

# T20 Saudi Arabia 2020

## Task Force 10: Sustainable Energy, Food, and Water Systems

### T20 Recommendations Report

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#### About this Report

The T20 is the official think tank network advising the G20. It produces research-based policy briefs containing recommendations for decision-makers. This report provides a repository and categorization of past T20 policy briefs relating to energy, water and food. It also provides information about G20 commitments. The report can be used by future T20 task forces to set up a research agenda, which builds upon the past efforts of the T20 network.



## Table of Contents

Introduction.....	1
Summary of key recurrent concepts.....	2
1. Policy Briefs.....	3
1.1. Supporting Sustainable and Orderly Energy Transitions that Create Prosperity for All .....	3
1.2. Addressing Challenges: Energy Poverty, Water-Food-Energy Nexus, Urbanization, Resilience & Environment .....	10
1.3. Agriculture and Food Security .....	15
2. Commitments and Initiatives of the G20.....	26
2.1. Relevant Commitments Made in G20 Leaders' Communiqués .....	26
2019 Japanese Presidency .....	26
2018 Argentinian Presidency .....	33
2017 German Presidency.....	39
2016 Chinese Presidency .....	42
2015 Turkish Presidency .....	48
2014 Australian Presidency .....	53
2013 Russian Presidency.....	54
2012 Mexican Presidency .....	57
2011 French Presidency.....	60
2010 Korean Presidency .....	64
2010 Canadian Presidency .....	65
2009 The United States' Presidency .....	66
2008 The United States' Presidency .....	67
2.2. General References to Issues Related to Energy, Food, and Water in G20 Leaders' Communiqués .....	68
3. The T20 Task Force on "Sustainable Energy, Food, and Water Systems" .....	95
References .....	97

## Introduction

Food, water and energy are core pillars of economic prosperity. As such, affordability, sustainability and security of these three resources are central to geopolitical and economic discourse. However, it remains the case that a substantial portion of the global population does not have sufficient access to modern energy services, adequate nutrition and/or clean water. The challenges associated with eliminating poverty and providing access to adequate food, energy and water are not easily remedied and can be very different across regions.

At the same time, concerns related to climate change have shown the potential consequences for food and water security in vast areas of the world, also advocating for transitioning toward lower greenhouse gas emissions (GHG). While the various proposals carry desirable end goals, the pathway has to face the interdependence of food, water and energy availability, considering that the transition has the potential to disproportionately affect economies that heavily depend on fossil resource endowments, have scarce water resources, or import food.

Governments have to find solutions that are acceptable to their constituents and, leveraging all available resource and technology options, efficient from an economic perspective, to provide platforms for growth and prosperity.

As the G20's think tank engagement group, the T20 aims at providing research-based policy advice to the G20. This T20 Recommendations Report reviews the previous work of the T20 regarding food, water and energy and summarizes the commitments made in previous G20 Leaders' Communiqués.

The Report is structured as follows. Section 1 outlines previous T20 policy briefs focusing on different aspects of energy, food and water. Section 2 reports the commitments the G20 Leaders have made regarding this topic during the previous G20 presidencies. Finally, Section 3 emphasizes the objectives, priorities and structure of the T20 Saudi Arabia's task force Sustainable Energy, Food, and Water Systems. This task force will bring international attention to the role the G20 can play in addressing the issues of sustainable production and use of natural resources.

## Summary of key recurrent concepts

End hunger

Agricultural productivity and production to promote food security

Agro-food value chains

Concrete steps to improve food security and nutrition

Support small-scale farming

Responsible investment in agriculture

Water and health promotion

Agricultural Market Information System (AMIS) to promote food security and water access

Responsibility to protect soils and water

Sustainable supplies of water for farmers

Policy coherence to improve water governance

Multilateral development banks to finalize their joint action plan on water and food

Energy transition

Energy security

Energy market stability

Resilient and transparent energy markets

Energy efficiency

Clean energy sources

## 1. Policy Briefs

### 1.1. Supporting Sustainable and Orderly Energy Transitions that Create Prosperity for All

*“There is a new paradigm of energy transition emerging. In several important sectors, the transition is now endogenous, driven by the achieved or imminent competitiveness of low-carbon technologies. This is the case notably for the power sector, energy efficiency, and increasingly for segments of the personal transport sector. However, other sectors such as industry and heavy transport are lagging behind ...”*

(Source: T20 Japan Policy Brief: “Energy Transition in Emerging and Developing Countries: Promoting the New Paradigm” by Thomas Spencer and Ajay Mathur, 2019, online available at: <https://t20japan.org/wp-content/uploads/2019/03/t20-japan-tf3-6-energy-transition-emerging-developing-countries.pdf>)

#### Potential of Various Renewable Energy and its Introduction Policy in Southeast Asia

PB G20 Insights: G20 Japan

- Hiroshi Komiyama (Mitsubishi Research Institute Inc.)
- Kazuo Matsushita (Institute for Global Environmental Studies [IGES])
- Ajay Mathur (The Energy and Resources Institute)
- Tamiksha Singh (The Energy and Resources Institute)
- Kenichiro Yamaguchi (Mitsubishi Research Institute Inc.)
- Kuniyuki Nishimura (Mitsubishi Research Institute Inc.)
- Nobuyuki Kobayashi (Mitsubishi Research Institute Inc.)
- Turki Alaqeel (King Abdullah Petroleum Studies and Research Center [KAPSARC])

**Summary/Abstract:** Renewable energy has gained importance and is changing the face of energy business. Introduction of community-based off-grid renewable electricity in developing countries is desirable from the viewpoint of fostering inclusive growth. Southeast Asia provides an ideal ground for demonstration, since the region is endowed with abundant renewable resources as well as a significant need for off-grid electricity. Identified impediments include inadequacies in accumulation of relevant data, management skills, financing and harmonization. Assistance by governments and international institutions such as development banks, coupled with utilizing private sector skills on energy management and novel financing methods are the keys to overcoming them.

#### **Recommendations/Proposal:**

- Governments and development banks should step up efforts to accumulate data on renewable energy potential to facilitate siting

- Concerted efforts need to be taken with respect to capacity building, since provision of electricity needs considerable entrepreneurial skills
- It is desirable to explore novel ways of financing enabled by recent innovation of communication technology, in order to reach out to previously untapped customers
- Further efforts should be taken to harmonize policies to integrate renewable energy resources

### [Energy Transition in Emerging and Developing Countries: Promoting the New Paradigm](#)

PB G20 Insights: G20 Japan

- Thomas Spencer (The Energy and Resources Institute [TERI])
- Ajay Mathur (The Energy and Resources Institute [TERI])

**Summary/Abstract:** There is a new paradigm of energy transition emerging. In several important sectors, the transition is now endogenous, driven by the achieved or imminent competitiveness of low-carbon technologies. This is the case notably for the power sector, energy efficiency, and increasingly for segments of the personal transport sector. However, other sectors such as industry and heavy transport are lagging behind. These sectors are particularly relevant for developing countries, which have large unmet material and freight transport needs. The whole international policy environment needs to evolve to reflect the new paradigm. International funding, research, and demonstration needs to shift toward shifting the frontier of decarbonization options into the hard to abate sectors.

#### **Recommendations/Proposal:**

- G20 countries should announce a 2030 deployment and cost target for stationary storage and a related initiative to scale-up R&D in grid-scale energy storage
- G20 countries should announce a platform for low-carbon industry and goals for the deployment of pilot projects
- Reallocating funding to assist developing countries in meeting the new paradigm

### [A decentralized consumer-driven-model for the solar eco-system](#)

PB G20 Insights: G20 Germany

- Amit Bhandari (Energy and Environment Studies Programme, Gateway House: Indian Council on Global Relations)
- Akshay Mathur (Research and Analysis, and Fellow, Geoeconomic Studies Programme, Gateway House: Indian Council on Global Relations)

- Purvaja Modak (Goeconomic Studies Programme, Gateway House: Indian Council on Global Relations)

**Summary/Abstract:** The transition from fossil fuel-based energy usage towards renewable energy sources needs to be accelerated. The issue is at the developing country level, where a lack of funds and technology - both promised by international institutions but not delivered – exacerbates the problem. Where financing is available, very few “bankable” projects exist for global investment.

To hasten the transition, a new decentralized, consumer-based renewable energy approach must be adopted. Solar energy technology is particularly suited for this and can see early gains for climate change. The G20 can create policies to help develop products for consumers and facilitate global private capital and multilateral finance towards this goal.

**Recommendations/Proposal:**

- Encourage renewable energy companies to design standardized home products that can easily be purchased and installed by consumers
- Encourage global use of electric vehicles
- Create specialized consumer financing for decentralized solar products
- Encourage multilateral banks and global private capital to invest in such consumer finance companies

**[Establishing an Expert Advisory Commission to assist the G20's Energy Transformation Processes](#)**

PB G20 Insights: G20 Germany

- Andreas Löschel (University of Münster)
- Philipp Großkurth (RWI – Leibniz-Institut für Wirtschaftsforschung)
- Michel Colombier (Institute for Sustainable Development and International Relations [IDDRI])
- Patrick Criqui (Grenoble Applied Economics Laboratory, CNRS, Université Grenoble-Alpes)
- Du Xiangwan (Chinese Academy of Engineering)
- Christoph Frei (World Energy Council)
- Carl Friedrich Gethmann (University of Siegen)
- The Rt. Hon John Gummer, Lord Deben (Committee on Climate Change)
- Baroness Brown of Cambridge DBE FREng (Julia King) (Committee on Climate Change)
- Franck Lecocq (Centre International de Recherche sur l'Environnement et le Développement)
- Jyoti Parikh, PhD, FNASc (Integrated Research and Action for Development IRAD)
- Dirk Uwe Sauer (RWTH Aachen)

- Robert Schlögl (Fritz Haber Institute of the Max Planck Society)
- Christoph M. Schmidt (RWI – Leibniz-Institut für Wirtschaftsforschung)
- Frithjof Staiß (Centre for Solar Energy and Hydrogen Research Baden-Württemberg [ZSW])
- Cyril Stephanos (National Academy of Science and Engineering)
- Kanako Tanaka (LCS, Japan Science and Technology Agency)
- Prof. Tian Zhiyu (CAE / Energy Research Institute National Development and Reform Commission)
- Eberhard Umbach (acatech – National Academy of Science and Engineering)
- Matt Wenham (Australian Academy of Technology and Engineering)
- Koichi Yamada (LCS, Japan Science and Technology Agency)
- Yu Cong (CAE / Energy Research Institute National Development and Reform Commission)

**Summary/Abstract:** The ongoing transformation of the world's energy systems requires international monitoring to evaluate the transformation processes and to identify transferable leading practice policies. For this purpose, an independent scientific expert commission should be established for the G20. By actively involving political decision-makers in the discussion of the final results a broad basis of support can be ensured.

**Recommendations/Proposal:**

- Establishing a Scientific Expert Advisory Commission to report to the G20
- This brief recommends a complementary process, aiming at cooperation between the commission and political decision-makers.

**[Green Shift to Sustainability: Co-Benefits & Impacts of Energy Transformation on Resource Industries, Trade, Growth, and Taxes](#)**

PB G20 Insights: G20 Germany

- R. Andreas Kraemer (Center for International Governance Innovation [CIGI])
- Barry Carin (Center for International Governance Innovation [CIGI])
- Max Gruenig (Ecologic Institute)
- Fernando Naves Blumenschein & Renato Flores (Fundação Getulio Vargas [FGV])
- Akshay Mathur (Gateway House)
- Clara Brandi (German Development Institute [GDI-DIE])
- Thomas Spencer (Institut du développement durable et des relations internationales [IDDRI])
- Sebastian Helgenberger & Sonja Thielges (Institute for Advanced Sustainability Studies [IASS])
- Scott Vaughan (International Institute for Sustainable Development [IISD])
- Shelagh Whitley (Overseas Development Institute [ODI])
- Joël Ruet (The Bridge Tank)
- Hermann Ott (Wuppertal Institute)



**Summary/Abstract:** Energy transformation towards 100% renewable energy is economically inevitable, and socially and environmentally desirable, yet it may produce negative signals in outdated statistics as fossil trade diminishes and the sector shrinks. This paradox should be addressed in a joint report by, e.g., IRENA, IMF, OECD, and the World Bank, and the Task Force on Climate-Related Financial Disclosures. Fossil fuel extraction and commodity trade will end, and fossil asset values erode. The industry's role in capital formation, international trade, economic activity (GDP), and government revenue will decline. New energy systems, based on efficiency, renewables, storage, and smart management are cheaper to build, run and maintain. Growth of electricity use stimulates innovation, value creation, and growth in consumer rent, as renewable energy technologies harvest free environmental flows that are not traded and often for self-consumption. Total utility will grow while trade, GDP and the tax base may shrink. Reports should inform G20 Leaders, Ministers of Finance and Central Bank Governors on the true costs and benefits, and alert them to misleading signals.

**Recommendations/Proposal:**

- The energy transformation is building an energy economy that serves the needs of people, current and future, and the planet much better than the old energy system. Some or even many of the benefits are not reflected in traditional economic indicators and statistics, which therefore give false signals to policy evaluators and decision-makers
- With the Task Force on Climate-Related Financial Disclosures (TFCD) of the Financial Stability Board (FSB), the Ministers of Finance and Central Bank Governors of the G20 already have a mechanism in place to investigate the implications of the energy transformation for the wider economy, notably:
  - Impact on the extractive sectors, both fossil (coal, oil, gas) and minerals and metals, including companies and underground assets in government-owned and privately held companies
  - Commodity trade patterns and financial flows, balances of trade and payment
  - Investment needs and time horizons, including for small smart energy systems that constitute durable investments but may look like “consumption” because of their small lot-size
  - Changes in the level and distribution of economic activity, including the likely growth of energy self-supply, peer-to-peer trading in the platform economy
  - Resulting changes in the statistics covering trade, investment, capital stock, GDP, etc.
  - Resulting changes in the tax bases and future government revenue streams

## Green Fiscal Reform for a Just Energy Transition in Latin America

PB G20 Insights: G20 Argentina

- Michael Jakob (Mercator Research Institute on Global Commons and Climate Change, [MCC])
- Rafael Soria, (Escuela Politécnica Nacional de Ecuador Carlos Trinidad [SPDA])
- Ottmar Edenhofer (Mercator Research Institute on Global Commons and Climate Change [MCC])
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- Andrew Scott (ODI)
- Jan Christoph Steckel (Mercator Research Institute on Global Commons and Climate Change [MCC])
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- Adrien Vogt-Schilb (IADB)
- Koichi Yamada (LCS-JST)

**Summary/Abstract:** Green fiscal reforms would contribute to climate change mitigation, increase the economic efficiency of national tax systems and provide additional public revenues. Policymakers need to ensure that the overall political and macro-economic conditions are favorable for green fiscal reforms and develop comprehensive reform plans. Reforms cannot usually be introduced directly; they require a gradual introduction and appropriate policy sequencing. To avoid adverse impacts on the poorest sections of the population, it is crucial to understand the distributional impacts of higher energy prices and design appropriate compensation schemes. To ensure that all relevant social groups are fairly considered, transparency and stakeholder participation are crucial. International fora, such as the G20, can play a crucial role in sharing experiences on different design options, carrying out monitoring and peer-review of green fiscal policies, providing financial assistance and building administrative and institutional capacities.

### **Recommendations/Proposal:**

After the adoption of the Paris Agreement, practically all countries in Latin America submitted their Nationally Determined Contributions (NDCs) that specified their Climate Action and Infrastructure for Development 4 intended climate targets. Green fiscal reform would be a viable next step to move from ambition to practical implementation of these targets. Even

though there are some general insights applicable to all countries, the specific national situation will determine the details of policy design and implementation.

## 1.2. Addressing Challenges: Energy Poverty, Water-Food-Energy Nexus, Urbanization, Resilience & Environment

*“... there are no shared global targets in relation to, among others, agriculture, biodiversity, climate, water and energy to address these challenges in an integrated way. Unless those problems are addressed rapidly, the ambitious targets contained in the SDGs and the Paris Climate Agreement (COP21 and 22) will not be met. So, the main challenge for the global community in general, and producing countries in particular, is how to produce more food at the level that is required by an increasing global demand while reducing GHG emissions ...”*

(Source: T20 Argentina Policy Brief: “The role of trade and sustainable intensification to achieve global food security with less carbon emission and more carbon sequestration” by Martin Pineiro and Ernesto Viglizzo, 2018, online available at: <https://www.g20-insights.org/wp-content/uploads/2018/07/TF3-3-1-Final-BRIEF-1-T20-Task-Force-3-1-EDB-suggestions-Accepted-MP-1.pdf>)

### The G20’s role in improving quality of life through sustainable energy and urban infrastructure in Africa

PB G20 Insights: G20 Germany

- Shingirirai S Mutanga (Africa Institute of South Africa)
- Rainer Quitzow (Institute for Advanced Sustainability Studies [IASS Potsdam])
- Jan Christoph Steckel (Mercator Research Institute on Global Commons and Climate Change [MCC])
- Amar Bhattacharya (The Brookings Institution)
- Anna Pegels (German Development Institute / Deutsches Institut für Entwicklungspolitik [DIE])
- Clara Brandi (German Development Institute / Deutsches Institut für Entwicklungspolitik [DIE])
- Gerd Leipold (Climate Transparency)
- Lorenza Campagnolo (FEEM-Fondazione Eni Enrico Mattei)
- Kamlesh Pillay (BRICS- Human Science Research Council)
- Martin Kagwa (SATRI-Sam Tambani Research Institute)
- Sybille Röhrkasten (IASS-Institute for Advanced Sustainability Studies)
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**Summary/Abstract:** Focusing on critical aspects of infrastructure, such as energy, this brief argues that Africa, and African cities in particular, need infrastructure that advances both basic needs and industrialization, and avoids a lock-in of unsustainable, high-carbon technologies. The G20 initiative in support of investment and infrastructure in Africa needs to take climate and energy-related concerns into consideration or it risks promoting unsustainable development

paths, which are likely to prove costly in the medium-term. This policy brief's recommendations ensure that the G20's proposed Africa strategy supports sustainable investments in infrastructure, the following four recommendations:

**Recommendations/Proposal:**

- Aligning the G20 agenda for Africa with the SDGs and African initiatives: Support for investment in Africa should ensure alignment with the SDGs and the Paris Agreement as well as existing African initiatives. Of particular relevance in this regard are the African Union's Agenda 2063 and the Africa Renewable Energy Initiative (AREI).
- Mitigating the economic risks of climate change by supporting African low-carbon development pathways: Africa needs a forward-looking approach to energy infrastructure development, which avoids lock-ins in high-carbon assets and is adapted to changing climatic conditions. Clean cookstoves represent an underexploited opportunity for supporting socio-economic benefits while also mitigating climate change.
- Leveling the playing field for a low-carbon energy transformation: The phasing out of fossil fuels offers an important opportunity to level the playing field for investments in low-carbon energy infrastructure. It would also relieve fiscal pressure on African governments. It should go hand-in-hand with integrated strategies for de-risking renewable energy investments.
- Supporting smart and sustainable urban planning: Creating inclusive cities with adequate infrastructure and services for all residents is critical. Investment and drive toward sustainable housing, infrastructure, transportation, energy and employment, and basic services such as education and healthcare, is key for Africa.

**[Improving Future Ocean Governance – Governance of Global Goods in an Age of Global Shifts](#)**

PB G20 Insights: G20 Japan

- Ulf Sverdrup (Norwegian Institute of International Affairs [NUPI])
- Alf Håkon Hoel (University of Tromsø)
- Hideaki Shiroyama (University of Tokyo)
- Michelle Voyer (Australian National Centre for Ocean Resources and Security, University of Woollongong)
- Elana Wilson Rowe (NUPI)
- Wrenn Yennie-Lindgren (NUPI)

**Summary/Abstract:** Japan's G20 presidency in 2019 will take the lead in promoting environmentally sustainable economic growth and the UN Sustainable Development Goals (SDGs). As a gathering of coastal states, under Japan's presidency, the G20 will specifically

work to reduce marine plastic pollution and support marine biodiversity. This policy paper highlights how oceans are governed spaces and points to the key role of the oceans in realizing the SDGs. We argue that the G20 can and should play an important role in addressing major governance gaps in ensuring the sustainable management of oceans.

Recognizing that there are increased geopolitical tensions and that we do indeed already have comprehensive multi-level governance systems in place to handle many aspects of the growing 'blue economy' and avoiding the tragedy of the commons, the G20 should primarily stress the need for full and effective implementation of existing instruments and measures at the national, regional and global levels and increased consistency across levels of governance. This would effectively address many of the challenges and make use of the opportunities of the oceans.

However, the rapidly moving horizon of technological development and insufficient progress in mitigating global climate change represent new governance challenges that require renewed effort and innovative thinking for a sustainable future for the oceans.

This policy paper provides recommendations as to how G20 states can: a) consolidate their own capacity and assist non-G20 states in taking responsibility for strengthening marine science and implementation of existing regulatory frameworks, b) exercise innovative global and regional leadership to address emerging opportunities and associated governance challenges and c) facilitate the meaningful involvement of the private sector and the public in ensuring a collective governance order around oceans.

**Recommendations/Proposal:**

- Taking responsibility for the implementation of multi-level regulatory frameworks in their ocean jurisdictions
- Strengthening G20 national capacity assisting non-G20 countries in building the necessary capacity to implement regulatory frameworks
- Encouraging accession to UNCLOS and its subsidiary agreements and encouraging compatibility between different initiatives
- Exercising leadership in global governance and institutions with the aim of pursuing multiple SDGs
- Recognition that multilateral cooperation and organizations and transparent, evidence-based policymaking strengthen the capacity of realizing national interest

## Clarifying the problem of food loss and waste to improve food and nutrition security

PB G20 Insights: G20 Argentina

- Maximo Torero (World Bank)
- Luciana Delgado (IFPRI)
- Monica Schuster (Institute of Development Policy, IOB, University of Antwerp)
- Geetha Sethi (World Bank)
- Eduardo Nakasone (IFPRI)
- Valeria Piñeiro (IFPRI)

**Summary/Abstract:** Reducing food loss and waste can contribute to food security and sustainability. Measuring food loss and waste (FLW), identifying where in the food system it occurs, and developing effective policies along the value chain are essential first steps toward addressing the problem.

