RSIS Non-Traditional Security (NTS) Year In Review 2016

RSIS
Nanyang Technological University
S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

RSIS NON-TRADITIONAL SECURITY (NTS) *YEAR IN REVIEW 2016*

CENTRE FOR NON-TRADITIONAL SECURITY STUDIES (NTS CENTRE)
S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES (RSIS)
NANYANG TECHNOLOGICAL UNIVERSITY
2016

Advisor
Mely Caballero-Anthony

Editors
Tamara Nair
Alistair D. B. Cook

Acknowledgements
The RSIS NTS Year in Review is a team effort, and we would like to acknowledge the editorial work and/or administrative support of Serina Rahman, Joey Liang, Helena Huang Yixin and Chiam Shin Shing.

Recommended Citation
RSIS Centre for Non-Traditional Security Studies (NTS Centre), 2016, *RSIS Non-Traditional Security (NTS) Year in Review 2016*, Singapore.

Photo Credits (Cover):
(From Left to Right) Naval Surface Warriors / Flickr, USAID U.S. Agency for International Development / Flickr, frankieleon / Flickr, United Nations Development Programme / Flickr, UN Photo / Flickr, Peatland Restoration Agency, 2016

This publication is also available online at: www.rsis.edu.sg/research/nts-centre.

Contents

Message from Executive Deputy Chairman

Dear Readers,

Non-Traditional Security (NTS) threats continue to trouble nations and communities in this region, and around the world. Many people die or are displaced as a consequence of a broad range of disasters. Resources to help those affected need to be mobilised at short notice, but in many cases they do not match what is needed. Better informed decision-making is required while effective preparation to deal with any emergency is essential. This is what we focus on at the S. Rajaratnam School of International Studies (RSIS).

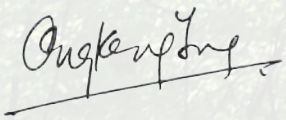
The past year has also seen a dramatic increase in the movement of people by all means possible, whether taking perilous journeys by boat facilitated by smugglers and traffickers, or through formal legal channels to take up a new job in another country. All the different paths taken have an impact on human security. In the countries of origin of forced migrants, there has often been a breakdown of law and order; and in recipient and transit countries, local authorities, civil society and increasingly the private sector need to mobilise resources to cater for the new arrivals. It is also important to look at the contributions such migrants can make in their respective host countries.

In this respect, human trafficking has become an increasingly prominent issue of urgency that requires high-level government attention across the Asia-Pacific. Cooperation by national agencies, international organisations and regional bodies need to be accelerated to prevent human trafficking. Policy think tanks have an important contribution to make in this regard by identifying new and innovative solutions to the problems we face today. High-tech progress, for example, helps us monitor the violations, and what further investigation to carry out. We must leverage on the technological advancements to make official responses more effective. This is another area of research that RSIS has undertaken.

We have also witnessed the deterioration of food security as climate change becomes more obvious. The effect can affect our food supplies. Also the recent spread of the Zika virus in the ASEAN region has raised the sense of vulnerability and highlighted the importance of sustained efforts to increase health security – a matter that has remained a priority since the SARS outbreak in the early 2000s.

Overall, there seems to be more bad news than good, but at the same time there is no need for severe pessimism as there are some bright spots. We have seen technological advancements and greater international cooperation initiatives like the Paris Agreement on Climate Change as well as a large number of action plans. What is important as we look ahead is how we implement the agreements in a systematic and robust way to tackle the NTS challenges and relate them to what the UN Sustainable Development Goals aspired to achieve.

Best wishes for the new year.



Ong Keng Kong
Executive Deputy Chairman
S. Rajaratnam School of International Studies (RSIS)
Singapore

Message from Head of Centre

Dear Readers,

Welcome to Year in Review 2016. While the international community is striving for a more peaceful and secure world, NTS challenges pose serious threats to this cause.

Humanitarian crises have been exacerbated by armed conflicts, natural disasters and climate change. The severity of the problem has been widely recognized as the international community is moving towards strengthened response to the challenge. The first World Humanitarian Summit was convened on 23-24 May in Istanbul Turkey, to deliberate on responses to the humanitarian emergencies across the globe. This was followed by the New York Declaration for Refugees and Migrants adopted at the UN in September, marking a significant step forward in provision of protection and assistance to displaced people.

State and human security are also threatened by epidemic diseases, hunger, natural disasters and climate change. Cases of Zika virus infection have been reported in several Southeast Asian countries, and the tropical environment in the region makes it difficult to control and eradicate the mosquito-transmitted disease. Food security robustness index in Asia has declined in 2016 according to the Rice Bowl Index. Excessive air pollution has exposed people to various health risks.

Given the transboundary nature of these issues, solutions often require a multilateral and multi-sectoral approach. To facilitate the exchange of views and perspectives on NTS-related practice, policy and research in Asia Pacific, the RSIS Centre for Non-Traditional Security Studies hosted the relaunch of the NTS-Asia Consortium in February 2016. This network provides an important platform for cross-regional discussions on NTS.

The issue of Year in Review presents you with a snapshot of our research on NTS agendas, from climate change to peace, human security and development. We hope that the articles in this issue will increase your appreciation of the progress we have made in practice, research and policy, as well as the challenges ahead.

Associate Professor Mely Caballero-Anthony
Head
Centre for Non-Traditional Security (NTS) Studies
S. Rajaratnam School of International Studies (RSIS)
Singapore

Key NTS Events 2016

January

Scientists publish findings on 13 January showing that forest burning in Africa and Southeast Asia causes ozone pollution in the air as far as the Western Pacific Ocean. They called for revision of global climate models to reflect findings.

* * *

The World Health Organisation cautioned Southeast Asian States to remain vigilant against continuing risks of Middle East respiratory syndrome coronavirus (MERS CoV) after Thailand confirmed its second case in seven months on 24 January.

February

A 6.4 magnitude earthquake hit Taiwan on 6th February and killed at least 114 people. Most of the fatalities and injuries came from the collapse of one residential building which was suspected to be constructed using substandard materials.

March

Ministers from 45 countries met in Bali, Indonesia, from 29-30 March 2016 to issue the "Bali Declaration on People Smuggling, Trafficking in Persons and Related Transnational Crime". All countries agreed for better preparation for sudden influxes of migrants and refugees, and to address root causes of irregular migration.

* * *

The Nuclear Security Summit process ended with a fourth summit held in Washington, DC from March 31-April 1, 2016. Enough states ratified the 2005 amendment to the physical protection convention to finally bring the amendment into force which lead to a stronger legal foundation for the nuclear security architecture.

July

On 11 July, Scientists warned of a new magnitude 9.0 earthquake threat in Asia. A GPS-study found evidence of a mega-thrust fault underneath Myanmar, Bangladesh and India exposing the region's 140 million people to disaster. However, the researchers do not know if and when the fault line will give way.

August

A powerful 6.8 magnitude earthquake shook central Myanmar on 24 August. At least four people were killed and 171 pagodas were damaged in Bagan.

September

Zika cases in Singapore have gone from zero to 258, raising concerns about a potential rapid surge in cases across Asia. Malaysia confirmed its first case of Zika infection in a 58-year-old woman — who had visited her daughter in Singapore — on September 1.

* * *

Leaders of ten ASEAN Member States signed a joint declaration entitled "One ASEAN One Response: ASEAN responding to disasters as one in the region and outside the region", as part of the 29th ASEAN Summit in Lao PDR held from 6 to 8 September 2016.

April

The Paris Agreement on Climate Change was opened for signing at the United Nations Headquarters in New York on 22 April 2016 and will remain open until 21 April 2017. Signing the Paris Agreement indicates the intentions of consent to be bound by the Agreement.

May

The World Humanitarian Summit held in Istanbul, Turkey on 23 and 24 May 2016 saw 9,000 delegates from governments, United Nations agencies and civil society come together to address a 'broken humanitarian system'.

June

Scores of police were deployed to guard a village in central Myanmar where religious tensions were running high after a Buddhist mob destroyed a mosque on 24 June. An angry mob of around 200 Buddhists rampaged a Muslim enclave in Bago province following an argument between neighbours over the building of a Muslim school.

October

Deeply revered King Bhumibol Adulyadej of Thailand died at the age of 88 on 13 October 2016 after a long illness. The late King contributed to the stability of a deeply divided country amid decades of political crises and frequent military coups.

* * *

On 19 October, Indonesia ratified the Paris Climate Change Pact, joining dozens of countries, including China, India and Singapore. Indonesia pledged to cut greenhouse gas emissions by 29 per cent by 2030, and up to 41 per cent with international support through technological and financial assistance.

November

On 22 November, Vietnam's National Assembly approved the government's decision on the cancellation of the Ninh Thuan nuclear power plant construction project.

December

On 1 December, the inaugural Thomson Reuters Foundation 'Stop Slavery Award' was conferred on Hewlett Packard (HP) Enterprise and NXP Semiconductors. In Southeast Asia, HP hosted workshops with its suppliers and labour agencies to combat forced labour in its supply chains.

* * *

At the end of his weeklong visit to Myanmar on 6 December, former UN Secretary General Kofi Annan expressed his deep concerns over reports of human rights abuses in Rakhine State, where dozens of Rohingya Muslims are said to have been killed.

* * *

At least 20 people died and dozens were injured after a 6.5 magnitude earthquake struck off Aceh province on Indonesia's Sumatra island on 7 December.

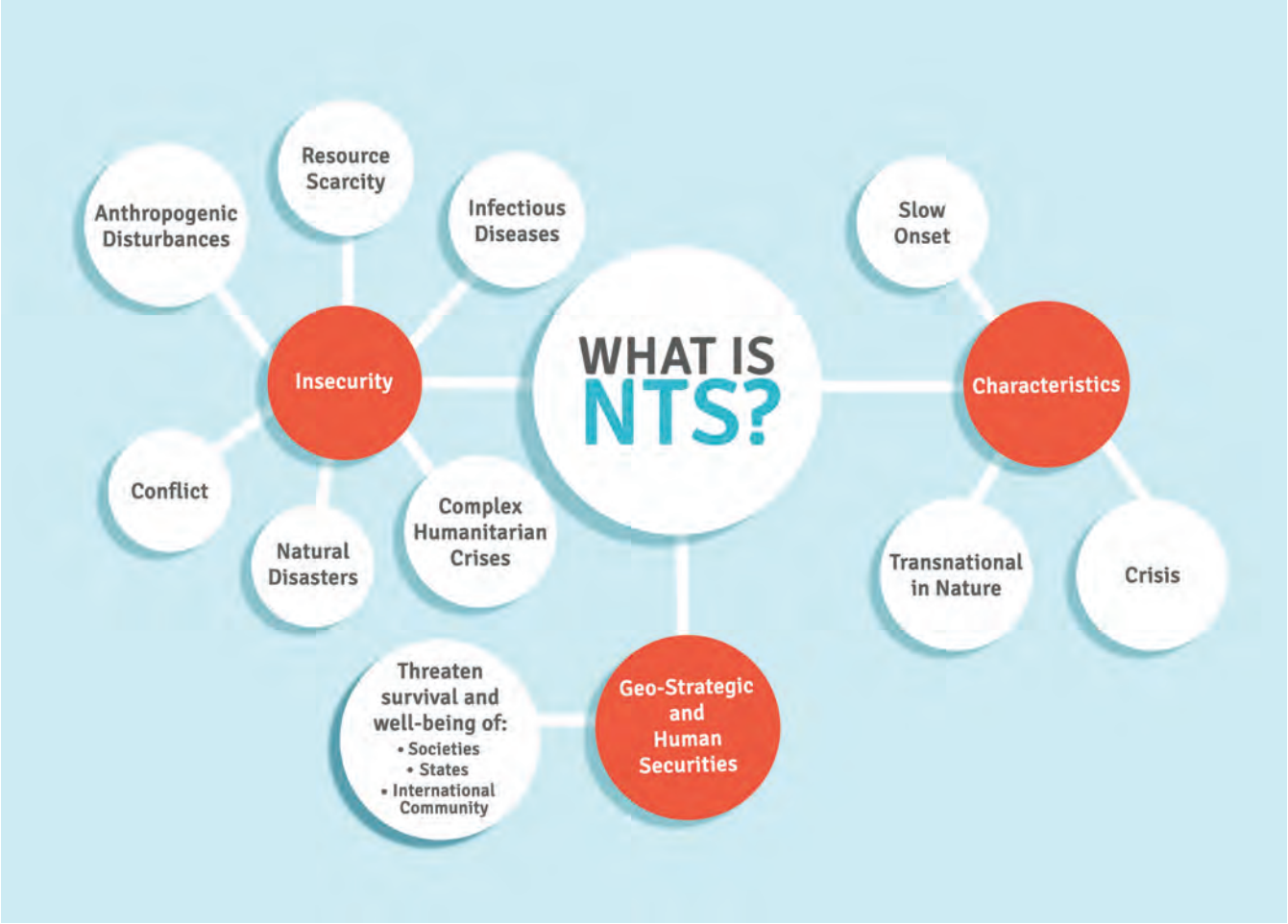
An Overview of Non-Traditional Security

Vishalini Chandara Sagar

The study of Non-Traditional Security (NTS) emerged during the post-Cold War period due to significant shifts in the way we understand global security. As risks of traditional inter-state wars and conflicts decline, new security challenges, which are typically non-military in nature, have transpired from transnational threats. Studies have shown that NTS crises have resulted in more deaths and have had a substantially larger impact on people over time than conventional military threats. Often, overcoming these NTS crises are more challenging than preventing traditional military aggression.

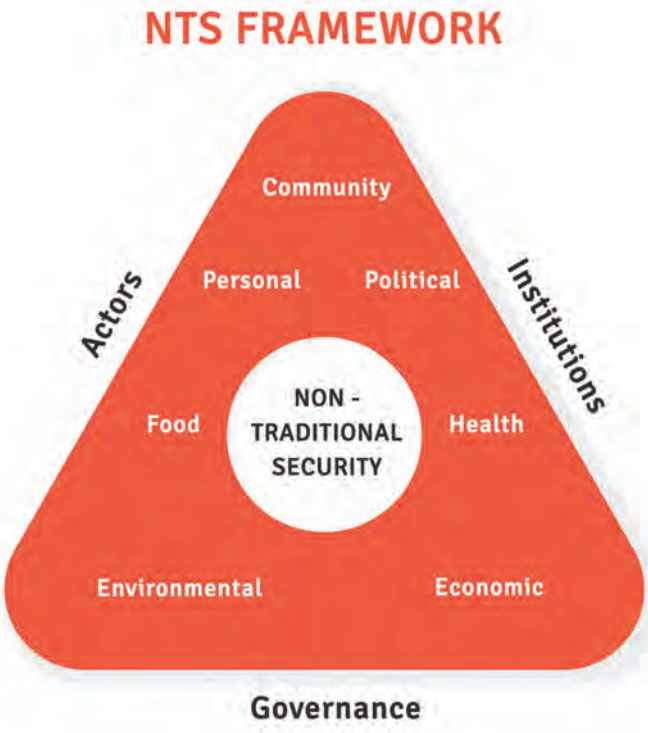
NTS challenges are mainly people-centred issues, which threaten the survival and well-being of individuals and states and can be broadly categorised into the following key areas – economic security threats; food security threats; health security threats; environmental security threats; community security threats; political security threats; and personal security threats. These arise from sources such as climate change, resource scarcity, infectious diseases, natural disasters, irregular migration, food shortages, people smuggling, drug trafficking and transnational crime. It is the state's responsibility to protect its citizens' from such threats. If governments fail to do so, they lose international standing and credibility.

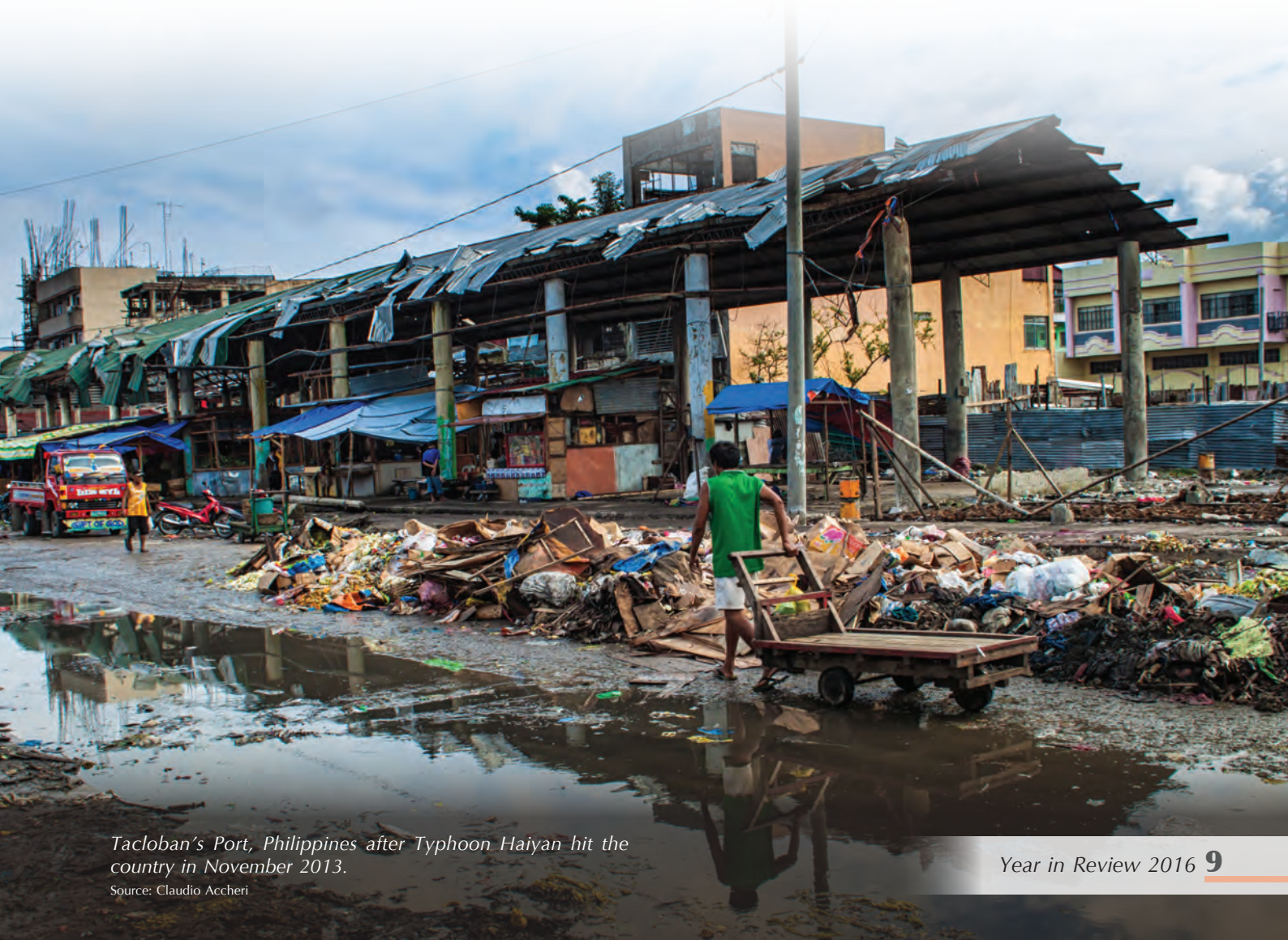
States are aware that the transnational nature of NTS crises defies conventional unilateral solutions. They require comprehensive political, economic and social responses. Such responses can only be initiated with significant cooperation between governments to formulate policies at a regional and international level to overcome NTS challenges.



