European Union countries?
The world beyond?

I ask because the world needs you to convince your government's leader to control the existential threat of climate change, in ways that simultaneously reduce today's escalating food insecurity and military conflicts that are the causes and consequences of climate change.

We know that in the physical world, climate change, food and agriculture, and military security are closely connected, in ways that currently harm all three.

But in the political world of global governance, how have they been, and should they be, connected in ways that benefit them all?

Today I suggest that at the centre of comprehensive global governance – the summits of the G7 major democratic powers since 1975 and the G20 systemically significant states since 2008 – these issues have rarely been connected, in their leaders' promises on paper and in their governments' implementation of them.

So much more should be done this year, when Canada hosts the next G7 summit in Kananaskis, Alberta, on June 15–17, and at the next G20 summit in Johannesburg, South Africa, on November 22–23.

The Current Climate-Food-Security Crises and Connections

In the physical world, we know that climate change kills people, and harms food and agriculture and peace in many other ways.

Heat is the key killer. Relentlessly rising greenhouse gas emissions and concentrations create global warming, in the air, the sea and land.

The "wet bulb temperature" is the smoking gun.

If this combination of atmospheric temperature and humidity surpasses 95°F, which is 35°C, humans are harmed after 30 minutes and die after six hours of unshaded outdoor exposure without hydration.[1]

[1] Technically, it includes not just air temperature and relative humidity, but also sun angle, cloud cover and wind speed. Heat indices are increasing faster than the actual air temperature.

More places are approaching and surpassing this deadly limit, more often, for longer, and during the dark night as well as the sunny day, so outdoor agriculture workers can no longer grow the food we need.[2]

Last year was the world's warmest ever. It was the first to surpass the safe1.5°C post industrial temporarily rise.

Drought comes directly from this heat. It reduces the available, affordable water that farmers need to grow the food that people need to live, and to live long and healthy lives.[3]

Wildfires are also fuelled by this global warming and global drying due to climate change. They helped cause heat-trapping carbon dioxide concentrations in the atmosphere jump to a new record of 425 ppm in 2024.

Floods and intense rainfalls also flow from climate change. The hot air evaporates more water, stores it for longer, and releases it in a deluge all at once, flooding farmland, their crops and livestock, and farmers, and killing many of them too.[4]

And as people are forced to flee to safer places, to escape the heat, droughts, wildfires and floods, and to find food, they create deadly conflict with those already living there.

Multilateral Organizations' Slow, Siloed, Failed Response

How can global governance convert these deadly climate-food-security crises and connections from bad impacts into benefits for all?

First, by recognizing that climate change is an inherently global phenomenon. What happens to the air, water and land anywhere on the planet soon has impacts everywhere.[5]

Crop failures anywhere quickly increase commodity and food prices everywhere in the global marketplace, and cause panic buying, and shortages of key commodities, like coffee now.

Conflict between and within countries rises, as people and their governments use deadly force to secure the scarce food, water, fertile land and forests that they desperately need.

The world's major multilateral organizations from the 1940s have failed to cope with these rising threats, especially in any kind of synergistic interconnected way.

The United Nations, created in 1945, covers many subjects. But its founding Charter, while amended since, does still not recognize even the existence, let alone the value, of the planet's natural environment and its climate change component. Nor do those of the two Bretton Woods bodies founded in 1944 – the International Monetary Fund and the World Bank.

[2] On February 17, 2025, Rio de Janeiro, the site of the last G20 summit on November 18–19, 2024, hit 111°F or 44°C, the hottest temperature in the last decade, and well above the 35°C/95°F limit. Food insecurity is a major concern of the leader and government of China, which has 18% of the global population but only 7% of its arable land. "Global warming could reduce China's yields of wheat by over 6%, maize by over 7% and rice by more than 9%" (*Economist* 2025).

[3] Canada has the most freshwater, in its lakes and rivers, among G7 members. But the US, with less water, has almost 10 times as many people as Canada, and in January President Donald Trump said he need the water from Canada to douse the fires then burning in Los Angeles.

[4] The flood in Valencia last year showed that "the rain in Spain does not stay mainly in the plain."

[5] The Covid-19 pandemic, since its start in January 2020, has killed about 20 million people worldwide.

For military security, the United Nations Security Council is the key body. But it has only recently addressed climate change and done so in a very tentative way (Murphy forthcoming).

For food and agriculture, the three biggest multilateral organizations are the Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP) – all headquartered in Rome. But these have done little to address climate change or conflict, especially at their source.

Moreover, the members of these multilateral organizations seldom comply well with the decisions made by their governing bodies, which are composed of their members' ministers, who have limited political authority at home.[6]

Indeed, these bodies seldom assemble their members' leaders. Only these leaders have the ultimate authority and responsibility for all subjects needed to cope with these climate, food and conflict crises, and do so in comprehensive, interconnected, mutually beneficial ways.[7]

G7 and G20 Governance of the Climate-Food-Conflict Connection

Thus, the global governance of the climate-food-conflict connection has been largely left to, and led by, the annual G7 and G20 summits of the most powerful leaders of the most powerful countries in the world. Their leaders alone have the authority and responsibility to govern all subjects, and to combine them through actions that benefit all.

So how well have these summits forged the climate-food-conflict connection?

And what more should they do, starting when Canada hosts the next G7 summit four months from now?

G7 Climate-Food-Conflict Governance

G7 Climate Change Commitments

To see, let's start with the G7's climate change performance.

The G7 invented the global governance of climate change, at its Tokyo Summit in 1979 (Kirton and Kokotsis 2015, 29; Kirton, Kokotsis and Warren 2022). There, amidst its focus on energy to confront the second oil shock from war in the Middle East, G7 leaders created the first, and the most ambitious and most effective, regime to control climate change that the world has ever seen.

They declared "we need to expand alternative sources of energy, especially those which will help to prevent further pollution, particularly increases of carbon dioxide and sulphur dioxides in the atmosphere" (G7 1979).