### **Recommendations/Proposal:**

The G20 can play a crucial role with three main actions:

- Mainstream the implementation of a global baseline of FLW with a common and validated measurement methodology across the value chain, with concrete targets at regional and country levels.
- Promote the implementation of context-specific cost-benefit analyses. These must be systematically carried out to identify the most sustainable, cost, energy, and socially-efficient FLW reduction interventions.
- Promote the coordination between multilateral and regional development banks and international organizations through the IFPRI and FAO's technical platform on measuring and reducing food loss and waste launched in December 2015 as a result of the Turkey G20.

## The role of trade and sustainable intensification to achieve global food security with less carbon emission and more carbon sequestration

PB G20 Insights: G20 Argentina

- Martin Piñeiro (CARI)
- Ernesto Viglizzo (CONICET/GPS)
- David Laborde, (IFPRI)
- Ana Maria Loboguerrero (CIAT)
- Alisher Mirzabaev, (University of Bonn)
- Federico Frank (INTA)
- Antonio Buainain (EMBRAPA)

**Summary/Abstract:** According to some estimates, food production needs to increase by 60% by 2050 to meet the expected demand and assure food security for all. In order to meet this target and simultaneously achieve the carbon emission targets set in the Paris Agreement, it is necessary to restructure agricultural production in a substantial way.

Lower carbon emissions per unit of product can be achieved by a global initiative to expand sustainable intensification of production especially in the more productive lands of the world.

**Recommendations/Proposal:**

- Produce better estimates of carbon emissions and sequestration in different agricultural areas.
- Generate a strong international initiative to develop, promote and finance the development and adoption of new technologies that support and make possible a global sustainable intensification strategy.
- Develop an efficient and open agricultural trade system that addresses the growing geographical imbalances between food production and food needs, contributing to lower global agricultural carbon emissions.

**[Global Targets on Drinking Water](#)**

PB G20 Insights: G20 Japan

- Taikan Oki (United Nations University [UNU])

**Summary/Abstract:** The Millennium Development Goals (MDGs) have passed their target year, and are followed by the Sustainable Development Goals. One of the achieved MDG targets was halving the proportion of the population without sustainable access to safe drinking water. In the course of the MDGs, how and why was the target achieved, and what contributed to the achievement? It was revealed that the major contributors to the achievement of the target were China and India, and that the increase in the proportion of population with access to improved sources was closely associated with economic development in most nations during 1990–2015.

**Recommendations/Proposal:**

- How and why MDGs were achieved should be reviewed
- Target level of global goals should be carefully crafted
- Appropriate indicators should be designed



### 1.3. Agriculture and Food Security

*“... These changes in the global food system have opened up enormous opportunities. Modern food systems have vast potential to underpin economic growth, create jobs, and satisfy changing consumer demand, especially in those developing countries experiencing rapid urbanization. They also offer the opportunity for system-wide change in the way in which production interacts with the environment, giving greater attention to the ecosystem services offered by the agricultural sector ...”*

(Source: T20 Argentina Policy Brief: “Redirecting investment for a global food system that is sustainable and promotes healthy diet” by Jamie Morrison, Eduardo Bianchi, Catherine Bowyer, Rob Vos, and Laura Wellesley, 2018, online available at: <https://www.g20-insights.org/wp-content/uploads/2018/07/TF3-3-3-food-systems-final-050618-Revised-after-PeerR-1.pdf>)

#### [Redirecting investment for a global food system that is sustainable and promotes healthy diets](#)

PB G20 Insights: G20 Argentina

- Martin Piñeiro (CARI)
- Jamie Morrison (Food and Agriculture Organization of the United Nations [FAO])
- Eduardo Bianchi (Instituto Universitario Escuela Argentina de Negocios)
- Catherine Bowyer (Institute for European Environmental Policy [IEEP])
- Rob Vos (International Food Policy Research Institute [IFPRI])
- Laura Wellesley (Chatham House)

**Summary/Abstract:** More and better-quality private sector investment in food systems will be needed for the achievement of the Sustainable Development Goals. Recent developments in food systems have resulted in new challenges and controversies, both with respect to their sustainability, and the extent to which they are contributing to diets that are more nutritious. The key challenge addressed in this brief is how to redirect investment such that it is both adequate to drive dynamic food system development and has the quality of promoting inclusive and sustainable systems. Three areas of action are considered: instruments that translate growing consumer awareness into SDG compliant investment; instruments that encourage investment in food systems in high-risk contexts; and improvements to food system governance.

#### **Recommendations/Proposal:**

- Strengthen global platforms for benchmarking and coordinating private sector sustainability initiatives

- Provide support to the coordinated implementation of voluntary guidelines to foster SDG-compliant investment in higher-risk contexts
- Promote greater coordination between multilateral fora to strengthen the global governance of complex and interlinked food system challenges

### [An Evidence-Based Approach to Ending Rural Hunger](#)

PB G20 Insights: G20 Germany

- Homi Kharas (The Brookings Institution)
- John W. McArthur (The Brookings Institution)

**Summary/Abstract:** Ending rural hunger by 2030 is feasible through scaled-up, data-driven efforts: We propose an evidence-based, coordinated approach to ending rural hunger, prioritizing countries with high needs, good policies and low levels of resources per capita.

#### **Recommendations/Proposal:**

- Examine the available data to identify the nature of local needs and priorities
- The international community could invest more and in better resources for global food and nutrition security, and do so with greater efficacy per dollar
- The international community can do more to invest in agricultural research, extension, and evidence, especially in developing countries
- The international community can institute outcome-oriented cooperation across relevant organizations and initiatives

### [Financing “A Sustainable Food Future”](#)

PB G20 Insights: G20 Argentina

- Eugenio Diaz-Bonilla (International Food Policy Research Institute [IFPRI])
- Ana Maria Loboguerrero (International Center for Tropical Agriculture [CIAT])
- Louis Verchot (International Center for Tropical Agriculture [CIAT])
- Ernesto Viglizzo (Instituto Nacional de Tecnología Agropecuaria [INTA])
- Alisher Mirzabaev (Center for Development Research [ZEF])

**Summary/Abstract:** Achieving a “sustainable food future” requires building food systems that, in line with the related Sustainable Development Goals (SDGs), support growth and employment, ensure social inclusiveness and equity, promote climate resilience and environmental sustainability, protect biodiversity, and generate healthy diets for all. Many policy, institutional, technological and investment innovations are needed to build such food systems. This brief considers as a necessary foundation, the existence and continuous

development of adequate technologies and innovations, including the ones related to soils, land, water, ecosystems, and, in general, those that have been called Climate Smart Agriculture (CSA) or Climate-friendly Sustainable Agriculture (CFSA). The main question this policy brief focuses on is how to mobilize the financial resources to support investments in those technologies and sustainable food systems at the scale needed to have some meaningful global impact.

**Recommendations/Proposal:**

A project preparation and financial structuring facility of an appropriate scale would help leverage scarce public-sector funds to mobilize the much larger pool of private financial funds from those that may be interested in participating in these investments but currently lack adequately structured investment vehicles to do so. The proposal focuses on a financial and operational mechanism to scale up investments in CSA/CFSA practices. There are many aspects to consider to ensure that such scaling up occurs. First, there must be an adequate policy and institutional environment for economic agents to undertake the necessary investments with an adequate risk/reward profile. Second, there must be a steady stream of appropriate technologies. This, in turn, requires the reinforcement of the work of the national and international research institutes on the technological aspects of the challenges identified above, regarding land, water, climate change and the environment.

**Monitoring Agricultural Productivity for Sustainable Production and R&D planning**

PB G20 Insights: G20 Argentina

- David Laborde (IFPRI)
- Valeria Piñeiro (IFPRI)
- Joaquin Arias (IICA)
- Jean Christophe Bureau (AgroParisTech)
- Pablo Elverdin (GPS)
- Alan Matthews (Trinity College)
- Eugenia Saini (FONTAGRO)
- Josef Schmidhuber (FAO)

**Summary/Abstract:** Argentina's G20 presidency has emphasized the need to improve soil management and increase agricultural productivity in a sustainable way to achieve an inclusive and resilient food future. While increases in agricultural productivity improve economic welfare and can help address food security problems by benefiting both consumers and producers simultaneously, it has to address the depletion of scarce natural resources.

In the context of changing climate, achieving sustainable and resilient agricultural production is a major cornerstone of both adaptation and mitigation strategies. The global community needs to have the proper tools to monitor sustainable agricultural productivity gains, identifying countries and sectors lagging behind, and committing R&D efforts accordingly to the challenges ahead.

**Recommendations/Proposal:**

- An international consortium should monitor agricultural total factor productivity (TFP) to provide international comparisons and track performance over time
- The G20 should acknowledge and address the issue of sustainable productivity measurement
- Support more in-depth research on the relationship between agricultural TFP and R&D.

**Targeting G20 Investments in Agriculture to End Rural Hunger**

PB G20 Insights: G20 Germany

- H. Kharas (The Brookings Institution)
- A. Gulati (ICRIER)
- J. von Braun (ZEF)

**Summary/Abstract:** Progress toward food and nutrition security needs to be sharply accelerated to achieve the SDGs. The G20 should systematically track progress reports on the state of food and nutrition security (FNS) made by international agencies and, based on this, they should scale investment opportunities and target their interventions to maximize impact on people and transformation of rural areas. Such tracking should include G20 countries themselves and countries they support with development assistance. Currently, few countries target investments, technical assistance, capacity building and policy support in a data-driven way. The G20 could develop such a methodology and identify priority countries and intervention points where additional investments and international assistance could have a transformative impact.

**Recommendations/Proposal:**

- G20 members can collectively help integrate global food markets and make them function more efficiently
- The G20 can still do more to invest in agricultural research, extension, and data systems, especially in and for developing countries

- The G20 should take the lead in reshaping the global food system to sustainably deliver on food security, nutrition, climate and other development goals, recognizing the implications of the growing demand for animal-sourced food
- The G20 should make the targeting of investments in agriculture, livestock, fisheries and forests, by country, a central theme, and identify a core group of countries where international assistance for food security is likely to have the greatest impact

### Key Policy Actions for Sustainable Land and Water Use to Serve People

PB G20 Insights: G20 Germany

- Ashok Gulati (Indian Council for Research on International Economic Relations [ICRIER])
- Homi Kharas (The Brookings Institutions)
- Joachim von Braun (Center for Development Research [ZEF])

**Summary/Abstract:** To achieve food security for all, new resource policies for sustainable land and water use are needed. Land, water, and energy need to be considered jointly in policies, not in isolation. G20 countries' policymakers, corporate and civil society actors, and those of other countries should act in a coordinated fashion in the following four policy areas on which specific proposals are made in this T20 Brief.

#### **Recommendations/Proposal:**

- Focus land and water resource policies on human wellbeing
- Invest in and sharing water, agricultural and energy innovations
- Make wider use of digital opportunities for sustainable agriculture
- Redesign the global governance of agriculture and food

### Sustainable Prevention of Food Crises in Sub-Saharan Africa

PB G20 Insights: G20 Japan

- Ousmane Badiane (International Food Policy Research Institute)
- Julia Collins (International Food Policy Research Institute)
- Yasuo Fujita (Japan International Cooperation Agency)
- David Laborde (International Food Policy Research Institute)
- Will Martin (International Food Policy Research Institute)
- Maximo Torero (Food and Agriculture Organization)
- Rob Vos (International Food Policy Research Institute)
- Futoshi Yamauchi (International Food Policy Research Institute)

**Summary/Abstract:** Food crises and distress migration will continue to plague the African continent in the decades ahead unless massive investments are made to make the region's agriculture and food systems more resilient.

**Recommendations/Proposal:**

- Target interventions to extend the productive season in chronically vulnerable regions, especially in the arid areas of Africa
- Leveraging investment finance and technical support to facilitate enterprise growth, efficiency gains and food quality improvements in the growing food processing and distribution sector
- Enacting concerted reforms of agricultural Price and trade policies to strengthen trade integration, diversify domestic Food supplies, and enhance country-level capacity to adjust to food shortages

**[Promoting competition in the fertilizer industry and efficiency in the fertilizer use to improve land productivity and sustainability](#)**

PB G20 Insights: G20 Argentina

- Maximo Torero (World Bank)
- Manuel Hernandez (IFPRI)

**Summary/Abstract:** Given the central role that agriculture plays in the rural economy in developing countries, governments have implemented supply- and demand-side policies and programs to promote sustainable fertilizer use yielding mixed results. Policies typically have not addressed hurdles to fertilizer uptake emanating from highly concentrated fertilizer markets and the related lack of competitive pricing behavior among fertilizer producers and distributors. Fertilizer production worldwide is dominated by a few producers. Most developing countries, especially in Africa, rely almost exclusively on imported fertilizer. Locally, fertilizer distribution channels are also characterized by a small number of market actors and poor dealer networks. As a result, fertilizers tend to be expensive and/or difficult to access for many farmers, limiting uptake.

**Recommendations/Proposal:**

- Establish a G20-led global task force to promote fertilizer trade and uptake in developing countries, with an emphasis on Africa

- Promote the formation of a consortium of multilateral and regional development banks for the creation of a financing facility for investments in new fertilizer plants, to increase market competition and reduce fertilizer costs
- Mobilize financial support for the expansion of open-access, detailed soil maps that identify soil classes and soil properties

### Global food security and market stability: the role and concerns of large net food importers and exporters

PB G20 Insights: G20 Argentina

- Martin Piñeiro (CARI)
- Jikun Huang (Peking University)
- Martin Piñeiro (Consejo Argentino para las Relaciones Internacionales [CARI])
- Valeria Piñeiro (IFPRI)
- Kym Anderson (University of Adelaide Nelson Illescas, Instituto para las Negociaciones Agrícolas Internacionales [INAI])
- David Laborde (International Food Policy Research Institute [IFPRI])
- Laura Wellesley (Chatham House)

**Summary/Abstract:** During the last two decades agricultural trade has increased substantially. One consequence of this is that almost 20 percent of all calories consumed worldwide are provided by traded food. A number of emerging economies and newly developed countries are now the main actors in world trade. Some countries like China, Korea and Saudi Arabia have become large net importers as a consequence of the rapid increase of consumption resulting from economic growth and a growing middle class. Others like Brazil, Argentina and Thailand have modernized their agriculture, improved the use of their ample natural resources, increased exponentially their production and are now main net exporters. The end result of these processes is that five countries (China, Korea, Japan, Russia and Saudi Arabia) are responsible for about 40% of food net imports and seven countries (Argentina, Australia, Brazil, Canada, New Zealand, Thailand and USA) account for about 55% of total food net exports. The impact of these main players on the international market stability and prices is enormous. In the context of the present difficulties to progress in multilateral trade negotiations, it is suggested that a special group composed of major food net importing and exporting countries should be formed within the WTO to promote dialogue, exchange of information and possible agreements and commitments between themselves. It is argued that it would contribute to global market stability.

**Recommendations/Proposal:**

- The above thirteen countries be given special participation in the Agricultural Markets Information System (AMIS) to encourage the dialog and promote the flow of timely information among them
- G20 promotes and facilitates:
  - the organization of a Special Group of countries (composed by Argentina, Australia, Brazil, Canada, New Zealand, Thailand and USA, as net exporters; China, Korea, Japan, Russia and Saudi Arabia as main net importers; and India as a top trader
  - that, within the institutional space in WTO, a permanent Secretariat is established to convene the Group for the purpose of dialogue, exchange of information and progress in special trading arrangements to facilitate a freer global trade in food among them and greater market stability worldwide

**[G20 Recommendations on Inequality, Climate Change, Food Security and Water Availability](#)**

PB G20 Insights: G20 Germany

**Summary/Abstract:** The Centre for International Governance Innovation (CIGI) proposes solutions for the G20 governments to reduce inequality, for climate change mitigation and adaption, for achieving food security, and increase water availability.

**Recommendations/Proposal:**

- **Inequality:** Addressing the growing threat of inequality requires new global governance initiatives, to join-up the causal threads and the inter-connected character of these; and to develop voluntary guidelines for global institutions responsible for advancing economic/financial, social and environmental development
- **Climate Change:** Providing developing countries the possibility for economic development without further harming the climate and to bear the costs for both climate change mitigation and adaptation. Integrating sustainable development, economic and financial aspects will be crucial to support a low carbon economy that enables economic development without having a negative impact on climate change
- **Food Security:**
  - Develop integrated support mechanisms across the DWG's work pillars on food security, infrastructure, private sector development and domestic resource



- mobilization, which link infrastructure, PSD and DRM objectives with the achievement of food security goals in poor and small developing countries
- Provide multi-basket support to countries pursuing food security objectives, which include funding for integrated policies for food security, climate adaptation, access to and tenure of land, and the development of energy and water policies consistent with food security goals
- Develop longer-term modeling of the impacts on food security, at national and regional levels, due to threats from forced migration, climate change and ocean degradation
- **Water Availability:**
  - Introduce water pricing mechanism that reflects the real value of water
  - Develop and deploy technologies that are able to clean water and to deliver it to the place where it is needed in order to avoid major effort to gather water especially in water-scarce countries

**[Engaging religious actors in addressing the famine emergency in South Sudan, Nigeria, Somalia, and Yemen](#)**

PB G20 Insights: G20 Germany

- Rabbi Awraham Soetendorp (Jacob Soetendorp Institute for Human Values)
- Ulrich Nitschke (International Partnership on Religion and Sustainable Development [PaRD])
- Mohammed Abu-Nimer (KAICIID DIALOGUE CENTRE)
- Manoj Kurian (World Council of Churches)
- Arnhild Spence (World Food Programme [WFP])
- Cole Durham (International Center for Law and Religion Studies)
- Katherine Marshall (World Faiths Development Dialogue)

**Summary/Abstract:** The United Nations has declared a famine emergency in light of the imminent danger of starvation facing an estimated 20 million people in four countries, and it has appealed urgently for US\$4 billion to meet immediate needs. This crisis should be prominent in G20 discussions. Religious institutions and leaders are actively involved in the immediate and specific famine situation affecting African nations and Yemen and in efforts to end the conflicts that are the primary cause of famine. More broadly, religious leaders are acting to achieve Sustainable Development Goal (SDG) 2, Zero Hunger, by 2030. This imperative is shared across religious divides and the common purpose that binds different religious communities portends well for peacebuilding and progress in the affected areas.

**Recommendations/Proposal:**

Religious actors should be an integral part of the international response to the famine emergency as well as to the zero hunger challenge. G20 attention and support for religious institutions would enhance responses to the famine and peacebuilding in affected areas and thus contribute to unlocking Africa's potential. Interfaith action on SDG 2, highlighted as part of the global agenda, can speed progress toward zero hunger.

**Achieving Food Security in the Face of Climate Change**

PB G20 Insights: G20 Germany

- Kacana Sipangule (Kiel Institute for the World Economy [IfW])
- Rainer Thiele (Kiel Institute for the World Economy [IfW])
- Ruth Delzeit (Kiel Institute for the World Economy [IfW])

**Summary/Abstract:** Climate change will lead to falling yields in already food insecure Sub-Saharan African and South Asian countries. The group that is likely to suffer most from climate change is poor rural households in developing countries who mainly rely on small-scale agriculture for their livelihood. Without concerted efforts to help small-scale farmers raise productivity and adapt to climate change the international community will not come close to achieving the ambitious goal of ending rural poverty and hunger by 2030.

**Recommendations/Proposal:**

- Develop agricultural technologies
- Strengthen local policies and institutions
- Access to financing

**Linking Smallholder Production with Value-Added Food Markets**

PB G20 Insights: G20 Japan

- Belay Begashaw (SDG Center for Africa)
- Gert-Jan Verburg (SDG Center for Africa)
- Futoshi Yamauchi (International Food Policy Research Institute)
- Daniele Fattibene (Istituto Affari Internazionali)
- Fujita Yasuo (Japan International Cooperation Agency)

**Summary/Abstract:** Demographic pressures and climate change in Africa are rendering subsistence farming an unviable livelihood strategy for smallholder farmers. However, urbanization and economic growth are creating new markets for fresh and processed foods in the region. To enter this market, African smallholders need to adopt new production strategies that will increase income and make farming more appealing to the next generation. The G20 can encourage this Transition by supporting the growth of a rural-based food processing sector, the reorientation of smallholder agriculture to commercialization, and the development of infrastructure to link farmers to markets.

**Recommendations/Proposal:**

- Enabling agro-processing
- Supporting smallholder producers by supporting business development programs, extending agricultural market information systems to African producers, and promoting better climate change adaptive management systems
- Developing market infrastructure in Africa

## 2. Commitments and Initiatives of the G20

### 2.1. Relevant Commitments Made in G20 Leaders' Communiqués

#### 2019 Japanese Presidency

##### Osaka, Japan, June 2019: G20 Osaka Leaders' Declaration (G20 2019)

- “We acknowledge the **importance of energy transitions** that realize the "3E+S" (Energy Security, Economic Efficiency, and Environment + Safety) in order to transform our energy systems into affordable, reliable, sustainable and low GHG emissions systems as soon as possible, recognizing that there are different possible national paths to achieve this goal. Recalling the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth Communiqué, we acknowledge the role of all energy sources and technologies in the energy mix and different possible national paths to achieve cleaner energy systems. We also recognize opportunities offered by further development of innovative, clean and efficient technologies for energy transitions, including hydrogen as well as, depending on national circumstances, the Carbon Capture, Utilization and Storage (CCUS) taking note of work on "Carbon Recycling" and "Emissions to Value". We acknowledge the G20 Japanese Presidency's initiative called Research and Development 20 for clean energy technologies ("RD20"). In light of recent events highlighting concern about safe flow of energy, we acknowledge the importance of global energy security as one of the guiding principles for the transformation of energy systems, including resilience, safety and development of infrastructure and uninterrupted flow of energy from various sources, suppliers, and routes. We recognize the value of international cooperation on a wide range of energy-related issues including energy access, affordability and energy efficiency, and energy storage. We reaffirm our joint commitment on medium term rationalization and phasing-out of Inefficient Fossil Fuel Subsidies that encourage wasteful consumption, while providing targeted support for the poorest.” (G20 2019a: paragraph 37)

##### G20 Osaka Leaders' Declaration (G20 2019)

We reaffirm our joint commitment on medium term **rationalization and phasing-out of Inefficient Fossil Fuel Subsidies** that encourage wasteful consumption, while providing targeted support for the poorest.

