National Defense

Strategic Annual Journal / Issued by National Defense College/ Issue 09 – June 2022

Sheikh Khalifa Bin Zayed..

A Journey Full of Regional and International Achievements

The First and Future 50: Reflections on UAE Development

COP28: UAE's Strategic Influence and Impact on National Economy

Hamdan Bin Mohammed Bin Rashid Al Maktoum

Attends the 9th National Defence College Graduation Ceremony

Sheikh Khalifa - may God have mercy on him - accompanied the founding father, Sheikh Zayed bin Sultan Al Nahyan - may God rest his soul - on every step of the UAE's development, then he continued to carry the nation's trust after Sheikh Zayed's departure with sincerity and wisdom. He completed his mission towards his people and bestowed an everlasting legacy of giving to the people of the region and the world.

His Highness Sheikh Mohamed bin Zayed Al Nahyan
President of the United Arab Emirates

Editorial

The United Arab Emirates embodies several principles in its internal and external relations and within its constitution. In building its political, economic and social relations, it promotes the principles of tolerance, peace, communication with countries of the world and openness to peoples and their different cultures to lay the foundations of communication, stability, development and peaceful coexistence.

Major General Staff
Aqab Shahin Aqab Alali
Commandant of the National
Defense College (NDC)

This represents a key factor of the UAE's foreign policy's focus on opening up to the world and establishing relations based on mutual respect and common interests. It reflects the wise leadership's vision aimed at strengthening connection through the UAE's pioneering role in various international issues at all levels, and adopting a political position that reflects the UAE's capabilities.

The international changes that we are experiencing today require in-depth study and understanding of their effects on the national, political and economic interests.

The speech delivered by His Highness Sheikh Mohamed bin Zayed Al Nahyan, President of the UAE - may God protect him - to the people is a roadmap for the next stage of the UAE's foreign policy. His Highness affirmed that the UAE extends a hand of friendship to all countries that share the values of peaceful coexistence and mutual respect, and that we will continue to support peace and stability in the region and the world, by endeavoring to enhance global energy security as a major dri v er of global economic growth.

His Highness' speech laid out the clear strategic vision for the UAE's future, along with a comprehensive national action plan to move forward decisively in building our country's development process.

The National Defence College epitomizes this concept of comprehensive strategy, mentioned in His Highness' speech, through its curricula and academic programs that outline the fundamental objectives designed for studying and analyzing national security and its strategic dimensions through evaluating its current and future challenges.

The mission of the National Defence College is to prepare and qualify military and civilian leaders and hone their skills to identify and assess national, regional and international security challenges. This mission aims for NDC participants to achieve an understanding of the foundations and requirements for managing and employing state resources in order to protect the national interests.

Because scientific research and academic discussion are essential, the 9th issue of the National Defence Magazine shares a selection of noteworthy articles that shed light on various issues in security, politics, diplomacy, economics, and scientific fields. In this edition we present various reports, intellectual articles, and scientific studies brought by intellectual, specialized and esteemed writers.

Therefore we thank all who have contributed by sharing their interests and imparting their views. Such participation always enriches the discussion and ensures its permanence and impact.

It is my sincere pleasure to extend my heartfelt thanks to everyone who has played a part in this publication and its content, and I welcome everyone who has participated to continue joining with us in the future, in producing a magazine that aims to provide powerful dialogue, active participation, and productive presentation.

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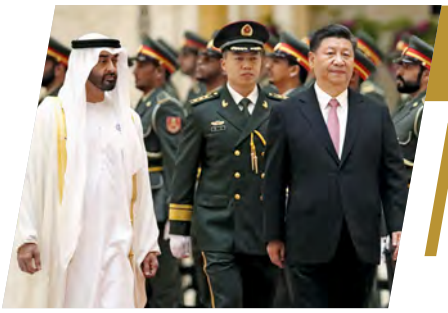

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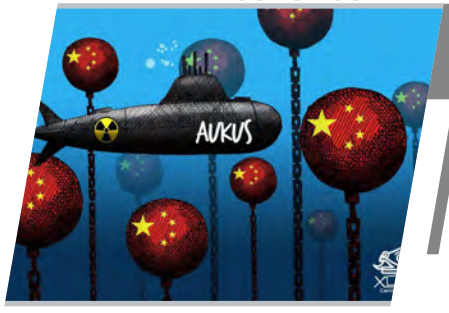

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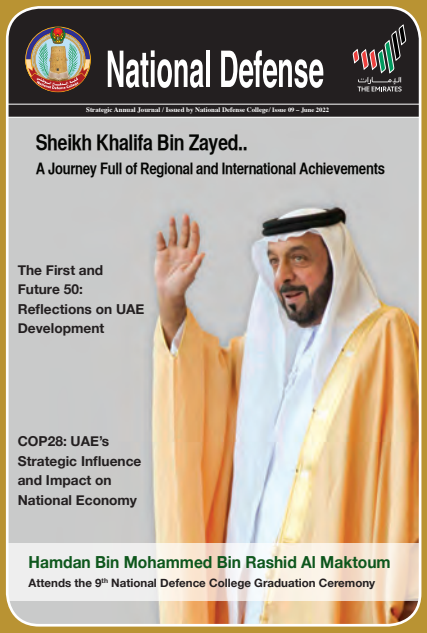

National Defense

A Specialized Yearly Journal
on Strategic Affairs
Issued by UAE National Defense College
Established In June 2014

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“The achievements of Sheikh Khalifa are innumerable, he was the finest heir to Sheikh Zayed; he upheld his father’s approach and built on his accomplishments. He embodied the noblest of virtues, he was generous, gentle, wise, modest, honorable and loyal.”

His Highness Sheikh Mohammed bin Rashid Al Maktoum
Vice President, Prime Minister of the United Arab Emirates and Ruler of Dubai

Editor In Chief

When we predict the future, we study successive variables, and set well-studied plans on how to deal with these variables which ensures that we seize all the opportunities to achieve success and overcome all obstacles.The international changes and crises that the world went through in the past - and continues to undergo – have put governments of all kinds under direct and relentless pressure. Yet not everyone has been able to handle these challenges effectively and successfully manage these crises. Whereas, we have governments that have turned these tests into remarkable successes, with the United Arab Emirates government emerging as a leading country and a successful example in crisis management, overcoming obstacles and dealing with post-crisis planning.

Brigadier General
Mohammed Saeed Al Jabri
Editor-in-Chief

The elements of success that distinguished the UAE reflect the wise leadership that supports all the ambitious plans to strengthen the people and the nation, in addition to the efficiency of its administrative systems that adopt prior planning for effective management, preceded by the availability of the human capital and qualified professional staff to carry out these duties and support their continuity.
In the recovery stage, where the UAE overcame the Covid19- global pandemic and the subsequent new strains of the Coronavirus, we found that the UAE - despite the difficulties it faced in the beginning - was able to deal with the pandemic with wisdom and consummate awareness, and set flexible strategic plans for different levels and for all institutions to minimize the disturbances to the flow of normal life, without the need for reactive responses or interruptions. This meant that the UAE was able to control the pandemic through utilizing all capabilities and providing various services regularly, while also applying the critical precautionary measures, which was ultimately what led to successfully limiting the impact of the virus.
The UAE has also extended a helping hand and support to many friendly countries and international humanitarian organizations in the efforts made to deal with the Covid19- pandemic.
The efforts of the UAE did not only focus on limiting the pandemic, but reached far beyond by developing post-crisis pre-plans and implementing them efficiently, professionally and competently to ensure that the wheel of development continues to revolve and to avoid any negative effects as a result of this pandemic, now and in the future.
In order for such plans to become a concrete reality, we cannot forget the most important factor in the process of implementation and sustainability: the human element. Because the development of the human element is the cornerstone for achieving success, our wise leadership has given it the utmost care and interest. The integration of plans at various levels and the development of strategic thinking methods and how to deal with national and international issues for all administrative elements of state institutions has witnessed the greatest impact and success achieved through its human element.
To this end, the National Defence College seeks to make intensive efforts in preparing and qualifying informed and qualified military and civilian leaders and in developing their capabilities to identify and assess national, regional and international security challenges, and understand the foundations and requirements for managing and employing state resources in favor of national interests.
The National Defence College also places among its main objectives the development of the capabilities of leaders from the human element in research, analysis, criticism, and evaluation. The National Defence College magazine provides a forum for expressing views and scientific perspectives with the contribution of NDC participants who present their specialized topics realizing fundamental elements of the National Defence Course curriculum. Topics vary between articles on national and international security policies and strategies, to economics, diplomacy, media and other subjects that undoubtedly enrich the National Defence College magazine.
As usual, the current NDC magazine also features a range of expert articles from notable personalities and subject specialists, through which it discusses a number of internal and external issues for the readers' interest and information.

Sheikh Khalifa bin Zayed.. A Journey Full of Regional and International Achievements

The United Arab Emirates has witnessed tremendous development since the late Sheikh Khalifa bin Zayed Al Nahyan, may God have mercy on him, became UAE President on November 3, 2004. His initiatives resulted in multiple achievements that have empowered Emirati citizens in all areas and achieved prosperity for the UAE at local, regional and global levels.

The UAE's achievements under the leadership of Sheikh Khalifa, may God have mercy on him, were not by chance. Rather, they were the product of the firm foundations laid by his late father, Sheikh Zayed bin Sultan Al Nahyan (may God rest his soul in peace). Sheikh Khalifa bin Zayed committed himself to following in the footsteps of his father by devoting significant attention to the prosperity of UAE nationals, and by establishing action plans that ensured the nation's elevation was the priority in all policies and strategies.

Sheikh Khalifa, may God have mercy on him, was born in 1948, in the city of Al Ain in the Eastern Region of the Emirate of Abu Dhabi. The eldest son of Sheikh Zayed (may God rest his soul in peace), his mother was Sheikha Hessa bint Mohammed bin Khalifa Al Nahyan. Sheikh Khalifa began memorizing the Holy Quran at an early age, guided by his father, from whom he inherited higher morals and attributes. He received his foundational education in the city of Al Ain, taking into consideration the fact there were no formal schools at the time.

Sheikh Khalifa's Achievements Prior to the Union

When Sheikh Zayed, may God have mercy on him, took the reins of government in the Emirate of Abu Dhabi on August 6, 1966, he issued Emiri Decree No. (3) on September 11, 1966, establishing the various government departments in the Emirate. He chose his son, Sheikh Khalifa, as the Ruler's Representive in the Eastern Province, and as President of the Courts of Justice in Al Ain.

In the early years of managing local affairs in Abu Dhabi, Sheikh Khalifa acquired a great deal of experience. He learned the principles of managing state affairs in a period that marked the beginnings of his appointment as Ruler of Abu Dhabi.

As Abu Dhabi prepared for modernization and development, Sheikh Zayed recognized the need to ensure comprehensive planning for all government departments, stressing the importance of coordination. Consequently, Decree No. (14) was issued on March 20, 1968, to establish the first Urban Planning Council in the Emirate of Abu Dhabi under his presidency, and to appoint Sheikh Khalifa as the Council's first Vice-President. The establishment of the Urban Planning Council was testament to Abu Dhabi's political development. Sheikh Khalifa paid particular at-

tention to the welfare of the Emirate's citizens, raising their standard of living and providing advanced infrastructure, especially in the industrial, commercial and agricultural sectors.

As security and stability are essential factors in achieving economic and social development, Sheikh Zayed knew the importance of establishing an army capable of defending the Emirate of Abu Dhabi. He established the Abu Dhabi Defense Force, in addition to the Abu Dhabi Department of Defense to oversee Defense Force affairs.

On February 1, 1969, the late Sheikh Zayed bin Sultan issued two Emiri decrees. The first stipulated that Sheikh Khalifa would assume the roles of Crown Prince of Abu Dhabi and Head of the Abu Dhabi Department of Defense. The second decree granted Sheikh Khalifa the rank of Lieutenant-General in the Abu Dhabi Defense Force.

From the very start of his appointment as Head of the Defense Force, Sheikh Khalifa played a major role in transforming it into a multi-faceted force, consisting of an infantry, air and naval units, with the latest equipment. He ensured all available resources were devoted to training the military and, as a result, forged skilled national military personnel able to protect the nation and its people. The establishment of Zayed Military College in Al Ain, which Sheikh Khalifa personally supervised, was an important and pioneering step, as the first military college of its kind in the Gulf region.

In addition to his leadership of defense affairs, Sheikh Khalifa, may God have mercy on him, was appointed Head of the first Local Ministerial Council, and Head of the Department of Finance, in July 1971, when Sheikh Zayed announced the establishment of the 16-member Ministerial Council.

Sheikh Khalifa's Achievements During the Union Phase

Shortly after the establishment of the Federation, the late Sheikh Maktoum bin Rashid Al Maktoum was entrusted with the formation and presidency of the first Federal Council of Ministers on December 9, 1971, following the establishment of the Federation. Two years later, on December 13, 1973, Sheikh Zayed agreed to the dissolution of the Federal Cabinet and the creation of Abu Dhabi Executive Council, as a prelude to making ministerial changes that supported the stability of the Union. Sheikh Maktoum was in charge of forming the new Cabinet, and on December 23, 1973, Sheikh Khalifa assumed the position of Deputy Prime Minister. In the role, he worked tirelessly toward formulating the nation's domestic and foreign policies, making a host of international visits in which he represented the UAE.

In January 1974, Sheikh Khalifa reorganized the structure of Abu Dhabi Government, following ministerial amendments at the Federal level. Under his leadership, Abu Dhabi Executive Council significantly increased its annual budget and allocated funds for agricultural and industrial development. This led to the establishment of factories and infrastructure, as well as the construction of homes, schools and health facilities. In addition to his responsibilties, Sheikh Zayed issued an Emiri decree appointing Sheikh Khalifa Commander-in-Chief of the Abu Dhabi Defense Force. Sheikh Khalifa's keen interest in developing a strategic vision for Abu Dhabi's considerable financial resources was clear. His vision was achieved through the establishment of Abu Dhabi Investment Authority in 1976, which is today among the largest sovereign wealth funds in the world.

Significant progress was also achieved when Sheikh Zayed issued a federal decree appointing Sheikh Khalifa Deputy Supreme Commander of the Union Defense Force, and a member of the Supreme Defense Council. On May 6, 1976, the Council issued its historic decision to merge all Emirates' armed forces and form a national army, with one central leadership, under one banner.

In addition, Sheikh Khalifa established Abu Dhabi Department of Social Services and Commercial Buildings, known as the Khalifa Committee, in 1981. Towards the end of the 1980s, Sheikh Khalifa served as Leader of the Supreme Petroleum Council, and in 1991, he established the Private Loans Authority, providing loans to nationals for construction and investment projects.

During that period, and until he assumed the UAE presidency, Sheikh Khalifa directed all available resources to improving living standards for nationals. Moreover, he provided support to brotherly Arab countries and allies around the world, especially during disasters and crises - whether humanitarian, social, economic or political. All of these efforts earned Sheikh Khalifa a prominent and influential role regionally and globally. This, in turn, afforded the UAE international standing and influence, as well as the respect and appreciation of various organizations and institutions within the international community.

Sheikh Khalifa's Most Notable Achievements as Head of State

Following the death of Sheikh Zayed bin Sultan Al Nahyan on November 2, 2004, Sheikh Khalifa bin Zayed was elected UAE President on November 3, 2004. He proceeded to launch his first strategic plan for the UAE government, which aimed to achieve balanced and sustainable development. In 2005, Sheikh Khalifa issued a law establishing the Abu Dhabi Emiratization Council, which was responsible for supporting and developing Emiratization plans in the public and private sectors. In the same year, he issued a decree establishing the National Health Insurance Company, which provides health insurance services to citizens and residents in the Emirate.

Sheikh Khalifa went on to issue a Federal law

establishing the Supreme Council for National Security in 2006, with the aim of achieving national safety and security. Also that year, he issued Resolution No. 3 of 2006, regarding the method of selecting representatives of the Emirates in the Federal National Council. The Resolution stipulates that the formation of the Council should include the election of half of its members via an electoral college for each Emirate.

In 2007, Sheikh Khalifa approved the decision to establish Sheikh Khalifa Bin Zayed Foundation for charitable works, and issued a Federal law establishing the Emirates Investment Authority. Recognizing the importance of empowering women, the first Emirati female judge was appointed in 2008, while among the achievements of 2009 was the law establishing the Emirates Nuclear Energy Corporation; launching a peaceful nuclear program for electricity production to support economic development and provide job opportunities for UAE citizens.

In 2010, Sheikh Khalifa issued a federal decree establishing the National Qualifications Authority, while on March 2, 2011, he ordered increased investment in the northern regions of the country, specifically in the water and electricity sectors. He also ordered the establishment of the Khalifa Fund for Enabling Emiratization, which provided the financial resources needed to support programs and policies that encourage citizens to join the labor market.

In 2012, Sheikh Khalifa issued a decree establishing the National Defense College, which specializes in preparing and qualifying military and civilian leaders, enhancing their abilities to identify and evaluate challenges. In 2013, he launched the Shams 1 concentrated solar power project (CSP) in the Al Dhafra region of Abu Dhabi, the world's largest facility of its kind.

As for the UAE's official entry into the global race to explore outer space, in 2014, Sheikh Khalifa announced the establishment of the UAE Space Agency, which was followed by the adoption of the 'UAE's Higher Policy for Science, Technology and Innovation' in 2015, comprised of 100 initiatives in the education, health, energy, transportation, space exploration and water sectors.

Sheikh Khalifa receives significant credit for the designation of special years, with themes that reinforced essential values. He designated 2017 as the 'Year of Giving' in the UAE, while 2018 was the 'Year of Zayed', in celebration of the Founding Leader on the 100th anniversary of his birth. In addition, Sheikh Khalifa declared 2019 the 'Year of Tolerance'. Each of these initiatives played a vital role in establishing the UAE as a model of benevolence, giving and an inspiring example of coexistence, tolerance and pluralism.

Measuring the many achievements of Sheikh Khalifa, may God have mercy on him, during his outstanding career is no easy task. What is certain is that the state, during his reign, made global advances in all fields, such as the first Emirati astronaut in space and the Hope Probe launch in 2020, as the UAE embarked on a new scientific journey to explore Mars. These are among the many achievements of which the UAE can be proud. Sound leadership has championed this advancement, through outstanding efforts and endless giving, establishing a unique and effective philosophy of governance and leadership.

