1. We, the Heads of State and Government, or our Representatives, have gathered in Rome, from 16 to 18 November 2009, at the World Summit on Food Security convened by the Food and Agriculture Organization of the United Nations (FAO), to secure a broad consensus on the total eradication of hunger from the world by 2025.

2. Since the creation of FAO in 1945, we are meeting for the third time in a Summit of Heads of State and Government on food security, further to those of 1996 and 2002, as we realize that the objective adopted by the ‘World Food Summit’ of 1996 of reducing by half, that is to say, to 420 million, the number of hungry people by 2015 at the latest is unlikely to be reached, even though current efforts to fight hunger must continue and be strengthened. While the previous Summits have contributed to keeping food and agriculture on the international agenda and making commitments to fight world hunger effectively, the decisions made were not followed by actions commensurate with achieving the goals set.

3. World hunger is increasing and global food security is facing the greatest challenge in modern history. We consider it unacceptable that over 1 billion human beings in the world, mostly in developing countries, presently do not have sufficient food to meet their daily basic nutritional needs. The number of hungry people in the world increased by several million in 2007 and 2008 as a consequence of high food prices and is expected to go up by a further 105 million in 2009 because of the economic and financial crisis, which is affecting jobs and deepening poverty.

4. Food security is central to poverty reduction, good public health, sustainable economic growth and world peace and security, as was witnessed in 2007-2008 with riots in 22 countries around the world, threatening government stability. There are still 31 countries in the world in a situation of food crisis requiring emergency assistance.

5. The present situation has come about because, instead of tackling the structural factors of hunger, in recent decades the world has neglected agriculture in development policies. The time has come to act responsibly and address the root and multifaceted causes of food insecurity by adopting lasting political, economic, financial and technical solutions so that all people in the world can enjoy the ‘Right to Food’, which is the most fundamental of all human rights.

6. In adopting these decisions, we have pledged today our commitment to undertake all necessary measures to:

- completely eradicate hunger from the face of the Earth by 2025 in conformity with the relevant provisions in the International Covenant on Economic, Social and Cultural Rights adopted in New York on 16 December 1966 (which entered into force on 3 January 1976) and the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security, adopted in November 2004 by the FAO Council; and

- secure sufficient, safe and nutritious food supplies for a growing world population that is projected to reach 9.2 billion in 2050.
1. World food security governance

7. We recognize that there is a lack of coherence and efficiency in the current governance of world food security. The system is poorly organised and each institution operates to a large extent separately despite important progress in coordination. Responding to the global food insecurity crisis in an effective and sustainable way requires not only strong leadership and relevant policies, strategies and programmes, but also coordinated implementation and monitoring capacities. We note in this regard that, in addressing the emergency situation arising from food-price rises, the United Nations High-Level Task Force on the Global Food Security Crisis conducted effective coordination actions among agencies, programmes and funds of the United Nations and the Bretton Woods institutions and has been very useful in its advocacy role for food security.

8. Governance of the fight against food insecurity needs to be coordinated at the international level to ensure coherent and effective long-term action, in particular with respect to the factors affecting world food security. To that end, we must draw and build upon existing structures, which should be empowered to be more effective, and upon existing programmes by consolidating and improving them. The new governance system should also involve all relevant actors along the food chain, from producer to consumer, including the food and food-processing industries; importers and exporters; suppliers of inputs, equipment and services; and all the actors responsible for food quality and safety.

9. We also recognize that the Committee on World Food Security (CFS), despite its many advantages, most notably its universal composition of Member Nations of FAO and Member States of the United Nations, its openness to civil society and its neutral forum for dialogue, could not fulfil the mission entrusted to it adequately. There are at least three reasons for this: (i) it has neither the political power nor all the scientific elements needed to tackle the short-, medium- and long-term problems of hunger in a satisfactory manner; (ii) it has no effective mechanism to follow up food security issues at national, regional and international level; and (iii) it lacks financial resources to exercise its mandate.

10. We therefore pledge our full support for the CFS to be renewed and strengthened as a system of governance of world food security. The new CFS must serve as the global forum for debate and convergence on the causes and consequences of food insecurity and the ways to address them. It should lay the principles for the formulation of appropriate policies and strategies and the means to monitor progress and to report to the FAO Conference and the United Nations General Assembly on their implementation, through the Economic and Social Council (ECOSOC).

