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Is ASEAN Prepared for the 4th Industrial Revolution?



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Introduced by Professor Klaus Schwab, the founder and executive chairman of the World Economic Forum, the term '4th Industrial Revolution' first came onto the scene in 2016—just as many of its characteristic technologies were coming into global prominence. Building on the 3rd Revolution, or the 'Digital Revolution', this 4th Revolution is characterised by the 'fusion of technology that is blurring the lines between the physical, digital and biological spheres.' The technological changes that have disrupted almost every part of human life from society to politics to the economy have forced leaders and policy-makers to respond efficiently and effectively, or risk being overwhelmed by a volatile global landscape. However, while mostly used in terms of the economy, its security implications — particularly with non-traditional security — must be looked at with great care.

Regionally, the 4th Industrial Revolution has already started to influence policies in Southeast Asia. ASEAN's prioritisation of this issue is clearly seen in the recently launched 2019 *ASEAN Integration Report*, which has an entire chapter about it. Moreover, with the adoption of initiatives such as the Smart Cities Network and the inclusion of 4th IR priorities in ASEAN documents like the ASEAN Work Plan on Education 2016-2020, the organisation has been accelerating the spread of digital technology across the region.

Effective regional governance is particularly key when dealing with non-traditional security issues, which include climate change, pollution, natural disasters and migration. These issues tend to be transnational, crossing national borders and affecting the politics, economy and society of the region. As

such, robust regional mechanisms must be in place to respond effectively. While the 4th Industrial Revolution has the potential to improve on current regional responses to these non-traditional security issues, it also has the power to cause disruptions.

On one hand, with its new technologies of artificial intelligence, block chains and widespread mobile internet, this revolution will benefit not just the economy through the empowerment of small and medium enterprises (a key goal for ASEAN), but also other areas related to non-traditional security. For example, data sharing is a key area of importance. The transboundary nature of most non-traditional security challenges means that any solution will have to be multilateral. The already existing network of crucial information and data sharing across the ASEAN region that is vital to the creation of these solutions will

become even stronger with the advances in data management.

On the other hand, the new technologies that come with the 4th Industrial Revolution are also likely to cause disruptions in the region. For example, the improvements in artificial intelligence and robotics also mean that more jobs are at risk of automation, in particular low-skilled repetitive jobs. According to the International Labour Organization, an estimated 56 per cent of jobs in five ASEAN member-states (Cambodia, Indonesia, Viet Nam, Thailand and the Philippines) are at high risk of automation in the next few decades. Moreover, not all ASEAN member-states are equally prepared for this future with only Singapore, Malaysia and Thailand considered to be 'leading' states that are 'well-positioned' according to the World Economic Forum Country Readiness Index.

The shifts in power created by these new realities will create new security concerns for the region. Unless the 4th Industrial Revolution is managed and regulated appropriately by leaders and policy-makers, inequalities in the region could grow faster rather than shrink further. In order for ASEAN to keep up with the current accelerated pace of change, it needs to become more flexible and quick to make decisions, while still maintaining a people-centric approach.

Suggested Readings

- Hartley, Kris 2019, 'What Can the Fourth Industrial Revolution Do for Sustainable Development?', *Fair Observer*, 1 October
- Fink, Anna & Gentile, Elisabette 2019, 'Skill flows and the Fourth Industrial Revolution: future questions and directions for the ASEAN Economic Community', *Skilled Labor Mobility and Migration: Challenges and Opportunities for the ASEAN Economic Community*, Chapter 10, pages 267-292, Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing and Manila: Asian Development Bank.
- Cung Vu 2018, 'The Fourth Industrial Revolution: Its Security Implications', *RSIS Commentary No. CO18086*, 24 May
- Rekhi, Shefali, 2018, 'People must be at the centre of smart city planning, say experts', *The Straits Times*, 14 September
- Yendamuri, Praneeth & Ingilizian, Zara, 2019, 'In 2020 Asia will have the world's largest GDP. Here's what that means', *World Economic Forum*, 20 December

CLIMATE SECURITY

NEWS & COMMENTARIES

Climate change: Re-assessing current approaches

Margareth Sembiring
RSIS Commentary
2 December 2019

Expert: High time we focus on water security

Nor Ain Mohamed Radhi
The New Straits Times
25 December 2019

Shouting into the apocalypse: The decade in climate change

John D. Sutter
CNN
29 December 2019

I'm using all my strength to fight climate change, says Merkel

Reuters
Channel News Asia
31 December 2019

The missing 99%: Why can't we find the vast majority of ocean plastic?