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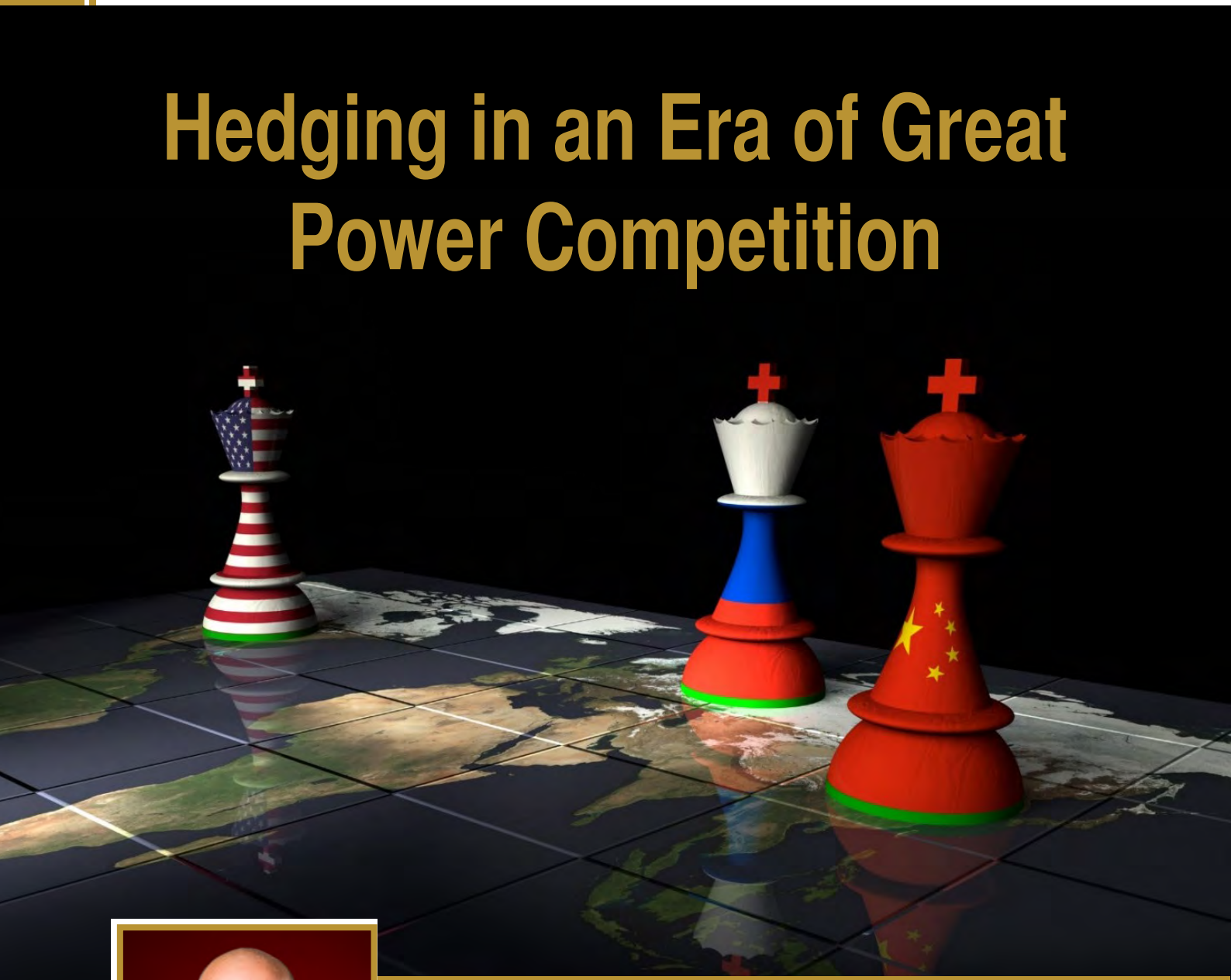
Hedging in an Era of Great Power Competition



Daniel Baltrusaitis, Ph.D.
NDC Academic Dean

One major trend evident in the international system is that power is shifting from West to East (Layne 2012). This power shift can be described as the erosion of the American era of global hegemony or can be labeled as the rise of China. Whatever the description one prefers, global power shifts have important implications for all players in the international game. Power shifts are not new, and the implications of power transitions are well known and predictable. Typically, when two international powers near parity, a period of intense competition begins where the rising power and accommodating power must come to agreement on the new power arrangement. War is likely to happen during this period if the rising state is dissatisfied with the role of the accommodating state in maintaining the status quo (Organski 1958). At a minimum, the accommodation of the rising power causes an ongoing competition between the two powers for international influence.

Effects of the competition will spill over into the relations between smaller powers and competing great power partners. According to one analyst at the Center for New American Security, we are seeing the re-emergence of a multipolar world where "we now live in a world of multiple powers with divergent interests and objectives" (Friedman 2019). This article will explore the impact these divergent interests and objectives will have on the foreign relations of the UAE and will present a framework for analyzing decisions that are likely to be affected by this competition.

Great power competition creates uncertainty for states such as the UAE. Since the United States has been the primary security partner of the UAE since its inception as a state, the UAE national leadership must assess the role of the U.S. as a security partner in the future and determine if the U.S. can be relied on to continue in its current role (Soubrier 2020). Additionally, the UAE needs to assess if other international partners will meet its national interests as well as in the current relationship with the United States. To understand how countries manage this transition, we should look at international relations theory to understand the challenges that lie ahead.

Traditional international relations theory argues that states either balance against or bandwagon with potential threats as a response to the power distribution in the international system. One of the most established international relations theories, balance of power theory, posits that a rising great power will cause others to balance against it to restrain its rising power (Schweller 2016). In a reformulation of balance of power theory, Steve Walt (1987) argued that states balance against rising threats rather than power alone. In the case of a rising China, one can expect that states that feel threatened by the rise will balance with the United States. Alternatively, bandwagoning occurs when a state aligns with a stronger, adversarial power in the hopes of sharing in the spoils and incentives

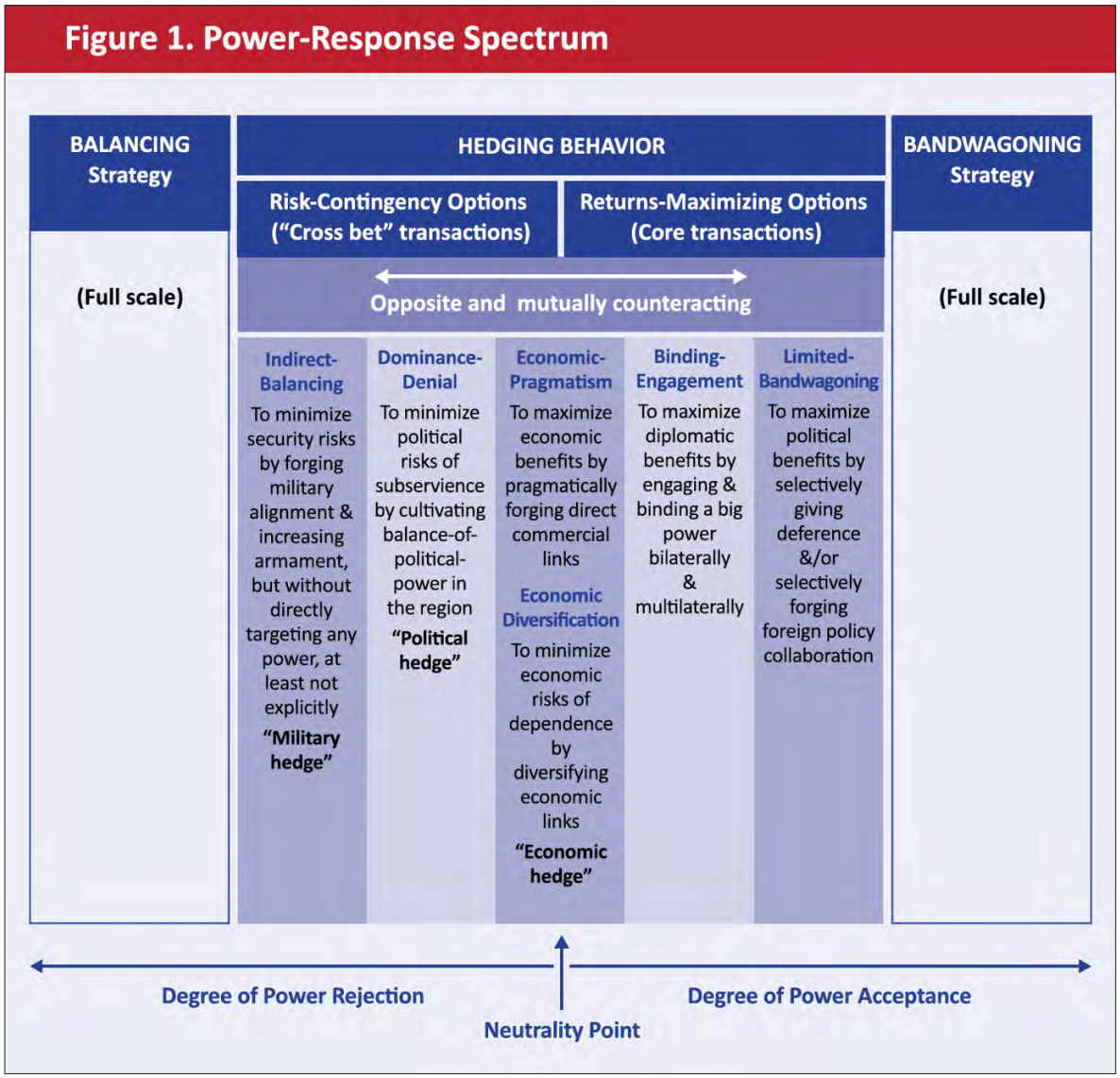
from the stronger state (Meirsheimer 2001). Generally, strong states tend to balance and weak states will either balance against other weaker states or bandwagon when threatened by stronger powers.

A common strategy for smaller states in an era of great power competition is neither balancing, nor bandwagoning, but rather hybrid approach known as hedging. Hedging is a defensive behavior typically seen in high-stakes and high-uncertainty situations aimed at avoiding the choice between balancing and bandwagoning, in the hope that a middle position can forestall having to choose one side at the expense of another (Goh 2006). Hedging describes when a state pursues a mix of engagement policies at the same time as balancing policies in the hopes that, regardless of the outcome of the great power competition, the contradictory acts will cancel out, thereby avoiding the risks of complete exposure and protecting long-term interests (Kuik and Rozman 2016). In the hedging case, states will make conciliatory policies to multiple great powers to avoid being on the wrong side of history when the competition is settled.

Hedging is not only a middle position, but is a position of opposites where states adopt sets of mutually counteracting policies that may be either 'returns-maximizing' or 'risk-contingency' options. For instance, Malaysia, which has unresolved territorial challenges with China, has increased security ties with the United States to include considering an American airbase, while at the same time developing a more productive and comprehensive relationship with China (Korolev 2019). Figure 1. shows how these strategies are part of a continuum balancing-bandwagoning spectrum of options.

Each of these possible hedging approaches display a degree of acceptance or rejection of the

Figure 1. Power-Response Spectrum



dominant power. In short, states pursue offsetting strategies in order to appear middle-of-the-road, not siding with any power (Kuik and Rozman 2016).

Uncertainty in the international system is the factor that motivates smaller states to hedge. Smaller states hedge when the source of imminent threat is unclear, when the distribution of power amongst the great powers is unclear, or when it is uncertain how great power competition will unfold. States manage risk by signaling ambiguity towards the great powers in an attempt to bandwagon and show allegiance that would entrap the state requiring supporting the great power's security interests. Effective hedging requires assessing risks accurately and accepting the costs incurred through an ambiguous strategy. Hedging will allow a state to pursue growth and independence; however, when hedging fails, a state may meet threats that it is unable to counter (Ciorciari 2019). The Russian invasion of Georgia in 2008 highlights the danger of hedging. Although Georgia received strong support from Europe and the U.S. for its sovereignty and territorial integrity, they did not provide military support to counter the Russian incursion, allowing Russia to occupy strategic portions of the country (Allison 2008).

The example of Georgia illustrates the limited maneuver space for smaller states when pursuing a hedging strategy. The policy maneuver space for a hedging state depends on the immediacy of local threats and the intensity of competition between the great powers (Korolev 2019). In the Georgian example, the immediacy of the external threat (Russia) exceeded the commitment of NATO and the United States. The West was unwilling to directly counter the Russian incursion for fear of triggering a much wider confrontation (Allison 2008). Georgia was left with no acceptable military options for countering the Russian invasion. Similarly, the intensity of the great power competition shrinks the foreign policy space for hedging states. As the great powers confront each other more intensely, structural uncertainty decreases, and they will push smaller powers to take sides more explicitly (Korolev 2019). A smaller state is in very dangerous territory when caught between two great powers.

Great power competition is already manifesting itself in the Gulf, and Gulf states need to be ready to navigate the dangerous waters created by such competition (Hoffman 2021). Any practitioner of foreign policy in the region should have a thorough understanding of Figure 1 to understand the dimensions and implications of hedging. Already the United Arab Emirates is being asked to choose between the advanced F-35 fighter and the Chinese developed 5G network. The U.S. is concerned with UAE economic development with China as well as the potential for using the 5G network for intelligence collection and espionage (Rumley 2022). The UAE can expect demands like this to multiply as the competition between the U.S., China, and Russia intensifies. As this competition increases, Gulf states' maneuver space will decrease. Smaller states should be aware of the rewards and risks of their policy options as they navigate these changing waters.

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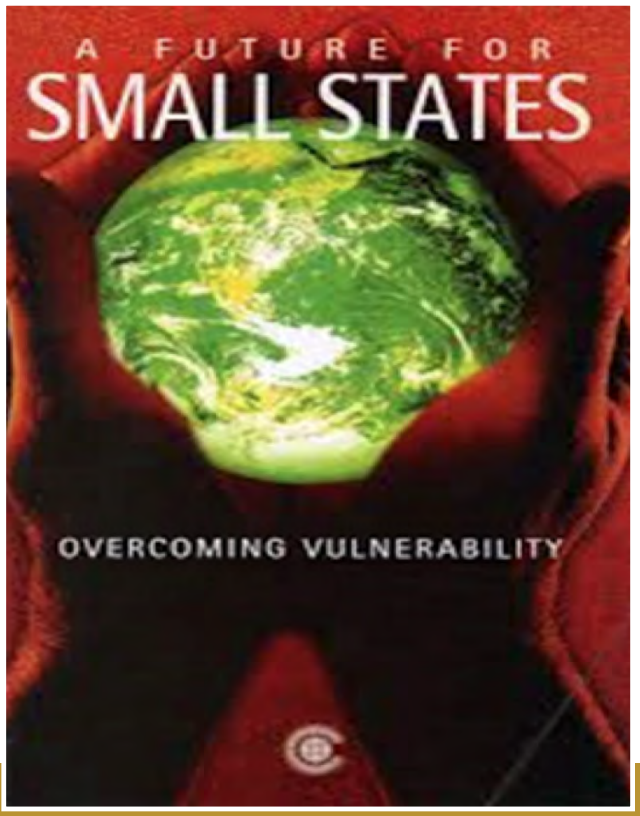


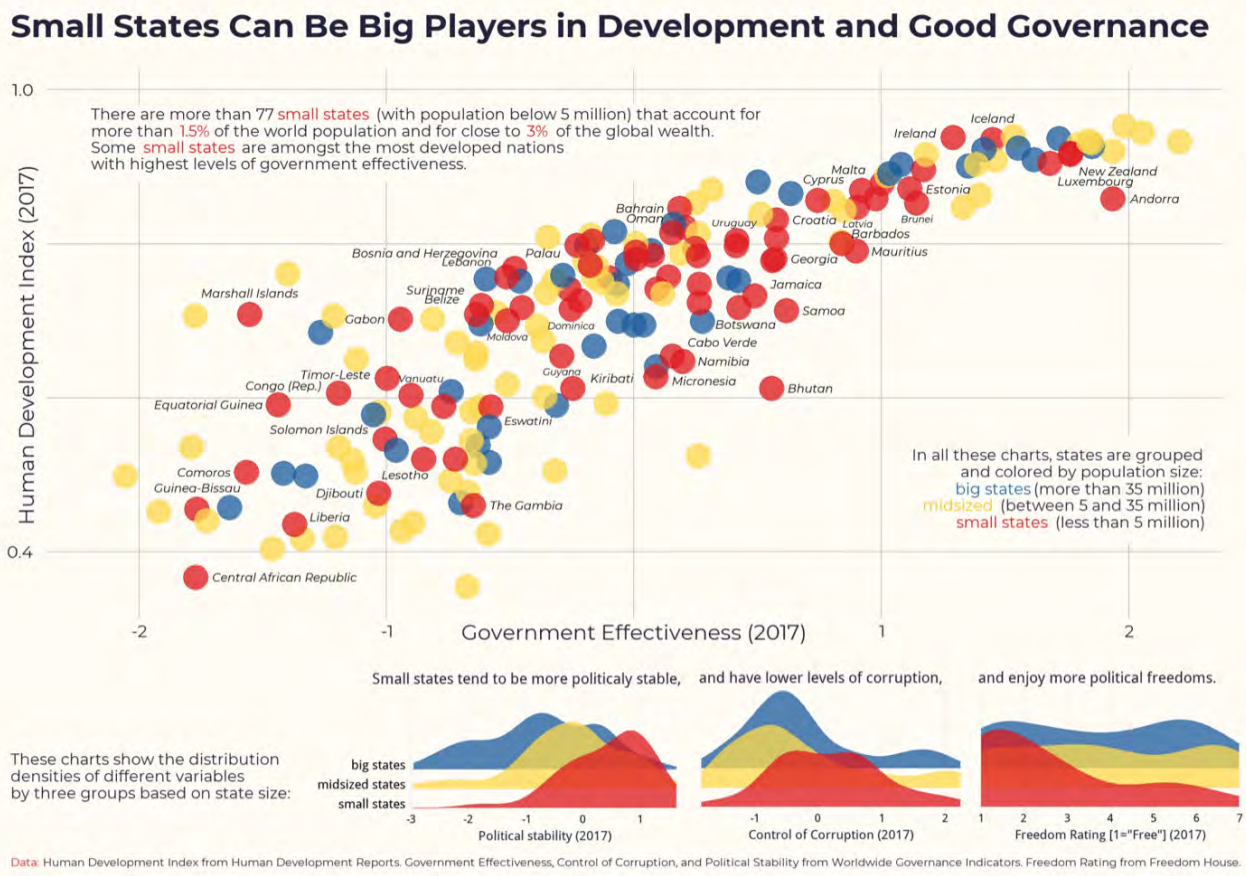
Small States, Big Stakes

Mohan Malik, PhD.
Faculty, UAE NDC

The vast Indo-Pacific region is critical to the prosperity and security of all – big and small. The intense jockeying for influence and forward presence amongst major powers and control over ports and vital pieces of critical infrastructure and/or for allegiance of and influence over small island states has made the Indo-Pacific region from East Asia to East Africa 'ground zero' of the 'new Cold War'. How are small states adjusting to a fast changing security landscape and managing relations with great powers? One recent study, Ocean Horizons: Strengthening maritime security in Indo-Pacific island States (2019), argued that, "Growing strategic competition in the Indo-Pacific means that the island states of the Pacific and the Indian Ocean are likely to become the battlegrounds for influence among the major powers…The islands are increasingly seen as prizes or even battlegrounds to gain or retain influence or access." As their need for resources, markets, and forward bases grows, Asia's rising powers – China and India – are increasingly running into each other and other major powers in countries in southern and central Asia, the Middle East and Africa.