The United States reiterates its decision to **withdraw from the Paris Agreement because it disadvantages American workers** and taxpayers. The U.S. reaffirms its strong commitment to promoting economic growth, energy security and access, and environmental protection. The U.S.'s balanced approach to energy and environment allows for the delivery of affordable, reliable, and secure energy to all its citizens while utilizing all energy sources and technologies, including clean and advanced fossil fuels and technologies, renewables, and civil nuclear power, while also reducing emissions and promoting economic growth

##### Osaka, Japan, June 2019: G20 Osaka Leaders' Declaration (G20 2019)

- “Health is a prerequisite for sustainable and inclusive economic growth. We recall our commitment to moving towards **achieving universal health coverage** according to national contexts and priorities. We look forward to the United Nations General Assembly High Level

- Meeting on Universal Health Coverage (UHC). **Primary health care including access to medicines, vaccination, nutrition, water and sanitation, health promotion and disease prevention is a cornerstone for advancing health and inclusion.**” (G20 2019b: paragraph 30)
- “In order to **achieve food security** and improve nutrition for the growing world population, agricultural productivity needs to increase and distribution needs to be more efficient, including by reducing food loss and waste, in a way more compatible with the sustainable management of natural resources. To this end, we highlight the importance of access to and utilization of existing, new and advanced technologies, such as Information and Communication Technology (ICT), Artificial Intelligence (AI) and robotics among others, and encourage cross-sectoral collaboration among stakeholders. We also encourage innovation, skills training and lifelong education for all, in attracting new entrants and empowering youth and women in the agro-food sector. We recognize the importance of developing sustainable, science-based and resilient agro-food value chains, in an inclusive and equitable manner, including family farming and small scale farmers, which will also contribute to revitalizing rural areas. We emphasize the need for continued and enhanced information sharing and research collaboration to respond to existing and emerging animal and plant health issues. We will further encourage voluntary exchange of good practices and knowledge towards more sustainable agrofood sector.” (G20 2019b: paragraph 25)

## Karuzawa, Japan, June 2019: G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth (G20 2019)

### a. Energy and Environment

- “We, the G20 Energy and Environment Ministers, met in Karuzawa Town, Nagano Prefecture, Japan, on 15 and 16 June 2019, to **discuss energy transitions and global environment for sustainable growth.**” (G20 2019b: paragraph 1, p.1)
- “We recognize the importance of leading energy transitions to improve the “3E+S” (Energy Security, Economic Efficiency, and Environment + Safety) as well as urgently addressing key global issues and challenges, such as climate change, biodiversity loss, resource efficiency, sustainable consumption and production, air, land, freshwater and marine pollution, urban environmental quality, and energy access. We recognize these challenges are complex and urgent, the importance of energy transitions and innovation on sustainable and clean energy systems, the close nexus between energy security, economic growth, climate change, and environmental protection, and the importance of long-term low emissions strategies for sustainable development, and acknowledge that G20 members have and continue to take concrete and practical actions to address these challenges and also acknowledge their progress. We note the reaffirmation of commitments made in Buenos Aires to the full implementation of the Paris Agreement by those countries that chose in Buenos Aires to implement it. To this end, we stress the importance of accelerating a virtuous cycle of environment and growth, which is driven by breakthrough innovation, and with business communities playing an important role under the enabling environment created by governments.” (G20 2019b: paragraph 2, p.1)
- “We adopt the “G20 Karuzawa Innovation Action Plan on Energy Transitions and Global Environment for Sustainable Growth” to accelerate the virtuous cycle as a collaborative endeavor to facilitate voluntary actions. This action plan would reinforce and enhance a variety of relevant international, regional, national and local initiatives involving multiple stakeholders, especially those in the private sector.” (G20 2019b: paragraph 3, p.1)
- “We realize that, in order to accelerate the virtuous cycle and lead transformations to a resilient, inclusive, and sustainable future, emphasis should be placed on collecting wisdom from around the world, mobilizing finance and investment, and improving business environments to encourage technological innovation and behavioral change.

We promote solutions, including nature based solutions that have multiple benefits.” (G20 2019b: paragraph 4, p.1)

- “We welcome the G20 Japanese Presidency’s initiative aimed at spurring innovation in the context of climate change by launching an international conference, called Research and Development 20 for clean energy technologies (“RD20”) to promote international collaborative relationships among leading R&D institutes from G20 members. We recognize that R&D collaboration under existing initiatives is also important to advancing innovation.” (G20 2019b: paragraph 5, p.1)
- “We acknowledge the importance of enhancing global communication between business and financial sectors to increase transparency and develop risk mitigation measures to help mobilize private finance, while recognizing that public finance plays an important role. We support efforts to mobilize finance and to improve the market and investment environment for various energy options, innovative technologies and quality infrastructure 2 that enhance energy access, resilience, sustainability, cleaner environment and water access.” (G20 2019b: paragraph 6, p.1)
- “We emphasize the importance of improving business environments and promoting business activities, including public-private partnerships for dissemination of innovative technologies and development of infrastructure projects, products, and services.” (G20 2019b: paragraph 7, p.2)

## **b. Energy**

- “Building upon the invaluable outcomes of the previous Presidencies and Ministerial Meetings, the G20 Energy Ministers emphasize their special responsibility to lead energy transitions of our energy systems into affordable, reliable, accessible, sustainable and low GHG emissions systems as soon as possible, recognizing that there are different possible national paths to achieve this goal. The G20 Energy Ministers stress the need to successfully transform energy systems, by increasing investments in cleaner technologies, cooperation in energy efficiency and deployment of renewables and delivering the policy, financial and business environment necessary to promote and support energy innovation in line with the spirit of the 2030 Agenda for Sustainable Development, recognizing that fossil fuels still play a major role in the energy transitions. We recognize that energy transitions are an essential element to achieving development strategies that should combine economic growth with decreasing GHG emissions. The G20 Energy Ministers promote the cleaner use of various energy sources and facilitate open, transparent, and competitive energy markets. The G20 Energy Ministers adopt the “G20 Karuizawa Innovation Action Plan” and take note of the six Presidency documents produced with the valued support of several prestigious international organizations.” (G20 2019b: paragraph 1, p.2)

### **b1. Energy Innovation**

- “In the framework of energy transitions, the G20 Energy Ministers considering individual country circumstances, stress the need to accelerate energy innovation, recognizing the critical role of innovative, clean and efficient technologies, including digitalization, renewable energy and systems flexibility, demand side management, energy efficiency, biofuels, advanced nuclear, and advanced and cleaner fossil fuels technologies considering individual country circumstances. The G20 members encourage relevant international organizations to support international collaboration and analyze the impact of innovative technologies and will share best practices for the development, dissemination and deployment of these technologies in particular on policies, national experiences, and market frameworks. The G20 Energy Ministers support further international cooperation on sustainable biofuels and bioenergy, as well as on innovative technologies for sector coupling, e.g. power to X and heat pumps in all sectors including the industrial sector, heating cooling and desalination, depending on national circumstances. The G20 members stress the importance of setting up innovation ecosystems and recognizing the role of startups and SMEs in promoting energy transitions.” (G20 2019b: paragraph 2, p.2)
- “The G20 Energy Ministers recognize opportunities for forms of energy carriers and storage including hydrogen in fostering a cleaner energy future that supports economic

growth, noting relevant international organizations' reports such as the IEA hydrogen report. The G20 Energy Ministers will step up existing international efforts to unlock the potential of hydrogen as a clean, reliable and secure source of energy including cooperation in research and development, evaluating hydrogen's technical and economic potential, cost reduction pathways and addressing the various challenges including regulations and standards." (G20 2019b: paragraph 3, p.2)

- The G20 Energy Ministers, depending on national circumstances, recognize the potential of developing and deploying Carbon Capture, Utilization and Storage (CCUS) technologies, 3 including through international cooperation and multilateral innovation initiatives, taking note of work on "Carbon Recycling" and "Emissions to Value". (G20 2019b: paragraph 4, p.2)

#### **b2. Energy Security**

- "In light of recent developments highlighting concern about energy security, the G20 Energy Ministers acknowledge energy security as one of the guiding principles for the transformation of energy systems. The G20 Energy Ministers also emphasize the importance of resilience, protection, and development of reliable energy infrastructure to prevent energy supply disruptions; and stress the importance of diversification of energy sources, suppliers, and routes, facilitation of open, flexible, transparent, competitive, stable, and reliable markets, increasing energy efficiency. They attach importance to promotion of dialogue between consumers and producers as well as global collaboration in the business sector, and the need to facilitate the proper conditions to continue and increase energy investments to ensure in sustainable, affordable, reliable, resilient and cleaner energy systems. The G20 Energy Ministers recognize the importance of quality infrastructure investment that promotes sustainable growth and enhances the resilience of our energy systems." (G20 2019b: paragraph 5, p.3)

#### **b3. Energy Efficiency**

- "The G20 Energy Ministers recognize the key contribution that energy efficiency makes to energy transitions as well as its vast untapped potential as an affordable, secure and sustainable means to provide energy services and welcome the work of the Task Groups of the Energy Efficiency Leading Programme (EELP), IPEEC and note the progress on establishing the Energy Efficiency Hub. In addition to the past achievements, the G20 Energy Ministers note the energy efficiency analysis such as Global Energy Efficiency Benchmark work undertaken by the IEA, which includes Well to Wheel analysis. They will further explore the potential and impact of energy efficiency, in such areas as heating and cooling, and buildings through international cooperation and sharing best practices. The G20 Energy Ministers encourage policy actions to significantly scale up investments and financing in energy efficiency across all sectors to help to achieve the energy transitions." (G20 2019b: paragraph 6, p.3)

#### **b4. Renewable Energy**

- "The G20 Energy Ministers welcome the impressive progress achieved with regard to the development and deployment of renewable energy, benefitting from innovation and in part from significant cost reductions. The G20 Energy Ministers welcome the rapid growth of renewable energy around the world and encourage increased investment and financing in renewable energy production. The G20 Energy Ministers acknowledge that renewable energy sources, such as wind, bioenergy, solar, hydro and geothermal energy, can play an important role including in the transportation, heating and cooling, and industrial sectors worldwide, and sector coupling and sustainable bioenergy can play an important role in those areas, depending on national circumstances and conditions. Renewable energy progress should be accelerated beyond the power sector. The G20 Energy Ministers will work together with support of international organizations such as IRENA, IEA, ISA, and the Biofuture Platform, to promote innovative solutions for accelerating the major potential of renewable energies." (G20 2019b: paragraph 7, p.3)

#### **b5. Power System**

- “The G20 Energy Ministers recognize the importance of achieving stable, flexible, clean, affordable and resilient power systems for low emissions future by improving electricity markets and supporting conditions for investment. The G20 Energy Ministers also emphasize the importance of technologies for system integration of variable renewable energy, including energy storage, smart grid technology, minimization of the risk of malicious use of ICT technologies, electric vehicles, hydropower, biomass power generation, flexible power plants, and demand side management. They acknowledge the increased potential for electricity use, and the opportunity for sector coupling to reduce and/or avoid emissions in end-use sectors and improve system efficiency and cost effectiveness, such as through electrified mobility, heating and cooling, and industrial processes.” (G20 2019b: paragraph 8, p.3)

**b6. Nuclear Energy**

- “For those countries that opt to continue utilizing nuclear energy, it can contribute to energy security, access to baseload power and reducing and/or avoiding emissions. Those countries intend to promote innovation, including through international cooperation on new developments, in small modular reactors and advanced reactors, and to improve the business environment for nuclear energy. We call upon those countries to uphold the highest standards of nuclear safety, security, and non-proliferation. It is also important to recognize the value of international cooperation on decommissioning of nuclear plants and final disposal of high-level radioactive waste; to share experience and knowledge on public engagement; and to promote technical cooperation for safety improvement.” (G20 2019b: paragraph 9, p.4)

**b6. Fossil Fuels**

- “The G20 Energy Ministers reiterate the importance of transparent, liquid, flexible, stable and competitive global energy markets. The G20 Energy Ministers support enhancing natural gas security, including LNG, through sharing of best practices and knowledge for supply security as well as for emergency response. The G20 Energy Ministers recognize the key role that natural gas currently plays for many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emissions energy systems. Natural gas can also play a significant role to meet expanded demand in some countries as well as in new sectors such as the transportation sector, including marine bunkering. Those countries that opt to continue utilizing fossil fuels recognize the need for investment and financing of advanced and cleaner fossil fuel technologies including CCUS, depending on national circumstances.” (G20 2019b: paragraph 10, p.4)

**b7. Inefficient Fossil Fuel Subsidies that encourage wasteful consumption**

- “In 2009, the Pittsburgh Leaders Declaration called for medium term rationalization and phasing-out of Inefficient Fossil Fuel Subsidies that encourage wasteful consumption, while providing targeted support for the poorest. The G20 Energy Ministers reaffirm this joint commitment. The G20 Energy Ministers welcome the efforts made by those G20 members who have already participated in voluntary peer reviews, and we encourage those who have not yet done so to initiate their peer reviews as soon as feasible.” (G20 2019b: paragraph 11, p.4)

**b8. Energy Access and Affordability**

- “The G20 Energy Ministers recognize that ensuring access to affordable, reliable, sustainable and modern energy services and clean cooking facilities is one of the prerequisites for social and economic development, noting the disproportionate impact of energy poverty on women. The G20 Energy Ministers welcome progress made on improving energy access globally, and reaffirm our commitments to promote universal energy access, in line with the spirit of the 2030 Agenda for Sustainable Development. The G20 Energy Ministers will explore ways to further advance energy access as well as productive use of energy. Building upon the past works of the G20, and with support of relevant international organizations, the G20 Energy Ministers will engage with other interested countries to explore effective ways to enhance implementation of regional action plans, taking into account the need to provide displaced people in disaster impacted and remote areas with energy access.” (G20 2019b: paragraph 12, p.4)



## Niigata, Japan, May 2019: G20 JAPAN, Niigata Agriculture Ministers' Meeting, G20 Agriculture Ministers' Declaration 2019 (G20 2019)

We reaffirm our support for the 2030 Agenda for **Sustainable Development and its Sustainable Development Goals (SDGs)** as the global framework for sustainable development to advance progress towards more sustainable agro-food sectors. In particular, we intend to end hunger, achieve food security and improved nutrition and promote sustainable agriculture. We will also work to maximize the role of agriculture in mitigating and adapting to climate change. **The G20 Hamburg Action Plan** or other relevant frameworks provide guidance in this respect.

We confirmed, building on the outcomes in previous meetings, the importance of making the best use of our experiences and knowledge to offer solutions for existing and emerging challenges and to realize the full potential of the **agro-food sector** in achieving **inclusive growth** and **sustainable development**.

We reaffirm that innovation and knowledge are critical for sustainable productivity growth in the agro-food sector. We acknowledge the efforts of public and private sector including farming community towards generating innovative solutions. At the same time, we reiterate the importance of their smooth and timely **adoption** by producers and stakeholders, including collaboration with non agro-food sectors, in order to maximize their full potential in raising productivity and sustainability of the agro-food sector.

- “Agriculture has developed along with civilization, from the ancient stone age to the modern era of science. Now we are venturing into the age of new challenges and opportunities for our food systems. Productivity needs to increase and distribution needs to be more efficient, including by reducing food loss and waste, in order to achieve food security and improve nutrition for the growing world population.” (G20 2019a: paragraph 1)
- “We are facing global challenges such as climate change, world hunger which is once again on the rise, and loss of biodiversity. We acknowledge that agriculture is vulnerable to these challenges, but can contribute to addressing them. As Ministers of Agriculture, we reaffirm our support for the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) as the global framework for sustainable development to advance progress towards more sustainable agro-food sectors. In particular, we intend to end hunger, achieve food security and improved nutrition and promote sustainable agriculture.” (G20 2019a: paragraph 12)

## G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth Declaration (G20 2019)

We adopt the “G20 **Karuizawa Innovation Action Plan** on Energy Transitions and Global Environment for Sustainable Growth” to accelerate the virtuous cycle as a collaborative endeavor to facilitate voluntary actions. This action plan would reinforce and enhance a variety of relevant international, regional, national and local initiatives involving multiple stakeholders, especially those in the private sector.

The G20 Energy Ministers will step up existing international efforts to unlock the potential of **hydrogen** as a clean, reliable and secure source of energy including cooperation in research and development,

evaluating **hydrogen's technical and economic potential**, cost reduction pathways and addressing the various challenges including regulations and standards.

The G20 Energy Ministers note the energy efficiency analysis such as **Global Energy Efficiency Benchmark** work undertaken by the IEA, which includes Well to Wheel analysis. They will further explore the potential and impact of **energy efficiency**, in such areas as **heating and cooling, and buildings** through international cooperation and sharing best practices.

The G20 Energy Ministers will work together with support of international organizations such as IRENA, IEA, ISA, and the Biofuture Platform, to promote innovative solutions for accelerating the major potential of **renewable energies**.

## 2018 Argentinian Presidency

### G20 Leaders' Declaration (G20 2018)

Building on the G20 Food Security and Nutrition Framework, we reaffirm our commitment to tackling the challenges of **food security**, which is crucial to achieving a world free of hunger and all forms of **malnutrition**.

We will promote dynamism in **rural areas** and **sustainable agriculture**, conscious of the importance of sustainable soil, water and riverbanks management supported by individual countries voluntarily, taking into consideration the specific needs of family and small-holder farmers.

We will promote **energy security, sustainability, resilience, efficiency, affordability and stability**, acknowledging that there are varied sources of energy and **technological advances** to achieve a **low emissions future**.

We continue to promote **universal energy access** by eradicating **energy poverty**, cooperating to provide displaced people and disaster-impacted and remote areas with access to it, and through enhanced implementation of G20 regional plans.

### Buenos Aires, Argentina, December 2018: Building Consensus for Fair and Sustainable Development, G20 Leaders' Declaration (G20 2018)

- “We recognize the crucial role of energy in helping shape our shared future and we encourage energy transitions that combine growth with decreasing greenhouse gas emissions towards cleaner, more flexible and transparent systems, and cooperation in energy efficiency. We recognize the opportunities for innovation, growth, and job creation through increased investment into cleaner and sustainable energy sources — including renewables, technologies and infrastructure. We acknowledge the role of all energy sources and technologies in the energy mix and different possible national paths to achieve cleaner energy systems under the term 'transitions'. We will promote energy security, sustainability, resilience, efficiency, affordability and stability, acknowledging that there are varied sources of energy and technological advances to achieve a low emissions future. We continue to promote universal energy access by eradicating energy poverty, cooperating to provide displaced people and disaster-impacted and remote areas with access to it, and through enhanced implementation of G20 regional plans.” (G20 2018a: paragraph 22)

### Bariloche, Argentina, June 2018: G20 Energy Ministers Communiqué (G20 2018)

- “At a worldwide level, while it is important to acknowledge that fossil fuels still play a major role, we stress the need to successfully transform energy systems, by increasing investments in cleaner technologies, cooperation in energy efficiency and deployment of renewables and innovation. We reaffirm G20's leading role in encouraging effective energy transitions processes, through combined efforts on both the demand and supply sides. These processes should involve a cost-effective approach, including in their design not only environmental, but also social and economic dimensions. We intend to collaborate closely to successfully address these challenges, with a view to foster economic growth and welfare.” (G20 2018b: p. 1)
  - a. **Energy Efficiency**

- “Energy efficiency has been prioritised by G20 members and has also become one of the pillars of the 2030 Agenda for Sustainable Development, due to its contribution to energy security, industrial competitiveness, emissions reduction, economic growth, job creation and others social benefits when introduced in a cost-effective manner. International collaboration, including through the G20, is critical to effectively support the design and implementation of national energy efficiency policies and programmes. We recognise the work of the Task Groups of the Energy Efficiency Leading Programme (EELP) in different sectors and uses. We also encourage to significantly scale up public and private investments and financing in energy efficiency across all sectors to help to achieve the energy transitions. Building on past achievements, Argentina’s G20 Presidency 2018 continues to support these efforts and has proposed to consider and promote other critical aspects that contribute to the success of energy efficiency policy options, such as Behaviour Change initiatives. Behaviour Change can act as a bridge between innovation, technological progress, and nationally driven energy efficiency measures, delivering greater benefits for consumers and all sectors of the economy. We will include Behaviour Change in the current EELP implementation plan.” (G20 2018b: p. 2)
- b. Renewable Energy**
- “The progress achieved with regard to the development and deployment of renewable energy has been remarkable, benefitting from innovation and in part from significant cost reductions (notably for solar and wind, which are now cost competitive in many cases), but much more progress will be needed, not only in G20 member countries, but also worldwide. We encourage G20 members that opt to enhance their renewable energy strategies considering national circumstances, needs and priorities to accelerate their implementation, where appropriate. We encourage increased investment and financing in renewable energy production, including through barrier reduction and risk mitigation initiatives, which is particularly important for developing countries. We recognise that system integration of variable renewable energy is crucial for electricity security and expanded deployment of renewables, which includes a number of elements, such as regional integration of grids, flexible power plants, electricity storage, grid stabilisation through digital technologies and demand-side management. We acknowledge the benefits of international collaboration. G20 members would foster efforts to take the lead to provide market design options that can be used to adapt electricity markets, facilitating their ability to integrate higher shares of variable renewables. We note that baseload generation remains an essential element of energy security, depending on national circumstances and preferences. In this regard, for many countries large-scale hydropower plays a key role. Renewable energy progress should be accelerated beyond the power sector. We acknowledge that some renewable energy sources, such as bioenergy (including biofuels), solar and geothermal energy, can play an important role in some G20 countries in reducing emissions in the transportation, heating and cooling, and industrial sectors worldwide, depending on national circumstances and conditions.” (G20 2018b: p. 2)
- c. Natural Gas**
- “We recognise the key role that natural gas currently plays for many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emission energy systems. We will endeavour to improve the functioning, transparency and competitiveness of gas markets, with a strategic view of the supply chain - including Liquefied Natural Gas (LNG) and storage facilities - at a global level. We will encourage an expanded dialogue with relevant international organisations on more effective and flexible use of natural gas.” (G20 2018b: p. 2)
- d. Other Fossil Fuels**
- “For those G20 countries that opt to continue utilising fossil fuels will endeavour to spur innovation through the use of advanced and cleaner technologies which will contribute to reduce emissions and encourage investment and financing in advanced and cleaner fossil fuels technology options (including Carbon Capture, Utilisation and Storage). We reaffirm the importance of using the most advanced and cleaner technologies in order

to address the environmental impacts, including GHG emissions, of the production, transport and consumption of fossil fuels. We encourage countries to enhance cooperation in developing and applying best available technologies.” (G20 2018b: p. 3)

**e. Inefficient Fossil Fuel Subsidies that encourage wasteful consumption**

- “In 2009, the Pittsburgh Leaders Declaration called for medium term rationalisation and phasing-out of Inefficient Fossil Fuel Subsidies that encourage wasteful consumption, while providing targeted support for the poorest. We reaffirm this joint commitment. We welcome the efforts made by those G20 members who have already participated in voluntary peer reviews, and we encourage those who have not yet done so to initiate their peer reviews as soon as feasible.” (G20 2018b: p. 3)

**f. Nuclear Energy**

- “For those countries that opt to use nuclear energy, it contributes to the reduction of GHG emissions and to baseload and the significant innovations underway (including in small modular and advanced reactors) were noted. We call upon these countries to uphold the highest standards of nuclear safety, security and non-proliferation, including the compliance with an independent and effective regulator, and to exchange their expertise and experiences.” (G20 2018b: p. 3)

**g. The Key Role of Innovation**

- “We will foster innovation as one of the key drivers of the energy transitions processes. We will encourage and facilitate research, development, demonstration and deployment (RDD&D) of innovative, cleaner and efficient energy technologies, recognising the need for these to be competitive and commercially viable. We will encourage greater cooperation in developing, sharing and applying best available technologies, and will also encourage multilateral development banks and finance institutions to facilitate investment, and technology transfer. We will support flexible energy systems and distributed generating capacities.” (G20 2018b: p. 3)

**h. Energy Data**

- “Transparency and Markets Digitalisation We recognise that more robust and comprehensive energy data is important for effective decision-making to face the challenges of our energy transitions. We will promote market digitalisation - minimising the risks of malicious use of ICT technologies - with a view to increase flexibility and enable integration across entire systems, as well as to open up the opportunity for millions of consumers, producers and investors to sell electricity or provide valuable services to the grid. We will encourage G20 members to foster closer collaboration among international, regional and national organisations, to set up training programmes to build and implement capacity for energy data collection and management.” (G20 2018b: p. 3)

**i. Energy Security**

- “We acknowledge energy security as one of the guiding principles for the transformation of our systems, and will continue to promote policy options that facilitate open, flexible, transparent, competitive and reliable markets for energy 4 commodities and technologies. We stress the importance of diversification of energy sources, suppliers and routes, and the need to facilitate the proper conditions for continued and increasing investments to ensure sustainable, affordable, reliable, resilient and cleaner energy systems. Investment in infrastructure is essential, but a persistent financial gap remains. We encourage increased contributions from both public and private financial resources.” (G20 2018b: p. 3)

**j. Energy Access and Affordability**

- “We recognise that energy is at the heart of economic growth and sustainable development, and that access to modern energy services and clean cooking facilities is one of the prerequisites for social and economic development. We reaffirm our commitments to promote universal energy access, with special emphasis on the need to eradicate energy poverty and ensure gender equality across the value chain. Fostering cooperation on energy access in disaster-impacted and remote areas is particularly important. We also recognise the need to provide access to displaced

people. We note the “Energy Access and Affordability Voluntary Action Plan for Latin America and the Caribbean” put forward by Argentina’s G20 Presidency, which highlights the need to tackle energy service cost and affordability issues, in addition to access challenges. We will explore ways to further advance energy access, including through enhanced implementation of G20 regional plans and increase international financing for access, in particular for those countries that have limited financial resources.” (p. 4)

### **G20 Agriculture Ministers’ Declaration (G20 2018)**

We reaffirm our strong commitment to the **Paris Agreement**, moving swiftly towards its full implementation in accordance with the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

We are committed to work collaboratively toward our goals of **ending hunger** and promoting **sustainable agriculture**, to achieve a **sustainable food future** in which all people, at all times, have access to sufficient, safe and nutritious food for an active and healthy life, in line with the **2030 Agenda** and its **Sustainable Development Goals**.