Many governments in the Asia-Pacific region are not sufficiently prepared to respond due to the scale, magnitude and complexity of NTS crises. As a result, when such crises occur, the devastation surpasses national boundaries and impacts states and societies further afield. For instance, the spread of Zika virus in the region, human trafficking across Southeast Asian borders, forced migration in Myanmar, massive typhoons and storms that hit the Philippines and surrounding countries, flooding of the Mekong River and recurring transboundary haze pollution from agricultural practices in Indonesia have had significant consequences in terms of human security, tourism and business, and economic development. Viewing these challenges through a NTS lens allows for a more multi-dimensional approach to be taken to analyse the situation and to formulate solutions.

In conclusion, it is crucial to note that to sufficiently understand NTS challenges, condense and resolve them, solutions need to be people-centric, multilateral and holistic.





Tacloban's Port, Philippines after Typhoon Haiyan hit the country in November 2013.
Source: Claudio Accheri

Movements of People: Dealing with Complexities and Challenges

Mely Caballero-Anthony

Today's globalisation has more than ever increased the interconnectedness of people, goods and services. With the exponential growth in information and communications technology, and trade, the movements of people within and across states have been made easier, making state borders more porous and the management of migration flows more complex. As a dynamic region driving global economic growth, Asia attracts mass movements of people in many forms. According to *International Migration Report 2015* of the UN Department of Economic and Social Affairs Population Division, Asia already accounts for about a third of 244 million international migrants.

A salient feature in the current migration flows in Asia is the 'mixed nature' of people's movement that is considered as irregular migration – broadly defined as cases that occur outside the regulatory norms of the countries of origin, transit and destination. The International Organisation for Migration (IOM) and the UN High Commissioner for Refugees (UNHCR) consider irregular migrants to include refugees, asylum seekers and those with specific needs such as trafficked persons, stateless persons, internally displaced people and people who were displaced by natural, chemical or nuclear disasters, famine or development projects. Given the different types of migrants that are regarded as falling outside legal frameworks, it is not surprising that states find it most challenging to deal with the complex challenges of mixed migration.

The challenges of protection

While a large share of the migration flows in Asia is irregular migration in its different forms, the imperatives of managing migration should include addressing the challenges pertinent to both regular and irregular migration. One of the key challenges is providing protection for all types of migrants.

Regular, documented migrants

The Asian Development Bank (ADB) has noted in its *Asian Economic Integration Report 2015* that Asia is the world's largest source of international migration. In 2013, 79.5 million migrants are from Asia, with South Asia being the largest source contributing 44% of the Asian total, followed by Southeast Asia. As a result of a significant migrant worker population, remittances form an important source of income for many Asian economies accounting for nearly 50% of the global total in 2014 with China, India and the Philippines receiving US$163 billion, or 61% of the Asian total. It is therefore important that international migration remains unfettered, while ensuring that labour migrants are accorded the rights and protection they deserve. An important step to provide protection is to urge countries to sign the *International Convention on The Rights of All Migrant Workers* and effectively implement regional frameworks that protect and promote the welfare and rights of migrant workers.

There are still many countries in Asia that have not ratified the International Convention on the Rights of All Migrant Workers since it came into force in 2003. Despite this, a regional regime is in place in Southeast Asia. The *ASEAN Declaration on the Protection and*

Source: UN Photo

Child at Metinaro Internally Displaced Person (IDP) Camp in Timor-Leste in 2009.

Source: UN Photo

The United Nations high-level summit on large movements of refugees and migrants in September 2016.

Promotion of the Rights of Migrant Workers adopted in 2007 calls on countries of origin and destination to ensure the dignity of migrant workers. It outlines states' obligations in the areas of protection from exploitation, discrimination, and violence, among others. This regional framework has established a set of international and regional (ASEAN) standards proclaiming the aspirations and rights for much greater access to social protection by all workers across ASEAN. However, recent studies have shown that despite these standards, access to social protection by migrant workers in the region remains limited. Many sending and receiving countries still lack clear practices that guarantee wider social protection for migrant workers leaving and/or working in their countries. The increasing reports of many forms of exploitation such as low pay and poor working conditions and abusive practices such as the withholding of passports and wages verbal and physical abuse and long working hours show the lack of implementation of the regional framework. Thus, the protection agenda should become a priority in Southeast Asia if the region were to progress toward a "caring and sharing" ASEAN community. At the same time, efforts should be made to educate migrant workers of their human rights and rights to protection.

Irregular, 'forced' migrants

Asia hosts the largest undocumented flows of migrants in the world, mainly between neighbouring countries. Irregular or forced migrants found in the region include victims of human trafficking, displaced populations, refugees and stateless persons. In the absence of national identity documentation – stateless persons often have no option but to resort to irregular migration channels making them more vulnerable to being targeted by traffickers.

Current trends indicate that many East Asian countries are considered as source, transit and destination points for trafficking victims. Trafficking crimes globally are estimated to be 80% trafficking for sexual exploitation, while 20% for forced labour. It is also estimated that 27% of trafficked victims are children. The ILO's 2015 estimates place illegal profit from forced labour at US$150.2 billion per year. The increased security concerns associated with the negative perception of migration among host populations have led many countries to take a stronger stand against people falling into these categories.

While there are robust international and regional regimes in preventing trafficking in persons currently in place, most efforts are focused on prevention and prosecution. A common observation regarding anti-trafficking regimes has been the heavy focus on prevention through criminalisation of the acts of trafficking in persons rather than on the protection and rights of the victims of human trafficking. Hence, states put more effort into allocating resources and building capacity to combat criminal activities related to human trafficking and punishing perpetrators while giving less attention to victim protection. One of the consequences of such an approach is the difficulties in identifying victims which continue to impede efforts at effectively combatting human trafficking. Protection needs of trafficked persons go beyond ensuring personal physical safety and security. They also include having access to legal assistance and protection, access to health care and temporary shelters, and continued assistance in repatriation and integration.

The plight of displaced populations from disasters and conflicts

Aside from victims of human trafficking, Asia also has to deal with displaced populations from disasters and conflicts. The 2014 report by the International Displacement Monitoring Centre estimates that nearly 30 million people in Asia had been displaced over the previous 7 years by natural disasters, which is 18 per cent of the global total of displaced population. Compared to the rest of the world, Southeast Asian countries face greater displacement risk due to exposure to multiple hazards, such as tropical cyclones, floods, earthquakes, landslides, wildfires, droughts, volcanoes and tsunamis.

There is currently no legal framework in place to deal with the protection needs of people displaced by

disasters. Governments have also not been able to reduce the vulnerabilities faced by these people to offset this increasing exposure. Hence, despite current efforts at improving humanitarian assistance and disaster relief (HADR) operations in the region, there remains a lack of comprehensive national and regional responses to protection issues for displaced people.

Aside from the problems faced by displaced populations from disasters, the plight of people internally displaced from conflicts is equally appalling. A 2015 study on internally displaced people (IDPs) in Southeast Asia by the Internal Displacement Monitoring Centre, revealed that the IDPs in most of the region's displacement camps lacked access to basic necessities such as food, clean water and adequate sanitation facilities. Moreover, there is little information available on the assistance and protection needs of IDPs who take refuge outside official camps.

An agenda for a comprehensive and human-centred migration approach

In July 2015, the UNHCR, OHCHR, IOM together with the UN Special Representative of the UN Secretary-General on Migration Peter Sutherland called for a comprehensive people-oriented approach to the irregular movement of migrants and refugees in South East Asia. They strongly urged ASEAN States to undertake sustained efforts to expand avenues for safe and legal migration, including for family reunification and labour migration at all skill levels, while stepping up law enforcement. These include prosecution of individuals involved in human trafficking and migrant smuggling syndicates and intensified efforts to identify and respond to the drivers and root causes of the irregular movement of people.

Source: Flickr

A Rohingya settlement in Myanmar in 2014

Source: UN Migration Agency

Survivors of typhoon Haiyan in temporary shelters in western Visayas, Philippines.

Clearly managing migration and addressing the protection needs of irregular migrants and refugees cannot be left to governments alone. The involvement of different actors—from local communities, CSOs, the private sector, regional organisations and other international agencies are important given the complexities of challenges involved. The meaningful engagement of local communities and NGOs in providing assistance to populations displaced by disasters and conflicts, victims of human trafficking and refugees lessens the burden of state authorities and UN agencies working on these issues. The private sector, on the other hand, could commit to funding assistance programmes to different migrant groups in need of shelter and medical access and skills training and even offer employment opportunities to displaced populations.

Thus, against the multifaceted migration challenges facing the global community today, addressing the competing demands and pressures on both states and societies compel no less than multi-level and multi-sectoral approaches founded on the principle that today's migration is a shared responsibility.

The Political Economy of Forced Labour in Southeast Asia

Vincent Mack and *Helena Huang Yixin*

Given the ASEAN Economic Community's (AEC) mandate of an integrated economy that is a key node in global value chains, ASEAN Member States (AMS) will have to contend with a number of challenges in relation to migrant protection and labour governance. This will certainly be true in relation to primary production, such as the palm oil and fishery industries, both of which are under pressure to increase production levels in order to meet increasing global demands.

ILO studies have shown that the Asian Pacific region hosts around half of the world's forced labour (around 11.7 million in 2012). With increased growth and development, people's desire to work in lower-skilled jobs decreases. Coupled with a demand for higher wages, labour intensive industries such as the oil palm and fishery industries find themselves unable to hire labour at lower costs.

Palm oil is used in the production of up to half of all packaged food worldwide. In recent years, global consumption of palm oil has more than doubled, leading to a steady expansion of land for cultivation and corresponding demand for labour. As of 2012, Malaysia and Indonesia accounted for approximately 85% of global palm oil production. In the fishery industry, the rising demand for seafood has resulted in an increased need for labour on board fishing vessels. Thailand is one of the world's largest fish and seafood producing countries.

Increased demands have often resulted in the recruitment of individuals who are desperate to make ends meet. These individuals have less bargaining power; they are often from less developed economies, and are often victims of human trafficking. For example, unskilled labour migrants from Cambodia and Myanmar are targeted for forced labour on fishing vessels and trafficked under false promises of other jobs.

Displaced people such as the Rohingyas have also recently become targets of forced recruitment. These labourers work for long hours in isolated work environments, beyond the reach of legal jurisdiction and enforcement of laws.

International organizations such as the ILO provide education and support through migrant resource centres (MRCs) throughout the region. The Thai, Singapore, and Cambodian governments have ratified the ASEAN Convention against Trafficking in Persons (ACTIP). The Thai government has implementing changes to the Fisheries Act, deploying GPS on fishing boats, and adopting steep fines to counter human trafficking and forced labour. However, these efforts remain rudimentary as human traffickers and fishing trawlers operate beyond national borders.

While better governance may mitigate some effects of labour exploitation, the problem remains rooted in existing trade regimes. This further complicates matters especially for countries whose economies are dependent on these sectors. In order to reduce challenges to migrant protection and labour governance, ASEAN needs to work more closely with state and non-state actors, including international organisations. More cross-border coordination between enforcement agencies of AMS is necessary to protect the rights of workers in the region.

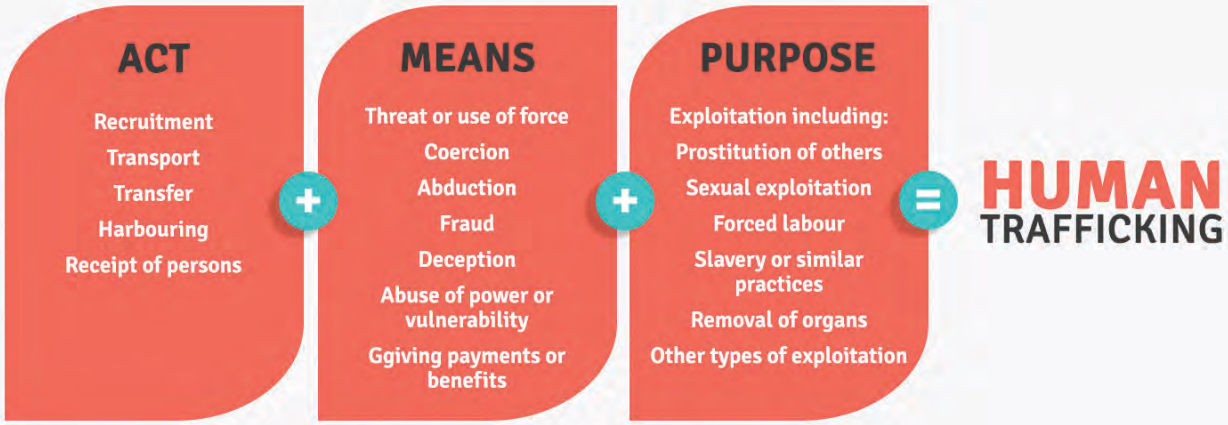
Migrant fishermen are photographed on a Thai fishing boat.
Source: Flickr / ILO in Asia and the Pacific

NTS FAST FACTS

MIGRATION

By **Vincent Mack and Helena Huang Yixin**

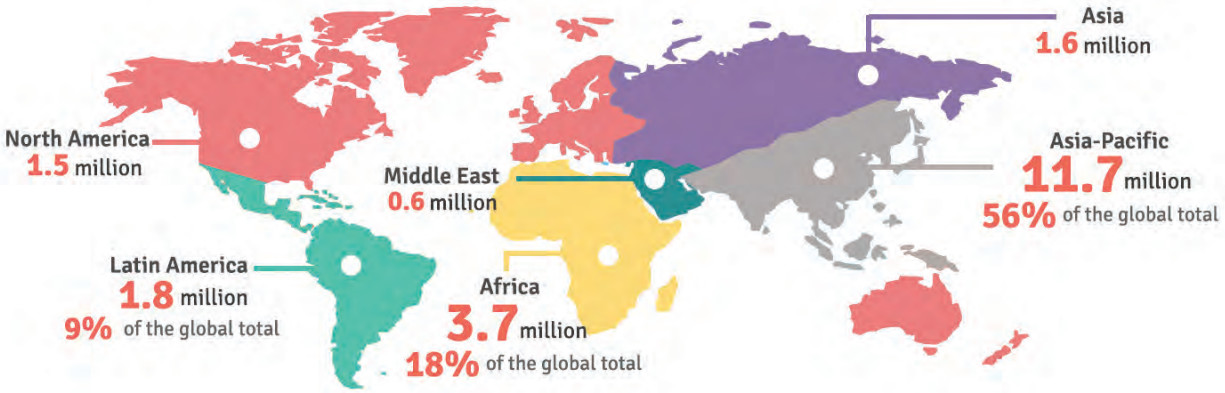
WHAT IS HUMAN TRAFFICKING?

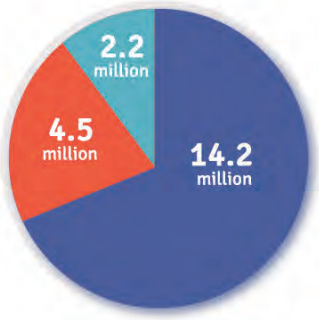


Sources: http://www.unodc.org/unodc/en/human-trafficking/what-is-human-trafficking.html

STATISTICS AND INDICATORS ON FORCED LABOUR AND TRAFFICKING

Nearly **21 million** people - Three out of every 1,000 people worldwide - are victims of forced labour across the world, trapped in jobs which they were coerced or deceived into and which they cannot leave.





TYPOLOGY OF FORCED LABOUR

- **Forced labour exploitation** in economic activities, such as agriculture, construction, domestic work or manufacturing.
- Forced sexual exploitation
- **State-imposed forced labour,** for example in prisons, or in work imposed by the state military or by rebel armed forces.

Sources: ILO, UNODC, GMDAC, Amnesty International

For more NTS Fast Facts please visit www.rsis.edu.sg/research/nts-centre/centre-resourcescnts/nts-fast-facts

In Pursuit of a Reformed Global Humanitarian System

Alistair D. B. Cook

In March this year, the much anticipated World Humanitarian Summit convened in Istanbul in the shadow of the Syrian conflict. With over 9,000 delegates from civil society, international organisations, governments and the private sector, the World Summit was the largest event to date for such a diverse range of stakeholders. It was an opportunity to rethink how the global humanitarian system works in the midst of current humanitarian crises the world over from the Yemen, to Syria, Iraq, Lake Chad basin and South Sudan to name the most high profile conflict situations. It also convened as we approached the first anniversary of the Nepal Earthquake, which was the worst to erupt in over 80 years and occurred in the Asia-Pacific, the world's most disaster-prone region. In the past decade, the Asia-Pacific has experienced over 1600 natural disasters, 40% of the global total, which resulted in the loss of 500,000 lives. The World Summit gathered to address these humanitarian challenges.