In the 'Great Game' stakes, small and middle powers play a big role. They often determine the nature and outcome of major power competition because major powers become great powers with the support of small and middle powers. Put simply, a major power is not great, and cannot be a leader if it does not have followers, i.e. the support of small and middle powers that serve to magnify its power. The support of small and middle powers, or lack of it, makes the difference between great power dominance and defeat. That is why small and middle powers are often called 'pivotal states' or 'swing states'. For example, during the Cold War, China and Egypt were two middle powers or 'swing states'. When China and Egypt shifted their support from the Soviet Union to the United States, they became pivotal players and brought about a decisive shift in the Asian and Middle Eastern balance of power respectively. This power shift tilted the scales against the Soviet Union and the rest is history.

Historically, small states are the first to experience major geo-political shifts. Usually 'the bit players' on the periphery of rising powers play a disproportionate role in triggering major crises, which prove to be turning points during power transitions. Small island states

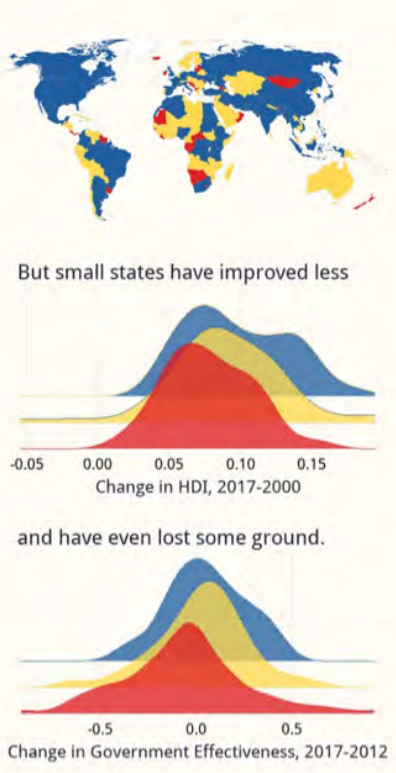


(SIS) and middle powers along the rims of the Pacific and Indian oceans now find themselves caught in the middle as the two emerging rival blocs strive to extend their influence. With the return of old-fashioned zero-sum great power competition, Vanuatu, Palau, Kiribati, the Solomon Islands, Sri Lanka, the Maldives, Mauritius, and the Seychelles are seen as the new 'frontline states'.

Despite a great deal of diversity in geography, ethnicity, politics, and historical experiences, many SIS in the Pacific and Indian oceans share some common characteristics. Their primary security challenges are invariably non-traditional in nature, mostly in the maritime realm: protection of their marine resources, illegal fishing, natural disasters, economic and social vulnerabilities, drug and people trafficking, and rising sea levels due to climate change. They all have relatively weak economies with limited financial resources and poor governance that make them vulnerable to external coercion or interference by major powers. Small is not secure. Furthermore, the Covid-19 pandemic is bound to further ravage their economies, and reverse years, possibly decades of economic progress, to the detriment of the poor and vulnerable segments of society. Many SIS would need injections of economic aid to stay afloat.

While great powers see small island states in the Indo-Pacific region as mere pawns on the geo-political chessboard to expand their presence and gain relative advantage, the agency of smaller actors and their ability to pull others in to exploit superpower competition for their own benefit should not be underestimated. Small states tend to be highly jealous of newly-acquired sovereignty and prefer not to depend on any one country for external assistance, whether Russia, China, the United States, France, Japan or India. Most are reluctant to be pawns of the great powers or get drawn into power rivalries which negatively influence domestic politics and constrain their foreign policy options. However, in times of heightened tensions and conflict between major powers, it becomes much more difficult to avoid taking sides, as evidenced during the Ukraine crisis.

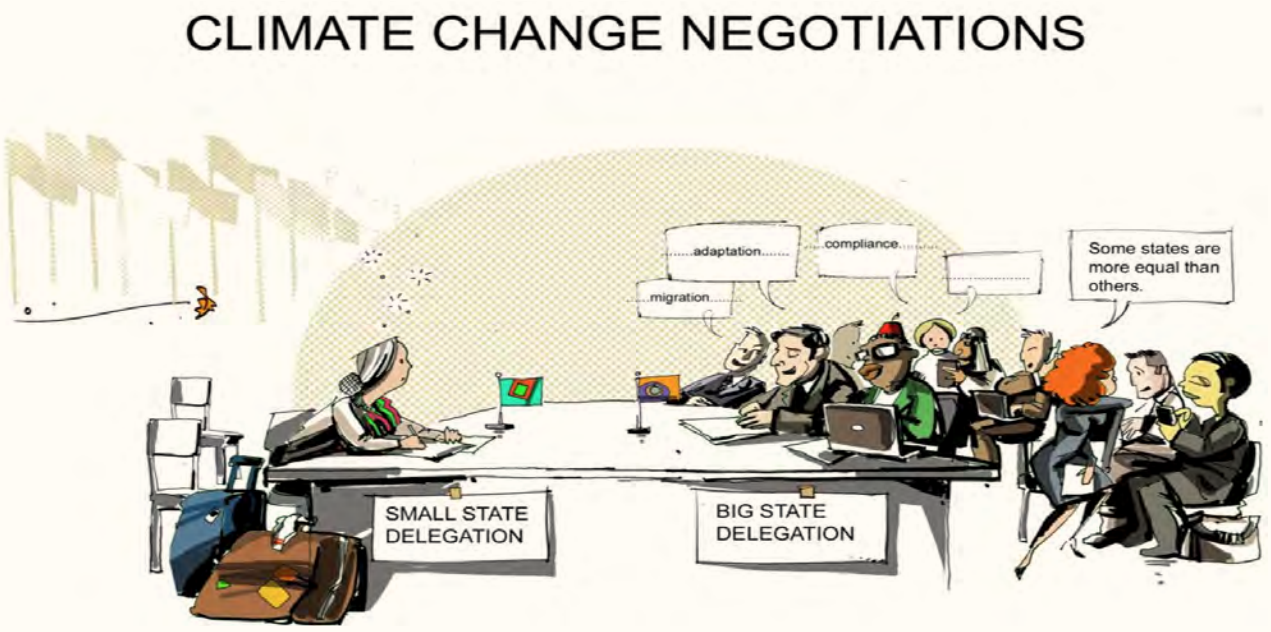
Small Island States also happen to be Vast Ocean States (VOS), given their large exclusive economic zones rich in fisheries, oil and gas and minerals. They have several options—bandwagon with great powers, balance against dominant powers seen as potential threats, or develop hedging strategies (play one off against the other to keep their autonomy) or stay neutral. For instance, most SIS are averse to throwing their lot in with one or the other great power because maintaining good relations with all powers brings benefits, whereas alienating one or



more incurs costs. Maneuvering between major powers allows the small island states to extract benefits from both sides while maintaining their autonomy. Hedging may be seen as a relatively safe strategy to pursue in times of power transitions but it is certainly not cost-free.

In fact, hedging can be a highly risky game. It requires adroit diplomacy. Hedging by small states may be perceived as balancing by others and invite counter-balancing measures, much to the hedgers' discomfiture. This is because many small states find it hard to resist major powers' advances in the guise of aid, trade, investment and security. In times of great power shifts and global crises, small states' power balancing can drag big powers into war. Sarajevo, Kuwait, North Korea and Ukraine are cases in point. Some get internally wrecked, even dismembered, others are absorbed and disappear from the map of the world.

Not just small states, even relatively medium-sized landlocked states – especially on the periphery of powerful continental powers – are particularly vulnerable: Mongolia, Tibet, Laos, the Central Asian republics, Afghanistan, Nepal and Central and Eastern European or Baltic states are good examples. Great continental powers want their smaller neighbors to be strictly neutral, buffer states that pose no threat to their security. Their freedom of action depends on their history, geo-political setting, political leadership, domestic politics and social cohesion, economic development, membership of regional and global organizations.



In an era of rupture in great power relations and rivalries over rival spheres of influence, small and middle powers need to devote more resources and employ patient, skillful diplomacy to build larger coalitions of like-minded states to influence decisions by great powers on vital issues. Owing to their size, small states usually rely on security guarantees, alliances, free trade, laws, norms and multilateral institutions. A rules-based order, vice power-based order, serves their interests better, especially when they find themselves at the receiving end of the big power stick. As Singapore's foreign minister, Vivian Balakrishnan, told parliament on 28 February 2022: "A world order based on 'might is right'...would be profoundly inimical to the security and survival of small states."

Offense, Defense and the Russo-Ukrainian War

Wars in the 21st century have seen the repeated failure of offensive military operations to achieve the political objectives for which they were initiated. In 2001 the United States and its Afghan allies overthrew the Taliban government in Afghanistan, but were ultimately unable to establish a viable representative government. In 2003, a US-led coalition defeated the Iraqi armed forces in conventional operations but failed to bring stability to the country. Most recently, in February 2022 Russian armed forces invaded Ukraine, transforming a low-intensity conflict that had smoldered since 2014 into the largest conventional war in Europe since 1945. Rather than quickly overwhelming their weaker adversary, however, Russian forces lost momentum, suffering heavy casualties in the process. In order to explain the repeated failure of offensive operations, despite material and technological superiority, it is helpful to turn to Carl von Clausewitz's On War.

Nearly 200 years after its publication, the book remains the most

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comprehensive analysis of war as a human activity. Although the 21st century has seen technological innovations that have changed the character of war, Clausewitz's ideas remain invaluable in explaining the fundamental dynamics of any conflict. Particularly useful is his explanation of the superiority of the defensive in war. While Clausewitz has been derided for his supposed advocacy of costly attritional offensives, in reality, he was convinced that the defender possessed inherent advantages that diminished the attacker's chances of success in most circumstances. This article will use Clausewitz's explanation of the relationship between offense and defense to shed light on the ongoing war between Russia and Ukraine.

Clausewitz believed that the greater strength of the defensive stemmed from several factors. At basis, he argues: "[i]t is easier to hold ground than to take it".[1] To achieve its objective in any war, the attacker must either defeat or outmaneuver the defender. This requires the coordination of forces in time and space to enable their concentration at a point where the defender is unprepared to counter them. But the defender is holding familiar territory, and can thus take advantage of terrain to conceal its positions and surprise the attacker.

Thus, the inherent complexity of the attacker's task may undermine the benefits of surprise, particularly against an enemy defending its own territory. The challenges of coordinating attacking forces are evident in Russia's failure to suppress Ukrainian air defenses at the beginning of the invasion. This apparently resulted from the inability of the Russian air force to execute complex operations involving large numbers of aircraft coordinating with surface-to-air missile (SAM) systems on the ground[2]. This left Russian land forces to advance on multiple axes without adequate air cover. Largely confined to major roads due to the impassability of the countryside, Russian forces were subject to ambushes by artillery and drones.[3]

In addition to the difficulties associated with conducting complex operations in unfamiliar territory, the attacker faces greater logistical challenges. As Clausewitz explains: "[b]y initiating the campaign, the attacking army cuts itself off from its own theater of operations, and suffers by having to leave its fortresses and depots behind."[4] As the advance progresses, it will slow due to the increasing time necessary to obtain reinforcements and supplies. Meanwhile, the retreating defender remains close to its logistical hubs, and is therefore able to replenish itself more easily.

The logistical difficulties facing the Russian army became apparent in the opening weeks of the invasion, as a huge convoy more than 60 kilometers in length ground to a halt north of Kyiv in early March. According to Western intelligence reports, the "traffic jam" resulted in part from mechanical breakdowns and shortages of fuel. The reliance of modern armies on heavy vehicles compounds the challenges that Clausewitz observed. Because tanks and trucks can only travel on paved roads when the surrounding territory is wet, one broken down vehicle can delay an entire column.[5]

According to Clausewitz: any "time which is allowed to pass accumulates to the credit of the defender." Thus, delays to the offensive due to logistical problems allow the defender to prepare positions and mobilize resources. Foremost among these resources is popular support. Unless the invading army is overthrowing a truly unpopular regime, it will face indifference or even hostility from the local population. Clausewitz explains the consequences of this attitude: "Nothing, major or minor, is done for the enemy save under force majeure, which the troops must apply at the expense of their own strength and exertions. The defender can get all he wants."[6] Thus, even if it does not actively oppose the attacker, the local population will be willing to assist the defender with both supplies and information.

The difficulties of the attacking force will increase exponentially if civilians take up arms. Ukrainians clearly reacted to the Russian invasion with fury. A public opinion poll taken on 18 March found that 98% of respondents regarded Russia as "a hostile country", and Russian soldiers occupying Ukrainian cities saw repeated protests against their presence. This hostility translated into military power. Immediately following the invasion, tens of thousands of Ukrainian civilians joined the Territorial Defense Forces and took up defensive positions around major cities. Moreover, Ukrainian military units benefited from a supportive populace to operate freely behind Russian front lines, targeting supply columns. Thus, as the conflict has progressed, Russian forces have faced increasing opposition from the Ukrainian armed forces as well as the civilian population.

The passage of time has also enabled the mobilization of external support for Ukraine. Clausewitz argues that rather than supporting the attacker, other states or actors are more likely to rally to the side of the defender in order to preserve the regional or international balance of power. Thus, he argues that, "the defender can count on outside assistance more than the attacker; and the more his survival matters to the rest – that is, the sounder and more vigorous his political condition – the more certain he can be of their help." The response of NATO and the European Union demonstrates this tendency clearly. Even before the Russian invasion, NATO members pledged military equipment to Ukraine and provided valuable intelligence. The invasion itself led to the shipment of additional weapons as well as punitive economic sanctions aimed at crippling the Russian economy. Ukraine's allies have not entered the conflict directly. Nor have sanctions ended Russian exports of oil and gas, which remain vital to the global economy. But these measures will enable the outmatched Ukrainians to continue resisting while they progressively degrade Russia's ability to make war.

The outcome of the Russia-Ukraine war remains uncertain. The belligerents may reach a negotiated settlement that halts the violence, at least temporarily. Alternatively, the war may escalate as new actors become involved. It is clear, however, that Russia has failed to achieve a quick and decisive victory. If Clausewitz is correct, the Russian invasion will reach a culminating point, at which its initial advantages of initiative and material superiority are matched by the growing strength of the Ukrainian defenders. This may have happened already. Without a significant injection of military power, it will be difficult for Russia to achieve more than a stalemate in Ukraine. Whatever the ultimate outcome of the conflict, Russia's difficulties in its opening weeks should serve as a warning for states seeking to achieve political objectives through offensive military operations. Even in the 21st century, the defensive remains the stronger form of warfare.

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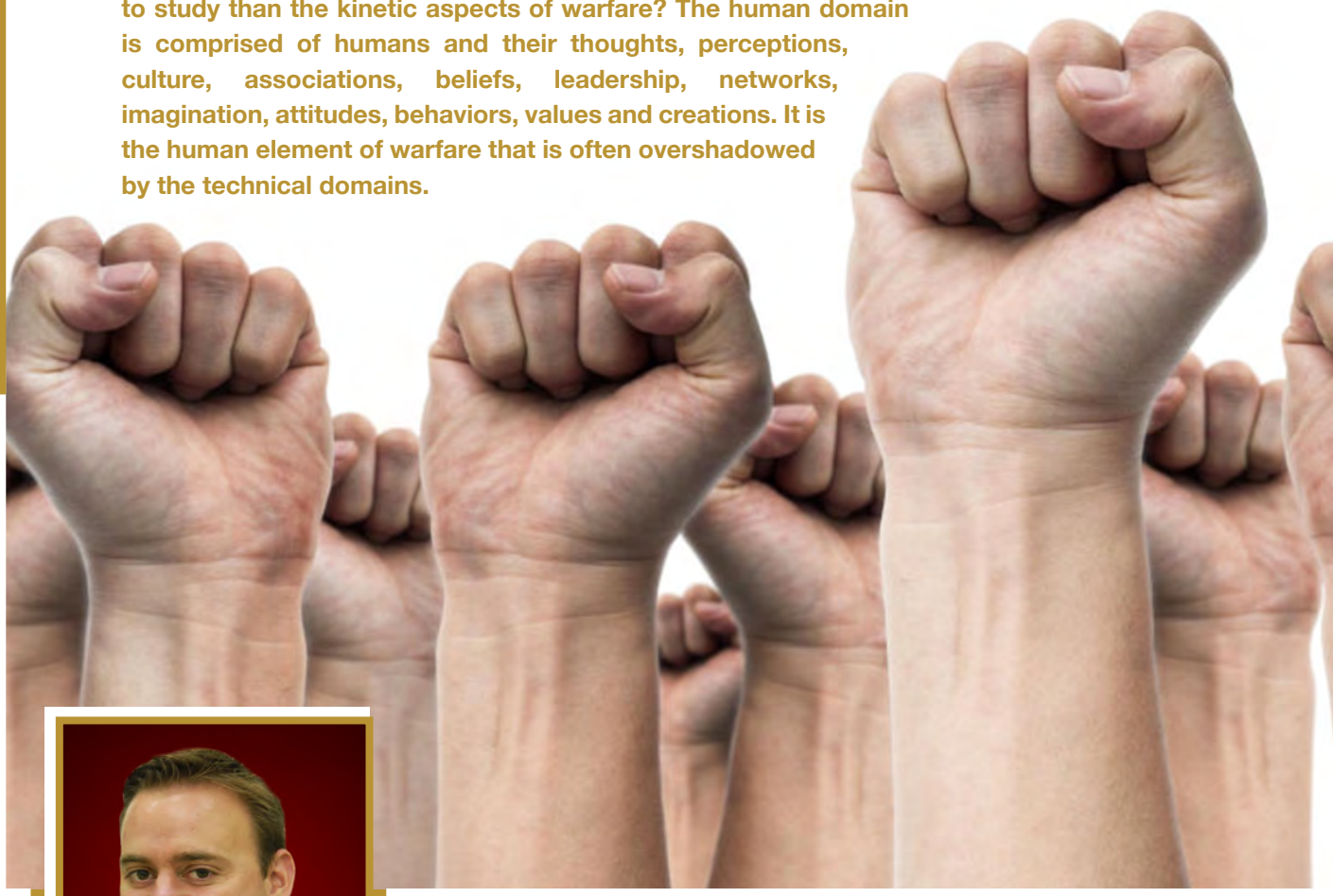
The Human Domain in Warfare

There are five established domains in warfare: air, land, sea, space and cyber (or information). Militaries study, assess, analyze, plan and operate in these domains to gain a competitive advantage against an adversary in a conflict. However, there is a debate in the literature about the importance of the human domain in warfare. Is it merely a factor in each of the five established domains, meaning the human element impacts how air, land, sea, space and cyber operations function, or is there a separate human domain that should be given equal, if not greater importance to study than the kinetic aspects of warfare? The human domain is comprised of humans and their thoughts, perceptions, culture, associations, beliefs, leadership, networks, imagination, attitudes, behaviors, values and creations. It is the human element of warfare that is often overshadowed by the technical domains.



