

FORUM

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Big Loans:
Some Strings
Attached**

PLUS

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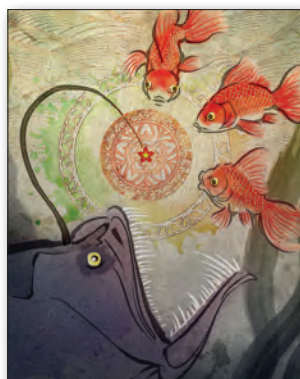
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Indian Army Soldiers from the famed daredevil team perform in Punjab in September 2016.

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ABOUT THE COVER:

This illustration metaphorically raises questions about China's methods to gain influence and their impact on sovereignty of smaller Indo-Asia-Pacific nations.

FORUM ILLUSTRATION



Dear Readers,

Welcome to the latest edition of *Indo-Asia-Pacific Defense FORUM*, which focuses on sovereignty. Nations are gradually changing the way they view sovereignty as the Indo-Asia-Pacific continues to garner world attention.

Sovereignty has traditionally been defined as the right to self-governance without interference from outside entities. Increasing globalization is changing how nations apply the meaning of this concept. State leaders must continually balance maintaining

domestic legitimacy with how they conceptualize the role of sovereignty.

Even though states may harbor varying concepts of sovereignty, all countries operate within the framework of international relations. Differences in how sovereignty is construed are generally constrained by the international system and the norms that underlie that system. International treaties bind states to give citizens rights that are globally agreed upon, while international laws dictate legal norms applicable to all nations.

In general, a more inclusive and flexible view of sovereignty has been evolving in the Indo-Asia-Pacific since the end of World War II. This notion has produced multilateral initiatives and institutions, such as the Association of Southeast Asian Nations (ASEAN), which strives to bind the diverse region together and reinforce sovereignty generally through a more collective approach to security.

Nevertheless, outside forces exert pressure on such multilateral approaches. Foreign powers can circumvent such notions of sovereignty by forming economic partnerships with private companies in other countries within the region. Moreover, conflicts persist among nations. Countries stake overlapping claims of sovereignty.

As the world continues to confront terrorism, humanitarian crises such as natural disasters, and other security challenges, countries' differing notions of sovereignty and nonintervention are increasingly colliding. Although nations are showing an increased willingness to participate in global governance initiatives, how nations structure domestic policy can affect how sovereignty is perceived.

This issue examines how competing perceptions of sovereignty and the state may drive many nations' policies and actions, ranging from Sri Lanka's approach to reconciliation to Pacific island nations' climate-change tactics to China's increasing use of economic and diplomatic levers to influence behaviors of nations across the region and world. As Indo-Asia-Pacific nations wrestle with evolving definitions of sovereignty, multilateral exercises and partnerships become increasingly important for achieving an equitable balance of power and securing regional stability and prosperity.

I hope that you find this edition insightful and thought-provoking, and I welcome your comments. Please contact the *FORUM* staff at iapdf@iapdforum.com with your perspectives.

All the best,

HARRY B. HARRIS, JR.
Admiral, U.S. Navy
Commander, U.S. Pacific Command

IAPD FORUM

Sovereignty

Volume 42, Issue 2, 2017

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Indo-Asia-Pacific Defense FORUM

is a professional military magazine published quarterly by the commander of the U.S. Pacific Command to provide an international forum for military personnel of the Indo, Asian and Pacific areas. The opinions expressed in this magazine do not necessarily represent the policies or points of view of this command or any other agency of the U.S. government. All articles are written by *FORUM* staff unless otherwise noted. The secretary of defense has determined that the publication of this magazine is necessary for conducting public business as required by the Department of Defense.

ISSN 2333-1593 (print)
ISSN 2333-1607 (online)



support and development, and the development and integration of the doctrine the U.S. Army uses to fight and win wars. *Featured on Page 38*

GEN. ROBERT B. BROWN is commanding general of U.S. Army Pacific (USARPAC), leading the Army's largest service component. Before joining USARPAC in April 2016, Brown served as commanding general of U.S. Army Combined Arms Center at Fort Leavenworth, Kansas. In this role, he led the synchronization of education, leadership development, training



LT. GEN. JEFF HARRIGIAN AND COL. MAX M. MAROSKO III share their insights on fifth-generation aircraft as the machines come of age to project U.S. power in the 21st century. Harrigian is commander of U.S. Air Forces Central Command, Southwest Asia. As the air component commander for Central Command, he is responsible for developing contingency plans and conducting air operations in a 20-nation area in Central and Southwest Asia. In addition to commanding at the flight, squadron and wing levels, he also has flown combat missions in support of operations Just Cause and Desert Storm. Marosko is a U.S. Air Force F-22 Raptor pilot who serves as deputy director for air and cyberspace operations at Headquarters Pacific Air Forces, Joint Base Pearl Harbor-Hickam, Hawaii. Marosko flew in multiple combat tours in the F-15C prior to transitioning to the F-22. He has commanded an F-22 squadron and previously served as the 325th Operations Group commander at Tyndall Air Force Base, Florida.

Featured on Page 44



deterrence strategies and tensions along the India-China border. *Featured on Page 54*

DEBALINA GHOSHAL is a research fellow at the Centre for Human Security Studies, a nonprofit and nongovernmental think tank in Hyderabad, India. Her work has been published across the Indo-Asia-Pacific and internationally. She completed a master's degree in international studies from Stella Maris College in Chennai, India, and lives in Delhi. For this issue of *FORUM*, she writes about

Join the Discussion

We want to hear from YOU!

Indo-Asia-Pacific Defense FORUM caters to military and security personnel in the Indo-Asia-Pacific region. A product of U.S. Pacific Command, the quarterly magazine provides high-quality, in-depth content on topics that impact security efforts across the region — from counterterrorism to international cooperation and natural disasters.

FORUM provokes thoughtful discussions and encourages a healthy exchange of ideas. Submit articles, pictures, topics for discussion or other comments to us **ONLINE** or at:

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FORUM

Exploring the issues that impact so many lives

Giant Panda No Longer Endangered

Decades of conservation work in China have paid off for the giant panda, whose status was upgraded in September 2016 from “endangered” to “vulnerable” due to a population rebound, officials said. The improvement for the giant panda (*Ailuropoda melanoleuca*) was announced as part of an update to the International Union for Conservation of Nature (IUCN) Red List — the world’s most comprehensive inventory of plants and animals.

The latest estimates show a population of 1,864 adult giant pandas. Although exact numbers are not available, adding cubs to the projection would mean about 2,060 pandas exist today, said the IUCN.

“Evidence from a series of range-wide national surveys indicate that the previous population decline has been arrested, and the population has started to increase,” said the IUCN’s updated report.

The cornerstones of the Chinese government’s effort to bring back its fuzzy, black-and-white national icon have included an intense effort to replant bamboo forests, which provide food and shelter for the bears. Through its “rent-a-panda” captive breeding program, China has also loaned some bears to zoos abroad in exchange for cash and reinvested that money in conservation efforts.

“When push comes to shove, the Chinese have done a really good job with pandas,” said John Robinson, a primatologist and chief conservation officer at the Wildlife Conservation Society.

“So few species are actually down-listed, it really is



CHINA

This picture taken on March 2, 2016, shows giant panda Yuan Xin with its feeder at the China Conservation and Research Center for the Giant Panda in Dujiangyan in southwest China’s Sichuan province. AFP/GETTY IMAGES

a reflection of the success of conservation,” he said at the IUCN World Conservation Congress, the largest meeting of its kind, which drew more than 9,000 heads of state, policymakers and environmentalists to Honolulu.

According to Simon Stuart, chairman of the IUCN Species Survival Commission, the improvement was “not rocket science” but came from the hard work of controlling poaching and replanting bamboo forests.

“This is something to celebrate because it is not a part of the world where we expect this to happen,” Stuart told reporters at a news conference to unveil the updated Red List. Agence France-Presse

NEW ZEALAND

POKEMON PLAYERS NAB REAL THIEF



Some New Zealand fans of the smartphone game Pokemon Go caught more than they bargained for when they grabbed a thief who broke into a car and held him until police arrived.

The young people were out hunting virtual cartoon characters in the North Island town of Napier when they heard a car alarm and saw a masked man run past, New Zealand Police said.

“They didn’t use Pokeballs to catch him — they just held him till police arrived,” police said, referring to an online tool used to capture Pokemons that appear in places such as temples and landmarks where people gather.

A 28-year-old man was arrested and will face theft charges in court, police said.

Nintendo’s Pokemon Go has become an unexpected smash hit, using augmented reality and Google mapping to make animated characters appear in the real world, overlaid on the nearby landscape viewed through players’ mobile phone cameras.

The game has also been blamed for injuries and robberies of distracted users in some countries, prompting authorities to warn gamers to play responsibly.

In Napier, police reminded players their own safety was paramount.

“Capturing little Pokemon monsters isn’t just good for the players because in this case it’s good for the police, too, but we don’t want any good Samaritans to get hurt,” said Senior Sgt. David Sutherland. Reuters



POLICE TO CENSOR ONLINE DISCUSSIONS ON NATIONAL DISASTERS

China's county-level police will be able to censor internet coverage of natural and man-made disasters, according to a revised draft of the country's policing law that the Chinese Public Security Bureau released in December 2016.

China reports a high rate of accidents and natural disasters every year due to its vast geography and its relatively low public safety and building standards. The government has pledged to improve the country's poor safety record.

Incidents are often met with an outpouring of public grief and anger that the authorities seek to contain using internet controls and state-media coverage focusing on successful relief work.

The provisional adjustment to China's policing law, posted on the security bureau's website, would grant county-level police new powers when dealing with disasters in their jurisdiction.

"When necessary," local police will be allowed to "implement internet controls" if approved by a province-level public security bureau, the draft said.

Local police will also be able to cordon off disaster areas and limit or block individuals or vehicles from entry into a certain area in the name of safety.

The bureau's website did not give a time frame for the revised law's implementation. Local police have in practice always been able to block access to disaster areas and could negotiate with websites and censorship authorities to guide discussion. The new law, however, if enacted, would see this practice formalized and ratified by the central government.

Reuters

THAILAND

TOURIST TRACKER

Thailand's telecommunications regulator has approved in principle a plan to issue special SIM cards to foreign tourists, so they can be tracked via their mobile phones.

Officials at the National Broadcasting and Telecommunications Commission said the plan would apply to tourists only, backtracking on an earlier announcement that it would cover all foreigners, including residents on long-term visas, the *Bangkok Post* newspaper and other media reported.

The commission said the plan would be studied further. Foreign and Thai users are already required to register when purchasing SIM cards.

State surveillance of online activity is high under the military government installed after a coup in 2014, and there have been dozens of arrests for posting political material on Facebook and other sites.

The commission's secretary-general, Thakorn Tanthasit, suggested that the plan would not only help catch terrorists and criminals but also help find travelers who were in trouble or had gone missing.

"We are not limiting any rights. The National Broadcasting and Telecommunications Commission has no authority to check on the location of users," he was quoted as saying by the *Bangkok Post*. "But if tourists commit wrong, or there is a court warrant, we will then forward the warrant to a mobile phone operator and seek cooperation."

His failure to explain details of the plan has caused skepticism, since it is unclear how the special cards would differ from normal SIM cards, which can already be used for tracking phones.

AIS, the country's leading mobile phone service provider, said it would be "happy to comply" with the plan if it helped to ensure national stability. It noted the existing requirement for everyone, Thai and foreigner alike, to register when buying a SIM card.

The Associated Press





Indian Foreign Minister Sushma Swaraj delivers a speech during the Heart of Asia conference in Islamabad, Pakistan.

REUTERS

INDIA AND U.S.

boost anti-terror cooperation

THE ASSOCIATED PRESS

India and the United States have agreed to boost counterterrorism cooperation by expanding intelligence sharing about known or suspected extremists and terrorist threats. Speaking after the conclusion of the second U.S.-India strategic dialogue in New Delhi on August 30, 2016, then-U.S. Secretary of State John Kerry and Indian Foreign Minister Sushma Swaraj said the two countries also renewed their commitment to track down and prosecute perpetrators of several terrorist attacks on Indian soil. Those attacks include the 2008 strike in Mumbai that killed 172 people and a January 2016 attack on the Pathankot Air Force base. India has blamed Pakistan-linked groups for the attacks.

Swaraj, speaking at a joint news conference with Kerry as well as then-U.S. Commerce Secretary Penny Pritzker and her Indian counterpart, said the two sides had agreed on the “urgent necessity for Pakistan to disable safe havens and terrorist networks” and on the need for “Pakistan to do more to bring the perpetrators of [the two attacks] to justice quickly.”

She said she and Kerry had had a “meeting of the minds” on cross-border extremism that India and its neighbors face from militants in Pakistan. “We both agreed that nations must not maintain double standards, such as the categorization of good and bad terrorists, nor must they act as safe havens,” she said.

Kerry said the U.S. “stands with India against all terrorism no matter where it comes from.” However, he did say he had spoken recently with Pakistani officials about “the need for Pakistan to deprive any [terrorist] group of sanctuary.” He specifically named the Haqqani network that operates in

Afghanistan as well as Lashkar-e-Taiba, which has been blamed for attacks in India.

“It is vital that Pakistan join with other nations in tackling this challenge, and in fairness, in recent weeks and months they have been moving more authoritatively,” Kerry said.

The counterterror cooperation will include expanding the exchange of screening information and expediting the processing of requests from both nations for information about potential suspects, the ministers said.

The India-U.S. bilateral talks took place against the backdrop of rising tensions in the disputed region of Kashmir, long a flashpoint between India and Pakistan. Some of the largest protests in Kashmir against Indian rule have occurred

in recent years. At least 68 civilians have been killed and thousands injured in the Himalayan region, mostly by government forces firing bullets and shotguns at rock-throwing protesters since July 2016.

In August 2016, Indian authorities lifted a curfew imposed in most parts of India-controlled Kashmir as part of a 52-day security lockdown. They reimposed the curfew in the region's main city after anti-India protests and clashes erupted in several neighborhoods.

Swaraj said India remained ready to open discussions with Pakistan but that such dialogue was difficult while India remains a target of Pakistan-based groups. The U.S. has consistently urged

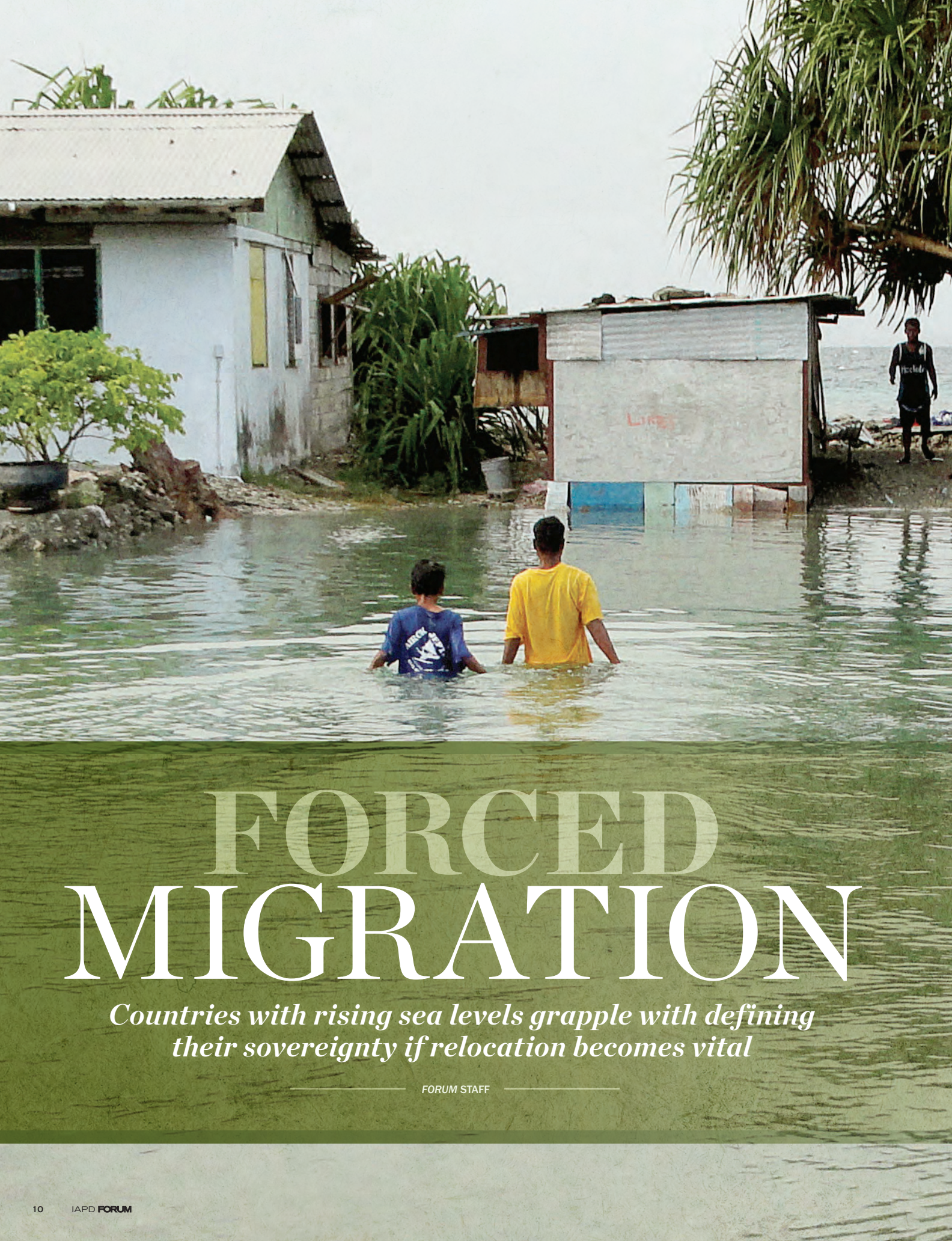
dialogue between India and Pakistan on the dispute and, in a meeting with Indian National Security Advisor Ajit Doval, Kerry reiterated that position, according to U.S. officials.

The two countries also agreed to restart a three-way dialogue with Afghanistan over its future, and they signed an agreement to combat and counter cyber attacks.

The nations also reaffirmed pledges to boost cooperation on climate change and clean energy development, including pressing ahead with the previously agreed construction of six nuclear reactors by the U.S. firm Westinghouse.



Indian Army Soldiers in Jamuna Balia give a gun salute at the funeral of their colleague Gangadhar Dalai, who was killed in a militant attack in Uri, Kashmir, in September 2016. THE ASSOCIATED PRESS



FORCED MIGRATION

*Countries with rising sea levels grapple with defining
their sovereignty if relocation becomes vital*

FORUM STAFF



Difficult decisions lie ahead for countries faced with challenges brought by climate change, rising sea levels, coastal erosion and extreme weather. Those woes and complications can appear even more daunting for small island nations — many of which have begun navigating the unfamiliar path of potential forced migration.

In the most dire analysis of these threatened islands, some experts suggest that sea level rise has placed a handful of nations in the region at risk of extinction. Such a grim prospect may prove unavoidable for some. Even so, regional organizations — such as the Pacific Islands Forum and the Asia-Pacific Climate Change Adaptation Forum — aim to raise the topic to prominence for affected nations not only to have resources to take action for themselves but also to solicit support.

“We believe that no country in our region can satisfactorily address the issue of forced migration by acting alone. Instead, regional cooperation is required,” according to the Centre for Policy Development’s Asia Dialogue on Force Migration. “However, in an environment often dominated by sensitivities and controversies about the appropriate responses to forced migratory movements at the national level, this has proven to be exceptionally difficult in practice.”

In September 2016, the Pacific Islands Forum released a report titled “Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management.” Referred to as voluntary guidelines for the Pacific Island region, the report highlights ways the public and private sectors can work together to mitigate risks and create a more resilient region as it confronts climate change.

