Research Report

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Russia's Growing Presence in Africa

A Geostrategic Assessment

Russia is expanding its presence in Africa. Although there is a growing mass of micro-level reporting on Russian activity on the continent, U.S. Air Forces Africa (AFAFRICA) has lacked an overall geostrategic picture of this activity and what it portends for the command's objectives in the region. The authors of this report provide such a picture and derive from it several implications for AFAFRICA's regional strategy.

KEY FINDINGS

- Russia's presence in Africa is very limited. Because Moscow strategically withdrew from the region from 1990 to 2015, recent growth in Russian activity started from a very low baseline and remains modest compared with that of the United States and China.
- There is little evidence that the Kremlin has a grand plan for Africa. Because the continent remains peripheral to Russian grand strategy, Moscow's approach in Africa is essentially opportunistic.
- Russia's future activity pattern in Africa could be predicted by identifying where Russian power brokers are most likely to find conducive conditions: preexisting government and commercial relationships, lucrative opportunities in extractive industries, local elites seeking external sponsorship, and opportunities to burnish Russia's great power credentials.
- Moscow will continue to find such opportunities across a wide swath of the continent, but conditions will be especially ripe in North Africa, particularly in Libya, Algeria, and Egypt.
- Given the areas of greatest potential overlap between Russian opportunities and AFAFRICA priorities, Libya, Algeria, and Egypt are the three most likely arenas for strategic competition and entanglement between Russia and the United States in Africa.
- AFAFRICA should adopt a *Compete and Disentangle* approach to Russian activity in Africa: Compete where Russian activity jeopardizes key U.S. strategic objectives, primarily in North Africa, and focus on disentangling U.S. operational forces from Russian operational entities elsewhere, primarily in Central and West Africa.

Abbreviations

AFAFRICA	U.S. Air Forces Africa
CAR	Central African Republic
DAFIF	Digital Aeronautical Flight Information File
DoD	U.S. Department of Defense
DRC	Democratic Republic of Congo
FMTD	Foreign Military Training Database
GRU	Main Directorate of the General Staff of the Armed Forces of the Russian Federation
IATA	International Air Transport Association
IISS	International Institute for Strategic Studies
MFA	Ministry of Foreign Affairs of the Russian Federation
OEC	Observatory of Economic Complexity
OECD	Organisation for Economic Co-operation and Development
PMC	private military company
RAGAT	Russia Africa Geostrategic Assessment Tool
SIPRI	Stockholm International Peace Research Institute
TIV	trend-indicator value
USAF	U.S. Air Force
USAFE	U.S. Air Forces in Europe
USAFRICOM	U.S. Africa Command

We aim to address the following research questions:

- Where are Russian commercial, diplomatic, military, and paramilitary actors involved in Africa?
- Where are these actors likely to become involved in the near future?
- How might Russia's evolving pattern of activity in Africa affect AFAFRICA's regional strategy, and what can the command do to mitigate those effects?

Methodology

This is a geostrategic assessment of Russian activity in Africa that aims to help U.S. Air Forces Africa make sense of the growing mass of often contradictory micro-level reporting on Russian involvement on the continent.[1] We adopt an inductive assessment approach, in which the probable patterns of future Russian involvement in Africa are derived from the observable patterns of recent growing involvement. To that end, we assembled data on Russian activity from a wide variety of sources, then employed innovative visualization techniques to analyze geostrategic patterns in the data with the goal of creating a "mental map" heuristic to help AFAFRICA interpret the emerging patterns of Russian behavior in Africa.

In defining these geostrategic patterns, we focused on the factors commonly highlighted by U.S. policymakers and analysts as key drivers of Russian involvement in Africa: historical and current physical presence; projects and opportunities in extractive industries; diplomatic relationships; and military and paramilitary assistance and operations (Russell and Pichon, 2019; Stronski, 2019; van Eyssen, 2019; Waldhauser, 2019). We assembled 20 key data sources across these commercial, diplomatic, military, and paramilitary domains (Figure 1). The data sources ranged from widely known World Bank trade databases to commercial flight plan and passenger records, corporate and financial reports, and Russian and English media reports.[2]

There were multiple alternative data sources that we could have chosen in each domain. In areas with a single credible source that could be easily collected, we typically went with that source option.