11. For the CFS to be a high-level intergovernmental process of decision making with political legitimacy, we stress the need for our governments to be represented at the CFS meetings at ministerial level. While the representation to the CFS of relevant technical ministries and departments is important, the participation of the ministers of cooperation and development of Member Nations is also necessary to address important financing and economic issues of world food security. The CFS should also have an office to take care of any required activities between ordinary and extraordinary sessions. We thus decide that our delegations to the CFS will be led by ministers of cooperation and development during the year of the Conference and by ministers of relevant technical departments during the intervening year.
12. We also support the establishment of a High-Level Panel of Experts (HLPE) in the framework of the renewed CFS, to act as a scientific and technical platform for policy decisions and recommendations by supplying objective and impartial analyses. The HLPE technical expertise should correspond to a multidisciplinary approach to food security and build on existing expert and advisory panels and intergovernmental sectoral technical committees, as well as on the Consultative Group on International Agricultural Research (CGIAR), the global agricultural research system through the Global Forum on Agricultural Research (GFAR), and the Intergovernmental Panel on Climate Change (IPCC).

13. All key actors, including members of the United Nations System Chief Executive Board for Coordination (CEB) and in particular the Rome-based agriculture agencies, international and regional financial institutions, regional economic unions, non-governmental organizations (NGOs), civil society, the private sector, farmers’ and agricultural trade associations, as well as humanitarian organizations involved in food and agriculture should participate in the renewed CFS in order to ensure the mobilization and coordination of all stakeholders of the food chain, so as to assure the effective implementation of programmes.

14. The renewed CFS at international level, with the system of coordination of the Food Security Theme Groups at country level, reporting to the UN Resident Coordinator involving the donor community, with the National Alliances for Food Security comprising farmers’, civil society and private sector organizations, under the leadership of governments implementing country-owned strategies, policies and programmes, would constitute the Global Partnership for Agriculture and Food Security (see Annex).

15. We call for the establishment of a close relationship between the CFS and governments focusing on the core principles of country ownership and effectiveness, through a yearly exchange of views on national food policy and strategy documents, and their implementation in the fields of production and trade, and access to food. The Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) programme, established following the 1996 World Food Summit, would be a useful tool to this effect.

16. At national level, partnership should also be developed by building on the Food Security Theme Groups and the National Alliances for Food Security which should be strengthened. These two mechanisms should provide effective support to governments, which have the responsibility of ensuring the proper allocation and use of budget resources, official development assistance and private national and foreign direct investments. These governments should then ensure the effective coordination of financial resources to achieve the set goals within national policies, strategies and programmes. The National Alliances and UN Resident Coordinators should specifically assist the governments in the preparation of the yearly national documents, to be submitted to the CFS. These documents should deal with agricultural development policies, strategies and programmes, and their impact on agricultural production and trade, as well as on household and national food security.

17. We note that, while there are bilateral, regional and multilateral mechanisms and institutions to deal with natural disasters and conflicts, there are none to cope with food crises like those of 2007-2008. We therefore request the CFS to establish as quickly as possible an Early Reaction System building on mechanisms already in place at bilateral, regional and international levels for natural disasters or conflict crises with a view to reviving local food production in the event of a food crisis, especially in low-income countries that are heavily dependent on food imports. This system, within the CFS, should have a Management Committee comprising one Ambassador or Permanent Representative to
FAO per regional group. The Committee should be able to launch appeals in favour of programmes and projects that are focused essentially on access to inputs (seeds, fertilizers, animal feed, vaccines, etc.), but can also intervene in the control of transboundary insect, animal and plant pests and diseases that threaten world food security. We urge governments and donor partners to take effective measures to ensure, as early as possible, that this system is operational by creating, inter alia, in their emergency assistance mechanisms and institutions, a window to address food insecurity crises arising from economic factors and establishing proper linkages with the Management Committee.