“National and subnational governments and administrations, the private sector, civil society organizations, communities, and regional organizations and development partners all have unique and key roles

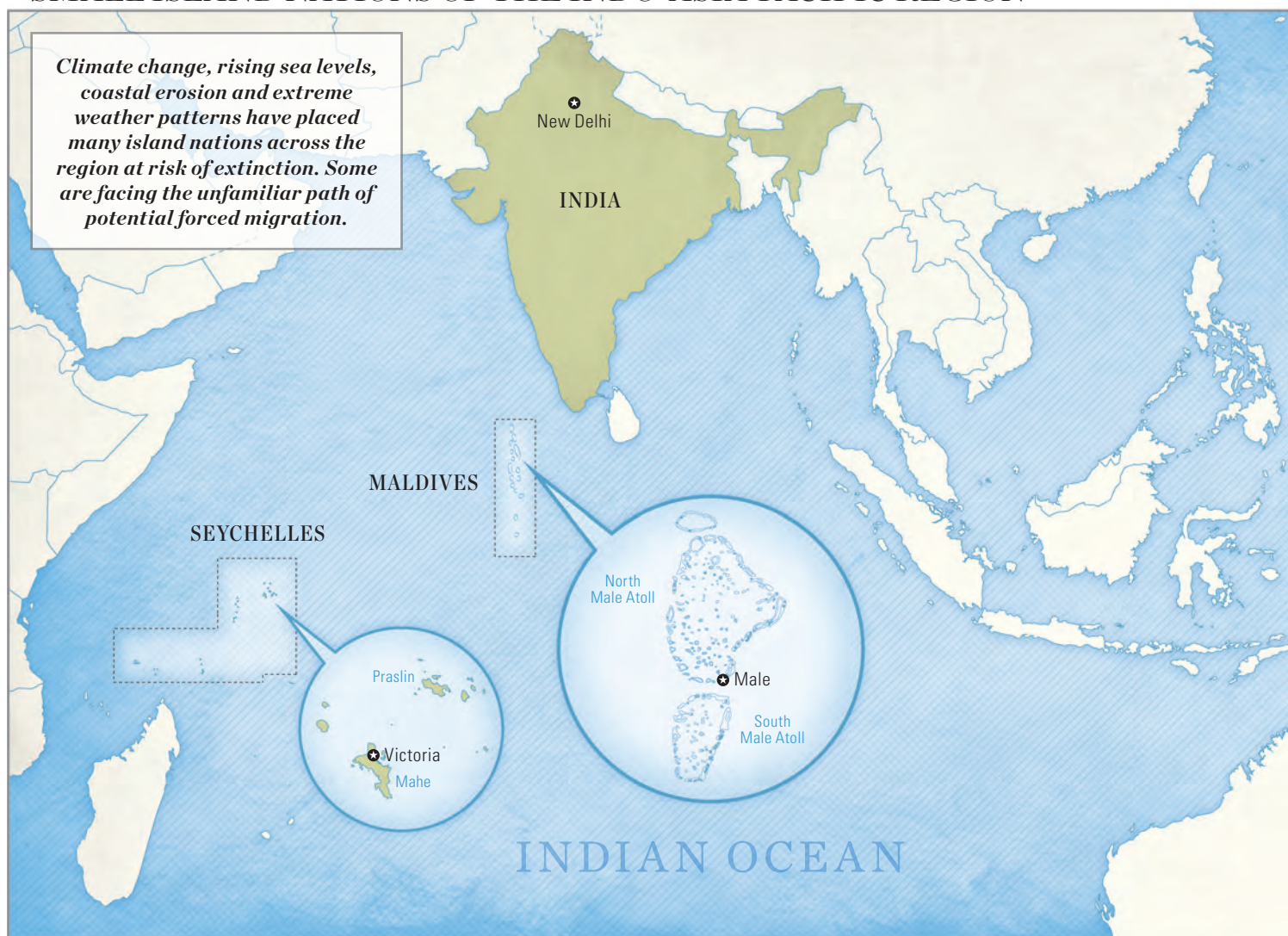
to play in addressing these challenges, individually and in partnership, to build a more resilient future for the Pacific region,” the report said.

Affected countries have begun working on ways to limit the effects of these increased weather-related disasters in Asia and the Pacific. Their challenges are intensified with the combination of sea-level rise and floods, storm surge, wind intensity, coastal erosion, saltwater intrusion into coastal aquifers, and the potential worsening of water scarcity and drought.

Both rapid- and slow-onset events can result in displacement of affected people and communities, as a

Two residents wade through flooding caused by high ocean tides in low-lying parts of Majuro Atoll, the capital of the Marshall Islands. AFP/GETTY IMAGES

SMALL ISLAND NATIONS OF THE INDO-ASIA-PACIFIC REGION



result of land degradation and loss, and of serious declines in water and food security, health and educational opportunities, according to the Framework for Resilient Development in the Pacific (FRDP).

“From national to community-level actions through to regional-level interventions, many initiatives have already been undertaken to strengthen local response capacity and reduce disaster risks, covering policies, plans, implementation and institutional strengthening, among others,” according to the FRDP. “Nevertheless, significant continued and additional efforts and support are needed in order to address climate change and disaster risks.”

To that end, the FRDP identified three interrelated areas of focus and called on stakeholders to work together on tackling them.

- **Strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters**

“Pursuing this goal entails successfully managing risks caused by climate change and disasters in an integrated

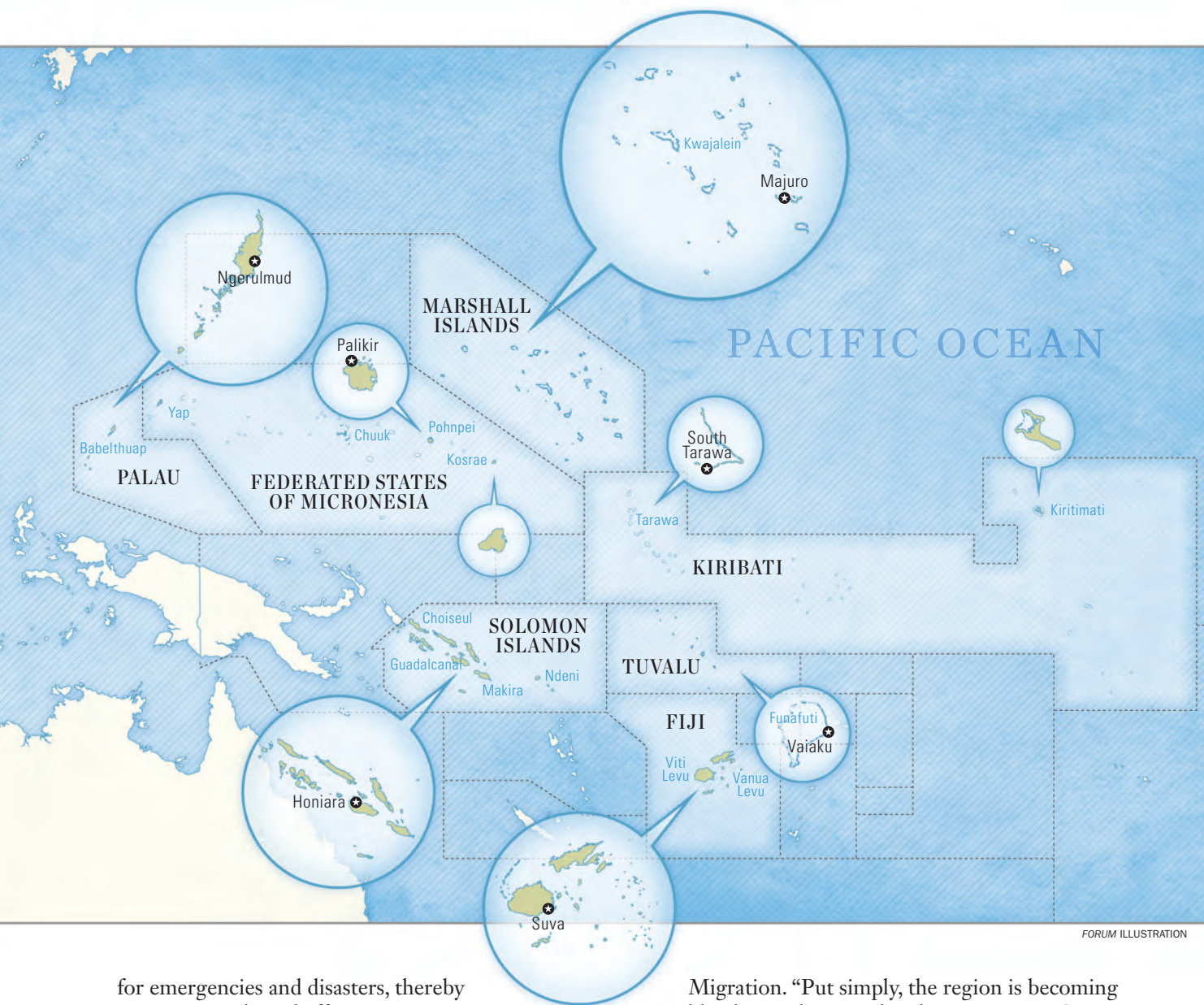
manner where possible, within social and economic development planning processes and practices, in order to reduce the accumulation of such risks, and prevent the creation of new risks or loss and damage. This goal will contribute to strengthening resilient development and achieving efficiencies in resource management.”

- **Low-carbon development**

“Pursuing this goal revolves mainly around reducing the carbon intensity of development processes, increasing the efficiency of end-use energy consumption, increasing the conservation of terrestrial and marine ecosystems, and enhancing the resilience of energy infrastructure. This goal will contribute to having more resilient energy infrastructure in place, and to increase energy security, while decreasing net emissions of greenhouse gases.”

- **Strengthened disaster preparedness, response and recovery**

“Pursuing this goal includes improving the capacity of PICTs [Pacific island countries and territories] to prepare



for emergencies and disasters, thereby ensuring timely and effective response and recovery in relation to both rapid- and slow-onset disasters, which may be exacerbated or caused by climate change. Disaster preparedness, response and recovery initiatives will reduce undue human losses and suffering, and minimize adverse consequences for national, provincial, local and community economic, social and environmental systems.”

Uncharted territory

Seated at the forefront of climate challenges, the Indo-Asia-Pacific accounts for more than 90 percent of the effects of tropical cyclones worldwide. Additionally, as much as one-third of the population in the Indo-Asia-Pacific live in low-lying coastal areas, according to the Centre for Policy Development.

“The security environment impacting forced migration in the Asia-Pacific is further complicated by nontraditional threats,” according to September 2016 briefing papers for the Asia Dialogue on Forced

Migration. “Put simply, the region is becoming older, hotter, less equal and more porous. Certain nontraditional threats, such as political uncertainty (short of civil war), climate change, economic downturns and rising inequality, impact the likelihood of forced migration just as much as traditional security threats.”

Smaller island nations such as Tuvalu and the Marshall Islands count themselves among the most vulnerable for potential forced migrations. These atoll nations are among the lowest-lying in the world. The threat of their submerging archipelagos brings with it damaged freshwater supplies and destroyed agriculture. By many accounts, islands in the Indian Ocean, such as the Maldives, face a similar fate.

The Maldives is projected to experience sea-level rise of 50 centimeters by 2100. The highest point in the Maldives is about 2.4 meters above sea level. The country would lose 77 percent of its island area by the end of the century.

If sea level were to rise by 1 meter — and the Maldives did not pursue further coastal protection measures — it would be nearly inundated by 2085. Rising sea levels,



Debris washes ashore in the storm surge of Cyclone Pam in March 2015 on the Pacific island of Kiribati.

GETTY IMAGES

biodiversity present major challenges to the Maldives due to climate change during the coming decades.

The Maldivian Ministry of Home Affairs Housing and Environment has identified potential measures to help the country adapt to rising seas. These include protecting groundwater, increasing rainwater harvesting and increasing the elevation of critical infrastructure.

The severity of the issue has prompted several questions about regional and national security and sovereignty. A *New York Times* newspaper article called out a few “serious ones” that it deemed “intellectually interesting.” Among them: What is the status of citizenship for those forced to relocate? What becomes of a country’s government? Does it retain its full status at the United Nations? Does it maintain control over fisheries and minerals, or do those resources evolve into the depths of international waters? While debate on these questions continues, suggestions on the way forward have begun to emerge.

“Retaining sovereignty, but more importantly ensuring that islanders retain the right to choose their own sovereignty pathways, might be the aspect that generates the most disagreements between migrants and hosts,” according to “Difficult Decisions: Migration

increased beach erosion, powerful storms, higher storm surges and threats to

from Small Island Developing States Under Climate Change,” a research article published in the April 2015 edition of the journal *Earth’s Future*. “Complications arise in determining the degree to which resettled islanders have the right to retain and manage their laws, justice system, language, education system and identity, whether sovereign or not. While major cultural changes need to be expected, compromise between migrants and hosts — at both community and country levels — would be necessary, including where the newly settled land was previously uninhabited.”

Defined boundaries

Establishing clearly delineated coastline boundaries now — while physical features remain above sea level to do so — could provide a legal basis for arguing sovereignty of a maritime domain should a landmass submerge. Generating maps, even at low tide, creates a more definitive line showing where a country’s exclusive economic zone had been historically.

“Every coastal state should be ensuring maritime boundary delimitation agreements have been established, and not only that they have these treaties in place but that these treaties define their boundaries in terms of geographical coordinates,” Rosemary Rayfuse, a law professor at Australia’s University of New South Wales, told *The New York Times*.

Many Pacific island nations already domestically define and record their coastlines at low tide, but their claims must be recorded with neighbors or some international maritime law agency to ensure those claims don't disappear when the landmass does, Rayfuse said.

Experts suggest that nations at risk of losing land act immediately, for there isn't a moment to waste.

Water insecurity

As recently as September 2016, researchers from Simon Fraser University in British Columbia said that many small island nations in the Pacific are already experiencing "significant water stress" as freshwater supplies become depleted. It's a multifaceted problem, researcher Diana Allen told Radio New Zealand.

Warmer climates have led to increased evaporation of groundwater drinking supplies. This, coupled with lack of sufficient rainfall to replenish aquifers, has led to an imbalance in the water supply that leaves too much water salinized and too little available for drinking.

"Some of the islands already have an indication that when you compare the amount of water that would be available compared to some other region of the world, 44 percent of the islands we looked at would be in a state of water stress in comparison to other areas around the world," Allen told Radio New Zealand.

The Asia Development Bank (ADB) has called the entire Indo-Asia-Pacific a "hot spot for water insecurity." ADB describes insecurity in drinking water as when only half of a population has access to sanitary water and facilities.

Despite the grim figures and the prospect for continued challenges, some progress has occurred, according to a September 2016 report by Eco-Business, a media company focusing on clean technology across the Indo-Asia-Pacific. ADB figures show that in 2013, 38 out of 49 economies evaluated were deemed "water insecure." Compare that to 29 out of 48 economies evaluated in 2016, Eco-Business reported.

Still, "significant investment and leadership are required to push many cities in Asia and the Pacific on the path to urban water security and become water-sensitive cities," according to the ADB.

Relocation matters

Legal issues surrounding displaced people tend to create spirited debate.

"The impact that climate change will have on the future displacement of persons is one of the major nontraditional threats that will profoundly affect the region's security," according to the Centre for Policy Development. "Extreme weather, resource scarcity and increasing natural disasters act as stressors that can trigger mass migration of people, leading to social destabilization within countries and in neighboring countries."

Experts say it's important to differentiate between undocumented migrants or asylum seekers and people (or

potentially nations) relocating due to climate change.

"Those migrating due to climate change are not refugees under international law, are not moving due to violent conflict and are not expected to be moving into volatile areas," according to the *Earth's Future* research article.

The ADB estimates that more than 42 million people were displaced between 2010 and 2011 alone due to sudden onset weather events.

Climate change is likely to present an additional set of challenges for the agriculture and forestry sectors, particularly in terms of managing the projected increase in the frequency and intensity of extreme weather events. The region has always been highly vulnerable to the impacts of climate variability and extreme weather, such as floods, intense rain, droughts and cyclones and these have been the cause of significant production losses to the agriculture and forestry sectors in the past. While farmers, foresters and tree growers have developed agricultural and forestry systems that help minimize climate-related risks, the magnitude of potential changes to key climatic variables projected for this century is likely to present a more formidable adaptation challenge.

The *Earth's Future* report offered several possibilities to consider for displaced nations, including building entirely new islands. Engineering options could allow for constructing new islands, including floating islands anchored to the seabed or to submerged islands, creating a kind of artificial island state to inhabit.

Another research suggestion called for developing a post-migration community within a host country. This would require integration and the real risk of losing the language, identity and culture of the migrating nation.

Researchers began recognizing these types of issues nearly 30 years ago. Yet questions persist regarding abandoned islands. Questions about fishing, mineral resources and shipping rights.

"Such questions are just starting to be explored, but few answers emerge, with the lack of parallels and precedents also inhibiting analysis," the *Earth's Future* article said.

Island nations would prefer if none of the alternatives was needed. The reality, however, remains that low-lying states must explore legal options for varying climate change scenarios.

"SIDS [small island developing states] peoples are not a single group with a single view or single voice. That presents challenges and opportunities in formulating and implementing decision-making processes for migration linked to climate change, while accepting that such decision-making processes are not removed from other social, environmental and governance interactions," the *Earth's Future* article concluded. "Rather than climate change and migration being completely new threats or opportunities for SIDS, they and their nexus add to ongoing decisions which SIDS peoples face regarding the future of their countries and cultures." □





SRI LANKA

DEMILITARIZING

The South Asian island nation may take its biggest step yet toward reconciliation

FORUM STAFF

Sri Lanka's tourism officials paint a picture of their sunbaked island that evokes images of the world's finest getaways. Visitors bask in "nearly 1,600 kilometers of palm-fringed coastline," making Sri Lanka the "ideal destination for beach bums worldwide," the tourism website boasts.

It's a bold image makeover for a nation that spent nearly a quarter of a century waging a bloody civil war that left 100,000 dead and many of those beaches unreachable. Now, eight years after the war's end and as tourists return, Sri Lanka embarks upon possibly its most important journey toward peace — getting the military out of daily civilian life.

Sri Lanka's announcement in July 2016 that it plans to demilitarize the country by 2018 could dramatically improve civilian life and boost international acceptance of the country's government, experts say.

There's only one catch: It has to follow through.

"Any time you have a military presence, you are still on a war footing," Alyssa Ayers, senior South Asia fellow for the Council on Foreign Relations, told *FORUM*. "The military activities extend into commercial enterprises, and that chokes off opportunities for the private sector."

Sri Lanka plans to withdraw military involvement from private industry in the island nation by 2018. REUTERS

Legacies of War

Large deployments of the Sri Lankan Army have remained in the island's north and east since the conflict between the Liberation Tigers of Tamil Eelam separatists and the majority Sinhalese government ended in 2009, according to Agence France-Presse.

Not only were military forces policing the country, they were deeply ensconced in private enterprise, running everything from luxury hotels and beauty parlors to retail stores.

Foreign Minister Mangala Samaraweera said in July 2016 that the military already had relinquished some businesses and would completely withdraw from private industry by 2018, Agence France-Presse reported. Former military leaders also have been replaced by civilian governors in two turbulent provinces, he said.

The military-owned enterprises forced many small-scale vendors out of business and drew criticism from the United Nations. "It's time to open it up to the private sector and let entrepreneurship bloom," Ayers said.

Now, as the military pledges to become less visible in civilian life, the government faces an even bigger challenge. It must investigate members of the government and military — on both sides of the conflict — for human rights abuses.

In 2015, the U.N. Human Rights Council adopted a consensus resolution that called for Sri Lanka to include foreign participation in these probes. Sri Lanka has started to address some points of that resolution, but it has been cool to the idea of foreign oversight.

Its recent announcements include:

- Sri Lanka established an Office of Missing Persons to look for people who were never found after the conflict ended in 2009. Although critics assailed the government for a lack of transparency in setting up this office, it has been welcomed by some relatives of the missing, according to Reuters. Sri Lanka acknowledged in June 2016 for the first time that as many as 65,000 people were missing from its war with Tamil Tiger rebels and a separate Marxist insurrection. In a September 2016 report to the U.N., Sri Lanka said it would give the Missing Persons Office its own witness protection unit to encourage wary relatives to come forward.
- Deputy Foreign Minister Harsha de Silva said the government decided to sign the 1997 U.N. treaty banning the use and stockpiling of anti-personnel mines. Sri Lanka had been among a few dozen nations to resist the treaty, known as the Ottawa Convention. "We decided to sign the Ottawa Convention because we have no intention of going to war again," de Silva told reporters, according to Agence France-Presse.
- The Sri Lankan government in September 2016 also told the U.N. that it amended death certificate laws to allow for "certificates of absence." These certificates allow families of missing people to



Tourists relax at the world-famous resort city of Hikkaduwa, which is known for its beautiful beaches and has attracted international visitors since the 1970s. ISTOCK

apply for benefits under social welfare programs. They also allow them to temporarily manage the property and assets of the missing person and act as provisional guardians for dependent children.

Sri Lanka also said it plans to have a special court set up in 2017 to begin hearing allegations of war crimes.