FIGURE 1
Data Sources by Functional Area

	Demographics	International Air Transport (IATA) boarding pass database	2016–2018
		FlightAware commercial itinerary database, Russia-originating flights	2014–2018
	Trade Flows	World Bank Integrated Trade Solutions database, annual trade flows	2014–2018
		Massachusetts Institute of Technology Observatory of Economic Complexity, composition of trade flows	1990–2018
	Commercial Projects	Russian corporate and financial documentation	2008–2018
		Russian, European, and U.S. media reporting on commercial projects	2008–2018
	Diplomacy	Ministry of Foreign Affairs of the Russian Federation (MFA) database, agreements in force	1926–2019
		Stanford CodeX database, legal and corporate documents	2010–2019
		Organisation for Economic Co-operation Development (OECD) official development assistance database, annual global flows	2013–2018
	Military Assistance	Stockholm International Peace Research Institute (SIPRI) arms transfer registers and database	1950–2017
		Russian, European, and U.S. media reporting on arms and assistance	2010–2018
		Eksport vooruzheni, Russian defense industry journal archives	2010–2018
		International Institute for Strategic Studies (IISS) *Military Balance*, material inventory data	2015–2018
	Operational Presence	Russian, European, and U.S. media reporting on operations and private military companies (PMCs)	2005–2019
		Sayari Analytics, financial intelligence database	2013–2018
		Aeron aircraft beacon data, all Russian flights by aircraft registration	2014–2018
		Russian, European, and U.S. think-tank reports on operations and PMCs	2000–2019
	U.S. Air Forces in Europe (USAFE)	Unclassified U.S. Department of Defense (DoD), U.S. Air Force (USAF), and U.S. Africa Command (USAFRICOM) guidance documents	2015–2018
		RAND Foreign Military Training Database (FMTD)	2010–2017
		Air Mobility Command's Digital Aeronautical Flight Information Files (DAFIFs)	2013–2018

SOURCE: Data drawn from various sources as indicated in report and collated in RAND Corporation, Project AIR FORCE, *Russia Africa Geostrategic Assessment Tool (RAGAT)*, database, undated, Not available to the public.

The Trade Flows, Diplomacy, and Military Assistance domains fit this description. In areas with no single credible database, such as the Operational Presence and Commercial Projects domains, we constructed individual databases from scratch by collecting large sets of individual data points, scrutinizing those points carefully for internal validity, and comparing them with observations available from other sources.[3] In some cases, such as media reports on Russian PMC activities in the Operational Presence domain, filtering and validation were painstaking processes of evaluating the credibility of each author, comparing reports across sources, and assigning an explicit credibility estimate using the estimative probability framework used in National Intelligence Estimates (Friedman and Zeckhauser, 2015).[4] One upshot is that the remaining additional data sources could be explored profitably to extend this work.[5]

Once each source was filtered and validated, these data were integrated into a custom software tool, called the RAGAT, which we created for this project. In essence, RAGAT is a cross-referential database of all of the data sources.

The conceptual diagram in Figure 2 depicts how RAGAT works. As listed on the left side of the figure, data from the 20 validated data sources, plus from

diaspora literature, are fed into the tool as inputs. As illustrated in the middle of the figure, seven concentric rings of trend lines correspond with the seven functional layers of data. The concentric rings represent broad categories of activities within each functional domain. The data on these activities can be combined within each domain and also "sliced" across the layers of domains as desired. The seven rings, or functional layers, are color-coded from the outside in (with the innermost, or eighth, ring representing the countries of Africa themselves).

From the outside in, the seven functional layers in Figure 2 are as follows (in keeping with the data categories in Figure 1):

- demographics (including the private presence of Russian nationals in Africa)
- trade flows
- commercial projects
- diplomacy
- military assistance
- operational presence (of both uniformed Russian personnel and PMC activities on the continent)
- USAFE (presence and operations).

RAGAT allows each of these layers to be displayed, individually or combined, across any portion of the continent. Thus, any number of data layers can be consolidated and displayed for any number of countries. In this way, a "wedge" can be carved out for any individual country or regional group of countries across any number of the functional layers. The data from the selected wedge can then be displayed on the map of Africa. This versatility of the tool—to slice the data either by pulling from the concentric rings or by carving from the outside in or both—allowed us to compare and contrast Russian activities across functional domains, drill down into particular regions and countries, and develop an understanding of the underlying patterns beneath the surface-level data.

The map images on the right side of Figure 2 depict various RAGAT outputs that will be explained later in this report. As suggested by this panel of maps, the RAGAT data can be displayed by country, by functional layer, or by any combination of countries and layers.