2. Public investment and funding

18. We are deeply concerned at the inappropriate level of financial resources made available for agriculture in developing countries and the lack of investment in this sector, which provides 70 percent of the world’s poor with their livelihood. Development aid to agriculture decreased by 58 percent in real terms between 1980 and 2005, even though total official development assistance (ODA) commitments increased significantly during the same period. This means that the share of agriculture in total ODA fell from 17 percent in 1980 to 3.8 percent in 2006 and the same trends were observed in national budgets. This is one of the root causes of the recent global food crisis and the difficulties encountered by the majority of developing countries in dealing with it effectively. The situation requires a decisive shift towards more adequate resource allocation for, and increased short-, medium- and long-term investment in developing countries’ agriculture to respond effectively to both the imminent and long-term challenges of food security. It is, in fact, a matter of feeding more than 1 billion hungry persons presently and of doubling world agricultural production to feed a population projected to reach 9.2 billion by the year 2050. We recognize that the G8 “L’Aquila” Joint Statement of the Global Food Security in July 2009, calling for the mobilization in three years of 20 billions US dollars funds to allow small farmers to increase their production is an important step in the right direction. We call on the G8 members to ensure the full implementation and effective monitoring of this commitment.

19. We stress the urgent need to reverse the declining trend of the share of agriculture in total ODA and particularly in lending portfolios of international financial institutions (IFI) and regional development banks. We commit to achieve in five years the target level of 17 percent reached in 1980. The investments in rural infrastructures, the adaptation and multiplication of high-yielding varieties and access to fertilizers and other inputs spearheaded the boost in food production and prevented the looming world famine in the 1970s. We call particularly for priority financing of agriculture in bilateral and multilateral resources and in IFIs and regional development banks’ lending, in the framework of the 2002 Monterrey Consensus and the 2008 Doha Declaration on Financing for Development through predictable and multi-year resource commitments. The developed countries are asked to fulfil their commitments and achieve the corresponding ODA targets.

20. We also urge governments of developing countries to devote the necessary portion of their national budgets to investment in agriculture and rural development consistent with the role they play in GDP, export earnings, employment and hunger and poverty reduction. We recall in this regard the 2003 Maputo Declaration in which African Governments committed to raising to at least 10 percent the share of agriculture and rural development in their budget expenditures within the next five years. We call upon African leaders to honour their commitment and ask other regions to adopt similar quantitative time-bound commitments and ensure their implementation, with proper monitoring systems.
21. We ask the International Monetary Fund (IMF), the World Bank, the International Fund for Agricultural Development (IFAD), FAO and the Organisation for Economic Co-operation and Development (OECD) to put in place mechanisms for monitoring progress in achieving the goals of agriculture sector financing and to report yearly to the CFS for discussions on this issue by Member Nations.

3. Private investment

22. We recognize the importance of private investment, from both foreign and domestic sources, in improving food supplies and ensuring global food security. Governments are urged to create a legal and governance framework to promote and develop the necessary investments in food, agriculture, fisheries and forestry, and rural development in order to attain and sustain food security for all.

23. Foreign direct investment (FDI) is necessary and should be encouraged. However, some forms could influence complex socio-economic, political, institutional, legal and ethical issues that are potentially controversial. We particularly note that the recent global food crisis has led to several deals of land and water acquisition or leasing on the part of certain food-importing countries with a view to reducing their dependence on world markets for food. At the same time, a number of, in particular, developing countries are making efforts to attract investments to build on their natural and human resources. If foreign direct investment is to play an effective role in filling the financial-resource gap facing agriculture, the objectives of investing countries need to be reconciled with the needs of recipient countries.

24. It is important that investments are guided by partnerships, including public-private ones, in the form of joint ventures. In recipient countries they should result in development benefits, such as technology transfer, employment creation, higher incomes and stronger upstream and downstream linkages. For investors, they should result in sustainability of endeavour and adequate return on investment while remaining legally, socially and politically acceptable. We urge that care must be taken in the formulation of such investment arrangements and appropriate legislative and policy frameworks, and guarantees need to be in place to ensure that they result in win-win situations.

25. We request FAO, in collaboration with the World Bank, IFAD, the United Nations Conference on Trade and Development (UNCTAD) and other relevant international institutions to conduct impact studies and encourage the negotiation and adoption of an international code of conduct for FDI in agricultural land and water. It is in the interest of investors, host countries and local populations to ensure that such investments are properly negotiated, laws are duly respected and benefits are balanced and mutually shared. We call on concerned countries to initiate a dialogue leading to the adoption of such a code of conduct on deals related to financial resources and water deals in the agricultural sector.