Most visibly this year we have seen media reports about the targeting of civilians and medical facilities in the Syrian conflict signalling the emergence of humanitarian 'black spots' – a growing global phenomenon. In September at least 26 civilians were killed in airstrikes in the Syrian city of Aleppo overwhelming hospitals with casualties. Earlier in July a maternity hospital in Idlib was bombed killing several people. Daily attacks in Syria ensure that people are forced from their homes into insecure situations with more than 4.7 million Syrian refugees in neighbouring countries and more than 13.5 million in need of assistance inside Syria. At the World Summit, stakeholders committed to promote and uphold international humanitarian law and the principles of humanity, neutrality, impartiality and operational independence (Core responsibility #2). In reality, this will mean that humanitarian organisations in the field will have an uphill task to re-establish safe spaces where civilian neighbourhoods, medical casualties and non-combatants remain off-limits and respected by those engaged in fighting.

At the World Summit, delegates reiterated the need to protect those fleeing conflict over the long-term as both a humanitarian and a development objective. Over recent decades, offers of asylum and refugee protection have decreased from traditional resettlement countries, while the numbers of those fleeing conflict have increased. Many civilians face being trapped with no safe exit out of the conflict zone. The UN Refugee Agency estimates that 65.3 million people are forcibly displaced worldwide.

Among them are nearly 21.3 million refugees, over half of whom are under 18, which leaves the vast majority of people fleeing conflict internally displaced. The majority of refugees found asylum in neighbouring countries with only 11% finding a durable situation further afield. The World Summit recognised the significant burden placed on these neighbouring countries and the need for comprehensive solutions to ensure no one is left behind. It called for new cooperation on responsibility-sharing among countries of origin, transit and resettlement (core responsibility #3). While there was consensus that political leadership was needed to address root causes of conflicts, and increase the use of early warning systems to prevent conflict (core responsibility #1), only 8% of delegates committed to it – the smallest amount of support for any of the core responsibilities by countries and stakeholders.

This contrasted with the commitment to change people's lives – from delivering aid to ending need (core responsibility #4) which received the most endorsements at the summit. It recognises the necessity of finding a new way of working between humanitarian and development actors. The commitment focuses on reinforcing national and local systems. This was an attempt by those attending the summit to shift the way relief and assistance is carried out from being reliant on large international non-government organisations towards a people-centred approach that empowers national and local players. This commitment was followed up by a delegates' pledge to a Grand Bargain between donors, UN agencies, IOM, a national and international consortium of non-governmental organisations and the International Red Cross and Red Crescent movement to deliver efficiency gains of up to $1billion per year over 5 years. The Grand Bargain also included the commitment to reduce earmarked funds and increase multi-year

Source: Asian Development Bank

Will humanitarian assistance and disaster relief be youth driven by 2020?

Source: Danish Red Cross/ Poul Henning Nielsen

A man shows a red card which indicates he lost his house in the earthquake and therefore qualifies for a cash grant from the Nepal Red Cross.

funding (core responsibility #5). This was confirmed by a move towards cash-based programming and direct funding to local actors as a means to stimulate local economies and empower local people.

One of the recent successes of cash-based programmes was after the Nepal Earthquake in 2015. Many Nepali farmers struggled financially as they sought to create temporary shelters, replace lost food, seeds, tools and animals. These difficulties were made worse by the five-month blockade on the Indian border which saw fuel prices skyrocket. In response the Nepal Red Cross initiated a cash-based, flexible and community-driven programme for farmers to buy some supplies with a 5,000 Nepali rupee (US$50) conditional grant. This allowed the farmers to get back on their feet after the disaster and contribute once again to the local economy without having to repay loans or become reliant on hand-outs. While this programme was a success, it remains exceptional at the moment. However, with the commitment at the World Summit to move towards more cash grants there is a sense of optimism that the way in which humanitarian action is delivered is changing.

A core challenge for the World Summit delegates is to turn one-off cash-based projects like the Nepali example into standard practice. This can be facilitated by sharing experiences through regional networks and organisations. At the summit, 13 regional organisations pledged to establish the Regional Organisations Humanitarian Action Network [ROHAN] to reinforce local systems, share information, deepen cooperation and further humanitarian principles and international humanitarian law. One regional organisation, the Organisation of Islamic Cooperation, committed to work with its member states to develop a network of crisis

management centres to facilitate bilateral and regional cooperation in preparedness and response and to share experiences through ROHAN. While this commitment is welcomed there remain several barriers to this being the catalyst for system-wide change. The most important is the strength and mandate of individual regional organisations in humanitarian action. As we've seen in humanitarian crises before, these organisations can be stymied in the face of member countries relying on a traditional understanding of state sovereignty in times of crisis – non-interference in the domestic politics of another country. It is also important to recognise the limited engagement of local civil society organisations and non-state actors more broadly in the activities of regional organisations. These are often organisations driven by member government's agendas rather than avenues for wider societal engagement.

In the Asia – Pacific, the dominance of natural disaster over conflict responses has created a less politically sensitive, if under-explored, environment within the region. More specifically, in Southeast Asia we have seen the legally-binding ASEAN Agreement on Disaster Management and Emergency Response [AADMER] come into force in 2009. In the AADMER, signatory countries agreed to involve all stakeholders including local communities, non-governmental organisations and private enterprises and to use community-based disaster preparedness and early response approaches. This subsequently paved the way for the establishment of the AADMER Partnership Group (APG) to work with the ASEAN Committee on Disaster Management, the AHA Centre and the ASEAN Secretariat to ensure a people-centred approach. This approach is broadly consistent with the outcomes agreed at the World Summit earlier this year. At present the APG currently remains a consortium of seven NGOs – Child Fund, HelpAge International, Mercy Malaysia, Oxfam, Plan International and World Vision – supported by the European Commission. While the membership is home to large NGOs, there is a commitment to expand the APG membership to include local civil society organisations by 2025.

There is broad global commitment to the outcomes of the World Summit, and identified mechanisms to share experiences in an effort to achieve these. However, there remain several hurdles to achieve these within a reasonable five year timeframe. While incremental progress is visible in the Asia-Pacific, it is important to recognise the often less confrontational environment of natural disaster preparedness and response. If this environment can be leveraged to build trust with the necessary stakeholders then the opportunity exists to turn World Summit outcomes into a reality for the wider global humanitarian system. With the low number of committed states to offer political leadership to address the root causes of conflict (core responsibility #1), a system-wide shift in mind-sets appears relegated to important but programmatic changes to the global humanitarian system. There are opportunities taking place in the Asia-Pacific from an increasingly more localised and diverse stakeholder environment to improved civil-military relations, which can significantly shift disaster preparedness and response. Undoubtedly these experiences will be important but will likely form the exception rather than the rule of the global humanitarian system in five years' time. These will need to take hold to ensure that the system is better prepared for future humanitarian challenges from decreasing traditional sources of finance, climate-induced displacement to potential nuclear power plant disasters and the current overflow of information.

Will ASEAN lead the reform of the global humanitarian system in the next decade?
Source: Gunawan Kartapranata

Big Data for Humanitarian Action: Opportunities and Challenges

Zin Bo Htet

Source: Walmart/ flickr

Big data playing an increasingly important role in disaster preparedness and emergency response

The benefits of big data

When disaster hits, access to information is as important as access to food, water and shelter. Today, the vast volume of crisis information generated and shared during emergency situations is fast becoming digital and user-generated. Indeed, affected communities are increasingly able to source, share and generate a vast amount of real-time information, which is transforming the humanitarian information landscape. Technology has enabled affected populations to quickly transform themselves into first responders, send aid requests and messages, provide critical information, and support rapid damage and needs assessments.

Data-driven research reports on social media use during disasters have shown that user-generated content posted on Twitter or Facebook can be informative and relevant for disaster response. Recent responses to the Haiti earthquake, Typhoon Haiyan, Typhoon Pablo and Nepal earthquake indicate the usefulness of mapping and crowdsourcing information through social media. In response to Typhoon Pablo in the Philippines in 2012, the Standby Volunteer Task Force and Humanity Road created the first UN crisis map using social media data. The maps were used by UN agencies and the Philippines government to address the needs of the affected population. Undoubtedly, big data in humanitarian response has become more prominent and important.

Challenges and emerging issues

While the use of big data brings significant benefits to humanitarian action, it also poses a number of challenges. One of the biggest challenges is the vast volume of big data produced by affected populations themselves. An overflow of information and data can be challenging when it comes to mobilizing response both locally and internationally. There is a risk of inaccurate information that misrepresents the situation due to the overwhelming nature of big data. As a result, it has been difficult for many humanitarian organisations and decision makers to effectively utilise big data in humanitarian response.

Open source data and social media by individuals, volunteers and aid organizations can provide timely and cost efficient data collection and analysis but requires the training and professionalization in order to attain accurate and reliable data. The use of UAVs by non-state actors for data collection and real time information raises ethical issues of data use. There is a risk of not adhering to established humanitarian ethics and principles because big data policy is not internationally understood yet. In addition, many governments and aid organisations have not developed data policies; hence humanitarians must navigate within undeveloped frameworks and face security issues with accessing data.

Moving forward

In order to effectively utilise big data in humanitarian response, humanitarian organizations need to work together to develop clear and shared standards, best practices and guidance to verify raw data and transform it into useful information for decision making. Privacy and ethics are important considerations in the formation of data policies. In order to adapt to increased ethical risks, humanitarian workers need explicit guidelines and codes of conduct for managing data and information. With these measures in place, aid agencies can make further improvements in incorporating big data into humanitarian operations.

Improving the Role of Faith-based Organisations in Disaster Response Operations within ASEAN

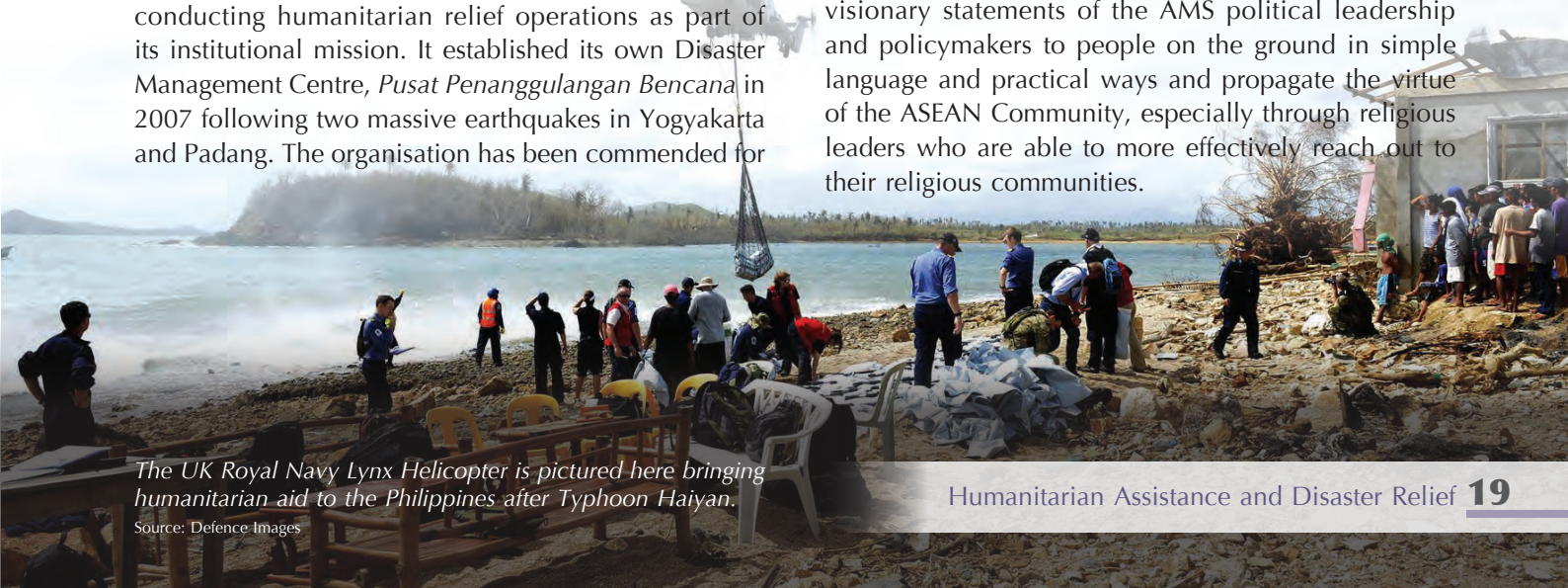
Vishalini Chandara Sagar

Faith-based Organisations (FBOs) are best known to provide education and medical services for local communities and to help children, mainly those who have been trafficked, orphaned or abandoned. For example, the Camillian Social Centre Chiang Rai, Thailand is a Catholic organisation that works to ensure that the hill tribe communities in the area, particularly children, have quality education, clothes and shelter regardless of their wealth, nationality and religion. Lately, FBOs have been providing more support for Humanitarian Assistance and Disaster Response (HADR) operations.

As the humanitarian landscape and nature of disasters that occur in the ASEAN region evolve, impacting a larger number of local communities, FBOs in the region are indeed playing an increasingly important role in HADR. FBOs are able to provide immeasurable support to HADR operations as they are adequately funded, have good local knowledge and extensive networks on the ground because of ongoing activities in the areas affected by disaster. Also, due to their longstanding presence in particular localities, they may have quick access to local authorities to further facilitate HADR operations. For example, *Muhammadiyah*, the oldest and one of the largest Muslim organisations in Indonesia has been conducting humanitarian relief operations as part of its institutional mission. It established its own Disaster Management Centre, *Pusat Penanggulangan Bencana* in 2007 following two massive earthquakes in Yogyakarta and Padang. The organisation has been commended for adding value to communities by providing education and training on disaster preparedness and community readiness in communities, schools and hospitals.

However, some FBOs are limited in their capacity to respond to disasters as they lack prior emergency response experience and training. At times, their presence could further worsen the situation in disaster-affected regions, particularly if they are perceived to be prioritising the needs of the population based on their faith and encouraging religious conversion. Moreover, their partnerships are likely to be impacted by the socio-religious conditions of the affected country. A Christian global relief and development agency, Ye Win Tun of the World Concern who delivered disaster relief in the Buddhist-majority Myanmar highlighted the difficulties faced by FBOs in reaching out to non-Christian communities in the country. People were threatened by the spread of certain religious groups that claimed to deliver development assistance. As a result the majority of its in-country partners were from similar religious backgrounds.

The recently launched ASEAN Socio-Cultural Community (ASCC) Blueprint 2025 provides FBOs with significant and more formal opportunities to overcome some of these challenges and to engage with ASEAN Member States (AMS)' governments and the people of ASEAN. The ASCC Blueprint 2025 emphasizes the importance of inter-faith and inter-cultural dialogue through ASEAN to heighten awareness and deepen the sense of an ASEAN identity. This will help to develop ASEAN into an open and adaptive society through the promotion of a culture of tolerance, understanding and mutual respect for all religions and cultures. The mandate of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) comes under the ASCC pillar. The ASCC thus proves to be an important platform that FBOs can engage in to shift existing perspectives of their work in the region, for AMS to be more open to aid provided by them and to strengthen expertise and effort in HADR operations in AMS. FBOs can bring the visionary statements of the AMS political leadership and policymakers to people on the ground in simple language and practical ways and propagate the virtue of the ASEAN Community, especially through religious leaders who are able to more effectively reach out to their religious communities.



The UK Royal Navy Lynx Helicopter is pictured here bringing humanitarian aid to the Philippines after Typhoon Haiyan.
Source: Defence Images

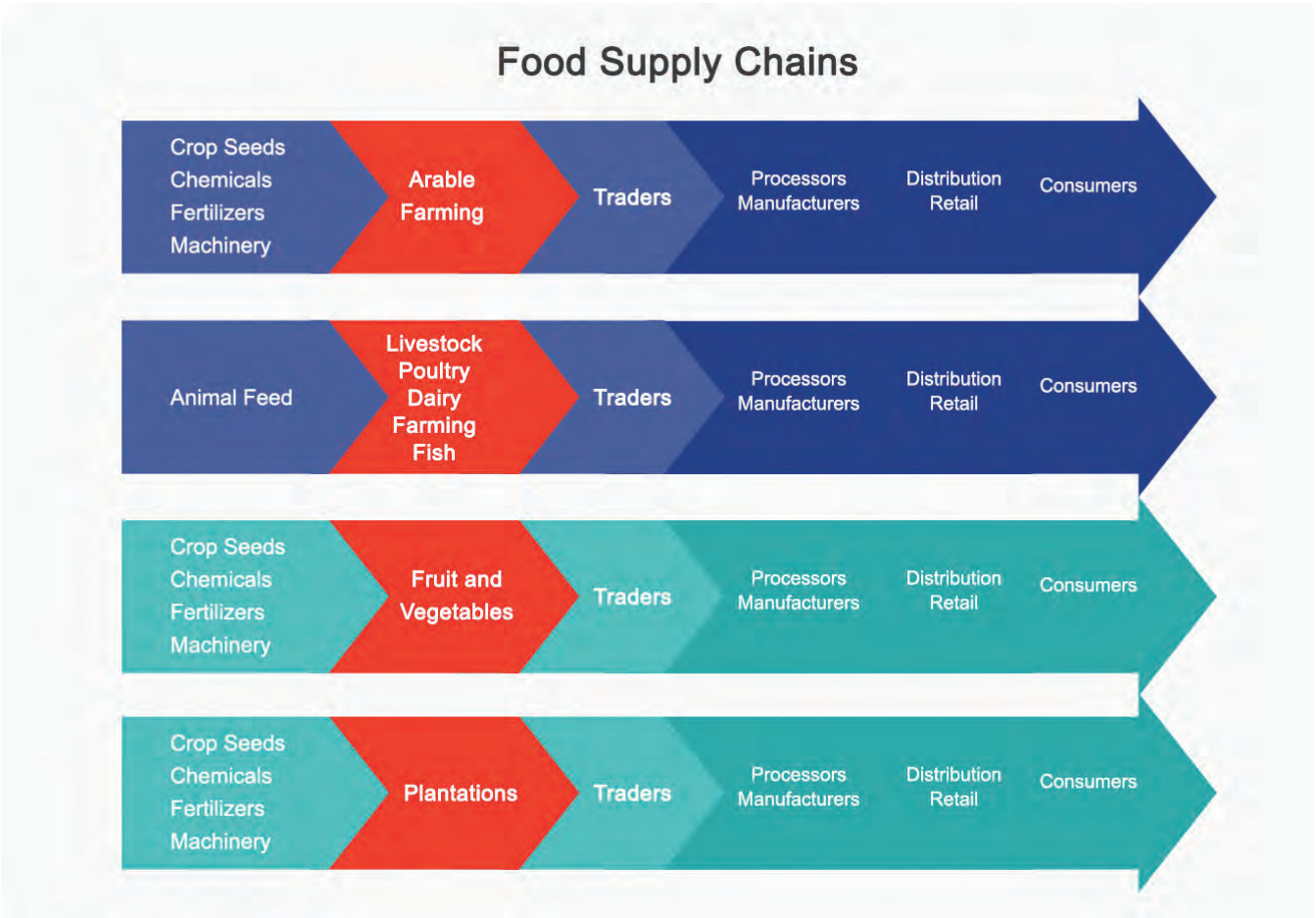
Inclusive Farming as a Foundation for ASEAN Food Security

Paul Teng

Food security as a matter of national and international concern cannot be considered in isolation from the broader political, socio-economic and physical environments. Because food security is a multi-dimensional and multi-sectoral, complex phenomenon, its operating landscape is open to many influences from the broad environment in which it is situated. Most food is today consumed away from where it is produced, and supply chains for the major food items may be distinguished, some of which stretch across continents, but all involve a multitude of stakeholders (Figure). Central to these interlinked chains of stakeholders are the smallholder farmers (the red part of the supply chain in the figure), of which there are estimated to be 100 Million in the ASEAN region.