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The US Army and Marines increasingly view the 'will to fight' as the most important factor in warfare. For example, before the war in Ukraine in 2022, intelligence analysts underestimated the human factor in the Ukrainian will to resist Russian forces invading their country. They assumed that Russian superiority in air, land, space and cyber operations would overwhelm Ukrainian defense capabilities and that the Ukrainian political leadership would capitulate within a few days. However, the Ukrainian will to fight the numerically superior Russian forc-

es frustrated the invader's operations. The leadership of Ukrainian President Volodymyr Zelenskyy also became an indispensable human element in Ukraine's response to the war. His willingness to stay in the capital Kyiv to lead the country and his daily messages to Ukrainian and international audiences persuaded and inspired people and countries to act in the interest of Ukrainian national security. Perceptions of Russia's attack on liberal values of freedom, democracy and national sovereignty ushered in an unprecedented alignment of both state and non-state efforts to support and show solidarity with Ukraine, which in turn enhanced Ukrainian morale and willingness to fight in the war.

Other examples of how failed assessments of the human domain led to military losses include the US failure to accurately assess the Vietnamese will to fight in the Vietnam War, Israeli failure to assess Arab will to fight in the 1973 October War, or Saddam Hussein's failure to assess regional and international responses to the 1990 Iraqi invasion of Kuwait. Militaries that wrongly assess a nation's will to fight, or the human domain of warfare, can lead to strategic failures.

Let us contrast the domestic and international response to Russia's invasion of Ukraine with the domestic and international response to the Taliban takeover of Afghanistan in 2021. It was the human element that was arguably the decisive domain. Afghan President Ashraf Ghani quickly fled into exile as Taliban fighters closed in on Kabul. Afghanistan's well-trained security forces were unwilling to risk their lives to protect their capital. Afghanis did not revolt against the Taliban's invasion; instead, they did everything in their power to flee. Afghanistan's neighbors did not support the Ghani government. The US and many of its allies were not willing to defend the capital. The international community and Afghanis were not inspired to act in a coordinated fashion to support Afghanistan's security or government. The people were not united, unwilling to fight and lacked courageous, strong leadership that clearly communicated a vision for Afghanistan that connected at an emotional level with domestic, regional or international audiences. It was the human factor that was lacking in the Afghan government's military strategy. While the contrast between Ukraine and Afghanistan could be largely due to differences in geography, political economy and history, it is difficult to underestimate the role of courage, leadership, vision, and willingness to sacrifice between the two conflicts. The human element clearly gave the Taliban a military advantage despite its inferior land, air, space, sea and cyber capabilities.

The military objective in the human domain is to influence human behavior in a theater of operations better than the adversary. This requires the military to have key competencies in the human domain, which include language and cultural analytics, communication skills, intelligence capabilities, and the ability to work in a whole-of-government approach for national security. These competencies are arguably better for the military to acquire and integrate organically, rather than outsourcing to specialists, such as the United States did with the Human Terrain System teams used in Iraq and Afghanistan. Ground soldiers, officers and analysts need to apply these human domain competencies to enhance their military's air, land, sea and cyber capabilities.

Integrating physical and human domains is essential for effective warfare. For example, ground forces must understand the human terrain before conducting military operations, understanding how a local population will react to a foreign military. Also social media plays an increasingly significant role in the information or cyber warfare domain. While operating in the cyber space requires technological expertise, it is humans and human emotions which make social media and other cyber capabilities effective or not in warfare. Incorporating the human element in the study of warfare domains can help militaries better compete in multi-domain conflicts.

As mentioned earlier, the military objective of the human domain concerns influence. The military objective of the land domain is to secure and hold specific territory, the air power objective is to deny the enemy access to contested airspace, the sea power objective is control lanes of communication and navigation, the objective of cyber is to dominate the virtual space. Influence in the human domain shapes individuals' and societies' attitudes, behaviors and thoughts. It can make or break the morale of combat troops, or unite or divide essential international support. For example, before Russia invaded Ukraine on February 24, 2022, Ukrainian President Zelensky did not have enough influence on the EU, UK or US to shape their policies in support of Ukraine. How-

ever, due to his leadership, Ukrainian courage to fight, unity of effort and alignment with liberal values (all human domain elements), Zelensky was able to gain enormous influence through daily conversations with powerful heads of state, impactful public speeches, conversations with legislatures or packed public squares of protestors standing in solidarity with Ukraine. Due to his leadership, communication skills, and ability to work in a whole-of-government and whole-of-society construct, President Zelensky gained unprecedented influence over great powers who responded with unprecedented policies in support of Ukraine. While significant military preparation, adept tactics and foreign arms transfers were essential for Ukrainian combat power, it was the power and influence from the human domain that enabled the other domains and gave Ukraine a military advantage over Russia's superior forces in the crucial first month of the war.

Militaries and armed groups that know how to compete in the human domain can gain operational advantage over militaries that have technological and kinetic superiority in warfare. Regional examples include the Taliban in Afghanistan, the Houthis in Yemen, Lebanese Hezbollah, and Daeshi fighters against Iraqi security forces in 2014. While the dynamics of warfare between non-state and state actors is not new, or the role of human psychology in warfare, it is considering the human element a domain of warfare that is new. Many militaries develop effective institutional cultures in warfare governed by physics, engineering, chemistry, technology and other hard sciences, through training and education, but they are not equally trained in social or behavioral sciences to better operate in the human domain. Perhaps it is time for human domain sciences, including psychology, sociology, anthropology and history to be more integrated into military and warfare studies.

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Challenges and Opportunities for Gulf States in the Era of Great Power Competition.

The past decade has seen the strategic rivalry between the U.S. and China experience multiple periods of escalation in both East Asia and increasingly in other areas such as the Indian Ocean Region (IOR) and the greater Middle East. A critical task for small and medium sized states in the Gulf is to find a way to navigate between the great powers and find a way to avoid leaning too much to one side. Such a position is essential for regional states to obtain the maximum benefits from both China and the U.S. This essay is divided into three key sections. First, an analysis of the opportunities that the rise of China provides will be discussed. Second, an assessment of the primary challenges that are present for Gulf States as they maneuver between the relevant powers will be provided. Finally, several theoretical informed policy recommendations will be presented.

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Opportunity Knocks

The rise of China represents opportunities and potential challenges for many countries. This development also coincides with a strong push by advanced economies to reduce their reliance on fossil fuels and has led numerous governments to provide incentives to their citizens to quickly embrace green energy. The last decade has also seen the rapid expansion of fracking in the U.S., thus significantly reducing American demand for imported oil[1]. While western demand for gulf energy has diminished, Chinese demand has rapidly increased in the region. In fact, with the Chinese middle class still constituting less than one-third of the entire Chinese population, there is enormous potential for sustained future growth and Chinese demand for imported oil[2].

The Chinese Belt and Road Initiative (BRI) has invested tens of billions of dollars in the greater Middle East and many Gulf states have hitched their long-term development strategies to the BRI[3]. It needs to be noted that BRI projects provide much needed infrastructure in the region, however there are concerns, both inside and outside of China that the BRI will create redundancies in infrastructure and that various projects have not been done with an eye on the economic viability of certain projects. In fact, Chinese have pointed out that over production of ports in China has led to fierce competition within China amongst various city and provincial players, and that such completion may take place along the BRI's various port projects[4]. While opportunities certainly exist to coupling economies to the Chinese economy, multiple geostrategic challenges are also present.

Strom Clouds on the Horizon?

The Sino-American strategic rivalry is rapidly transforming into a systemic competition. The U.S. has been the great power in the Middle East for much of the past four decades. Contrary to perceptions that the U.S. is in the process of withdrawing from the region, the available data demonstrates that the American military presence in the Gulf has actually increased over the past decade and a half[5]. The American presence provides Gulf states with a powerful security partner, but it also presents the potential for the Sino-U.S. rivalry to be played out in the region. If states are perceived as being too close to one power, the other power may

push back and pressure a state to limit cooperation with their rival[6]. Such a situation requires deft diplomacy and a solid understanding of how other states in similar situations have managed to navigate, or not-navigate the great power competition.

The case of South Korea is illustrative. In 2016 the South Korean government purchased the American THAAD missile defense system. While the missiles are designed to protect South Korea from a potential North Korean attack, they were perceived by Beijing to be a tool for Washington to collect information on China due to their powerful radars that can supposedly penetrate into Chinese territory[7]. What should have been a case of South Korea exercising its sovereign right to defend itself, turned into a cautionary tale for governments trying to avoid being stuck between China and America. Shortly after the missile system was announced, boycotts of South Korean products were announced in China and the numbers of Chinese tourists to South Korea were dramatically reduced. While Seoul stood its ground and kept the missile system, other countries would do well to understand the political and security dimensions of the Sino-U.S. rivalry and how issues and events can quickly be tied up in the rivalry.

For Middle Eastern states a chief goal is likely to maintain strong relations with both Beijing and Washington. Concerns from the Americans over 5G technology and potential Chinese military facilities in the region can become unwanted political obstacles. The core issue is for regional states to keep friendly ties with Washington and maintain the American security umbrella, while also further developing economic and political ties with China.

The Way Forward.

Gulf states can study cases such as South Korea and the THAAD missile system as well as how some South Asian states have been able to sidestep geopolitical controversies by playing great powers off each other[8]. The key issue here is the role of a state's agency, or ability to determine one's own course of action. Gulf states that engage China are not "hedging" as some have proposed, but instead are simply following the logic of economic diversification. "Strategic hedging" requires a state to have both a cooperative relationship with another state, while also having a more confrontational approach to the same state[9]. For example, Vietnam has a strong cooperative relationship with China, but it also has a rivalry that causes Hanoi to "hedge" against China while also courting the American military as a form of balance against China.

Gulf states can continue to developed robust political and economic ties with both China and the U.S. while trying to avoid security issues that could cause challenges in bi-lateral relations with either one of the powers. This is not an easy rode to travel, especially considering the regional rivalries in the Gulf and the ongoing conflicts in the region. This is a hard balance to maintain, especially as the Sino-U.S. rivalry continues to escalate. Ultimately, regional states will likely find it extremely useful to study the successes and more importantly, the failures of similar states that have tried to maneuver between Beijing and Washington.

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Forms, Functions and Complexities of Multilateral Diplomacy

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At the National Defense College (NDC) our mission is, "to prepare and qualify both military and civilian leaders and hone their skills in identifying and assessing challenges to national, regional, and international security…". Navigating through the complex and, occasionally, uncertain alleys of multilateral diplomacy is a challenge that NDC graduates will face in their careers. As the former US Secretary of State, Condoleezza Rice, rightly pointed out, "Multilateral diplomacy is hard. It's slower, it's tougher, it's a bigger slog." However, solutions to supranational problems require us to mobilize the international community through the practice of multilateral diplomacy. Hence, mastering the skills of diplomatic statecraft, especially in the multilateral domain, carries particular significance for practitioners of international politics. For that reason, this article will focus on the analysis of the core functions, forms, and complexities of multilateral diplomacy, comprehension of which will enhance the skills of NDC participants to face multi-dimensional challenges as players on the international stage.

Multilateral diplomacy gradually emerged as the prevalent form of diplomatic statecraft in the 20th century. As Kofi Anan, former Secretary-General of the United Nations, highlighted, "Diplomacy has expanded its remit, moving far beyond bilateral political relations between states into a multilateral, multi-faceted enterprise encompassing almost every realm of human endeavor". Although multilateral diplomacy, in different forms or degrees of intensity, has existed throughout history, whether in ancient Greece or medieval Europe, it reached the pinnacle of its influence during the 20th century. The evolution of institutionalized forms of international cooperation, especially since the end of World War II, has given considerable impetus to the development of multilateral diplomacy that has left its stamp on the conduct of 21st century statecraft. The practice and process of multilateral diplomacy, however, considerably differ from the more traditional bilateral forms of diplomatic statecraft, due to the added complexities associated with its implementation. Hence, grasping the complexities of multilateral diplomacy is a sine qua non for mastering the skills of modern-day diplomatic statecraft.

The practice of multilateral diplomacy is a more complex undertaking for at least three reasons. Firstly, the practitioners are compelled to operate in a more complex informational environment. The amount and volume of information that should be processed increases dramatically when more than two parties are involved. More importantly, the practitioners of multilateral diplomacy should address numerous audiences simultaneously, which further complicates their task. Processing the increased volume of information as well as addressing multiple audiences simultaneously increases the likelihood of decision-making and strategic communication errors. Secondly, practicing multilateral diplomacy underscores the social complexity that it replicates. Managing conversations, relationships and motives of multiple stakeholders adds significant complexity to multilateral diplomacy. Moreover, forming and preserving coalitions with diverse actors requires more nuanced understanding of the strategic environment. Thirdly, multilateral diplomacy is marked by procedural complexities. The decision-making procedures or even the simple protocol rules of seating arrangements may acquire strategic overtones. For instance, the kind of decision-making rules that are applied, such as majority voting, consensus, or principle of unanimity, to a larger extent determine the outcome of a diplomatic process. The combination of informational, procedural, and social complexities makes the practice of multilateral diplomacy a 'bigger slog', in comparison to more traditional bilateral forms of diplomatic statecraft.

The practice of multilateral diplomacy takes different forms that enable individual actors to pursue their interests by using various diplomatic frameworks or forums. Barston identifies four distinct forms of multilateral diplomacy, namely, ad hoc formats, international conferences, on-going dialogue forums and permanent international organizations. Ad hoc formats provide more flexibility and fewer procedural constraints for achieving relatively swift solutions to emerging or unfolding international crises. A recent example of an ad hoc format is the Normandy Group, consisting of France, Germany, Russia, and Ukraine, set up in 2014 to seek a solution to the Russian-Ukrainian conflict. On-going dialogue forums also provide a degree of flexibility for navigating the convoluted alleyways of multilateral diplomacy with fewer procedural or bureaucratic obstacles. However, unlike an ad hoc format, they are of a permanent nature and are not limited to a single issue. The most prominent example of on-going dialogue format, formed in November 1975, is the Group of Seven (G-7), consisting of Canada, France, Germany, Italy, Japan, the UK, and the USA. International conferences, on the other hand, focus on a single issue of global significance. They are conducted through various degrees of formalization and are primarily centered on producing diplomatic solutions to supranational problems. For instance, the increasing concerns over global warming and climate change led to the initiation of multiple international conferences (e.g. the Kyoto Conference). The permanent international organizations, probably the most prevalent form of multilateral diplomacy, represent the highest degree of institutionalization. The common features of such permanent international organizations include: founding charters that form a basis of the organization, a governing body, permanent headquarters with permanent secretariat, and accredited diplomatic missions of member states and so on. The particular form of multilateral diplomacy an actor chooses to pursue, to a larger extent, defines the degree of success or failure. Hence, understanding the limitations as well as the strengths of each of the forms of multilateral diplomacy carries a paramount significance for practitioners of a modern-day diplomatic statecraft.

Another important aspect that practitioners should grasp is the key functions of multilateral di-

plomacy. Multilateral diplomacy serves numerous functions, probably too many to deliberate in this short article. Thus, we highlight only those key functions that other forms of diplomatic statecraft cannot fulfil. To start with, "the multilateral international institutions provide a global arena for states and other actors in which participation demonstrates their sovereign equality, masking but not removing disparities of economic and other power". This is a key function that enables different actors, particularly states, to project their views at a global level and receive diplomatic recognition of their identity. Another key function of multilateral diplomacy is norm creation. For instance, the adoption by the United Nations General Assembly (UNGA) of two important initiatives of banning landmines and cluster weapons indicates how the norm creation function can serve the higher purpose of protecting human lives. Moreover, multilateral diplomacy forms a basis for the legitimate use of force on the international stage. Hence, it serves the key function of providing legitimacy to states to use military power under exceptional circumstances, and therefore, plays a crucial role in maintaining peace and security at a global level. Finally, multilateral diplomacy serves an important function of setting the aspirational goals for humanity. The adoption of the Millennium Development Goals (MDGs) during the UN Summit of 2000 is a vivid example of setting aspirational goals, agreement on which can be only attained through international organizations such as the UN.

In conclusion, despite the frequent frustration and disappointment with such global institutions, which in the words of Harold Nicholson, "tend to promote rather than allay suspicion", multilateral diplomacy serves the functions that otherwise cannot be fulfilled by more traditional forms of diplomatic statecraft. Despite all its deficiencies and shortfalls, multilateral diplomacy has emerged as a central element of the modern world order, where international organizations and multilateral institutions play increasingly important role in shaping global political processes. Hence, understanding the complexities, forms and functions of multilateral diplomacy underpins the skills for mastering modern-day diplomatic statecraft.

