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INTERGOVERNMENTAL PANEL ON climate change

STATEMENT OF DR. R. K. PACHAURI, CHAIRMAN,
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)
AT THE EIGHTEENTH CONFERENCE OF THE PARTIES
DOHA

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Your Excellency Dr. Abdullah Bin Hamad Al-Attiyah, President of COP 18,
Excellencies,
Madame Executive Secretary, Christiana Figueres,
Distinguished delegates,
Members of civil society,
Representatives of the media,
Ladies and gentlemen,

It is a privilege for me to be invited to address COP 18 in the city of Doha. I have been a student of the history of this region, and can look back on the period a thousand years ago when this region was a fountain of knowledge on subjects ranging from astronomy to chemistry. Today Qatar is moving again in the direction of knowledge, and I salute the leadership of this country for investing financial capital for creation of human capital and educational infrastructure. Qatar, therefore, promises to become in this day and age a source of new knowledge and enlightenment.

And it is new knowledge and enlightenment that must drive the level of ambition towards a satisfactory outcome in this COP 18. Hence I submit with deep humility the rich knowledge produced by the IPCC since its inception in 1988, a full four years before the UN Framework Convention on Climate Change came into existence. The drafting of the Convention benefited enormously from knowledge created in the First Assessment Report of the IPCC, and I would like to submit with due emphasis that knowledge from the recent work of the IPCC must drive and define decisions that need to be taken now to deal with the growing challenge of climate change. Let me place before you some findings of the Fourth Assessment Report (AR4) which outline the seriousness of impacts that would be faced by the world in the years ahead if we do not take timely and adequate action to limit the concentration of greenhouse gases (GHGs) in the earth's atmosphere, and if we do not adapt to the level of climate change which is now committed to happen.

On regional impacts, several important findings were put forward in the AR4. For instance, in respect of Africa it was stated that by 2020, between 75 and 250 million people are projected to be exposed to increased water stress due to climate change. Agricultural production, including access to food, in many African countries is projected to be severely compromised. This would further adversely affect food security and exacerbate malnutrition. By 2080, an increase of 5 to 8 per cent of arid and semi-arid land in Africa is projected under a range of climate scenarios.

Towards the end of the 21st century, projected sea level rise will affect low-lying coastal areas with large populations.

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The cost of adaptation could amount to at least 5 to 10 per cent of Gross Domestic Product (GDP).

Several abrupt and irreversible impacts were also highlighted in the AR4. Partial loss of ice sheets on polar land could imply metres of sea level rise, major changes in coastlines, and inundation of low lying areas, with greatest effects in river deltas and low-lying islands. Such changes are projected to occur over millennial timescales, but more rapid sea level rise on century timescales cannot be excluded.

Approximately 20 to 30 per cent of species assessed so far are likely to be at increased risk of extinction if increases in global average warming exceed 1.5 to 2.5°C above the 1980-1999 temperature. As global average temperature increase exceeds 3.5°C, model projections suggest significant extinctions ranging from 40 to 70 per cent of species assessed around the globe.

The IPCC has assessed that responding to climate change involves an iterative risk management process that includes both mitigation and adaptation, taking into account actual and avoided climate change damages, co-benefits associated with several actions, and addressing issues of sustainability, equity and attitudes to risk.

Our Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation has been acknowledged worldwide. It has found on the basis of evidence from observations gathered since 1950 of change in some extremes, that it is very likely there has been an overall decrease in the number of cold days and nights, and an overall increase in the number of warm days and nights, at the global scale, that is, for most land areas with sufficient data. There is medium confidence of a warming trend in daily temperature extremes in much of Asia. It is likely that there have been statistically significant increases in the number of heavy precipitation events (e.g., 95th percentile) in more regions than there have been statistically significant decreases, but there are strong regional and subregional variations in the trends. There is medium confidence that since the 1950s some regions of the world have experienced a trend to more intense and longer droughts, in particular in southern Europe and West Africa, but in some regions droughts have become less frequent, less intense, or shorter, for example, in central North America and northwestern Australia.

During the period from 1970 to 2008, over 95% of deaths from natural disasters occurred in developing countries. Middle-income countries with rapidly expanding asset bases have borne the largest burden. In small exposed countries, particularly small island developing states, losses expressed as a percentage of GDP have been particularly high, exceeding 1% in many cases and 8% in the most extreme cases, averaged over both disaster and non-disaster years for the period from 1970 to 2010.

Models project substantial warming in temperature extremes by the end of the 21st century. It is virtually certain that increases in the frequency and magnitude of warm daily temperature extremes and decreases in cold extremes will occur in the 21st century at the global scale. It is very likely that the length, frequency, and/or intensity of warm spells or heat waves will increase over most land areas.

Based on established IPCC emissions scenarios without additional mitigation measures, a 1-in-20 year hottest day is *likely* to become a 1-in-2 year event by the end of the 21st century in most regions, except in the high latitudes of the Northern Hemisphere, where it is *likely* to become a 1-in-5 year event.

It is *likely* that the frequency of heavy precipitation or the proportion of total rainfall from heavy falls will increase in the 21st century over many areas of the globe. This is particularly the case in the high latitudes and tropical regions, and in winter in the northern mid-latitudes. Heavy rainfalls associated with tropical cyclones are *likely* to increase with continued warming. There is *medium confidence* that, in some regions, increases in heavy precipitation will occur despite projected decreases in total precipitation in those regions.