However, for supply chains to maintain their unity and integrity as mechanisms to produce and move food from "farm to table", it is essential that enablers be in place at regional, national and local levels. These enablers include policies, regulations, infrastructure and human capacity.

In the past year in ASEAN, there has been explicit recognition of the importance to be "inclusive" in the discourse on food security. This inclusiveness is not just about the role of smallholder farmers, but also the roles of input suppliers (mostly MNCs and SMEs), financiers (mostly rural banks or cooperatives), traders and processors, transport companies, wholesale marketers, and retailers. Key players in this discourse to be



Source: Author

Figure 1: Common Supply Chains

"inclusive" have included the regional office of the Food and Agriculture Organization, the ASEAN Secretariat, the Asian Development Bank, SEARCA, the WEF/GROWASIA entity, and industry organizations such as CROPLIFE Asia. The inclusiveness imperative is particularly relevant for ASEAN and Asia regionally due to the relatively large number of smallholder farmers in this region. For food security to be sustainable, these small farmers must have their contributions clearly recognized and integrated into modern supply chains.

International political and policy enablers which affect smallholder farmers

This past year has seen two international agreements adopted which have particular impact on a country's ability to achieve food security, namely the SDGs and Climate Change COP21. The longer term expectation is that action taken today to implement the COP21 agreements will at best not exacerbate the worsening trends in global climate changes. Asia in particular, has an important stake to see both the SDGs and COP21 bear success. In Southeast Asia, arable land is only 0.12 ha per person. With the large number of small farmers, the SDG goals (1 and 10) related to rural poverty and equity are particularly relevant here as smallholder farmers and fishers often are among the "poorest of the poor". So any failure from not implementing the SDGs and COP21 agreement will greatly impact farmers and consumers.

The ASEAN situation

At the political level, an important game changer is the emergence of the ASEAN "common market" in 2015 which espouses more movement within ASEAN and between ASEAN and its Plus 6 partners (China, Japan, Korea, India, Australia, New Zealand), of food trade, and investments. A larger integrated market, will increase intra-ASEAN and extra-ASEAN trade with the rest of Asia.

Source: Raeky / Creative Commons

Numerous cities have embarked on developing rooftops as green spaces and possible sites for small scale food production.

Source: Flickr / Linda N.

Urban agriculture is increasingly identified as an important aspect of ensuring food security and building resilient cities.

The policy aspect of the food security landscape in ASEAN is strongly influenced by government positions on the country's production of staples (rice in particular). Countries like China, South Korea and Malaysia now have disavowed 100% rice self sufficiency in favor of certain levels of self production. Other countries still pretend to have a policy of full (100%) self sufficiency, like Indonesia and Philippines, even though experts would argue that it does not make economic sense or will likely be achieved in the short term. The rice food security landscape is further strongly influenced by the production situation in important exporting countries like India, Vietnam and Thailand.

Within the ASEAN region, in 2015, apart from inclusive farming, food loss and waste, and nutrition security were also topics that received attention by policy makers, researchers and practitioners.

From a socio-economic lens, the food security landscape for ASEAN looks bright in the near term. ASEAN remains one of the fastest developing sub-regions within Asia, and it is expected that the 190 Million middle-class population in 2015 will more than double by 2020 (Nielsen 2015 ASEAN Report), driving demand for more meat and luxury food products. However, on the flip side, the percent of malnourished still remains stubbornly at around 10%, even though individual countries have shown visible progress in reducing poverty-induced malnutrition (FAO State of Food Insecurity, 2015).

In the 2015-2016 period, food security has been influenced by many positive factors, namely lower petroleum prices, lower commodity prices contributing partly to lower food price indices, and carryover food stocks. At the same time though, slower economic growth in many Asian countries has also led to the lower demand for food and non-food commodities. While the above would suggest a move towards improved numbers of food secure people, the data does not appear to suggest much effect.

Food security discussions commonly centre on food availability, and much less on food loss or waste. But the past year has seen increased attention and concern about food waste in particular. The Global Initiative on Food Loss and Waste Reduction led by FAO has seen several related initiatives launched in Asia, including one involving the private sector in 2015 to improve measurement of food waste (Business Council for Sustainable Development). Initiatives such as the Sustainable Rice Platform championed by UNEP and IRRI saw significant increases in PPP to apply standards for growing rice which use sustainable practices and give rice with lower levels of contaminants. The WEF/ GROWASIA entity has also made much progress in the past year to reach its goal of 10 Million smallholder farmers integrated into modern supply chains by 2020. The ASEAN-endorsed program to date has targeted five ASEAN countries (Indonesia, Philippines, Vietnam, Myanmar, Cambodia) and used a multi-stakeholder partnership approach to ensure inclusiveness of all partners in moving food from "farm to table".

Technology as an enabler of inclusive participation

In Asia, technology is key enabler of food security, especially with respect to increasing farm level yields or maintaining yield under threats of severe weather. The "quiet revolution" in Asian agriculture generally, and specifically in some ASEAN countries like the Philippines and Vietnam, in using mechanical and Information-Communication Technology (ICT) is making inroads even into remote rural farming areas such as those in East India and Central Philippines. Suffice to say that the 2015-2016 period has seen a consolidation in applications, all of which augur well for assuring food security robustness. Companies like Accenture (Southeast Asia) and Digital Green (India) have played and will continue to play an important role to spread ICT applications for market) information access, on-farm management decision-making, and for accessing integrated downstream services.

Another noteworthy technology contribution in 2015-2016 has been biotechnology, with the commercialization of Genetically Modified (GM) crops in Vietnam and Bangladesh in particular. In March 2016, China declared its intention to grow GM corn within next five years, an action that has potentially wide implications for the security associated with producing terrestrial animal protein and fish, as Asia annually imports more than a third of the world's surplus corn production, most

Source: lulupinney / Flickr

of which is GM. The 2015-2016 period has also seen much fanfare about "New breeding technologies" using non-GM biotechnology such as CRISPR-CAS9, which have potential to create new crop varieties with higher yield potential and higher tolerance to biotic and climate stresses. This could be the beginning of a game-changing era in which improved crop varieties get from "lab to field" in a much shorter time and at lower cost than previous crop varieties produced using GM biotechnology.

Another potentially important game-changer for food security is the growing movement in "Urban agriculture", with pioneering activities occurring in major cities like Seoul, Beijing and Singapore. Much of this has focused on using technology-enabled farming of fish and vegetables, two food items which lend themselves to space-limited farming with manageable pollution levels. Urban agriculture is expected to take some pressure off the countryside, reduce the ecological footprint of the food items concerned, and importantly, also give urban dwellers a stake in producing the food that they consume.

Agriculture has played and continues to play an important role in the ASEAN region. It is an important driver for social, inclusive growth; an important source of export earnings, a guarantor of food availability to its citizens; and a source of employment directly and through agriculture-related, value adding activities. Some ASEAN countries have chosen to focus their development policies on more "export-oriented" agriculture (e.g. palm oil and rubber) while others have recognized the importance of both export and food security needs. Going forward from 2015, this balance is likely to remain, with deficits in production traded from other geographic regions, especially the Americas.

Bridging Technology Gaps in Agriculture through Innovation Brokers

Jose Ma. Luis P. Montesclaros

Regardless of differences in agro-climatic, economic or political environments, the spread of technology in agriculture (e.g. irrigation, fertilizer use, pesticide use, breeding practices) remains crucial to boosting yields. Figure 1, above right, shows the disparities in rice yields across ASEAN countries, and between ASEAN countries and the Asia-Pacific region. An FAO report shows that in Southeast Asia, cereal yields of farmers employing different mixes of technologies and farming practices were more than thrice the yields of farmers who used minimal-farming inputs. Moreover, Southeast Asian farmers applying mixed technologies reach only 68% of the full potential.

A prime concern to overcome is the lack of private sector investment and involvement in the farming sector. This was uncovered in an assessment facilitated by the FAO among different stakeholders in South and Southeast Asia, including research, government, and academic institutions as well as civil-service organizations, traders and journalists. To build farmers' capacities, it was deemed important that initiatives such as farmer education and training, technology, microfinance, and business mentoring be tailored to farmers' needs.

One initiative to involve and enable the private sector to address farmers' demands is by developing 'innovation brokers' (IBs) or persons/organizations that bring together actors and facilitate their interaction to catalyze innovation. These manage 'many-to-many' relationships, not just between farmers and the private sector, but with other actors too, such as government, academia and technology developers.

Learning from outside ASEAN, an example of an IB is the International Development Enterprises (iDE). iDE helped farmers in Bangladesh to overcome high water costs

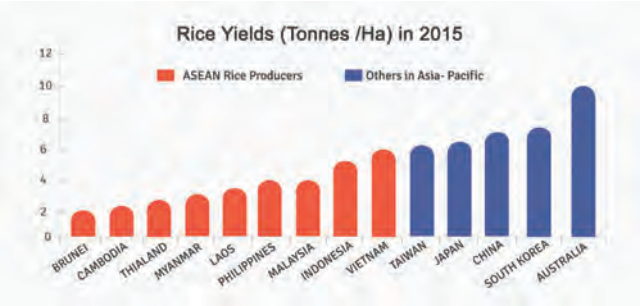


Figure 1: Rice Yields in the ASEAN and Select Countries in Asia-Pacific

Source: USDA Data, through IRRI World Rice Statistics Database, 2016.

which limited their production levels. After exploring technologies to address this problem, iDE coordinated the production of a low-cost solution: 'treadle pumps' or manually powered water pumps. By 2015, more than 1.5 million of such pumps were sold in Bangladesh. Another example is Agricultural Knowledge Centre North Holland, which helped source for an automated disease detector to reduce labor costs for producers. In other cases, innovations are in the form of services, such as the Innovation Support Centre's (Europe) coaching services to agricultural SMEs in logistics processes and in developing supplier partnerships with buyers.

In 2015, the ASEAN Ministers of Agriculture, with strong funding support from Australian and Canadian governments, launched 'Grow Asia' as a potential IB. Grow Asia has organized working groups for specific commodities to identify farmer needs and draw private sector financial support. Grow Asia, and other IBs within ASEAN, will benefit from insights and past experiences of IBs outside the region. For instance, while working groups and alliances are a good start to enable innovation, the challenge is to ensure that these continue beyond the period of funding support from its initiators.

Source: Flickr / Francis Deport

Culture of rice in Vietnam. Vietnam has the highest rice yields in Southeast Asia.

NTS FAST FACTS
FOOD SECURITY

By Jose Ma Luis Montesclaros

Food security in urban areas will need to be addressed if the Sustainable Development Goal of a Hunger Free World is to be achieved by 2030.

KEY FACETS OF URBAN FOOD SECURITY

Economic Food Access
Can the city's population afford the food?

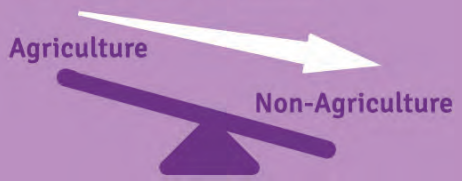
Trend: **25%** increase in share of urban poor in Asia, from 1990 to 2008

Food Utilization
Does the city's population have healthy consumption habits and outcomes?

9.6%
Undernourished in Southeast Asia in 2014/16.

Obesity in ASEAN-6 grew faster than USA and UK from 2010 to 2014

Food Availability
Does the city have enough food sources to meet demand?



By 2020, East and South Asia will have less workers in agriculture than non- agriculture sectors.

Physical Food Access
Can the city ensure food is physically available?

Logistics Infrastructure of **6 out of 10** ASEAN countries below global average in 2016

Sources: UN FAO; World Bank; ASEAN; UN Population Division; The Economist Intelligence Unit; WHO; Food Industry Asia; Paul Teng, Mely Caballero-Anthony, Margarita Escaler and Pau Khan Khup Hangzo (2011): Ensuring Urban Food Security in ASEAN.

For more NTS Fast Facts please visit www.rsis.edu.sg/research/nts-centre/centre-resourcescnts/nts-fast-facts

Science-Policy-Practice Nexus: The Case of Climate Change and Science and Technology in Disaster Risk Reduction

Margareth Sembiring

Science and technology (SnT) development is a major driver of human civilisation. Its applications are found in numerous aspects of modern society including in the advancement of human security through, but not limited to, disaster risk reduction (DRR) efforts. The complex nature of disasters, whether they are natural or manmade, carries notions of uncertainty. SnT has been very useful in reducing vulnerability by providing evidence-based analysis through data collection and observations, which in turn would lead to better anticipatory responses with respect to impending hazards. With climate change increasingly being attributed to more frequent and severe disaster events, the application of SnT in DRR is getting more critical.

SnT in DRR

The utilisation of SnT in DRR efforts has expanded considerably in the last decade as seen in the establishment of the Indian Ocean Tsunami Warning and Mitigation System (IOTWS) in 2005. SnT has enabled flood forecasting, earthquake and tsunami wave detection, and early warning dissemination. Remote sensing technology supported by space satellite systems enables the establishment of early warning systems. Real-time data collection and advanced modelling technologies add rigour to the accuracy and details of early warnings, and are often able to take into account driving factors such as economic and social vulnerabilities into the predictions.

In real applications, forecasting makes timely evacuations, protection of assets including fisheries and livestock, storing of food and drink, and adjusting crop planting and harvesting times possible. Additionally, computer technology enables the amalgamation of information from various sources, and dissemination of such data from global to regional to local levels, as well as to a wider audience including community members. Such knowledge will then allow decision makers and communities to develop necessary preventive, preparedness and mitigation measures. It will also aid in deciding the most appropriate technologies to reduce disaster risk, and initiating appropriate responses and recovery actions.

Climate change adaptation is critical to reduce the risk of climate-induced disaster events
Source: Flickr / Asian Development Bank

In so doing, SnT applications directly contribute to risk and vulnerability mitigation and build resilience against the adverse effects of disaster events. The science-policy-practice nexus is therefore evident in the DRR setting as SnT knowledge is imbued in DRR strategic planning and implementation.

SnT and DRR in Southeast Asia

In Southeast Asia, SnT applications are evident in a number of cases. The ASEAN Disaster Monitoring and Response System (DMRS), for example, is equipped with risk monitoring platforms based on global and regional hazard monitoring, modelling, satellite-based data, and computer technology. The DMRS has enabled the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) to notify ASEAN Member States of disaster situations and this will be exercised more frequently when regional responses are needed. The ASEAN Disaster Information Network (ADINet) also uses information and computer technology to disseminate disaster-related information to members of the public.

At the national level, the Philippines has already incorporated advanced modelling and physical sciences into its disaster assessment system as seen in the Rapid Earthquake Damage Assessment System (REDAS) developed by the Philippine Institute of Volcanology and Seismology (PHIVOLCS) and the Pre-Disaster Risk Assessment-Actions, Protocols and Programmes (PDRA-APP). Additionally, Thailand's Hydro and Agro Informatics Institute (HAII) is instrumental in managing Thailand's water resources using hydroinformatics.

The need for expanded role of SnT in DRR

Despite its ongoing applications, the role of SnT in DRR was only mentioned explicitly for the first time in the Sendai Framework for Disaster Risk Reduction 2015-2030. The deliberations of its significance, however, had taken place a few years prior. In 2008, the United Nations International Strategy for Disaster Reduction (UNISDR) Scientific and Technical Committee, which now is called the UNISDR Scientific and Technical Advisory Group (STAG), was formed. In its 2009 report, the Committee identified challenges in pushing the agenda forward and suggested that enhancing interactions between scientists and policy makers would assist in promoting the significance of SnT in DRR. The inclusion of SnT in the Sendai Framework, therefore, lays the foundation for the formulation of a more specific Road Map and actions specifically targeted at achieving the widespread use of SnT in DRR efforts.

In the follow-up to the Sendai Framework adopted in March 2015, the 1st UNISDR Science and Technology Conference on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 was conducted early this year. A downscaled meeting at the regional level titled First Asian Science and Technology

As part of climate change adaptation efforts, technology is used to divert water resources for multiple uses
Source: Flickr / Olaf Zerbock

Conference for Disaster Risk Reduction (ASTCDRR) was organised in August 2016 and it aimed to discuss the challenges and ways forward to integrating SnT in regional policies.