Stephen Buranyi
The Guardian
31 December 2019

The 2010s were a lost decade for climate. We can't afford a repeat, scientists warn

Sarah Kaplan
The Washington Post
2 January 2020

What is Australia doing to tackle climate change?

Jack Goodman
BBC
2 January 2020

SELECTED PUBLICATIONS

Water security and the Sustainable Development Goals: Global Water Security Issues (GWSI) case studies

UNESCO i-WSSM,
Daejeon: UNESCO i-WSSM
2019

Warming projections global update

Climate Action Tracker
2019

EVENTS & ANNOUNCEMENTS

Global Symposium on Soil Biodiversity

10–12 March 2020
Rome, Italy

7th Climate Change Online Conference

23–30 March 2019
Virtual



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ENERGY SECURITY

NEWS AND COMMENTARIES

EU leaders include nuclear energy in green transition

Associated Press
The Japan Times
14 December 2019

IAEA team discusses nuclear law with members of the Philippines Congress

Alexander Ahlfont
IAEA News
30 December 2019

ASEAN quickly turning to renewable energy hub

The ASEAN Post Team
The ASEAN Post
2 January 2020

China touts foreign access to oil and gas industry ahead of US trade deal

Bloomberg
The Straits Times
9 January 2020

As US and Iran step back from the brink, China faces energy security risk

Wendy Wu
South China Morning Post
9 January 2020

CNOOC boosts output targets as China seeks energy security

Benny Kung and Lopamudra Bhattacharya
Nikkei Asian Review
13 January 2020



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SELECTED PUBLICATIONS

Security of radioactive material in use and storage and of associated facilities

International Atomic Energy Agency, Vienna: IAEA 2019

World energy outlook 2019

International Energy Agency, Paris: IEA 2019

EVENTS AND ANNOUNCEMENTS

International Conference on Nuclear Security: Sustaining and Strengthening Efforts

10-14 February 2020
Vienna, Austria

7th International Conference on Nuclear and Renewable Energy Resources

20-23 September 2020
Ankara, Turkey

FOOD SECURITY



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SELECTED PUBLICATIONS

Supporting Singapore’s “30-by-30” food security target: Finding the “sweet spot” in property taxation

*Jose Ma. Luis Montesclaros and Paul S. Teng
RSIS Policy Report
Singapore: S.Rajaratnam School of International Studies, Nanyang Technological University, Singapore
December 2019*

WFP Global Hotspots 2020: Potential flash-points to look out for in New Year
*World Food Programme
January 2020*

NEWS & COMMENTARIES

Manila’s tariff move on imported rice: Implications for the region

*Jose Ma. Luis P. Montesclaros
RSIS Commentary
25 November 2019*

Look ahead 2020: Environment — food security to take centre stage while climate change activism forges ahead

*Navene Elangovan
Today
3 January 2020*

Singapore tops food security index for 2nd straight year

*Vanessa Liu
The Straits Times
10 December 2019*

Urban agriculture — the future of farming

*Paul Teng
Sci Dev Net
5 January 2020*

Food supply chain transparency will support Singapore’s ‘30 by 30’ food security goal

*Yi-Ming Ng
The Business Times
17 December 2019*

Swine fever, climate change, armyworm: a perfect storm for Asia’s food prices

*Paul Teng
South China Morning Post
10 January 2020*

EVENTS & ANNOUNCEMENTS

ICCAS 2020: 14. International Conference on Conservation Agriculture and Sustainability