RAGAT also enables analysts to display georeferenced data in several different forms on a base map of the African continent, as suggested by Figure 3. The tool can display one or more data sources not only as country-level shadings and country-level symbols but also as individual geographic points, air traffic pathways, aeronautical range arcs, and other geospatial forms. The color-mapping function can be assigned to more than 50 color gradients, which can be either sequential, cyclical, ascending, or descending. Data can be scaled linearly, logarithmically, or by square root. Individual maps can be saved as portable network graphic files or as unique web addresses to facilitate distributed collaboration.

We employed RAGAT to construct a series of maps that progressively accumulate to an integrated geostrategic picture of Russian involvement on the continent of Africa. The series includes maps devoted to each of the functional domains (again, including private Russian presence, trade flows, major commercial projects, diplomatic posture, military assistance activity, uniformed Russian military activity, and paramilitary operational activity).[6]

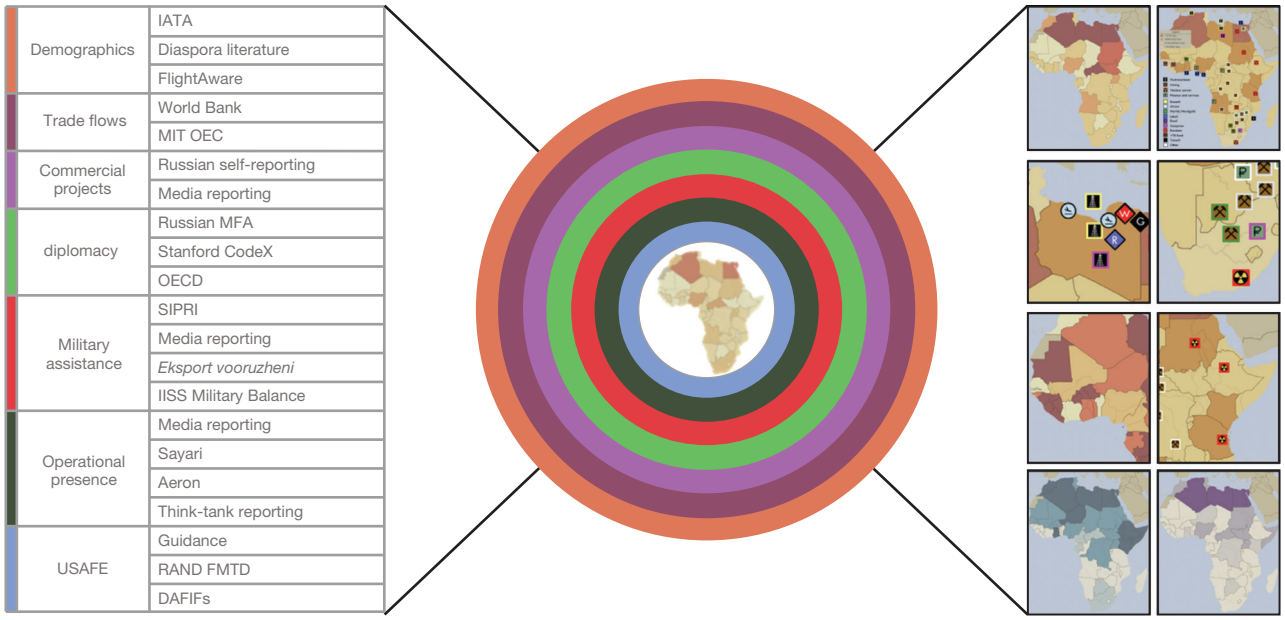
The following sections each describe one domain and provide at least one map of Russian activity in that domain. Those individual map layers are then integrated into an overall map of current Russian involvement.

We then assess the potential for Russia to become more involved in African countries where it is not currently active by identifying states with political systems that are conducive to Russia's current mode of personalized, patronage-driven engagement. The data on current Russian activity and potentially receptive future locations are then combined to produce an integrated assessment of likely future locations for Russian involvement.

Finally, this geostrategic picture of Russian involvement is combined with a visualization of AFAFRICA's involvement on the continent to identify where Russian activity is most likely to spark competition or entanglement between the forces of the two nations. The final visualization, which highlights the intersections or overlaps between potential Russian and U.S. involvement in Africa, leads to our recommendations for AFAFRICA.