Ayers contends the Sri Lankan people want to move forward expeditiously with all of these efforts. She points to a December 2011 report by the Lessons Learnt and Reconciliation Commission (LLRC), which said Sri Lanka's government should do all it can to locate missing people and bring human rights violators to justice.

"There is an urgent need to assist the victims and their families to overcome the trauma they suffered due to the conflict, and to bring the perpetrators of any human rights violations to justice," the LLRC report said. "There is also the essential need to ensure that lessons from these past incidents be learnt in a manner that they will never be repeated again."

These recommendations didn't come from the U.N., Ayers noted. "These are recommendations from Sri Lankans."

Gaining Respect

The tilt toward democracy is yielding some diplomatic bounty. The U.S. and Canada, both sharply critical of human rights violations during the war, have embraced Sri Lanka's steps toward good governance.

Atul Keshap, U.S. ambassador to Sri Lanka and the Maldives, said the 2015 elections encouraged the U.S. to work with Sri Lanka in many areas, including development programs, demining activities and human rights training, according to a report in the Colombo Gazette online newspaper. "We are working to strengthen our relationship with all of the different facets of the Sri Lankan government, including the military, because we



believe that a professional military is essential to the development and the success of any viable democracy,” Keshap said.

Canada, which has one of the world’s largest expatriate communities of Tamils, also appears to be warming to the island nation. Canadian Foreign Affairs Minister Stephane Dion visited Sri Lanka in July 2016, officially re-engaging a government his country had sharply criticized after the war. Canada said it downgraded relations with Sri Lanka following the war because Tamils continued to face persecution after the conflict was over.

Many of Canada’s estimated 200,000 Tamils said they welcome the re-engagement but want Canada to push Sri Lanka to show more respect for minority rights, according to a report by The Canadian Press, a multimedia news agency. “It’s a good step in the right direction, but we want more to be done,” said David Poopalapillai of the Canadian Tamil Congress.

Investing In Paradise

Sri Lanka’s lush landscape permeated popular culture long before the country’s recent reconciliation efforts.

The English new wave band Duran Duran, which helped revolutionize music video in the 1980s, filmed *Hungry Like a Wolf* and *Save a Prayer* in Sri Lanka while the civil war still raged. The videos featured band members running through jungles, playing with elephants and visiting ornate temples. “Tourism is a huge revenue boost for Sri Lanka,” Ayers said. “It is a spectacularly beautiful country.”

Investors are taking notice. To bring visitors to lush spice gardens, tea plantations and those world-class beaches, international hotel chains have come back to the teardrop-shaped island in droves. Outside investment, however, isn’t limited to tourism.

India remains one of the largest foreign investors in

Sri Lanka, contributing U.S. \$844 million in investments between 2005 and 2015, according to Sri Lanka’s Board of Investment. These investments are in multiple sectors, including petroleum, technology, financial services, real estate, tourism, food processing, tires, cement, glass manufacturing and infrastructure. India further pledged to invest U.S. \$2 billion in Sri Lanka over four years, and it supports a plan to link the countries’ electricity grids to improve the reliability and stability of the Sri Lanka power supply.

China investors also are turning to Sri Lanka, most notably by financing the Colombo Port City Project, a U.S. \$1.4 billion reclamation and development project, according to media reports. When completed, about 252 hectares of reclaimed land will be turned into a sustainable lifestyle hub where affluent people can work and live. The project is expected to generate more than 80,000 jobs and will include a marina, yacht club, sea view apartment complex, five-star hotel, shopping center, office space and miniature golf.

Colombo Port City was conceived by Sri Lanka but is now completely financed by China. Colombo Port City is intended to make this logistical heartland into something more than just a place to transship containers. It is designed to be a major financial center, rivaling Singapore to the east and Dubai to the west, providing direct access to the markets of the Indian subcontinent while boosting Sri Lanka’s intake of foreign capital and increasing local employment in the process, according to *Forbes* magazine.

Skepticism Remains

As Ayers pointed out, the path toward good governance includes transparency and follow-through. Many ethnic Tamils have criticized the reconciliation process as too slow and too secretive.

More than 100,000 Tamils can’t access their homes because they were either destroyed by fighting or their land is still occupied by the military, according to an Agence France-Presse report.

During a September 2016 visit to the island, U.N. Secretary-General Ban Ki-moon praised President Maithripala Sirisena’s administration for taking steps to address human rights abuses, but he added that more can be done — and it can be done more quickly.

“I also urge you to speed up the return of land so that the remaining communities of displaced people can return home,” he said, according to a report by Channel NewsAsia. “In parallel, the size of the military force in the North and East could be reduced, helping to build trust and reduce tensions.”

Ban said more progress in addressing human rights abuses would help restore the country’s international reputation.

“Sri Lanka is still in the early stages of regaining its rightful position in the region and the international community,” he said. □

CHINA'S OPEN CHECKBOOK

FORUM STAFF



FORUM ILLUSTRATION

Loans to Africa, Latin America help infrastructure but not job markets, trade deficits or transparency

With a thirst for raw materials and jobs for its workers, China's spending in Africa and Latin America has captured the world's attention.

Since 2000, China also has emerged as Africa's largest trading partner, exchanging U.S. \$160 billion worth of goods a year, according to a report by *The Economist* magazine. During the

coming decade, Chinese leaders said they intend to invest U.S. \$250 billion in Latin America.

Such far-flung investments breathe life into much-needed public projects — roads, airports, railways, telecommunications projects and ports. By the second half of 2015, the Chinese state news agency Xinhua boasted that China had completed 1,046 projects, built 2,233 kilometers of railroads and 3,350 kilometers of highways in Africa.

Although many of these projects improve Africa's infrastructure and elicit goodwill from borrower nations, they often don't yield the full menu of public benefits that come with locally funded efforts, experts say. From a lack of local hiring to an absence of transparency, China's investments in the two hemispheres draw criticism and praise.

Local projects, Chinese workers

Reliable data on the number of Chinese citizens working in Africa are tough to pinpoint, but the most commonly used estimate is a robust 1 million.

"Africa needs to create a lot of jobs for its large youth populations," said a July 2016 Brookings Institution report titled, "China's Engagement with Africa: From Natural Resources to Human Resources."

"To the extent that Chinese workers fill jobs, there are fewer opportunities for Africans," according to the report by the nonprofit public policy organization based in Washington, D.C.

David Dollar, author of the report and the U.S. Treasury's economic and financial emissary to China from 2009 to 2013, said in a July 2016 panel discussion at Brookings that the Chinese get a lot of attention for financing big projects in Africa, but he characterized the percentage of China's infrastructure financing in Africa as "significant but not overwhelming."

Chinese workers bring much-needed skills to train others, he said, adding that African governments should focus on the need to create more local jobs on these projects.

Job creation may be one of Africa's biggest challenges. Fertility rates remain high while infant mortality continues to decline because of modern medicine and the "spread of better health and education services," the Brookings report said. About half of Africa's population is below the age of 20.

The prevalence of Chinese workers at African construction sites is a mixed blessing, Dollar concluded. Chinese projects aren't putting enough Africans to work. Chinese construction companies, however, work at competitive prices and provide Africa with "needed infrastructure at lower costs."

Trade deficits, risky loans

Chinese investment is ubiquitous in Latin America and Africa. From a plan for a U.S. \$10 billion railway linking the coast of Peru to Brazil to a U.S. \$12 billion railroad project along the coast of Nigeria, Chinese financing sates the cash-starved appetites of developing countries.

Many of these borrower countries, however, run large trade deficits with China, "which imports mostly commodities from Africa and Latin America, and exports higher-value-added consumer goods to both regions," according to a 2016 report from The Economist Intelligence Unit (EIU), a financial research and forecasting firm and sister company of *The Economist* magazine.

Risky loans are also causing financial pressure on borrowers.

Since 2000, China's government, banks and companies have issued more than U.S. \$86 billion in loans in Africa, according to the China Africa Project (CAP), an ongoing multimedia report by veteran journalists and academics studying China's engagement in Africa.

The loans are sometimes secured against oil, minerals or other natural resources. With commodity prices dropping, leveraged African states find it difficult to repay the loans, the CAP reported. "In Angola, for example, much of the country's oil exports are being used to repay at least [U.S.] \$20 billion in Chinese loans. That means the country is not actually earning any real money (cash that is) from its oil exports, prompting a liquidity crisis that is also fueling inflation," the CAP reported.

Similarly in Kenya, China is now the country's largest creditor and owns more than half of its external debt.

The Brookings study said about one-third of China's loans to Africa are secured by commodities. Countries with such loans include Angola, the Republic of the Congo, Equatorial Guinea, Ghana, Niger and Sudan.

This type of financing enables them to get international loans on terms that would otherwise be unavailable, the report said. For China, using oil as security reduces the default risk and allows it to export in risky environments.

As China continues to invest abroad, business leaders

in Latin America and Africa are starting to voice concerns about another financial quandary: growing trade imbalances.

Days before Argentine President Mauricio Macri was scheduled to meet with Chinese President Xi Jinping, business leaders in Buenos Aires in August 2016 aired their concerns publicly in a business summit.

“The trade ties between the two countries show a discouraging scenario,” said Argentine Industrial Union head Adrián Kaufmann in a report by the *Buenos Aires Herald* newspaper. “The trade balance has a deficit that has only deepened in the last few years. It’s an asymmetric relationship that has ill effects on the economy.”

Argentina’s exports to China were valued at nearly U.S. \$5 billion in 2015 compared with imports from China valued at U.S. \$10 billion, the *Herald* reported.

The EIU report adds detail to the imbalance.

Three-quarters of Latin American exports to China are made up of just four commodities: oil, copper, iron ore and soybeans. Meanwhile, China exports a large proportion of low- and high-tech consumer goods to Latin America. “This process of exporting natural resources to China and importing higher-value-added manufactures has produced large and growing trade deficits for most of the past decade,” the report said.

Weak commodity prices are making the problem worse. By 2015, Latin America’s trade deficit with China had quadrupled to U.S. \$26 billion, the report said.

Unfulfilled promises

While China’s investments in Africa have attracted attention worldwide, many of its proposed developments never materialized. Plagued by many of the same roadblocks facing Western investors, Chinese firms have faced challenges ranging from a lack of local support to inferior infrastructure.

In one high-profile example, a large Chinese firm and Ugandan investors earmarked U.S. \$1.5 billion for some of the least-developed parts of Uganda, according to an article in *The Economist* magazine. On the western edge of Lake Victoria, they envisioned a transformative free trade zone in which a 500-square-kilometer area would house a solar-powered airport, manufacturing facilities, a distribution hub, homes and agribusinesses.

None of these projects got off the ground.

In the Democratic Republic of the Congo, China promoted a U.S. \$1 billion development to create a palm oil plantation. When work started, however, the Chinese found no roads in the area and a river that was barely navigable, *The Economist* reported. When a small patch of land was finally planted, the crop was stolen. The project eventually died.

Environmental questions

Academics and government officials in Latin America also have raised questions about China’s environmental stewardship.

The Brookings report noted that multilateral banks, such as the World Bank, have developed detailed policies to govern large infrastructure projects that could have significant impacts on the environment. A large development project funded by the World Bank, for example, would include environmental assessments, public comments and mitigation efforts to reduce negative impacts on the environment, Dollar said.

China’s approach to building in developing countries is to follow the local guidelines of the host country. While seemingly reasonable, the Brookings report said, the “implementation of regulations is poor in many developing countries.”

“Critics of China’s activity in Africa note that China’s own domestic environmental outcomes are also very unsatisfactory,” according to the report.

Those outcomes have been widely publicized.

Coal burning in China caused 366,000 premature deaths in 2013, according to a report by Chinese and American researchers released in August 2016. The study, “Burden of Disease Attributable to Coal-Burning and Other Major Sources of Air Pollution in China,” was led by Tsinghua University in Beijing and Health Effects Institute, based in Boston, Massachusetts.

A July 2015 report by Goldman Sachs Global Investment Research said China was emitting more carbon dioxide than the United States and European Union combined, and 60 percent of China’s groundwater was unfit for human consumption. “China’s Environment: Big Issues, Accelerating Effort, Ample Opportunities” pointed out, however, that these problems are leading to unprecedented government spending to remediate them.

It’s that track record that has some Latin American business and community leaders urging caution. The proposed 5,000-kilometer, Chinese-funded railway linking the soya farms and iron ore mines of Brazil to the southern Peruvian port of Ilo would provide the Chinese with a cheaper and shorter route to extract natural resources. The route preferred by the Chinese, however, would cut across heavily forested areas in the Amazon and require the construction of an entire city in the rainforest to house the workers needed to build the railway.

Brazil’s state-run rail operator in August 2016 criticized the China Railway Eryuan Engineering Group’s choice, saying it bisects an indigenous reserve and would damage sensitive ecosystems.

A 2015 Boston University study, “China in Latin America: Lessons For South-South Cooperation and Sustainable Development,” echoed the notion that the “China boom” in Latin America could be cause for environmental alarm. Exports to China cause large increases in greenhouse gas emissions, the report stated, because most are directly linked to the extraction of natural resources. Those exports, however, “do not account for the most important cause of deforestation: roads, canals and railroads to get those products to ports.”

These access roads open up Amazonian forests to human settlements and interrupt animal migration patterns, the study said.

Rewards for loyal voters

Trade imbalances and environmental questions aren't the only concerns when China eyes a nation for investment. China's financial involvement in Africa comes with political strings attached.

A project based at the College of William and Mary in Virginia shows that China rewards African countries that vote with it on United Nations resolutions.

While China gives proportionally more money to poorer countries, it largely supports with greater amounts the countries that vote with it, the AidData project shows.

For example, the two countries that voted with China the most frequently — Ethiopia and Zimbabwe — received the most development assistance from China from 2000 to 2012.

No transparency

Doing business with democracies typically requires financial disclosures from government officials, public hearings on development projects and competitive bidding, but doing business with a secretive regime poses transparency challenges.

Leading up to the September 2016 G20 summit, an international financial forum, China proposed that world leaders adopt new principles that promote international cooperation for returning corrupt individuals to their countries to face justice. Transparency International, a nonprofit organization that works to fight corruption, wrote that China's lead role in this discussion should raise a red flag because the Chinese government still uses methods including "forced confessions and a lack of an independent judiciary, which means it is not possible to know if those arrested are political targets."

"Given its push to win business around the world," Transparency International wrote, "China could have more impact on the G20 anti-corruption agenda if it took its commitment to investigate and prosecute Chinese companies that bribe foreign officials more seriously."

Other world leaders have called on China to increase transparency when reporting economic data. Ben S. Bernanke, former chairman of the Board of Governors of the U.S. Federal Reserve System, co-authored a report for the Brookings Institution in March 2016 that said China needs to better explain policy initiatives and improve data transparency by reporting believable growth numbers, which is a "difficult transition for a government accustomed to secrecy."

That secrecy cloaks some of the downsides of Chinese investment, according to the Seven Pillars Institute (SPI) for Global Finance and Ethics, which analyzes issues of moral philosophy in global financial markets.

The largest source of Chinese investment in Africa is

the export credit program in which China lends money to a recipient government to finance exports from the lender. For example, it could finance construction projects in African states using Chinese construction companies, workers and equipment, the SPI report stated.

"What makes Chinese export credit ethically questionable is the conditions under which it is extended to African states," the SPI report said.



A Chinese construction engineer works at a section of the Mombasa-Nairobi railway at Emali in Kenya. REUTERS

Interest rates don't conform to internationally established norms, the report said. They are typically below market rates, and the length of the repayment period is much longer. While these export credit agreements have strict quotas for local hiring, "there is very little evidence that these quotas are met," the report stated.

Still, the Chinese loans are welcomed by governments across Latin America and Africa as countries push forward with overdue modernization projects.

Oliver Wonekha, Uganda's ambassador to the United States, views China as playing a complementary role to the U.S. and other Western lenders. In the July 2016 panel discussion at Brookings, she noted that her president, Yoweri Museveni, has visited China five times and that such collaboration is improving two of Uganda's airports. She also pointed out that China is financing a U.S. \$350 million highway project linking the capital city of Kampala to Entebbe International Airport.

Africa, she said, needs lenders willing to take risk. She summed up her country's growing relationship with China succinctly: "China has a great appetite for risk." □

CHECKBOOK DIPLOMACY

From billion-dollar projects in Latin America to large loans to nations in the Indo-Asia-Pacific and Africa, China spends freely to expand its influence. China's spending spree also creates jobs for its people and helps it lay claim to raw materials in developing countries.

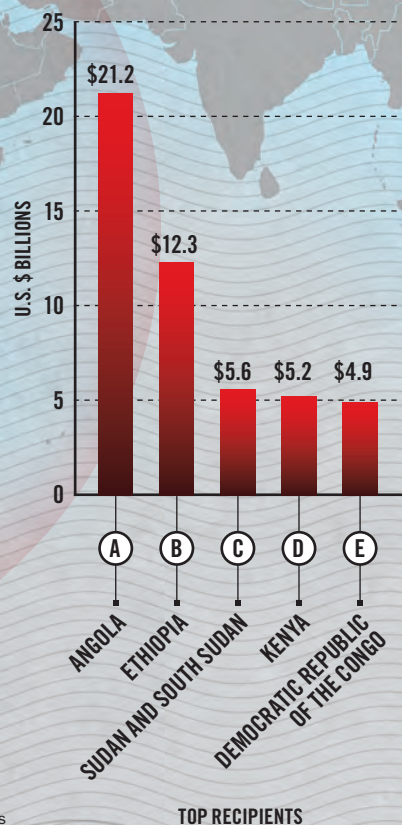


Hong Kong-based company HK Nicaragua Canal Development Investment Co. Ltd. (HKND Group) plans to build a U.S. \$50 billion shipping canal in Nicaragua. Chairman Wang Jing listens to a question at a media conference in Managua, Nicaragua.

China's Loans To Africa

Between 2000 and 2014, the Chinese government, banks and contractors extended U.S. \$86.3 billion in loans to African governments or state-owned enterprises.

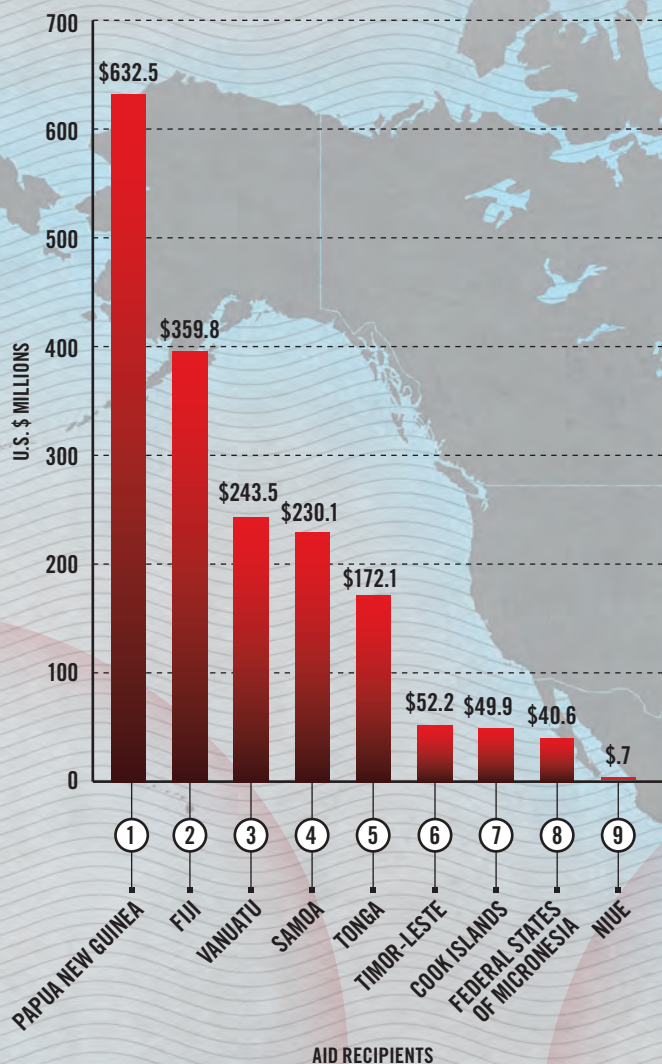
Source: China-Africa Research Initiative, Johns Hopkins School of Advanced International Studies



Beijing bought U.S. \$300 million of Costa Rican bonds to pay for the 35,000-seat national stadium that opened in 2011.

Pacific Islands Presence

Since 2006, China has increased its foreign aid in the form of grants, gifts and concessional loans to boost its influence with Pacific island countries.