4. Trade and support to farmers

26. We reiterate that a rules-based international agricultural trading system that is open, non-distorted, non-discriminatory, equitable and fair can promote agricultural and rural development and contribute to world food security. That is why we are hoping for a successful conclusion to the Doha round of trade negotiations.
27. While international trade in agricultural and food products has expanded, many developing nations, in particular the least developed countries, have remained at the margins of these developments. These countries face specific challenges and their supply-side constraints and trade capacity in agriculture need to be addressed effectively. Their farmers will also need to be provided with adequate incentives to increase their production and productivity and to profit from increased trade opportunities. Agriculture policy should play a critical role in providing incentives to stimulate production. However, it could have adverse impacts if it is not properly designed to avoid distorting effects to the detriment of small and poor farmers.

28. We need all farmers of the world, in developing and developed countries alike, to ensure the food security of the 1 billion hungry people and to double agricultural production by the year 2050 for a world population that is projected to reach 9.2 billion by then. Farmers in both developed and developing countries should have an income comparable with those earned by workers in the secondary and tertiary sectors of their respective countries to remain in rural activity. This objective should be achieved through support that causes no distortions on the international markets.

29. Developed countries should continue to shift their support to ‘decoupled’ forms of support authorised under WTO provisions, while for developing countries, appropriate support measures to boost production should be designed, particularly using effective support mechanisms to facilitate access to inputs, direct payments to achieve income targets and compensatory financing in cases of natural disasters. We request the WTO, UNCTAD and FAO to prepare and submit to the renewed CFS proposals for support measures in both developed and developing countries for an international agricultural system that is based on open and fair trade while ensuring food security for all.

30. Food and agricultural trade policies should be conducive to fostering world food security. They should not be hampered by actions taken in response to the economic climate. We call upon all countries to remove food export restrictions or extraordinary taxes, especially for food purchased for humanitarian purposes, and to consult and notify in advance before imposing any new restriction.

31. The WTO Agreement on Technical Barriers to Trade (TBT) sets out the rules that should govern trading practices at the international level for all consumer type products, with a view to ensuring that regulations and product standards do not create unnecessary and unjustified obstacles to trade. It is noted, however, that developing countries continue to face many stringent technical requirements for their exports. We urge governments to refrain from using TBT-type measures to block imports, particularly from the developing countries, and to adhere fully to the provisions of the TBT Agreement as set by the WTO. We also emphasize the need to provide developing countries with the information, training and resources needed to comply with standards and regulations governing their exports.

32. We recognize that the WTO work programme on Aid for Trade can contribute to the Doha Development Agenda by helping developing countries, particularly the least developed ones, to overcome their supply-side constraints and enhance their trade capacity. We urge donors to keep their Aid for Trade promises, giving due place to food and agriculture supply constraints. We also ask WTO and the OECD to prepare annual review and monitoring reports of the Aid for Trade initiative in food and agriculture, for presentation at the CFS meetings.
5. Market stability

33. Food and agricultural market instability has severe consequences on world food security. Rapid increases in food prices, like those experienced in 2007-2008, can have both short- and long-term effects, by leading to increased hunger and poverty, economic difficulties, social unrest, political instability and protectionist measures. Price volatility has direct effects on investment decisions and flows.

34. The recent turmoil in traditional financial markets has made hedge funds and investment banks more involved in derivatives markets based on food commodities in the hope of achieving better returns than those from traditional assets. Global trading activity in futures has more than doubled in the last five years. It is therefore essential to address the issue of speculation in agricultural markets given the serious implications it can have for world food security. We note that some studies suggest that speculation in food markets played a certain role in the increasing level and volatility of world food prices in 2007-2008. We recognize that speculation increased because of a growing gap between supply and demand, emphasizing the need to boost production to reduce speculative behaviour.

35. We, therefore, call upon the World Bank, the IMF, UNCTAD, FAO and other relevant intergovernmental organizations, within their mandates and areas of expertise, and in collaboration with other specialized actors, to conduct in-depth and comprehensive studies to analyze the causal links between speculation and agricultural commodity price movements, with a view to fostering a coherent and effective policy response in the context of food security. There is a need to develop appropriate guiding principles and measures for commodity futures markets to ensure a minimum level of market stability and to limit negative impacts on food security.