Challenges in advancing SnT in DRR-related policies

Despite its apparent uses, integrating SnT into DRR policies does not seem to be a straightforward exercise. The primary challenge lies in the interface between science, policy and practice. SnT needs to meet the 'useful, usable and used' criteria to be relevant, timely and impactful. Such criteria are called for considering that SnT outputs are often difficult to implement. In the context of DRR, the incorporation of SnT is often hindered by challenges in translating scientific and technical knowledge into policy discourse and the certain degrees of uncertainty inherent in models and predictions. The level of confidence in forecasts and early warnings plays a role in policymakers' actions as they would need to look at projections critically and in a balanced manner before making decisions.

Multi-stakeholder environments, strategic communications, and sustainable financing have been identified as some solutions to integrate SnT in DRR policies. The 'co-design, co-produce, co-deliver' concept emphasises the need for buy-ins from all actors involved, particularly from local communities and local authorities. As such, community participation, strong leadership and political commitments are critical for science-led solutions to gain their credibility. Knowledge brokers may be useful to bridge the gap and facilitate communication between the scientific and technical community and policymakers. Ensuring that solutions offered by SnT are practical would assist in gaining support from local authorities and communities.

2015 saw the signing of important UN Agreements such as the Sendai Framework, the Sustainable Development Goals, and the Paris Agreement on Climate Change. 2016 has been on track for the incorporation of SnT in DRR efforts. The Sendai Framework will expire in 2030, and it will be interesting to see how much disaster-related losses can be saved through the application of SnT.

Technology used by the AHA Centre to monitor disaster hazards in the region

Source: AHA Centre

Science and Technology Applications in Disaster Risk Reduction in Padang, Indonesia

Margareth Sembiring

A number of scientific studies have pointed out that Indonesia's city of Padang is projected to experience tsunamigenic earthquakes in the future with potential impacts on the city's population of 400,000 people. In anticipation of such a calamitous event, and in reaction to the 2004 Indian Ocean Tsunami (IOT) and the 2009 major earthquake that severely devastated the city, Padang has embarked on heightened disaster risk reduction (DRR) efforts. The application of science and technology, particularly in computer models and satellite systems, is evident in a number of cases including the establishment of the German-Indonesian Tsunami Early Warning System (GITEWS) and the Indian Ocean Tsunami Warning & Mitigation Systems (IOTWS).

Source: United Nations Development Programme

Devastating earthquake rattled Padang in 2009. Padang is projected to experience tsunamigenic earthquakes in the future.

Scientific knowledge has also directly helped to build community disaster resilience. Local NGOs as hands-on practitioners have played a critical role in transforming science-led solutions into reality. KOGAMI (the Tsunami Alert Community) is the most prominent local NGO working on tsunami preparedness in Padang. It has engaged international geoscientists to boost the effectiveness and credibility of its work. Although the partnership is largely informal, KOGAMI has been able to translate scientific recommendations into action. Previous studies by Shannon et al. cited some examples, including colour-coded maps depicting levels of tsunami hazards that are mounted at strategic spots in the city of Padang. KOGAMI also explains the concept of earthquakes using a cracked hardboiled egg to communities with the assistance of respected village elders.

A scientific study by Stanford University in 2009 also attempted to further strengthen Padang's tsunami preparedness by looking at its evacuation plans, particularly in relation to Padang's built infrastructure such as bridges for horizontal evacuations and buildings for vertical evacuations. The study looked at data such as ground acceleration and tsunami flow and depth, among others, and concluded that it is critical for the government to formulate an official tsunami hazard and inundation map to enable Padang to enhance its tsunami preparedness efforts. It also recommended that reinforced high-rise buildings could be the most likely evacuation venue in a densely-populated city like Padang.

Despite the assistance that science and technology can offer to reduce the risk of damage caused by tsunamis, the local government is yet to maximise its potential. In a media report in February 2016, KOGAMI mentioned that although the local government has inaugurated officials in charge of disaster response, they are not well-equipped with adequate knowledge of disasters and preventive measures. KOGAMI also mentioned that the people of Padang themselves are complacent and not doing enough to prepare themselves for disaster events.

Integrating science and technology in DRR policy and practice requires buy-ins and commitment from local governments and communities. Getting them involved in the formulation of science-led solutions to reducing disaster risk could be the way forward to building resilient communities.

Peatland Restoration for a Haze Free Southeast Asia: A Review of Opportunities and Challenges

Rini Astuti

The haze crisis from peat fires is characteristically seen as being transnational in nature. The crises require a specific governance architecture that goes beyond national borders in order to efficiently address the complexities of the problem. According to Greenpeace, 75% of Indonesian forest and land fire hotspots in 2015 occurred on peatland. These particular fires have emitted three to six times more particulate matter than any other type of soil, creating thick and heavy haze. Peat is formed from layers of decayed vegetation and is characterized by its saturated condition. However, once peatlands are opened, cleared and drained for plantations, the soil becomes prone to fires. Hence, governing peatlands is vital in achieving a haze free region by 2020.

Southeast Asia hosts 25 million hectares of peatland, of which about 70% are located in three of Indonesia's main islands: Sumatra, Kalimantan and Papua. Approximately 9 million hectares of these peatlands have been converted into other land uses. Rising global demand for palm oil and other forest products, population and demographic changes, and weak forest management contribute indirectly to the increasing rate of forest and peatland conversion. Statistical data from FAO for example, shows a swift increase in palm oil estates in Indonesia covering an area of 200 thousand hectares in 1980, rising to more than 7 million hectares in 2013.

Source: Peatland Restoration Agency, 2016

Member of State Army extinguishes peat fires using water from deep well

In the areas proposed to be crop estates and industrial plantations, once the wood has been logged, the forest or peatland is usually cleared using fires, as it is the fastest and cheapest clearing method. The government of Indonesia for example, has banned this slash and burn practice. However, without proper monitoring and law enforcement, many companies still prefer to clear their plots using this method. The occurrences of peat fires in the region have always been associated with human-related activities instead of natural causes.

Other countries in the region, such as Malaysia, suffer from common causes that hinder the sustainable governance of peatland use, such as, human-induced peat fires, inappropriate management practices, drainage of peatlands through canalization, limited livelihood options, and corruption in licensing regimes. Therefore, a serious effort to tackle the haze crisis requires a comprehensive approach.

Haze from forest and peat fires has been identified as a serious threat affecting health, and livelihoods of millions in Southeast Asia. Nineteen fatalities were reported and half a million instances of respiratory illnesses were on record for the haze crisis in 2015. A World Bank study highlights Indonesia's economic losses, amounting to $16.1 billion; double what it cost to rebuild Banda Aceh following the 2004 tsunami. The neighboring countries suffered as much as Indonesia, with Singapore and Malaysia documenting millions in economic and health losses.

Regional initiatives and policies

A series of regional initiatives under ASEAN have been rolled out to address the transboundary haze crisis as early as 1997. One of the initiatives is the ASEAN Peatland Management Initiative (APMI) that was developed in 2003 and focuses specifically on promoting good peatland governance.

Following the initiative, a strategy providing guidance for the ASEAN Member States (AMS) to sustainably manage peatlands, prevent fires and reduce the occurrence of haze was formulated to cover a 15 year period under the ASEAN Agreement on Transboundary Haze Pollution. The ASEAN strategy encompasses the following 4 objectives: (i) enhance awareness and knowledge on peatlands; (ii) address transboundary haze pollution and environmental degradation; (iii) promote sustainable management of peatlands; and (iv) enhance and promote collective regional cooperation on peatland issues. The strategy acts as operational guidance for AMS to develop their National Action Plans.

National initiatives and policies: Case of Indonesia

Positioned in the centre of the haze crisis configuration, Indonesia is the most influential state member in the region. Indonesia's mode of peatland governance will create a significant effect for the objective of achieving a haze free ASEAN by 2020.

President Joko Widodo reaffirmed Indonesia's ambition to address the repetitive forest and peat fires by announcing an initiative to restore two million hectares of degraded peatland located in seven provinces. The initiative was announced at the 21st Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris at the end of 2015. Another key point conveyed by the President was his intention to imminently establish a new government agency mandated to coordinate the restoration efforts and improve peat fire prevention. At the beginning of 2016 the Peat Restoration Agency (PRA) was established.

The PRA has the mandate of coordinating and strengthening peatland restoration; planning, controlling and collaborating on peatland restoration; mapping peatland hydrology; designating protection and utilization zones; coordinating rewetting implementation; restoring burned peatland areas; raising awareness on peatland restoration efforts; and supervising the restoration process.

Of the estimated eight to ten million hectares of degraded peatland in Indonesia, the PRA is tasked with the restoration of two million hectares located in the provinces of Riau, South Sumatra, Central Kalimantan, Jambi, West Kalimantan, South Kalimantan and Papua. The PRA intends to restore 30 percent of the two million hectare target by the end of 2016. To meet this ambitious goal, the head of PRA will work with four deputies and a secretary appointed by the President.

A Steering Committee and Expert Committee will also guide the work of the Agency while provincial work units will coordinate the implementation of activities at the sub-national level. While the state budget will be allocated to finance the agency, its success in its

Head of the Peatland Restoration Agency monitors peat fires in Riau Province

Source: Peatland Restoration Agency, 2016

early days of existence will rely on close coordination of donor efforts and international financial support. The PRA may mobilize resources from external sources to fulfill its mandate. It might still be too early to judge the effectiveness of this new agency, but what we are seeing in Indonesia at the moment is an improvement of peatland governance.

There are still many challenges ahead for AMS such as Indonesia to transform its peatland governance that will address the embedded political problems around corruption and mismanagement in peat protection and utilization plans.

Peatland governance: challenges and opportunities

There are two major conflicting interests with peatland: its utilization and protection. The utilization is driven by the increasing demand for land for plantation expansion. High global demand for food, fuel, feed and fibre requires new landscapes for crops to grow. On the other hand, conservationists are increasingly concerned about the expanding deforestation and peatland degradation and its ramifications on biodiversity loss, climate change, and society. Governing the balance of these two conflicting interests is vital to success in the short and long term.

Another aspect influencing the decision on peatland politics is the type of actors involved. The challenge is to create an amenable environment at the national and sub-national levels for civil society organizations, universities, the private sector, and multilateral and international agencies for genuine dialogue, target setting and monitoring. Finding a common understanding from all actors about the goals, methodology and priority of peatland governance will pose a sizeable challenge. Therefore, the ability of AMS to develop strategic partnerships and build consensus is key.

It is also important to actively safeguard the interests of indigenous people and local communities, while also strengthening their active participation in peatland restoration projects. Active participation from local and indigenous communities will ensure the sustainability of peatland restoration in and around community settlements. Millions of hectares of peatland have provided livelihood opportunities for local communities.

Another significant challenge is ensuring the continuation of financial support and funding for peatland restoration. According to PRA restoring 2 million hectares of priority damaged peatland in Indonesia requires Rp 14.7 Trillion or around 112 Million USD. While state budget is allocated to fund the peat restoration effort in 2016 and beyond, additional interim funding from international development partners should be secured as a bridging solution. In addition to securing commitment from donors, a platform for increasing the participation of the private sector needs to be established and strengthened. Tapping into the private sectors' resources and participation will ease the national government's burden in restoring millions of hectares of degraded peatland while also promoting sustainable businesses. With the progress made to date in Indonesia there are many lessons for fellow AMS to draw on in the development of a functional peatland governance system. These lessons are not only at the national level but have significant implications more broadly in designing a regional fabric for effective peatland governance.

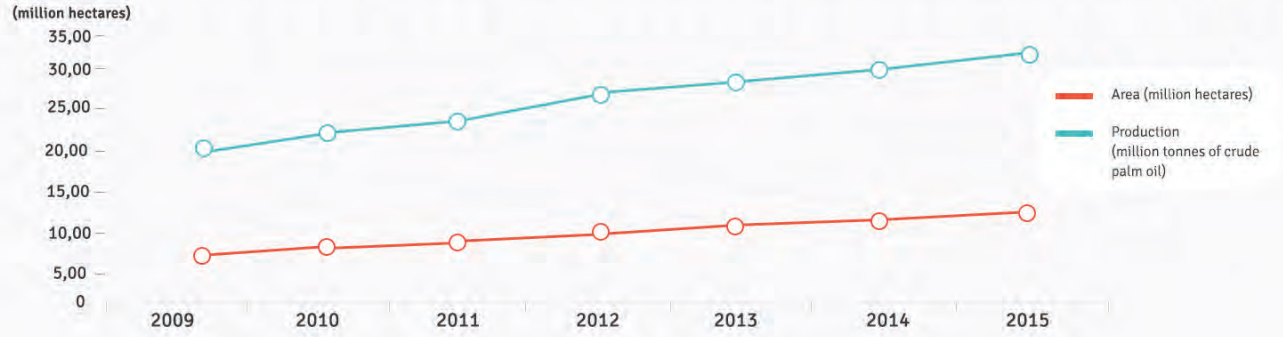
Source: Peatland Restoration Agency, 2016

Planting dragon fruit as a form of community livelihood on peatland.

NTS FAST FACTS
FOREST FIRES

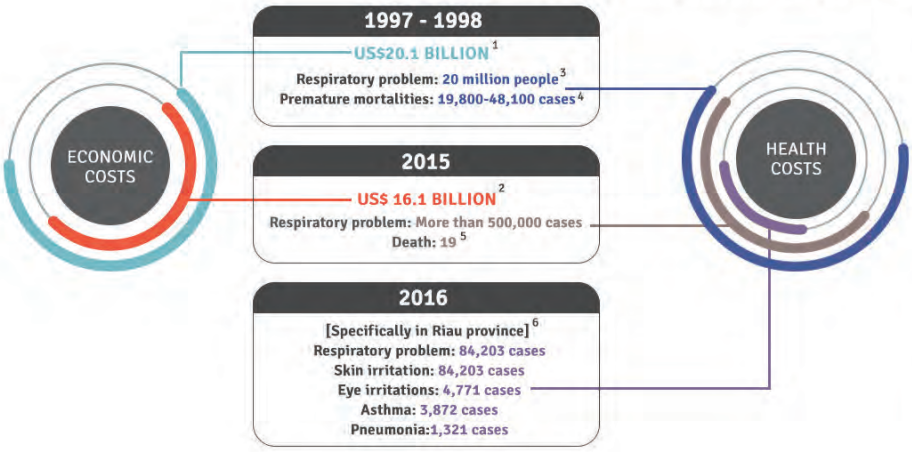
By Margareth Sembiring

PALM OIL PLANTATION AREAS AND PRODUCTION IN INDONESIA, 2009-2015



Source: Statistik Kelapa Sawit Indonesia (Indonesian Oil Palm Statistics) 2014, 2015, Badan Pusat Statistik (BPS –- Statistics Indonesia)

COSTS OF INDONESIAN FOREST FIRES



1 Varma, A. (2003). The economics of slash and burn: A case study of the 1997/1998 Indonesian forest fires. Ecological Economics 46: 159-71.

2 The Cost of Fire: An Economic Analysis of Indonesia's 2015 Fire Crisis, February 2016, World Bank Group, http://pubdocs.worldbank.org/en/643781465442350600/Indonesia-forest-fire-notes.pdf

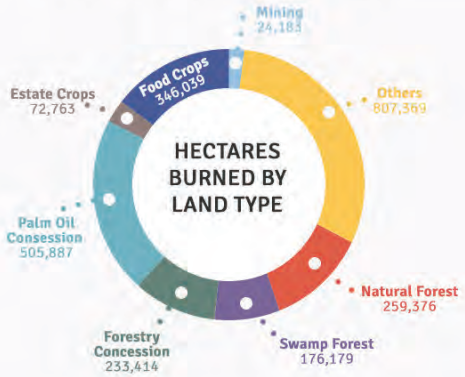
3 Heil, A. (2007). Indonesian Forest and Peat Fires: Emissions, Air Quality, and Human Health. PhD thesis, Max Planck Institure for Meteorology, Hamburg, Germany

4 Heil, A. (2007). Indonesian Forest and Peat Fires: Emissions, Air Quality, and Human Health. PhD thesis, Max Planck Institure for Meteorology, Hamburg, Germany

5 "Indonesia Forest Fires: Widodo to Visit Stricken Regions as Death Toll Mount," The Guardian, October 28, 2015.

6 Rizal Harahap, August 29 2016, Hundreds of Bengkalis residents affected by respiratory infections, The Jakarta Post, http://www.thejakartapost.com/news/2016/08/29/hundreds-of-bengkalis-residents-affected-by-respiratory-infections.html

2015 FOREST FIRES



Source: The Cost of Fire: An Economic Analysis of Indonesia's 2015 Fire Crisis, February 2016, World Bank Group, http://pubdocs.worldbank.org/en/643781465442350600/Indonesia-forest-fire-notes.pdf

For more NTS Fast Facts please visit www.rsis.edu.sg/research/nts-centre/centre-resourcescnts/nts-fast-facts

Water Security: Moving Beyond 2016

Maxim Shrestha

From recognition and reiteration at numerous global forums, to the formulation and re-assessment of water policies at many national and sub-national levels, the importance and magnitude of the water security challenge is well established. But while there is some advancement on the policy front and improvements in freshwater availability and access in many countries, a number of important questions remain.

On the regional and multilateral level, water security largely concerns the management and governance of important transboundary rivers like the Mekong, Brahmaputra, Indus, and Nile. Passing through numerous national borders, these shared waters are critical for freshwater access, irrigation, hydro energy generation, local environment and livelihoods for all countries involved. Relatively cordial cooperation between state parties around shared waters has historically been the norm; the Mekong River Commission (MRC) and Indus Commission (IC) serve as good examples. Of late, however, these multilateral mechanisms have suffered

Source: Takeaway/ Creative Commons

The Salawin river (a.k.a. the Nujiang river in China) is an important transboundary river passing through China, Myanmar and Thailand. Myanmar is on the left bank, Thailand on the right.

Source: Shannon 1/ Creative Commons

The Mekong River serves as an important source for water security in numerous countries in Southeast Asia

increasing strains due to differences in state development priorities. In Southeast Asia the effectiveness of the MRC has come into question, given unilateral decisions made by national governments. Is there room for national sovereignty when it comes to water, and if yes, how should it be defined?

At a national level, reference is a key question as national and local governments are not specific on whose water security they refer to. Water security from the perspectives of the country, community, family or individual differ vastly in concept and potential policy prescriptions. The cost and consequences of choosing one over the other needs to be carefully considered as governments define and communicate their water security plans and policies.