Neither adaptation nor mitigation alone can avoid all climate change impacts; however, they can complement each other and together can significantly reduce the risks of climate change. Many impacts can be reduced, delayed or avoided with mitigation, as we stated in the AR4.

Fossil energy use is responsible for about 85% of the anthropogenic CO2 emissions produced annually. Natural gas is the fossil fuel that produces the lowest amount of GHG per unit of energy consumed and is therefore favoured in mitigation strategies, compared to other fossil fuels.

The AR4 assessed a range of economically viable and technologically feasible mitigation options. We found, for instance, that mitigation opportunities with net negative cost have the potential to reduce emissions by about 6 gigatons of C02 equivalent per year in 2030. Realising these requires dealing with implementation barriers. Policies that provide a real or implicit price of carbon could create incentives for producers and consumers to significantly invest in low-GHG products, technologies and processes.

In the Special Report on Renewable Energy Sources and Climate Change Mitigation, we have found, for instance, that deployment of renewable energy (RE) has been increasing rapidly in recent years. Various types of government policies, the declining cost of many RE technologies, changes in the prices of fossil fuels, an increase of energy demand and other factors have encouraged the continuing increase in the use of RE. The levelized cost of energy for many RE technologies is currently higher than existing energy prices, though in various settings RE is already economically competitive. Monetizing the external costs of energy supply would improve the relative competitiveness of RE. RE can help accelerate access to energy, particularly for the 1.4 billion people without access to electricity and the additional 1.3 billion using traditional biomass.

A significant increase in the deployment of RE by 2030, 2050 and beyond is indicated in the majority of the 164 scenarios reviewed in this Special Report. The global primary energy supply share of RE differs substantially among the scenarios. More than half of the scenarios show a contribution from RE in excess of a 17% share of primary energy supply in 2030 rising to more than 27% in 2050. The scenarios with the highest RE shares reach approximately 43% in 2030 and 77% in 2050.

There are now many low stabilisation scenarios available through the SRREN - relevant for the review of the two 2 degree target, and there are scenarios included in the SRREN moving away from the typical perfect world assumptions that have been used previously.
Substantial progress has been made with preparation of the Fifth Assessment Report (AR5). I must express my deep gratitude to the scientific community for the overwhelming enthusiasm they have displayed in being involved with the AR5. We had an unprecedented number of approximately 3,000 nominations of outstanding scientists who volunteered to work on the AR5. The IPCC selected 831 out of this number as Lead Authors and Review Editors for direct involvement in the preparation of the Report. If we add the large number of

Expert Reviewers we get a massive magnitude of thousands of scientists engaged in the preparation of the AR5. All of these thousands contribute their expertise and hard work on a voluntary basis. They deserve all our gratitude and support, and more specifically the direct support of governments. Only though this system is the broadest scientific basis of a comprehensive assessment guaranteed.

The AR5 has several novel features which on the basis of new published material would add a significant amount of new knowledge beyond that of the AR4. The First Order Draft (FOD) of the Summary for Policymakers (SPM) of the WGI Report is now out for review. From the literature and the science performed since mid 2006 (the cutoff for WGI in AR4), we now have a much more comprehensive and extended view and understanding of a changing planet, with for example a better appreciation of mass loss of the large ice sheets of Greenland and Antarctica where satellite missions planned in the 1990s now bear fruit. This is leading to a more quantitative understanding of ongoing sea level rise which is also reflected in the fact that WGI dedicates an entire chapter on this in the AR5. Similar statements can be made on clouds and aerosols, the latter also being significant for air quality and health.

In the case of the WG II, core themes in the framing of the contribution to the AR5 include the central role of managing risk in dealing with climate change, the importance of recognizing the diversity of values and value systems that stakeholders bring, the recognition that consequences of investments in mitigation are delayed by decades, placing a priority on effective adaptation in the near term, the essential continuity between adaptation and mitigation and the role of links to sustainable development, and the critical importance of impacts altered by multi-stressor interactions.

In the case of WGIII, an innovation in AR5 is the “Human Settlements, Infrastructure and Spatial Planning” chapter. This is important because while urban planning is referenced in AR4 there is no comprehensive survey on the role which urban planning can play in adaptation and mitigation. WGIII is also providing greater emphasis on social science aspects of mitigation measures. For the first time, WG III is going beyond the technical aspects and into the social science aspects. WG III AR5 Report is also providing greater focus on technologies, sectors and regions, in order for the distribution of risks and costs to be more specific, i.e, there is less reliance on averages. And finally, it is focusing more explicitly on mitigation options, costs, strategies and policy requirements, with a more integrated approach to adaptation and mitigation.

When I had the privilege in 2007 of accepting the Nobel Peace prize on behalf of the IPCC, in my speech on the occasion I asked the rhetorical question “Will those responsible for decisions in the field of climate change at the global level listen to the voice of science and knowledge, which is now loud and clear?” I am not sure our voice is louder today, but it is certainly clearer on the basis of new knowledge. I hope the world at large and this august audience would shape their actions on the basis of scientific evidence on all aspects of climate change and projections of the future, a future that we are all responsible for.

Thank you.