China's Growing Influence in Latin America

Nicaragua

U.S. \$30 billion

Chinese telecom mogul Wang Jing plans to build a canal linking the Caribbean Sea and Pacific Ocean.

Honduras

U.S. \$350 million

Chinese dam builder Sinohydro is constructing a hydroelectric power plant in the eastern part of the country.

Costa Rica

U.S. \$395 million

The Chinese government loaned money to cover 85 percent of a project to expand Route 32, the main highway connecting San Jose and the Caribbean province of Limon.

U.S. \$300 million

Beijing bought Costa Rican government bonds to pay for a 35,000-seat national sports stadium in San Jose.

Venezuela

U.S. \$50 billion

China Development Bank loaned Venezuela the money since 2007 as low oil prices crippled the country's economy. A portion of Venezuela's fuel and crude sales are used to pay down the loans.

Chile

U.S. \$1.2 billion

Chinese renewable energy company Sky Solar in 2013 received approval from Chile's foreign investment committee to build seven solar power projects nationwide.

Argentina

U.S. \$25 billion

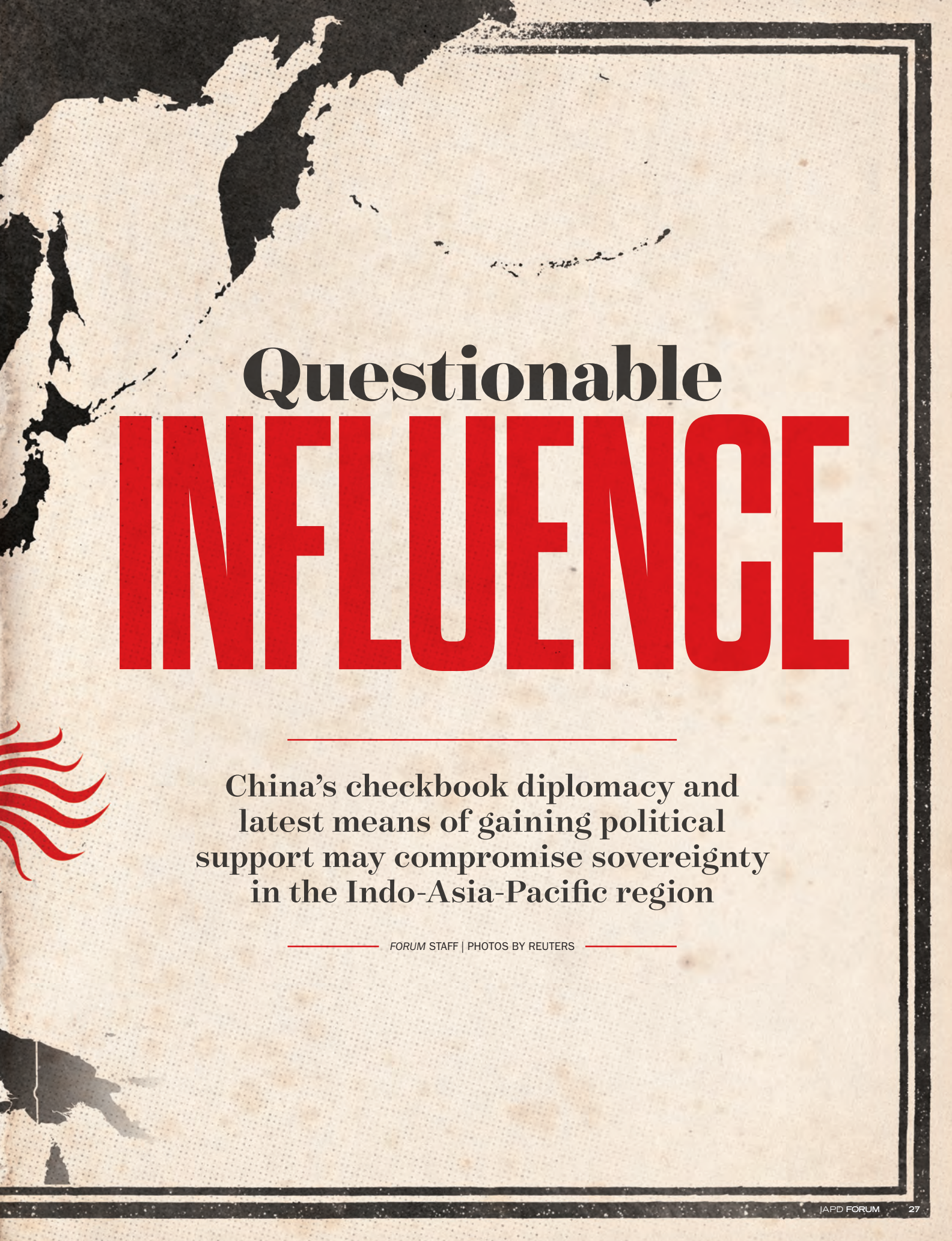
China financed energy and infrastructure projects in 2016. Of the total, Argentina will use U.S. \$12 billion for two nuclear reactors and U.S. \$5 billion on hydroelectric power plants.

Brazil


U.S. \$10 billion

China plans a 5,000-kilometer railway linking soya farms and iron ore mines in Brazil to the Peruvian port of Ilo. The China Railway Eryuan Engineering Group wants to start work in 2017, but environmental concerns could stall the project.





Questionable **INFLUENCE**



China's checkbook diplomacy and
latest means of gaining political
support may compromise sovereignty
in the Indo-Asia-Pacific region

FORUM STAFF | PHOTOS BY REUTERS



Instead of traditional coercive or hard power approaches, China is increasingly using economic and diplomatic levers to influence the behaviors of nations in the region. Its concerted strategy combines an ever-expanding definition or brand of soft power with public initiatives to advance its interests and image. Although smaller, developing nations in the Indo-Asia-Pacific region may be more susceptible to such Chinese charms, the widespread use of such tactics that employ everything from state-owned enterprises and media groups to private industry and cultural organizations is increasingly troubling to some people.

Consider Australia, where in the past decade China has gone from making almost no investments to emerge as the fifth-largest source of foreign direct investments (FDI) in 2016, according to an analysis by East Asia Forum online, a policy forum at Australian National University. Chinese investors have bought farmland, utilities and other properties and even leased the Port of Darwin for the next century, according to media accounts. Private companies such as the Yuhu Group have donated millions to Australian universities to establish centers for Chinese culture and art. China's Communist Party has funneled money to both of Australia's main political parties, think tanks, media

companies, universities, schools and hospitals, as the Australian Financial Review website, www.afr.com, reported. One visible consequence is that every month Australian readers can now find an eight-page version of *China Daily*, the state-controlled newspaper that details the Communist Party line, inserted in Australia's major newspapers, various media reported.

Individually, many of these investments may seem innocuous — even beneficial — until they are viewed in a larger context, some experts and policymakers said.

Concern over such financial contributions erupted in Australia in September 2016 when a senator from the opposition Labor Party disclosed he accepted a donation from a Chinese company, as *The New York Times* newspaper reported. The incident raised alarm over growing foreign influence in Australian politics.

The foreign donation pushback stems from deeper concerns about the broader ramifications of Chinese acquisitions and investments in Australia and the realization that such investments may be part of a carefully orchestrated campaign to promote China's strategic interests, some experts said.

"We have to assume that there is a larger strategy by the Communist Party to shift domestic public opinion in Australia on sensitive issues such as the U.S. alliance and the South China Sea," Rory Medcalf, who



Activists cheer a ruling on the South China Sea by an arbitration panel of The Hague in July 2016 in favor of the Philippines.

Security personnel stand at Hangzhou railway station in eastern China's Zhejiang province. China hosted the Group of 20 summit to highlight its role as the world's second largest economy and promote the nation worldwide.

heads the National Security College at the Australian National University, told www.afr.com in September 2016. “The long-term goal is to make Australia less likely to oppose China in regional confrontations.”

China seems to be using a similar strategy to string together deals across the Indo-Asia-Pacific and the world that when taken collectively could potentially be very influential. China has pledged to invest an unprecedented U.S. \$1.25 trillion worldwide by 2025, according to *Foreign Affairs* magazine, through such vehicles as the Asian Infrastructure Investment Bank (AIIB); the New Development Bank, which is a project with Brazil, Russia, India and South Africa; and the country’s “One Belt, One Road” plan to integrate trade and investment in Europe and Asia through transport links along the new Silk Road. By increasing such financial investments, China is striving to influence countries to take its side in regional controversies and confrontations, some observers contend.

INROADS IN SOUTHEAST ASIA

In July 2016, for example, Southeast Asian nations could not reach a consensus on maritime disputes in the South China Sea, various media reported. Although an arbitration panel at The Hague ruled in the Philippines’ favor and denied China’s broad claims to

the passageway under the U.N. Convention on the Law of the Sea, the 10-member Association of Southeast Asian Nations (ASEAN) did not issue a joint statement on the international ruling because Cambodia opposed mentioning the verdict. ASEAN members including Brunei, Indonesia, Malaysia, the Philippines and Vietnam have staked competing claims to portions of the sea, through which U.S. \$5 trillion in global trade travels each year.

The Philippines and Vietnam pushed for an ASEAN statement in support of the ruling and international law, Reuters reported. Cambodia, however, supported China’s opposition to “any ASEAN stand on the South China Sea, and its preference for dealing with the disputed claims on a bilateral basis,” Reuters reported. China pledged U.S. \$600 million to Cambodia days before the ruling, according to The Associated Press.

There is only one other time in ASEAN’s nearly 50-year history that the organization could not agree to the wording in a statement after a major meeting due to a lack of consensus. In 2012, Cambodia also blocked ASEAN from including language about the South China Sea in a statement, according to Reuters.

Curtis S. Chin, Asia fellow with the Milken Institute, explained it this way to www.voa.com: “For Cambodia, China is its most significant partner. Each

nation is seeking to advance their own interest, [and] Cambodia is getting tremendous amounts [of] money from China.” China continues to increase its investments to Cambodia and funds nearly a third of FDI there, according to the 2016 ASEAN Investment Report, published by the ASEAN Secretariat and the U.N. Conference on Trade Development. China has contributed more than U.S. \$11 billion to Cambodia in direct charity and soft loans over the past 20 years, according to analysts at the Wharton School at the University of Pennsylvania.

China, meanwhile, “just like every other country in the world, through its development assistance, through its diplomacy, through its soft power ... is really trying to advance, understandably, its own national interests,” Chin said.

China’s increasing investment across the region has the potential to undermine sovereignty of nations in the longer term, some experts caution. Nations should examine whether efforts that undermine ASEAN or other collective security institutions ultimately work in a given country’s favor despite the allure of investment dollars, they say.

China has increased the flow of money into other ASEAN countries, although it is not considered a major investor overall. Chinese FDI to these nations burgeoned from U.S. \$600 million in 2003 to more than U.S. \$8.2 billion in 2015, according to the 2016 ASEAN report. Besides its investments in Cambodia, China is the largest investor in Laos, accounting for 62 percent of FDI there. China continues to increase FDI to Indonesia where it has been among the top 10 investors since 2014 with more than half of its investments targeting energy and mining extraction, according to *The Jakarta Post* newspaper. Exact figures and data on China’s investment and aid programs throughout the region are often hard to track overall, analysts said, largely because of transparency issues. Many speculate, however, that China is actually the largest investor in Indonesia, given that Chinese investors often invest in other countries via proxy companies based in other countries such as Singapore, *The Jakarta Post* reported. Meanwhile, Burma owes nearly half of its U.S. \$10 billion debt to China.

In addition to recently blocking a consensus among ASEAN nations, China’s investments in member countries seem to have tipped the balance of trade in its favor in the past decade. Since the ASEAN-China Free Trade Area (ACFTA) was created in 2010, ASEAN’s goods trade with China went from a surplus to a U.S. \$45 billion deficit in 2013, according to a 2015 study by the U.S.-China Economic and Security Review Commission of data from the China Ministry of Commerce. “The causal link between ASEAN’s deficit and ACFTA merits scrutiny,” the report found.

PACIFIC ISLANDS PRESSURE

China is also increasing its engagement and investment in Pacific island nations. It has diplomatic relations with the Cook Islands, Federated States of Micronesia, Fiji, Niue, Papua New Guinea, Samoa, Tonga and Vanuatu. Between 2006 and 2013, China has emerged as the fifth-largest donor in the region, donating more than U.S. \$1.47 billion since 2006, according to the Lowy Institute for International Policy website. Australia remains the region’s largest donor, contributing U.S. \$6.8 billion in aid during the same period. The U.S. ranks as the second largest donor, contributing about U.S. \$1.7 billion for that period.

In the 2013-2014 time frame, China pledged to make more than U.S. \$2 billion in loans available to Pacific island nations, half of which would be concessional. It also promised to reduce tariffs on imports from Pacific island nations.

Thus far, as much as 78 percent of loans by China to Pacific island nations have been concessional, according to Philippa Brant, an expert in Chinese aid in the Pacific and former research associate at the Lowy Institute, as reported by the Radio New Zealand website. This often means Chinese contractors perform the related infrastructure projects such as building roads and hospitals, she said. Moreover, they often import workers from China to carry out the contracts.

Chinese concessional loans to Tonga, for example, present challenges. Tonga owes about 60 percent of its debt or roughly U.S. \$110 million to China’s Export-Import Bank. The amount is equivalent to about a quarter of its gross domestic product. The Tonga administration that held power from 2006 to 2010 and racked up the debt had hoped “China would write off the debt,” according to the Radio New Zealand website, but China has declined to do so.

Some observers, however, wonder what China will ask for when loans to Pacific island nations can’t be repaid. Some suggest China will expect indebted nations to vote with China in the U.N. or demand to be paid in resources or to relinquish control of strategic assets such as Tongasat, Tonga’s telecommunications company.

Pesi Fonua, editor of *Mantangi Tonga* magazine, told the Nikkei Asian Review online that Tonga will be tied to China as a result of the debt. “[It] is clear that the increasing role and influence of China in Tonga today, basically, revolves around finding ways for how Tonga might repay its loan to China. It is a debt collector’s influence, and Tonga has no option but to satisfy the demands of the debt collectors,” he said.

Steven Ratuva, director of Canterbury University’s Macmillan Brown Center in Christchurch, New Zealand, said China perceives Tonga as more susceptible to its influence than larger islands such



Tongan Prime Minister Samuela Akilisi Pohiva addresses the United Nations General Assembly in New York in September 2016.



Cambodia's Foreign Minister Prak Sokhon, center, arrives at a meeting during the Association of Southeast Asian Nations foreign ministers meeting in Vientiane, Laos, in July 2016.

as Fiji. "Tonga is the place they are really going to have much more substantial control, and they need this in the Pacific," he said. "The Chinese deny they have a grand plan, naturally you have to deny it, but they will wait for 20 or 30 years. ... The more aid they give, the more vulnerable [Pacific islands] become."

Indeed, larger islands may also be vulnerable. Chinese aid to Fiji soared after Chinese president Xi Jinping visited Fiji in November 2014 and pledged to increase development loans there. Chinese companies have bought up mining rights on Fiji. Zhongrun International, for example, owns controlling shares in Fiji's Vatukoula gold mine, according to *The Economist* magazine.

In addition, China runs Papua New Guinea's U.S. \$1.6 billion Ramu nickel mine, *The Economist* reported.

LIMITED PERSUASION

Despite the growing outlays of cash, the degree to which many of China's soft power initiatives have succeeded in the region to date remains in question.

"China's soft power has been fairly effective in Cambodia. In Australia and New Zealand, China has had some success, but that has usually been

knocked back by revelations like the most recent ones in Australia about members of parliament receiving donations from China," Michael Jonathan Green, senior vice president for Asia and Japan Chair at the Center for Strategic and International Studies (CSIS) told *FORUM*.

"Soft power is usually initiated by civil society and not the government. In open democratic societies, China's more propagandistic edge has turned off readers or viewers of their material. China has more success in less open societies, but many of these (Vietnam, for example) have confronted China's hard power," Green said.

Scott Harold, associate director for the Rand Corp.'s Center for Asia Pacific Policy, went further, telling www.voanews.com that some countries resent China's approach. "When Beijing says jump, and your only right is to ask how high, [it] is not very well appreciated. ... It may very well be a reality that some small states are takers in the international system. But it's not something they like."

China's economic successes have attracted admirers, however. "I think China gets a lot of soft power from its astonishing record economically, raising hundreds of millions of people out of poverty. A lot of people admire that. That produces

People queue at a polling station in Hong Kong on September 4, 2016, for the legislative council election, which saw a record turnout.



soft power,” Joseph S. Nye Jr., university distinguished service professor at Harvard University’s Kennedy School of Government, told a CSIS forum.

“China does better in Africa and Latin America than it does in its own neighborhood in Asia. Because China has problems with so many of its neighbors, Japan, India, Vietnam, the Philippines and so forth, that makes it hard to generate a lot of soft power there,” said Nye, a former U.S. assistant secretary of defense and chairman of the U.S. National Intelligence Council.

In the aftermath of the Cold War, Nye introduced the term soft power in his 1990 book *Bound to Lead: The Changing Nature of American Power*. Observing a shift in focus from raw military might, Nye described soft power as the influence the U.S. embodied through less tangible qualities,

such as its cultural heritage, human values, technological innovation and political ideals.

Some two decades later, China became interested in the notion of increasing its influence without using force or coercion. In 2007, then-President Hu Jintao first pushed for China to increase its soft power. In 2014, President Xi Jinping reiterated the drive. “We should increase China’s soft power, give a good Chinese narrative, and better communicate China’s messages to the world,” he said, according to *Foreign Affairs* magazine.

“They know that, for a country like China, whose growing economic and military power risks scaring its neighbors into forming counterbalancing coalitions, a smart strategy must include efforts to appear less frightening. But their soft-power ambitions still face major obstacles,” Nye



For a country like China, whose growing economic and military power risks scaring its neighbors into forming counter-balancing coalitions, a smart strategy must include efforts to appear less frightening.”

— Joseph S. Nye Jr., former U.S. assistant secretary of defense

explained in July 2015 on the Project Syndicate website, a forum for informed public debate. Namely, China’s leading challenges include its intense nationalism and its tight government control, he wrote.

In addition to President Xi increasing his visits to foreign countries, some of China’s soft power tools include the government’s expansion of its state media organizations including its Xinhua news agency overseas, creation of more than 500 Confucius Institutes around the world to promote study of the Chinese language and culture and encouragement of hundreds of thousands of foreign students to study in China. It has also increased the number of international events it holds including sponsoring the summer 2008 and winter 2022 Olympics in Beijing and the G-20 summit in Hangzhou in 2016 as well as myriad conferences.

China, more than the U.S., has expanded the concept of soft power to include economic resources in its adaptation of the strategy, other analysts contend. “Not only is Chinese soft power inclusive of economics, it actually is the most fundamental, durable and influential feature of this power. For rating purposes, we can say that Chinese soft power largely rests on its economic power, and it secondly places its strength on its foreign policy ideas and political values followed by its culture and civilization — these being the least developed aspects of Chinese power,” graduate student Afsah Qazi explained on the independently-run website International Policy Digest.

Various studies show, however, that China’s soft power, as traditionally defined to exclude economic and military power, has not been increasing on the whole. “Polls in North America, Europe, India and Japan show that opinions about China’s influence are predominantly negative,” Nye wrote in a commentary published on the Project Syndicate website in July 2015. China’s practices such as importing labor remain unpopular even in Latin

America and Africa, where it doesn’t have ongoing territorial or human rights disputes, Nye wrote.

China may spend as much as U.S. \$10 billion each year on “external propaganda,” according to David Shambaugh, a professor of political science and international affairs at George Washington University, writing in *Foreign Affairs*. Even so, “China’s favorability ratings are mixed at best, and predominantly negative and declining over time. They have dropped fully 20 percent from ... 2009 to 2015,” he told a recent CSIS forum on China’s soft power on the basis of a series of public opinion surveys conducted around the globe in recent years.

Perhaps the results of two recent elections are better indicators of how the Communist Party’s charm initiative is faring and what nations really think of China’s soft power assertions across the region. In January 2016 in Taiwan, voters elected a president whose party seeks to diversify trade relations and lessen its dependence on China. In Hong Kong, the elections in September 2016 revealed the lack of public favor for the values of the Communist Party in the region. In a record turnout, voters picked candidates for their new legislature who advocated democratic rights. They even elected some leaders who support Hong Kong’s independence or at least its long-term autonomy.