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UAE Membership of the UN Security Council and Pandemic Response: Lessons from COVID - 19

The UAE's diplomatic triumph of a non-permanent seat on the world's most significant inter-governmental body, the United Nations Security Council, was predicated on a commitment to working with the international community to address multiple threats and challenges throughout 23-2022. The avowed national resolve encompasses harnessing innovative technologies for the peaceful resolution of conflicts; humanitarian relief; countering terrorism and extremism; advancing gender equality; and confronting climate change. In a world recently ravaged by COVID19-, another declared priority is "tackling global health crises and pandemics" (UAE 2020). While the first in the list carries implications for approaches to traditional state-centric notions of security (i.e. the protection of a nation's sovereignty and territorial integrity from armed attacked by another state), the remaining ones fall more squarely in broadened perspectives on security. These took root in the 1970s and focus on so-called societal, people-centered or 'human security' issues (Daase 2010). For the UN Security Council founded in the 1940s to manage inter-state conflict in the aftermath of the cataclysmic Second World War, this conceptual extension of security has provoked reconsideration of its mandate.

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Understanding the opportunities as well as limitations is vital to any state wishing to leverage its presence on the Council to advance particular security concerns for action by the world community. It is beyond the scope of this article to address the Security Council's role in attending to each of the human security subjects previously catalogued. However, regard for the body's reply to COVID-19 provides some clues about what reasonably may be achieved in one facet of human security: pandemic response.

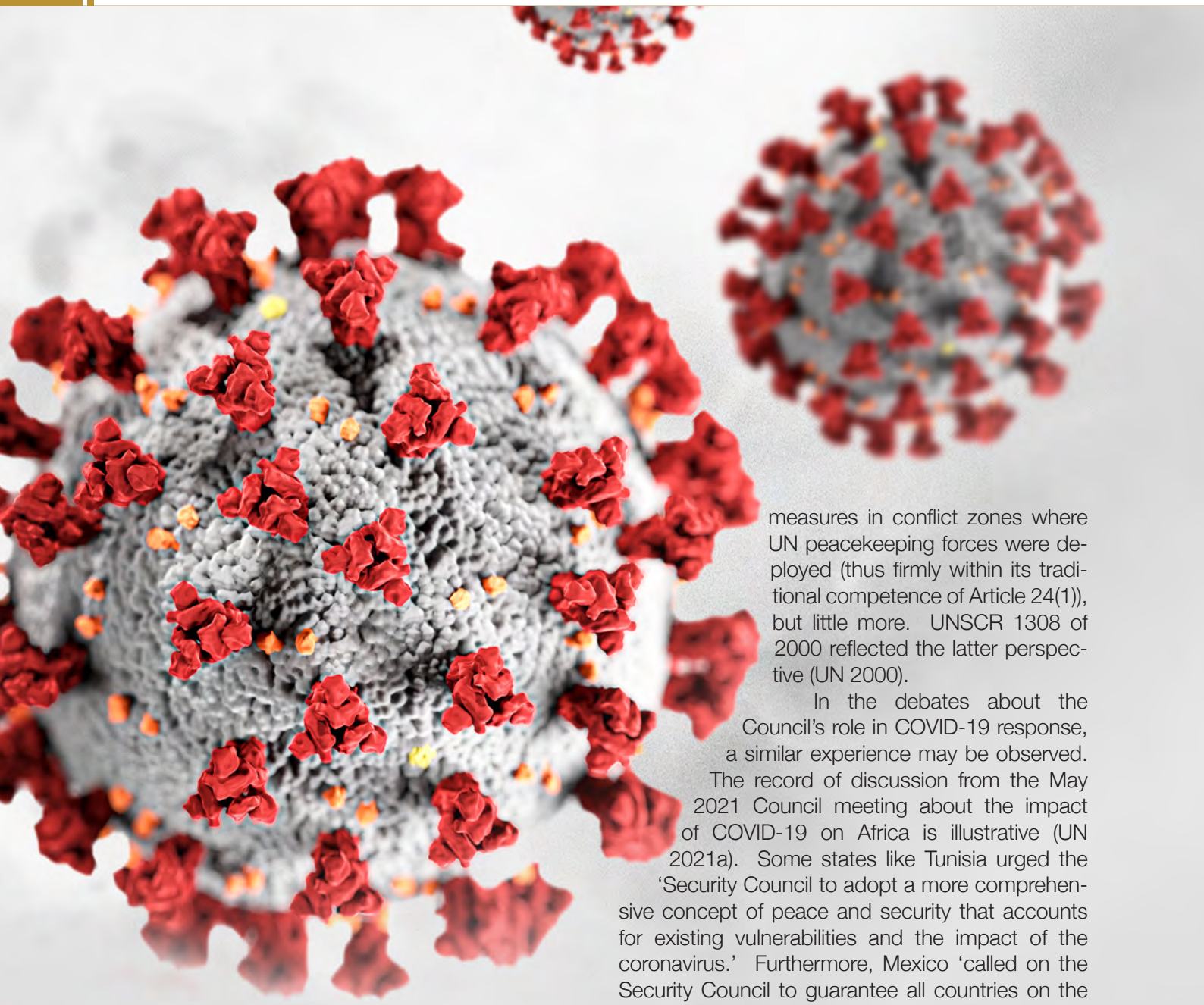
UN Security Council Mandate

Article 24(1) of the 1945 UN Charter established the principal competence of the Security Council as conferred by the member states: 'primary responsibility for the maintenance of international peace and security' including enforcement measures under Chapter VII. While on the surface it may seem difficult to locate human security issues within this mandate, as Hitoshi Nasu (2013) explains, the Charter also stipulates in Article 24(2) that in discharging its duties the Council shall 'act in accord-

ance with the Purposes and Principles of the United Nations" (Article 24(2)). One of those purposes is 'to achieve international cooperation in solving international problems of an economic, social, cultural or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms without distinction as to race, sex, language or religion' (Article 1(3)). Thus, it is these provisions that have been regularly cited in debates about Security Council competence regarding human security issues. 'Debate' is the operative word because, as shall be explained in the next part, when it comes to pandemic response at least, there remain differing perspectives about the extent of Security Council involvement. Not surprisingly, the five permanent members with their great power veto over UN Security Council Resolutions (UNSCRs), exercise disproportionate influence in this regard.

COVID-19 Response

The first globally significant virus entering



contemporary UN Security Council discourse was HIV/AIDS in the early 2000s. Then, two schools of thought emerged only to return more recently with COVID-19. On the one hand, some states argued for a broad interpretation of the body's mandate to address a pandemic with the Council able to compel states to action. On the other hand, some states viewed health crises as principally an internal, national affair albeit addressed with the support of other bodies within the UN system such as the World Health Organization (WHO). For them, the Security Council might go so far as to raise global awareness about pandemic disease through declaratory diplomacy, or even call for specific measures in conflict zones where UN peacekeeping forces were deployed (thus firmly within its traditional competence of Article 24(1)), but little more. UNSCR 1308 of 2000 reflected the latter perspective (UN 2000).

In the debates about the Council's role in COVID-19 response, a similar experience may be observed. The record of discussion from the May 2021 Council meeting about the impact of COVID-19 on Africa is illustrative (UN 2021a). Some states like Tunisia urged the 'Security Council to adopt a more comprehensive concept of peace and security that accounts for existing vulnerabilities and the impact of the coronavirus.' Furthermore, Mexico 'called on the Security Council to guarantee all countries on the continent access to COVID-19 vaccines, as political tensions and conflicts might worsen if vaccinations continue at its current, slow rate.' Others, like the Russian Federation, took a more constrained view stressing respect of 'African solutions to African problems' instead. Still others chose to emphasize the importance of unhindered humanitarian access for COVID-19 vaccinations in conflict zones. In addition, they called for a cessation of hostilities to facilitate vaccine rollout just as the Council had agreed in its first Resolution on the coronavirus pandemic—Resolution 2532 of July 2020 (UN 2020). This circumscribed orientation nested comfortably in the Council's traditional competence for international peace and security. Beyond the ceasefire provisions of Resolution 2532, there were only general statements raising awareness of the imperative of a global response through initiatives such as the UN

Global Humanitarian Response Plan for COVID-19, and of the disease's disproportionate negative impact on women and girls. Because the Trump Administration had recently announced US withdrawal from WHO and faced deteriorating relations with China over the virus, the declaratory diplomacy of Resolution 2532 was considerably subdued compared to the Council's Resolution (2177) on the Ebola outbreak six years earlier (UN 2014). In a Council that is beholden to their veto, the preferences and congeniality of the great powers matter to the agreed content of UNSCRs.

By the time the next Resolution (2565) on COVID-19 was agreed in February 2021 (UN 2021b), this time with the Biden Administration's endorsement, language supporting UN system efforts included reference to WHO (the US announced its return in January). However, the Security Council's interpretation of response measures within its purview remained focused on conflict zones and UN peacekeeping operations. With the exception of military operations conducted against the Islamic State in Iraq and the Levant, Al Qaeda, the Al Nusra Front and their associates, the Council demanded that 'all parties to armed conflicts engage immediately in a durable, extensive, and sustained humanitarian pause to facilitate, inter alia, the equitable, safe and unhindered delivery and distribution of COVID-19 vaccinations in areas of armed conflict.' Going one step further than a year earlier, the Council also stated its intent to consider enforcement measures if necessary where impediments to vaccine accessibility in conflict zones were brought to its attention by the UN Secretary General (although these were not specified).

Conclusion

In many respects, the COVID-19 experience is evocative of the Security Council's earlier agreed interpretations of its competence as regards pandemic disease. While slower to emerge than in the case of Ebola, the Council eventually mustered sufficient political will among its members—crucially those wielding veto power— to raise global awareness of this human security issue. This stance included recognition of the virus' possible exacerbation of conflict situations and the need, therefore, for international cooperation to address it—albeit principally through other parts of the UN system like WHO. In the case of Resolution 2565, demands for action with possible enforcement measures were articulated. Nevertheless, they were circumscribed to conflict zones—'vaccine ceasefires' as they have been described. Moreover, reminiscent of the Council's approach to HIV/AIDS, there was an appreciable preoccupation with the health and well-being of deployed UN peacekeeping personnel. Both foci remained inherently grounded in the Council's traditional domain of international peace and security under Article 24(1) and Chapter VII of the Charter. While some member states expressed a desire for more expansive intervention and enforcement action on behalf of the Security Council to address coronavirus, it did not materialize. Thus, as the UAE navigates through the Council its declared priority of future pandemic response, recent history should help inform policy prescriptions and manage expectations for dealing with this particular human security issue.

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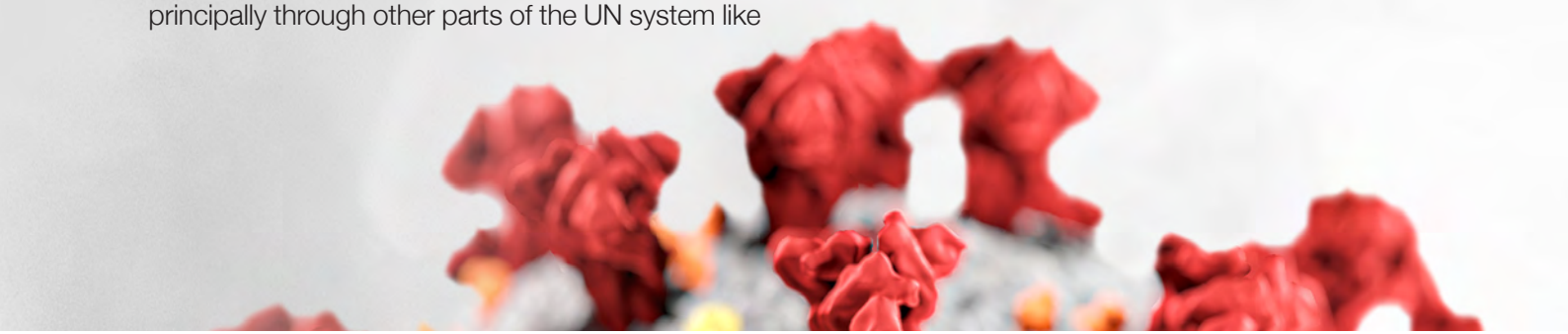

The War in Ukraine and the New Era of 'Nuclear-Economic' Warfare

The deployment of a new arsenal of economic tools against Russia as a retaliation to the war it launched against Ukraine on 24 February 2022 is without precedent. It has propelled the world into the nuclear-like era of geo-economics, which we define as "the use of economic instruments to promote and defend national interests, and to produce beneficial geo-political results; and the effects of other nations' economic actions on a country's geo-political goals".

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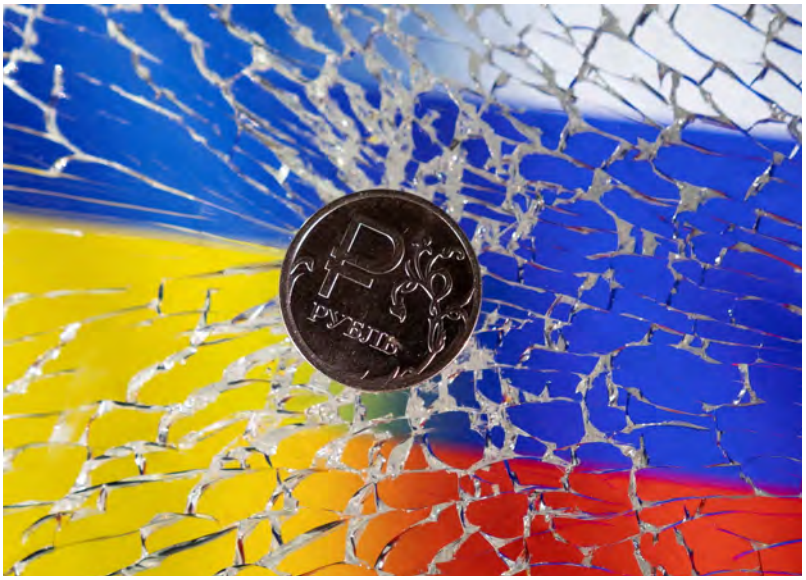
The unprecedented economic measures taken by the West have targeted the Russian Central Bank, the Ministry of Finance, the Sovereign Wealth Fund, and other financial institutions and businesses. They have largely excluded Russia from the international finance networks and payment system, and shrunk its international trade. These measures drastically limit Russia's ability to use its considerable foreign reserves of $630 billion which had been considered essential to its insurance plan against economic sanctions. As a result, the rouble plunged, inflation rocketed and Russia's financial conditions index deteriorated exponentially.

In an era when economic power could be seen as powerful as military might at winning war, the use of economic sanctions is increasingly becoming an integral component of warfighting and a default alternative to direct military confrontation. That said, three important considerations ought to be vetted carefully, especially since standard economic instruments are displaced to a lower grade by 'nuclear-economic bombshells'. First, what are the anticipated geo-economic and political effects of these economic tools on the target, and what is the likelihood of success? Second, could these sanctions be different and thereby reduce tension and enhance cooperation, thus supporting a quicker settlement of the war? Third, what could be some of the unforeseen effects, especially given that these measures are unparalleled? These considerations should not be overlooked.



Firstly, sanctions could be necessary as a strong response to actions deemed illegal, but strong regimes are able to resist. Russia, like any other country, is unlikely to backtrack in using its military instrument of power to achieve what it sees as a vital national interest because of economic sanctions, even unprecedented measures, less so when it is a great power. In spite of the severe Western coercive economic measures against Russia, the likelihood that they will lead to a toppling of the regime or radical changes in Moscow's strategic calculus toward Ukraine is far lower than what is largely expected. Historically, sanctions have not been generally able to force countries to change course, including in Cuba or Syria.

Nonetheless, the unparalleled economic weapons that have been deployed against Russia are decidedly a serious blow to its economy. Officials in Moscow recognized that their economy is confronted with an absolutely exceptional shock, because of economic warfare in a manner that has never taken place before. Since the collapse of the Soviet Union and the demise of its command economy, Russia has strived to insert itself into the global economy. The geo-economic repercussions of the war in Ukraine have unraveled these achievements almost overnight. If Russia's new economic isolation persists, it will reinforce its economic lag behind the United States, which Moscow's 30 years of global economic integration have barely reduced. Export restrictions on computers, telecommunications equipment and aircraft parts will undermine Russian industry, which is largely dependent on global supply chains.

The Kremlin has options at its disposal for countering the sanctions. Sanctioned states such as Iran and North Korea have been coping with sanctions and seeking self-sufficiency for decades. Adjusting to the new economic reality could take years and it is difficult to predict how Russia could escape the effects of a 'reverse globalization'. Great power competition and the Covid-19 pandemic have already pushed countries to rethink their reliance on foreign producers.

Secondly, because economic sanctions generally increase tension and delay cooperation, it is likely that 'nuclear-economic bombing' of a major international actor such as Russia will fuel more tension in a broader spectrum. It is challenging to imagine otherwise, given the type of geo-economic measures being applied, the importance of Russia in key energy supply chains, and its great power status. Assuredly, this new peak in geo-economic warfare will add to the logic of self-help, self-sufficiency and disintegration in the world's economic and political system exacerbated during the Covid-19 global pandemic.

At the same time, economic sanctions, one of the few options between military intervention and inaction, are usually just a way for states to express strong protests. Economic coercion is an important statecraft tool, but not a cure-all. These measures will add substantially to the total cost of the war and encourage public resentment in Russia, but the endgame will be determined by the military balance of power in the theater of operations in Ukraine.

That said, the dangers that these economic weapons can create must not be underestimated. They are able to perform similar to 'economic weapons of mass destruction' when fully deployed. They will not directly destroy physical infrastructure, but they affect businesses and people's livelihoods. Like a military weapon of mass destruction, they inflict damage indiscriminately, striking both the guilty and the innocent. And if used too broadly, they can disintegrate the world's trade and finance, thus reversing globalization. If the fear of wide-ranging sanctions spreads, more defensive actions will be taken. As a result of the measures targeting Russia's Central Bank, China, India and other governments will try to reduce their exposure to the risk of the freezing of their foreign exchange reserves in Western economies, and limit activities, such as

cross-border corporate borrowing.

Thirdly, there are always unforeseen effects when economic sanctions are unleashed, and even more so when they involve 'economic weapons of mass destruction' and the target country is a geo-political player the size of Russia. These financial sanctions have been much stronger than expected. For example, even though it was applied before on countries like North Korea or Iran, prohibiting Russia from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) system was perceived as an ambitious goal before the Russia-Ukraine war. In an even bolder move, the US and allied countries have frozen a major state's foreign assets.