36. It is important to foresee practical mechanisms to cope with sudden price spikes and market failures. While grain storage should be encouraged at village and national levels, the establishment of physical nationally held regional and virtual global grain reserve systems should also be envisaged. We request FAO and the World Food Programme (WFP), in collaboration with the other relevant international organizations, to study the feasibility of setting up systems as well as their operating modalities. Regional and global measures should be triggered only in cases of food crises and humanitarian emergencies. They should not interfere with regular market functioning.

37. It is also essential to put in place targeted social safety nets and protection programmes for the needy and vulnerable, such as food and cash for work, unconditional cash transfer programs, school feeding and mother-and-child nutrition programmes, which is an imperative goal. In the long-term, government-led, cash-based social protection systems and targeted nutrition interventions are needed to support the poorest and excluded populations.

38. The emerging bioenergy market is a new and significant source of demand for some food commodities such as sugar cane, cassava, maize and oilseeds. The rapid increase in the use of these commodities for biofuel production, triggered by policies involving subsidies of around US$11 billion in 2006 and by tariff protection, may be one of the factors contributing to the sharp increases in food prices in recent years. In 2008-2009, it is estimated that 104 million tonnes of cereals will be used for energy production. Also, crops for biofuel production sometimes compete with food crops for land and water.
39. We underline that biofuels should be produced and used in an environmentally sustainable manner, with consideration being given to the need to secure global food security. In addition, biofuels should, in compliance with the competition rules for international trade, be able to contribute to energy provision in countries with sufficient land and water, especially in rural areas. Considerable benefits should reach rural farmers and poor populations. We reiterate the need to develop research into better options, exchange experiences and knowledge on biofuel technologies, norms and regulations, and to consequently adopt the most appropriate practices on that basis.

6. Institutional and capacity building

40. To ensure sustainable global food security and promote sustainable management of water, forest and other natural resources, there should be special focus on small farmers, women and families and their access to land, water, inputs, and financial services including microfinance and market.

41. There is a need to strengthen capacity building in particular through knowledge transfer using North-South, South-South and triangular cooperation to achieve increased agricultural production and productivity with a stimulus to pre- and post-harvest intervention, with emphasis on preservation of the natural resource base, expansion of employment and decent work opportunities.

42. In the 1960s and 1970s, support to small farmers through the provision of inputs, the purchase of their output, credit and extension services was provided by public institutions and national marketing boards. In the 1980s, in line with market liberalization policy and as part of the structural adjustment programmes, these institutions were weakened and in some cases even dismantled. Yet no effective and consistent policies or continuous operational programmes were adopted and implemented to ensure their replacement with adequate private or semi-private institutions to continue to provide the same services to small farmers.

43. It has become clear today that small farmers need public policy and institutional support to enable them to organize themselves to collect information, improve their production and benefit from economies of scale in input access and product marketing. We recognize the need to rebuild the institutional capacity of developing countries to help smallholders to access the technologies, inputs, credit and markets they need to become more productive, as well as to enable them to organize themselves better and to market their output. These include services for research and extension, access to inputs, product marketing, rural credit and capacity building of trade organizations, in particular by training producers and administrators in the sector.

44. We stress the importance for developing countries to rebuild their institutional capacity and strengthen and empower farmers’ organizations. We call upon developed countries and relevant international organizations to provide them with the necessary support. These renewed institutions should include more farmers’ organizations and the private sector and use modern management techniques and control systems, to avoid the inefficiency and politicization that plagued some of the old institutions.

7. Food quality and safety

45. Food quality and safety are essential for healthy nutrition, public health and economic development at both national and international levels. Scientific developments have allowed
a better understanding of food composition and the health implications of nutrients and other physiologically active food components. Consumers expect that locally produced or imported foods will meet established food quality and safety standards. This prevents food-borne diseases and toxins, while protecting consumers and promoting fair practices in food trade. The application of quality assurance and risk-based food safety systems utilizing current scientific knowledge is essential. The implementation of such controls throughout the food chain at every level (production, harvest, handling, storage, transport, processing, distribution and consumption) is the responsibility of all actors in the chain.