Although China has had limited success in increasing its soft power, in terms of traditional definitions, the manner in which it conducts its checkbook diplomacy and uses cash to supplant its public initiatives remains a growing concern for regional security, some experts maintain, especially because of the close link historically between economics and politics in China. Nations must grapple with reaping the benefits of Chinese investment without compromising self-interests or even sovereignty, given the resulting political pressure that such investments appear to ultimately entail. □



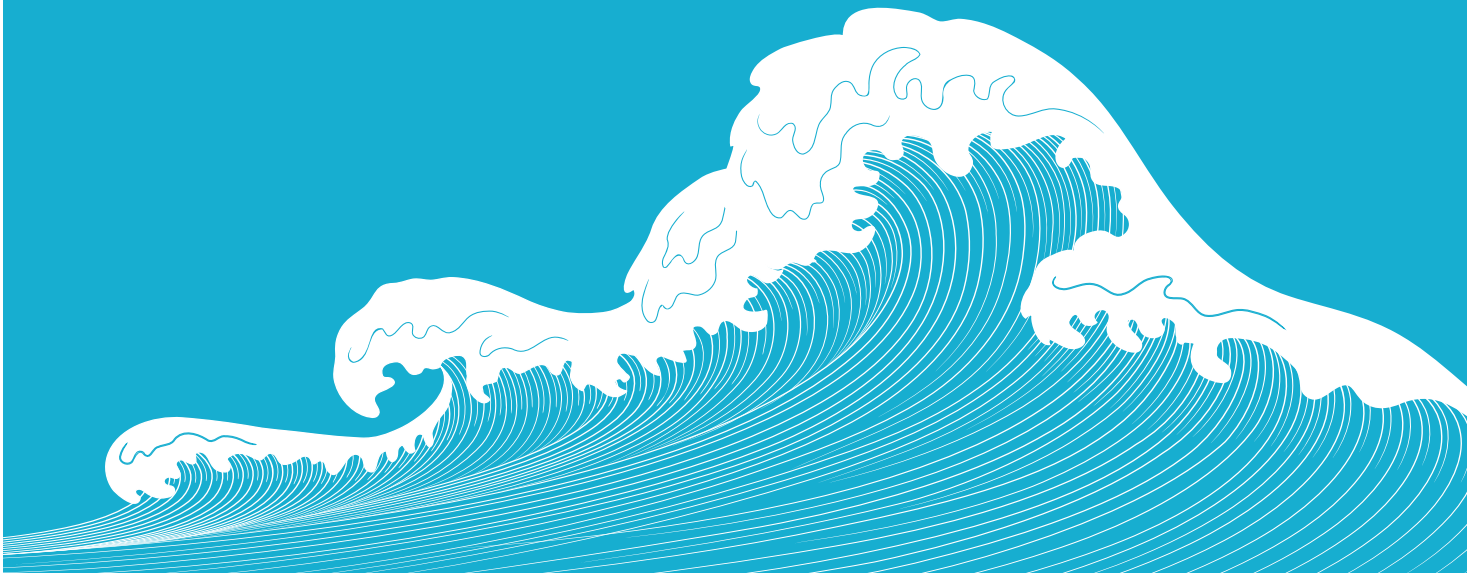
Vietnamese Coast
Guardsmen march
during a national
celebration in
Hanoi. REUTERS

BEYOND *the* OND

S H O R E L I N E

FORUM STAFF

Coast guards across the Indo-Asia-Pacific increase partnerships and see their prominence rise as countries expand their roles in regional security



These days, the task of policing waterways requires substantially more cooperation. Gone is the time when a single maritime agency had the desired resources and personnel to do it alone.

Fleets worldwide are shrinking while seaborne challenges continue to expand.

Seafaring agencies in the Indo-Asia-Pacific — which contains eight of the 10 countries with the world's longest coastlines (Canada, Indonesia, Russia, the Philippines, Japan, Australia, the United States and New Zealand) — recognize that facing today's maritime challenges requires a concerted effort. Furthermore, international law mandates certain obligations to countries to prevent security incidents at sea, on ships and at ports.

It's to that end that coast guard units across the region have seen their prominence grow.

“Coast Guards are emerging as important national institutions in Asia and the Pacific with the potential to make a major contribution to regional

vessels often appear less intimidating than naval ships, which tend to be larger and equipped with wartime capabilities. The bulkiness of naval ships limits their access to certain sea channels, whereas smaller coast guard cutters have a greater chance of navigating narrow straits. In Indonesia, authorities have worked to put the advantage of size on their side. Coast Guard personnel there now deploy even smaller vessels able to chase sea bandits who often travel in high-speed boats, an Indonesian Navy commander told *FORUM*. Indonesia has also given its maritime officials the authority to sink the vessels of illegal fishermen by blowing up their ships upon capture.

Other countries as well have employed measures to advance their naval and coast guard operations, but experts suggest that attention to multinational and interagency interoperability remain a priority.

“The importance of regional maritime

cooperation flows from the complexity of the maritime environment in the region, overlapping maritime jurisdiction and the risks of tensions and disputes at sea,” according to the analysis published by the East-West Center. “As well as being essential for the effective management of regional seas, maritime cooperation is an important maritime confidence- and security-building measure and a recognized building block for greater regional stability.”

Sea crimes — including piracy, smuggling, and illegal, unreported and unregulated fishing — remain a serious concern for all nations with a

stake in safe water passages. Japan saw fit to help ensure safety by boosting cooperation among member states of the Association of Southeast Asian Nations (ASEAN).

In September 2016, Japanese Prime Minister Shinzo Abe announced his country's intention to train 1,000 maritime security officials from ASEAN. The three-year initiative would include mostly members of coast guards, as well as other personnel who monitor sea traffic, according to *The Straits Times* newspaper.

“We are responding to countries' call for



Members of the Philippine Coast Guard Special Operations Group participate in the Joint Maritime Law Enforcement exercise with the Japan Coast Guard. REUTERS

order and security,” according to an analysis titled “Coast Guards: New Forces for Regional Order and Security” published by the East-West Center, an education and research organization established by the U.S. Congress. “This development reflects a concern for cooperative and comprehensive security and will facilitate regional maritime cooperation and confidence building. It is a positive factor for regional order and security and may constitute a revolution in maritime strategic thinking.”

Expanding the coast guard role can yield greater security for a country, experts say. Coast guard

assistance to enhance their capacity to deal with ocean management,” Yasuhisa Kawamura, press secretary for Japan’s Ministry of Foreign Affairs, told *The Straits Times*, adding that training for rescue operations at sea would be included.

A month earlier, in August 2016, Japan provided the Philippines with the first of 10 Coast Guard vessels to aid the Philippines in its maritime and law enforcement capabilities.

Indian Prime Minister Narendra Modi also announced his country’s plans to expand military relations in ASEAN. In September 2016, Modi detailed a U.S. \$500 million line of credit to Vietnam. Among the dozen defense cooperation agreements to occur, India will outfit the Vietnamese Coast Guard with high-speed boats to patrol offshore.

“Our decision to upgrade our strategic partnership to a comprehensive strategic partnership captures the intent and path of our future cooperation,” Modi said, according to *The Indian Express* newspaper. “It will provide a new direction, momentum and substance to our bilateral cooperation.”

August 2016 also saw cooperation among the coast guards of two of the most talked about powers in the Indo-Asia-Pacific: China and the United States. The two nations held a joint operation in the

Pacific as part of regular patrols “to detect and deter illegal, unreported and unregulated fishing activity, including large-scale pelagic drift-net fishing on the high seas,” *The Japan Times* newspaper reported. U.S. officials noted they conduct such operations with Japan, South Korea, Russia and Canada and have done so for more than 15 years.

“There is increasing recognition of the value of Coast Guard-type forces — dealing with transnational threats and crimes at sea — for peaceful and routine engagement at sea with counterpart maritime forces from other states,” according to the 2015 analysis on “Enhancing Maritime Law Enforcement in the Pacific.”

Therefore, the analysis advocated, continued improvements for communication and cooperation bilaterally and multinationally must continue with coast guards, because of the “increased need for sea lanes to be safe and secure to serve as the shipping routes for the global economy.” □

A Vietnamese Coast Guard officer patrols the South China Sea.

AFP/GETTY IMAGES



A stylized illustration of a person in a military uniform, shown from the chest up. The person's face is a light beige silhouette. They are wearing a dark green uniform jacket with a V-neck. The background is a dark green world map with white outlines of continents and countries. The map is centered on the Pacific Ocean, showing Asia, Australia, and parts of North and South America.

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READY AND RESPONSIVE

GEN. ROBERT B. BROWN,
COMMANDING GENERAL OF U.S.
ARMY PACIFIC, SPEAKS WITH
FORUM ABOUT THE UNITED STATES'
DESIRE TO REMAIN A PARTNER OF
CHOICE IN THE INDO-ASIA-PACIFIC

FORUM STAFF

As commanding general of U.S. Army Pacific (USARPAC), Gen. Robert B. Brown serves as leader of the Army's largest service component. Prior to assuming the post in April 2016, Brown served as commanding general of U.S. Army Combined Arms Center at Fort Leavenworth, Kansas, where he led synchronization of education, leadership development, training support and development, and the development and integration of the doctrine the U.S. Army uses to fight and win wars.

Brown shared his vision for Pacific Pathways with *FORUM* as well as his take on complexities and challenges to security across the Indo-Asia-Pacific and USARPAC's continued commitment as a regional partner.

FORUM: Articles on Pacific Pathways often describe it as USARPAC's ability to have more faces in more places without having more bases. What message would you relay to allies to assure them that this remains true during a time when militaries are facing resource challenges?

BROWN: There will always be resourcing challenges. This is not going to change, but what is changing is the complexity of the security environment. The Indo-Asia-Pacific strategic environment is the most complex I have seen it in my 35 years of service. Populations continue to grow, with 24 of the 36 megacities on Earth in the Indo-Asia-Pacific. Technology continues to progress rapidly, and militaries continue to build their capabilities. Inside our region, tensions increase, relationships appear to shift, and vital national interests seem ready to collide. The Pacific is complex. When you add in the diverse land geography — jungles, deserts, arctic and alpine — coupled with large, diverse populations, there is a demand signal for assuring allies and partners. The U.S. and its partners, through bilateral and multilateral exercises, such as Pacific Pathways, develop capabilities and

increase collective readiness should crisis or contingency arise. There is a lot of opportunity for us, with seven of the largest armies in the world and 21 of 26 chiefs of defense being army officers. The more the U.S. Army Pacific works with its partners in the region, the better we all become at dealing with the ambiguity, chaos and complexity that has become the modern security environment.

FORUM: Troop readiness, commitment to peace and stability and persistent engagement have remained hallmarks of USARPAC's

presence in the Indo-Asia-Pacific. Explain how your vision as commanding general integrates with those and other long-standing USARPAC pledges to the region.

BROWN: There is no question that the U.S. Army has maintained a proud and uninterrupted presence in the Pacific for what is approaching 120 years, but I think what is more impressive is that we have maintained our presence by evolving our land force capabilities and partnerships throughout the region to

overcome challenges that impact all of us. Our robust security cooperation program exercises joint and combined maneuver, empowers our teams through mission command and builds the concepts, personnel and equipment necessary to sustain Army and joint operations. But it's also a mindset. U.S. Army Pacific must continue to leverage our innovative culture to experiment with new concepts and capabilities, such as multi-domain battle, to build Army and joint force readiness. This mindset will contribute to presenting any competitors with multiple dilemmas and ultimately strengthen deterrence by increasing our warfighting effectiveness. Through these activities, along with their effect on increasing the capabilities of our partners and the U.S. Army Pacific, we will maintain our pledges to our allies and support peace and stability within the region.



Gen. Robert B. Brown,
commanding general of U.S.
Army Pacific



The 325th Brigade Support Battalion, 25th Infantry Division, loads cargo and military vehicles on board the 8th Theater Sustainment Command's Logistic Support Vessel-2 in August 2016 in preparation for a Pacific Pathways deployment.

STAFF SGT. JOHN GARVER/U.S. ARMY

FORUM: You have called Pacific Pathways the biggest innovation you've seen in training and exercises in 35 years. What has enabled the mission to remain so unique and successful since its debut in 2014?

BROWN: Well, I think Pacific Pathways is tremendous. First of all, it builds readiness for the U.S. Army throughout the Indo-Asia-Pacific region while supporting joint theater security cooperation requirements. This provides an Army force that is robust, versatile and deployed forward of the international date line nine months a year. I think that's a pretty significant edge. Some of the tangible benefits of Pacific Pathways are displayed through the relationship-building, repeated rehearsals, and regional familiarization it continually provides — all of which directly contribute to increased readiness throughout the theater

at the tactical, operational and strategic level. It has also allowed us to expand the types and quantities of equipment integrated into exercises. Our allies and partners have seen that this has produced multinational, interoperable, combat-ready units while at the same time showcasing the strength of our partnerships to maintain regional security and stability. It is just a huge difference maker in this theater.

FORUM: For the first time in 2016, USARPAC conducted a “reverse” Pacific Pathways. Describe its mission, how it differed from Pacific Pathways and what benefits it yielded for the U.S. and participating regional allies.

BROWN: Well again, this is just another example of the value Pathways plays within this theater. The reverse Pathways brings

allies and other partners to the U.S. to conduct combined training in our training areas. While the basic logistic requirements of a reverse Pacific Pathways are similar to other Pacific Pathways, what makes the reverse Pathways different is that it expands on the experience and learning that comes from conducting sustained operations with our allies and partners. While it does provide our partners with an opportunity to conduct training in a foreign environment, while it enhances their capabilities, it also further enables our own interoperability with those partner nations. This helps to reinforce the ties between the U.S. and our partners. This ultimately enhances regional security, which is invaluable.

assessment is a priority Army method to test and assess emerging material, doctrinal, and conceptual solutions to current and future operational challenges as well as deliver training readiness for participating units. U.S. Army Pacific's collaboration with the 2017 assessment and other opportunities provides critical early user feedback to expedite technology and concept development that benefits the entire Army and creates efficiencies that accelerate the pace and output of innovation in support of U.S. Army Force 2025. Because of its diverse climates, terrain and geographic expanse, the Indo-Asia-Pacific region serves as a unique environment for equipment and doctrine experimentation, which is why multi-domain battle can be operationalized here as

complex security environment we face today. The evolutionary multi-domain battle concept does just that. It builds on air-land battle, full spectrum operations, and the Army operating concept to enable joint forces to create windows of superiority in the land, air, sea, space and cyber domains. These windows of opportunity create multiple options for our civilian leaders and joint force commanders and multiple dilemmas for potential opponents. The Army of the Pacific has an opportunity to operationalize this concept in key locations throughout this vast theater. Land forces have a requirement to project force from the land domain into the air, sea, space and cyber domains. As a result, I think the Army in the Pacific must invest in and deliver future force capabilities which contribute

THE ARMY'S OPERATING CONCEPT LAYS OUT WARFIGHTING CHALLENGES WHOSE SOLUTIONS WOULD DIRECTLY CONTRIBUTE TO JOINT OPERATIONS IN THE PACIFIC THEATER.

FORUM: Describe how Pacific Pathways will aid in Army Warfighting Assessment to inform future force design.

BROWN: U.S. Army Pacific and the U.S. Army Training and Doctrine Command agreed to use the 2016 Pacific Pathways to support the broader Army effort to identify potential solutions to operational challenges addressed in the Army Operating Concept. The Army's Operating Concept lays out warfighting challenges whose solutions would directly contribute to joint operations in the Pacific theater. We evaluate solutions to these challenges through the Army Warfighting Assessment. This

well. By leveraging and extending existing exercises and multinational partnerships in the Indo-Asia-Pacific, we benefit from the Pacific theater as a laboratory for experimentation with global applications, and we will continue to inform on these findings to contribute to future force design.

FORUM: Explain the strategy behind developing a "multi-domain battle" doctrine and how such a policy will transform Army tactics and training moving forward.

BROWN: I think we have to continue creating the processes and cultivating a culture of joint integration and innovation that can hedge against the

to domain dominance across all domains. By changing mindsets, capabilities and most important, the culture of our military, we can achieve true joint integration. If we do this right, I think we may avoid the next conflict altogether because our adversaries will truly be deterred. Not just because of the technologies or concepts we can bring to the fight through multi-domain battle, but also through our true strategic advantage — our people. Through innovative ways of solving problems, empowered through mission command to develop cohesive teams, our men and women cannot only succeed, but thrive in the ambiguity and chaos that will be a part of any future battlefield. That said, I really believe that we have to take



Japanese Ground Self-Defense Force and U.S. Soldiers conduct medical training during Orient Shield 2015.

advantage of this opportunity now — here in the Pacific — because it is as good as any opportunity I have seen in my career, in terms of having the right people, timing and structure in place.

FORUM: As the senior U.S. Army commander in theater, you oversee the integration of active and reserve personnel to support U.S. Pacific Command. What challenges does this present?

BROWN: We are the operationalization of the multicomponent, Total Force — and this is readily apparent here in the Pacific. Each component of the Army brings unique capabilities to U.S. Army Pacific, and by leveraging and integrating those areas of expertise in support of exercises in the Indo-Asia-Pacific, we enhance not only our interoperability within the U.S. Army, but with our allies and partners as well. The National Guard-led State Partnership Program has been a perfect example of this for over 20 years — providing continuity in support and ever-deepening relationships with nine Pacific nations. As many armies in the region can attest, the integration of active and reserve force provides critical capabilities and manpower. The U.S. Army is currently in the midst of an ongoing effort to transition its reserve component forces into an operational, integrated Total Force governed by the same interchangeable policies and procedures. This will facilitate the better integration of the various components of the U.S. Army and result in a more balanced, multicomponent force that can respond to the challenges that exist in today's complex security environment.

FORUM: Your remarks during the Pacific Armies Management Seminar (PAMS) in Kuala Lumpur, Malaysia, in September 2016 highlighted the need to build civil-military partnerships to counter violent extremism. Why is this important in the region?

BROWN: The Pacific Armies Management Seminar remains an important engagement that enables the armies of the Pacific to discuss, share and exchange best practices, to include ensuring our civilian and military responders are effective and efficient in their efforts to address the security challenges they face. In terms of countering violent extremism, this is incredibly important because it requires a unity of effort. Exchanges like PAMS, and also bilateral or multilateral exercises, enable our partners to not only respond more effectively to violent extremism but also address the underlying conditions that foster extremism. But this absolutely requires a civil-military partnership. By providing a more secure environment for their citizens, countries in the region can focus on addressing the root causes of extremist violence and not only counter it but also eliminate it from local safe havens.



U.S. ARMY

FORUM: You have said the Indo-Asia-Pacific region has all the challenges that exist anywhere in the world, including the unpredictability of North Korea and tensions in the South China Sea. What ongoing and future contributions will USARPAC make to help allies address these challenges?

BROWN: The relationships developed between countries during military-to-military engagements and exercises are an important step in our collective ability to prevent conflict in the Indo-Asia-Pacific. I just returned from the 2016 China Disaster Management Exchange [in November 2016], and it was a great event displaying the power of continuing to build military-to-military relationships. Events like these allow us to build on areas of common interest, like humanitarian assistance/disaster response, peacekeeping and other key military support operations. Focusing on areas of agreement builds trust that can then be used to mitigate differences and help resolve future issues. This type of progress is made only when we are able to develop a shared understanding between our armies and ultimately, this cultivates mutual respect for one another. Exercises and exchanges build confidence, trust, and interoperability between the U.S. military and our regional partners through consistent partnership. These activities deter conflict by building partner capabilities and relationships that demonstrate the U.S. military remains a reliable



STAFF SGT. KWADWO FRIMPONG/U.S. ARMY

partner, engaged and focused on enhancing the multinational collective security network across the region.

FORUM: How has the military realm changed since you joined more than 30 years ago, and what advice would you give new recruits hoping to one day assume a leadership role in the Army?

BROWN: In my 35 years of military service, I have seen the security environment change drastically, a change that requires new ways of thinking and operating. I talked about this complexity earlier — but I still am resolute in my belief that our greatest strategic advantage as a nation is our people. And we are developing the capability and capacity to optimize performance of leaders, Soldiers, and civilians in U.S. Army Pacific to thrive in ambiguity and chaos; being comfortable is not enough, our men and women must thrive in the toughest situations to win. Where the “fog of war” was once created by a lack of information requiring some guessing on the part of leaders, today the “fog of war” is having too much information and needing to analyze and find the nuggets of truth to make

decisions. My advice for new recruits hoping to one day assume leadership roles is to develop the agile and critical thinking that is required to thrive in dealing with complex problems found not only here in the Indo-Asia-Pacific, but throughout the world.

FORUM: Is there anything else that you’d like to mention?