We are committed to strengthening the international mechanisms we have created to jointly and collaboratively achieve the goal of a world free of **hunger and malnutrition** in all its forms, address the challenges of food security and nutrition and take into consideration the Voluntary Guidelines to support the **Progressive Realization of the Right to Adequate Food** in the context of **national food security** and the relevant work of the **Committee on World Food Security**.

We concur on the need to continue G20 discussions, as initiated by the Chinese Presidency and carried forward by the German Presidency, on their **potential opportunities** and **impacts**, particularly on **women and small and family holders**, addressing scientific and technological issues, as well as institutional, commercial and trade-related aspects. It will also be necessary to further explore the possibilities for establishing **ICT cooperation mechanisms**.

We affirm both our rights and obligations under the WTO agreements as well as our commitment to base our **sanitary and phytosanitary** measures and technical regulations on **international standards**, guidelines and recommendations set by relevant international organizations, or assessment of risk as appropriate to the circumstances, as well as to refrain from adopting unnecessary obstacles to international trade. In this context, we welcome and support the initiative launched by the **World Organization for Animal Health (OIE)** to develop an Observatory that monitors the implementation of its standards at a national or regional level in order to identify the difficulties and constraints of its Members and to propose solutions.

We, therefore, welcome the inclusion of the issue of **agri-food global value chains** in the agenda of the **G20 Trade and Investment Working Group**. We intend to consider their findings, including discussing how we, the G20 agriculture ministers, can better contribute to increase countries and

farmers' participation in GVCs, in particular of small-holders, so they can benefit from food production and distribution networks.

To promote transparency in global food markets, we confirm our commitment to strengthen the **Agricultural Market Information System** (AMIS), which should further evolve and also consider exploring the monitoring of food trade junctures that are important to international trade.

We will promote interdisciplinary and inter-sectoral approaches, as well as joint actions with the Ministries responsible for **human health, animal health, environment** and research in order to design national policies and help their implementation by the relevant stakeholders, mainly through **"One Health-based"** national action plans.

- “We are convinced that reducing “food losses and waste” is a “triple win”: (i) increasing **food security**; (ii) alleviating pressure on climate, water and land resources; and (iii) improving income for farmers, agri-food businesses and the household economy.” (G20 2018: paragraph 19)

### **G20 Energy Ministers’ Declaration (G20 2018)**

We reaffirm G20's leading role in encouraging effective **energy transitions processes**, through combined efforts on both the demand and supply sides. These processes should involve a **cost—effective approach**, including in their design not only **environmental**, but also **social and economic dimensions**.

We will endeavor to improve the **functioning, transparency and competitiveness** of **gas markets**, with a strategic view of the supply chain — including Liquefied Natural Gas (LNG) and storage facilities — at a global level.

We reaffirm our commitments to promote **universal energy access**, with special emphasis on the need to eradicate **energy poverty** and ensure **gender equality** across the value chain.

We will explore ways to further advance **energy access**, including through enhanced implementation of **G20 regional plans** and increase international financing for access, in particular for those countries that have limited financial resources.

Argentina's G20 Presidency 2018 continues to support these efforts and has proposed to consider and promote other critical aspects that contribute to the success of **energy efficiency policy** options, such as **Behaviour Change initiatives**.

**Renewable energy** progress should be accelerated beyond the power sector. We acknowledge that some renewable energy sources, such as **bioenergy (including biofuels), solar and geothermal energy**, can play an important role in some G20 countries in reducing emissions in **the transportation, heating and cooling, and industrial sectors** worldwide, depending on national circumstances and conditions.

In 2009, the Pittsburgh Leaders Declaration called for medium term rationalization and phasing-out of Inefficient **Fossil Fuel Subsidies** that encourage **wasteful consumption**, while providing targeted support for the poorest. We reaffirm this joint commitment.



## 2017 German Presidency

### G20 Leaders' Declaration (G20 2017)

In order to achieve food security, we are committed to increase **agricultural productivity and resilience** in a sustainable manner, while aiming to protect, manage and use efficiently **water and water-related ecosystems**.

We remain collectively committed to mitigate greenhouse gas emissions through, among others, increased innovation on sustainable and **clean energies and energy efficiency**, and work towards **low greenhouse-gas emission energy systems**.

We regard energy security as one of the guiding principles for the **transformation of our energy systems**, and we will continue to work on open, flexible, and transparent markets for **energy commodities and technologies**.

### Hamburg, Germany, July 2017: Shaping an Interconnected World, G20 Leaders' Declaration (G20 2017)

- “Energy and Climate: A strong economy and a healthy planet are mutually reinforcing. We recognise the opportunities for innovation, sustainable growth, competitiveness, and job creation of increased investment into sustainable energy sources and clean energy technologies and infrastructure. We remain collectively committed to mitigate greenhouse gas emissions through, among others, increased innovation on sustainable and clean energies and energy efficiency, and work towards low greenhouse-gas emission energy systems. In facilitating well-balanced and economically viable longterm strategies in order to transform and enhance our economies and energy systems consistent with the 2030 Agenda for Sustainable Development, G20 members will collaborate closely. Recalling the G20 Principles on Energy Collaboration, we regard energy security as one of the guiding principles for the transformation of our energy systems, and we will continue to work on open, flexible, and transparent markets for energy commodities and technologies. We welcome international cooperation on the development, deployment, and commercialization of sustainable and clean energy technologies and support financing by Multilateral Development Banks to promote universal access to affordable, reliable, sustainable and clean energy. We take note of the decision of the United States of America to withdraw from the Paris Agreement. The United States of America announced it will immediately cease the implementation of its current nationally-determined contribution and affirms its strong commitment to an approach that lowers emissions while supporting economic growth and improving energy security needs. The United States of America states it will endeavor to work closely with other countries to help them access and use fossil fuels more cleanly and efficiently and help deploy renewable and other clean energy sources, given the importance of energy access and security in their nationally determined contributions. The Leaders of the other G20 members state that the Paris Agreement is irreversible. We reiterate the importance of fulfilling the UNFCCC commitment by developed countries in providing means of implementation including financial resources to assist developing countries with respect to both mitigation and adaptation actions in line with Paris outcomes and note the OECD's report “Investing in Climate, Investing in Growth”. We reaffirm our strong commitment to the Paris Agreement, moving swiftly towards its full implementation in accordance with the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances and, to this end, we

agree to the G20 Hamburg Climate and Energy Action Plan for Growth as set out in the Annex.” (G20 2017: pp. 9-10)

## **G20 Agriculture Ministers' Declaration (G20 2017)**

- “We, the G20 Ministers of Agriculture, highlight the G20 economies' role as major actors in the global food system, which represent about 60 percent of all agricultural land and about 80 percent of world trade in agricultural products. We acknowledge that this entails a great responsibility for contributing to **global food security** and improved nutrition.” (G20 2017: paragraph 1)

We aim to raise awareness of the vulnerability of the agricultural sector to the impacts of **climate change** and the role of **agriculture in sustainable development** and the progressive realization of the right to an **adequate standard of living** including the right to **adequate food**

We commit to implement the enclosed G20 Agriculture Ministers' Action Plan 2017 entitled "**Towards food and water security: Fostering sustainability, advancing innovation**". Under the Argentinian Presidency we will conduct a stock-taking of actions launched by the G20 Agriculture Ministers since the G20 French Presidency. We task the G20 Agriculture Deputies to agree on terms of reference for this exercise under the German Presidency.

We will continue to implement our past commitments made at the G20 Agriculture Ministers' Meetings and other relevant fora, especially regarding **information and communication technologies (ICT), research and development, collaboration and voluntary knowledge transfer, the Agricultural Market Information System (AMIS), food loss and waste (FLW), antimicrobial resistance (AMR) and agricultural trade and investment.**

We reaffirm our commitment to the implementation of the **G20 Action Plan on Food Price Volatility and Agriculture, the G20 Food Security and Nutrition Framework** and the **G20 Action Plan on Food Security and Sustainable Food Systems** in close coordination with the Development Working Group.

### *Implementation of the 2030 Agenda for Sustainable Development*

We commit to supporting the implementation of the **Paris Agreement**. We emphasize the need for **agriculture** and **forestry** to adapt to **climate change** and also emphasize their role in its mitigation. We will strive to enhance their adaptation and mitigation capacity as well as strengthening their resilience to climate change. At the same time, we must ensure that **agriculture** will be able to fulfil its role to provide **food security** and nutrition for the growing global population. We should strive to contribute to the formulation and communication of long-term low greenhouse gas development strategies.

### *Agriculture and Water*

We need to ensure that the rising demand for **food, feed and renewable resources** does not result in an unsustainable increase in water use by the agricultural sector. For this reason, we are committed to

policy approaches that foster **increased agricultural productivity** while ensuring that **water and water-related ecosystems** are protected, managed and used sustainably. We need to ensure that farmers are a key part of this process and of the solution.

We commit to support the achievement of the relevant water-related **Sustainable Development Goals (SDGs)**, **particularly SDG 6**, which aims at substantially increasing water-use efficiency, ensuring sustainable withdrawals, improving water quality and implementing integrated water-resource management. As G20 Ministers of Agriculture we will focus our commitment on **water issues** related to sustainable and improved **agricultural productivity**, while recognizing the need for our contribution to sustainable water use and management in the entire **food value chain**.

We aim to improve **water-use efficiency** in **agriculture** through improved policies with due regard to regional and local conditions. We will promote the use of site-adapted and efficient methods and technologies in order to optimize yield per drop and **reduce water losses and wastage**. This includes water delivery and application such as **irrigation technologies, cropping systems and crop varieties**.

## 2016 Chinese Presidency

### G20 Leaders' Communiqué (G20 2016)

We reaffirm our commitment to building **well-functioning, open, competitive, efficient, stable and transparent energy markets**, fostering more effective and inclusive global **energy architecture** to better reflect the changing realities of the world's energy landscape, and shaping an affordable, reliable, sustainable and low **greenhouse gas (GHG) emissions energy future** while utilizing energy sources and technologies.

We reaffirm the importance of **energy collaboration** towards a **cleaner energy future** and sustainable **energy security** with a view to fostering economic growth. We welcome the progress on the voluntary international collaboration on **energy efficiency** in six key areas, taking into consideration the policies outlined in the **Energy Efficiency Leading Programme** and in line with national circumstances, including in heavy duty vehicles, and improving the efficiency of these vehicles.

We also reaffirm our commitment to rationalize and phase-out **inefficient fossil fuel subsidies** that encourage **wasteful consumption** over the medium term, recognizing the need to support the poor.

### Hangzhou, China, September 2016: G20 Leaders' Communiqué: Hangzhou Summit (G20 2016)

- “The G20 will continue to **prioritize its work on food security**, nutrition, sustainable agricultural growth and rural development as a significant contribution to implementing the 2030 Agenda for Sustainable Development. We endorse the outcome of the G20 Agriculture Ministers Meeting and encourage our agriculture ministers to meet regularly to jointly **facilitate sustainable agricultural development** and food value chains, including through technological, institutional and social innovation, trade and responsible investment, **as a means of food security**, rural development and poverty alleviation. We support increasing efforts in this regard by the agricultural scientific and private sectors and welcome the opening of the First G20 Agricultural Entrepreneurs Forum. We recognize the role of family farmers and smallholder agriculture in development, and welcome the Good Practices on Family Farming and Smallholder Agriculture that identifies a set of policies, programs and tools that can prove useful to G20 members and beyond. We welcome the contribution by programs and initiatives that promote sustainable agricultural development, including the Global Agriculture and **Food Security Program**.” (G20 2016: paragraph 41)
- “In line with the G20 Principles on Energy Collaboration, we reaffirm our commitment to **building well-functioning, open, competitive, efficient, stable and transparent energy markets**, fostering more effective and inclusive global energy architecture to better reflect the changing realities of the world's energy landscape, and shaping an affordable, reliable, sustainable and low greenhouse gas (GHG) emissions energy future while utilizing energy sources and technologies. We stress that continued **investment in energy projects** and better regional interconnection, particularly in **sustainable energy projects**, remains critically important to ensuring future energy security and preventing economically destabilizing price spikes. We endeavor to work with Sub-Saharan and Asia-Pacific countries to improve universal access to affordable, reliable, clean, sustainable and modern energy services, particularly by addressing barriers to electricity access. We encourage members to significantly **improve energy efficiency** based on the specific needs and national circumstances of each member and promote energy conservation through appropriate lifestyle changes. We will explore

- innovative collaborative arrangements for **international cooperation on energy efficiency**. We endorse the G20 Voluntary Collaboration Action Plan on Energy Access, the G20 Voluntary Action Plan on Renewable Energy and the G20 Energy Efficiency Leading Programme issued by the G20 energy ministers and ask them to meet regularly to follow up on the implementation of these plans.” (G20 2016a: paragraph 23)
- “We reaffirm **the importance of energy collaboration towards a cleaner energy future and sustainable energy security** with a view to fostering economic growth. We welcome the progress on the voluntary international collaboration on **energy efficiency** in six key areas, taking into consideration the policies outlined in the Energy Efficiency Leading Programme and in line with national circumstances, including in heavy duty vehicles, and improving the efficiency of these vehicles. We also reaffirm our commitment to rationalize and phase-out inefficient fossil fuel subsidies that encourage wasteful consumption over the medium term, recognizing the need to support the poor. We welcome G20 countries’ progress on their commitments and look forward to further progress in the future. Further, we encourage G20 countries to consider participating in the voluntary peer review process. Given that natural gas is a less emission-intensive fossil fuel, we will enhance collaboration on solutions that promote natural gas extraction, transportation, and processing in a manner that minimizes environmental impacts. We stress the importance of diversification of energy sources and routes.” (G20 2016a: paragraph 24)
  - “We launch the G20 Initiative on Supporting Industrialization in Africa and LDCs to strengthen their inclusive growth and development potential through voluntary policy options including: promoting inclusive and sustainable structural transformation; supporting sustainable agriculture, agri-business and agro-industry development; deepening, broadening and updating the local knowledge and production base; promoting investment in **sustainable and secure energy, including renewables and energy efficiency**; exploring ways to develop cooperation on industrial production and vocational training and sustainable and resilient infrastructure and industries; supporting industrialization through trade in accordance with WTO rules; and leveraging domestic and external finance and supporting equitable access to finance - with a focus on women and youth; and promoting science, technology and innovation as critical means for industrialization.” (G20 2016: paragraph 35)
  - “The G20 will continue to **prioritize its work on food security**, nutrition, sustainable agricultural growth and rural development as a significant contribution to implementing the 2030 Agenda for Sustainable Development. We endorse the outcome of the G20 Agriculture Ministers Meeting and encourage our agriculture ministers to meet regularly to jointly **facilitate sustainable agricultural development** and food value chains, including through technological, institutional and social innovation, trade and responsible investment, **as a means of food security**, rural development and poverty alleviation. We support increasing efforts in this regard by the agricultural scientific and private sectors and welcome the opening of the First G20 Agricultural Entrepreneurs Forum. We recognize the role of family farmers and smallholder agriculture in development, and welcome the Good Practices on Family Farming and Smallholder Agriculture that identifies a set of policies, programs and tools that can prove useful to G20 members and beyond. We welcome the contribution by programs and initiatives that promote sustainable agricultural development, including the Global Agriculture and **Food Security Program**.” (G20 2016: paragraph 41)

## Beijing, China, June 2016: G20 Energy Ministerial Meeting Beijing Communiqué (G20 2016b)

### a. Energy Access

- “We recognize energy access as a crucial factor to achieving a better quality of life, overcoming poverty and improving global economic growth. We reiterate our commitment to take joint action, in line with the UN 2030 Agenda for Sustainable Development, and in particular Sustainable Development Goals (SDG)-Goal 7, to ensure universal access to affordable, reliable, and sustainable and modern energy for

all. We want to build on G20 leaders endorsement of the G20 Energy Access Action Plan: Voluntary Collaboration on Energy Access in 2015 by expanding our focus beyond sub-Saharan Africa to include the Asia-Pacific region, where about 500 million people still do not have access to electricity. As a roadmap for achieving these objectives, we adopt the Enhancing Energy Access in Asia and the Pacific: Key Challenges and G20 Voluntary Collaboration Action Plan, which acknowledges investment, financing, innovation, building institutional capacity, and ensuring market viability of the new projects as key challenges to achieve universal energy access in the Asia-Pacific, and that technological options will need to be tailored to utilizing all indigenous available sources. We also encourage G20 and other countries to concentrate their efforts in disadvantaged communities and regions where large proportions of the population are without electricity, and in areas with the most acute problems of access to modern energy for all, where the impact will be most significant. G20 members noted there is a range of options to improve energy access, including, but not limited to, voluntary financial support, building enabling environments, public sector support, community participation, decentralized energy system, grid expansion programs, capacity development, regional interconnection, coordinated country support and innovative business models as appropriate to the existing specific planning and specific needs of each country. We acknowledge the need for action in the cooking energy sector across Sub-Saharan Africa and the Asia-Pacific region, by promotion of clean cooking technologies. We will work together with SE4All and its Asia-Pacific and African hubs, and with other relevant international, regional and national institutions in the Asia-Pacific region and the African region; and commit to working 4 jointly on a voluntary basis towards implementation of both G20 Action Plans by strengthening ongoing initiatives, and cooperating and collaborating on capacity development for policy formulation to increase investment and financing for energy access in both regions, taking into consideration national needs and context.” (G20 2016b: pp. 3-4)

**b. Clean Energy Future**

- “We encourage members to explore clean energy production and consumption models appropriate to their own circumstances and, in light of the changes in the regional and global energy landscape and the needs of sustainable energy development, while at the same time fostering economic growth. We recognize various forms of energy used by G20 members, including renewable energy, natural gas and nuclear power for those countries which opt to use it, and advanced and cleaner fossil fuel technologies as meaningful options for countries with diverse energy realities. Renewable Energy We emphasize the significant role of renewable energy in context of the UN 2030 SDG goals and Paris Agreement from COP21. We adopt the G20 Voluntary Action Plan on Renewable Energy and will continue to implement the G20 Toolkit of Voluntary Options on Renewable Energy Deployment agreed by G20 Energy Ministers in Istanbul. We encourage members to develop energy strategies, including renewable energy development, taking account of their respective situations, and to propose action plans to fulfill their energy strategies. We encourage members to facilitate investment in renewable energy production and use through reducing barriers and risks, taking full consideration of the available indigenous renewable energy sources, increasing substantially the share of renewable energy in the global energy mix, in line with SDG-Goal 7. We acknowledge that continued cost reduction of renewable technologies and power system integration of variable renewables are key challenges. We G20 members will endeavor to reduce the deployment costs of renewable energy through in-depth cooperation on knowledge sharing, capacity building, technology transfer, financial innovation and pilot projects. We note the important role of government in supporting power sector evolution and energy system integration, and we promote technical development and deployment of energy storage, electric vehicles and modern bioenergy, including second generation and other advanced biofuels, and renewable heating. Smart grids can facilitate reducing emissions and enhance resilience of electricity systems, and therefore we encourage cooperation on standards to accelerate smart grid deployment and interoperability. Nuclear Power For countries

which opt to use nuclear energy, it contributes to the reduction of GHG emissions. We call upon all countries that opt to use nuclear power to ensure the highest standards of nuclear safety, security and nonproliferation including an independent and effective regulator, and to exchange their expertise and experiences. In addition it is important to engage the public in science-based dialogue and transparency to inform policymaking. Natural Gas We note the results of the G20 Natural Gas Day. We recognize that natural gas can be a less emission intensive fossil fuel, and can play an important and effective role in moving towards a low GHG emission energy future. We note that natural gas has become an integral part of global energy supply and we will endeavor to improve the functioning, transparency and competitiveness of gas markets, with a strategic view of the gas supply chain including LNG at the global level. Many countries intend to expand the utilization of natural gas in transportation, distributed energy, or power generation, as well as to enhance gas trading. We will enhance collaboration on solutions that promote natural gas extraction, transportation, and processing in a manner that minimizes environmental impacts. Advanced and Cleaner Fossil Fuel Technologies 6 We affirm the importance of using the best available technologies and practices in order to address the environmental impacts, including GHG emissions, of the production, transport and consumption of fossil fuels. And we encourage countries to enhance cooperation in developing and applying best available technologies. (G20 2016b: pp. 4-6)