[6] For the Conferences of the Parties to the UN Framework Convention on Climate Change, the latest evidence comes from the deadline of February 10, 2025, for submitting their nationally determined contributions with updated, stronger, climate change targets and timetables. On the almost 200 members, only 12 met the deadline – a compliance rate of only 6%. Of the G7 members, only the United Kingdom did.

[7] Climate change summits started only in 1992 at Rio de Janeiro, and then took place about every five years, most recently at Paris in 2015 and Glasgow in 2001. Food and agriculture summits with all FAO members' leaders participating have never taken place. The landmark World Food Summit in Rome on November 13–17, 1996, attracted only 41 leaders of the FAO's almost 200 members.

Their target was thus zero increase in carbon dioxide concentrations. Their timetable was to act immediately, by preventing further pollution now. Their instrument was clean energy, as an alternative to oil and other fossil fuels.

Members' compliance with this consensus was high. In the following five years, they and their partners in the Organisation for Economic Co-operation and Development acted to reduce their carbon emissions, which regularly declined (Ikenberry 1988).[8]

This historic success was led by Germany's Social Democrat chancellor Helmut Schmidt. He had strong support from America's Democratic Party president Jimmy Carter, Canada's Progressive Conservative prime minister Joe Clark and Britain's Conservative prime minister Margaret Thatcher. They showed that when G7 leaders get together alone at their summit, they can do great, future-facing things to control the greatest threats they face.

Since then, G7 leaders at their annual summits have made about 500 precise, future-oriented, politically binding, commitments on climate change (see Appendix A). Their first one came at Bonn in 1985 with one, then Paris in 1989 with three, Houston in 1990 with eight, London in 1991 with three and Munich in 1992 with two.

But then, after the UN's historic Rio Summit on the Environment and Development in June 1992, G7 leaders left it to the UN. G7 leaders made few commitments on climate change from 1993 to 2004. Meanwhile, global greenhouse gas emissions and concentrations steadily rose.

By 2005, with the UN process clearly failing, the G8 – now with Russia as a member – returned to fill the gap. The G8 summit in Gleneagles in 2005 produced 21 climate change commitments, Toyako-Hokkaido in 2008 made 55 and L'Aquila in 2009 made 42.[9]

But then the global financial crisis erupted in 2008 and the resulting economic recession cut emissions. So the G8 retreated for three years, until leaders returned to act again from 2013 to 2016.

Then Donald Trump became US president in 2017, and G7 climate governance disappeared (along with Russia, suspended in 2014). The only exception the Charlevoix Summit that Canadian prime minister Justin Trudeau hosted in 2018. It produced 12 climate commitments, with two of them applying to the US only.

When Joe Biden became US president in 2021, G7 climate change commitments soared. G7 leaders at Cornwall in 2021 generated 54, at Elmau in 2022 an all-time peak of 59, and at Hiroshima in 2023 they made 55. But, surprisingly, Giorgia Meloni's otherwise successful Apulia Summit in June last year produced only 12.

[8] They did so by setting and respecting oil import quotas, supporting a severe recession in their economies to control inflation and countering the Soviet Union, to end the Cold War that would end in 1998.

[9] At Hokkaido the G7 leaders met with others in the Major Economies Meeting on Energy Security and Climate Change.

This rollercoaster ride suggests which G7 member, when it hosts the summit and can thus set its agenda, leads the G7's work on climate change.[10]

Germany's summits come first with 129 climate commitments.
Japan's summits come second with 123.
The United Kingdom's come third with 97
Italy's come fourth with 64.
Canada's come fifth with 24
The US's comes sixth with 18.
France's come seventh with 12.

G7 Climate Change Compliance

It's a good start when G7 leaders proclaim these paper promises from the sunny summit mountaintop. But do they keep their promises when they descend into the dark valley of domestic politics back home alone?

The best answer comes from the G7 Research Group's compliance reports. It has now assessed members' compliance with 733 of the over 7,000 commitments that G7 leaders have made.

Their overall compliance averages 77% – a good B+ grade.

On the 102 assessed climate change commitments, it is 74% – a solid B.[11]

Climate change compliance varies widely every year. It reached a perfect score of 100% only in 1998, and again in 2023.

But overall there is an upward trend. The longest, biggest streak of high compliance, averaging 85%, started in Brussels in 2014 (now without a suspended Russia there) and lasted to Hiroshima in 2023. From 2021 to 2023, with US President Biden there, compliance averaged 94%.

So, there is good reason to look to the G7 for the effective climate action we badly need now.

To which of its members should we look first?

To the UK whose summits lead with 82% compliance. They are followed by Japan's whose summits achieve 80% compliance, France's 78%, Germany's 75%, and Italy's 74%; then comes Canada's 69% and the US's 58%.

This is not good news for Canada's Kananaskis Summit this June.

[10] Germany comes first, as its summits have produced 129 climate commitments. Its first came at Bonn in 1985 with Christian Democrat Helmut Kohl as host, with more at every summit it has hosted since, and the G7's all-time peak of 59 under Social Democrat Olaf Scholz in 2022. Whatever political party its chancellor belongs to, and whatever coalition or majority government he or she heads, Germany leads G7 climate governance. Japan comes second, producing 123 climate commitments, with all but one at its last three summits. The United Kingdom comes third, producing 97 from all its summits. Italy comes fourth, producing 64 at all its five most recent summits. Canada comes fifth with 24, almost all coming at its two most recent summits. The United States comes sixth with only 18. It started only in 1990 and produced none the last time it hosted, in 2020. Half of these 18 commitments have come from Republican presidents and half from Democratic ones. France comes seventh, with only 12. At its last summit at Biarritz in 2019, Emmanuel Macron, preoccupied with trying to please Trump, produced none.

[11] Based on the 102 assessed climate change commitments made since 1985.

But on a better measure – each member's compliance with each of the assessed commitments – the European Union leads with 92%. It is followed by the UK and US with 84%, Germany 82%, Canada 78%, France with 73%, Japan 71% and Italy 57%.[12]

So, there's hope that Canada this year can make the climate change commitments that count.