FIGURE 2

Conceptual Diagram of the Russia Africa Geostrategic Assessment Tool

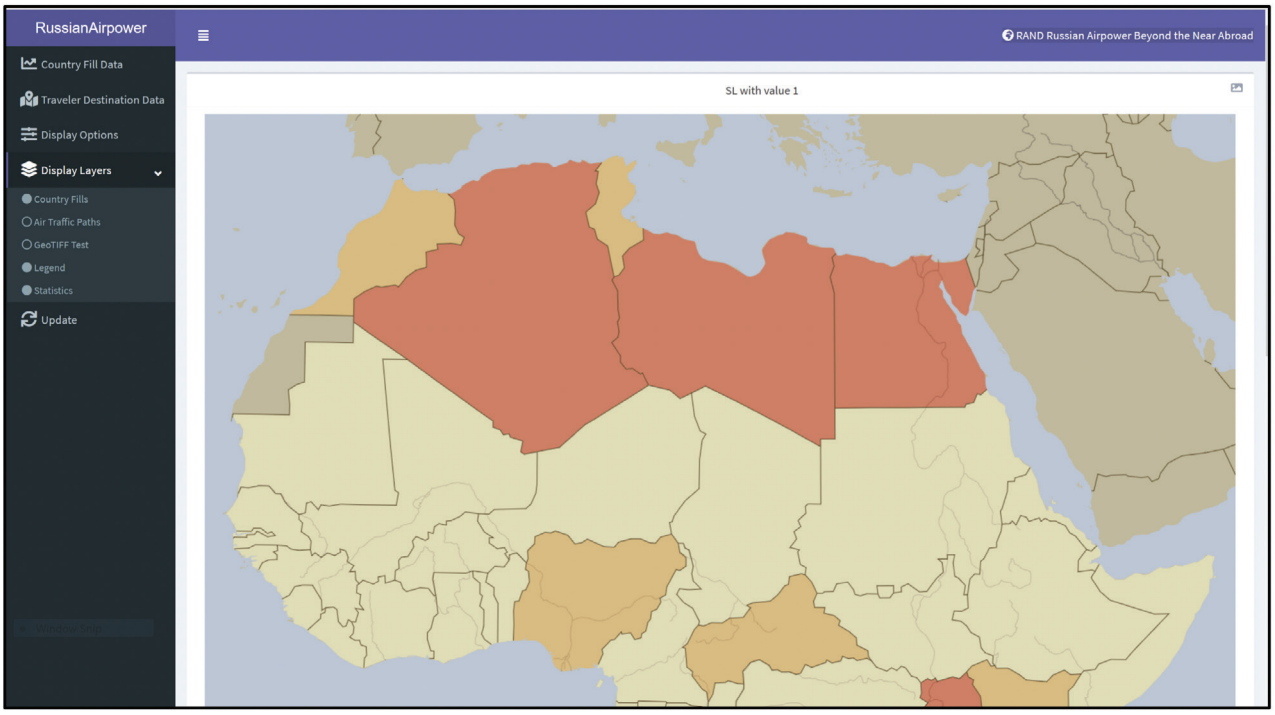


Demographics	IATA
	Diaspora literature
	FlightAware
Trade flows	World Bank
	MIT OEC
Commercial projects	Russian self-reporting
	Media reporting
diplomacy	Russian MFA
	Stanford CodeX
	OECD
Military assistance	SIPRI
	Media reporting
	Eksport vooruzheni
	IISS Military Balance
Operational presence	Media reporting
	Sayari
	Aeron
	Think-tank reporting
USAFE	Guidance
	RAND FMTD
	DAFIFs

SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.
NOTE: OEC = Observatory of Economic Complexity.

FIGURE 3

Screen Capture from Russia Africa Geostrategic Assessment Tool



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

Russian Demographics in Africa

The first map focuses on Russian demographics in Africa as a possible factor in Moscow's involvement on the continent. The presence of Russian citizens or a Russian diaspora has provided both the means and motive for several of Moscow's external interventions in recent years (Suslov, 2017). Therefore, it is a logical starting point for a geostrategic assessment of Russia in Africa.

Here, we define *Russian individual presence* in Africa as long-term residents and short-term visitors. Because direct census data are not available, we use novel air travel data. We drew primarily on two data sources for this portion of the analysis. The first source was an IATA database on the passport nationality of all passengers disembarking at African airports from 2016 through 2018 (IATA, undated-a).[7] The IATA database tracks virtually all boarding passes issued in the global commercial air system, along with passport nationality for each boarding pass associated with an international flight. Overall, the IATA estimates that approximately 4 billion passengers were carried in the global system in 2018 (IATA, 2018). Of those, approximately 135 million (3.4 percent) passengers embarked or disembarked in Africa.