46. However, for many developing countries, national food control systems are not adequate: food laws and regulations need to be strengthened and capacity to enforce existing regulations is weak. Developing countries should be assisted in building the means necessary to ensure an adequate supply of safe, good-quality food for domestic consumers and meet international trade requirements. Food quality and safety goals can be realized only if strategies, within adequate legal frameworks, are supported by sound investment plans covering human resource development and building the capacity of official food control institutions and facilities in the producer, trade and industry sectors. We urge governments and the donor community to allocate the necessary resources to meet food quality and safety investment needs, including the strengthening of the joint FAO/WHO Codex Alimentarius to enable it to meet the growing demand for scientifically based international standards. We also urge governments not to use food safety and quality requirements as discriminatory measures against food imports.

8. Transboundary animal and plant pests and diseases

47. Transboundary animal and plant pests and diseases represent a serious threat to global food security. They affect every aspect of it – availability, stability, access and safety. For some time now, diseases have been transmitted from animals to humans and vice versa with the risk of epizootics and pandemics. It is a public concern across all countries and regions of the world. Moreover, climate change is altering the distribution, incidence and intensity of animal and plant pests and diseases and may also result in new transmission modalities and different host species. Pests, pathogens and weeds cause the loss of more than 40 percent of the world’s food supply and transboundary animal diseases such as foot and mouth disease, bovine spongiform encephalopathy, swine fever and bird flu are estimated to have caused economic losses in the tens of billions of US dollars. Transboundary animal and plant pests and diseases can result in huge financial losses and require control measures and large-scale eradication programmes.

48. National animal and plant protection infrastructures, in particular in developing countries, are often not suited to executing the range of activities required for prevention, early warning and early control of transboundary animal and plant pests and diseases. It is therefore a top priority to build the capacity of national veterinary and plant health services through producer training and the development of institutions and infrastructure, as well as border control. It is also necessary to enhance the ability to respond to any movements of animal and plant pests and diseases by increasing preparedness, maintaining expertise, adopting rapid diagnostic tools and improving forecasting models.

49. We urge developed countries and other donors to assist developing countries in building their capacity at national and regional levels, developing their infrastructure and enhancing their preparedness measures to ensure effective prevention and control of animal and plant pests and diseases. Regional and global cooperation for prevention, early warning
and control should be promoted. FAO and the WHO, as well as relevant intergovernmental agencies and other stakeholders, are encouraged to provide support to governments to develop specifications and sustainable systems in this field.

9. Climate change

50. Climate change will have significant consequences for agriculture, forestry and fisheries. It will threaten world food security. Access to water resources will become more variable and extreme weather events, such as droughts and floods, will be more frequent, thus exerting increased stress on production systems and the ecosystems underpinning them. Climate change is likely to reduce the productivity of agriculture and fisheries in tropical and low-latitude regions where many developing countries are located.

51. Meeting the growing demands for food requires prioritizing climate change adaptation throughout the food chain. Investments are required for more efficient irrigation and watershed management; improved land preparation and use; farm, forest and livestock management; preservation of coastal area ecosystems and the development of crop varieties and livestock breeds that are adapted to changing climatic conditions. Effective use of climate data and forecasts, particularly through early warning systems, can assist in reducing the impacts of climate change on agricultural production and the entire food chain. Climate change adaptation in agriculture can be leveraged through pro-poor economic growth and sustainable development.

52. Agriculture and forestry currently contribute, and could contribute still more, to mitigating climate change by acting as carbon sinks and through their ability to maintain and increase existing carbon stocks by managing cropland and livestock more effectively. Agriculture and forestry are vital in meeting the challenge of climate change. At the same time, financial incentives for improving animal and plant production systems, reducing deforestation and forest degradation and increasing the amount of carbon sequestered in agricultural soil can help to mitigate the effects of climate change and improve food safety. Support for developing countries through farmer training, building the capacity of farmers’ organizations, agriculture support services and technology transfer is critical in mitigating the impact of climate change effectively.

53. We emphasize the importance that should be given to agriculture and food security on the agenda of the United Nations Climate Change Conference in Copenhagen in December 2009. The international climate change negotiation process should take into due consideration world food security goals. Carbon fixation by agricultural activities and reductions in greenhouse gas emissions should be encouraged. We point out that the decisions of the Copenhagen Conference should lead to greater investment in rural infrastructure and sustainable forestry and fish resource management and should promote farming techniques such as conservation agriculture, which are better suited to the conditions arising from climate change.