G7 Food and Agriculture Commitments

On food and agriculture, G7 summits have made 391 commitments. They started to do so at Tokyo in 1979 (see Appendix B).

Until 2011 they made only 21.[13] But in the three years from 2012 to 2014 they made 81. Then the rollercoaster ride began.

Recently, Elmau in 2022 produced 57 and Hiroshima in 2023 the all-time peak of 80. But Apulia last year plunged to only 12.

As summit host, the leader is Japan with 117 commitments. It is followed by Germany with 97, Italy, with 58, the US with 55, Canada 20, France 20 and the UK 19.

Thus, for making both food and agriculture and climate change commitments, Japan and Germany are the most productive hosts.

But we cannot wait until they host again, a long four years from now.

G7 Food and Agriculture Compliance

Compliance with these food and agriculture commitments averages 82% – an A minus grade.

So, solving the climate-food-conflict crisis could start by putting food and agriculture first.

Here, as summit host, Italy leads with 92% compliance. It is followed by Japan with 86%. Germany and the US 85%, the UK 83%, Canada 70%, but France only 56%.

Why is Italy first?

Maybe it is proud that Bologna has the best food in the world.

Or maybe it is because Rome is the home of the world's three leading multilateral organizations on food and agriculture – the FAO, IFAD and WFP. They can help the Italian government prepare the summit to generate commitments likely to be complied with. They can then help G7 members comply with them once they are made.[14]

If so, let's hope Trump does not withdraw the US from these bodies, as he just did for the Paris Agreement on climate change, the World Health Organization and the UN Human Rights Council.

[12] Russia, when it was a G8 member, had only 58%.

[13] And they did not make commitments at every summit.

[14] We can test this by seeing if the US, host of the IMF, World Bank and UN, complies most with G7 commitments on macroeconomic policy, development and regional security, and if Canada, host of the International Civil Aviation Organization and UN Biodiversity, complies most with those on the environment, etc.

With each assessed G7 commitment on food and agriculture, it's the European Union that leads with 91%. It is followed by the US, UK, Japan and Germany with 89%, Canada 84% and France 78%. But Italy has only 64%.[15]

Still, such high compliance from most members provides another reason to start with food and agriculture in crafting recommendations for the Kananaskis leaders to turn into commitments to solve the triple crisis they confront.

G7 Regional Security Commitments

In regional security, G7 leaders have just struggled to make any commitments at the special summit they held on February 24, to mark the third anniversary of Russia's full scale, still unsuccessful, invasion of Ukraine.

But, on the whole, they and their predecessors have done very well here.

G7 summits have made 438 commitments on regional security from 1975 to 2024 (see Appendix C). They started in 1980 with four commitments, all on Russia's invasion of Afghanistan a few months before. They made a few more through to 2001. They made 19 at Kananaskis in 2002, the first G7 summit after the terrorist attacks on the United States on September 11, 2001.[16]

Since Russia's full-scale invasion of Ukraine on February 24, 2022, G7 leaders made 65 commitments at Elmau in 2022, 67 at Hiroshima in 2023 and 65 at Apulia in 2024, for a total of 197 in the last three years.

By summit host, Germany's summits lead with 104. That is followed by Japan's with 96, Italy's 95, the UK's 66, Canada's 42 and France's 24. The US has only six.

But if we ask which country makes such commitments at most of the summits it hosts, Canada leads.17

This suggests putting regional security first at Kananaskis this year.

G7 Regional Security Compliance

Compliance with these regional security commitments averages an encouraging 82% – another A− grade.[18]

Compliance soared above 95% in 2004 and 2005 after the 9/11 terrorist attacks on the US. It averaged 81% from 2014 to 2021, after Russia's annexation of Crimea. It reached 100% for 2022 and 94% for 2023, after Russia's full-scale invasion of Ukraine.[19]

It is now on track to reach 96% for Apulia in 2024.

[15] Russia, when it was a G8 member, had 45%. There have been 18 commitments on food and agriculture assessed for compliance.
[16] They made more at all but three summits after 2022.
[17] Canada's total number of commitments will jump when it hosts in Kananaskis in June to complete the current seven-year hosting cycle.
[18] There have been 51 regional security commitments assessed.
[19] This shows that shock-activated vulnerability for the G7 is the strongest cause of summit performance on the same subjects as the shocks.

By summit host, the US leads with 95% on compliance with the G7's regional security commitments. It is followed by Italy with 91%, Germany 88%, Canada 83%, Japan 77%, the UK 70% and France 67%.

With each assessed commitment, the US still leads with 91%. But all the other members have 75% or more.[20]

So, we should start by having the G7 leaders at Kananaskis make commitments that help win the war in Ukraine, while enhancing food and climate security at the same time.

Connecting G7 Climate, Food and Conflict

What should these commitments be, based on how G7 summits have connected climate, food and conflict in their commitments so far?

Climate Change

On climate change, of the 497 commitments, only 10 were explicitly linked to food and agriculture. They started in 2013. Half came in 2021 and 2022, but none since.[21]

Only one climate commitment was explicitly linked to military conflict. It was made at Elmau in 2022. Here G7 leaders stated: "We recognise the adverse effects of climate change and environmental degradation on peace, stability, and security, and will work together with the global community to counter these impacts" (G7 2022).

So it was thus a very general commitment, portraying climate change as a harmful cause of conflict.

Food and Agriculture

On food and agriculture, of the 391 commitments, only 14 explicitly were linked to climate change. They started in 2015. Hiroshima in 2023 produced five and Apulia in 2024 two.[22]

But 28 of the food and agriculture commitments were explicitly connected to conflict. They began after Russia's annexation of Crimea, at Elmau in 2015 with seven. They appeared again after Russia's full-scale invasion of Ukraine, when the Elmau Summit in 2022 produced 14. They continued in 2023 with five and in 2024 with two.[23]

This supports linking Kananaskis's food and agriculture commitments with climate change and conflict.