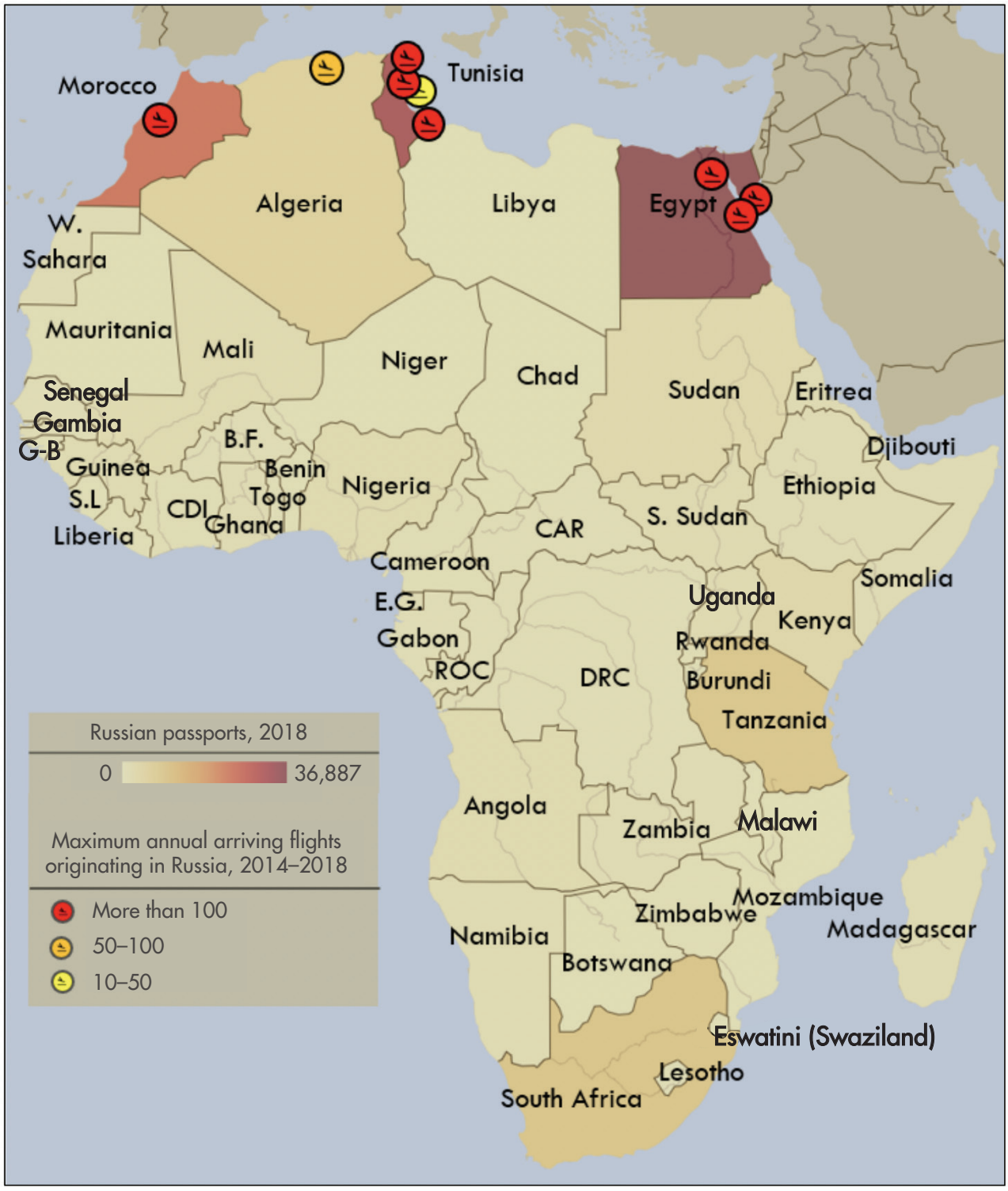
Our second major data source was aircraft flight records from Aireon's FlightAware. Aireon maintains a satellite beacon system that tracks most commercial and contract aircraft flights. The Aireon database yielded information on all flights originating in Russia and terminating in Africa from 2014 to mid-2019 (Aireon, undated).[8] When coupled with IATA data on commercial passengers, Aireon provides a reasonably complete picture of Russian travel to Africa.