From an individual or community standpoint, the issue of water security is inextricably connected to issues of cost, equity and justice. How each is measured is critical in order to ensure security in terms of access to water for all in society. This will become even more pertinent when the issues of climate change and increasing uncertainty and vulnerability (both systemic and individual) are brought in. Water is central for achieving a larger sense of security, sustainability, development and human well-being. Numerous factors, many of which lie outside the realm of water, ranging from biophysical to infrastructural, institutional, political, social and financial, have a direct bearing on our collective water security.

Post-Nuclear Security Summits: The Need for Nuclear Security Cooperation in Southeast Asia

Julius Cesar Imperial Trajano

The Nuclear Security Summit (NSS) process ended with its fourth summit held in Washington, DC, US from March 31 to April 1, 2016. The three previous summits were held in Washington D.C. in 2010; Seoul, South Korea in 2012, and The Hague, Netherlands in 2014. The broad goal of the summit process was to address the threat of nuclear terrorism by minimizing and securing weapons-grade nuclear materials, enhancing international cooperation to prevent the illicit acquisition of nuclear material by non-state actors such as terrorist groups and smugglers, and taking steps to strengthen the global nuclear security system. While the NSS process has achieved some tangible objectives, though not legally binding, from participating-states, the global nuclear security governance issue is far from being resolved. Russia boycotted the final Summit in Washington DC. There are differing opinions between the US and Russia over a nuclear arms control regime, which together hold more than 90 percent of the world's nuclear weapons. As global governance on nuclear security may appear to be in a deadlock with the absence of a comprehensive international legal architecture, can regional cooperation help enhance nuclear security governance in Southeast Asia?

The issue of nuclear security, together with nuclear safety, is becoming more relevant in Southeast Asia with the announced national plans by several ASEAN Member States (AMS) to build nuclear power plants (NPP). Due to the potential increased flow of nuclear materials and radioactive sources in the region by the time NPPs start operating, the development of robust nuclear security capabilities in Southeast Asia is critical to prevent terrorist attacks on nuclear facilities and theft of radioactive materials by terrorists and armed non-state actors.

Nuclear energy plans in Southeast Asia

Six ASEAN countries namely, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam took part in the NSS to disclose their achievements and commitments, either individually or collectively. One evident observation from their national NSS commitments is their collective effort to strengthen nuclear security in Southeast Asia amidst the growing interest of several AMS in nuclear energy.

Participating world leaders at the 2016 Nuclear Security Summit in Washington DC, US

Source: Gobierno de Chile via Wikimedia Commons under Creative Commons

Table 1: Status of ratification in ASEAN Member States.

	Amendment to the Convention on the Physical Protection of Nuclear Material	International Convention for the Suppression of Acts of Nuclear Terrorism	Global Initiative to Combat Nuclear Terrorism
Brunei	Not yet ratified	Not a signatory	Not a participant
Cambodia	Not yet ratified	Signatory 7 December 2006	Participant
Indonesia	Ratification 10 May 2010	Ratification 30 September 2014	Not a participant
Lao PDR	Not yet ratified	Not a signatory	Not a participant
Malaysia	Not yet ratified	Signatory 16 September 2005	Participant
Myanmar	Not yet ratified	Not a signatory	Not a participant
Philippines	Not yet ratified	Signatory 16 September 2005	Participant
Singapore	Acceptance 22 October 2014	Signatory 1 December 2006	Participant
Thailand	Not yet ratified	Signatory 14 September 2005	Participant
Vietnam	Ratification 3 November 2012	Not a signatory	Participant

Source: IAEA, 2016, https://www.iaea.org/Publications/Documents/Conventions/cppnm_amend_status.pdf. Date accessed: 18/12/16

On 30th August 2016, the Philippines' new energy secretary announced a plan to study the opening of the shelved Bataan Nuclear Power Plant, which was built in the 1980s. It was never opened due to safety concerns and corruption allegations. Meanwhile, in November 2016, Vietnam decided to scrap its plans to open its first nuclear power plant primarily due to the rising cost of the project and low projection of local energy demand. Thailand, Indonesia and Malaysia have nuclear energy plans and maintain nuclear research reactors but no national decisions have been made yet. In May 2016, Cambodia and Russia signed two deals to set up a nuclear energy information centre and a joint working group on peaceful uses of atomic energy. According to Russian state-owned ROSATOM, the nuclear energy information centre will help Cambodians, especially students, better understand nuclear energy principles and important developments in nuclear energy and industry.

Importance of nuclear security in Southeast Asia

Nuclear security is the responsibility of every nation that utilises nuclear technology, including countries that are considering the use of nuclear power. While the International Atomic Energy Agency (IAEA) does not influence a country's decision to introduce nuclear power, it supports member states' efforts to evaluate all options towards making an informed decision. National governments are responsible for regulations that govern how safety and security at nuclear facilities are maintained, as well as to reduce radiation risks, including emergency response and recovery actions. But nuclear energy has transboundary implications if nuclear security in each member state is not strengthened. ASEAN countries share a common goal in achieving a high level of public safety and confidence in nuclear and radiation related issues in the region.

Among the key transboundary challenges for nuclear security in the region are the high level of terrorist activity, weak maritime security, insufficient border and export controls, and scarcity of adequately trained and supported human resources. A number of terrorist groups and networks, such as Jemaah Islamiyah (JI) and Abu Sayyaf, remain active in Southeast Asia and are inspired by terrorist groups beyond the region. For the security of the peoples of ASEAN, the chance that a terrorist group could try to get access to sensitive materials from nuclear facilities in the region cannot be ignored. The issue of human capacity and inadequate training has been consistently highlighted as a major challenge for nuclear security. The region currently does not have enough human resources that are highly trained in nuclear safety and security.

Enhancing regional nuclear security cooperation

Given the regional challenges for nuclear security, it is crucial to enhance cooperation on nuclear energy governance in Southeast Asia. Cooperation at all levels is important to reduce potential risks and mitigate potential damage as the impact of a nuclear accident or sabotage will be widespread, indiscriminate and harmful to food and water sources, public health, and the environment. While not all AMS have acceded to or ratified major nuclear security international conventions (**see table 1**), regional cooperation can help member states strengthen nuclear security.

The ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM) was established in 2011 and is a collaborative network of nuclear regulatory bodies and relevant agencies of the 10 AMS. The network shares information, experiences, and best practices, as well as discusses issues relevant to nuclear safety, security and safeguards. It focuses on issues of mutual interest, such as enhancing regulatory capacity through training courses and technical collaboration. ASEANTOM has been conducting regional workshops and training courses to boost capacity building in the region, which is extremely vital to AMS to strengthen nuclear security. For instance, ASEANTOM's nuclear security-related activities in 2016 included the Nuclear Security Border Exercise in Malaysia-Thailand borders; the IAEA Regional Workshop on Strategy to Establish Inventory for the Security of Radioactive Sources; the IAEA Regional Training Course on Nuclear Security Culture; and the Workshop on Nuclear Material Accounting and Control System for Safeguards and Nuclear Security Purposes. In addition, ASEANTOM has also been working to set up an environmental radiation monitoring network in order to provide a platform for sharing environmental radiation monitoring activities and data.

To complement the role of ASEANTOM, several national initiatives have been made to build a regional nuclear security culture. Thailand's Chulalongkorn University, with the support of the European Commission, offers an MSc programme on nuclear safety, security and safeguards with scholarships for ASEAN nationals. Indonesia launched the inter-agency Centre of Excellence on Nuclear Security and Emergency Preparedness (I-CoNSEP) in 2014 to contribute to the development of nuclear security at national and regional levels. The primary roles of I-CoNSEP are to facilitate the development of human resources and enhance the regulatory framework to ensure the long-term sustainability and effectiveness of nuclear security and nuclear emergency preparedness in Indonesia. I-CoNSEP may also provide support for capacity building and technical expertise to neighbouring countries in Southeast Asia. Emulating this initiative by Indonesia, Vietnam also announced its plan to establish the Vietnamese Centre of Excellence for Nuclear Security and Safeguards, although the timeframe is not revealed.

Malaysia has been working closely with Thailand in conducting joint table top and field exercises along their shared border, and has also shared these experiences with other ASEAN countries. To enhance detection capability, Malaysia, with the cooperation of IAEA, established a nuclear security detection laboratory, focusing on maintenance and configuration of radiation detection equipment. The lab is established under the Malaysian National Nuclear Security Support Centre (NSSC) that was approved by the government in February 2016.

The need for multi-stakeholder participation

One evident shortcoming of the existing networks is that participation in regional and national activities on nuclear energy cooperation are limited to nuclear energy state agencies; hence, there is a lack of participation by non-governmental stakeholders such as academia, scientists, civil society and the private sector. Related to this, there is also a lack of public education and communication on the importance of nuclear security in view of nuclear energy plans in the region.

Critical to safe and peaceful use of nuclear power and strengthening regional cooperation on nuclear governance is robust engagement among all stakeholders and not just of nuclear energy agencies. It is imperative for ASEANTOM and the state regulatory agencies to foster multi-sectoral participation so that information sharing and expertise on nuclear security traverses not just across state boundaries but also across sectoral groups. Multi-sectoral participation is indeed crucial for countries in the region to make well-informed decisions on the pursuit or rejection of nuclear power. Early preparations through coordinated regional activities can help the region identify and address gaps and limitations in response readiness even before any of the AMS builds a nuclear power plant.

Restarting the Philippines Nuclear Power Plant

Julius Cesar Imperial Trajano

The Philippines was mulling the opening of the mothballed Bataan Nuclear Power Plant (BNPP). On 30 August 2016, the Philippines' Energy Secretary Alfonso Cusi announced that the government plans to assess the feasibility of opening the BNPP to address growing energy demands amidst a depleting energy supply. Domestic demand for electricity is expected to grow by an average of 5 percent a year until 2030. To meet rising demand, the Philippines is weighing all options, with emphasis not just on meeting capacity requirements but also on sustainability and climate change mitigation obligations. Secretary Cusi said that nuclear energy can therefore be a viable choice for the country. In November 2016, President Rodrigo Duterte gave the go-ahead to the Department of Energy to proceed with plans to reactivate BNPP to generate 621 megawatts of electricity, a turnaround from an earlier stand rejecting the use of nuclear energy during his presidency. But he gave a clear instruction to pay special attention to the safety and security aspects of operating the 30-year-old power plant.

The late dictator President Ferdinand Marcos ordered the construction of the plant from 1974 to 1985, considered nuclear energy to be key to addressing the country's energy demands and to decrease dependence on oil imports. But like Marcos, the BNPP was also shrouded with controversies. The plant had been set for commercial operations in June 1985, but it was mothballed by then President Corazon Aquino in 1986 due to safety concerns in the wake of the Chernobyl accident in the Soviet Union.

But what should the Philippine government do before considering to use nuclear energy or open the BNPP? The biggest challenge is the lack of human resources in the nuclear field in the Philippines. The nuclear engineering program at the University of the Philippines was shut down after the shelving of BNPP in 1986. The country's only research reactor run by the Philippine Nuclear Research Institute was decommissioned in 2012. The Philippines no longer actively produces nuclear professionals equipped with first-hand skills and experience in operating a nuclear reactor and will need to revisit its human resource development strategy, including universities' capability to produce nuclear engineering graduates.

The Philippines also needs to come up with a nuclear energy policy which includes a well-informed national position, legal and regulatory framework, management of spent fuel and radioactive waste, human resource development and capacity building, comprehensive analysis of the current and required national infrastructure, and emergency planning and response, among other related technical issues.

But more importantly, public education and consultation should be conducted by the government to educate the public about the BNPP operation and its impact on nearby communities. Residents in Morong, Bataan, where the plant is located, have already cautioned the government against making the plant operational. They want the government to assure the public that BNPP is safe and radioactive waste will be managed safely. The Nuclear-Free Bataan Movement cited two important reasons against commissioning the BNPP or using nuclear power in the country: "It is unsafe *and* it remains costly." But the proponents of the BNPP revival claim that nuclear power will reduce the cost of electricity in the country, and BNPP is well-maintained and can withstand earthquakes. The debate over cost versus safety will definitely shape the country's national position on nuclear energy. As reiterated by the Department of Energy, the government still needs to get the people's approval before the controversial BNPP can be opened.

Source: Jiru27 via Wikimedia Commons under Creative Commons

The mothballed Bataan Nuclear Power Plant in the Philippines

Emerging Diseases and Health Security in Southeast Asia

Sunil Unnikrishnan

In October 2015, Brazil reported an anomalous increase in the number of cases of microcephaly, a condition where babies are born with unusually small heads. The suspect was an obscure mosquito-transmitted virus named Zika. The discovery startled scientists, since the virus was not known to cause serious illness. Heartbreaking images of babies with microcephaly caused distress and alarm in the public. The evidence for the association of Zika with microcephaly and neurological disorders like Guillain-Barré syndrome (GBS) continued to grow. On Feb 1, 2016, the WHO declared the Zika infection a Public Health Emergency of International Concern (PHEIC).

Since 2015, Zika virus infections have been recorded in over 70 countries. Large outbreaks occurred in the Americas, especially in Latin America and the Caribbean. In Brazil, over 80,000 cases of Zika infection and about 2000 cases of microcephaly and other neurological disorders (collectively termed Zika-associated congenital syndrome) have so far been confirmed. A locally transmitted Zika outbreak hit Singapore as well. As of this writing, 431 cases have been recorded, including 16 pregnant women. Other parts of Southeast Asia like the Philippines and Thailand have also reported outbreaks.

Emerging diseases like Zika pose a threat to health security in Southeast Asia. The nations in the region face numerous challenges in securing the health of their populations. Concrete policy measures are needed to attain the goal of health security in the region.

Source: Flickr / Sanofi Pasteur – Patrick de Niormont

Fumigation can be used to limit the spread of vector-borne diseases

Disease burden of Zika

While Zika infection is mild in most cases, the disease imposes substantial life-long health burdens in the case of infant microcephaly, which occurs in about 1% of Zika-affected pregnancies. Zika infection can also lead to Guillain-Barré syndrome, a rare but severe neurological condition that can cause paralysis and might require long hospital stays. Furthermore, the possibility of sexual transmission complicates family planning for couples.

The short-term macroeconomic costs are relatively low: World Bank estimates that Zika will only cost 0.06% of the GDP in Latin America and Caribbean. But the bank cautioned that longer-term costs would be much higher due to the link between Zika and microcephaly. The overall burden will also increase if the disease becomes endemic in a region and if effective vaccines or drugs are not available. Tourism and travel will be affected. While the WHO has recommended maintaining travel and trade ties at normal levels, several countries have issued Zika-related travel alerts. USA, UK, Taiwan, Australia, and Malaysia issued Zika advisories for travel to Singapore.

There are social and political costs as well. The presence of the virus presages potential demographic problems for affected countries, since couples have been advised to postpone pregnancy and starting a family. Zika has also impinged on national and international politics. In the US, legislation providing $1.1 billion for Zika research and vaccine development has been stalled in the Senate due to a tussle over contraception provisions. The Rio Olympics were held under the heavy shadow of Zika, with some public health practitioners even calling for the postponement or relocation of the games. These examples indicate that infectious diseases can have effects beyond their direct health consequences.

Challenges for health security in Southeast Asia

Southeast Asia is a tropical region of incredible biodiversity. But the natural environment is being modified due to climate change and exploitation of resources for economic purposes. This increases the risk of zoonotic transmission and brings humans in contact with new microbes and vectors. Urbanization and trade links are growing. Due to high population density and better connectivity of cities to other regions, outbreaks can spread far rapidly. Containment measures are unlikely to be effective in these scenarios.

Health system capacities vary significantly in the region. While countries like Singapore and Malaysia have advanced healthcare infrastructure, others like Cambodia, Myanmar and Laos are still lagging. ASEAN countries have generally made good progress in building core capacity as part of their obligations under the International Health Regulations (IHR) agreement. IHR commits countries to building 'their capacities to detect, assess and report public health events.' But there is room for substantial capacity improvement. For example, the Zika outbreak in the region has revealed the limited laboratory capacities of countries like Indonesia and the Philippines, where health officials admitted to a lack of sufficient kits for diagnosing Zika. The paucity of scientific knowledge about obscure diseases and the consequent lack of well-established medical best practices put a big strain on weak health systems.

Another challenge that could undercut the capacity to fight infectious diseases arises from the fact that populations in the region are aging: non-communicable diseases (NCD) are displacing infectious diseases as key health concerns. More resources and research money will be spent on chronic care than infectious diseases. Critical pharmaceutical capabilities for treating emerging diseases might be irretrievably lost if market forces are given free rein. Greater advocacy will be required to counter this trend. In an encouraging development, Brunei, which recently took over the chairmanship of the ASEAN Health Ministers Meeting and Senior Officials Meeting on Health Development (SOMHD), has identified emerging diseases as one of the health priorities of the region.

The way forward: capacity building through cooperation

Given the aforementioned problems with containment measures and the lack of capacity in the region, policy focus should be on building health system capacity in the region. Capacity in disease surveillance and control needs to be enhanced. This includes building, inter alia, laboratory facilities, hospital preparedness capacity,

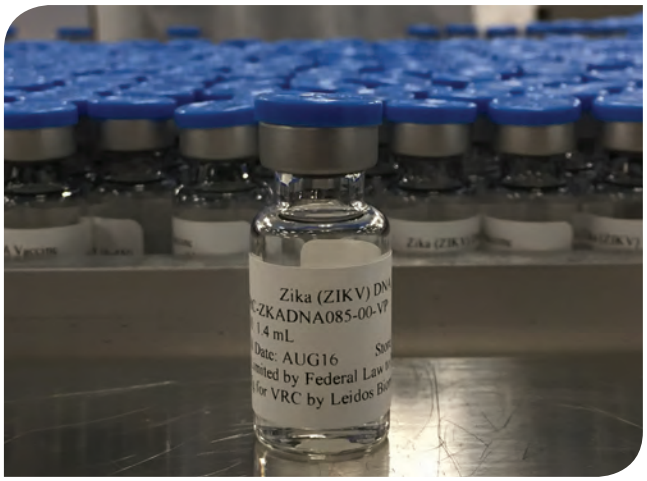
Rapid urbanization in the Asia-Pacific aids the spread of infectious diseases.
Source: United Nations Photo/flickr

pharmaceutical manufacturing capacity, and institutional capacity for risk assessment and communication.