Conflict

On military conflict, on the key regional security issue of Ukraine, G7 summits have made the 339 commitments. But only four were explicitly linked to climate change. However, 29 were linked to food and agriculture.

[20] The US at 91% is followed by the UK with 85%, Germany 82%, France 81%, Canada 77%, Italy 76% and Japan 75%.

[21] Of the 10, 70% were highly politically binding and thus relatively ambitious ones.

[22] Of these 14 climate-connected commitments, seven were highly politically binding and seven were low binding ones. Compliance with the one assessed climate-connected food and agriculture commitment (G7 2022-54) was 88%, with 100% from Canada, France, Germany, the UK, US and EU, and 50% from Italy and Japan.

[23] Of these 28 conflict-connected commitments, nine were highly politically binding and 19 low binding ones. No conflict-connected commitments have been assessed for compliance.

The four linked to climate change started at Elmau in 2022 and Hiroshima in 2023 with two each, with none at Apulia last year. The four in 2022 and 2023 promised to end dependence on Russian energy without compromising G7 climate goals, to support Ukraine's green economic recovery, to address the invasion-caused energy crisis and achieve the common goal of net zero emissions, and to "holistically address energy security, climate crisis and geopolitical risk" (G7 2023).

The 27 Ukraine commitments linked to food and agriculture also arose only in 2022. Elmau that year produced 19 of them, Hiroshima in 2023 eight and Apulia last year two.[24] At Apulia leaders reiterated their "support for Ukraine's agriculture sector, which is critical for global food supply, particularly for the most vulnerable nations" (G7 2024).[25]

Together their commitments recognized the climate, food and conflict connection. But never did they link all three in a single commitment that then mandated a common mutually beneficial response.[26]

G20 Climate-Food-Conflict Governance

Does the bigger, broader G20 do better, in connecting climate, food and security together?

In the G29, the G7 leaders are joined by those from democratic Australia, South Korea, and Mexico, from democratic Turkey, India, Brazil, Indonesia, and South Africa from the so-called Global South, and from non-democratic China, Russia, and Saudi Arabia.

But the G20 has done even less than the G7, as a connecting club.

On climate change, G20 summits have made 180 commitments from 2009 to 2024 (see Appendix D).

The best one came on energy, at the third G20 summit. It was hosted by US president Barack Obama and held in Pittsburgh in September 2009. There the G20 leaders promised "to phase out and rationalize over the medium term inefficient fossil fuel subsidies while providing targeted support for the poorest" (G20 2009).

G20 leaders promised again to do so at almost every summit since. Moreover, G7 summits joined the call at Camp David in 2012.[27]

[24] They emphasized food security, food and nutrition security, the global food crisis, food prices, agricultural exports, production, inputs and infrastructure, and Ukrainian grain.

[25] The one relevant commitment assessed for compliance had 100%. It stated: "We will continue to impose severe and immediate economic costs on President Putin's regime for its unjustifiable war of aggression against Ukraine, while stepping up our efforts to counter its adverse and harmful regional and global impacts, including with a view to helping secure global energy and food security as well as stabilising the economic recovery" (G7 2022).

[26] The G7 commitment in 2023 was the closest they came.

[27] Both the G20 Pittsburgh in 2009 and the G7 2012 Camp David Summit were hosted by US President Barak Obama. The G7's commitment was: "We strongly support efforts to rationalize and phase-out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, and to continue voluntary reporting on progress" (G8 2012). It secured compliance of 67%, with 100% from France, Italy, Japan, and the EU, 50% from Canada, Germany, the UK and USA and 0% from Russia (for a summit that President Vladimir Putin skipped).

At Pittsburgh, the G20's carefully crafted language was created jointly by the US from the Global North and India from the Global South.

Their leaders and personal representative all understood that "medium" meant about five years, or by about 2014.

But sadly, 11 years later, in 2025, it has still not been done.

When it is, through members' full compliance with this one commitment, it will cut carbon emissions into the atmosphere by 20%. It will also save G20 treasuries and taxpayers $7 trillion a year, to spend on other things, says the IMF. It will also help human health, cut corruption and improve other things.

Most recently, G20 leaders made 21 climate commitments in 2021, 18 in 2022, 19 in 2023 and 28 at Rio de Janeiro in November 2024.

By 2023, G20 climate compliance averaged 70%, just below the all-subject average of 71% (Warren 2024).[28] It was led by the G7 members of Germany, the UK, France, the EU and Canada, all with 88% or more.

On food and agriculture, G20 summits made 177 commitments from 2009 to 2024 (see Appendix E). Rome in 2021 had eight, Bali in 2022 produced 22, New Delhi in 2023 had 14, while Rio in 2024 had only seven.

Compliance averaged 70% by 2023 (Zelenova 2024).[29]

Compliance was led by Canada with 90%. Argentina had 87%, the EU 84%, and the UK, Italy and Australia 80% each.[30]

On conflict, G20 summits have made very few commitments. But at Rio in November 2024, they made five, with one general one and four on the Middle East.[31] None related to climate change or food and agriculture.

In connecting climate, food and conflict, G20 summits have done even less than the G7.

On climate change, of their 180 climate change commitments, only two explicitly referenced food and agriculture, in the form of hunger. Both came at Rio in 2024, where they promised "scaling up climate action, in synergy with sustainable development priorities and efforts to eradicate poverty and hunger" (G20 2024).[32]

None of the 180 climate change commitments referenced conflict.

On food and agriculture, of the 177 commitments, only three explicitly referenced climate change. Two came in 2012 and 2013 and one in 2023. They stated that climate change caused harm to food and agriculture.

[28] Based on the 55 assessments made by the G20 Research Group. Compliance was led by the G7 members of Germany with 94%, the UK 92%, France 89%, EU 89% and Canada 88%.
[29] Based on 15 assessments.
[30] The US had 77%.
[31] Three were on Gaza/Palestine and one on Lebanon.
[32] Neither has been assessed for compliance.