BROWN: As I have noted, an important aspect of the Army is its people. It is essential to our success and our nation’s defense that our senior leaders empower their teams to ensure that they are fully trained, resourced and enabled to accomplish their missions at every level. From team leader to general officer, we must be ready for any crisis or contingency and push our formations to get better, stronger and become more capable. But this takes more than just the leaders, Soldiers and civilians who are part of U.S. Army Pacific. The family is a critical component of the Army Total Force. By providing resiliency and family programs for the families of the U.S. Army Pacific, and by better integrating reserve forces, we can successfully operate in the complex Indo-Asia-Pacific security environment. □

Left: Philippine and U.S. Soldiers conduct contact drills during Balikatan.

Republic of Korea Soldiers with 8th Division, 137th Battalion, and U.S. Soldiers assigned to Bravo Company, 2nd Battalion, 3rd Infantry Regiment, conduct an urban breaching at Rodriguez Live Fire Range in South Korea in March 2016 during Pacific Pathways.

The image shows two F-35 fighter jets in flight over a lush green landscape with a winding river. The jet in the foreground is seen from a top-down perspective, while the second jet is positioned behind and to the right, partially obscured. The background features a dense forest and a prominent river that meanders through the terrain. The overall scene is captured from a high altitude, emphasizing the stealth and maneuverability of the aircraft.

FIFTH-GENERATION AIR COMBAT

CUTTING-EDGE AIRCRAFT DELIVER A JOINT FORCE ADVANTAGE

LT. GEN. JEFF HARRIGIAN AND COL. MAX M. MAROSKO/U.S. AIR FORCE



The U.S. Air Force has declared this fifth-generation fighter, the F-35A Lightning II, ready for combat.

STAFF SGT. MADELYN BROWN/U.S. AIR FORCE

“F

fifth-generation” aircraft are coming of age, becoming a key element in U.S. power projection in the 21st century. The F-22 Raptor, first conceived in the later years of the Cold War as a response to advances in Soviet air combat capabilities, has now operated in the combat Air Force for more than a decade and played a key role in the kickoff of Operation Inherent Resolve over Syria in September 2014 and subsequent operations.

Commanders have discovered that, in addition to the Raptor’s speed, maneuverability and stealth capabilities, it brings immense situational awareness by utilizing sensors in ways few could have imagined in the program’s infancy more than three decades ago. The F-22’s ability to perform strikes, conduct escort operations, collect and manage information, pass taskings in real time and provide dynamic targeting information “has even exceeded our expectations,” Air Combat Command Chief Gen. Herbert “Hawk” Carlisle said in February 2015.

The F-22 has the ability to make every asset it works with better, as it connects and leverages the entirety of a strike package in ways older combat aircraft could not do. This holds great implications for the future of air combat and for joint operations as a whole. Fifth-generation aircraft “are key to military success in future conflict,” Carlisle added.

The technologies in the F-22 and the F-35 provide situational awareness of a conflict that is unparalleled in modern war, and lethal tools that enable both aircraft to perform at a higher level. Fifth-generation assets employed by joint forces give the U.S. “the asymmetric advantage we need to win our nation’s wars,” Carlisle added.

DEFINING FIFTH-GENERATION AIRCRAFT

A fifth-generation aircraft is capable of operating effectively in highly contested combat environments, defined by the presence of the most capable current air and ground threats, and those reasonably expected to be operational in the foreseeable future. Currently, fielded fifth-generation aircraft include the Air Force’s F-22A Raptor, the U.S. Marine Corps’ F-35B Lightning II and the Air Force’s F-35A.

There are many characteristics of fifth-generation aircraft that separate them from older aircraft. These include multispectral low observable (LO) design features (such as radar, infrared sensors and visual situational awareness tools), along with self-protection and radar-jamming capabilities that delay or deny enemy systems the ability to detect, track and engage the aircraft. These aircraft also feature integrated avionics, which autonomously fuse and prioritize the aircraft’s multispectral sensors and off-board data, providing an accurate real-time operations picture for the pilot and the ability to download data for post-mission analysis. Advanced onboard diagnostics help vital monitoring of the aircraft’s health, accurately reporting faults as they occur, increasing overall system performance and reliability.

Resilient communications, navigation, and

identification tools and techniques are crucial aspects of fifth-generation aircraft, designed to counter enemy attempts to jam, deny or confuse these vital capabilities. Fifth-generation aircraft are also empowered by robust networks, linking individual aircraft to create a common, accurate and highly integrated picture of the battlespace for friendly forces. The aircraft and its subsystem designs are closely integrated, far more intricately than older aircraft. This helps to maximize lethality and survivability while enabling decision-making superiority by reducing the number of actions required by the pilot. The effect of these tools turns operators of these advanced aircraft into mission commanders, rather than having them focus on managing and operating subsystems.

Despite their capability, fifth-generation aircraft comprise a fraction of the current combat air forces. The average age of a U.S. Air Force airframe is 27 years and rising. Modernizing fighter and bomber forces with sufficient numbers of fifth-generation aircraft is critical for continued combat relevance, especially in light of three trends.

Modern Integrated Air Defense Systems (IADS) have created regions where fourth-generation aircraft cannot effectively penetrate and hope to survive.

Threat aircraft, air-to-air missiles, electronic attack and electronic protection systems have advanced beyond the capabilities of U.S. fourth-generation fighters.

Fifth-generation aircraft provide a wider variety of wartime options, preserve U.S. technological advantage over near-peer threats and serve as force multipliers by increasing the situational awareness and combat effectiveness of legacy aircraft.

UNDERSTANDING FIFTH-GENERATION OPERATIONS

An effective capability, such as fifth-generation aircraft, is only a tool — and must be properly utilized with effective preparation to perform at its best and empower joint operations fully. To achieve success with any fifth-generation aircraft requires all personnel associated with the generation and employment of these capabilities, including aircrew, maintenance and support personnel, to optimize their roles in ensuring effective combat operations.

Airmen must have an intuitive understanding of their aircraft and how they perform in relationship to the threats they might encounter. They must train for the most demanding scenarios against the latest IADS and enemy aircraft, and U.S. military services, allies and partner nations must also develop a strategy with fiscally realistic and executable plans to adequately train against advanced adversary capabilities (including air-to-air, surface-to-air, space and cyber threats). These plans and preparations must include an appropriate mix of live, virtual and constructive (LVC) training scenarios and exercises. This is of added importance in the context of fifth-generation aircraft, because flight simulator training is even more important than with older aircraft. Given the current Department of Defense fiscal forecast, the



An F-22 Raptor disconnects from the boom of a KC-135 Stratotanker after receiving fuel to continue on a training exercise.

MASTER SGT. BURT TRAYNOR/U.S. AIR FORCE

U.S. military will need to increasingly rely on the LVC environment to rehearse for realistic combat scenarios with improved fidelity. To a greater extent than training with legacy aircraft, fifth-generation simulators must provide realistic training through timely concurrency with the aircraft, sufficient fidelity for realism and appropriate connectivity to other assets for realistic exercising.

In addition to operators, maintenance personnel require more training to adequately keep up fifth-generation aircraft and their vital low-radar signatures.

To improve survivability against adversary IADS, the signatures of fifth-generation aircraft must be actively managed, much like airframe inspection and engine maintenance schedules. Commanders must ensure that training resources are adequately provided for these assets to capitalize on the unique capabilities they bring to the operational environment. All personnel must be trained to understand the importance of specialized security requirements for fifth-generation aircraft. From ensuring physical security and cyber standards to balancing protection of classified capabilities with realistic training, personnel must appreciate and carry out security guidelines for daily operations effectively, as well as those for allied, coalition and partner training exercises and combat operations. Lastly, commanders and support personnel must understand the fifth-generation aircraft global sustainment system for use at home station and during deployed operations. Commanders should

consider and actively track changing threat conditions and how these can affect the ability to sustain their fifth-generation operations.

FIFTH-GENERATION AIR POWER AND DATA

Fifth-generation aircraft bring incredible capability into combat but are also some of the most data-dependent machines in the U.S. inventory. They require significant amounts of information to operate at their best.

Fifth-generation aircrew and aircraft rely on mission data files to enable onboard systems to accurately identify friendly, neutral and adversary systems. This data allows fifth-generation pilots to enhance their stealth, or LO signature management, enabling the aircraft to survive and maintain situational awareness of events in combat even when operating in close proximity to advanced threats. The U.S. Air Force (USAF), sister services, allies and the intelligence community have an essential role in populating and updating these files. Not only is this mission data necessary for internal operation of these aircraft, this data also contains the capability for fifth-generation systems to communicate their fused sensor products off board to other aircraft, providing an integrated common operational picture of a conflict or contingency. In the future, near-real-time exploitation of fifth-generation aircraft's unique information collection capabilities will become increasingly mandatory to operate in more sophisticated threat environments.



An F-35A Lightning II pilot takes the aircraft on its first trans-Atlantic flight in June 2016.

STAFF SGT. NATASHA STANNARD/
U.S. AIR FORCE

“The F-35 Lightning II will be the keystone to future U.S. air power. It is critically important that this fifth-generation system is integrated into the Pacific theater in a well-informed and collaborative manner to leverage the benefits of not only our sister services, but also those of our trusted partners in the largest theater on the planet.”

— Gen. Lori R. Robinson, U.S. Air Force commander,
U.S. Northern Command; former commander, Pacific Air Forces

To achieve true combat systems integration, this fused sensor information must be linked up with the USAF’s much larger legacy aircraft forces and select command and control nodes via data links and cloud-based communication architectures. By linking this information to the entire force, an actionable common operating and targeting picture can be created for commanders and decision-makers. As sensors, communication protocols and data links improve, all friendly forces should be able to share the multidomain situational awareness fifth-generation aircraft can generate, in cooperation with other assets. To perform this effectively, however, requires a detailed systems understanding of data-link architectures and protocols to ensure communication compatibility across the enterprise.

DEPLOYING FIFTH-GENERATION AIR POWER

Squadrons of fifth-generation aircraft deploy today extensively, much like fourth-generation units that preceded them (aircraft such as F-16s, F-15s and others). To realize the potential of fifth-generation aircraft in modern joint operations, fifth-generation communities in the USAF must make several improvements.

First, units must improve deployment reaction time and speed, because windows of opportunity to penetrate IADS or to destroy high-value targets may be fleeting. Second, fifth-generation aircraft must work diligently to minimize the required amount of forward-deployed equipment and personnel, and fully understand the logistics, sustainment and communications limitations at a deployed location. Third, the Air Force must work

to increase flexible basing options available for fifth-generation aircraft (such as increasing the number of airfields the Air Force can deploy to), and build a fuller understanding of the impact these options will have on operations, maintenance, and command and control in dispersed locations. This includes not only conducting combat operations from bases owned by international partners, but also operating at austere locations.

Deploying and operating from limited support locations does come with challenges. The U.S. and its allies must ensure support (logistics and connectivity) can be delivered to forward airfields where commercial carriers may not operate. Finally, fifth-generation aircraft sustainment and support systems must be hardened with sufficient redundancy to ensure resilience under attack. This hardening must be multidomain, and the sustainment and support systems must be able to operate in the face of both kinetic and cyber attack.

EMPLOYMENT AND SUSTAINMENT ACROSS SPECTRUM

Combat employment of air assets may occur across a wide spectrum of potential conflicts, from permissive environments, where legacy and fifth-generation aircraft can operate together with ease, to highly contested environments, where only fifth-generation aircraft can operate effectively. In permissive or moderately contested environments, the force packaging of air power can combine both legacy and fifth-generation aircraft to maximize survivability and the lethality of the force. Since legacy aircraft sensors alone may be insufficient to detect threats or may be overwhelmed by the quantity of threats, fifth-generation aircraft may provide the most utility by sharing their fused operations picture via a well-constructed data link — feeding this information into the communications architecture, which disperses this picture to as many legacy aircraft as possible.

Likewise, legacy aircraft increase a force's ordnance capacity due to the internal carriage configurations of most fifth-generation aircraft. Modern fifth-generation aircraft can offer targeting solutions for fourth-generation assets via established data links, while themselves targeting threats only by exception. This gives commanders an incredible amount of operational flexibility. In highly contested environments, an air component commander might use only fifth-generation aircraft to bypass an IADS and neutralize the objective. Alternatively, fifth-generation aircraft can destroy or degrade enemy defenses to create a temporary or localized permissive (or semi-permissive) environment where legacy aircraft can operate with relative freedom of action. This often requires fifth-generation aircraft to operate on the leading edge of the force package, allowing legacy aircraft to ingress and destroy priority targets. Once combat begins, however, adversaries may adjust tactics, as well as the operating parameters of their systems. Thus, leaders will need to ensure that appropriate intelligence, surveillance and

reconnaissance assets report this information quickly to the mission data enterprise supporting fifth-generation aircraft and other elements of joint force operations.

This seamless information sharing must be achieved to enable rapid reprogramming and re-release of mission data files for optimum employment of allied assets.

To make this a reality, collaboration is critical. USAF units must share lessons with other U.S. military services and, as required, select allied and coalition partners. Sharing with international partners while balancing security concerns will be paramount to successful fifth-generation aircraft employment. Joint and combined training, exercises and even “cross talks” at forums like tactics conferences and training review boards will be critical learning and development opportunities. In addition, it is necessary to ensure fifth-generation pilots, as well as maintenance and logistics personnel, fill key billets on major command, headquarters and joint staff positions to inform senior leaders and enable appropriate enterprise-wide resource planning and decision-making.

Maintenance of fifth-generation aircraft also requires careful planning to keep the force ready for combat. While fifth-generation aircraft require the same maintenance considerations as legacy aircraft, such as maintaining flight systems and engines, there are additional requirements to maintain their LO characteristics.

This adds another level of complexity USAF leadership must proactively manage. The Air Force must understand how the logistics enterprise can support the unique capabilities of fifth-generation aircraft both in garrison and during deployed operations. While deployed, leaders and commanders must understand how to leverage in-theater fifth-generation assets, along with sister U.S. military service or partner nation logistics networks. When the answers to these sustainment challenges are discovered, they should be analyzed rapidly with respect to the changing phases of a given campaign, training exercise or other engagement involving fifth-generation aircraft.

Fifth-generation aircraft are capable of providing a variety of options for any given contingency. While it may be difficult to visualize how these aircraft can provide an asymmetric advantage to U.S. and partner nation forces, it is not difficult to forecast scenarios where fifth-generation aircraft could be leveraged in response to an adversary nation's invasion of a neighboring U.S.-aligned country.

SCENARIO 2026: SEIZING THE ADVANTAGE

In one of these potential crises, the year is now 2026. The USAF fields a mixed force of legacy and fifth-generation aircraft. In response to rising tensions in a key region abroad, aircraft based in the continental U.S. (CONUS) are mobilized along with other assets. Adversary-sponsored cyber attacks immediately attempt to target unclassified computer systems supporting fifth-generation aircraft deployment, including the F-35's Autonomic Logistic Information System, but are successfully thwarted by a

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STEALTH MOVES

THE INDO-ASIA-PACIFIC INVESTS IN FIFTH-GENERATION AIRCRAFT

FORUM STAFF

Nations in the Indo-Asia-Pacific region are in a technological race to develop or buy “fifth-generation” combat aircraft to achieve air dominance.

While the U.S. employs two fifth-generation fighters — the F-22 Raptor and F-35 joint strike fighter — Indo-Asia-Pacific nations are investing and inventing to keep up, and in many cases, partnering with the U.S.

These aircraft incorporate stealth technology, powerful communication systems and advanced sensors. They also have price tags that are too steep for some smaller countries. Lockheed Martin’s program manager recently said the F-35A, the Air Force variant of the aircraft, costs about U.S. \$100 million per plane. That hefty price tag hasn’t deterred Indo-Asia-Pacific nations with robust military budgets.

AUSTRALIA

The Royal Australian Air Force (RAAF) has committed to purchasing 72 F-35s for three squadrons to replace its F/A-18 Hornet fleet. Lockheed Martin delivered the first two to Australia in 2014. The RAAF says more planes will arrive in 2018, and the first squadron will be operational in 2021. All 72 aircraft are expected to be operational by 2023, according to the RAAF website.

Australia may add a fourth squadron for a total of 100 F-35s, but a final decision hasn’t been made on that expansion. A U.S. expert says F-35 purchases by Australia and other partners in the Indo-Asia-Pacific region will create a lethal fighting force and strong deterrent to armed conflict.

“Hypothetically, our ability to leverage fifth-generation capabilities from our partner nations will allow us to have much more efficient and lethal combat operations,” said U.S. Air Force Col. Max Marosko, an F-22 Raptor pilot and deputy director for air and cyberspace operations at Headquarters Pacific Air Forces in Hawaii.

This synchronized force with cutting-edge technology allows the partners to “rely on their increased lethality to minimize the duration of combat operations if the tensions escalate to that level,” Marosko added.

CHINA

China is developing two models of fifth-generation fighters. The Chengdu Aerospace Corp. J-20 is China’s version of the F-22 Raptor. It is designed to be an air

superiority fighter, according to *The Diplomat*, an online magazine. China’s F-35 counterpart is the Shenyang J-31, which will provide close-air support, aerial bombing and suppression of enemy air defenses.

The J-20 is expected to be operational by 2018, and the J-31 by 2020.

Some American officials question whether intelligence for these fighters was stolen from the U.S., as it appears to be another example of techno-cloning by the Chinese. In September 2015, Sen. Joe Manchin of West Virginia remarked in a hearing with Pentagon officials that the J-20 is strikingly similar to the F-22, and the J-31 is similar to the F-35.

Six months later in March 2016, a Chinese businessman pleaded guilty to conspiring to hack into the computer systems of U.S. defense contractors to steal data on military projects. Su Bin, 50, admitted to conspiring with two unnamed hackers in China to export U.S. military information to the communist nation between 2008 and 2014, according to a federal plea agreement. The men targeted fighter jets such as the F-22 and the F-35. Su was sentenced to nearly four years in prison in July 2016, *The Associated Press* reported.

INDIA

India is attempting to negotiate an agreement with Russia for the design and production of a new fifth-generation fighter aircraft, which India calls the Perspective Multirole Fighter (PMF), according to *The Times of India* newspaper.

In addition to speeding up the design and production of the PMF, India wants to upgrade its fleet of 272 Sukhoi-30 MKI fighters to “Super Sukhois” by 2017. India plans to fit the aircraft with new weapons systems and more advanced avionics, according to *The Diplomat*. While the upgrades would give the aircraft some fifth-generation capabilities, the Super Sukhoi would not be considered a true fifth-generation aircraft.

That’s because they still would lack some fifth-generation characteristics, including internal weapons bays that enhance stealth capabilities.

JAPAN

Japan plans to purchase 42 F-35s, 38 of which are to be manufactured in Nagoya, Japan. The first four are being

built in Forth Worth, Texas. Japan received its first F-35 in September 2016 during a ceremony in the U.S., and it will join the Japanese Air Self-Defense fleet in 2017.

Japan is also developing its own fifth-generation air superiority fighter to replace its aging F-15s. A prototype of the ATD-X, also called the Mitsubishi F-3, was integrated into Japan's X-2 program and flown for the first time April 22, 2016.

Japan says the ATD-X will have state-of-the-art technology. It is expected to be equipped with an active electronically scanned array radar. Data are transmitted in the ATD-X by optical fibers rather than wires, so they are transmitted faster and are supposed to be immune to electromagnetic disturbance.

SOUTH KOREA

South Korea signed an agreement with the U.S. in 2014 for the purchase of 40 F-35s. Initial deliveries will start in 2018, and all aircraft are expected to be in place by 2021.

In addition to this purchase, the South is working on its own indigenously produced aircraft, the KF-X. In August 2016, the government said it will complete the development of an advanced radar system for the fighter jets by 2026. The country hopes to develop 120 by the mid-2020s, according to the Yonhap News Agency.

The KF-X is termed a "4.5 generational platform" because it has stealth capabilities greater than the

F-16s it has now but somewhat short of the F-35 and its counterparts, *The Diplomat* reported.

Indonesia has already signed on to the KF-X program and hopes to receive 80 fighters once they are completed.

One key to making this technology leap effective will be an ongoing exchange of information and training between partners in the Indo-Asia-Pacific, Marosko said.

"We have been sharing information with our partners for years in the F-22" through pilot exchange programs with Australia and the United Kingdom, Marosko said. "They have been exposed to our fifth-generation tactics/capabilities and will bring this knowledge back to their F-35 programs."

RUSSIA

Russia expects by the end of 2017 to begin mass producing its fifth-generation Sukhoi PAK FA fighter jet, which is also known as the T-50.