**c. Energy Efficiency**

- “We recognize that energy efficiency, including energy conservation, is a long-term priority for G20. Improving energy efficiency brings social, economic, environmental and other benefits, and plays a key role in shaping a sustainable future. We adopt the G20 Energy Efficiency Leading Programme (EELP), and agree to take the lead in promoting energy efficiency. We agree to take action by adhering to the Voluntary Pillars for Energy Efficiency Cooperation, which are “mutually beneficial, innovative, inclusive, and sharing”. We commit to significantly improve energy efficiency in the G20, through greater energy efficiency cooperation and by encouraging G20 members to develop active energy efficiency programs, policies and measures based on the specific needs and national circumstances of each member. In order to strengthen the global voice for energy efficiency, G20 members support IPEEC working with the IEA and other international organizations, including IEF, OPEC, OECD, APEC, BRICS, SE4ALL and C2E2, and with stakeholders, and we will explore the feasibility of innovative collaborative arrangements for international cooperation on energy efficiency. We welcome the significant progress in voluntary international collaboration coordinated by IPEEC in the six key areas of Vehicles, particularly heavy-duty vehicles, Networked Devices, Finance, Buildings, Industrial processes (Industrial energy management), and Electricity Generation. We recognize the particular opportunity provided by voluntary collaboration on heavy-duty vehicles, as well as upscaling of energy efficiency investment and other workstreams. We encourage interested countries to strengthen this collaboration and to participate actively in the additional key areas outlined in the EELP, which are Best Available Technologies and Practices 7 (‘TOP TENS’), Super-efficient Equipment and Appliances Deployment initiative (‘SEAD’), District Energy Systems (‘DES’), Energy Efficiency Knowledge Sharing Framework, and Energy End-Use-Data and Energy Efficiency Metrics. We welcome the active participation of non-G20 countries in all key areas of energy efficiency collaboration.” (G20 2016b: pp. 6-7)

**d. Global Energy Architecture**

- “We share a common understanding that the global energy architecture needs to continue to evolve to reflect better the changing realities of the world energy landscape. We recognize the contribution of G20 countries to sustaining discussions on critical global energy issues, their roles in fostering collaboration to address global energy challenges and their effectiveness in facilitating collaboration among a variety of international organizations. We welcome G20 energy meetings’ collaboration with

international organizations and their efforts to expand engagement with non-members.” (G20 2016b: p. 7)

**e. Energy Security**

- “We emphasize the need for sustainable energy security and our commitment to the improvement and enhancement of energy security through cooperation and dialogue on issues such as emergency response measures. We stress the importance of diversification of energy sources and of efficient, flexible and competitive markets. We stress that continued investment in energy projects remains critically important for ensuring future energy security and preventing economically destabilizing price spikes. We resolve to ensure those investments contribute to our sustainable energy security.” (G20 2016b: p. 7)

**f. Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption**

- “In the light of the commitment in 2009 and beyond to rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, while providing targeted support for the poorest, we welcome significant progress made to date by a number of G20 countries, and we will endeavor to make further progress in moving forward this commitment which was agreed by our Leaders in 2009. And we look forward to the upcoming results of US-China voluntary peer reviews which could provide a useful way to share experiences on both theoretical and practical ways of rationalizing and phasing out inefficient fossil fuel subsidies that encourage wasteful consumption. We also welcome peer review processes that will be carried out in Germany, Mexico and Indonesia. We encourage more G20 countries to participate in peer reviews.” (G20 2016b: pp. 7-8)

**g. Market Transparency**

- “We believe transparent markets are a critical prerequisite for energy security and encouraging investment. To promote market transparency and efficiency, we commit to further strengthen the Joint Organisations Data Initiative (JODI) by encouraging and facilitating the collection and dissemination of high quality energy data, and promoting the visibility of the initiative, as well as enhancing support for capacity building. We welcome the cooperation among the IEF, OPEC and IEA, on energy outlooks and encourage them to continue with their fruitful collaboration on market transparency and on the interaction between physical and financial markets. Building on the IOSCO Principles for Price Reporting Agencies, we note the importance of remaining vigilant on the integrity and transparency of market price formation. We also acknowledge the importance of publication of timely and high-quality market-related information on all energy resources.” (G20 2016b: p. 8)

## **G20 Agriculture Ministers Meeting Communiqué (G20 2016)**

We, as members of the G20, are therefore determined to fulfill our commitments taken under the **Sustainable Development Goals (SDGs)**. We reaffirm that **agriculture and rural development** are crucial to global food security and poverty alleviation and can contribute significantly towards inclusive **economic growth, social stability and the sustainable use of natural resources**. Further, through the **G20 Food Security and Nutrition Framework and the G20 Action Plan on Food Security and Sustainable Food Systems**, we have committed to promote innovation in institutions, policies, science and technology, in order to increase agricultural productivity in a sustainable manner.

We commit to continue to tackle the issue of price volatility. In particular, we commit to pursue the implementation of the concrete initiatives of the **2011 G20 Action Plan on Food Price Volatility** and Agriculture in dedicated forums:



- Agricultural Market Information System (AMIS) and the Rapid Response Forum,
- GEO Global Agricultural Monitoring Initiative (GEOGLAM) for market and production international monitoring,
- Risk management tools, such as the Platform for Agricultural Risk Management (PARM), and the Wheat Initiative.

We commit to continue to cooperate with international organizations and support their activities, such as those related to the International Year of Pulses 2016, which was declared by the UN and launched by FAO in November 2015, for the purpose of raising awareness about diet diversification and soil protection. We are committed to promoting the **reduction of food loss and waste** and supporting the G20 Technical Platform of Measurement and Reduction of Food Loss and Waste established in 2015.

We commit to support the implementation of plans and programs regarding the agriculture-related SDGs in the 2030 Agenda for Sustainable Development, while paying due attention to the links with other SDGs.

We share the idea that **climate change** is an important challenge in relation to **agriculture**. Furthermore, we reaffirm our strong support to **Paris Agreement adopted at COP 21**, including implementation of Intended Nationally Determined Contributions.

We will promote innovations in technology, social organizations, institutions and **agricultural business** models, through scientific, **evidence-based policies and programmes** and sustainable use of resources. We resolve to explore innovative options for adjusting our **agricultural development paths**, technology systems, policy environment and resource allocations, so as to generate new opportunities for sustainable and **inclusive growth**, stimulate the productivity of land, capital and labor, and enhance the quality efficiency and inclusiveness of **food value chain**.

## 2015 Turkish Presidency

### G20 Leaders' Declaration (G20 2015)

We endorse the G20 Action Plan on **Food Security and Sustainable Food Systems**, which underlines our commitment to improve global food security and nutrition and ensure the way we produce, consume and sell food is economically, socially and environmentally sustainable.

We remain focused on promoting responsible **investment in agriculture and food systems**, improving market transparency, increasing incomes and quality jobs, and fostering **sustainable productivity growth**.

We will continue to promote transparent, competitive and well-functioning energy markets, including gas markets. We stress the importance of diversification of energy sources and continued investments for increased energy security. We reaffirm our commitment to rationalize and phase-out inefficient fossil fuel subsidies that encourage wasteful consumption, over the medium term, recognizing the need to support the poor. We will endeavor to make enhanced progress in moving forward this commitment.

### Antalya, Turkey, November 2015: G20 Leaders' Communiqué (G20 2015)

- “Our work this year **supports key areas for sustainable development such as** energy access, **food security** and nutrition, human resource development, quality infrastructure, financial inclusion and domestic resource mobilization. We endorse the G20 Action Plan on Food Security and Sustainable Food Systems, which underlines our commitment to **improve global food security** and nutrition and ensure the way we produce, consume and sell food is economically, socially and environmentally sustainable. We remain focused on promoting responsible investment in agriculture and food systems, improving market transparency, increasing incomes and quality jobs, and fostering sustainable productivity growth. We will pay particular attention to the needs of smallholder and family farmers, rural women and youth. We also commit to reducing food loss and waste globally. We welcome Expo Milano with the theme “Feeding the Planet – Energy for Life”. We also welcome our Agriculture Ministers’ decision to establish a new platform to improve the way we and other countries can measure and reduce food loss and waste.” (G20 2015a: paragraph 20)
- “We remain focused on the G20 Principles on Energy Collaboration and welcome our Energy Ministers’ first meeting ever. Recognizing that globally over 1.1 billion people lack access to electricity and 2.9 billion rely on the traditional use of biomass for cooking, we endorse the G20 Energy Access Action Plan: Voluntary Collaboration on Energy Access, the first phase of which focuses on **enhancing electricity access in Sub-Saharan Africa** where the problem is most acute. The Plan aims to strengthen G20 coordination and establishes a long-term voluntary cooperation framework that can be applied to other regions over time, recognising that **energy access is a critical factor to foster development**. In this first phase, we will cooperate and collaborate with African countries and relevant regional and international organizations on policy and regulatory environments, technology development and deployment, investment and finance, capacity building, regional integration and cooperation, taking into consideration national needs and contexts.” (G20 2015: paragraph 22)
- “We recognize that **actions on energy**, including **improving energy efficiency, increasing investments in clean energy technologies and supporting related research and development activities** will be important in tackling climate change and its effects. We endorse the G20 Toolkit of Voluntary Options for Renewable Energy Deployment. We also highlight the

progress made this year by participating countries in taking forward our collaboration on energy efficiency and agree to further support on a voluntary basis the 2015 outcomes of existing work streams on efficiency and emissions performance of vehicles, particularly heavy duty vehicles, networked devices, buildings, industrial processes and electricity generation, as well as financing for energy efficiency. We will continue to promote transparent, competitive and well-functioning energy markets, including gas markets. We stress the importance of diversification of energy sources and continued investments for increased energy security. We reaffirm our commitment to rationalise and phaseout inefficient fossil fuel subsidies that encourage wasteful consumption, over the medium term, recognising the need to support the poor. We will endeavour to make enhanced progress in moving 6 forward this commitment. We ask our Energy Ministers to report back on energy collaboration again in 2016 on the continued implementation of the G20 Principles on Energy Collaboration.” (G20 2015 paragraph 23)

## **Istanbul, Turkey, October 2015: Communiqué G20 Energy Ministers Meeting (G20 2015b)**

### **a. Access to Energy for All**

- “We recognize that more than 1.1 billion people live without access to electricity, many of which live in remote and disadvantaged regions, and around 2.9 billion people rely on the traditional use of biomass for cooking. Energy access is a critical factor to achieve a better quality of life, to overcome poverty and to improve global economic performance. The lack of modern energy access acts as a severe obstacle to economic growth and social development in many countries. We welcome the inclusion within the 2030 Agenda for Sustainable Development of the Goal to “Ensure access to affordable, reliable, sustainable and modern energy for all”. We will collaborate to move this goal forward. The development of a balanced, clean, affordable, viable and reliable energy mix is vital for sustainable development.” (G20 2015b: paragraph 1)
- “We adopt the G20 Energy Access Action Plan: Voluntary Collaboration on Energy Access, the first phase of which focuses on enhancing electricity access in Sub-Saharan Africa where this problem is most acute. We welcome the discussions held with African Energy Ministers at the Conference on Energy Access in Sub-Saharan Africa on 1 October. We recognize the importance of a conducive enabling environment for increased investments and sustainable growth of the power sector, taking into account national circumstances, including available indigenous energy sources, needs and priorities. We are committed to strengthening G20 coordination and activities on energy access through the Plan, which establishes a long term voluntary cooperation framework. We will work together with SE4All, its Africa Hub, and other initiatives and donors, cooperating and collaborating with other relevant international and regional institutions and Sub-Saharan African countries on policy and regulatory environments, technology development and deployment, investment and finance, capacity building, regional integration and cooperation, taking into consideration national needs and contexts. We stress the need for public-private partnerships, stakeholder alliances and strong political commitment to energy access. We recognize the regulators' contribution to energy access and encourage increased communication and cooperation among regulatory authorities. We also welcome and support the African led Renewable Energy Initiative as put forward at the African Union Summit in June 2015 which aims at accelerating access to renewable energy in Africa and reducing energy poverty.” (G20 2015b: paragraph 2)

### **b. International Energy Institutions**

- “We recognize the contribution of the G20 itself to furthering coordination and cooperation among international and regional energy institutions and its effectiveness facilitating a variety of international organizations to work together. We are supportive of continuing our work with international and regional organizations in an inclusive

manner and we welcome their increased collaboration. We will also work together to make international energy institutions more representative and inclusive of emerging and developing economies while taking into consideration the specific objectives and mandates of international institutions and we note the ongoing processes for this purpose.” (G20 2015b: paragraph 3)

**c. Market Transparency**

- “We believe that transparent and competitive energy markets are a prerequisite for energy security and encouraging investment. To promote market transparency and efficiency, we commit to further strengthen the Joint Organizations Data Initiative (JODI) by encouraging and facilitating the collection and dissemination of high quality energy data, as well as enhancing support for capacity building. We note the Second Price Reporting Agencies (PRA) Review Report prepared by IOSCO in collaboration with IEA, IEF and OPEC and the Joint IEA-IEF-OPEC Reports on the Market Impact of IOSCO Principles that together highlight the progress achieved on the functioning of PRAs through cooperation and transparency, and we stand ready to monitor continued progress in this effort. We also welcome the joint work of the IEA, IEF and OPEC to further understand energy outlooks and the interaction between physical and financial markets and encourage them to continue with their fruitful collaboration on market transparency. We support efforts to improve the functioning of energy markets, including gas markets. We also acknowledge the importance of public disclosure of market related information on all energy resources.” (G20 2015b: paragraph 4)

**d. Energy Security**

- “We emphasize the need for sustainable energy security, given the dynamic and uncertain energy landscape today, and our commitment to the improvement and enhancement of energy security through cooperation and dialogue on issues such as emergency response measures. We stress the importance of diversification of energy sources. We support continued investments in the energy sector, taking into account the importance of current investments for ensuring future energy security.” (G20 2015b: paragraph 5)

**e. Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption**

- “We welcome the progress being made by a number of countries to rationalize and phase-out inefficient fossil fuel subsidies that encourage wasteful consumption, which may lead to a reduction in the associated market distortions and environmental damage while taking into account vulnerable groups and their development needs. We encourage the efforts underway in some G20 countries as described in the country progress reports, and the peer review process which is now in place. We encourage more G20 countries to join the peer review process. In the light of the commitment in 2009 and beyond to rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, while providing targeted support for the poorest, we will endeavor to make enhanced progress in moving forward this commitment in future G20 meetings. We note the update paper on recent progress in reforming inefficient fossil fuel subsidies, prepared by the IEA and OECD in consultation with the World Bank, IEF and OPEC.” (G20 2015b: paragraph 6)

**f. Energy Efficiency**

- “We recognize the benefits of energy efficiency, including lower costs for households and businesses, greater economic productivity and growth, strengthened energy security, and improved environmental outcomes. We acknowledge the need for substantial improvement in countries’ energy efficiency performances. We therefore welcome the important progress achieved in 2015 in the implementation by participating countries of the G20 Energy Efficiency Action Plan: Voluntary Collaboration on Energy Efficiency. We welcome the Report on the Voluntary Implementation of the Energy Efficiency Action Plan prepared by the International Partnership for Energy Efficiency Cooperation (IPEEC) in cooperation with other international organizations and participating countries of the workstreams.

We agree to further support on a voluntary basis the 2015 outcomes of the existing workstreams on efficiency and emissions performance of vehicles, particularly heavy duty vehicles, networked devices, buildings, industrial processes and electricity generation, as well as financing for energy efficiency. In this regard, we welcome the Voluntary Energy Efficiency Investment Principles for G20 participating countries. We will further consider potential areas for future voluntary collaboration that increase energy efficiency in our economies. We agree in addition to further work to ensure that the Plan has a long term perspective.” (G20 2015b: paragraph 7)

**g. Renewable Energy**

- “We emphasize the importance of renewables and its potential long-term growth. Renewable energy use is on the rise and this trend is expected to continue in the future. We recognize that, while markets, technologies and policies vary from country to country, enhancing renewables investments through innovation, risk mitigation and the deployment of conducive policy frameworks, in accordance with national priorities and contexts, can contribute to an environmentally sound, socially and economically sustainable development path.” (G20 2015b: paragraph 8)
- “We adopt the G20 Toolkit of Voluntary Options on Renewable Energy Deployment, which sets out useful options for further work, and we take note of the background report prepared by IRENA in cooperation with IEA and other relevant international organizations. We highlight the importance of innovation, technologies, and knowledge sharing to encourage the increased uptake of renewables in the energy mix, and the central role played by system integration, and by stable national policy and regulatory frameworks, with the understanding of existing specific national circumstances.” (G20 2015b: paragraph 9)

**h. Innovative Energy Technologies, including clean energy technologies**

- “We acknowledge the importance of innovative energy technologies to deliver secure, affordable, reliable, viable and sustainable energy in a challenging energy world. We recognize the important role of the private and public sectors in making the investments and developing the technologies and good practices needed to enhance productivity, efficiency and sustainable development. We also support continued investment in research and development, demonstration and the deployment of innovative energy technologies across a broad range of energy sources, including clean energy technologies. In addition we support increased international coordination on clean energy research and development. Such actions can enhance energy security, boost economic growth, create jobs and business opportunities, support greater levels of energy access and provide environmental benefits.” (G20 2015b: paragraph 10)

**i. Climate Change**

- “We recognize that 2015 is a critical year to take strong and effective action to tackle climate change and its effects and that actions on energy, including improving energy efficiency and increasing investments in clean energy technologies will be important. In this regard, we welcome the Intended Nationally Determined Contributions (INDCs) that have been submitted thus far. We support the work of the UNFCCC as the primary international intergovernmental body for negotiating climate change and we are working together to achieve a positive and balanced outcome at COP 21 in Paris in December 2015.” (G20 2015b: paragraph 11)

## **G20 Agriculture Ministers Final Communiqué (G20 2015)**

We, the G20 Agriculture Ministers, are committed to meeting the challenge of **global food security** and **nutrition** for an expected world population of nine billion by 2050. We stress that intensifying pressures on **natural resources and biodiversity** and the impacts of **climate change** mean that we should raise productivity while moving towards food systems that are more sustainable in all their

dimensions – economic and social as well as environmental – and in particular minimize food loss and waste.

- “We underscore that farmers need **sustainable supplies of water** and need to manage agriculture's impact on water supplies to ensure sufficient quantity and quality of water across the watershed. Given the growing competition for water supply between agriculture and other actors, we therefore aim at **coordinated action** and **policy coherence** for **improving water governance** across sectors, in particular with regard to extraction, distribution, recovery and application systems.” (G20 2017: paragraph 11)

Investment at all stages **of food value chains** is fundamental to raising productivity, generating employment and incomes and reducing food loss and waste. We will promote national enabling environments for investment including **infrastructure and policies conducive to well-functioning markets**, the integration of smallholders and women into those markets, inclusive financing institutions, secure tenure of land, social protection, the management of risk and measures to limit the adverse impacts of excessive price volatility.

We reaffirm our commitment to the fundamental role of the multilateral trading system in global food security and to the ongoing **WTO** negotiations with a view to promptly concluding the **Doha Development Agenda** and to the success of the **WTO Tenth Ministerial Conference at Nairobi**.

## 2014 Australian Presidency

### G20 Leaders' Declaration (G20 2014)

We are committed to **poverty eradication** and development, and to ensure our actions contribute to **inclusive and sustainable growth in** low-income and developing countries. We commit to take strong practical measures to reduce the global average cost of transferring remittances to five per cent and to enhance financial inclusion as a priority.

We reaffirm our commitment to rationalize and phase out **inefficient fossil fuel subsidies** that encourage **wasteful consumption**, recognizing the need to support the poor.

### Brisbane, Australia, November 2014: Australian G20 Summit Communiqué (G20 2014)

- “Increased **collaboration on energy** is a priority. **Global energy markets** are undergoing significant transformation. **Strong and resilient energy markets are critical to economic growth**. Today we endorse the G20 Principles on Energy Collaboration. We ask our energy ministers to meet and report to us in 2015 on options to take this work forward. Gas is an increasingly important energy source and we will work to improve the functioning of gas markets.” (G20 2014: paragraph 17)
- “**Improving energy efficiency** is a cost-effective way to help address the rising demands of sustainable growth and development, as well as **energy access and security**. It reduces costs for businesses and households. We have agreed an Action Plan for Voluntary Collaboration on Energy Efficiency, including new work on the efficiency and emissions performance of vehicles, particularly heavy duty vehicles; networked devices; buildings; industrial processes; and electricity generation; as well as work on financing for energy efficiency. We reaffirm our commitment to rationalise and phase out inefficient fossil fuel subsidies that encourage wasteful consumption, recognising the need to support the poor.” (G20 2014: paragraph 18)

## 2013 Russian Presidency

### G20 Leaders' Declaration (G20 2013)

We reaffirm our determination to implement all previous G20 commitments and existing initiatives including that stated in the **Action Plan on Food Price Volatility and Agriculture** which the G20 endorsed in 2011.

We commit to enhance **energy cooperation**, to make energy market data more accurate and available and to take steps to support the development of cleaner and more **efficient energy technologies** to enhance the efficiency of markets and shift towards a more sustainable energy future.

We underscore our commitment to work together to address **climate change and environment protection**, which is a global problem that requires a global solution.

To promote market transparency and efficiency, we commit to strengthen **Joint Organizations Data Initiative (JODI)** - Oil by ensuring greater visibility, more complete and comprehensive data, enhanced access and improved availability, and by maintaining support for capacity building.