Compliance with them averaged 73%, with 68% for 2012 and 78% for 2023.[33]

Connecting Climate, Food and Energy at Kananaskis

In conclusion, what should the Kananaskis G7 and Johannesburg G20 summits in 2025 do to control the climate, food and conflict crises, in mutually beneficial ways?

Starting with the G7, whose summit arrives first, its existing agenda is not promising.

So, from this analysis, five recommendations flow.

1. Ukraine. It has long been a subject of many G7 commitments. These include those on food and agriculture, notably the Black Sea grain initiative, and on energy, the close cousin of climate change. The G7 is already defending, rebuilding and replacing Ukraine's energy and food infrastructure, and planning to do much more when the deadly conflict ends. The G7 should do so in clean, green ways that ensure that Ukraine will flourish far into the future to deter Russia from invading it again.

   G7 members should thus commit to using their own military forces to keep Ukrainian grain, food and fertilizers flowing out to all the countries in the Global South and North that need them, to keep the necessary inputs and food flowing in and to keep all the necessary infrastructure intact.[34] Grain from Ukraine will help the world eat more plants and less meat, which is better for both planet and human health.

2. Critical minerals. Ukraine has many, which it is prepared to trade for the US and G7 military and financial support it needs to show Russia's Vladimir Putin that he cannot win his war and thus must accept and keep a ceasefire now. These minerals are vital for G7 members' military systems and strength, and for climate-friendly renewable energy systems too. Only a few G7 members are rich in critical minerals, led by Canada.

   They should join with Ukraine to present a package to those G7 members that lack them, notably the United States, and work with the G20 democracies to expand this critical minerals partnership for both supply and demand.

3. Disasters. Extreme weather events include wildfires, droughts, floods, hurricanes and typhoons. G7 leaders should identify how they harm food and agriculture within and beyond G7 members and create deadly conflict in poor ones.

   Leaders should commit to address them at their ultimate source by controlling climate change and promoting clean energy.

4. Artificial intelligence. G7 leaders should agree that AI's voracious power demands must come increasingly from clean, green sources. These include existing civilian nuclear power, sun, wind, hydro, geothermal, tides and waves, along with forests and peatlands as carbon sinks.

[33] One commitment from the 2012 Los Cabos Summit on adapting agriculture to climate change had compliance of 68%. One commitment from the 2023 New Delhi Summit on climate-resilient agriculture and food systems had compliance of 78%.

[34] By February 22, 2025, the World Food Programme (2025) estimated that five million Ukrainians faced food insecurity, especially near the frontlines of the conflict. The WFP was providing food and cash to nearly 1.5 million Ukrainians, mostly near the front lines.

They should agree to enhance their energy and military security and high technology competitiveness by shifting to such sources, rather than relying on any Russian oil, gas, coal or uranium.[35]

5. Development finance. G7 leaders should promote partnerships between their development finance institutions and the private sector for projects on fostering food and agriculture, clean energy and artificial intelligence, in G7, G20 and African democracies.

[35] The US can get all the uranium it needs from Canada right next door.

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Appendix A: G7 Climate Change Commitments, 1985–2024

Food/Agriculture and Security Related

	Climate		Food and Agriculture		Security
Summit	# Commitments	Compliance (# assessed)	# Commitments	Compliance	#Commitments
1975–1984	0	-	-		-
1985 Bonn	1	75% (1)	-		-
1986 Tokyo	0	-	-		-
1987 Venice	1	65% (1)	-		-
1988 Toronto	0	-	-		-
1989 Paris	3	57% (4)	-		-
1990 Houston	8	45% (4)	-		-
1991 London	3	71% (2)	-		-
1992 Munich	2	86% (2)	-		-
1993 Tokyo	2	79% (2)	-		-
1994 Naples	2	86% (2)	-		-
1995 Halifax	2	65% (1)	-		-
1996 Lyon	2	79% (1)	-		-
1997 Denver	4	66% (4)	-		-
1998 Birmingham	7	100% (3)	-		-
1999 Köln	3	39% (1)	-		-
2000 Okinawa	1	72% (1)	-		-
2001 Genoa	5	50% (4)	-		-
2002 Kananaskis	0	-	-		-
2003 Evian	1	93% (1)	-		-
2004 Sea Island	1	67% (1)	-		-
2005 Gleneagles	21	90% (5)	-		-
2006 St. Petersburg	22	69% (9)	1		-
2007 Heiligendamm	35	78% (4)	-		-
2008 Hokkaido	55	76% (5)	2	56%	-
2009 L'Aquila	42	83% (5)	-		-
2010 Muskoka	10	67% (5)	-		-
2011 Deauville	6	84% (1)	1		-
2012 Camp David	5	56% (1)	1	56%	-
2013 Lough Erne	12	62% (2)	-		-
2014 Brussels	13	84% (3)	-		-
2015 Elmau	23	80% (5)	-		-
2016 Ise-Shima	12	73% (3)	-		-
2017 Taormina	1	86% (1)	-		-
2018 Charlevoix	12	75% (7)	-		-
2019 Biarritz	0	-	-		-
2020 Camp David	0	-	-		-
2021 Cornwall	54	88% (3)	3	81%	-
2022 Elmau	59	94% (1)	2		1
2023 Hiroshima	55	100% (1)	-		-
2024 Apulia	12	56% (1)*	-		-
Total	497		10		1
Average		75% (34)		64%	

*Compliance from draft interim compliance report to December 20, 2024, not included in average.
Compiled by Brittaney Warren and John Kirton, February 15, 2025.

