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**CLIMATE INSECURITIES, HUMAN SECURITY AND SOCIAL RESILIENCE
CONFERENCE
FOUR SEASONS HOTEL, SINGAPORE
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Distinguished Speakers,

Ladies and Gentlemen,

Good morning. On behalf of Nanyang Technological University, S. Rajaratnam School of International Studies, and the RSIS Centre for Non-Traditional Security Studies, I am pleased to welcome you today to the opening of the Climate Insecurities, Human Security and Social Resilience Conference. And to all our overseas participants, a very warm welcome to Singapore.

Our conference today marks a significant moment. This conference serves as the ‘kick off’ for the NTS-MacArthur Asia Security Initiative project on climate change and environmental security led by the RSIS Centre for NTS Studies. As some of you may already know, the MacArthur Foundation has sponsored, on an unprecedented scale, a grant of US\$ 68 million for a number of initiatives in the field of security studies that examine emerging security challenges in Asia and how international cooperation can be made more effective to address these complex challenges. This programme called the Asia Security Initiative or ASI is organised into three research clusters covering a wide range of subjects. The third cluster, for which the RSIS Centre for NTS Studies serves as a Core Institution, covers Internal Challenges, which involves regional cooperation to assist states in managing Internal Challenges.

In managing the programme on Internal Challenges, RSIS will focus on four transnational security programmes and challenges. One of these programmes is the Environmental and Climate Change programme which will study the linkages between state and social resilience with regional climate security.

This brings us to the theme of today's conference. Traditionally seen as an environmental and an energy issue, climate change is now being recast as a threat to international peace and security. There have been some attempts to construct scenarios of the ways in which warming temperatures might undermine security on a global scale. But the security impacts of climate change at the level of countries have been lost in the political rhetoric.

For years, global warming was discussed in the hypothetical--a threat in the distant future. Now it is increasingly regarded as a clear, observable fact. This sudden shift means that all of us must start thinking about the many ways global warming will affect us, our communities, our properties, and our economic prospects.

When climate scientists use the word adaptation, they are referring to actions intended to safeguard a person, community, business or country against the effects of climate change. Its complement is mitigation--any measure that will reduce greenhouse-gas emissions, such as drawing power from a wind turbine rather than a coal-fired power plant. Mitigation addresses, if you will, the front end of the global-warming problem; by cutting emissions, it aims to slow rising temperatures. Adaptation is the back end of the problem--trying to live with the changes in the environment and the economy that global warming has and will continue to generate.

Mitigation and adaptation are both climate change risk management strategies. Both target climate change but in markedly different ways. A simple characterization of the differences would describe mitigation as damage prevention and adaptation as damage control.

Despite ongoing efforts, both academics and policymakers are still unable to characterize the tradeoffs between mitigation and adaptation, either in theory or in practice. The optimal time path for mitigation and adaptation in the presence of both uncertainty and catastrophic damages has yet to be tested empirically. It is probably not a simple matter of 'mitigate now, adapt later,' but a more complicated and interesting mix that depends on national characteristics such climate vulnerability (wealth + risk), finding the right balance between the two strategies, and being able to effectively engage the international community in addressing the challenges brought on by

climate change. However with the privileging of mitigation over adaptation, it makes for the focus on adaptation more compelling.

For years, adaptation was overlooked or disparaged in policy circles; many complained that even discussing it was a sell-out that gave governments and others an excuse not to act. Today adaptation has become an accepted part of the discussion. Adaptation to climate change is now inevitable. The only question is whether it will be by plan or by chaos.

The need for adaptation is rooted in the unhappy fact that we can't turn global warming off, at least not anytime soon. The momentum of the climate system--carbon dioxide remains in the atmosphere for decades, while oceans store heat for centuries--ensures that no matter how much humanity cuts greenhouse-gas emissions, our previous emissions will keep warming the planet for decades. Even if we were to magically stop all emissions today, temperatures will keep rising, and all the impacts will keep changing for about 25 years. So while we strive to green our economies, we must also mount a major new effort to strengthen our resilience against the impact on the climate that our past emissions have set in motion. In the context of a developing Asia, both mitigation and adaptation must be tackled evenly. Within Southeast Asia, most countries are not considered major contributors to greenhouse gas emissions as yet. This however will change in the coming years as increases in population and urban centres are growing at an exponential rate. This will mean an increase for all resources, land, water, food and energy.

So what are the impacts and vulnerabilities of climate change on countries in Southeast Asia? I will touch on this briefly, as I am certain that it will be covered in greater detail by our speakers.

Let me start with the issue of food security. The Food and Agriculture Organisation defines food security in four dimensions, namely food availability, access to food, stability of food supply and utilization of food. This goes far beyond food production. In the short term, socio-economic factors such as those linked with market forces may dominate food security. However, in terms of the long-term stability and sustainability of food production and food supply, environmental factors become crucial. Food insecurity vulnerability patterns will be modified by climate

change. Small-scale rain fed farming systems, pastoralist systems, inland and coastal fishing and aquaculture communities, and forest-based systems are particularly vulnerable to climate change. Moreover, the urban poor, particularly in coastal cities and floodplain settlements face increasing risks. Generally, impacts of climate change on smallholder and subsistence farmers, pastoralists, artisanal fisher folk and forest dwellers including indigenous people are complex and highly localized. Vulnerability also varies within communities, dependent on factors such as land ownership, gender, age and health.

Food security must be regarded as one of the main criteria for the effectiveness of adaptation at the national and local levels. Food security considerations should be made explicit in adaptation of the agriculture, forestry and fisheries sectors to climate change and variability. This can be achieved by raising awareness of policy-makers, providing incentives and promoting the most resilient food production systems.

The other salient issue I would like to highlight are the different kinds of human insecurities brought on by climate change on the coastlines of South East Asia. These coastlines are highly vulnerable to the effects of climate change due to the geology and geography of some of the region's coastal areas, the growing density population and infrastructure in the coastal zone. Moreover, large tidal variations, tropical cyclones, coupled with the potential increase in regional rainfall, suggest the potential for increased coastal hazard. In particular, sea-level rise is the most obvious climate-related impact in coastal areas. Densely settled and intensively used low-lying coastal plains, islands, and deltas are especially vulnerable to coastal erosion and land loss, inundation and sea flooding, upstream movement of the saline/freshwater front, and seawater intrusion into freshwater lenses.

Especially at risk are the large deltaic regions of Myanmar, Vietnam, and Thailand, and the low-lying areas of Indonesia, the Philippines, and Malaysia. International studies have projected the displacement of several million people from the region's coastal zone in the event of a one meter rise in sea level. The costs of response measures to reduce the impact of sea-level rise (30-50 cm) in the region could amount to millions of dollars per year. These will inevitably lead to an increase in internal and cross-border migration and its attendant security implications.

I have chosen to focus on these areas as studies show that the projected impacts of climate change can vary greatly due to the development pathway assumed. For example, there may be large differences in regional population, income and technological development under alternative scenarios, which are often a strong determinant of the level of vulnerability to climate change. This difference is largely explained, not by differences in changes of climate, but by differences in vulnerability.

In conclusion, other looming problems, including the financial, food and energy crises may tempt countries to take a defensive stance and ignore the growing plight of people. Indeed, the current economic situation could even be an excuse to ignore the consequences of worsening climatic conditions. We now find ourselves in a defining moment where short-sightedness could prove fatal. As the UN Secretary General, Ban Ki-moon said recently, “The human suffering will be incalculable” – this encapsulates the climate change impact on human security.

Thank you and have a pleasant conference.

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