3-4 February 2020
Bangkok, Thailand

4th International Conference on Global Food Security

15-18 June 2020
Le Corum, Montpellier, France



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HEALTH SECURITY



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NEWS & COMMENTARIES

Asia’s hardest year for dengue fever - in pictures

Luke Duggleby and Laure Siegel
The Guardian
30 December 2019

Southeast Asia hits \$226m in healthtech investments in 2019, report finds

Thu Huong Le
TechInAsia
9 January 2020

China pneumonia outbreak may be linked to new type of virus: WHO

Reuters
CNA
9 January 2020

China races against the clock to build virus hospitals

AFP
CNA
27 January 2020

Defeating dengue fever: AI boosts the global fight against mosquito-borne diseases

Geoff Spencer
Microsoft
9 January 2020

How testing woes slowed China’s Wuhan virus response

Reuters
CNA
28 January 2020

SELECTED PUBLICATIONS

Liver diseases in the Asia-Pacific region

Shiv K. Sarin et al.,
The Lancet
2019

Recurrence of WHO-defined fast breathing pneumonia among infants, its occurrence and predictors in Pakistan: a nested-case-control analysis

Nick Brown et al.,
BMJ Open, Vol. 10, No. 1
2020

EVENTS & ANNOUNCEMENTS

Inclusive Healthcare Symposium 2020 - Towards a Singapore model for providing effective healthcare management for persons with IDD & their families

1 February 2020
Singapore

First Global Technical Partnership Meeting on Antimicrobial Stewardship

24-26 February 2020
Bangkok, Thailand



Courtesy of Flickr account of CDC Global and used under a creative commons license.

HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

NEWS & COMMENTARIES

UN Secretary-General's remarks at the Global Refugee Forum

António Guterres
United Nations Geneva
17 December 2019

Humanitarians, scientists, and the battle against climate change

Priti Patnaik
The New Humanitarian
18 December 2019

The Centre: Top 10 highlights of 2019

Centre Team
Centre for Humanitarian Data
18 December 2019

2019 a ‘deadly decade’ for children in conflict, with more than 170,000 grave violations verified since 2010

UNICEF
30 December 2019



Courtesy of Flickr account of US Army and used under a creative commons license.

Aid policy trends to watch in 2020
Ben Parker
The New Humanitarian
2 January 2020

Networked world: Re-envisioning disaster risk
Angelo Trias
RSIS Commentary
6 January 2020

SELECTED PUBLICATIONS

Better SOPS for effective emergency response
Asian Disaster Preparedness Center (ADPC)
2019

IRC emergency watch-list 2020
International Rescue Committee
2020



Courtesy of Flickr account of Jeffrey Pioquinto, SJ and used under a creative commons license.

EVENTS & ANNOUNCEMENTS

Humanitarian Networks and Partnerships Week (HNPW)
3-7 February 2020
Geneva, Switzerland

The 2020 Asia Pacific Science and Technology Conference for Disaster Risk Reduction (APSTCDRR)
16-17 March 2020
Kuala Lumpur, Malaysia

MIGRATION



Courtesy of Flickr account of ILO Asia Pacific and used under a creative commons license.

Canberra workers must not pay the cost of climate-fuelled disasters
Alex White
The Canberra Times
13 January 2020

Is Asean doing enough for migrant workers?: Inquirer contributors
Gideon Lasco and Raudah Yunus
Philippine Daily Inquirer
13 January 2020

SELECTED PUBLICATIONS

World Migration Report 2020
International Organisation for Migration, Geneva: IOM
2019

The use of non-judicial accountability mechanisms by the refugee sector in Australia
Savitri Taylor and Joyce Chia, in collaboration with Refugee Council of Australia, Melbourne: La Trobe University.
2019

NEWS & COMMENTARIES

Backlash against migrant workers in Asia-Pacific sparks slavery concerns
Nanchanok Wongsamuth
Reuters
18 December 2019

Global mobility is 'the starkest it has been' as countries tighten their borders
Ollie Williams
Forbes
7 January 2020

2019: The year refugees were urged to return
Anealla Safdar
Al-Jazeera
24 December 2019

Worker organising can counter labour abuse in the Global South
Elena Shih
Al-Jazeera
9 January 2020

EVENTS & ANNOUNCEMENTS

Twentieth International Conference on Diversity in Organizations, Communities & Nations
10-12 June 2020
Milan, Italy

International Conference on Refugee and Forced Migration Studies
27-28 August 2020
Sydney, Australia