The coercive economic measures imposed by the West on Russia in response to its invasion of Ukraine are of historic proportions. They could also determine the future of international relations for decades to come in unpredictable ways. This new era will bring definitive change to nations' economic security, fast-tracking and completing a geo-economic transition already accelerated by the global health crisis. The consequences for the world economy and politics are immense.

More countries are likely to follow China's example and begin to seek alternatives to financial messaging networks controlled by the West, potentially leading to the fragmentation of the world's payment systems. Private enterprises and even individuals may now think twice before undertaking investments or transactions between countries that do not share political and social values. There may also be new strategic behaviors whereby a country develops measures for deploying economic weapons. For example, a government may invite foreign companies to its domestic market with the hidden agenda of seizing their assets in the future. Conversely, countries could be tempted to limit the exposure of their firms and investment to reduce vulnerability to such threats. Cross-border economic exchanges will inevitably decrease.

In essence, while economic weapons can provide an alternative to the use of military force, the move to the 'nuclear dimension' in economic warfare calls for new rules of economic statecraft. Otherwise, we risk spreading geo-political anarchy, and creating an economically fragmented and poorer world. In particular, economic 'weapons of mass destruction' are too powerful to be left in the hands of any one country. Indeed, the threat of secondary sanctions can force third parties (countries, entities, and persons) to abide by the sanctions. Therefore, adhering to the sanctions regime must be based on voluntary agreements, and the more destructive the economic weapons, the greater the importance of such agreements. It is clear that powerful countries do not like to self-impose limits on the weapons that they control. But they must accept that a fragmented global economy will harm everyone. Moreover, 'economic arms control' negotiations can be the first step in restoring the chaotic world order.

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Towards a diversified aid and investment strategy: understanding the UAE-Indonesia investment partnership dynamics

Over the past twenty years, the UAE has embarked on a remarkable national development program that is making strides in economic diversification and expanding its range of bilateral partnerships in different parts of the world. The use of economic statecraft (via foreign investment and bilateral development assistance) is becoming an essential diplomatic tool that the UAE uses to achieve economic security outcomes. Amidst the UAE's efforts to forge new strategic partnerships, the Indo-Pacific region is becoming increasingly essential. For the UAE's strategic leaders, focusing investment and aid resources on emerging states in the Indo-Pacific serves several core UAE purposes. First, robust partnerships in this region will help ensure markets for the UAE's own energy exports in large energy-consuming states. Second, states in the Indo-Pacific region (notably in South and Southeast Asia) are growing rapidly and need investment and aid. In this sense, strong UAE engagement in aid and investment sectors can help ensure lasting bilateral relationships. And ultimately, this will serve the UAE's long-term economic security needs.

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This short article examines how the UAE is diversifying its economic statecraft activities in the areas of foreign aid and investment strategy. It focuses on the UAE's use of economic statecraft in the ASEAN region, specifically the recently announced UAE-Indonesia investment partnership, including $32.7 billion worth of UAE-funded projects in the Indonesian economy. It also highlights the UAE's investment and aid diversification strategy. This bilateral investment agreement serves as an exemplar of the importance of the UAE-Indonesia bilateral relationship.

While some have argued that the interests of GCC states (including the UAE) in Indonesia are peripheral, I take a different view. On the contrary, I argue that a robust bilateral relationship between the UAE and Indonesia, the world's most populous Muslim-majority state, will be essential for the UAE's economic security.

Investment and Development policies

The UAE's foreign policy is increasingly preoccupied with questions related to economic security which is operationalized at the policy level through the application of non-coercive economic statecraft. Among the various financial instruments available to states, aid and investment are two commonly used tools to achieve non-coercive foreign policy goals. The UAE has emerged as an innovator in using these economic instruments. For example, as an energy producer with a small citizen population, the UAE has been able to pool long-term budget surpluses into sovereign wealth funds and then deploy these to 'future-proof' the UAE economy in anticipation of the post-oil economy. As such, outward investment, funded by government-controlled sovereign wealth funds, has emerged as a key node in the UAE's economic statecraft. Over recent years, the UAE has initiated Comprehensive Economics Partnership Agreements (CEPA) with several states, including India, Israel, the East African Community, and Indonesia. The agreements function as de facto free trade agreements, thereby eliminating tariffs.

At the same time, the provision of aid (development and humanitarian assistance) has become an increasingly important tool in the UAE foreign policy strategy. Here, the UAE has used its development assistance policy in the service of both humanitarian causes and its strategic goals. Over the past twenty years, the UAE's aid policy has evolved in size and scale from a regional outlook to a global one. The mixture of aid and investment tools gives the UAE flexibility in different regions. There are several

cases, particularly in the Indo-Pacific region, where aid and investment are used concurrently within recipient states. In South West Asia, for example, Pakistan is the beneficiary of both aid in the forms of development assistance and UAE-driven foreign direct investment (FDI) in various commercial joint-venture projects.

Diversifying into the Indo-Pacific

At a geostrategic level, the Indo-Pacific region presents opportunities for the UAE to engage in economic statecraft using both aid alongside investment. The region is home to many strategically important middle and lower-middle-income states that need investment and development assistance. While the UAE has been engaged in aid and investment activities in the Indo-Pacific region, these activities have focussed on South West and South East Asia. Consequently, there has been comparatively little emphasis on the wider ASEAN region. This legacy is changing, and there has been an apparent diversification, which includes greater engagement with the ASEAN region. The region is home to 650 million people and states at vastly different levels of development, ranging from Cambodia to Singapore.

Within the context of diversifying aid and bilateral investment strategies, the UAE's recent investment agreement, and forthcoming CEPA with Indonesia is symbolic of the growing importance of the ASEAN region. Indonesia represents a regional outlier and punches well below its strategic weight by most accounts. With a population of 240 million, Indonesia is hardly small. Yet, it is economically dwarfed in size and strategic importance by its larger (India, China) and wealthier (Singapore, Japan, Korea) neighbors. The country has changed dramatically following its 1998 political transition. Over the past two decades the country has grown rapidly. It has become an engine of economic growth in the ASEAN region, with the country's middle class growing faster than any other group, with 50 million Indonesians now considered economically secure. Also, 114 million have been lifted out of absolute poverty. Over the past five years, the country's popular president Joko Widodo has undertaken an ambitious reform agenda, including the "Omnibus Law on Job Creation," signed in October 2020. It essentially amended 73 laws to create a more business- and investment-friendly environment, particularly for foreign firms.

Given its size, impressive growth rate, and moderate and pro-market leadership, Indonesia was a logical choice as a beneficiary of UAE investment funds and an eventual CEPA agreement. Also, despite differences (i.e., size and location), deepening bilateral relationships serves both states' strategic interests. As they navigate complex trajectories of great power competitions and seek to densify partnerships beyond legacy relationships. The strengthened bilateral UAE-Indonesia relationship can be seen clearly in a deal signed on November 4, 2020. The UAE (via its state-linked companies and sovereign wealth funds) pledged to invest $32.7 billion across many sectors which included agreements between the Indonesian Investment Authority and the Dubai-based DP World and also the Indonesian state oil company Pertamina and Masdar to procure floating solar panels. Furthermore, in the IT sector, there was an agreement be-

tween Abu Dhabi-based AI firm G42 (and Etisalat) and the Indonesian tech firm Smartfren to run data centers in Indonesia. These agreements served a dual function of firstly, linking key state-backed companies in both countries and secondly, investing UAE funds in key growth sectors in the Indonesian economy.

There is little doubt that this agreement and the forthcoming CEPA present great possibilities for both states. For the UAE, a deeper investment-based relationship offers the opportunity to diversify into an important emerging economic market, while also solidifying ties with a large and like-minded state in a critical region. While for Indonesia, the burgeoning bilateral relationships help it achieve two core goals – first, it presents an opportunity to diversify inward FDI flows away from its usual sources (ASEAN states and China) and second, it allows Indonesia to solidify links with an increasingly important aid donor.

Notwithstanding mutual benefits, the domestic landscape in Indonesia represents a multitude of complexities for aid donors and financial investors alike. Indonesia, similar to many lower-middle-income states in the Indo-Pacific, requires both aid and investment. Thus, to maximize the impact of its influence in Indonesia, the UAE might leverage its investment footprint to become more active in much-needed development projects. With regard to the security sphere, both states share common interests in promoting moderation and combating violent extremism. Here, the UAE is uniquely placed to leverage its existing religio-cultural ties and burgeoning investment relationship to help Indonesia with capacity-building initiatives related to 'counter-violent extremism programming' initiatives.

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The National Defence College of the UAE: Ten Years of Sustained Quality Metrics for Academic Credibility and Excellence

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As the United Arab Emirates (UAE) marked its 50th year on December 2021 ,2, a milestone occasion that called for the UAE, its citizens and residents alike to celebrate their personal milestones the same day the country celebrates its foundation, accomplishments and sustainable human capital investment over the past five decades. During the twentieth century, education, skill and the acquisition of knowledge have become crucial determinants of people and nations productivity (Basheer, 2007).

This year, the National Defence College (NDC) of the United Arab Emirates celebrates its 10th birthday. NDC was created, pursuant to Federal Law Decree No. (1) of 2012, to establish in the nation's capital a leading graduate institute for Strategic and Security Studies. Through its Strategic and Security Studies program, the NDC prepares future leaders of the highest caliber. The program fosters in students the intellectual breadth, global perspective and critical reflection that is needed to prepare them to identify and assess challenges to national, regional and international security and skillfully manage and employ state resources in the national interest (http://www.ndc.ac.ae).

The NDC has a compelling success story to tell to the region and the world. Starting with the long term vision of the country leader's, His Highness Sheikh Khalifa bin Zayed bin Sultan Al Nahyan, the president of the United Arab Emirates, and the Supreme Commander of the United Arab Emirates Armed Forces, this perspective values the past, while addressing the future, and concomitantly dealing with today's realities and rapidly changing contexts.

Maintaining high academic practices and quality standards can be a daunting task that requires persistence, consistency and faith in the institution, its mission and future. These requirements were available at NDC from day one by the appointments of UAE military and civilian academic leaders. These pioneers took the initial steps of building the NDC curriculum and academic content, high quality faculty and participant recruitment, while comparing highly ranked international defense institutions of higher learning and implementing measures of performance using a specific benchmarking indicators that can place NDC at the highest level of academic institutions of higher learning in the region and the world. Moreover, this effort was concurrently supported by the UAE Ministry of Education Commission of Academic Accreditation (CAA) to ensure meeting the highest national and international academic standards and quality principles available. This gave NDC a strong starting point and solid launchpad to graduate its first cohort of UAE military and civilian participants in AY 2013-2014. Furthermore, the manifest support of UAE leaders including H.H. Sheikh Mohammed bin Rashid Al Maktoum, Vice President and

Prime Minister of the United Arab Emirates, Minister of Defence and the Ruler of Dubai, and H.H. Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces is apparent. For example, the opening ceremony of the NDC on December 4, 2014 was under the patronage of H.H. Sheikh Mohammed bin Zayed who also the first Chairman of the College Supreme Council. NDC Graduation each year also receives the special attention of his H.H. Sheikh Mohammed bin Rashid Al Maktoum.

Establishing credibility and evaluation of quality and performance of institutions of higher learning, both civilian and Professional Military Education (PME) institutions, including NDC, involves, but is not limited to, a number of performance measures. This includes: Leadership and governance, Rigor and Curricular Relevance, Faculty expertise and qualifications, Quality Assurance and Assessment Cycles, Admission criteria, enrollment and completion requirements, and Implementing learning outcome accomplishment measurement tools.

Leadership and Governance at NDC has been inspiring since Day One, starting with the Chairman of the College Supreme Council – H.H. Sheikh Mohammed bin Zayed. This provided the NDC with a sense of accountability and high standing in its role, expectations and mission for the UAE and the region. In addition, the NDC has been fortunate to have highly qualified and well-respected Commandants appointed to lead the College and support its strategic position as a highly respected institution of higher learning in strategic and security studies, and strategic leadership that build a new generation of decision makers capable of properly responding to their nation's strategic interest and goals.

Rigor and curricular relevance at NDC results from the work provided to participants that challenges their thinking in new and complex ways. NDC's institutional rigor is evident through its processes of academic program development, execution policy and monitoring criteria. At NDC, participants are encouraged to understand, analyze and synthesize fundamental ideas, perspectives or scenarios while driven by curiosity to discover what they do not know in order to create something new that did not exist prior to their learning experience. At NDC, rigor and curricular relevance continually reach beyond the "what "of curriculum to the "how" of instruction. This andragogic model of learning is built on Bloom's Taxonomy: Synthesis that involves the "putting together of elements and parts so as to form a new whole."

Faculty expertise and qualifications at NDC has been a critical component of the NDC's structure. Through an effective and transparent vetting process the College has been successful in attracting highly qualified faculty and professional staff from the UAE and abroad who present a rich professional portfolio of career researchers and scholars in the fields of study applicable at NDC. Faculty and staff of diverse backgrounds endow the NDC with a broad range of classroom and field-based experience. These diverse backgrounds, perspectives, and the combination of UAE military and civilian faculty with non-UAE faculty and staff have improved the overall participant learning achievement and made the NDC more effective in its operations and practices.

Quality assurance and assessment cycles at NDC are well-stablished, consistently supported and well supervised. Each course developed and offered at NDC is equally treated, planned for and executed. This includes NDC core, electives and outreach courses offered every academic year on a regular basis. Each course is governed by a time-

line and specified milestone where the College leaders and institutional effectiveness staff ensure that all approved course requirements including external organization's standards (i.e., ADEK, CAA, QFEmirates) are fulfilled.

Admission criteria, enrollment and completion requirements at NDC are aligned to the Ministry of Defence and Ministry of Education requirements as per the Official College Decree. Participants are admitted to NDC as per the UAE's policy and guidelines. Enrollment in the academic program and degree completion requirements are applied to all participants with no exception. All NDC participants equally adhere to NDC, MoE and MoD policies and standards.

Implementing learning outcome accomplishment measurement tools at NDC includes regularly developed course key assessments by the course coordinators in consultation with the College leadership and the College Academic Affairs Council. Generally speaking, typical challenges of effective assessment are to ensure alignment between the learning outcomes, the teaching and learning activities aimed at meeting identified learning outcomes, and the key assessments utilized to assess the level of which learning outcomes have been met. Measurement of learning outcomes' accomplishment at the NDC involves a rigorous process, based on tangible evidence of learning that is well-aligned with the learning outcomes. It includes direct and indirect assessment approaches supported by formative and summative assessment practices implemented throughout the academic year.

Conclusion:

Quality Assurance practices and education excellence criteria in institutions of higher learning differ among countries and institutions. However, common guiding elements of quality assurance systems and practices that apply in the majority of countries and institutions at the regional and international levels are quite agreeably identified by a number of internationally recognized quality assurance governing bodies, professionals and organizations including the NDC and the UAE-CAA. What's subject to wide debate however, is how effective quality assurance systems and practices really are, and the extent of unwavering commitment that institutions are willing to provide to effective practice and apply identified quality measures. Moreover, lack of collective agreement and clarity on the purpose of quality assurance standards and how they contribute to institutional excellence is also a common trend among institutions. In the UAE and at NDC, high level commitment to quality assurance practices stems from the country's leadership vision and faith in high quality practices, incomparable living standards and expectations-exceeding accomplishments. This is evident in the latest decision made by H.H. Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates, Minister of Defence and the Ruler of Dubai on May 23, 2022 to establish the "Federal Authority for Quality and Standards of Education" affiliated to the UAE Cabinet, that is charged with and responsible for measuring the educational outcomes, student performance, and the efficiency of the educational process.

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Semi-conductors and Securing Access to Strategic Minerals: an Evolving Security Challenge

It is 1 March 2022, the stricken cargo ship, the Felicity Ace, ablaze and adrift, sinks into the Atlantic. It carries approximately 4,000 cars, many of them luxury brands including Bentley, Porsche and Lamborghini with an estimated market value of 400$ million. It is not clear when or even if some of these cars can be replaced. This is the latest blow to an industry that is already suffering from a supply chain disruption brought on by the global Covid19-pandemic (Valdes-Dapena 2022).

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This event would likely not have a national security implication were it not for one important on-going event: the global semiconductor shortage. This shortage has impacted not just the automotive industry but consumer electronics - computers and smartphones, renewable energy - solar panels and various defense systems - missiles and Unmanned Aerial Vehicles. Underlying this shortage is a complex web of interconnected, and strategically important, relationships, both in terms of the manufacturers of these vitally important components and the suppliers of the raw materials that make up these chips.

From the manufacturing side, global semiconductor production is located primarily in four areas as depicted in the map above. What this map reveals is that manufacturing is concentrated in Asia, with a majority of manufacturing capacity, about 75%, held in just four countries - China, Japan, South Korea and Taiwan. Moreover, manufacturing of the most sophisticated semiconductors is located in just two countries with Taiwan accounting for more than 90% and South Korea about 8 % (Boston Consulting Group/Semiconductor Industry Association 2021).

From the supplier side, raw materials are located primarily in three areas as depicted in the map on the next page, with a majority of the production of rare earth oxides (REOs) concentrated in China. Otherwise known as critical or strategic minerals, these REOs are the building blocks of many defense systems including command and control, precision guided munitions or radar. (Parman 2019)

These maps reveal two evolving security dilemmas comprising:

- Vulnerability of global supply chains and
- Contested access to raw materials used to make many of the world's high tech-

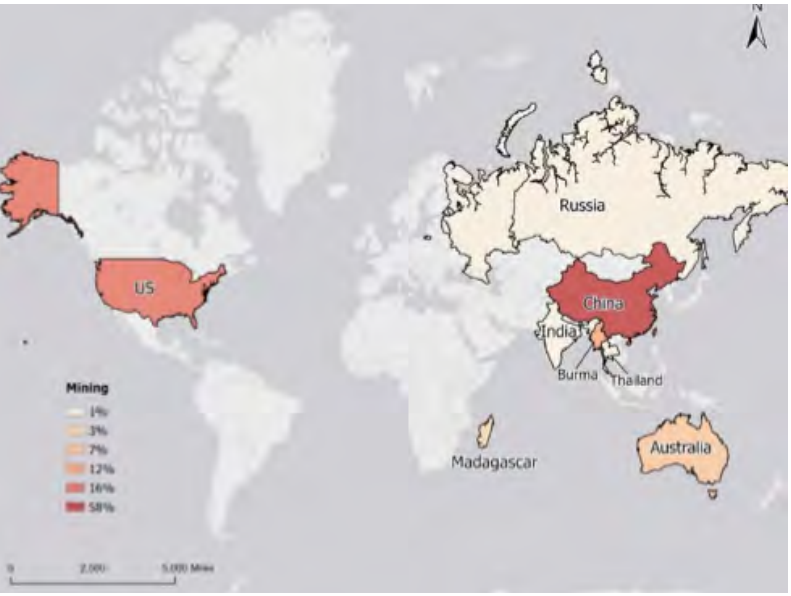
nology hardware.