Food and Agriculture Related (10)

Food and agriculture excludes biofuels, biomass cultivation

2006-113: using methane otherwise released in the atmosphere from coal mining, landfills, and agricultural operations. (food-agriculture-related). (high binding)

2008-251: Conscious of our leadership role in meeting such challenges, we, the leaders of the world's major economies, both developed and developing, commit to combat climate change in accordance with our common but differentiated responsibilities and respective capabilities and confront the interlinked challenges of sustainable development, including energy and food security, and human health. (health, development, energy, food-agriculture related) (high binding) Compliance = 56%

2008-252: Recognizing the scale and urgency of the challenge, we will continue working together to strengthen implementation of the Convention and to ensure that the agreed outcome maximizes the efforts of all nations and contributes to achieving the ultimate objective in Article 2 of the Convention, which should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner. (food-agriculture, economy, development-related) (low binding)

2011-43: We strongly support international cooperation on green growth and will intensify our efforts to contribute to progress for the next steps, notably looking toward the June 2012 UN Conference in Rio on sustainable development and various international events planned, including the Bonn Conference on Water, Energy and Food Security in November, the Durban Conference on Climate Change in December, the Marseille World Water Forum in March 2012 and the Conference on Biological Diversity in October 2012 in New Delhi. (high binding)

2012-29. Recognizing the impact of short-lived climate pollutants on near-term climate change, agricultural productivity, and human health, we support, as a means of promoting increased ambition and complementary to other CO2 and GHG emission reduction efforts, comprehensive actions to reduce these pollutants. (food-agriculture, health, environment related) (low binding) Compliance = 56%

2021-203: In our agricultural, forestry and other land use sectors, we commit to ensuring our policies encourage sustainable production, the protection, conservation, and regeneration of ecosystems and the sequestration of carbon. (food-agriculture related) (high binding) Compliance = 88%

2021-313: Participating in and supporting the COP26 Forest, Agriculture and Commodities Trade dialogue: we will champion the collaborative effort between consumer and producer countries to advance global and regional sustainable supply chains, protecting, conserving, and sustainably managing forests and other ecosystems, while promoting sustainable trade and development (food-agriculture-related) (high binding)

2021-315: Globally we will work to accelerate an inclusive transition to sustainable and climate resilient agriculture, including through the COP26 policy dialogue on accelerating Transition to Sustainable Agriculture where relevant. (high binding) (food-agriculture-related)

G7 2022-27. We will continue to be mindful with regards to our long-term drive towards alternative fuels for transport, to our objectives on climate and biodiversity and food security. (energy, environment, food-agriculture related) (low binding)

G7 2022-108. [We will strengthen the agricultural sector's contribution to] … fighting climate change (climate change) (high binding)

Security Related (1)

G7 2022-22. We recognise the adverse effects of climate change and environmental degradation on peace, stability, and security, and will work together with the global community to counter these impacts. (security)

Appendix B: G7 Food and Agriculture Commitments and Compliance, 1975–2024

Climate and Security Related

	Climate Change		Climate Related	Security Related
Summit	# Commitments	Compliance (# Assessments)	# Commitments	# Commitments
1975 Rambouillet	0	-	-	-
1976 San Juan	0	-	-	-
1977 London	0	-	-	-
1978 Bonn	0	-	-	-
1979 Tokyo	2	-	-	-
1980 Venice	2	-	-	-
1981 Ottawa	1	-	-	-
1982 Versailles	0	-	-	-
1983 Williamsburg	0	-	-	-
1984 London	0	-	-	-
1985 Bonn	4	-	-	-
1986 Tokyo	1	-	-	-
1987 Venice	4	-	-	-
1988 Toronto	1	-	-	-
1989 Paris	0	-	-	-
1990 Houston	0	-	-	-
1991 London	0	-	-	-
1992 Munich	0	-	-	-
1993 Tokyo	0	-	-	-
1994 Naples	0	-	-	-
1995 Halifax	0	-	-	-
1996 Lyon	0	-	-	-
1997 Denver	0	-	-	-
1998 Birmingham	0	-	-	-
1999 Köln	0	-	-	-
2000 Okinawa	3	88% (1)	-	-
2001 Genoa	3	-	-	-
2002 Kananaskis	16	79% (1)	-	-
2003 Evian	16	-	-	-
2004 Sea Island	49	84% (1)	-	-
2005 Gleneagles	4	78% (1)	-	-
2006 St. Petersburg	1		-	-
2007 Heiligendamm	1		-	-
2008 Hokkaido	27	72% (1)	-	-
2009 L'Aquila	20	95% (1)	-	-
2010 Muskoka	2	61% (2)	-	-
2011 Deauville	4	56% (1)	-	-
2012 Camp David	6	86% (2)	-	-
2013 Lough Erne	14		-	-
2014 Brussels	4		-	-
2015 Elmau	57	82% (1)	2	7
2016 Ise-Shima	4	82% (1)	1	-
2017 Taormina	10	88% (1)	-	-
2018 Charlevoix	0	-	-	-
2019 Biarritz	0	-	-	-
2020 Camp David	0	-	-	-
2021 Cornwall	1	88% (1)	1	-

2022 Elmau	35	88% (1)	3	14
2023 Hiroshima	80	100% (2)	5	6
2024 Apulia	19	-	2	2
Total	391	82% (N=15)	14 (3.5%)	29 (7.5%)

Climate Related

2015 Elmau (2)

2015-346: We are concerned about the negative effects of climate change and other underlying disaster-risk drivers on food security and nutrition, and we therefore commit to furthering means of sustainably increasing agricultural production and productivity and incomes while adapting and building resilience to climate change and mitigating greenhouse gases. (food and agriculture) [climate]

2015-347: We commit to promoting best practices for adaptation to climate change and take note of new initiatives, e.g. the Global Alliance for Climate Smart Agriculture. (food and agriculture) [climate]

2016 Ise-Shima (1)

2016-189: We support the development of good practices for global food security and nutrition that are in line with the SDGs and the Paris Agreement on climate change. (food and agriculture) [climate]

2022 Elmau 2 (3)

G7 2022-104. As key stakeholders in the global agricultural sector, we are committed to spearheading its transformation towards sustainability and resilience. (food and agriculture) [climate]