We will continue in cooperation with international organizations sharing national experiences and case studies regarding **sustainable development, clean energy, and energy efficiency** as well as development, deployment and broader application of related technologies and will take forward work, on a voluntary basis, on corresponding policy options and technologies.

We reaffirm our commitment to rationalize and phase out **inefficient fossil fuel subsidies** that encourage wasteful consumption over the medium term while being conscious of necessity to provide targeted support for the poorest.

### St Petersburg, Russia, September 2013: G20 Leaders' Declaration (G20 2013)

- "G20 countries have a responsibility to ensure that all people have an opportunity to gain from strong, sustainable and balanced growth. We endorse the St Petersburg Development Outlook to focus our efforts on **concrete steps to improve food security**, financial inclusion, infrastructure, human resource development and domestic resource mobilization." (G20 2013: paragraph 6,vii)
- "We share a common interest in **developing cleaner, more efficient and reliable energy supplies**, as well as more transparent physical and financial commodity markets. We commit to **enhance energy cooperation**, to make energy market data more accurate and available and to take steps to support the development of cleaner and more efficient energy technologies to enhance the efficiency of markets and shift towards a more sustainable energy future. We underscore our commitment to work together to address climate change and environment protection, which is a global problem that requires a global solution." (G20 2013: paragraph 6, ix)
- "**Access to energy** is a key factor to achieve better quality of life and to improve global economic performance. Access to reliable and affordable energy is particularly critical to the development agenda, poverty eradication and social inclusion. Transparent, well-functioning, reliable energy markets and sufficient investment are needed to boost economic growth, job creation and sustainable development." (G20 2013: paragraph 90)



- “To **promote market transparency and efficiency**, we commit to strengthen Joint Organizations Data Initiative (JODI) - Oil by ensuring greater visibility, more complete and comprehensive data, enhanced access and improved availability, and by maintaining support for capacity building. We look forward to the launch of JODI-Gas at earliest date possible. We note the second report prepared by the International Energy Agency (IEA), the International Energy Forum (IEF) and the Organization of the Petroleum Exporting Countries (OPEC) in May 2013 on practical steps to increase transparency in international gas and coal markets. We ask the IEF to come back with a report on progress in these areas before the next G20 Ministers of Finance and Central Bank Governors meeting in October.” (G20 2013: paragraph 91)
- “We welcome the Report on energy-related issues including on G20 work to facilitate better functioning of physical and financial commodity markets. We welcome Finance ministers' commitment to take actions on PRAs as set out in their Communiqué of July 20, 2013 with a view to improve their functioning through transparency and regulation as appropriate, and would welcome a further update in 2014. We also call on Finance ministers to monitor on a regular basis the proper implementation of IOSCO's principles for the regulation and supervision on commodity derivatives markets and encourage broader publishing and unrestricted access to aggregated open interest data.” (G20 2013: paragraph 92)
- “We welcome efforts aimed at promoting sustainable development, **energy efficiency**, inclusive green growth and **clean energy technologies and energy security** for the long term prosperity and well being of current and future generations in our countries. We will continue in cooperation with international organisations sharing national experiences and case studies regarding sustainable development, clean energy, and energy efficiency as well as development, deployment and broader application of related technologies and will take forward work, on a voluntary basis, on corresponding policy options and technologies. We take note of the new World Bank report 'Toward a Sustainable Energy Future for All', which aims to promote access to reliable and affordable energy in developing countries and recognise the importance of the sustainable and responsible production and use of modern bioenergy and the role played by the Global Bioenergy Partnership (GBEP) in this regard.” (G20 2013: paragraph 93)
- “We reaffirm our commitment to rationalise and **phase out inefficient fossil fuel subsidies** that encourage wasteful consumption over the medium term while being conscious of necessity to provide targeted support for the poorest. We welcome the efforts underway in some G20 countries as described in the country progress reports. We welcome the development of a methodology for a voluntary peer review process and the initiation of country-owned peer reviews and we encourage broad voluntary participation in reviews as a valuable means of enhanced transparency and accountability. We ask Finance Ministers to report back by the next Summit on outcomes from the first rounds of voluntary peer reviews. Recognising the importance of providing those in need with essential energy services, we ask Finance Ministers to consider, in conjunction with the relevant international institutions, policy options for designing transitional policies including strengthening social safety nets to ensure access for the most vulnerable.” (G20 2013: paragraph 94)
- “Sizable **investment**, including from private sources, will be needed in the G20 and other economies **in energy infrastructure** in the years ahead to support global growth and development. It is our common interest to assess existing obstacles and identify opportunities to facilitate more investment into more smart and low-carbon energy infrastructure, particularly in clean and sustainable electricity infrastructure where feasible. In this regard we encourage a closer engagement of private sector and multilateral development banks with the G20 Energy Sustainability Working Group (ESWG) and call for a dialogue to be launched on its basis in 2014 that will bring interested public sector, market players and international organizations together to discuss the factors hindering energy investment, including in clean and energy efficient technologies and to scope possible measures needed to promote sustainable, affordable, efficient and secure energy supply.” (G20 2013: paragraph 95)
- “Regulation among other policy levers can play an important role in creating a proper context for investment. Noting that regulatory roles differ from country to country and that regulation remains a country-led process, but in some cases is shared within regional integration space, we welcome the dialogue between interested G20 national power sector regulators supported

by regulatory associations and international organisations, and take note of the statement they have provided on sound regulation and promoting investment in energy infrastructure agreed at the G20 Outreach Energy Regulators Round Table in Kazan. In the context of our efforts to **promote investment in energy infrastructure**, notably in clean, affordable and sustainable energy, and in order to engage all interested parties, we encourage interested regulators to continue their dialogue and ask the ESWG to take note of this dialogue.” (G20 2013: paragraph 96)

- “Many countries are trying to improve their energy mix and use, such as by promoting renewable and/or nuclear energy. Nuclear power is a low-carbon option, but it is capital intensive and comes with responsibilities for nuclear safety, security and safeguards/nonproliferation. G20 countries, whether nascent or established nuclear power producers should strive for the **highest possible level of nuclear safety, to foster robust nuclear safety and nuclear security cultures** and, as called for in the International Atomic Energy Agency (IAEA) Action Plan on Nuclear Safety, we encourage multilateral cooperation towards achieving a global nuclear liability regime.” (G20 2013: paragraph 97)
- “We recognize the value of multilateral cooperation and coordination in advancing the global energy security agenda through resilient energy markets and welcome the IEA’s current efforts to deepen its engagement with non-members and will monitor progress in this regard.” (G20 2013: paragraph 99)

## 2012 Mexican Presidency

### G20 Leaders' Declaration (G20 2012)

To fight hunger, we commit to continue our efforts on our initiatives, including the **Tropical Agriculture Platform, the Platform for Agricultural Risk Management, the GEO Global Agriculture Monitoring, research initiatives for wheat, rice and corn, the Rapid Response Forum, regional emergency food reserves, the Global Agriculture and Food Security Program and support for the Principles of Responsible Agriculture Investment.**

We reaffirm our commitment to remove export restrictions and extraordinary taxes on food purchased for non-commercial humanitarian purposes by the World Food Programme (WFP).

We therefore endorse the conclusions of the G20 report on the macroeconomic impacts of excessive **commodity price volatility** on growth and its identification of policy options that countries could consider, taking account of national circumstances to mitigate any such effect.

We reaffirm our commitment to enhance transparency and avoid abuse in financial commodity markets, including OTC, with effective intervention powers for market regulators and authorities and an appropriate regulation and supervisory framework.

We recognize that excessive **price volatility** in energy commodities is also an important source of economic instability. We remain committed to well-functioning and transparent energy markets. We will continue to work to improve the timeliness, completeness and reliability of JODI-Oil.

### Los Cabos, Mexico, June 2012: G20 Leaders' Declaration (G20 2012)

- G20 members will remain vigilant of the evolution of oil prices and will stand ready to carry out additional actions as needed, including the commitment by producing countries to continue to ensure an appropriate level of supply consistent with demand. We welcome Saudi Arabia's readiness to mobilize, as necessary, existing spare capacity to ensure adequate supply.
- "We recognize that excessive price volatility in energy commodities is also an important source of economic instability. We remain committed to well-functioning and transparent energy markets. We will continue to work to improve the timeliness, completeness and reliability of JODI-Oil and look forward to a progress report next year. We will work on the JODI-Gas database on the same principles. We expect the International Energy Forum (IEF) report on improving the reliability of the JODI-Oil database and the report on transparency in international gas and coal markets submitted by the International Energy Agency (IEA), IEF, and Organization of the Petroleum Exporting Countries (OPEC) to be discussed by our Finance Ministers in November. We also look forward to IOSCO's recommendations to improve the functioning and oversight of Price Reporting Agencies in November 2012, which will be produced in collaboration with other mandated organizations (IEF, IEA and OPEC), and task Finance Ministers to take concrete measures in this area as necessary." (G20 2012: paragraph 62)
- "In Cannes we committed to promote low-carbon development strategies in order to optimize the potential for green growth and ensure sustainable development in our countries and beyond. We therefore welcome the report on clean energy and energy efficiency technologies and acknowledge the G20 countries' efforts to foster investment in these technologies through

the sharing of national experiences regarding challenges for technology deployment.” (G20 2012: paragraph 75)

## **G20 Agriculture Vice Ministers/Deputies Meeting Report (G20 2012)**

G20 countries also agreed to remove **food export restrictions** or extraordinary taxes for food purchased for non-commercial humanitarian purposes by WFP and not to impose them in the future. We reaffirm our commitment on this matter and noted the need to continue seeking a resolution of this issue in the WTO.

We recognize the important role that international trade can play in improving **food security** and increasing **agricultural productivity**, and reaffirm our Ministers commitments as per paragraphs 37 and 38 of the Action Plan.

We agree to:

- Undertake further analysis of current national approaches and best policy practices to increase sustainable **agricultural productivity growth**.
- Enhance investment in productivity growth in each country's **agricultural sector**, paying attention to the specific infrastructure and market integration requirements of **smallholder farmers** in those countries where this is a key factor in agricultural productivity.
- Encourage all relevant stakeholders to invest in the agricultural sector, taking into account the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests and PRAI
- Promote the implementation of public policies which contribute to a market-oriented investment environment, to encourage private sector involvement in sustainable agricultural productivity growth and promote market integration of farmers.
- Take note of the World Agriculture Watch initiative, hosted by FAO, in partnership with France and IFAD

We commit to support public policy and international cooperation initiatives aimed at promoting an efficient and stable food distribution system, with the goal of optimizing the **food value chain** and reducing **post-harvest losses** and **food waste**.

Given the importance of Agricultural Innovation Systems (AIS) and especially R&D activities in each country's respective production systems, we commit to explore additional ways of enhancing international cooperation for the effective management of R&D activities and agree to:

- i. Facilitate the exchange of experiences and policy dialogue on AIS at a high level
- ii. Promote effective mechanisms to facilitate voluntary public-private technology transfer to developing countries, and take note of the importance of supporting countries in improving their own **intellectual property rights frameworks**, encouraging developed countries to establish

the tools to promote innovation and technology transfer aiming to increase **agricultural productivity**, in accordance with each country's international obligations.

iii. Support the development and promotion of a global information sharing system on plant and animal genetic resources, as a tool to boost breeding and to sustainably increase agricultural productivity, both worldwide and at small-scale farmer levels, taking into account the ongoing efforts in the FAO Commission on Genetic Resources for Food and Agriculture and, for the countries involved, the work of Bioversity International, CGIAR, the Global Crop Diversity Trust (GCDDT), the ITPGRFA, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity.

We reaffirm our commitment to support rice research, particularly through the **Global Rice Science Partnership (GRISP) and the Coalition for Africa Rice Development (CARD)**.

We commit to counter the main causes of loss of biodiversity by participating actively in international fora where these issues are being addressed

Considering the importance of **mitigating risks in agriculture**, we agree to:

i. Support the efforts of relevant IOs and existing risk management initiatives, such as the Platform for Agricultural Risk Management, the Global Index Insurance Facility, the Weather Risk Management Facility, the R4 Rural Resilience Initiative and the Weather Info for All, to provide smallholders with innovative and effective market-based risk management options, including weather index insurance.

ii. Strengthen efforts towards improving and exchanging weather information, including the recovery of historical meteorological information to facilitate the development of weather index insurance and re-insurance market.

iii. Promote the exchange of experiences to achieve greater coverage of agricultural insurance mainly for smallholder farmers. In addition, we underscore the importance of competition in insurance markets.

## 2011 French Presidency

### G20 Leaders' Declaration (G20 2011)

We agree to further invest in agriculture, in particular in the poorest countries, and bearing in mind the importance of smallholders, through responsible public and private investment. In this regard, we decide to:

- Urge multilateral development banks to finalize their joint action plan on **water, food and agriculture** and provide an update on its implementation by our next Summit;
- Invest in research and development of **agricultural productivity**.

We commit to improve market information and transparency in order to make international markets for **agricultural commodities** more effective. To that end, we launched:

- The "Agricultural Market Information System" (AMIS)
- The "Global Agricultural Geo-monitoring Initiative"

We agree to remove **food export restrictions** or extraordinary taxes for food purchased for non-commercial humanitarian purposes by the World Food Program and agree not to impose them in the future.

We are committed to promote **sustainable development and green growth** and to continue our efforts to face the challenge of climate change.

We commit to more transparent physical and **financial energy markets**. Commodity derivatives are being addressed as part of our financial regulation reform agenda.

We have made progress and reaffirm our commitment to improve the timeliness, completeness and reliability of the JODI-Oil database as soon as possible. We also commit to support the **IEF -- JODI work** in order to improve the reliability of **JODI-Oil** and look forward to receiving their recommendations. We will regularly review and assess progress made on this front.

We reaffirm our commitment to rationalize and phase-out over the medium **term inefficient fossil fuel subsidies** that encourage **wasteful consumption**, while providing targeted support for the poorest.

We will promote low-carbon development strategies in order to optimize the potential for green growth and ensure sustainable development in our countries and beyond.

We commit to encouraging effective policies that overcome barriers to efficiency, or otherwise spur innovation and deployment of clean and efficient energy technologies.

### Cannes, France, November 2011: Cannes Summit Final Declaration – Building Our Common Future: Renewed Collective Action for the Benefit of All (G20 2011)

- “Increasing agricultural production and productivity is essential to **promote food security** and foster sustainable economic growth. A more stable, predictable, distortion free, open and transparent trading system allows more investment in agriculture and has a critical role to play in this regard. Mitigating excessive food and agricultural commodity price volatility is also an

- important endeavour. These are necessary conditions for stable access to sufficient, safe and nutritious food for everyone. We agreed to mobilize the G20 capacities to address these key challenges, in close cooperation with all relevant international organisations and in consultation with producers, civil society and the private sector.” (G20 2011: paragraph 40)
- “We commit to sustainably increase agricultural production and productivity. To feed a world population expected to reach more than 9 billion people by 2050, it is estimated that agricultural production will have to increase by 70% over the same period. We agree to further invest in agriculture, in particular in the poorest countries, and bearing in mind the importance of smallholders, through responsible public and private investment. In this regard, we decide to: **Urge multilateral development banks to finalise their joint action plan on water, food and agriculture** and provide an update on its implementation by our next Summit” (G20 2011: paragraph 43)
  - “We welcome the production of a report by the international organizations on how water scarcity and related issues could be addressed in the appropriate fora.” (G20 2011: paragraph 49)
  - “We stress the importance of well-functioning and transparent physical and financial energy markets, reduced excessive price volatility, **improved energy efficiency** and **better access to clean technologies**, to achieve strong growth that is both sustainable and inclusive. We are committed to promote sustainable development and green growth and to continue our efforts to face the challenge of climate change.” (G20 2011: paragraph 52)
  - “We commit to **more transparent physical and financial energy markets**. Commodity derivatives are being addressed as part of our financial regulation reform agenda. We have made progress and reaffirm our commitment to improve the timeliness, completeness and reliability of the JODI-Oil database as soon as possible. We also commit to support the IEF -- JODI work in order to improve the reliability of JODI-Oil and look forward to receiving their recommendations. We will regularly review and assess progress made on this front.” (G20 2011: paragraph 53)
  - “We will promote **low-carbon development strategies** in order to optimize the potential for green growth and ensure sustainable development in our countries and beyond. We commit to encouraging effective policies that overcome barriers to efficiency, or otherwise spur innovation and deployment of **clean and efficient energy technologies**. We welcome the UN Secretary General's "Sustainable Energy for All" initiative. We support the development and deployment of clean energy and energy efficiency (C3E) technologies. We welcome the assessment of the countries' current situation regarding the deployment of these technologies as well as the on-going exercise of sharing best practices, as a basis for better policy making.” (G20 2011: paragraph 59)
  - “We are committed to the success of the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012. "Rio + 20" will be an opportunity to mobilize the political will needed to reinsert sustainable development at the heart of the international agenda, as a long term solution to growth, job creation, poverty reduction and environment protection. A green and inclusive growth will create a broad spectrum of opportunities in new industries and in areas such as environmental services, **renewable energy** and new ways to provide basic services to the poor.” (G20 2011: paragraph 60)

## G20 Agriculture Ministers Meeting

### Action Plan on Food Price Volatility and Agriculture (G20 2011)

We reaffirm the right of everyone to have access to safe, sufficient and **nutritious food**, consistent with the progressive realization of the right to adequate food in the context of **national food security**.

We commit to five main objectives for this **Action Plan**:

(i) Improve agricultural production and productivity both in the short and long term in order to respond to a growing demand for **agricultural commodities**;

(ii) Increase **market information** and **transparency** in order to better anchor expectations from governments and economic operators;

(iii) Strengthen **international policy coordination** in order to enhance confidence in international markets and to prevent and respond to food market crises more efficiently;

(iv) Improve and develop risk management tools for governments, firms and farmers in order to build capacity to manage and mitigate the risks associated with food price volatility, in particular in the poorest countries;

(v) Improve the functioning of agricultural commodities' derivatives markets, this objective is being pursued through the work of Finance Ministers and Central Bank Governors.

We commit ourselves to implementing a broad scope of actions to boost agricultural growth. In this whole range of actions, we will give special attention to smallholders, especially women and young farmers, in particular in developing countries.

We agree to strengthen agricultural research and innovation and support results based agricultural research for development through our national agricultural research systems, the Consultative Group on **International Agricultural Research (CGIAR)** and the **Global Forum on Agricultural Research (GFAR)**.

We will promote technology transfers, knowledge sharing and capacity building through North-South, South-South and triangular cooperation.

We will foster **innovation** in **plant breeding**, including by strengthening internationally agreed legal mechanisms for plant varieties.

We agree on the importance of involving relevant international research centers, G20 countries, and other relevant bodies in new and existing **agricultural research and development initiatives**.

As a first step, we decide to launch an **International Research Initiative for Wheat Improvement (IRIWI)** in order to coordinate our research efforts on this major crop for food security.

We commit to creating an enabling environment to encourage and increase public and private investment in agriculture. In particular, we stress the need to support public-private partnership on investments, based on a **value-chain approach**, for services (such as **access to financial services, agricultural education and extension services**), and for infrastructure and equipment for production (such as irrigation), for agroprocessing, for access to markets (such as transport, storage, communication) and for reducing pre and post-harvest losses. We also encourage efforts to establish proper investment environments, including through improvement of law and regulations.



We reaffirm the G20 Leaders' commitment of the Seoul Multi-Year Action Plan for Development to uphold the PRAI and we support the ongoing extensive consultations on these principles launched within the framework of the CFS.

We commit to taking part in this initiative by disclosing reliable, quality, accurate, timely and comparable data and where needed to improving our national systems of collection and dissemination of such data.

We will continue to address the challenges and opportunities posed by **biofuels, in view of the world's food security, energy and sustainable development needs.**

We agree that managing the risk and mitigating the adverse impact of excessive **food price volatility** in developed and developing countries would provide an important contribution to longer term agricultural development and strengthen global food security.

We also agree that agricultural insurance and contracts between farmers and buyers or suppliers of agricultural inputs can improve risk management of **price volatility** and provide better predictability in the agricultural value chain

## 2010 Korean Presidency

### The Seoul Summit Document (G20 2010)

We reaffirm our commitment to rationalize and phase-out over the medium term **inefficient fossil fuel subsidies** that encourage **wasteful consumption**, with timing based

We are committed to support country-led green growth policies that promote environmentally sustainable **global growth** along with **employment creation** while ensuring energy access for the poor.

We recognize that sustainable green growth, as it is inherently a part of sustainable development, is a strategy of quality development, enabling countries to leapfrog old technologies in many sectors, including through the use of energy efficiency and clean technology. To that end, we will take steps to create, as appropriate, the enabling environments that are conducive to the development and deployment of energy efficiency and clean energy technologies, including policies and practices in our countries and beyond, including technical transfer and **capacity building**.

We support the ongoing initiatives under the **Clean Energy Ministerial** and encourage further discussion on cooperation in R&D and regulatory measures, together with business leaders, and ask our Energy Experts Group to monitor.

We also commit to stimulate investment in clean energy technology, energy and **resource efficiency**, **green transportation**, and **green cities** by mobilizing finance, establishing clear and consistent standards, developing long-term energy policies, supporting education, enterprise and R&D, and continuing to promote cross-border collaboration and coordination of national legislative approaches.

## 2010 Canadian Presidency

### G20 Leaders' Declaration ([G20 2010](#))

We commit to exploring innovative, results-based mechanisms to harness the private sector for agricultural innovation.

We commit to exploring the potential of innovative, results-based mechanisms such as advance market commitments to harness the creativity and resources of the private sector in achieving **breakthrough innovations in food security and agriculture development** in poor countries.

## 2009 The United States' Presidency

### G20 Leaders' Declaration (G20 2009)

We individually and collectively commit to:

- Increase energy market transparency and market stability by publishing complete, accurate, and timely data on oil production, consumption, refining and stock levels, as appropriate, on a regular basis, ideally monthly, beginning by January 2010.
  - o We note the Joint Oil Data Initiative as managed by the **International Energy Forum (IEF)** and welcome their efforts to examine the expansion of their data collection to natural gas.
  - o We will improve our domestic capabilities to collect energy data and improve energy demand and supply forecasting and ask the International Energy Agency (IEA) and the Organization of Petroleum Exporting Countries (OPEC) to ramp up their efforts to assist interested countries in developing those capabilities.
  - o We will strengthen the producer-consumer dialogue to improve our understanding of market fundamentals, including supply and demand trends, and price volatility, and note the work of the IEF experts group.
- Improve regulatory oversight of energy markets by implementing the **International Organization of Securities Commissions (IOSCO)** recommendations on commodity futures markets and calling on relevant regulators to collect data on large concentrations of trader positions on oil in our national commodities futures markets.
  - o We will direct relevant regulators to also collect related data on over-the-counter **oil markets** and to take steps to combat market manipulation leading to excessive price volatility.