A T-50 prototype made its first flight in 2010. Sukhoi has promised to produce a highly maneuverable stealth fighter with supercruise capabilities that can match Lockheed Martin's F-22 Raptor in air-to-air combat.

The T-50 will have sophisticated avionic systems and a variety of electronic warfare components. Experts believe the F-22 has the stealth advantage, while they praise the T-50 for its maneuverability, according to an article in the *National Interest* magazine.



Lt. Gen. Terrence O'Shaughnessy, then commander of the 7th Air Force, U.S. Forces Korea, left, shakes hands with Lt. Gen. Wang-Geun, commander of the Republic of Korea Air Forces Operations Command, in front of an F-22 stealth fighter at Osan Air Base in Pyeongtaek, South Korea. REUTERS

combination of cyber defense and backup capabilities.

While CONUS-based fifth-generation aircraft gear up for future combat missions, several squadrons of fifth-generation aircraft rapidly deploy and disperse to numerous military and civilian airfields, making sure not to concentrate more than a single squadron at any one location. Consequently, adversary planners are unable to effectively use ballistic or cruise missile attacks to score a pre-emptive “knockout” blow against forward-deployed aircraft, and fifth-generation missions continue with little impact. Though some expeditionary airfields have navigation or air traffic control facilities, by 2026 F-35 and F-22 pilots are now adept at conducting autonomous all-weather operations (such as landing in inclement weather using the aircraft’s sensors to find the runway). This also reduces the number of personnel and equipment required for deployment, while greatly increasing the number of airfields available.

As combat operations begin, U.S. military fifth-generation aircraft (both CONUS and forward-based assets), along with F-35s from coalition countries effectively integrate and collaborate in the opening phase of operations, thanks to prior consideration and exercising of security, maintenance, logistics and command and control (C2) plans. There are no surprises concerning the multilevel security construct of the operation, because the U.S. military has built transparent relationships with key allies and partners in the preceding years.

During the opening days, fighting focuses on the battle for air superiority as aircraft from both sides clash over contested territory. Heavy radar and communications jamming confront U.S. and coalition forces, but fifth-generation aircraft leverage their networked multispectral sensors to detect and target enemy aircraft, while supporting a common operating picture through data links and communication architectures. Though legacy aircraft operate at a distance from the most dangerous threats, they provide critically important layered defense in depth for ongoing operations.

During the initial days of the conflict, F-35s occasionally return to their bases — only to discover several are heavily damaged from enemy missile attacks. Executing contingency plans, they divert to a nearby civilian airfield and use pilot swap-out procedures to reposition aircraft to another F-35 operating location, allowing these assets to continue fighting despite heavy airfield attacks. In one instance, a USAF F-35 is forced to recover at an Australian F-35 airbase after an inflight malfunction makes it impossible to return to its original deployment location. Royal Australian Air Force maintenance technicians are able to quickly repair, rearm and refuel the USAF F-35 in a manner similar to U.S. maintenance and regeneration practices. The F-35 rejoins combat operations the next day.

Also during the initial stage of the conflict, several civilian aircraft are damaged during airfield attacks, halting

commercial logistics operations. In response, contingency plans link up commercial and military distribution channels to enable adequate supplies of spare parts, weapons and fuel destined for dispersed airfields. This sustains these locations for several weeks until enemy cruise and ballistic missile inventories are depleted or destroyed.

As operations continue, it becomes apparent stealth aircraft like the F-22, F-35, B-2 and B-21 are the only aircraft capable of operating over the contested territory due to the large number of adversary mobile advanced surface-to-air missiles (SAMs) deployed. Fifth-generation fighters achieve most of the air-to-air kills, since older fighters find themselves vulnerable to the long reach and lethality of advanced SAMs. Fortunately, F-35s use advanced geolocation capabilities, combined with their stealth signature and electronic warfare tools, to neutralize many of these SAMs, allowing joint force operations to steadily increase their freedom of action.

Despite heavy kinetic and nonkinetic attacks on the Combined Air Operations Center (CAOC), the air commander is still able to provide C2 to legacy and fifth-generation units by using preplanned distributed C2 procedures specifically designed to allow the entire force to operate, even when the CAOC is offline. These procedures rely on redundant communication systems requiring little bandwidth and commanders’ guidance in the run-up to conflict, specifically tailored to ensure decentralized operations that contribute to campaign objectives. F-35s and F-22s put their advanced sensors and long-range communications to use as key elements of these decentralized operations. Aircraft take off with minimal information — little more than a general target area that may be more than 1,000 miles away. On the way to target, the fifth-generation aircraft receive minimal tanker, threat and target information, but sufficient updates to enable them to ingress, identify and prosecute targets successfully.

During one adversary attack on an operating location, several operations and maintenance personnel are killed in a ballistic missile strike. Allies provide personnel to fill in for these casualties and maintain the current operations tempo until U.S. reinforcements arrive.

As the conflict continues, fifth-generation aircraft seek out, degrade and destroy advanced SAMs in contested territory, creating a more moderate threat environment. This enables legacy aircraft to operate alongside their fifth-generation counterparts. The mature integration and full operational capabilities of fourth- and fifth-generation aircraft working together proves the turning point in the conflict, as the mix provides U.S. and coalition forces needed flexibility, mass and depth of munitions to gain the advantage.

EMPLOYING THE ADVANTAGE

This concept of employing fifth-generation airpower lays out and defines the operational need for these vital aerial warfare systems. But employing these aircraft in future combat requires careful attention across several aspects



of employment beyond the aircraft themselves. These aspects include advanced planning, preparation, ensuring effective use and dissemination of mission data, how deployment of fifth-generation aircraft is conducted, actual combat employment design and supporting operations with appropriate logistics and sustainment practices. This potential future combat scenario illustrates how each of these elements could come together and enable success in a modern air campaign or joint combat operation.

While fifth-generation aircraft do not provide decision-makers with a single-point solution, their demonstrated ability as valued contributors to strategic deterrence, capacity as advanced airborne echelons and operational utility as enduring force multipliers make them indispensable to future joint force operations.

Future concepts of employment should aim to focus on several integration priorities. These include refining connectivity between legacy and fifth-generation aircraft, improving connections between fifth-generation airborne platforms, improving integration with space and cyber capabilities, and integrating fifth-generation platforms with other components of joint and combined force operations. Integration advances in these areas will help move toward the goal of creating a cloud-based architecture — where every element of air, space and cyber power contribute to conducting

disaggregated, distributed operations over a wide area. The complementary employment of capabilities from all domains will enhance the effectiveness of future combat operations and help compensate for vulnerabilities.

The need to explore these concepts will only increase. In the coming decade, fifth-generation aircraft will grow and mature in sufficient numbers to give the U.S. and its allies a definitive strategic advantage to counter the advancement of modern weapon systems used by potential adversaries. These potential adversary weapon systems, from aircraft to cruise missiles to advanced SAMs and cyber capabilities, are contributing factors to the destabilization of contested regions around the world. Fifth-generation aircraft are critical to returning the military balance to our favor. Along with thoughtful integration and investment in select legacy aircraft, the maturation of fifth-generation aircraft capabilities in sufficient numbers will better enable joint force operations that will provide the U.S. and its allies a wider range of options to secure our interests in a scenario like the one described, or many others which could emerge in the coming years. □

This article originally appeared in The Mitchell Forum short paper series. It has been edited to fit FORUM's format and published with permission from the Mitchell Institute for Aerospace Studies, Arlington, Virginia.



DETERRENCE **POSTURING**

FIELDING BRAHMOS STRENGTHENS INDIA'S CONVENTIONAL DEFENSE STRATEGY

DEBALINA GHOSHAL

India and China are strengthening their defense capabilities, particularly when it comes to conventional strength against each other. India has been watching Chinese military developments along the 4,057-kilometer de facto border between the two nations known as the Line of Actual Control (LAC).

In August 2016, the Indian government signaled the Indian Army to induct the ramjet-powered, 290-kilometer-range supersonic BrahMos cruise missiles in the border state of Arunachal Pradesh as a credible weapon system for mountain warfare.

Developed jointly by the Russian Federation's rocket design bureau and India's Defence Research and Development Organization, the missile can travel at a speed of Mach 2.8, roughly three times the speed of sound. It has a maneuverable trajectory to help dodge enemy missile defense systems. With a range of 290 kilometers, the missile can take a steep dive of 75 degrees.

With an advanced guidance system, the missile can make precision strikes. The missile is capable of performing an "S" maneuver just a few minutes before impact to frustrate interception, thereby increasing its survivability and ability to launch lethal strikes. Experts consider the missile to be "low observable" with "penetration capabilities."

The joint Russian-Indian venture, known as BrahMos Aerospace, is working to achieve a 90-degree steep dive. This capability would enable the missile to hit targets hidden behind mountain ranges. *The Times of India* newspaper reported in August 2016 that the 90-degree capability in the future could lead to acquiring an aircraft carrier-killing capability. The BrahMos is the fastest anti-ship cruise missile in operation.

BROADER INDUCTION

The missile has been in service with the Indian Army since 2007. The Indian Navy has already inducted the missile system, which can be launched from submarines, ships, aircraft or mobile launch vehicles on land. The Indian Air Force will also induct a smaller, air-launched version for its Sukhoi-30 MKI, India's premier twinjet multirole air superiority fighter licensed to and manufactured in India. The development and integration of the system is already at an advanced stage.

India's Arunachal Pradesh regiment would be the fourth BrahMos regiment cleared at a cost of 4,300 crore rupees or 43 billion rupees (about U.S. \$674 million). The 864 regiment of the 41st Artillery Division in Arunachal Pradesh would be assigned to operate these missiles. The regiment would consist of 100 advanced BrahMos Block III missiles with the steep-dive capability, five mobile autonomous launchers on 12-by-12 heavy duty trucks and mobile command post and a mobile replenishment vehicle. The previous regiments inducted early versions of the BrahMos, known as Block I and II, with missiles designed to strike small targets with low-radar cross-sections in a cluttered environment, according to *The Times of India*.

The launcher is mobile in all kinds of terrains. Three BrahMos missiles, placed in three individual containers, are installed on each launcher. The missiles can be fired in single or in salvos of two to three seconds within four minutes of receiving a command, making them capable of quick reaction.

China has already warned India about inducting the BrahMos in Arunachal Pradesh. Officials believe it could have a "negative influence" on border stability, and they argue that such weapons systems pose threats to Tibet and Yunnan provinces, according to the Chinese People's Liberation Army's (PLA's) official newspaper, the *PLA Daily*. China further argues that the missile, with its steep dive capabilities, "could increase the suddenness and effectiveness of attacks." The missile could also give "crushing blows on time-sensitive targets like missile launchers and solid targets like command centers," the *PLA Daily* reported.

To "maintain peace and stability along the India-China border is an important consensus reached by the two sides," Col. Wu Qian, Chinese Ministry of Defence spokesman, asserted during an August 2016 media briefing. "We hope the Indian side can do more for peace and stability in the border region rather than contrary," he added, according to an account by www.indianexpress.com. India's notion of "counterbalance and confrontation," he said, were behind the induction move as "deterrence to China to create a military advantage in the boundary." He noted, however that the missile has a "relatively short range that cannot threaten China's deep zones."

Meanwhile, top Indian Army officials responded to China's assertions about the BrahMos, telling NDTV in August 2016: "Our threat perceptions and security concerns are our own, and how we address these by deploying assets on our territory should be no one else's concern."

CONTENTIOUS BORDER

The border dispute between India and China over Arunachal Pradesh is nothing new. Many skirmishes in the 1962 Sino-Indian War were fought in this area. Although the nations agreed to the LAC in 1996, China claimed the entire area in 2006. Border infiltration by Chinese soldiers across the Arunachal Pradesh border has been a concern for India in the intervening years as tensions have mounted. China has also referred to Arunachal Pradesh as Southern Tibet.

In 2007, China refused to issue a visa to Ganesh Koyu, an Indian administrative officer who was to visit China on a study tour. The Chinese argued that since Koyu was from Arunachal Pradesh, which China believes belongs to them, Koyu did not require a visa. Beijing has also expressed dissatisfaction with then-Indian Prime Minister Manmohan Singh's visit to Arunachal Pradesh in October 2009 in advance of state assembly elections. China's Foreign Ministry issued a statement that said Beijing was "strongly dissatisfied with the visit to the disputed region

by the Indian leader," according to *The Hindu* newspaper. In July 2016, Uttarakhand Chief Minister Harish Rawat confirmed incursion of Chinese soldiers into Indian territory along the 350-kilometer border shared between Uttarakhand and China.

Some years back, China had replaced DF-3 liquid-fueled ballistic missiles deployed on the border with India with DF-21 solid-fueled road mobile ballistic missiles, which are capable of delivering nuclear and conventional warheads. The DF-21s are deployed in Delingha in the central Qinghai province and can reach targets in India. Delingha also hosts China's intercontinental range ballistic missile called DF-31s and DF-31As that could reach targets in India.

India's BrahMos missiles, on the other hand, are capable of delivering conventional payload with a capacity of 300 kilograms. India has deliberately restricted the range of BrahMos to 290 kilometers and 300 kilograms. There are two reasons for this. First, Russia, which has jointly developed the missile, is a member of the Missile Technology Control Regime (MTCR) and could not have jointly developed a ballistic or cruise missile exceeding the range of 300 kilometers and 500-kilogram payload. This is because the MTCR defines a nuclear-capable missile as having a range of 300 kilometers and above and a payload of 500 kilograms and more. Second, keeping the missile below the 300-kilometer range

India's Army parades its BrahMos supersonic cruise missiles in New Delhi during a Republic Day event.
REUTERS



INDIA-CHINA BORDER



enables India to export the missile system to friendly neighboring states under the MTCR norms. Countries such as Vietnam and the Philippines, which also have territorial disputes with China, have expressed interest in purchasing the missile system.

Recently, India also acquired the MTCR membership, although China has not. China, however, has denied India membership into the Nuclear Suppliers Group on grounds that India has not acceded to the Nuclear Non-Proliferation Treaty. This was strongly asserted by China's Foreign Ministry's head of arms control department, Wang Qun, when he stated, "Applicant countries must be signatories of the treaty of non-proliferation of nuclear weapons."

THREAT DETERRENCE

China's long-range DF-21s and DF-31s cannot be compared to India's short-range BrahMos, some experts argue, because DF-category long-range missiles can reach targets inside India while BrahMos would not be capable of doing so. However, BrahMos would serve as a tactical deterrence weapon for India to strengthen its conventional capability versus China. India already possesses the Agni V, which has a 5,000-kilometer range, and is also working on an even longer-range missile, the Agni VI, which can have an intercontinental range of 10,000 kilometers.

Russia is also building the SA-21, a long-range (400 kilometer) surface-to-air missile (SAM) system with anti-theater ballistic missile (TBM), low observable (LO) and low-flying aircraft capabilities that will be exported to China in 2017 and potentially India in 2020.

Indian researchers are also testing the next generation of BrahMos missiles, which are a smaller, faster and stealthier version of the bigger missiles. India is also working on BrahMos-II, which is a hypersonic cruise missile capable of reaching Mach 7 speed.

In addition, the Indian Army is set to procure M777 155-millimeter, 39-caliber, towed gun ultralight howitzers from the United States. The Indian Army is raising the 17 Mountain Strike Corps in Arunachal Pradesh, which was approved in 2013. In May 2015, there were reports that efforts to build new roads, strategic railway lines and key location points for basing more military assets were underway, although India is behind China in terms of infrastructure developments in the border region. India has also increased deployment of troops on India's side of the region as well as increased support from armored regiments and artillery.

Though China has a "no first use" policy in its nuclear doctrine, it does not apply to territories that China claims. Thus, Arunachal Pradesh remains a concern because China claims the territory.

According to reports, China has also increased its defense capabilities and increased deployment of troops along the border. China has 13 border defense regiments with at least 300,000 PLA troops. Apart from this, China's sea-based nuclear deterrence is also a threat to India.

India's induction of the BrahMos missiles in Arunachal Pradesh is sending a clear message to China that it will respond in kind to Chinese aggression in the region and elsewhere. India's move seems to be working already to enhance its conventional deterrence capability. □

SULU SEA

Maritime Security Developments

JOINT INTERAGENCY TASK FORCE WEST PUBLIC AFFAIRS

Philippine forces team with U.S. PACOM's Joint Interagency Task Force West



he tri-border region of Indonesia, Malaysia and the Philippines hosts some of the world's most important shipping lanes as well as unparalleled ecological wonders. The region contains the Sulu archipelago, a chain of islands in the southwestern Philippines famous for its abundant marine life and natural beauty. Some of Southeast Asia's most pristine beaches and coral reefs can be found in this extremely biodiverse area including the Tubbataha Reefs National Park, which covers more than 130,000 hectares and probably contains more species of coral, fish and other marine animals than any comparable area in the world.

“This kind of training really improves our interoperability with other agencies involved in the region.”

Philippine National Police Superintendent Osmundo Dupangan Salibo,
Chief, 2nd Maritime Special Operations Unit

The ecological and cultural significance of this region is matched by its strategic significance as a gateway between the Pacific and Indian oceans. Farther south, the Malacca Strait is one of the world's busiest waterways and the shortest sea route for oil between the Persian Gulf and Asia. The Malacca Strait is the world's second-largest choke point for the transit of oil, with more than 15 million barrels transiting through every day (compared to the Strait of Hormuz with 17 million barrels per day), according to the U.S. Energy Information Administration. When a tanker exceeds the maximum depth of the Malacca Strait, the alternative is to detour south through the Lombok Strait, Makassar Strait, Sibutu Passage or Mindoro Strait, all of which lie within the tri-border area.

Despite an abundance of natural resources, the region faces significant challenges to governance and prosperity. Substantial cultural differences across ethnic groups in the region contribute to tensions spilling over into violence. The area has developed a well-earned reputation for lawlessness and violence due in part to economic challenges, a growing population and pressures on natural resources caused by illegal fishing and poaching from outsiders.

Illicit trafficking of all kinds is highly prevalent throughout the region. Trafficking of contraband goods, narcotics, weapons and even people helps fuel instability.

The number of piracy and robbery acts



**A Philippine National Police
Maritime Group member
communicates with other
Philippine forces during a Joint
Interagency Task Force West
exercise in July 2014 in Puerto
Princesa, Philippines.**

**STAFF SGT. CHRISTOPHER HUBENTHAL/
U.S. AIR FORCE**

against ships reported to the International Maritime Organization in the Malacca Strait and Singapore had the highest number of incidents reported in 2015 with 134 out of the 303 reported, followed by the South China Sea with 81, according to *Review of Maritime Transport 2016*, a report by the United Nations Conference on Trade and Development.

The rugged terrain of the islands in the shared waters of Indonesia and Malaysia off the island of Borneo enables terrorist groups such as Jemaah Islamiyah to train, sustain and grow in relative safety. The autonomous region of Muslim Mindanao in the Sulu Sea is home to other militant groups including the Abu Sayyaf Group and the Moro Islamic Liberation Front. By taking advantage of the region's porous borders, these groups have been able to train, sustain and operate with relative impunity throughout the region.

Militant and criminal activity has created an everyday reality of kidnapping for ransom, piracy and terrorist attacks, directly affecting the day-to-day lives of the people of the region. The result is an increased disruption of legitimate fishing and trade that is prompting Malaysia, Indonesia and the Philippines to all consider new ways to collaborate on security concerns.



A Philippine National Police Maritime Group member provides security as others detain a Joint Interagency Task Force West training liaison officer. He was playing the part of a drug trafficker during an exercise in July 2014 in Puerto Princesa, Philippines.

STAFF SGT. CHRISTOPHER HUBENTHAL/U.S. AIR FORCE

SECURITY COLLABORATION

Within Philippines territory, the Armed Forces of the Philippines (AFP) have been heavily engaged in combating these internal security threats for a number of years. U.S. support has helped the AFP make a significant impact in stabilizing the region, so much so that the Philippine government is now well-established in an effort to transition to primarily a civilian law enforcement led security effort. The United States is supporting this transition through a variety of efforts, helping the Philippines to normalize security and governance throughout the region. This effort has not been without risks and challenges. In January 2015, 44 Philippine

Special Action Force police officers tragically lost their lives in the pursuit of a high-value terrorist target on the island of Mindanao.

To help the Philippine government develop a civilian law enforcement group that is capable and prepared for the challenges of the southern region, the U.S. Pacific Command's counterdrug task force, Joint Interagency Task Force West (JIATF West), began providing training and infrastructure support to the Philippine National Police's (PNP's) counterdrug efforts.