G7 2022-541. We will ensure that our response to the current challenges also strengthens the long-term resilience and sustainability of agriculture and food systems, in alignment with the Sustainable Development Goals, the Paris Agreement and Glasgow Pact, the Convention to Combat Desertification and the Convention on Biological Diversity, including via increasing our support to smallholder farmers. (food and agriculture)

G7 2022-542. In this context, we support the crucial work of all relevant multilateral organisations, including the Rome-based agencies WFP, Food and Agriculture Organisation (FAO) and IFAD as well as the Committee on World Food Security (CFS), the WTO and international financial institutions. (food and agriculture)

2023 Hiroshima (5)

G7 2023-228. We recognize the urgent need of establishing inclusive, resilient and sustainable agriculture and food systems including through enhancing, diversifying and ensuring sustainability of local, regional and global food supply chains as well as through solving structural bottlenecks. [This includes increasing local production capacities by making use of existing domestic agricultural resources and by facilitating trade, sustainable productivity growth with climate adaptation and mitigation and biodiversity conservation, and sustainable food consumption.] (food and agriculture)

G7 2023-625 [Supporting medium- to long- term activities, including:]… (d) promotion of organic farming, climate smart, agro-ecological, nature-based solutions and ecosystem based approaches and other innovative approaches as appropriate (food and agriculture)

G7 2023-632 Addressing climate-shocks by promoting climate-smart agriculture, agro-ecological, nature- based solutions and ecosystem based approaches and other innovative approaches as appropriate, drawing on the knowledge and evidence base developed by the FAO, IFAD and CGIAR, and noting outcomes of the Agricultural Breakthrough Agenda and deliveries of its priority

Actions, and efforts of the Agriculture Innovation Mission for Climate (AIM for Climate) to advance investment in climate-smart research and development and innovation. (food and agriculture)

G7 2023-633 Supporting efforts to adapt crops and livestock to climate change and to enhance their productivity sustainably, including in particular those traditional and indigenous crops whose potential to contribute to resilience, food security and nutrition has not been realized due to past underinvestment, while enhancing benefits to indigenous peoples and local communities. (food and agriculture)

G7 2023-634 Welcoming awareness-raising activities and researches of climate-resilient crops, including but not limited to those on millets in the International Year of Millets, 2023 and noting the importance of the full implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) to promote access to and utilization of genetic resources covered by the Treaty for the purpose of breeding climate-resilient crops such as millet (food and agriculture)

2024 Apulia (2 of 19)

G7 2024-14. Reinforcing global food security and enhancing climate resilience, including by launching the Apulia Food Systems Initiative. (food and agriculture)

G7 2024-110. Noting global food supply disruptions due to climate change and that the Paris Agreement can only be reached by transforming food systems, we will support synergetic and coherent policies and investments to address the climate-food systems nexus, particularly in low-income countries. (food and agriculture)

Security Related

2015 Elmau (7)

2015-255: [we aim to safeguard] nutrition in conflicts and crisis. (food and agriculture) [security]

2015-359: We remain committed to addressing the food security [needs of populations affected by] societal [conflicts] (food and agriculture)

2015-360: [We remain committed to addressing the nutrition needs of populations affected by] societal [conflicts] (food and agriculture)

2015-361: We remain committed to addressing the food security [needs of populations affected by] political [conflicts] (food and agriculture)

2015-362: [We remain committed to addressing the] nutrition needs of populations affected by] political [conflicts] (food and agriculture)

2015-363: We remain committed to addressing the food security [needs of populations affected by violent conflicts] (food and agriculture)

2015-364: [We remain committed to addressing the] nutrition [needs of populations affected by] violent conflicts. (food and agriculture)

2022 Elmau 2 (14)

G7 2022-345. To protect people from hunger and malnutrition, and in response to Russia's weaponisation of grain, we will increase global food and nutrition security through the Global Alliance on Food Security. (food and agriculture)

G7 2022-346. We will provide an additional USD 4.5 billion to this end (food and agriculture)

G7 2022-347. [We will]…stand by our commitments to keep our food and agricultural markets open (food and agriculture)

G7 2022-345. [We will]…step up efforts to help Ukraine produce and export. (food and agriculture)

G7 2022-401. We will foster coordinated initiatives that promote global food security and address the causes of the evolving a global food crisis. (food and agriculture)

G7 2022-415. As we impose severe costs on Russia and those who are complicit in its aggression, we will continue to assist the global economy and take action to help mitigate spillover effects, especially relating to humanitarian and other basic needs, and vulnerable populations. (macroeconomics)

G7 2022-416. We will continue to ensure that in taking further measures, we are not targeting food and allow for the free flow of agricultural products and make every effort to minimise potential negative impacts and spillovers on third countries, in particular low- and middle-income countries. (food and agriculture)

G7 2022-527. We will step up our efforts to help Ukraine to keep producing agricultural products in view of the next harvest season (food and agriculture)

G7 2022-528. [We]…commit to supporting Ukrainian farmers in gaining access to essential agricultural inputs and veterinary medicines. (food and agriculture)

G7 2022-529. We are strongly supporting Ukraine in resuming its agricultural exports to world markets (food and agriculture)

G7 2022-530. [We are strongly supporting]…UN efforts to unlock a safe maritime corridor through the Black Sea. (food and agriculture)

G7 2022-531. Additionally, we will step up our efforts to establish alternative routes building on the already implemented EU "Solidarity Lanes" initiative. (food and agriculture)

G7 2022-532. Working with relevant agencies and partners we will collaborate to identify the provenance of grain imports, with the aim of identifying illegally seized Ukrainian products and deterring Russia from continuing its illegal seizures. (food and agriculture)

G7 2022-533. We will continue to ensure that our sanctions packages are not targeting food and allow for the free flow of agricultural products, including from Russia, and the delivery of humanitarian assistance. (food and agriculture)