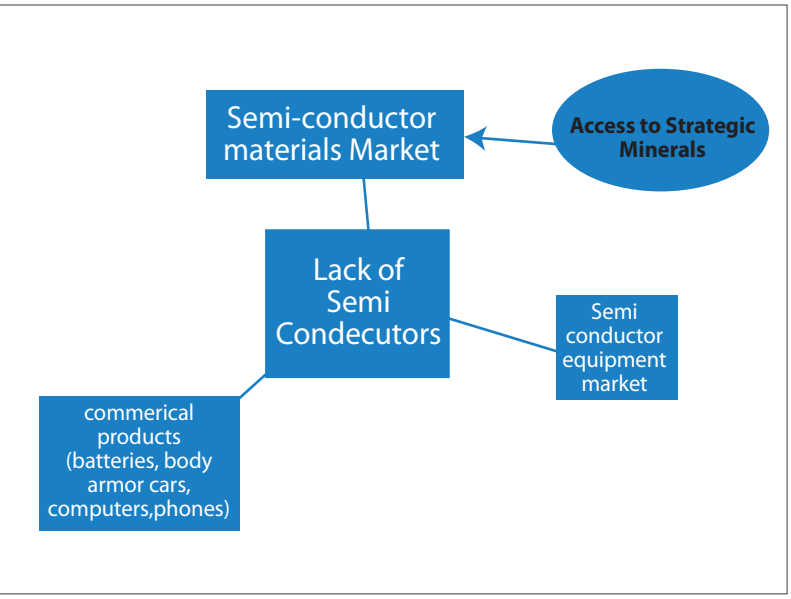
The dilemmas are interconnected and the impact is twofold, first in terms of manufacturing capacity and second in terms of mining and processing of the raw materials.

As the effects of the Covid-19 pandemic have persisted, global supply chains have become increasingly brittle. A key factor in this regard is the volatile fluctuations in the demand for semiconductors. Denoted the 'Bullwhip effect', it aptly describes the current shortage (Burkacky, Mahindroo and Weisman 2022). Initially, demand slumped as a result of a slowdown in production in 2020 brought on in large part because of the pandemic. Demand then spiked when companies such as car manufacturers rapidly opened factories in 2021. Semiconductor fabrication facilities failed to sustain production in this cycle thus inducing the global shortage.

Regardless of manufacturing capacity, access to the raw materials has been the subject of contention as more REOs are being used in more applications, especially with regard to clean energy - solar panels and defense applications. Nowhere is this contested access more apparent than in the case of REOs in China. China has long valued REOs as a matter of state policy and sought to capitalize on their presence within China. An example of this was the adoption of the National Plan for Rare Earth Industry in 1986 to export quotas existing from 1990. New draft legislation designed to control access passed in 2021, with attempts to 'reinforce the protection of its rare earth resources' and 'strengthen full industrial chain regulation' (Nakano 2021).

To understand this complex web of relationships, one must first be able to visualize how they are connected. Using a system dynamics tool denoted as a Casual Loop Diagram (CLD) can be helpful in this regard. The figure below is an exam-





ple to visualize how these challenges are interconnected.

Semi-conductors and Strategic Minerals: Addressing challenges for the long term (Source: the author)

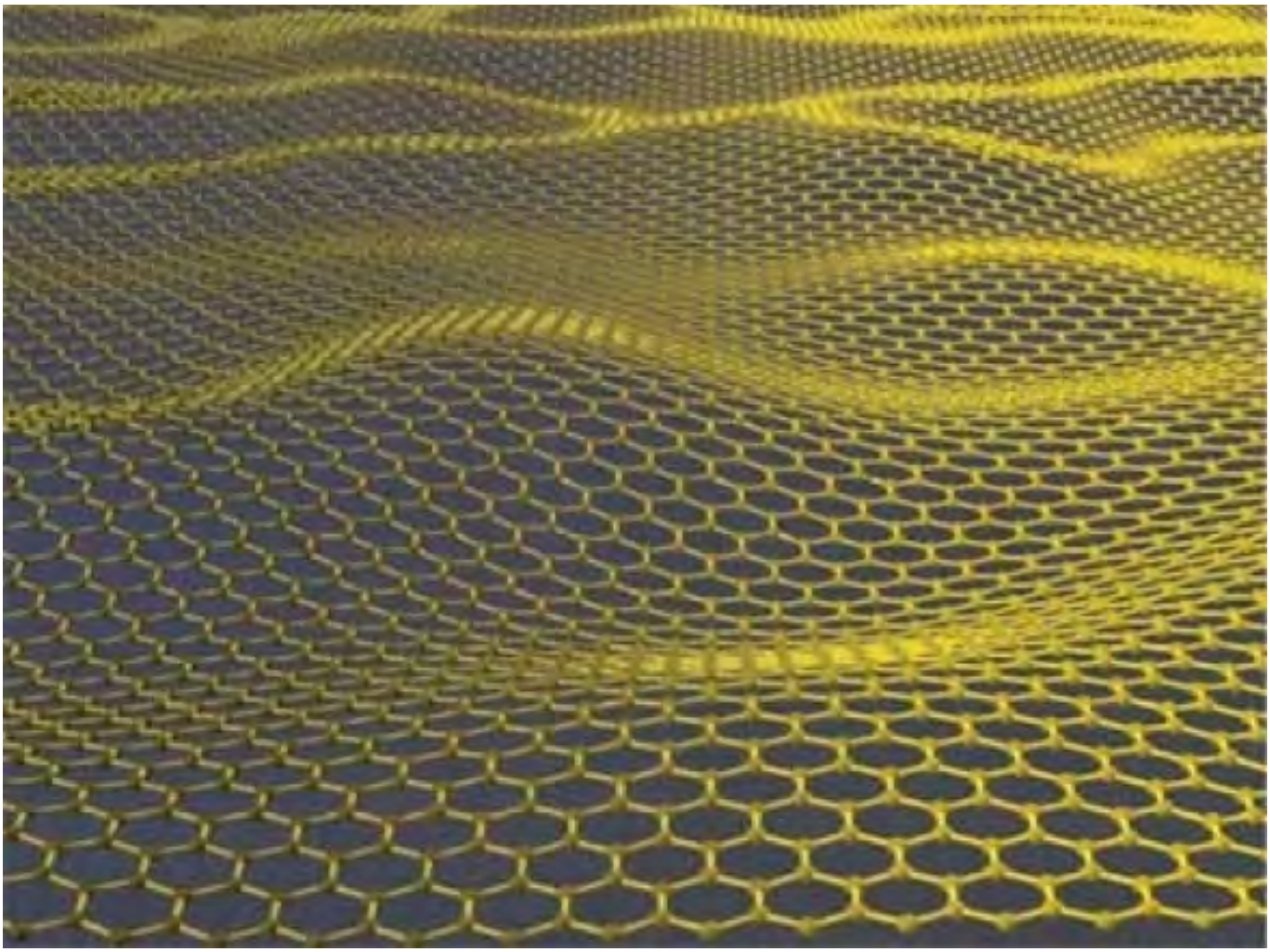
Both the current shortage of semi-conductors and the lack of access to strategic minerals represent long-term challenges. Even when the current issues surrounding production and access improve, the lack of productive capacity will still exist. Both dilemmas require long-term solutions as demonstrated by their projected demand. First, the need for semi-conductors is projected to increase by 11% in 2022 after having increased by 25% in 2021 continuing a long-term trend in the increasing demand for semi-conductors over the last decade (IC insights, Bill McClean 2022). Second, the projected need for strategic minerals in areas such as clean energy are forecasted to increase by as much as 600% in the next 20 years according to the International Energy Agency (International Energy Agency 2021).

Addressing these challenges in the long term requires action at the strategic level as the creation of new foundries for semi-conductors or new supplies of critical minerals is both capital and time intensive. Semi-conductor fabrication facilities require billions of dollars and a least three to four years to build. Such high capital and time requirements limit the number of states or companies that can bear these costs. So, when a company such as Intel or the Taiwan Semiconductor Manufacturing Company (TSMC) announced plans to build fabrication facilities in the US it has strategic implications not just for the US but for the global economy (Semuels 2022).

The challenge for strategic minerals is more complex. While the demand for minerals is increasing, the supply is restricted to just a few countries as denoted earlier. One way to address this challenge is to invest in the creation of new strategic materials that have the same properties as these minerals. Among the most promising of these materials is graphene. Although it was theoretically studied in the late 1940s graphene was first demonstrated in 2004. It is part of a class of materials denoted nanomaterials for their extremely small (less than 100 nanometers) dimensions. These materials can display many of the properties – such as superconductivity, extreme tensile strength and ductility as materials made from REOs and yet are potentially far more accessible. Sheets of graphene, composed of a single layer of carbon atoms, display these properties when stacked together at a 'magic angle' (Yuan Cao 2018).

Superconductivity refers to the ability of a material to pass an electric current without interference or heat resistance. Tensile strength and ductility refer to the ability of a material to be stretched or transformed without breaking. In scientific tests graphene has been shown to be stronger than steel yet lighter than aluminum.

Having these properties graphene can be used in various applications related to defense - ultra-lightweight avionic components, body armor and emerging technologies such as the next generation batteries or quantum computers. If graph-



eme can be manufactured on a commercial scale it could form the basis of a new class of strategic materials, thereby creating an opportunity to address the challenges presented by both the shortage of semi-conductors and access to strategic materials. This potential breakthrough represents a strategic opportunity that will be sorely needed, given the increasing severity of current and future geopolitical tensions.

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The First and Future 50:
Reflections on UAE Development

Dr. Stephen Quick
NDC Academic Staff

The First 50

On 2nd December 2021, the UAE's 50th National Day celebration was a reminder of the country's achievements over the past half century. From the challenges of unification and state development in the early 1970s to being in the world's spotlight hosting the successful Expo 2020 event, the journey has been ultimately successful, whilst also providing valuable lessons for the future.

From the development of the oil industry and wider economy to health and education, the UAE was propelled into modern statehood in a short timeframe. From a modest economic status in 1971, focused UAE economic development resulted in higher GDP per capita levels than either the UK or France by 2019 (UN, 2022). Additionally, as a marker of social and economic development, from low levels of public health provision in the 1970s, government-led programs have reversed this situation. By 2018 for example, the UAE could claim the same number of medical doctors per capita as Japan (UN, 2022). Likewise militarily, from UAE armed forces unification in 1976 and modest initial capability, it is now a well-resourced and respected organization with the world's 16th highest defence budget, and has served in high profile conflicts including Gulf War 1, Afghanistan, and Libya (IISS, 2021: 524). Despite its short history the UAE military has now undertaken both conventional and counter-insurgency expeditionary operations, contributing to the country being termed 'Little Sparta' by US forces for its proactive and capable military responses (Heller, 2019).

HH Sheikh Zayed laid the foundation for such national advancement through bold developmental plans allied to the judicious use of all instruments of national power. Fast-forwarding to modern times, this legacy has helped facilitate the UAE's achievement of both civilian nuclear energy and UN Security Council status, and allied to the successful 2021 Mars mission has significantly raised the UAE's worldwide profile. Additionally, the soft power influence resulting from factors as varied as the Tour de France-winning Team Emirates cycling team, the successful pandemic response, and the highly lauded Expo 2020 have served to cement the UAE's position in the international consciousness. In 50 years the UAE has, therefore, not only created a prosperous, modern state, but has provided an example of development for others to potentially adopt.

Whilst there has been much to celebrate, there have

also been obstacles to overcome. 1970s-era developmental issues aside, in more recent history issues relating to economic diversification were emphasized by the 'OPEC+' actions of 2020, and the 30percent drop in barrel price of crude oil which highlighted the risks of a largely hydrocarbon-dependent economy (Forbes, 2020). The UAE also faced a steep learning curve in its pursuance of military and humanitarian actions in Yemen from 2015-2020. The difficulties of counter-insurgency warfare long-experienced by more established military powers were hard won. Furthermore, the challenges associated with the utility of the economic and diplomatic instruments of power were illustrated by the intra-GCC Qatar stand-off of 2017-2021. These cases showed that the pursuance of statecraft at the highest level is rarely a straightforward undertaking, and provided valuable strategic lessons.

The Next 50

What, then, of the next half century? Looking forward, the following are key potential threats, challenges or opportunities for the UAE:

Economic

Despite secure long-term UAE reserves, even with a 25percent estimated rise in world energy demand in the next 20 years, the hydrocarbon share of this remains uncertain (ADNOC, (2022). With ever reducing production costs, renewables such as wind and solar power will account for over 30percent of world power generation as early as 2040 (Fattouh B., Sen A., (2021:84). Further expansion of producers such as ADNOC into alternative oil uses such as petrochemical derivatives will likely represent a key part of continued national economic diversification strategies. Such efforts, potentially in conjunction with efforts to moderate relative levels of national defence spending could assist the building of further economic resilience. Total UAE military spending from 2019-2021 averaged over $19 billion annually, accounting for 4.67 percent of GDP in 2021; more than double most NATO countries for example (IISS, 2021: 521-524).

Iran and Gulf Security

Beyond current threat perceptions, with cumulative defence expenditure (2019-2021) of less than the UAE, and three times less than the GCC combined, Iran's future military threat profile should be kept in perspective (IISS, 2021: 523-524). In the next 50 years Iran's governance will also likely change, potentially reverting the country to one which, as in the past, contributed to regional security. Iranian assistance to Oman, for example, during the Dhofar War (1965-1975) helped defeat a communist insurgency which threatened to destabilize the whole region (Goode, 2014: 441). With an appropriate regional engagement strategy, Iran could potentially be a future force for stability instead of instability, theoretically also acting as a solution catalyst for the 'Three Islands' issue which has been a key ongoing "…sore in [bilateral UAE/Iran] relations." (Al Nahyan, 2013: 23).

Issues relating to GCC integration will also continue in the future. The tensions illustrated by the potential Omani GCC withdrawal in 2013 over deeper integration proposals will likely continue (The National, 2013). Further military integration of the Peninsula Shield concept and even monetary union have been discussed but not implemented to date. The next 50 years will likely either see a more integrated approach along quasi-EU lines or the continuance of a loose federation of independent states, with associated regional security considerations.

Adjustment of World Order

The recent events in Ukraine show that notions of geopolitical power such as 'World Island' control are still relevant looking forward (Deibel, 2007: 49). With multiple big powers increasingly assertive in utilizing the military instrument of power worldwide, the stage is set for a potential adjustment of the world order. Additionally, with the likely ending of the solo world reserve currency status of the US Dollar, and China forecasted to overtake the USA as the world's largest economy by 2030 (with the purchasing power to overtake US military capability) the potential for increased international stability-related issues over the next 50 years is apparent (CNBC, 2021). In a post-unipolar world, the continuance of the current 'middle road' approach towards all such larger powers will be key policy issue for the UAE.

Environmental

Environmental considerations will become increasingly important for the UAE going forward. Due to global warming, it estimated that "…the Middle East is warming at twice the rate of the rest of the world.", and the UAE is one of the largest carbon emitters per capita in the world (The Guardian, 2021). There is an inherent challenge in reducing reliance on fossil fuels and maintaining income for hydrocarbon-based economies. The UAE is, however, moving quickly towards addressing such issues, importantly being the first Middle Eastern nation to ratify the 2015 Paris Agreement on climate change. The UAE recently also announced the Net Zero by 2050 initiative, described as "a national drive to achieve net-zero emissions by 2050" (UAE Government Portal, 2021). Such efforts should see 50percent of the UAE's total energy consumption supplied by renewables and nuclear power by the middle of the 22nd Century (The Guardian, 2021).

In a sense, the UAE's 2050 Net Zero initiative brings the story of the nation full circle. The UAE has both survived and flourished in its first 50 years with the groundwork for success set by HH Sheikh Zayed in 1971. This initiative is just one of the nation's efforts to effect positive future change. By applying the lessons from the previous five decades, the future should be one of positive opportunities for the UAE, and not just of negative threats and challenges.

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AUKUS nuclear submarine deal and the Non-Proliferation of Nuclear Weapons Treaty (NPT)

AUKUS stands for a trilateral program between Australia, UK, and US. The program is centered on aiding Australia regarding security issues in the Indo-Pacific region. The plan is geared toward access to state-of-the-art military technology to Australia from the two other partners the USA and the UK. The technology encompasses quantum equipment and innovative capabilities such as artificial intelligence (Tidwell, Moroney 2022). AUKUS has serious and negative nonproliferation implications, given that having nuclear-powered submarines would require Australia to become the first non-nuclear nation to use a loophole that permits it to take out nuclear materials from the scrutiny of the International Atomic Energy Agency (IAEA).

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Participant, UAE NDC

AUKUS Background

Australian Prime Minister Scott Morrison, President Joe Biden, and UK Prime Minister Boris Johnson announced the AUKUS security agreement on September 15, 2021. Under this pact, the UK and US will aid Australia in constructing at least eight nuclear-powered attack submarines. The goal is to strengthen the alliance by attempting to contain the expanding Chinese Navy. Notably, this agreement replaced the agreement that Australia had agreed on with France in 2016. Under this deal, French would have supplied Australia with 12 French Suffren-class submarines fortified with conventional propulsion instead of the nuclear propulsion that France uses (Maclellan 2021). In 2016, Australia did not appear to seek to build the needed infrastructure for maintenance and supply fuel for nuclear-powered ships. The life-of-ship core permitted the nation to bypass having to make its own nuclear fuel, resupply its submarine reactors, and dispose of the spent fuel. Australia could objectively procure the reactor cores from its two partners in the agreement and later return them for disposal when the submarines are decommissioned (Masterson 2022). Subsequently, Australia abruptly canceled the A$90 billion Naval Group contract with France in mid-September 2021. The withdrawal led to a diplomatic dispute with France (Wainwright 2021).

Therefore, France removed Australia as a strategic partner on 23rd February 2022 over AUKUS, citing lack of collaboration of trust with France without prior consultation.