Capacity building should be pursued at both national and regional levels. At national levels, countries should strive to create adequate and inclusive health systems. The needs of vulnerable groups like migrant workers ought to be addressed; the WHO's Southeast Asian office recently appealed for the creation of 'inclusive health systems sensitive to the needs of migrants.' Beyond the national level, capacity building at the regional level is equally important. For one, it would help plug the expertise gap that plagues lower capacity systems. Secondly, the protean nature of emerging diseases and their varied interactions with host populations puts a premium on establishing transparent and dynamic mechanisms of information sharing. In the past, the idea of setting up a regional centre for disease control and prevention has been put forth. The centre could become a dedicated hub for pooling expertise and enabling information collection and sharing. It is time to revive that proposal and pursue it with urgency. ASEAN's current institutional mechanisms to deal with infectious diseases, such as the ASEAN Risk Communication Resource Centre and the ASEAN Technical Working Group on Pandemic Preparedness and Response, could be incorporated into the regional center.

Stakeholders beyond ASEAN need to be included in capacity building, since many bring unique strengths to the table. China, Japan, and South Korea, who are members of the ASEAN plus Three (APT) community, are vibrant centers of scientific research. Previously, collaboration within the APT community resulted in the establishment of the APT Field Epidemiology Training Network (FETN), which enhanced epidemiology training capacity in the region. The research expertise available in the APT community should be channeled towards the development of cheap diagnostics for emerging diseases. This is critical to ensuring equitable access. Singapore was able to offer subsidized Zika testing but most governments across the region cannot afford to do that.

ASEAN must also contribute to the proactive, albeit nascent, international efforts directed towards rapid vaccine development. When an outbreak occurs, efforts



Source: National Institute of Allergy and Infectious Diseases (NIAID), USA/flickr

Vial of Zika Virus Investigational Vaccine

at disease control are stymied by the lack of ready availability of vaccines for emerging diseases. There is a delay between the beginning of an outbreak and before the arrival of a fully tested and safe vaccine. A Zika vaccine is only expected to become available in 2018. Commercial and regulatory issues often get in the way of prompt development of vaccines. Recently the Norwegian government has partnered with India's Department of Biotechnology, Wellcome Trust, Bill & Melinda Gates Foundation, and the World Economic Forum to form the Coalition for Epidemic Preparedness Innovations (CEPI). The organization's goal is to accelerate vaccine development by addressing licensing issues, funding manufacturing capacity, conducting early-stage clinical trials and establishing a small stockpile of candidate vaccines. CEPI is currently expanding its partnership and ASEAN should join the organization. It would go a long way towards providing equitable access to vaccines in the region.

Emerging diseases like Zika are a growing threat to health security in Southeast Asia. The region is often left reacting to fast moving and uncertain conditions. A proactive approach is needed to tackle the threat. Health system capacity needs to be strengthened to ameliorate both the short-term and long-term morbidity imposed by emerging diseases. Cooperation within the ASEAN community and with external stakeholders should be deepened for effective and transparent sharing of resources, expertise and information. Investments should be directed towards the development of inexpensive diagnostics and vaccines.

From Inclusion to Greater Resilience – Ramping Up ACWC

Tamara Nair

Any worthwhile attempt at strengthening resilience of communities needs to reach out to women. In this, ASEAN has done due diligence in establishing a regional commission to protect women's interests. The ASEAN Commission on the Rights of Women and Children (ACWC) was established in 2010. An intergovernmental commission set out to promote and protect the fundamental rights and freedoms of women and children in the region; it resonates with the ideals contained in the Convention on the Elimination of All forms of Discrimination Against Women (CEDAW) and the Convention on the Rights of the Child (CRC), both ratified by all ASEAN Member States. As marked out in the ACWC work plan for 2012-2016, the commission touches on strengthening economic rights of women, looking at social impacts of climate change on women and children, and equality in education, among other areas. However, human rights activists in the region report that, as yet, none of the planned activities have been implemented through to completion. This was revealed in *Forum Asia* – an online platform dedicated to consolidating and disseminating information and advocacy materials on human rights in ASEAN.

The women of Southeast have time and again revealed their resilience, especially in times of crises. For example,

Source: Flickr/U.S. Navy photo by Mass Communication Specialist 2nd Class David A. Brandenburg/Released

Girls in Lumpur School in the small village of Gresik in Surabaya, Indonesia.

Source: Flickr/Shankar, S

Women graduates at the Temple of Literature. Hanoi, Vietnam.

during natural disasters, women have formed informal networks and sourced food, clothing and shelter for themselves and their families. They leave their homes to work so that they can put food on the table and send their children to school. In addition, foreign remittances from these women form a substantial portion of their country's income. According to an International Organisation for Migration (IOM) study, remittances from Indonesian migrant workers (of which three-quarters are women) reached USD$6.6 billion in 2008 and this figure has steadily increased over the years, according to the World Bank, to more than USD$7 billion in 2012. They provide the bulk of agricultural labour in the region, up to 90 per cent of Thailand's farm labourers are women, yet are not easily compensated in times of natural or financial crises.

The ACWC is part of the region's community-building plan. There has certainly been greater inclusion of women across the three pillars of the ASEAN Community but that does not necessarily translate to change and opportunities, or even empowerment of women. For example, not enough is written explicitly on the role of women in the APSC or the AEC, for the most part expressed in general terms, which almost always discounts specific contexts as it applies to women. Language is impactful because it can highlight that experiences are gendered; are different. What is needed is more action behind the rhetoric. The work plan of the ACWC is a good starting point to empower and springboard women into mainstream decision-making at multiple levels of governance. The face of poverty and insecurity might be female, but so is the face of resilience. The end of 2016 marks a year into a 'new' ASEAN Community; a good time to review and recharge women's roles in addressing the fundamental tenets that the regional community is build upon – stronger integration and greater resilience.

The APSC and SDG 16: Peace and Security in Southeast Asia

Lina Gong

This year sees Southeast Asian countries embark on the journey towards an ASEAN Community 2025. It also marks the beginning of the 2030 Agenda for Sustainable Development that was set to achieve and strengthen universal freedom and prosperity. Despite the differences in scope and focus, both agendas work towards peace and security.

ASEAN political and security communities

One pillar of the effort towards more cohesive and integrated Southeast Asia is the ASEAN Political and Security Community (APSC). According to the APSC Blueprint 2025, the community is envisaged to be rule-based, people oriented, resilient and outward-looking, with enhanced institutions. The realisation of this vision relies on close cooperation and coordination among member countries at the regional level. At the same time, a peaceful and secure region is not possible without solid progress in addressing challenges at the country level.

Just, peaceful and inclusive societies

Among the 17 Sustainable Development Goals (SDGs), Goal 16 of promoting just, peaceful and inclusive societies is an enabling factor for progress in other goals, as peace and security is a precondition for sustainable development. This goal consists of twelve targets, the essence of which is peace, stability, human rights, good governance, and the rule of law. By prioritising the security-related goal, the SDGs place more emphasis on the development-security nexus than the preceding Millennium Development Goals (MDGs) that consist solely of socio-economic goals. The respective performance of ASEAN countries on the targets of SGD16 will have a direct bearing on the APSC as political instability and social injustice in member countries hamper the building of a peaceful regional community.

Threats and challenges

Some countries in the region have been or are still affected by political instability and violence. Progress in this regard has been exemplified by the unfolding of democratic transition in Myanmar since 2010 and the Comprehensive Agreement on the Bangsamoro between the Philippine government and the Moro Islamic Liberation Front in March 2014. Nonetheless, countries also face barriers on their path to the achievement of the security-related SDG. Tension between different political parties in Cambodia following the election in 2013 has been a risk factor to its economic development. The Rohingya problem demonstrates the humanitarian consequence of communal violence in Myanmar and the repercussions to the region. The 2016 anti-drug campaign in the Philippines draws attention again to the issue of extrajudicial killings. The violence in Thailand's restive southern provinces this year poses grave threats to the safety and security of local children, according to the United Nations Children's Fund (UNICEF). Proper management and resolution of these domestic challenges constitute the bedrock of the region's effort to build a prosperous, secure, and politically stable community.

Ways forward

Since SDG16 and the APSC overlap on peace and security related targets, respective achievements in the two agendas reinforce each other. However, SDG16 is primarily within the domestic domain and the building of the APSC is a regional undertaking. Guided by shared norms and values like non-interference, the ASEAN way of constructive engagement will continue to shape the region's community-building effort. It is worth exploring proper approaches and avenues to carry out the two agendas in a mutually reinforcing manner.

21st Century Panglong Peace Conference in Nay Pyi Taw, Myanmar, 31 August 2016.
Source: UN Photo

About RSIS

The **S. Rajaratnam School of International Studies** (**RSIS**) is a professional graduate school of international affairs at the Nanyang Technological University, Singapore. RSIS' mission is to develop a community of scholars and policy analysts at the forefront of security studies and international affairs. Its core functions are research, graduate education and networking. It produces cutting-edge research on Asia Pacific Security, Multilateralism and Regionalism, Conflict Studies, Non-Traditional Security, International Political Economy, and Country and Region Studies. RSIS' activities are aimed at assisting policymakers to develop comprehensive approaches to strategic thinking on issues related to security and stability in the Asia Pacific.

For more information about RSIS, please visit www.rsis.edu.sg

About NTS Centre

The **Centre for Non-Traditional Security Studies** (**NTS Centre**) conducts research and produces policy-relevant analyses aimed at furthering awareness and building capacity to address NTS issues and challenges in the Asia-Pacific region and beyond. Non-traditional security (NTS) issues are challenges to the survival and well-being of peoples and states that arise from non-military sources, such as climate change, resource scarcity, infectious diseases, natural disasters, irregular migration, food shortages, people smuggling, drug trafficking and transnational crime. These dangers are transnational in scope, defying unilateral remedies and requiring comprehensive – political, economic and social – responses, as well as the humanitarian use of military force. The NTS Centre addresses knowledge gaps, facilitates discussions and analyses, engages policymakers and contributes to building institutional capacity in the following areas: Humanitarian Aid & Disaster Relief; Food, Health and Energy Security; Climate Change, Environmental Resilience and Sustainable Development; and Peace, Human Security and Development. It brings together myriad NTS stakeholders in regular workshops and roundtable discussions, as well as provides a networking platform for NTS research institutions in the Asia Pacific through the NTS-Asia Consortium.

Our Research Areas

- Humanitarian Assistance and Disaster Relief
- Peace, Human Security and Development
- Energy Security
- Migration
- Environmental Security
- Climate Change, Adaptation and Disaster Risk Management

Our Output

Policy Relevant Publications

The NTS Centre produces a range of output such as research reports, books, monographs, policy briefs and conference proceedings.

Training

Based in RSIS, which has an excellent record of post-graduate teaching, an international faculty and an extensive network of policy institutes worldwide, the NTS Centre is well-placed to develop robust research capabilities, conduct training courses and facilitate advanced education on NTS. These are aimed at, but not limited to, academics, analysts, policymakers and non-governmental organisations (NGOs).

Networking and Outreach

The NTS Centre serves as a networking hub for researchers, policy analysts, policymakers, NGOs and media from across Asia and further afield interested in NTS issues and challenges.

The NTS Centre is the founding member of the Asia Pacific Partnership for Atrocity Prevention, inaugurated 7-8 November 2016. RSIS co-hosted with the Asia Pacific Centre for the Responsibility to Protect (APR2P), School of Political Science and International Studies, University of Queensland St. Lucia, the 'High Level Advisory Panel's (HLAP) Report on Mainstreaming the Responsibility to Protect in Southeast Asia: Pathway Towards a Caring ASEAN Community', This was to generate comments and inputs from the participants on how the HLAP Report on mainstreaming the Responsibility to Protect and mass atrocities prevention can be promoted in ASEAN, as well as in operationalizing the Report's recommendations in the domestic and regional contexts.

Previously, it served as the Coordinator of the ASEAN-Canada Research Partnership (2012-2015) supported by the International Development Research Centre (IDRC), Canada. It also serves as the Secretariat of the initiative.

In 2009, the NTS Centre was chosen by the MacArthur Foundation as a lead institution for its three-year Asia Security Initiative (2009-2012), to develop policy research capacity and recommend policies on the critical security challenges facing the Asia-Pacific.

It is also a founding member and the Secretariat for the Consortium of Non-Traditional Security Studies in Asia (NTS-Asia Consortium).

More information on the NTS Centre is available at: http://www.rsis.edu.sg/research/nts/.

About The NTS-Asia Consortium

The NTS-Asia Consortium was launched in January 2007 as a network of non-traditional security research institutes and think tanks. The aims of the consortium are as follows:

- To develop a platform for networking and intellectual exchange between regional NTS scholars and analysts
- To build long-term and sustainable regional capacity for research on NTS issues
- To mainstream and advance the field of non-traditional security studies in Asia
- To collate and manage a regional database of NTS publications and other resources

NTS issues include the challenges to the survival and well-being of peoples and states that arise from non-military sources, such as climate change, resource scarcity, infectious diseases, natural disasters, irregular migration, food shortages, people smuggling, drug trafficking and transnational crime. These dangers are transnational in scope, defying unilateral remedies and requiring comprehensive – political, economic and social – responses, as well as the humanitarian use of military force. Non-traditional security studies also looks at the multi-dimensional civilian angle to security in conjunction with state, military and governmental actors.

Inaugural Meeting of The Consortium of Non-Traditional Security Studies

The Inaugural Meeting of the Consortium of Non-Traditional Security Studies in Asia (NTS-Asia) from the 8th to 9th January 2007 was a milestone in the progress of NTS studies. The meeting not only officially launched the Consortium but also brought together its pioneering network members - comprising 14 research institutes and think tanks from across Asia - to discuss current NTS challenges facing the region, and possible policy responses to address these problems.

The pioneering members of NTS-Asia are as follows:

South Asia

- Bangladesh Institute of International and Strategic Studies, Bangladesh (BIISS)
- Women In Security, Conflict Management and Peace, India (WISCOMP)
- Centre for the Study of Developing Societies, India (CSDS)
- Refugee and Migratory Movements Research Unit, Bangladesh (RMMRU)
- Regional Centre for Strategic Studies, Sri Lanka (RCSS)

Northeast Asia

- Institute of Asia-Pacific Studies, Chinese Academy of Social Sciences (CASS)
- Ilmin International Relations Institute, Korea University
- Center for International Security and Strategic Studies, Institute of World Economics and Politics (IWEP), Vietnam
- Beijing Foreign Studies University (representing IWEP China)
- Centre of Asian Studies, University of Hong Kong

Southeast Asia

- Centre for Strategic and International Studies, Indonesia (CSIS)
- Institute for Strategic and Development Studies, Philippines (ISDS)
- The Worldfish Center, Malaysia
- S. Rajaratnam School of International Studies, Singapore (RSIS)

NTS-Asia Relaunch 2016

The RSIS reactivated the NTS-Asia Consortium in early 2016 with the aim to re-establish the Consortium's significance and value to NTS research in the region, and to reemphasize the increasingly relevant and urgent need to focus on transnational and multilateral non-traditional security issues.

NTS-Asia Secretariat

The RSIS NTS Centre functions as the Secretariat of the NTS-Asia Consortium. Led by Associate Professor Mely Caballero-Anthony as the Secretary-General, the team comprises Dr Rini Astuti, Research Fellow, Ms Margareth Sembiring, Senior Analyst, and Ms Joey Liang, IT Executive and Webmaster. Mely Caballero-Anthony is Associate Professor and Head of the Centre for Non-Traditional Security (NTS) Studies at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore.

Publications and Activities

RSIS COMMENTARIES

COP 21 and the Paris Agreement: Achievement or Half Measure?
Maxim Shrestha, *RSIS Commentary* CO16028, 05 February 2016

Zika Risk Governance and Climate Change
Jonatan A. Lassa, *RSIS Commentary* CO16029, 05 February 2016

Five Years after Fukushima: Southeast Asia's Nuclear Dilemma
Julius Cesar I. Trajano, *RSIS Commentary* CO16058, 17 March 2016. Re-printed in *The Straits Times*, 14 April 2016

The West Sumatra Earthquakes: Not Learning Our Lessons?
Jonatan A. Lassa, *RSIS Commentary* CO16066, 28 March 2016

"Gaps" in Tsunami Alert System
Jonatan A. Lassa, *New Straits Times*, 07 April 2016

Securing Singapore: Applying Biopolitics
Alan Chong and Tamara Nair, *RSIS Commentary* CO16086, 15 April 2016

Law and Gender: An Emerging Fault Line in Social Cohesion?
Tamara Nair, *RSIS Commentary* CO16089, 19 April 2016

El Nino: Coping with the New Normal
Mely Caballero-Anthony and Jonatan A. Lassa, *RSIS Commentary* CO16090, 20 April 2016

Combatting Climate Change: Involving Indigenous Communities
Serina Rahman, *RSIS Commentary* CO16094, 26 April 2016

Nepal Earthquake One Year On: Building a More Effective Relief Effort
Maxim Shrestha, *RSIS Commentary* CO16095, 26 April 2016

Food Security Now: New Norm or False Dawn?
Paul Teng, *RSIS Commentary* CO16104, 05 May 2016. Re-printed in *New Straits Times*, 12 May 2016

Cheaper Fossil Fuels: The Relevance of Nuclear Energy
Julius Cesar Imperial Trajano, *RSIS Commentary* CO16106, 09 May 2016

Philippines' Next President: Implications for ASEAN
Mely Caballero-Anthony, *RSIS Commentary* CO16107, 10 May 2016. Re-printed in *The Straits Times*, *YaleGlobal Online*, *PacNet*, *The Nation*

Climate Change, Disaster Risk Reduction and Gender: The Southeast Asia Experience
Margareth Sembiring, *RSIS Commentary* CO16111, 13 May 2016

Food Prices: A Double-edged Sword
Mely Caballero-Anthony and Jose Ma. Luis P. Montesclaros, *RSIS Commentary* CO16113, 16 May 2016

From Brazil to Singapore: Containing Zika in Southeast Asia
Celina Y. Loyzaga, *RSIS Commentary* CO16118, 19 May 2016

Less is more: Untapped Role of Small Farmers in Asia
Manda Foo and Paul Teng, *RSIS Commentary* CO16102, 20 May 2016.