We commit to rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption. As we do that,

- o We will have our Energy and Finance Ministers, based on their national circumstances, develop implementation strategies and timeframes, and report back to Leaders at the next Summit.

We commit to:

- Stimulate investment in clean **energy, renewables, and energy efficiency** and provide financial and technical support for such projects in developing countries.
- Take steps to facilitate the diffusion or transfer of clean energy technology including by conducting joint research and building capacity.

We commit, on a voluntary basis, to funding programs that achieve this objective, such as the **Scaling Up Renewable Energy Program and the Energy for the Poor Initiative**, and to increasing and more closely harmonizing our bilateral efforts.

## 2008 The United States' Presidency

### G20 Leaders' Declaration ([G20 2008](#))

We remain committed to addressing other critical challenges such as **energy security** and climate change, **food security**, the rule of law, and the fight against **terrorism, poverty and disease**.

## 2.2. General References to Issues Related to Energy, Food, and Water in G20 Leaders' Communiqués

### 2019 Japanese Presidency

#### G20 Osaka Leaders' Declaration ([G20 2019](#))

In order to achieve **food security** and improve nutrition for the growing world population, agricultural productivity needs to increase and distribution needs to be more efficient, including by reducing food loss and waste, in a way more compatible with the sustainable management of natural resources.

We acknowledge the importance of **energy transitions** that realize the "3E+S" (Energy Security, Economic Efficiency, and Environment + Safety) in order to transform our energy systems into affordable, reliable, sustainable and low GHG emissions systems as soon as possible, recognizing that there are different possible national paths to achieve this goal.

Recalling the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth Communiqué, we acknowledge the role of all energy sources and technologies in the **energy mix** and different possible national paths to achieve cleaner energy systems.

We also recognize opportunities offered by further development of innovative, clean and efficient technologies for energy transitions, including hydrogen as well as, depending on national circumstances, the **Carbon Capture, Utilization and Storage** (CCUS) taking note of work on "**Carbon Recycling**" and "**Emissions to Value**".

We acknowledge the G20 Japanese Presidency's initiative called Research and Development 20 for clean energy technologies ("RD20").

In light of recent events highlighting concern about safe flow of energy, we acknowledge the importance of global **energy security** as one of the guiding principles for the transformation of **energy systems**, including resilience, safety and development of infrastructure and undisrupted flow of energy from various sources, suppliers, and routes.

We recognize the value of international cooperation on a wide range of energy-related issues including **energy access, affordability and energy efficiency, and energy storage**.

#### G20 Agriculture Ministers' Declaration ([G20 2019](#))

**Agriculture** has developed along with civilization, from the ancient stone age to the modern era of science. Now we are venturing into the age of new challenges and opportunities for our food systems. Productivity needs to increase and distribution needs to be more efficient, including by reducing **food loss and waste**, in order to achieve **food security** and improve **nutrition** for the growing world population. This should be achieved in a way more compatible with the sustainable management of natural resources, and with "**leaving no one behind,**" as is expressed in the **2030 Agenda** for

**Sustainable Development.** Digitalization and innovation are opening up new opportunities in various stages of **agro-food value chains** (FVCs), which will contribute to solving many of the above challenges.

*Need for innovation toward sustainability of the agro-food sector*

We underline the need for an environment where farmers, including new and small scale farmers, regardless of age, gender or geographic location can have access to knowledge and skills.

*Need for focusing on agro-food value chains toward inclusive and sustainable growth of the agro-food sector*

The development of sustainable FVCs that increase efficiency and productivity, and in particular, that reduce food loss and waste, can contribute to the fight against **food insecurity**, increase **natural resource efficiency** and **reduce greenhouse gases** (GHG) emission. Along with our continuous efforts for alleviating hunger and malnutrition, we strive to take the leading role in the reduction of food loss and waste along FVCs.

*Need for collaboration and knowledge exchange to address global issues*

Acknowledging the importance of the efforts so far to reduce, prepare for and manage these risks, we emphasize the need for an **effective policy environment** in which all stakeholders of the **agro-food sector** can choose optimal risk management measures. We recognize the important role that **scientific assessment plays** to inform policy setting, including those of **climate change** and adoption of innovative technologies.

We recognize that ensuring animal and plant health is one of the key issues for a viable and **sustainable agro-food sector**, **food safety** and **security**, **ecosystem** functions and sustaining all life on Earth. We reaffirm the importance of enhancing information sharing and supporting activities of international organizations

We reiterate the importance of our continuous efforts to combat antimicrobial resistance (AMR) through balanced and multi-sectoral approaches. We underline the value of tackling this issue through **"One Health"** national action plans, including terrestrial and aquatic animals and agriculture throughout the food chain, and we reaffirm the commitments G20 made in 2017 and 2018 in that regard.

**G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth Declaration (G20 2019)**

We recognize the importance of leading **energy transitions** to improve the **"3E+S"** (**Energy Security, Economic Efficiency, and Environment + Safety**) as well as urgently addressing key global issues and challenges, such as **climate change, biodiversity loss, resource efficiency, sustainable consumption and production, air, land, freshwater and marine pollution, urban environmental quality, and energy access.**

We recognize these challenges are complex and urgent, the importance of energy transitions and innovation on sustainable and clean energy systems, the close **nexus** between **energy security, economic growth, climate change, and environmental protection**, and the importance of long-term low emissions strategies for sustainable development, and acknowledge that G20 members have and continue to take concrete and practical actions to address these challenges and also acknowledge their progress.

We realize that, in order to accelerate the virtuous cycle and lead transformations to a **resilient, inclusive, and sustainable future**, emphasis should be placed on collecting wisdom from around the world, mobilizing **finance and investment**, and improving **business environments** to encourage technological innovation and behavioral change. We promote solutions, including nature based solutions that have multiple benefits.

We support efforts to mobilize finance and to improve the **market and investment environment** for various energy options, innovative technologies and quality infrastructure that enhance **energy access, resilience, sustainability, cleaner environment and water access**.

### *Energy*

The G20 Energy Ministers stress the need to successfully transform energy systems, by increasing **investments** in cleaner technologies, cooperation in energy efficiency and deployment of **renewables** and delivering the **policy, financial and business environment** necessary to promote and support **energy innovation** in line with the spirit of the **2030 Agenda for Sustainable Development, recognizing that fossil fuels still play a major role in the energy transitions.**

We stress the importance of accelerating a virtuous cycle of environment and growth, which is driven by **breakthrough innovation**, and with **business communities playing an important role under the enabling environment created by governments**

### *Energy Innovation*

The G20 Energy Ministers support further international cooperation on sustainable **biofuels** and **bioenergy**, as well as on innovative technologies for sector coupling, e.g. power to X and heat pumps in all sectors including the industrial sector, heating cooling and desalination, depending on national circumstances. The G20 members stress the importance of setting up innovation ecosystems and recognizing the role of startups and SMEs in promoting energy transitions.

### *Energy Security*

The G20 Energy Ministers acknowledge **energy security** as one of the guiding principles for the transformation of energy systems.

The G20 Energy Ministers also emphasize the importance of **resilience, protection, and development of reliable energy infrastructure** to prevent **energy supply disruptions**; and stress the importance of **diversification** of energy sources, suppliers, and routes, facilitation of open, flexible, transparent, competitive, stable, and reliable markets, increasing energy efficiency.



### *Nuclear Energy*

For those countries that opt to continue utilizing nuclear energy, it can contribute to **energy security, access to baseload power and reducing and/or avoiding emissions**. .. We call upon those countries to uphold the highest standards of nuclear safety, **security**, and **non-proliferation**.

It is also important to recognize the value of international cooperation on **decommissioning of nuclear plants** and final disposal of high-level radioactive waste; to share experience and knowledge on public engagement; and to promote technical cooperation for safety improvement.

### *Fossil Fuels*

The G0 Energy Ministers reiterate the importance of transparent, liquid, flexible, stable and **competitive global energy markets**. The G20 Energy Ministers support enhancing natural gas security, including **LNG**, through sharing of best practices and knowledge for **supply security** as well as for **emergency response**.

The G20 Energy Ministers recognize the key role that natural gas currently plays for many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emissions energy systems ... Those countries that opt to continue utilizing fossil fuels recognize the need for investment and financing of advanced and **cleaner fossil fuel technologies** including CCUS, depending on national circumstances.

## 2018 Argentinian Presidency

### G20 Leaders' Declaration (G20 2018)

We encourage the voluntary use and sharing of innovative as well as traditional agricultural practices and technologies. We highlight the importance of collaboration among public and private stakeholders to strengthen risk management, facilitate adaptation to a changing environment, protect **biodiversity** and provide **effective responses** to reduce the impacts of **extreme weather** on agriculture.

We will increase efforts to engage with the private sector, the scientific community and all other relevant stakeholders to enhance **value addition, productivity, efficiency, sustainability and upgrading in Agro-Food Global Value Chains** and encourage initiatives to reduce **food loss and waste**.

We recognize the crucial role of energy in helping shape our shared future and we encourage energy transitions that combine growth with decreasing **greenhouse gas emissions** towards cleaner, more flexible and transparent systems, and cooperation in **energy efficiency**.

We recognize the opportunities for **innovation, growth, and job creation** through increased investment into cleaner and **sustainable energy sources** — including renewables, technologies and infrastructure.

We acknowledge the role of all **energy sources and technologies** in the **energy mix** and different possible national paths to achieve cleaner energy systems under the term 'transitions'.

### G20 Agriculture Ministers' Declaration (G20 2018)

We, the G20 Agriculture Ministers, while strengthening adaptive capacity of food systems, agree that **agriculture** contributes to addressing global challenges such as a **changing climate**.

#### *Sustainable Food Future*

We underline the importance of improving land tenure security and integrated water management, technical training and the adoption of innovative and sustainable agricultural practices, involving farmers in the co-development and evaluation of sustainable agriculture systems.

#### *Healthy Soils to Support the Role of Agriculture in Sustainable Human Development*

We undertake to continue the strengthening of institutions that promote **soil health**, in multiple dimensions and approaches, and coordinate actions and initiatives among them.

We underline the importance of the development of the bioeconomy for the effective implementation of production systems that ensure **sustainable soil use**. In this context we recall the importance of sustainable management of forests. The exchange of experiences on policy measures and knowledge on new technologies contributes to the creation and diversification of conditions that promote the development of **sustainable production systems** and strengthen **rural and urban economies**

### *Information and Communications Technologies (ICTs)*

We support interdisciplinary collaboration and inter-institutional arrangements on innovation in agricultural ICTs, fostering discussions, knowledge and views exchange to enhance **agricultural ICT application**.

### *Food Loss & Waste*

We are convinced that reducing "**food loss and waste**" is a 'triple win':

- (i) increasing food security;
- (ii) alleviating pressure on climate, water and land resources; and
- (iii) improving income for farmers, agri-food businesses and the household economy.

### *Trade, Investment and Transparency of Agricultural Markets*

We recognize the importance of an open and transparent multilateral trading system, based on rules as agreed by WTO members, to achieve the objectives of a **sustainable food future, job creation, hunger and poverty eradication, and inclusive economic growth**, to promote sustainable **agri-food supply chains** and also to foster the responsible agricultural investment needed to increase productivity in the sector and thus address the growing demand for food.

## **G20 Energy Ministers' Declaration (G20 2018)**

We emphasize our commitments to work towards low **greenhouse gas (GHG) emissions** through, among others, increased innovation on sustainable and cleaner energy systems. As highlighted by the Energy Transitions Working Group (ETWG), we recognize that **energy transitions** are an essential element of long-term development strategies that should combine economic growth with decreasing GHG emissions.

We acknowledge the importance of **energy transitions** to achieve emissions reductions and for those countries that are determined to implement the Paris Agreement; and we note the linkage between country-driven energy transitions that provide **affordable and reliable energy** and the important role of energy markets and innovation in providing **energy security, economic growth, and a cleaner environment**.

### *Energy Transitions towards Cleaner, more Flexible and Transparent Systems*

We welcome the approach of Argentina's G20 Presidency, which recognizes that there are **different possible national paths to achieve cleaner energy systems** — while promoting sustainability, resilience and energy security — under the term "transitions" (in plural). This view reflects the fact that each G20 member — according to its stage of development — has a unique and diverse energy system as starting point, with different **energy resources, demand dynamics, technologies, stock of capital, geographies and cultures**.

While it is important to acknowledge that fossil fuels still play a major role, we stress the need to successfully transform **energy systems**, by increasing investments in **cleaner technologies, cooperation in energy efficiency and deployment of renewables and innovation**.

We reaffirm G20's leading role in encouraging effective **energy transitions processes**, through combined efforts on both the demand and supply sides. These processes should involve a cost—effective approach, including in their design not only environmental, but also social and economic dimensions.

#### *Energy Efficiency*

We recognize the work of the Task Groups of the **Energy Efficiency Leading Programme (EELP)** in different sectors and uses. We also encourage to significantly scale up public and private investments and financing in energy efficiency across all sectors to help to achieve the **energy transitions**.

#### *Renewable Energy*

We recognize that system integration of variable renewable energy is **crucial for electricity security** and expanded deployment of renewables, which includes a number of elements, such as **regional integration** of grids, **flexible power plants, electricity storage, grid stabilization** through digital technologies and demand—side management.

#### *Natural Gas*

We recognize the key role that **natural gas** currently plays for many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emission energy systems.

#### *Other Fossil Fuels*

For those G20 countries that opt to continue utilizing fossil fuels will endeavor to spur innovation through the use of advanced and **cleaner technologies** which will contribute to reduce emissions and encourage investment and financing in advanced and cleaner fossil fuels technology options (including **Carbon Capture, Utilisation and Storage**).

We reaffirm the importance of using the most advanced and cleaner technologies in order to address the environmental impacts, including **GHG emissions**, of the production, transport and consumption of fossil fuels. We encourage countries to enhance cooperation in developing and applying best available technologies.

#### *The Key Role of Innovation*

We will foster innovation as one of the key drivers of the energy transitions processes. We will encourage and facilitate research, development, demonstration and deployment (RDD&D) of innovative, cleaner and efficient energy technologies, recognizing the need for these to be competitive and commercially viable.

#### *Energy Data Transparency and Markets Digitalization*

We will promote market digitalization — minimizing the risks of malicious use of **ICT technologies** — with a view to increase flexibility and enable integration across entire systems, as well as to open up the opportunity for millions of **consumers, producers and investors** to sell electricity or provide valuable services to the grid.

### *Energy Security*

We stress the importance of diversification of energy sources, suppliers and routes, and the need to facilitate the proper conditions for continued and increasing investments to ensure **sustainable, affordable, reliable, resilient and cleaner energy systems**. Investment in **infrastructure** is essential, but a persistent financial gap remains. We encourage increased contributions from both public and private financial resources.

### *Energy Access and Affordability*

We recognize that energy is at the heart of economic growth and sustainable development, and that access to **modern energy services** and **clean cooking facilities** is one of the prerequisites for social and economic development.

We note the "**Energy Access and Affordability Voluntary Action Plan for Latin America and the Caribbean**" put forward by Argentina's G20 Presidency, which highlights the need to tackle energy service cost and affordability issues, in addition to access challenges. We will explore ways to further advance energy access, including through enhanced implementation of G20 regional plans and increase international financing for access, in particular for those countries that have limited financial resources.

## 2017 German Presidency

### G20 Leaders' Declaration (G20 2017)

We underline that making markets function better can contribute to reducing **food price volatility** and enhance **food security**. It is vital for farmers to be profitable and, along with consumers, have access to national, regional and international markets.

We welcome international cooperation on the development, deployment, and commercialization of sustainable and clean energy technologies and support financing by Multilateral Development Banks to promote **universal access to affordable, reliable, sustainable and clean energy**.

### G20 Agriculture Ministers' Declaration (G20 2017)

We emphasize there are a number of significant **challenges** that must be met if stable supplies of safe, nutritious and affordable food are to be provided for the global population, that is expected to reach 8.5 billion by 2030; these challenges include **climate change, urbanization, conflict and the limited availability of energy and natural resources**, such as **land and water, and their increased degradation**.

#### *Implementation of the 2030 Agenda for Sustainable Development*

We underscore the importance of the 2030 Agenda for **Sustainable Development** as a global plan of action that calls for input by all relevant stakeholders. We take seriously our responsibility to achieve the **agriculture-related goals (especially SDG 2)** and targets in order to end **hunger**, ensure **global food security** and improved **nutrition** and promote **sustainable agriculture**.

We underline that sustainable and resilient agriculture contributes significantly to achieving a wide range of SDGs, including through its links to food security and nutrition, poverty eradication, health, women's empowerment, employment, economic development, climate change and the environment, including soil and biodiversity.

We emphasize that water is an essential production resource for agriculture and is therefore critical for feeding the growing world population.

#### *Agriculture and Water*

We underscore that the agricultural sector must contribute to achieving good quality of water and water-related ecosystems. Therefore we aim to foster the efficient and environmentally friendly use of all agricultural inputs and the application of sustainable agricultural production practices, including livestock husbandry, soil management and water conservation.

#### *Information and communication technologies (ICT) in agriculture*

We acknowledge the potential and increasing importance of ICT for improved **food chain efficiency, productivity and sustainability of agriculture**, improved **animal husbandry practices** and for adaptation and mitigation strategies in the context of climate change. We emphasize ICT's potential to enhance the quality of life and improve business opportunities in rural and remote areas

#### *Agricultural Market Information System (AMIS)*

We reiterate our support for the implementation of the Global Action Plan on **Antimicrobial Resistance** published by the WHO in collaboration with OIE and FAO and encourage the relevant international bodies to take their work forward.

#### *Combating Antimicrobial Resistance (AMR)*

We acknowledge that emergence of AMR is an increasing threat to global health. Therefore **agriculture** must provide an important contribution to containing the development and spread of antimicrobial resistance in line with the '**one health**' approach. We reiterate our support for the implementation of the Global Action Plan on Antimicrobial Resistance published by the WHO in collaboration with OIE and FAO

#### *Agriculture trade and investment*

We underline that making markets function better can contribute to reducing **food price volatility** and enhance food security. We underscore that it is vital for farmers to be profitable and, along with consumers, have access to national, regional and international markets.

## 2016 Chinese Presidency

### G20 Leaders' Communiqué (G20 2016)

We stress that continued investment in energy projects and better regional interconnection, particularly in sustainable energy projects, **remains critically important** to ensuring future **energy security** and preventing economically **destabilizing price spikes**.

We endeavor to work with Sub-Saharan and Asia-Pacific countries to improve universal access to affordable, reliable, clean, sustainable and modern energy services, particularly by addressing barriers to electricity access.

We will explore innovative collaborative arrangements for international cooperation on **energy efficiency**. We endorse the G20 Voluntary Collaboration Action Plan on Energy Access, the G20 Voluntary Action Plan on Renewable Energy and the G20 Energy Efficiency Leading Programme issued by the G20 energy ministers and ask them to meet regularly to follow up on the implementation of these plans.

We welcome G20 countries' progress on their commitments and look forward to further progress in the future. Further, we encourage G20 countries to consider participating in the voluntary peer review process. Given that **natural gas** is a less emission-intensive fossil fuel, we will enhance collaboration on solutions that promote **natural gas extraction, transportation, and processing** in a manner that minimizes environmental impacts. We stress the importance of diversification of energy sources and routes

### G20 Agriculture Ministers Meeting Communiqué (G20 2016)

We stress that ensuring **food security and nutrition** requires global efforts with a special focus on developing countries, and it is in these countries where the multi-tiered and multi-faceted governance systems for food security should be built.

We recognize the importance of being farsighted and the necessity of advancing agricultural development globally in a sustainable manner. We note that promoting **sustainable agriculture** is an important part of the 2030 Agenda for **Sustainable Development**. Agriculture's links with **inclusive rural development, poverty reduction and environmental protection** underline its importance in achieving SDGs that reflect economic, social and environmental targets.

We maintain that G20 members should coordinate and continue to play a leading role in identifying issues of global concern, coordinate efforts, and in collaboration with organizations such as the **Food and Agriculture Organization** of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and World Food Programme (WFP), work in an innovative and prioritized manner, to further contribute to the improvement of local, national, regional, and global food security and nutrition.



**Science, technology and social innovation** play an important and leading role in sustainable agricultural growth. We value the fundamental significance of **agricultural research and development (R&D)** for the benefit of all.

We support the efforts made to carry out R&D innovation by international organizations and initiatives including the Consultative Group for International Agricultural Research (CGIAR). We encourage G20 members to participate in and recognize the importance of open data and statistics networks. We support increasing exchanges in **agricultural innovations**, and sharing relevant policy experience and successful practices

We stress that, smallholder farmers face crucial challenges in addressing globalization, increasingly complex **food value chains**, pressures on **natural resources**, and the adverse effect of **climate change**.

**Technical skill upgrading**, especially for smallholder farmers and rural workers, is crucial for sustainable agricultural development. We stress that training programmes should focus on innovative farming practices and technologies that promote sustainable production, business skills, as well as basic education and best practices to cope with downstream market concentration.

We stress the need of greater **agricultural investment** by the **governments**, consistent with the World Trade Organization (WTO) rules, and also by the **private sector** in developed and developing countries, so as to meet the demand of the growing world population and address the sluggish agricultural growth and uneven regional development.

We will promote institutional innovation in improving **agricultural production systems**, giving full play to the active role of all types of food producers, enhancing the degree of sustainable agricultural intensification and organization, and better enabling family farmers and smallholders, in particular, women and young people, to integrate into the **food value chain**.

## 2015 Turkish Presidency

### G20 Leaders' Declaration ([G20 2015](#))

We endorse the **G20 Energy Access Action Plan: Voluntary Collaboration on Energy Access**, the first phase of which focuses on enhancing electricity access in Sub-Saharan Africa where the problem is most acute.

We recognize that actions on energy, including improving energy efficiency, increasing investments in clean energy technologies and supporting related research and development activities will be important in tackling climate change and its effects. We endorse the **G20 Toolkit of Voluntary Options for Renewable Energy Deployment**.

We also highlight the progress made this year by participating countries in taking forward our collaboration on energy efficiency and agree to further support on a voluntary basis the 2015 outcomes of existing work streams on efficiency and emissions performance of vehicles, particularly heavy duty vehicles, networked devices, buildings, industrial processes and **electricity generation**, as well as financing for **energy efficiency**.

