**CSCAP DRAFT MEMORANDUM ON**

**THE SECURITY IMPLICATIONS OF CLIMATE CHANGE**

## EXECUTIVE SUMMARY

**Climate change poses significant security risks to the Asia-Pacific region, including: decreasing energy access, decreasing access to food, increased frequency and intensity of hydro meteorological disasters, population displacement, increased public health problems, and water stress. The kinds of responses that could help manage these climate security risks include: policy and institutional strengthening; regional and international cooperation; monitoring, research and technology; public awareness, education and training; and finance and resource mobilization. It would be prudent to begin implementing these responses in the near term, recognizing that there is uncertainty about the timing of these security risks, some of which will emerge gradually, and some of which may be rapid onset and catastrophic in nature.**

## INTRODUCTION

Assessment reports from the Intergovernmental Panel on Climate Change show that climate change will have adverse effects on environmental and human systems in the Asia-Pacific region. While there remains considerable uncertainty about the vulnerability of environmental and human systems to climate change, some large-scale risks have been identified. These include: increases in the intensity of extreme heat events; increasingly variable rainfall, leading to more frequent and extreme flooding and drought events; decreasing winter rainfall across most of the region; an increase in the intensity of storms; increasing sea-levels; increasing water pollution; increasingly variable and in the long term declining runoff in river basins; decreasing crop productivity; and decreasing supplies of protein from coastal and pelagic fisheries. These changes will impact on sub-regions, countries, sectors, social groups and places in different ways, and at different times. Unless well managed, they may in turn increase security problems in the region.

## IMPLICATIONS OF CLIMATE CHANGE ON SECURITY IN ASIA PACIFIC

Based on a review of the available materials about climate change and security in the region, consultations with climate change and security experts, and the views of CSCAP members, climate security risks for the region have been identified. The security issue of concern is an increased risk of significant social, economic or political instability in one or more countries in the region. Achieving climate security is therefore consistent with the United Nations Framework Convention on Climate Change's objective to avoid dangerous climate change.

The primary drivers of climate security risks in the region are changes in mean temperature and precipitation, increasing climate variability, and sea-level rise and coastal change. The following climate security risks arise from these primary drivers:

**Energy availability**. Climate change is likely to impact on the supply of climate sensitive energy sources, in particular biomass and hydroelectricity. It is also likely to impact on infrastructure used to extract and distribute energy, for example oil and gas platforms and pipelines. The effects of

these impacts on security include: disruption of supply of energy needed for the health and wellbeing of the rural poor, and disruption of supply of energy needed by industries, households, and critical public services.

**Food access.** Climate change is likely to undermine agro meteorological conditions in the region, and coastal and marine fisheries, leading to declining yields and short term food production failures. It may also damage food transport and storage systems, and lead to rising food prices. These changes are likely to lead to widespread hunger and malnutrition, and social unrest.

**Hydro meteorological disasters.** Climate change is likely to increase the frequency and intensity of extreme events, which will have catastrophic outcomes on social systems that are sensitive to and lack the capacity to plan for and respond to these hazards. Such events may be immediate, and lead to widespread social disruption, including loss of life, injury and illness, damage to critical infrastructure, disrupted agricultural and industrial production, and livelihood shocks.

**Population displacement.** Climate change is likely to contribute to the movement of people within and across borders, over short and long periods of time, through its effects on livelihoods, health, and the sustainability of settlements. Large scale unplanned migrations may lead to social disruption by increasing: pressure on public goods and services, rivalry over resources, and problems of border control.

**Public health.** Climate change is likely to increase the number of people exposed to vector borne diseases such as dengue fever and malaria, water borne diseases such as cholera and gastrointestinal disorders. It is likely to increase mortality due to heat stress, and cardiovascular illness due to smoke haze. These may lead to increasing mortality and morbidity, epidemics that may cross borders, impacts on economic growth, and problems of border control.