Growth of Nuclear Energy: Issues in Safety, Safeguards and Security
Olli Heinonen, *RSIS Commentary* CO16122, 24 May 2016

Agriculture and ASEAN Economies: Still Key for Growth
Paul Teng and Andrew McConville, *RSIS Commentary* CO16127, 26 May 2016

World Humanitarian Summit: Meeting Expectations or Falling Short?
Alistair D.B. Cook, *RSIS Commentary* CO16129, 27 May 2016. Re-printed in *Reliefweb*

Why ASEAN's Disaster Management Strategy must Include Gender
Tamara Nair, *East Asia Forum*, 03 June 2016

As the Water Recedes: Sri Lanka Rebuilds
Vishalini Chandara Sagar, *RSIS Commentary* CO16141, 10 June 2016

Road To Low-Carbon ASEAN Community
Julius Cesar Imperial Trajano and Phidel Marion G. Vineles, *RSIS Commentary* CO16149, 17 June 2016

Forced Migration: Some Sobering Realities
Mely Caballero-Anthony, *RSIS Commentary* CO16157, 24 June 2016. Re-printed in *New Straits* Times, 20 July 2016

International Disasters in Asia Pacific: Indonesia's Civil-Military Responses
Margareth Sembiring and Jonatan A. Lassa, *RSIS Commentary* CO16174, 12 July 2016

Climate Change and Renewable Energy: Mitigation or Vulnerability
Margareth Sembiring, *RSIS Commentary* CO16176, 13 July 2016

Vietnam's Vision for a Renewable Energy Future
Margareth Sembiring, *East Asia Forum*, 12 August 2016

Combating Haze: Holding One's Breath A Year On
Margareth Sembiring, *RSIS Commentary* CO16211, 19 August 2016. Re-printed in *New Straits Times*, 27 August 2016

Southeast Asia's Haze Plight: Is Insurance a Suitable Preventive Mechanism?
Christopher H. Lim and Tamara Nair, *RSIS Commentary* CO16227, 13 September 2016. Re-printed in *New Straits Times*, 20 September 2016

Zika and Health Security in Southeast Asia
Mely Caballero-Anthony and Sunil Unnikrishnan, *RSIS Commentary* CO16234, 22 September 2016

Reforming Myanmar: The Big Task to Develop Human Capital
Arunajeet Kaur, *RSIS Commentary* CO16240, 29 September 2016

Floating Nuclear Power Plants: Are They Safe and Secure?
Julius Cesar Imperial Trajano, *RSIS Commentary* CO16250, 07 October 2016

Toward A Haze-Free ASEAN: Private Financing For Peatland Restoration
Rini Astuti, *RSIS Commentary* CO16252, 10 October 2016. Re-printed in *New Straits Times*, 15 October 2016

Disaster Drones: Great Potential, Few Challenges?
Zin Bo Htet, *RSIS Commentary* CO16253, 10 October 2016

From Paris to Marrakech: Hopes High for Carbon Emissions Reduction
Rini Astuti, *RSIS Commentary* CO16270, 01 November 2016

3-D Printing for Food Security: Providing the Future Nutritious Meal
Tamara Nair, *RSIS Commentary* CO16273, 03 November 2016. Re-printed in *New Straits Times*, 08 November 201

Is There Such a Thing as a "Natural" Disaster?
Jonatan A. Lassa, *RSIS Commentary* CO16279, 10 November 2016

Rethinking Philippine Labour Export
Arunajeet Kaur, *RSIS Commentary* CO16284, 18 November 2016

The Rise of Trump and Its Global Implications – Aborting TPP: Will US Global Leadership Be Crippled?
Arunajeet Kaur, *RSIS Commentary* CO16286, 23 November 2016. Re-printed in *The Straits Times*, 28 November 2016

The Rise of Trump and Its Global Implications – Turning Trouble Around: Re-imagining US Role as Global Player
Christopher H. Lim and Vincent Mack Zhi Wei, *RSIS Commentary* CO16288, 25 November 2016

JOURNAL ARTICLES

Non-Traditional Security Concept, Issues, and Implications on Security Governance
Mely Caballero-Anthony in *Georgetown Journal of International Affairs*, Vol. 3, No. 1, Fall 2016

Deepening Divides: Decentralized Development and the 'Tyranny' of Participation"
Tamara Nair in *Journal of International Development*, Vol. 28, Issue 8, 2016

Food Security
Paul Teng in *COSMOS*, Vol. 11, No. 1 Special Issue, 2016

Challenges and Responses to Asian Food Security
Paul Teng and Jose Ma. Luis P. Montesclaros in *COSMOS*, Vol. 11, No. 1 Special Issue, 2016

BOOKS

An Introduction to Non-Traditional Security Studies: A Transnational Approach
Mely Caballero-Anthony (Ed.). Singapore: Sage Publications, 2016

Asia on the Move
Mely Caballero-Anthony and Toshihiro Menju (Eds.).Tokyo: Japan Center for International Exchange, 2016

Civilian Protection in the Twenty-first Century: Governance and Responsibility in a Fragmented World
Cecilia Jacob and Alistair D.B. Cook (Eds.). New Delhi: Oxford University Press, 2016

Natural Resource Management for Sustainable Growth (ASEAN-Canada Research Partnership)
Mely Caballero-Anthony and Richard Barichello (Eds.). Singapore: RSIS, 2016

Mapping State and Non-State Actors' Responses to Nuclear Energy in Southeast Asia
Nur Azha Putra and Mely Caballero-Anthony (Eds.). Singapore: World Scientific Publishing, 2017

Agricultural Biotechnology and Global Competitiveness
Paul Teng (Ed.). Japan: Asian Productivity Organization, 2016

BOOK CHAPTERS

Understanding Non-Traditional Security
Mely Caballero-Anthony in Mely Caballero-Anthony (Ed.), *An Introduction to Non-Traditional Security Studies: A Transnational Approach*. Singapore: Sage Publications, 2016

On Security
Mely Caballero-Anthony in Mely Caballero-Anthony (Ed.), *An Introduction to Non-Traditional Security Studies: A Transnational Approach*. Singapore: Sage Publications, 2016

Conflict and Human Security
Mely Caballero-Anthony in Mely Caballero-Anthony (Ed.), *An Introduction to Non-Traditional Security Studies: A Transnational Approach*. Singapore: Sage Publications, 2016

Stakeholders and Actors
Alistair D.B Cook in Mely Caballero-Anthony (Ed.), *An Introduction to Non-Traditional Security Studies: A Transnational Approach*. Singapore: Sage Publications, 2016

Food Security
Paul Teng and Jonatan A Lassa in Mely Caballero-Anthony (Ed.), *An Introduction to Non-Traditional Security Studies: A Transnational Approach*. Singapore: Sage Publications, 2016

China's Dual Approach towards the Protection of Civilians
Lina Gong in Cecilia Jacob and Alistair D.B. Cook (Eds.), *Civilian Protection in the Twenty-first Century: Governance and Responsibility in a Fragmented World*. New Delhi: Oxford University Press, 2016

Civilian Protection, Resilience and Insecurity in Myanmar
Alistair D.B Cook in Cecilia Jacob and Alistair D.B Cook (Eds.), *Civilian Protection in the Twenty-first Century: Governance and Responsibility in a Fragmented World*. New Delhi: Oxford University Press, 2016

New Wine in Old Bottles?
Alistair D.B Cook in Cecilia Jacob and Alistair D.B Cook (Eds.), *Civilian Protection in the Twenty-first Century: Governance and Responsibility in a Fragmented World*. New Delhi: Oxford University Press, 2016

The Global and Regional Dynamics of Humanitarian Aid in Rakhine State
Alistair D.B Cook in Melissa Crouch (Ed.), *Islam and the State in Myanmar: Muslim-Buddhist Relations and the Politics of Belonging*. India: Oxford University Press, 2016

How Relevant Are Internal and Non-Traditional Security Challenges in the Asia-Pacific?
Alistair D. B. Cook in Joanne Wallis and Andrew Carr (Eds.), *Asia-Pacific Security – An Introduction*. Washington, D. C: Georgetown University Press, 2016

Bioentrepreneurship in Asia: Some Learnings to Accelerate Innovation
Paul Teng in Liavoga, A., Virgin, I., Ecuru, J., Morris, J. and Komen, J. (Eds.), *Fostering a Bio-economy in Eastern Africa: Insights from Bio-Innovate*. Kenya: International Livestock Research Institute, 2016

Energy Security and Connectivity in Asia and Europe
Margareth Sembiring in Sunkyoung Lee (Ed.), *ASEF Outlook Report 2016/2017, CONNECTIVITY: Facts and Perspectives, Volume II: Connecting Asia and Europe*. Singapore: Asia-Europe Foundation, 2016

Biotechnology: Food Security and Farming Competitiveness
Paul Teng in Paul Teng (Ed.), *Agricultural Biotechnology and Global Competitiveness*. Japan: Asian Productivity Organization, 2016

POLICY BRIEFS

One ASEAN, One Response: ADMM and ADMM-Plus Contributions to Humanitarian Assistance
Alistair D.B Cook in Sarah Teo and Bhubhindar Singh (Eds.), *The Future of the ADMM/ADMM-Plus and Defence Diplomacy in the Asia Pacific*, RSIS, 23 February 2016

Setting the Scene in ASEAN
Paul Teng, *Efficient Agriculture, Strong Economies in ASEAN: Private Sector Perspectives for Policy Makers*, RSIS, 25 April 2016

The 2015 Nepal Earthquake: Implications for Future International Relief Efforts
Alistair D. B. Cook, Maxim Shrestha and Zin Bo Htet, RSIS, 22 June 2016

Regional Solutions to Migration Crises in the Asia-Pacific
Alistair D.B. Cook in the Middle East – Asia Project series, *Adrift: Migrant Crises in the Mediterranean and Andaman Seas*. Washington: Middle East Institute, 2016

REPORTS

The Future of Rice Security under Climate Change
Mely Caballero-Anthony, Paul Teng and Jonatan A. Lassa, NTS Report No. 4, RSIS, 14 July 2016

International Response to 2015 Nepal Earthquake Lessons and Observations
Alistair D.B Cook, Maxim Shrestha and Zin Bo Htet, NTS Report No. 5, RSIS, 04 October 2016

Women, Peace and Security in the Asia-Pacific
Alistair D.B Cook, Vishalini Chandra Sagar, Zin Bo Htet and Celina Yulo Loyzago, RSIS, 23 February 2016

Is Southeast Asia Ready for Nuclear Power?
Serina Rahman, Alistair D.B Cook, Julius Cesar I. Trajano, RSIS, 24 February 2016

Public Stockpiling of Rice in Asia Pacific
Mely Caballero-Anthony, Paul Teng, Tamara Nair, Jonatan A. Lassa and Maxim Shrestha, RSIS, 11 April 2016

Inter-Regional Comparisons of Humanitarian Action
Alistair D.B Cook, Vishalini Chandra Sagar, Zin Bo Htet and Celina Yulo Loyzago, RSIS, 08 June 2016

RSIS World Humanitarian Day: Voices from the Field
Vishalini Chandra Sagar and Zin Bo Htet, RSIS, 23 November 2016

Nuclear Safety and Cooperation in ASEAN
Mely Caballero-Anthony and Julius Cesar I. Trajano, RSIS, 29 November 2016

WORKING PAPERS

Identifying Stakeholders in the Land Use Management Process and Related Critical Factors in ASEAN
Tulus Tambunan, *ASEAN-Canada Working Paper No. 1, 2016*, 31 May 2016

Effects of Natural Disasters on Agricultural Production Activities in the Cambodia-Laos- Vietnam Development Triangle Area: Case Studies of Ratanakiri (Cambodia), Attapeu (Laos) and Kon Tum (Vietnam) Provinces
Nguyen Tuan Anh, *ASEAN-Canada Working Paper No. 2, 2016*, , 26 July 2016

Orienting ASEAN towards Its People: Enabling Engagement with Local NGOs
Serina Rahman, *RSIS Working Paper No. 298*, 12 October 2016

Balancing Sustainable Growth and Forest Conservation through Spatial Planning for a Green Economy in the Heart of Borneo
Paramitha Yanindraputri, *ASEAN-Canada Working Paper No. 3, 2016*, 19 October 2016

Linking Resources to Livelihoods: A Comparative Study of Two Villages in the Chin State of Myanmar
Mr Cin Khan En Do 'John' Pau, *ASEAN-Canada Working Paper No. 4, 2016*, 10 November 2016

Revisiting Food Stockpiles Policies and Practices: Recent Observation from Asian Countries
Mely Caballero-Anthony, Paul Teng, Maxim Shrestha, Tamara Nair and Jonatan A. Lassa, *In Proceedings, 60th Annual Conference of the Australian Agricultural and Resource Economics Society, 2016*

NTS BULLETINS

COP21: Diplomatic milestone or half measure?
Centre for Non-Traditional (NTS) Studies, RSIS, January 2016

Towards Gender Equality in the 2030 Sustainable Development Agenda
Centre for Non-Traditional (NTS) Studies, RSIS, March 2016

Understanding the Risks of the Zika Virus
Centre for Non-Traditional (NTS) Studies, RSIS, April 2016

Labour Exploitation in the Fishing Industry
Centre for Non-Traditional (NTS) Studies, RSIS, May 2016

Between Summits and Vision: Effective Disaster Management by 2025
Centre for Non-Traditional (NTS) Studies, RSIS, June 2016

The State of Human Trafficking in Asia Pacific
Centre for Non-Traditional (NTS) Studies, RSIS, July 2016

Climate Change Adaptation and Disaster Risk Reduction: A Disconnect between International Initiatives and Domestic Challenges?
Centre for Non-Traditional (NTS) Studies, RSIS, August 2016

Five Years After Fukushima: Is Southeast Asia Ready for Nuclear Power?
Centre for Non-Traditional (NTS) Studies, RSIS, September 2016

ASEAN-driven Disaster Response: Progress and Potential
Centre for Non-Traditional (NTS) Studies, RSIS, October 2016

Water Security Insights for An Urbanizing Southeast Asia
Centre for Non-Traditional (NTS) Studies, RSIS, November 2016

EVENTS

Closed-door Roundtable Discussion on "Global Developments in Humanitarian Affairs", 15 February 2016, Singapore

NTS Asia Consortium Relaunch/Inter-Regional Comparisons of Humanitarian Action, 22 February 2016, Singapore

RSIS –Embassy of Sweden Panel Seminar "Moving Beyond UNSCR 1325? Women in Conflict-Affected Countries and Peace Building" with Dr Noeleen Heyzer, 7 March 2016, Singapore

Seminar on "Human Security as Ontological Security? A Post- Secular Approach" by Professor Giorgio Shani, 30 March 2016, Singapore

Seminar on "The Future of Food Security in Asia: Emerging Issues and Challenges", 20 April 2016, Singapore

Seminar on "From Development to Security: The Roles of Women" by Dr Noeleen Heyzer and Dr Chantal de Jonge Oudraat, 22 April 2016, Singapore

Roundtable on "HADR Research in Singapore", 24 June 2016, Singapore

World Humanitarian Day Public Panel and Exhibition, 18 August 2016, Singapore

Seminar on "Asia Toxic Haze Crisis – Our Black Swan" by Ms Vivian Claire Liew, 22 August 2016, Singapore

CSCAP Nuclear Energy Experts Group Meeting, 19 September 2016, Singapore

Commentaries to the Geneva Conventions: An Updated Interpretation for Contemporary Humanitarian Challenges, 21 September 2016, Singapore

Seminar on "An Assessment of the Hospital Preparedness and Community Readiness for Emergency and Disaster (HPCRED) Approach" by Dr Rahmawati (AMA) Husein, 29 September 2016, Singapore

Seminar on "Preparing to Excel in Emergency Response [PEER]: Local Faith Capacity Building for Emergency Response" by Dr Rahmawati (AMA) Husein, 6 October 2016, Singapore

Seminar on "Antimicrobial Resistance: A Major Global Crisis Looming – Do We Have Global Solutions, and Do They Include Both Animals and Humans (i.e. One Health)?" by Prof Jorgen Schlundt, 17 October 2016, Singapore

RSIS Closed-Door Roundtable Meeting with the SIEW Panellists on Nuclear Safety Cooperation, 27 October 2016, Singapore

RSIS Roundtable at the Singapore International Energy Week 2016, 28 October 2016, Singapore

APR2P-NTS Centre: Inaugural Meeting of the Asia Pacific Partnership for Atrocity Prevention, 07 November 2016, Singapore

APR2P-RSIS Joint Seminar on "High Level Advisory Panel's (HLAP) Report on Mainstreaming the Responsibility to Protect in Southeast Asia: Pathway towards a Caring ASEAN Community" by Dr. Surin Pitsuwan, Former ASEAN Secretary General, 07 November 2016, Singapore

"RSIS-AHA Centre Workshop on World Humanitarian Summit – Implications for the Asia-Pacific", 14 November 2016, Indonesia

NTS Centre Workshop on "Towards Resilient Cities, Green Urban Infrastructure and Sustainable Livelihoods: Dynamics of the Just City, the Right to the City, and Food and Nutrition Security", 23 - 24 November 2016, Singapore

NTS Centre Seminar on "Human Security: An Evolving and Contested Concept" by Dr Sorpong Peou, 29 November 2016, Singapore

NTS Centre Seminar on ""Human Security through Formal Trials?" by Dr Sorpong Peou, 1 December 2016, Singapore

RSIS-APLN Southeast Asian Sub-regional Meeting on Nuclear Non-Proliferation and Disarmament, 8 December 2016, Singapore

Notes

RSiS
Nanyang Technological University
S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

Nanyang Technological University

Block S4, Level B4, 50 Nanyang Avenue, Singapore 639798

Tel: +65 6790 6982 | Fax: +65 6794 0617 | www.rsis.edu.sg