2023 Hiroshima (5 of 80)

G7 2023-224. Building on our commitment made at Elmau, we continue to provide support for the restoration of Ukraine's agriculture sector, including support to its efforts in identifying and evidencing illegal seizure of Ukrainian grains by Russia, through the creation of a grain database which can be used to verify the origin of grain shipments. (food and agriculture)

G7 2023-470. G7 2023-471. We will continue to support the export of Ukrainian agri-products including through the EU-Ukraine Solidarity Lanes. (food and agriculture)

G7 2023-472. In this regard, we support the expansion and extension of the Black Sea Grain Initiative (BSGI) (food and agriculture)

G7 2023-473. We remain committed to the Grain from Ukraine initiative. (food and agriculture)

G7 2023-590. Especially in light of its impact on food security and the humanitarian situation around the world, we support a just and durable peace based on respect for international law, principles of the UN charter and territorial integrity and sovereignty. (food and agriculture)

2024 Apulia (2 of 19)

G7 2024-65. We reiterate our support for Ukraine's agriculture sector, which is critical for global food supply, particularly for the most vulnerable nations. (food-agriculture)

G7 2024-103. Noting that we have already exceeded our joint commitment of USD 14 billion to global food security, announced in Elmau in 2022, we remain steadfast in addressing the escalating global food security and nutrition crisis, aggravated by Russia's war of aggression against Ukraine. (food and agriculture)

Appendix C: G7 Regional Security Commitments and Compliance, 1975–2024

Summit	# Commitments	Compliance (# Assessments)
1975–79	0	-
1980 Venice	4	-
1981 Ottawa	1	-
1982 Versailles	0	-
1983 Williamsburg	0	-
1984 London	1	13% (1)
1985 Bonn	0	-
1986 Tokyo	0	-
1987 Venice	0	-
1988 Toronto	5	-
1989 Paris	2	-
1990 Houston	0	-
1991 London	0	-
1992 Munich	0	-
1993 Tokyo	5	-
1994 Naples	5	-
1995 Halifax	2	-
1996 Lyon	6	25% (2)
1997 Denver	2	-
1998 Birmingham	2	-
1999 Köln	0	84% (1)
2000 Okinawa	0	-
2001 Genoa	2	78% (1)
2002 Kananaskis	19	-
2003 Evian	0	-
2004 Sea Island	4	95% (2)
2005 Gleneagles	12	98% (2)
2006 St. Petersburg	2	75% (2)
2007 Heiligendamm	20	89% (1)
2008 Hokkaido	17	67% (3)
2009 L'Aquila	9	95% (1)
2010 Muskoka	12	97% (2)
2011 Deauville	7	100% (1)
2012 Camp David	0	-
2013 Lough Erne	32	87% (5)
2014 Brussels	5	96% (4)
2015 Elmau	17	77% (4)
2016 Ise-Shima	7	71% (3)
2017 Taormina	10	94% (1)
2018 Charlevoix	3	69% (3)
2019 Biarritz	9	76% (5)
2020 Camp David	0	-
2021 Cornwall	19	81% (2)
2022 Elmau	65	100% (2)
2023 Hiroshima	67	94% (2)
2024 Apulia	65	96% (3)*
Total	438	
Average compliance by summit	9	80% (22 summits)
Average compliance by commitment		82% (50 commitments)

* Draft interim compliance, not included in the average.

Appendix D: G20 Commitments and Compliance on Climate Change, 2008–2024

Summit	# Commitments	# Assessed	Compliance
2008 Washington	0	-	-
2009 London	3	1	45%
2009 Pittsburgh	3	1	93%
2010 Toronto	3	3	71%
2010 Seoul	8	4	54%
2011 Cannes	8	3	69%
2012 Los Cabos	5	3	79%
2013 St. Petersburg	11	3	42%
2014 Brisbane	7	5	76%
2015 Antalya	3	1	85%
2016 Hangzhou	2	2	83%
2017 Hamburg	22	9	66%
2018 Buenos Aires	3	3	71%
2019 Osaka	13	7	69%
2020 Riyadh	3	3	84%
2021 Rome	21	3	76%
2022 Bali	18	1	85%
2023 New Delhi	19	1	98%
2024 Rio	28	-	-
Total/Average	180	53	
Average compliance by summit			73% (17 summits)
Average compliance by commitment			70% (53 commitments)

Food and Agriculture inclusions: hunger, food, agriculture

2009–2023 = 0 related to food and agriculture

2024 Rio (Climate change commitments 28, 2 related to food and agriculture)

G20 2023-104. We are determined to lead bold, timely and structural actions in our national economies…with a view to accelerating and scaling up climate action, in synergy with sustainable development priorities and efforts to eradicate poverty and hunger. (climate change) (food and agriculture related) (Compliance not assessed)

G20 2023-105 [We are determined to lead bold, timely and structural actions in]…the international financial system with a view to accelerating and scaling up climate action, in synergy with sustainable development priorities and efforts to eradicate poverty and hunger. (climate change) (food and agriculture related) (Compliance not assessed)

Appendix E: G20 Commitments and Compliance on Food and Agriculture, 2008–2024

	Food and Agriculture		Climate Related	
Summit	# Commitments	Compliance (# Assessments)	# Commitments	Compliance
2008 Washington	0	-		
2009 London	0	-		
2009 Pittsburgh	3	-		
2010 Toronto	2	60% (1)		
2010 Seoul	2	-		
2011 Cannes	36	78% (2)	1	
2012 Los Cabos	4	68% (1)	1	68%
2013 St. Petersburg	11	90% (1)		
2014 Brisbane	0	-		
2015 Antalya	31	45% (1)		
2016 Hangzhou	3	-		
2017 Hamburg	22	57% (3)		
2018 Buenos Aires	5	84% (2)		
2019 Osaka	4	-		
2020 Riyadh	3	40% (1)		
2021 Rome	8	93% (1)		
2022 Bali	22	83% (1)		
2023 New Delhi	14	78% (1)	1	78%
2024 Rio	7	-		
Total/Average	177	70% (17 summits) 71% (15 assessments)	3	73%