**Water stress.** Climate change is likely to reduce runoff in major catchments, increased pollution of surface water, depleted and contaminated groundwater resources, and coastal subsidence. These are likely to undermine livelihoods, industrial and agricultural production, and lead to tensions over the management of transboundary water resources,

Other, lesser security risks arising from climate change include disputes over regional fisheries, land and maritime boundaries, and increased human trafficking.

## SUGGESTED RESPONSES

We recommend regional, sub-regional, national and local level responses to manage these particular climate security risks, in the following five areas:

**Policy and institutional strengthening**. This includes a review of existing national policies to identify gaps, areas for improvement, and areas where better integration across sectors and scales are required. It also includes enhancing coordination among institutions working at regional, national and local levels, across policy domains, and between the public, private and community sectors. For example, improving food access may require new national strategies, such as stockpiling in times of surplus production, and improved coordination between trade, agricultural and rural development policies. Meeting the humanitarian needs of people displaced by disasters requires planning to coordinate the efforts of local, national and regional agencies working to provide shelter, food and water, and to assist with resettlement.

**Public awareness, education and training**. A key element of capacity to adapt to climate change is awareness among the general population of risks and an understanding of responses at all

levels and across all sectors of society. National programmes to raise awareness of the risks of dengue fever, for example, have proven to be effective in reducing infection. This requires culturally appropriate materials to promote awareness of climate risks and responses across the region. It may also require the integration of materials about climate change into primary, secondary and tertiary curriculum across the region. For example, teaching about the risks climate change poses to population movements can help break down the barriers to the integration of displaced people. There is a need for regional and national training schemes to improve the skills base required to manage climate security risks at all levels and across sectors. This includes developing skills in, for example: integrated water resource management, disaster risk management, public health and primary health care, and renewable energy systems.

**Monitoring, research and technology.** There is a need to develop regional and national research initiatives to identify places and groups most at risk from the impacts of climate change, for example communities vulnerable to sea-level rise, water borne diseases, or food access problems. There is a need to develop regional and national monitoring and early warning systems to alert organizations to impending climate extremes such as cyclones, and emerging crises such as dengue fever outbreaks, food access crises, and population movements. There is also a need for the transfer of technologies to manage climate security risks, such as the use of energy technologies, the use of new materials and systems in agricultural production, climate and weather surveillance, and improved public health technologies and systems. Cooperation among countries within and beyond the region to overcome the technical and financial barriers to the transfer of technologies is required. This may take the form of regional technical training programmes, and mechanisms to lower the cost of the transfer of technologies from the private to public spheres.

**Regional and international cooperation.** This includes making use of existing regional forums for dialogue among political leaders, officials, and private and community sector actors from countries within and beyond the region on emerging climate security risks and ways to manage them. Regional contingency plans for food and health crises, and disaster responses are necessary. Regional platforms for the exchange of information between countries and communities about effective policies and programmes can be of assistance. Regional programmes for the exchange of personnel between countries can help build capacity and share experiences, for example with respect to groundwater management, or the implementation of renewable energy systems in rural areas.

**Finance and resource mobilization.** This includes global, regional and national mechanisms to raise and effectively deliver the financial, human, and technical resources to manage climate security risks in the region. This may include, for example: mechanisms to extend insurance against losses caused by hydro meteorological disasters, schemes to help overcome the financial and technical barriers to implementing renewable energy systems in rural areas; funding to establish stockpiles of food and medicine to respond to food and health crises, contingency funds to enable rapid responses to the humanitarian needs of people displaced by disasters, and technical assistance to improve climate and weather surveillance systems. These resources should be mobilized through multilateral and other bodies responsible for the implementation of programmes specifically related to climate change, and to related climate security activities such as disaster risk management, health, water access, and food access.

It would be prudent to begin implementing these responses in the near term, recognizing that there is uncertainty about the timing of these security risks, some of which will emerge gradually, and some of which may be rapid onset and catastrophic in nature.