Nuclear Submarine Characteristics and Naval Nuclear Propulsion

Nuclear power is especially suited to ships that require to be at sea for long periods for the propulsion of the engine and without refueling. It only needs to ascend for restocking food supplies. The technology has various characteristics that enable it to achieve this end. For example, they have long core lives, with new ones developed to last 30-40 years (more than 1.5 million kilometers) in most submarines and 50 years in carriers (Mihail 2018). Moreover, they run on highly enriched uranium (HEU), which delivers a lot of power from a very small volume. Also, the naval reactors does not use soluble boron. (Mihail 2018). The nuclear propulsion also allows the submarine to maneuver without noise, stay underwater at deep depths, and move at high speed. In addition, the re-

actor compartment is relatively small. However, there are notable disadvantages of this technology. For instance, maintenance and operation requires specialized knowledge, facilities, and equipment. It necessitates a highly skilled workforce and billions of dollars to build. There is risk of radiation leakage or reactor failure. Moreover, the reactor is cooled by sea water, leaving behind huge amounts of warm water that rise to the surface creating a thermal wake, that is detectable by thermal satellite imaging. Finally, it is necessary to cool the reactors even when the submarine is not moving.

Countries Operating and Planning To Operate Nuclear Submarines

At present, only six nations have nuclear-powered submarines. The USA has 68 nuclear-powered submarines. France has eight. Conversely, India has one nuclear-powered submarines. 11 of the submarines are found in the UK. Notably, China possesses 12 nuclear submarines. Finally, Russia has 29 (Gaurav 2022). Thus, the current AUKUS treaty will make Australia the seventh country to acquire nuclear-powered submarines. At the time of drafting of the NPT and Comprehensive Safeguards Agreement (CSA), several non-nuclear weapon states (NNWS), including Japan, Germany, Italy, and Sweden, as well as others, were interested in acquiring nuclear submarines, without pursuing this interest any further (Jayantha, Rauf 2017, 2).

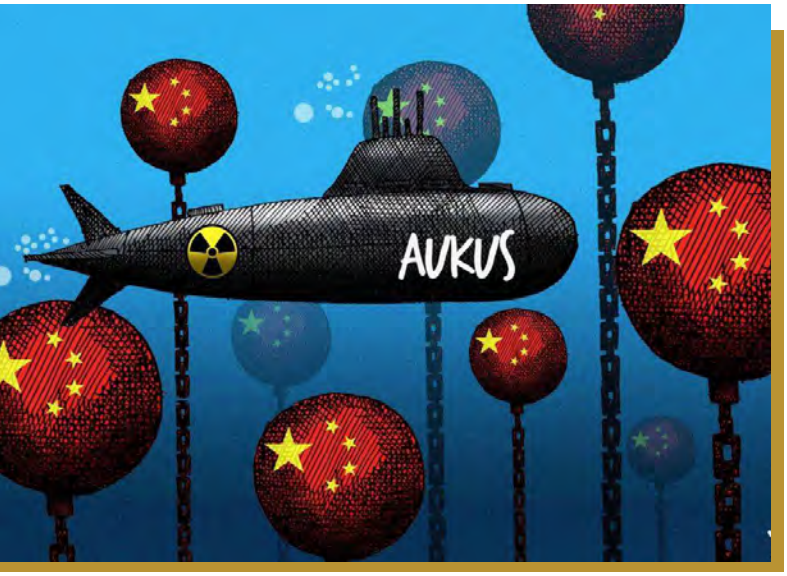
For example, in the late 1980s, Canada approached the IAEA to reach an agreement to remove nuclear material for use in nuclear-powered submarines, with Canada supplying the US with Canadian uranium for the fuel and the US supplying Canada with HEU fuel manufactured in the US. To avoid triggering Article 14, it was recommended that the uranium/fuel exchanges be treated as a “military-to-military” arrangement, which would be fully outside of IAEA oversight. Canada ultimately decided not to pursue this initiative for proliferation concerns (Rockwood 2017).

In contrast, the Republic of Korea (ROK) requested the US to share reactor technology and HEU fuel. The request was rejected by President Trump, who complained about double standards (Holt 2013). Furthermore, Iran announced plans for naval reactors in 2012, and officially informed the IAEA in 2018, despite there being no known Iranian technical capabilities for nuclear submarine design and construction. The Iranians resumed uranium enrichment up to 20% in Jan 2021 and started enriching up to 60% in April 2021, with no credible use for the 60% enriched uranium. The provisional Additional Protocol (AP) implementation suspended following US withdrawal from Joint Comprehensive Plan of Action (JCPOA) (Borger 2021).

If implemented, Iran would by itself, produce the reactor design, enrich up to HEU levels, produce the HEU fuel, dispose of the HEU fuel. Is Iran’s nuclear submarine program an excuse to produce HEU and a pressure tool for JCPOA negotiations? This needs further investigation.

Nuclear Submarines, Non-Proliferation Treaty, and IAEA Safeguards

The NPT and CSA Paragraph 14 and provisions in the AUKUS agreement have led to various dilemmas. It is perceived as raising the complexity of the conflict of interest between key nations in the Indo-Pacific region. Subsequently, Australia asserted that the nation will continue to uphold its obligations under the NPT (Cheng 2022). The goal of this treaty is to prevent the spread of nuclear arms and technology. It is also focused on nuclear disarmament and compete and general disarmament and encourage collaboration in the peaceful use of nuclear energy (Skinner



2022). NPT is perceived as the basis of the global nuclear non-proliferation regime and a fundamental cornerstone for the pursuit of nuclear disarmament. It develops a safeguard system with the IAEA being in charge (Reddie et al., 2018). The IAEA carries out inspections to verify compliance with the safeguards. Regarding submarines, the most significant provision of the safeguards is Paragraph 14. Overall, the paragraph is vital because it comprises the procedures to be adhered to in a situation that country desires to exercise its discretion to use nuclear material needed to be protected under the treaty in a nuclear operation that does not need the application of safeguards.

Australia would have to become the first non-nuclear-weapon state to utilize a weakness that authorizes it to exclude nuclear materials from the IAEA examination classification for the nation to run nuclear-powered submarines. Such an exclusion might set an undesirable practice whereby would-be proliferators in upcoming years could hide the creation of nuclear weapons using naval reactor programs. The possible model arrangement with IAEA is that there is need for adequate verification arrangement (Lee and Nacht 2020). Having adequate knowledge is important for the IAEA because fuel could be hidden in the course of verification of mass and isotopic composition.

Any possible arrangement will have various implication of Paragraph 14's application. Specifically, it may lead to the introduction of conditions for invoking Paragraph 14. Perhaps, the application of such an AP could mitigate the likely negative consequences on safeguards of Paragraph 14 arrangement (Leece 2021). An AP would provide the IAEA with extended access to locations and information that would increase the ability of the institution to identify indications of undeclared nuclear activities and materials. Therefore, different actions contained in an AP, including the right of the IAEA to request information to and access to data regarding nuclear fuel-cycle-related research and development operations not encompassing nuclear material could be pertinent to a nuclear naval propulsion program.

Arguments for and against AUKUS and Possible Solutions

On the other hand, the argument against AUKUS is that the persistent use of HEU fuel is against the long-term determination to eliminate the stockpile of the material worldwide (Hinman 2021). Moreover, it has been seen to cause geopolitical challenges, especially with China. Finally, it creates a dangerous precedent for other nations and creates double standards for Australia.

In conclusion, the AUKUS deal risks developing a new double standard or severely exacerbate one that already exists whereby a would-be proliferator could exploit the loophole to create nuclear weapons (Novita 2022). The NPT does not prescribe non-nuclear weapon nations from running or developing ships powered by nuclear fuel. the non-proliferation costs resulting from the AUKUS treaty outweigh the strategic and military advantages. Thus, that's a clear strategic impact on the region.

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COP28: UAE's Strategic Influence and Impact on National Economy

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The UAE has succeeded in diversifying %70 of its total GDP from oil based on IMD World Competitiveness Ranking 2021, with the UAE ranked 9th out of the 64 most competitive and advanced economies. With the UAE's visionary leaders and its strong emphasis on building the best and most dynamic economy and cementing its reputation in the world as per the 'Principles of the 50', it is imperative to accelerate the transition to a greener economy. The UAE has always been a pioneer in adopting challenging missions, being the first in the Middle East North Africa (MENA) region to pledge a net-zero carbon emissions target by 2050, a conscious commitment towards a more sustainable future. Even before the pledge, sustainability has been a top priority on the UAE's national agenda including its UAE Vision 2021, the UAE's Centennial, and the UAE Energy Strategy 2050 among other initiatives and supportive strategies.

The UAE has regularly held prestigious international events advocating sustainability such as the UN's 17 sustainable development goals during Dubai EXPO 2020 and on climate change actions such as Abu Dhabi Sustainability Week, while in 2014 and 2019 hosting UN climate summit preparatory meetings. In 2021, the UAE bid to host the COP28 international climate summit. COP – 'Conference of Parties' – the top decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC is the entity mandated to combat climate change, made up of 197 member parties, including the UAE. It is the parent treaty of the Paris Agreement and Kyoto Protocol which both aim to reduce the impact of greenhouse gas (GHG) emissions and support sustainable development. COP meets annually to assess the measures taken by countries and their progress in dealing with climate change.

In November 2021, the UNFCCC confirmed the UAE's hosting of COP28 in 2023. This coincided with the Abu Dhabi National Oil Company (ADNOC) announcement of a record drilling investment of $6 billion enabling its 2030 capacity production growth plan of 5 million barrels per day (mmbpd). Both developments augur new economic opportunities for the UAE, which the CEO of ADNOC, Dr.Sultan AlJaber who is also the UAE's Climate Change Envoy, will oversee. The UAE's Nationally Determined Contributions (NDC) submitted to the UN in 2020 reveal that the policies and targets for 2030 in relation to the Paris Agreement are clearly insufficient as they predict a rise instead of a fall in GHG emissions. The transition from oil to renewable energy in not just the 'switch of a button'. Although renewable energy is growing quickly, fossil fuel still dominates the UAE's energy mix in powering its electricity grid and is among the top sectors

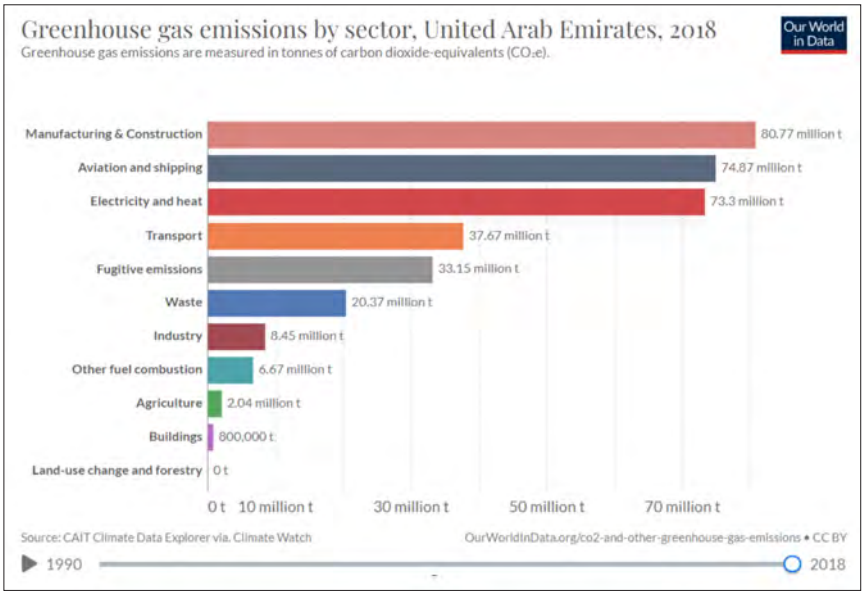

Figure 1 Source: Our World in Data

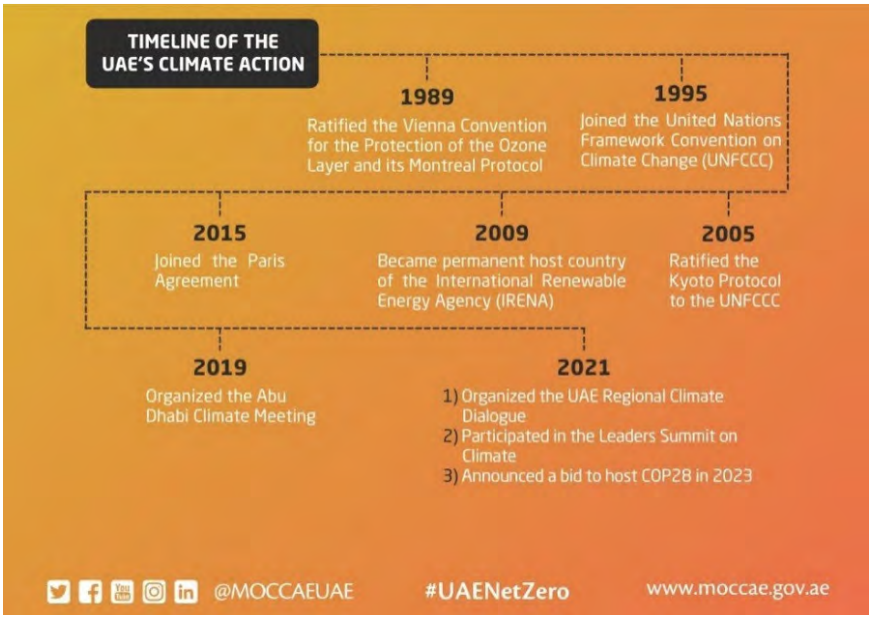

Figure 2 Source: Ministry of Climate Change and Environment UAE

contributing to the country's high emissions as shown in Figure 1. COP28 will focus on painful economic decisions that need to be made within the framework of comprehensive climate action.

The UAE welcomes the privilege of hosting COP28 and showcasing the country's transformation over the past fifty years into a world class commercial and trading hub. The goals for the next half century reflect the government's efforts to diversify the national economy towards renewable energy utilizing smart climate solutions and innovative technological advancements. The UAE has made significant progress in recent years towards reducing CO2 emissions, mitigating climate change and building an environmentally-friendly future both globally and domestically:

Global

A timeline of the UAE's climate action (Figure 2) indicates a consistent set of commitments since 1989 ratifying the Vienna Convention for the Protection of the Ozone Layer, followed by joining the UNFCC six years later. In 2005 it ratified the Kyoto protocol, and welcomed the In-

ternational Renewable Energy Agency (IRENA) in Masdar City, Abu Dhabi. It was also the first country in MENA to ratify the Paris Agreement, and launched multiple climate meetings and dialogues, culminating in 2023 with hosting COP28.

IRENA's headquarters based in Abu Dhabi sends a message to the world regarding the UAE'S promotion of renewable energy. IRENA's goal is to propagate the transition to usage of renewable energy on an international level. IRENA and the UAE jointly announced the Energy Transition Accelerator Financing (ETAF), a global climate financing platform facility, to speed up the transition to renewable energy for developing countries. The UAE committed to almost half the funding towards the platform which aims to reach 1 billion USD of capital resourcing by 2030.

The UAE participates in the Global Methane Pledge. When methane enters the air it mixes with oxygen to form carbon dioxide (CO2) thus speeding up the warming effect. The plege aims to reduce eight gigatons of annual CO2 emissions by 2030 (30% reduction in comparison to the 2020 levels). It also aims to spur global actions and bolster support for existing international technical and policy initiatives. The UAE can leverage its position as a low methane emitter (0.01%.) to support many countries' domestic initiatives.

Domestic

The Barakah nuclear power plant has played a major role in increasing the UAE's share of clean energy and reducing its carbon footprint. It has already started its commercial operations, and when the plant's four reactors are fully operational, it will generate a quarter of the UAE's electricity with zero CO2 emissions. It is aligned with the country's efforts to diversify its energy sources by providing efficient and clean energy.

In the past thirty years, the UAE has successfully reduced the flaring of natural gas to significant levels, thereby reducing GHG emissions and air pollution. The UAE's policy is shifting from low flaring to zero tolerance.

Hydrogen represents a clean fuel made from different sources such as natural gas (blue hydrogen), with nuclear energy, and renewable energy such as wind and solar (green hydrogen). The UAE's Hydrogen Leadership Roadmap supports its net-zero ambitions and explores the full value chain to support domestic investments and production of low carbon hydrogen and derivatives (e.g. sustainable aviation fuel and green steel exports) as well as unleashing new value creation potential markets through low carbon hydrogen and derivatives exports.

With the abundance of sun, the UAE has state-

Figure 3 Source: Dubai Electricity & Water Authority

Figure 4 Source: Jubail Island Exhibition

of-the-art power plants such as Mohammed bin Rashid AlMaktoum Solar Park (Figure 3), Shams 1 in Abu Dhabi and other projects which are under construction. This provides a low cost energy supply reducing over 9 million tonnes of CO2 emissions annually

Carbon capture, utilization, and storage (CCUS) is a means of mitigating climate change by capturing CO2 from large-point sources such as manufacturing industries and storing it safely underground instead of releasing it into the atmosphere. The UAE has developed the region's first commercial-scale network 'AlReyadah' for CCUS. It reduces up to 800,000 tonnes of CO2emissions per year producing clean fuel.

Mangroves absorb carbon emissions, create a natural habitat for many creatures and protect against rising sea levels. The UAE has raised its mangrove planting targets from thirty million units submitted to the UN to a hundred million by 2030 resulting in an annual drop of 115,000 tonnes of CO2.

With a deep understanding of the impact of climate change, the UAE is a regional leader when it comes to implementing climate change solutions. Despite having the world's seventh largest natural gas and oil reserves, the UAE recognizes that the global economy is shifting away from oil towards other environmentally-friendly sources of energy. Due to these changing dynamics, the UAE has taken bold steps to diversify its energy mix, reduce its carbon emissions and introduce alternative means to expand its economy. However, the UAE should seek to achieve 50% CO2 emissions' reduction by 2030 in order to reach its net-zero target by 2050.

The UAE is actively supporting other countries in renewable energy projects and efficiency programs as part of sustainability diplomacy. It has invested 16.8 billion USD in 70 countries, including aid and loans spreading renewable energy initiatives to 27 island nations (Figure 4). Ultimately, we need a collaborative effort to help limit the global temperature from rising by 1.5 C compared to the pre-industrial levels. On the occasion of COP28, the UAE can highlight its successes to the world and use the event's extensive media coverage to attract more businesses and initiatives and help achieve even greater CO2 emissions' reduction by 2030 and eventually meet the 2050 net-zero emission goals.

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