### G20 Agriculture Ministers' Final Communiqué ([G20 2015](#))

We recognize the important role of the private sector in making the investments and developing the technologies and good practices needed to enhance productivity, efficiency and sustainability in food value chains and we will dedicate ourselves to making increased efforts to engage with the private sector.

**Productivity improvement** can be promoted by adopting technologies and sharing knowledge as much as new research and innovation. We recognize that adoption will not happen without favorable policy and regulatory environments and effective and locally adapted technical advisory and extension services.

Taking into account the role played by agricultural policy in promoting **sustainable food systems** and **food security**, we call for greater cooperation and exchange of information among G20 members on policy experiences and successful practices in these respects and their sharing with non- member countries.

We note with great concern the significant extent of **food loss and waste** throughout **food value chains** and their negative consequences for food security, nutrition, use of natural resources and the environment. We highlight this as a global problem of enormous **economic, environmental and societal** significance and encourage all G20 members to strengthen their efforts to address it.

We recognize that while specific actions to combat food loss and waste may vary by country and **food system**, priority of action should be based on prevention and recovery of safe and nutritious otherwise

wasted food to feed people rather than repurposing it for other uses. We acknowledge the importance of promoting this hierarchy of action to improve **food system efficiencies** and reduce **food insecurity**, taking into account national circumstances and market-based approaches.

Responsible investment in **sustainable and resilient food systems** should raise productivity to expand food supplies and increase incomes and quality jobs in rural areas, especially for women and youth, reducing poverty and contributing to the **G20's inclusive growth agenda**. Our Leaders underscored that food security and nutrition is a top priority for the G20 and endorsed the **G20 Food Security and Nutrition Framework in 2014**.

We reaffirm the Rome Declaration on Nutrition adopted by the Second International Conference on Nutrition. We welcome the policy options and strategies proposed in the voluntary Framework for Action and strongly encourage governments and other stakeholders to incorporate them into their national food and nutrition strategies as appropriate.

**Sustainable food systems** can help promote not only **food security** and the more **sustainable use of natural resources** but also economic and social opportunities through quality jobs especially for smallholders, rural women and youth.

### **G20 Energy Ministers Meeting (G20 2015)**

We, the G20 Energy Ministers, meeting for the first time as mandated by our Leaders in Brisbane, affirm our commitment to **inclusive energy collaboration** in order to help address the energy challenges of today and those of the future.

#### *Access to Energy for All*

We recognize the contribution of the G20 itself to furthering coordination and cooperation among international and regional energy institutions and its effectiveness facilitating a variety of international organizations to work together.

We are supportive of continuing our work with international and regional organizations in an inclusive manner and we welcome their increased collaboration. We will also work together to make international energy institutions more representative and inclusive of emerging and developing economies while taking into consideration the specific objectives and mandates of international institutions and we note the ongoing processes for this purpose.

#### *Energy Security*

We emphasize the need for **sustainable energy security**, given the dynamic and uncertain energy landscape today, and our commitment to the improvement and enhancement of **energy security** through cooperation and dialogue on issues such as emergency response measures. We stress the importance of diversification of energy sources.

We support continued investments in the energy sector, taking into account the importance of current investments for ensuring future energy security.

#### *Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption*

We welcome the progress being made by a number of countries to rationalize and phase-out **inefficient fossil fuel subsidies** that encourage wasteful consumption, which may lead to a reduction in the associated market distortions and environmental damage while taking into account vulnerable groups and their development needs.

#### *Energy Efficiency*

We recognize the benefits of **energy efficiency**, including lower costs for households and businesses, greater economic productivity and growth, strengthened energy security, and improved environmental outcomes. We acknowledge the need for substantial improvement in countries' **energy efficiency performances**.

#### *Renewable Energy*

We emphasize the importance of renewables and its potential long-term growth. **Renewable energy** use is on the rise and this trend is expected to continue in the future. We recognize that, while markets, technologies and policies vary from country to country, enhancing renewables investments through innovation, risk mitigation and the deployment of conducive policy frameworks, in accordance with national priorities and contexts, can contribute to an environmentally sound, socially and economically sustainable development path.

#### *Innovative Energy Technologies, including clean energy technologies*

We acknowledge the importance of innovative **energy technologies to deliver secure, affordable, reliable, viable and sustainable energy in a challenging energy world**. We recognize the important role of the private and public sectors in making the investments and developing the technologies and good practices needed to enhance productivity, efficiency and sustainable development.

We also support continued **investment in research and development**, demonstration and the deployment of innovative energy technologies across a broad range of energy sources, including clean energy technologies.

In addition we support increased international coordination on **clean energy research and development. Such actions can enhance energy security, boost economic growth, create jobs and business opportunities, support** greater levels of energy access and provide environmental benefits.

#### *Climate Change*

We recognize that 2015 is a critical year to take strong and effective action to tackle **climate change** and its effects and that actions on energy, including improving energy efficiency and increasing

investments in clean energy **technologies** will be important. In this regard, we welcome the **Intended Nationally Determined Contributions (INDCs)** that have been submitted thus far.

## 2014 Australian Presidency

### **G20 Leaders' Declaration (G20 2014)**

The G20 Food Security and Nutrition Framework will strengthen growth by lifting investment in food systems, raising productivity to expand food supply, and increasing incomes and quality jobs. We support efforts in the United Nations to agree an ambitious post-2015 development agenda. The G20 will contribute by strengthening economic growth and resilience.

Increased collaboration on energy is a priority. **Global energy markets** are undergoing significant transformation. Strong and resilient energy markets are critical to economic growth. Today we endorse the **G20 Principles on Energy Collaboration**.

Improving energy efficiency is a cost-effective way to help address the rising demands of sustainable growth and development, as well as energy access and security. It reduces costs for businesses and households. We have agreed an **Action Plan for Voluntary Collaboration on Energy Efficiency** processes; and electricity generation; as well as work on financing for **energy efficiency**.

## 2013 Russian Presidency

### G20 Leaders' Declaration (G20 2013)

We acknowledge that food security and nutrition will remain a top priority in our agenda. We recognize the importance of boosting agricultural productivity, investment and trade to strengthen the global food system to promote economic growth and job creation. We encourage all ongoing efforts in the agricultural sector to further reduce hunger, under-nutrition and malnutrition, through increased coordination in the G20 to promote the identification and implementation of effective actions in support of production and productivity growth as well as enhancement of food security and nutrition for vulnerable population through, among others, nutrition sensitive policies and comprehensive social protection systems, with particular emphasis on low income countries.

We recognize that the agricultural market situation needs closer attention and that the **Agricultural Market Information System (AMIS)** is generating better transparency and still needs more efforts to be fully implemented. We reaffirm our determination to implement all previous G20 commitments and existing initiatives including that stated in the Action Plan on Food Price Volatility and Agriculture which the G20 endorsed in 2011.

We welcome efforts aimed at promoting **sustainable development, energy efficiency, inclusive green growth and clean energy technologies and energy security** for the long term prosperity and well being of current and future generations in our countries.

We will continue in cooperation with international organizations sharing national experiences and case studies regarding sustainable development, clean energy, and energy efficiency as well as development, deployment and broader application of related technologies and will take forward work, on a voluntary basis, on corresponding policy options and technologies.

Many countries are trying to improve their energy mix and use, such as by promoting **renewable** and/or nuclear energy. **Nuclear** power is a low-carbon option, but it is capital intensive and comes with responsibilities for nuclear safety, security and safeguards/nonproliferation. G20 countries, whether nascent or established nuclear power producers should strive for the highest possible level of nuclear safety, to foster robust nuclear safety and nuclear security cultures and, as called for in the International Atomic Energy Agency (IAEA) Action Plan on Nuclear Safety, we encourage multilateral cooperation towards achieving a global nuclear liability regime.

We recognize the value of multilateral cooperation and coordination in advancing the **global energy security** agenda through resilient energy markets and welcome the IEA's current efforts to deepen its engagement with non-members and will monitor progress in this regard.

## 2012 Mexican Presidency

### G20 Leaders' Declaration (G20 2012)

We recognize that increasing production and productivity on a sustainable basis while considering the diversity of agricultural conditions is one of the most important challenges that the world faces today. The crisis in the Sahel and the Horn of Africa also underscores that strengthening emergency and long-term responses to food insecurity remains a pressing challenge.

We recognize the need to adapt agriculture to climate change and we recognize the importance of improving the efficiency of water and soil use in a sustainable manner. To this end, we support the development of and a greater use of available technologies, well-known practices and techniques such as soil fertility enhancement, minimum tillage and agroforestry, and call upon international organizations to provide a report on science-based options to improve the efficiency of water use in agriculture including in ways particularly suitable for small farms.

We recognize the importance to the global economic recovery of maintaining stability in international commodity markets. We stress the importance of well-functioning and transparent physical and financial commodities' markets and reduced excessive price volatility to achieve food security and strong growth that is both sustainable and inclusive.

We recognize that **excessive commodity price volatility** has significant implications for all countries, increasing uncertainty for actors in the economy and potentially hampering stability of the budgets, and predictability of economic planning. We recognize that mitigating the negative effects of commodity price volatility on the most vulnerable is an important component of reducing poverty and boosting economic growth.

### G20 Agriculture Vice Ministers/Deputies Meeting Report (G20 2012)

We support the TAP to achieve its goals for fostering the generation, sharing and utilization of agricultural technologies and practices for smallholders in developing countries.

Considering that increasing access to, and efficient use of agricultural inputs in developing countries, constitutes a key strategy to boost productivity among smallholders, we stress the importance of improving the functioning of input markets

We welcome the launch of the Pilot Projects of the Agriculture Pull Mechanism (AGPM): nutrient fortified crops, post-harvest storage solutions and crop quality technologies in Sub-Saharan Africa, and continue to support the promotion of innovative funding for agricultural research needs, mainly in low income countries

We stress the need of deepening international cooperation to foster linkages between **climate change** and food security in accordance with UNFCCC principles and provisions as well as the work done by



UNFCCC in this regard. We take note of the ongoing work of the Global Research 12/16 Alliance on Agricultural Greenhouse Gases and of the Second Global Conference on Agriculture, Food Security and Climate Change.

The humanitarian crisis in the Horn of Africa underscores the urgent need to strengthen emergency and long-term responses to food insecurity. In accordance with our Multi-Year "Action Plan on Food Price Volatility and Agriculture", we:

- Support, for those involved, the implementation of the **L'Aquila Food Security Initiative** and other initiatives, including the Global Agriculture and Food Security Program;
- Launch a platform for tropical agriculture to enhance capacity-building and knowledge sharing to improve agricultural production and productivity;
- Foster smallholder sensitive investments in agriculture and explore opportunities for market inclusion and empowerment of small producers in value chains;
- Support risk-management instruments, such as commodity hedging instruments, weather index insurances and contingent financing tools, to protect the most vulnerable against excessive price volatility, including the expansion of the Agricultural Price Risk-Management Product developed by the **World Bank Group** (IFC). We ask international organizations to work together to provide expertise and advice to low-income countries on risk-management and we welcome the NEPAD initiative to integrate risk management in agricultural policies in Africa;
- Confirm our commitment to scaling-up nutrition through a combination of direct nutrition interventions and the incorporation of nutrition in all relevant policies.

We stress the importance of well-functioning and transparent physical and **financial energy markets, reduced excessive price volatility, improved energy efficiency and better access to clean technologies**, to achieve strong growth that is both sustainable and inclusive.

## 2011 French Presidency

### G20 Leaders' Declaration (G20 2011)

We agreed to mobilize the G20 capacities to address these key challenges, in close cooperation with all relevant international organizations and in consultation with producers, civil society and the private sector.

We support the development and deployment of clean energy and energy efficiency (C3E) technologies.

### G20 Agriculture Ministers Meeting

#### Action Plan on Food Price Volatility and Agriculture (G20 2011)

We stress the need to increase agricultural production and productivity on a sustainable basis. It requires improvements in land and water management, improved **agricultural technologies**, an appropriate and enabling environment which could lead to increased investments notably from the private sector, well-functioning markets and means to mitigate and manage risks associated with excessive **price volatility of agricultural commodities**.

We reaffirm the right of everyone to have access to safe, **sufficient and nutritious food**, consistent with the progressive realization of the right to adequate food in the context of national food security.

We stress the need to increase agricultural production and productivity on a sustainable basis. It requires improvements in land and water management, improved agricultural technologies, an appropriate and enabling environment which could lead to increased investments notably from the private sector, well-functioning markets and means to mitigate and manage risks associated with excessive price volatility of agricultural commodities.

We also insist on the need to enhance the transfer of the research results and technologies to farmers and to ensure that research activities respond to their needs and concerns and involve farmers in that process.

We stress the importance of research and development on **agricultural productivity**, including on orphan crops and crops most suitable for developing countries climate and constraints, such as legumes, making the best use of all available plant genetic resources for food and agriculture.

We stress the importance of strengthening rice **research and development** and the dissemination of its outcome and relevant cultivation technique to accelerate production and productivity growth in rice producing countries, particularly in Asia and Africa, through among others the **CGIAR, the International Rice Research Institute (IRRI), the Global Rice Science Partnership (GRiSP) and the Coalition for African Rice Development (CARD)**

We decide to launch the Agricultural Market Information System (AMIS) in order to encourage major players on the agri-food markets to share data, to enhance existing information systems, to promote greater shared understanding of food price developments, and further policy dialogue and cooperation.

We support the Global Strategy to Improve Agriculture and Rural Statistics and we invite international organizations to create synergies between this Global Strategy and AMIS.

For developing countries which need to improve and enhance progressively their food security information systems, including national early warning systems and vulnerability assessment and monitoring systems, we stress the need to implement capacity building actions, in conjunction with AMIS, through existing mechanisms, in particular in FAO, WFP and IFAD.

We commit to improving public-private partnership. In order to facilitate this, AMIS will have a framework to ensure the confidentiality of proprietary and sensitive information.

In order to improve crop production projections and weather forecasting, with the use of modern tools, in particular remote sensing tools, we decide to launch, via the Group on Earth Observation, an international voluntary network of agricultural production monitoring based on geoinformation. This “Global Agricultural GeoMonitoring Initiative” will be a useful input for AMIS concerning the provision of more accurate crop forecasts data.

As far as public health, animal health and plant health are concerned, we stress the importance of strengthening international and regional networks, international standard setting taking into account national and regional differences, information, surveillance and traceability systems, good governance and official services, since they ensure an early detection and a rapid response to biological threats, facilitate trade flows and contribute to global food security.

Building on the AMIS initiative, we stress the need to improve international policy coordination at the senior agriculture policy officials level to share views and plans for immediate actions in order to prevent or mitigate world food price crises.

We support increased country-led efforts to provide vulnerable households (including producers’ households), communities and governments with an effective, market-based risk management tool-box that reduces household and community vulnerability to economic and climatic shocks.

We stress the need to develop in-country capacity building and other efforts to make it easier for farmers, firms and governments to access appropriately regulated risk management markets.

We recognize that modern, flexible and diversified food assistance, relying on a wide range of instruments which ensure that the specific needs of target populations are addressed, remains a critical tool to address food insecurity and mitigate the negative impact of high and volatile food prices on the most vulnerable. Against this background, we support initiatives to maximize efficient delivery of food assistance and strengthen supply chains against price and supply shocks, in particular through forward positioning networks and mainstreaming risk management in international food assistance procurements. We support the development of a proposal for a targeted emergency humanitarian food

reserves system to complement existing regional and national food reserves, in response to the expressed needs of developing countries.

We emphasize that AMIS will enable financial actors and market regulators to be better informed of the fundamentals of physical markets. Transparency on physical markets is important for derivatives markets and the reverse is also true.

## 2010 Korean Presidency

### **G20 Leaders' Declaration ([G20 2010](#))**

To promote resilience, job creation and mitigate risks for development, we will prioritize action under the Seoul Consensus on addressing critical bottlenecks, including infrastructure deficits, food market volatility, and exclusion from financial services.

### **The Seoul Summit Document ([G20 2010](#))**

We recognize that sustainable green growth, as it is inherently a part of sustainable development, is a strategy of quality development, enabling countries to leapfrog old technologies in many sectors, including through the use of energy efficiency and clean technology. To that end, we will take steps to create, as appropriate, the enabling environments that are conducive to the development and deployment of energy efficiency and clean energy technologies, including policies and practices in our countries and beyond, including technical transfer and capacity building.

We support the ongoing initiatives under the Clean Energy Ministerial and encourage further discussion on cooperation in &D and regulatory measures, together with business leaders, and ask our Energy Experts Group to monitor and report back to us on progress at the 2011 Summit in France.

## 2010 Canadian Presidency

### G20 Leaders' Declaration (G20 2010)

We are building not just bigger MDBs, but better MDBs, with more strategic focus on lifting the lives of the poor, underwriting growth, promoting security, and addressing the global challenges of climate change and food security. Implementation of these reforms has already begun, and we will continue to ensure that this work is completed and that further reforms are undertaken where necessary.

We also support the development of the private sector window of the GAFSP, which will increase private sector investments to support small and medium sized agri-businesses and farmers in poor countries.

## 2009 The United Kingdom's Presidency

### G20 Leaders' Declaration ([G20 2009](#))

We are determined not only to restore growth but to lay the foundation for a fair and sustainable world economy. To this end, we are making available resources for social protection for the poorest countries, including through investing in long-term **food security** and through voluntary bilateral contributions to the World Bank's Vulnerability Framework, including the Infrastructure Crisis Facility, and the Rapid Social Response Fund.

## 2009 The United States' Presidency

### G20 Leaders' Declaration (G20 2009)

We welcome and support the food security initiative announced in L'Aquila and efforts to further implement the Global Partnership for Agriculture and Food Security and to address excessive price volatility.

We stressed the importance of adopting a dynamic formula at the World Bank which primarily reflects countries' evolving economic weight and the World Bank's development mission, and that generates an increase of at least 3% of voting power for developing and transition countries, to the benefit of under-represented countries.

We will increase, on a voluntary basis, funding for programs to bring clean affordable energy to the poorest, such as the Scaling Up Renewable Energy Program.

We agree that development and reducing global poverty are central to the development banks' core mission. The World Bank and other multilateral development banks are also critical to our ability to act together to address challenges, such as climate change and food security, which are global in nature and require globally coordinated action.

We will promote energy market transparency and market stability as part of our broader effort to avoid excessive volatility.

Even before the crisis, too many still suffered from hunger and poverty and even more people lack access to energy and finance. Recognizing that the crisis has exacerbated this situation, we pledge cooperation to improve access to food, fuel, and finance for the poor.

To increase access to energy, we will promote the deployment of clean, affordable energy resources to the developing world.

In our Framework for Strong, Sustainable and Balanced Growth, we will assess the implications and consistency of fiscal and monetary policies, credit growth and asset markets, foreign exchange developments, commodity and energy prices, and current account imbalances.



### 3. The T20 Task Force on “Sustainable Energy, Food, and Water Systems”

The “Sustainable Energy, Water, and Food Systems” task force is a new theme, introduced at T20 Saudi Arabia, which focuses on the sustainable production and use of natural resources.

24 policy briefs were written on energy, water, and/or food in past T20s. These policy briefs were mostly embedded in the following task forces:

- Toward Ending Hunger and Sustainable Agriculture, by T20 Germany
- Food Security and Sustainable Agriculture, by T20 Argentina
- Climate Change & Environment, by T20 Japan
- Cooperation with Africa, by T20 Argentina and T20 Japan
- G20 and Africa, by T20 Germany
- Climate Policy and Finance, by T20 Germany

The proposed task force by T20 Saudi Arabia is an integration of the above-highlighted task forces.

#### T20 Saudi Arabia 2020

##### Task Force Description

The sustainability of the production and use of natural resources is a central theme of the task force. This task force will produce policy recommendations to enhance the management of energy, water and food systems and ensure security of supply for the global population in an efficient and sustainable way. The scale of existing networks and value chains and the manner in which deployment of new technologies and circular approaches contributes to the policy discourse will be examined. Options to accelerate the attainment of related sustainable development goals (SDGs) will be proposed. The task force also aims to provide guidance to achieve efficient transitions that reduce GHG emissions while allowing all economies to prosper. It will also offer recommendations on how to enhance international cooperation, infrastructure and institutions that help to ensure the stability of markets, for the joint benefit of both producing and consuming countries.

##### Task Force Priority

- Supporting sustainable and orderly transitions that create prosperity for all;
- Accelerating the attainment of related SDGs;
- Addressing challenges such as energy poverty, sustainability of the food-water-energy nexus, local stresses of urbanization, economic and environmental resilience;
- Energy security, market stability and economic and environmental vulnerabilities;

- Security and sustainability of agriculture and food and water supply and distribution networks;
- Beginning a broader dialogue on various energy transition strategies that recognize the roles of legacy, scale and technology and the regionally-specific nature of various potential pathways.

#### **Lead Chair**

- Hossa Al-Mutairi (Research Fellow at King Abdullah Petroleum Studies & Research Center [KAPSARC])

#### **Co-Chairs**

- Christophe Bonnery (Executive Vice President of the International Association for Energy Economics [IAEE] and President of the French Association for Energy Economics)
- James G. McGann (Director of Think Tanks and Civil Societies Program at the University of Pennsylvania)
- Kenneth B. Medlock III (Senior Director of the Center for Energy Studies at the Baker Institute for Public Policy)
- Rob Vos (Director of Markets, Trade and Institutions Division at the International Food Policy Research Institute [IFPRI])

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- Statement by Finance Minister Taro Aso on G20 Finance Ministers and Central Bank Governors Meeting under the Japanese Presidency: [https://www.mof.go.jp/english/international\\_policy/convention/g20/20181202.htm](https://www.mof.go.jp/english/international_policy/convention/g20/20181202.htm)
- Vision of Japan's G20 Presidency in the Finance Track: [https://www.mof.go.jp/english/international\\_policy/convention/g20/g20\\_priority.pdf](https://www.mof.go.jp/english/international_policy/convention/g20/g20_priority.pdf)

### 2018

- OECD-IEA Update on Recent Progress in Reform of Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption (September 2018): <http://www.oecd.org/g20/summits/buenos-aires/update-progress-reform-fossil-fuel-subsidies-g20.pdf>
- Energy Transitions in G20 Countries - Energy Data Transparency and Market Digitalization: <https://webstore.iea.org/energy-transitions-in-g20-countries-energy-data-transparency-and-markets-digitalisation>
- Energy Transitions in G20 Countries - Energy transitions towards cleaner, more flexible and transparent systems: <https://webstore.iea.org/energy-transitions-in-g20-countries-energy-transitions-towards-cleaner-more-flexible-and-transparent-systems>