Beginning in 2007, JIATF West, in partnership with the U.S. Department of Justice International Criminal Investigative Training and Assistance Program (ICITAP), began working with the Philippine National Police Maritime Group (PNP-MG) to establish a Special Boat Unit to operate and provide law enforcement services throughout the Sulu Sea.

To support the unit, JIATF West built boat maintenance and operations facilities while ICITAP, using funding provided by the U.S. State Department's Bureau of International Narcotics and Law Enforcement (INL), oversaw the construction and delivery of six state-of-the-art patrol craft. In addition to investing in infrastructure, JIATF West also provided yearly training in maritime

law enforcement, operations and small craft maintenance.

The training provided by JIATF West alternated between counterdrug and maritime law enforcement skills, leveraging the expertise of U.S. personnel to provide advanced training and, more important, to develop PNP officers as instructors to

support their own long-term training requirements.

The PNP Maritime Group Special Boat Unit was renamed in 2014 to what is today the Maritime Special Operations Unit (MSOU). It is leading the way in law enforcement capability with over 250 officers patrolling a more than 900-kilometer arc of the Sulu Sea.

ENHANCING INTEROPERABILITY

To date, JIATF West has organized more than 20 counter narcotics and maritime law enforcement training events and helped build seven maritime police outposts and stations in the Sulu Sea region. More than 900 officers of the PNP and the Philippine Coast Guard have expanded their skills through these efforts. The development of PNP

officers as instructors for their own training, as well as the JIATF West investment in a Law Enforcement Training Center on Palawan, means the PNP owns its future and can develop its own training programs to sustain the force in the long term.

“This kind of training really improves our interoperability with other agencies involved in the region,” Police Superintendent Osmundo Dupangan Salibo, chief, 2nd Maritime Special Operations Unit, said during a JIATF West Maritime Skills Training event with the MSOU in December 2015. Senior Airman Michael Connors, U.S. Air Force, American Forces Network Pacific, interviewed Salibo, who has been in charge of the MSOU 2nd Unit since December 2012.

To date, the MSOU is credited with more than 400 arrests and 22 criminal vessels seized for forfeiture. They are also credited with the seizure of criminal contraband and assets valued at more than U.S. \$2 million. The success of the MSOU goes far beyond thwarting drug smugglers and terrorist groups. The joint training and infrastructure projects have generated numerous ancillary benefits to the environment and people in the region. There have been 298 rescues at sea of people in distress and ongoing disruption of illegal fishing and poaching of sea life.

From 2013 to 2014, the MSOU helped support the PNP-MG with the seizure of endangered wildlife, including the rescue and capture of approximately 900 sea turtles and over 9,000 marine turtle eggs. In 2015, the United Nations Environment Program presented

the Asia Environmental Enforcement Award to the PNP-MG, Police Senior Superintendent Jonathan Ablang and Salibo, in the Combating Wildlife Crime category.

The efforts of the Philippine government, with help from JIATF West, ICITAP and INL, to develop this highly skilled MSOU is the result of their commitment to maintain security in the Sulu Sea. According to U.S. Navy Cmdr. Jeffrey Scudder, former director of operations at JIATF West, “These successes don’t happen overnight. It takes a long-term programmatic commitment. We have had a great relationship with the Philippine government and Philippine National Police Maritime Group that has made this effort possible. JIATF West and the U.S. interagency will continue to work alongside our Philippine law enforcement counterparts to meet the challenges and threats of the future.”

JIATF West is optimistic about the future in the Sulu Sea and hopes to continue to work alongside Philippine law enforcement counterparts to meet the challenges in the region. □

Philippine National Police take part in counternarcotics training organized by Joint Interagency Task Force West.

CAPT. JASON LANORE/U.S. ARMY

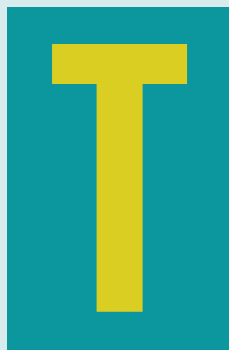




THAILAND AND JAPAN

share mutual affection that is rare in Asia

THE ASSOCIATED PRESS



hailand is smitten by Japan: Sushi restaurants fill the malls, Issey Miyake's luxury "Bao Bao" bags are all the rage, and Thai tourists are flocking to Japan in record numbers to visit a country many view as a role model.

"I love Japan. They really put their heart into whatever they do," says Aunyawee Sahachalermpat, 26, who has traveled to Japan more than a dozen times since studying there five years ago. She owns at

least 10 Comme des Garçons shirts, another popular brand that sounds French but is actually Japanese.

Like many Thais, she loves Japanese food and admires the quality of its products and its advanced, orderly economy that retains a respect for tradition. "We look up to them," she says.

MUTUAL AFFECTION

Japan, too, has a soft spot for Thailand, although it doesn't loom nearly as large in the public mind. It's seen more as a warm, easygoing tourist spot — a welcome break from Japan's often onerous social codes — and a vital production and export hub for more than 4,500 Japanese companies, including behemoths such as Toyota, Honda and Canon.

All this has resulted in a mutual affection between these two nations that's rare in Asia, where historical, political and territorial tensions often complicate ties.

Typical of many in her generation, Aunyawee traces her positive feelings to watching Japanese cartoons such as *Doraemon* and *Sailor Moon* as a child. As an adult, she instinctively trusts anything "Made in Japan" and admires the courteous, subdued manners of many Japanese — widespread sentiments among Thais.

Economic and bureaucratic changes have helped foster these ties. In 2013, Japan waived visas for Thais for up

to 15 days, prompting tourist numbers to surge to nearly 800,000 in 2015, up fivefold from 2011.

As Thai incomes have grown and budget carriers such as AirAsia have intensified competition, trips to Japan have become more affordable. Likewise, Japanese tourists can now fly from Tokyo to Bangkok for about the same price as to Okinawa, in southern Japan.

These two peoples seem to have a cultural affinity — a gentleness, an aversion to conflict and an emphasis on proper etiquette — that creates a sense of familiarity and safety.

COMPELLING DIFFERENCES

Yet, there are still enough intriguing differences to make the other culture appealing in a nonthreatening way.

Buddhism, for example, has influenced both countries, although in Thailand it plays a more overt role and it is epitomized by brilliantly colored temples and monks in orange robes, while in Japan it takes on a more subdued form. Both countries have royal families, although the Thai king holds greater sway over society than the emperor does in Japan.

“There’s a kindred feeling” with Thais, more so than with other Asians, said Mariko Uehara, an English instructor from Chigasaki, southwest of Tokyo, who recently visited Thailand for a second time since 2012. “We have something in common that makes us feel secure.”

Some 1.38 million Japanese tourists came to Thailand in 2015, a similar level to previous years.

Japan and Thailand aren’t encumbered by historical baggage that has strained ties with their respective neighbors.

Tokyo’s ties with China and South Korea are tainted by territorial disputes and lingering resentment over Japan’s aggression before and during World War II. After briefly resisting Japanese troops, Thailand formally became an ally of Tokyo during most of the war and served as a supply base and so suffered less. Japan’s infamous “death railway” in western Thailand was built by British, U.S. and Australian prisoners of war and thousands of other Asians.

CHARM CULTURE

Japan’s rosy image in Thailand has been partly shaped by popular books, TV dramas and movies.

Khu Kam, a novel that has been made into movies many times — titled *Sunset on the Chaophraya* in English — depicts a wartime romance between a Japanese naval officer and a Thai woman in the resistance. He manages to win her over before being killed.

Japanese food, once considered a delicacy in Thailand, has become more affordable and popular as more than 2,300 Japanese restaurants have opened up across the country, tripling since 2008.

Now a top reason Thais want to go to Japan is to eat authentic Japanese food — in Japan.

Chaitee Tandhanskul, a 29-year-old manager in his family’s chemical business, says he makes bookings at restaurants in Japan weeks ahead of time and bases his itinerary around those reservations.

“I’ve traveled many times to Japan just for the culinary experience,” he said.

ECONOMIC TIES

The two countries’ economies have become increasingly intertwined.

Thailand’s importance to Japanese manufacturers was made plain when severe flooding in Thailand in 2011 swamped many factories and suppliers, disrupting markets as far away as Chicago and London, Japanese Ambassador Shiro Sadoshima said.

“We need to think in terms of being in the same boat as they are — that whatever Thailand is doing well is good for

Japan, too,” said Sadoshima, who was surprised to find a big Ippudo restaurant in Bangkok serving ramen noodles native to his home island of Kyushu.

“It’s bigger and grander than the main shop in Japan,” he said.

Kazue Takenaga moved with her three children to Bangkok in 2014 to escape the growing educational and social pressures facing her family, especially her 11-year-old daughter. Her

husband had car parts factories in Thailand, so she decided to move here

and enroll her children in an international school because the country and environment seemed more accepting and diverse than Japan, and yet also familiar.

“It’s so good that we came to Thailand,” she said. “Our family’s overall health is much better. The lifestyle is much easier here. The thought of returning to Japan is daunting.”

Thais, meanwhile, want to see and experience things in Japan they can’t at home, like snow, cherry blossoms and colored autumn leaves — without traveling all the way to Europe or North America, said Tanong Prakuaptanon, who runs a “Japanthaifanclub” Facebook page, which has tips for travelers and more than 230,000 followers.

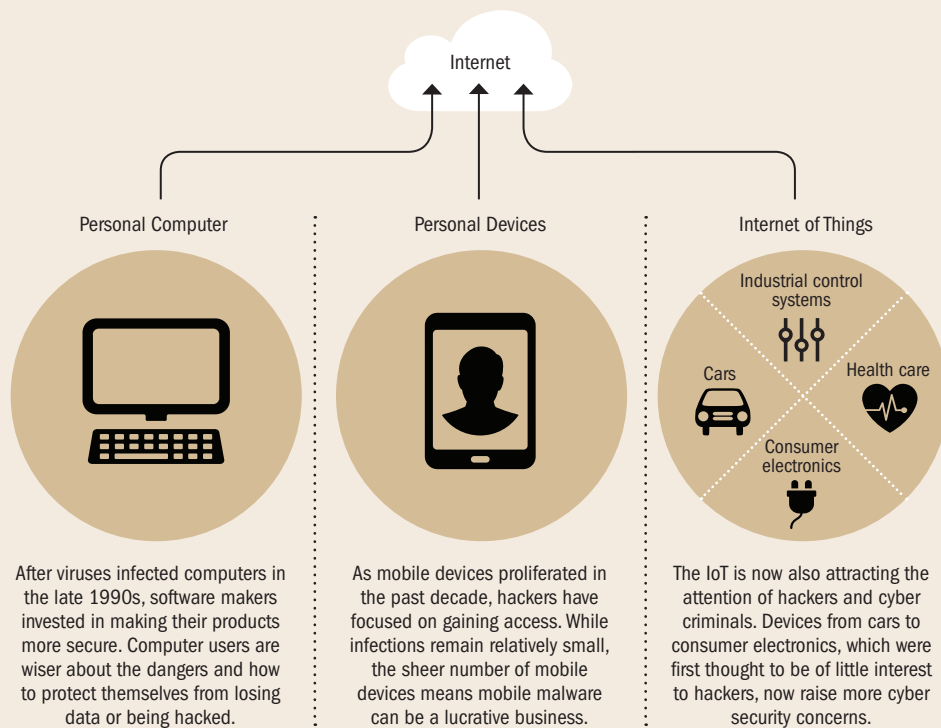
“It’s different, but not too foreign,” he said. “It’s a dream destination.”



Thai shoppers pose with sumo wrestler statues on a Japanese-themed floor of a Bangkok shopping mall. THE ASSOCIATED PRESS

Hacking Via the Internet of Things

The internet of things (IoT) is a term used to describe devices connecting to the internet that aren't primarily computers — anything from a hydroelectric turbine to a toaster. There are billions of such devices and because of poor security practices, they're increasingly becoming the target of hackers — especially those wanting to create a network of compromised devices, or botnet.



PRODRONE

TWO-HANDED DRONE

The Japanese company Prodrone has released what it calls "the world's first dual robot arm large-format drone" with the ability to carry heavy objects and perform detailed tasks.

The PD6B-AW-ARM drone weighs 20 kilograms and can carry objects with a maximum weight of 10 kilograms. It can fly for up to 30 minutes, with a maximum forward speed of 60 kilometers per hour and a maximum operating altitude of 5,000 meters.

Its two remotely operated, five-axis robotic arms are able to grasp objects varying in shape and size and have the ability to cut cables, turn dials or flick switches. The drone is also designed to be useful in performing tasks that are perilous for humans, such as retrieving hazardous materials or objects at high altitude.

The company said the industrial and commercial drone market is focused on using unmanned aerial vehicles (UAVs) for photography and filming, mapping and surveying sites, but it has not met strong demands for UAVs with carrying and transporting features.

The PD6B-AW-ARM was unveiled at the InterDrone show in Las Vegas, Nevada, but no pricing details have been announced. Reuters

FORUM ILLUSTRATION

Making smart devices SECURE

Recent cyber attacks harnessing everyday devices such as cameras, video recorders, printers, routers and speakers are a wake-up call to the hidden dangers of the internet of things (IoT).

The problem for the device makers, though, is that few are well-equipped to tackle the unfamiliar task of foiling hackers.

"The harsh reality is that cyber security is not even on the radar of many manufacturers," said Trent Telford, CEO of Covata, an internet security firm. "Security will eventually become more of a priority, but it may well be too late for this generation of IoT users."

Up to 30 billion devices are expected to be connected to the internet by 2020 — all potentially vulnerable.

The danger was highlighted when hundreds of thousands of consumer devices were harnessed recently into so-called botnets, launching attacks on target websites, including PayPal, Spotify and Twitter.

Cyber security experts say this is just the beginning, but a handful of industry groups are emerging to focus exclusively on security.

Refiti set up IoTSec Australia in 2016 to work with entrepreneurs, while U.K.-based IoT Security Foundation has chipmaker ARM, Huawei and Philips among its members.

Its main goal, says founder John Moor, is to simplify guidance so engineers actually read it. The foundation is releasing its first best-practice manual, condensing a more than 300-page industry document to just 30 pages.

"The challenge is more than the technical challenge" for these companies, said Moor. "You can put in security features, but do you have the right processes in place, are you doing the right things?" Reuters

DNA Research Sparks Ethical Debate

AGENCE FRANCE-PRESSE

Scientific techniques that can wipe out invasive species or alter mosquitoes' ability to carry disease are advancing, raising concerns about the ethics of permanently changing the natural world, experts say.

This fast-moving field of science — which involves changing the biology of creatures by interfering with their DNA — is increasingly being debated not only for human health purposes but also in conservation circles. Perhaps the most controversial type of research is known as a “gene drive,” which ensures that a certain trait is passed down from parent to offspring. It eventually leads to genetic changes throughout the entire species.

Projects being considered include one to populate islands with altered mice that will only bear male offspring, ensuring an end to future generations, scientists said at the International Union for Conservation of Nature (IUCN) World Conservation Congress. Another idea is to save endangered birds on the Hawaiian islands by releasing altered mosquitoes that cannot carry avian malaria.

Other approaches, such as the Oxitec mosquito developed by Intrexon, is not technically a “gene-drive” approach but would cut down on the population of mosquitoes by introducing altered males whose offspring cannot survive.

Proponents of gene-drive technology say it eliminates the need for polluting pesticides and could offer a more effective remedy against invasive species

than any tool on hand. Opponents, however, fear the impacts of permanently altering life forms on Earth and the unknown — and likely irreversible — effects on Earth's creatures and its ecosystems.

Kevin Esvelt, an assistant professor at the Massachusetts Institute of Technology, is among the first scientists to propose using gene-editing, or CRISPR (clustered regularly interspaced short palindromic repeats) technology, to alter species. He is also one of the most cautious voices on its potential uses.

“As a scientist who worked on it, I am particularly concerned because we scientists are ultimately morally responsible for all the consequences of our work,” Esvelt said at a panel discussion at the IUCN meeting.

“It should be a requirement that no one gets to build a gene drive or any technology designed to alter the shared environment in a laboratory without making their proposals public first,” he said.

“If something goes wrong in the laboratory, it can affect people outside the laboratory,” Esvelt added. “That means if you do it behind closed doors — as is traditional in science — then you are not giving people a voice in a decision that might affect them.”

He also said the current regulatory environment is “all based around release. And not really stringent enough, frankly, if you ask me.”

Others at the same panel, however, called for quick action to save imperiled species from invasive species and disease before they disappear forever.

Members of the IUCN voted for caution on gene-drive technology at the ongoing World Conservation Congress, a meeting of environmentalists and heads of state from around the world in September 2016.

A nonbinding motion was adopted that called for IUCN members to refrain “from supporting or endorsing research, including field trials, into the use of gene drives for conservation or other purposes” until a rapid assessment, due by 2020, is completed.

British primatologist Jane Goodall and dozens of other environmentalists and scientists have signed an open letter expressing concern about the use of gene drives in military, agriculture and conservation. The letter calls for a halt to all proposals for the use of gene-drive technologies, “given the obvious dangers of irretrievably releasing genocidal genes into the natural world.”



Asian tiger mosquito
ISTOCK

INDIA'S GLOW-IN-THE-DARK COWS

Police in central India are sticking glow-in-the-dark strips on the horns of stray cattle to prevent motorists from crashing into the animals as they wander across roads at night.

After a spate of road accidents, traffic police in one district of Madhya Pradesh state stuck orange reflective bands on the horns of 300 cows and bulls to help drivers spot them.

Stray cattle are a major traffic menace in India, with hundreds of bovines roaming freely on roads across the country.

Kailash Chauhan, traffic police inspector for Balaghat district, said: "Many drivers injured themselves or killed the cattle after running over them at night. There was an urgent need to prevent such accidents."

Because of the success of the scheme, officers said they now plan to purchase permanent reflective paint to cover cows' horns, because the plastic bands only last for a few weeks.

In 2015, more than 550 people were killed in India in accidents involving stray animals, according to road ministry figures. *Agence France-Presse*



AFP/GETTY IMAGES



ISTOCK

NEW ZEALAND LIBRARY SHELVES ANNOYING 'MOSQUITO' DEVICE

A New Zealand library that went beyond stern looks from librarians to ensure peace and quiet has turned

off a "mosquito" device after drawing criticism for targeting young people with an annoying, high-pitched buzz.

The Papanui Library in the South Island city of Christchurch installed the device, which produces a high-frequency buzz that can be heard apparently mainly by people under 25, to deter youths from loitering outside and intimidating library users.

The library agreed to evaluate use of the device after receiving criticism from the public and rights activists.

"Libraries should be places where children and teenagers are welcome, not excluded by deliberately making them uncomfortable," Thomas Beagle, the head of the New Zealand Council for Civil Liberties, said in a statement on his website condemning the device.

The Council of Europe said in 2010 the mosquito device was a breach of human rights and anti-torture conventions. It also raised potential health problems that could arise from exposing children and babies to high-frequency sounds.

Despite shelving the device for now, the library said it had worked. "Recent customer feedback said the device has helped to manage the behavior, and customers feel safer entering our libraries," Carolyn Robertson, head of libraries at the Christchurch City Council, said in an emailed statement.

Reuters

ORPHANED BABY KOALA FINDS FLUFFY FRIEND



THE ASSOCIATED PRESS

An orphaned koala in Australia found solace cuddling a stuffed toy companion in the absence of his mother as he recovered from the trauma of her death.

Shayne's mother was killed by a car in September 2016 in Queensland state as the 9-month-old clung to her back.

Rescuers found the joey had been thrown 20 meters down the road by the impact and was being chased by crows.

The baby was taken to the Australia Zoo Wildlife Hospital, run by the family of "Crocodile Hunter" Steve Irwin, where doctors said the marsupial was overcoming his

terrifying ordeal with the help of a toy koala as he learns to be independent.

At the hospital, Shayne, his black button nose and bushy ears visible above the soft pink blanket he was swaddled in, clung onto the back of the toy koala as he might his real mother.

"It's very fortunate that we had an observant rescuer who found Shayne and brought him into us because he wouldn't have lasted even a day in the wild by himself at his young age — now he gets a second chance at life," hospital director Rosie Booth said. *Agence France-Presse*

BALANCING ACT



Indian Army Soldiers from the famed daredevil team perform at an event honoring the 8th Mechanised Infantry, 7 Punjab, in September 2016. The battalion was celebrating its 75th anniversary during its Platinum Jubilee at Khasa, 15 kilometers from Amritsar. The unit was raised May 5, 1941. It participated in the Burma campaign of World War II and all of India's major operations after the country gained independence in 1947.

Photo By: **NARINDER NANU** | AFP/Getty Images

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