Figure 4 depicts the results of this analysis. According to IATA data, 157,000 Russians traveled to the continent in 2018, compared with more than 2 million Americans and 478,000 Chinese. The IATA and Aireon data indicate that Russian visitors are mostly traveling to Egypt, Morocco, and Tunisia. About 37,000 Russians visited Egypt, 35,000 visited Tunisia, and 20,000 visited Morocco in 2018. The Aireon data on flights to Africa from Russia tells a similar story. Between 2014 and 2018, the maximum number of annual flights from Russia exceeded 100 to only three countries in Africa: Egypt, Tunisia, and Morocco. More than 90 percent of flights from Russia to Africa also terminated in those countries (two-thirds in Tunisia alone) in 2018. Sub-Saharan Africa attracted few Russian visitors, (approximately 60,000 visitors spread among 50 countries in 2018), and no airport outside North Africa received more than ten flights from Russia in any of the past five years.

Although Russian citizens and ethnic Russians reside in Africa, there is no cohesive Russian expatriate community that parallels those of Europeans and Chinese in various areas of the continent (Hodzi, 2019).[9] South Africa is a partial exception, where a significant Russian population has waxed and waned since the 19th century. However, the Russian community in South Africa never developed a coherent identity, and the population today is waning again (Russkiy Mir Foundation, 2008). As a result, there is no discernible diasporic aspect to Moscow's policy toward Africa (Arkhangelskaya and Shubin, 2013). In sum, demographics likely are not a driving force behind Russian strategic involvement in Africa, but the concentration of Russian visitors in North Africa could have operational implications during periods of unrest.

FIGURE 4

Russian Demographics in Africa



SOURCES: Data drawn from IATA and Aireon and collated in RAGAT.

NOTES: Boundaries, labels, and abbreviations are not authoritative. B.F. = Burkina Faso; CAR = Central African Republic; CDI = Cote D'Ivoire; DRC = Democratic Republic of Congo; E.G. = Equatorial Guinea; G-B = Guinea-Bissau; ROC = Republic of the Congo S.L = Sierra Leone. Several small island states are omitted from this map and from the analysis that follows, including São Tomé, Cabo Verde, Seychelles, Comoros, and Mauritius.

Russia's Commercial Presence in Africa

Commercial opportunities, particularly in the extractive sector, are widely cited as important drivers of Russia's expanding involvement in Africa (Dettmer, 2019). Because most active Russian companies on the continent are at least partly state-owned and almost all are connected informally to Russian President Valdimir Putin's circle, it is important to map Russia's commercial presence.

For this analysis, we define *commercial presence* in terms of overall trade flows and large-scale commercial projects in the extractive, nuclear, and financial sectors. To measure this presence, we assembled World Bank annual bilateral trade data (2014–2018); corporate documents from Sayari's Analytics Financial Intelligence database (2013–2018); and reports from Russian, European, and U.S. media outlets into an integrated database of Russia's overall trade relationships and large-scale commercial projects in Africa (World Bank and United Nations Conference on Trade and Development, undated; Sayari, undated). The media reporting provided the initial indicator of potential projects, which were then confirmed with Sayari data drawn from corporate documents. Together, they create a reasonably complete database of major Russian commercial projects on the continent. We then analyzed the data to identify strategic patterns.

Russia engages in a comparatively modest amount of trade with African countries, totaling $12.2 billion per year out of a global trade of $587 billion (2.1 percent) in 2018. This compares with $57.1 billion in U.S. trade and $162.9 billion in Chinese trade with African countries (with global totals of $3.95 trillion and $4.1 trillion, respectively). The balance of U.S. trade with African countries is thus nearly five times larger than that of Russia, while the balance of Chinese trade with African countries is more than 13 times larger than that of Russia. The composition of Russia's trade with African countries is similar to European trade—dominated by food imports—rather than to U.S. and Chinese trade with African countries, which is dominated by raw materials and fuels (World Bank and United Nations Conference on Trade and Development, undated).

Figure 5 illustrates the strategic patterns in Russia's commercial presence. The map is shaded by overall trade relationship with each country. Major commercial projects are denoted by icons for the four major categories: hydrocarbons, mining, nuclear power, and finance and services. The icon borders denote company ownership, as indicated by the nine designated Russian companies, plus "other."

Russia's bilateral trade relationships are weighted heavily toward North Africa. Its three largest trading relationships (Egypt, Algeria, and Morocco at $4.4 billion, $1.9 billion, and $1.4 billion, respectively) account for 67 percent of total trade with the continent (World Bank and United Nations Conference on Trade and Development, undated). Russia's trade relationship with Egypt is five times as large as the largest Sub-Saharan trade relationship, with South Africa at approximately $800 million per year.

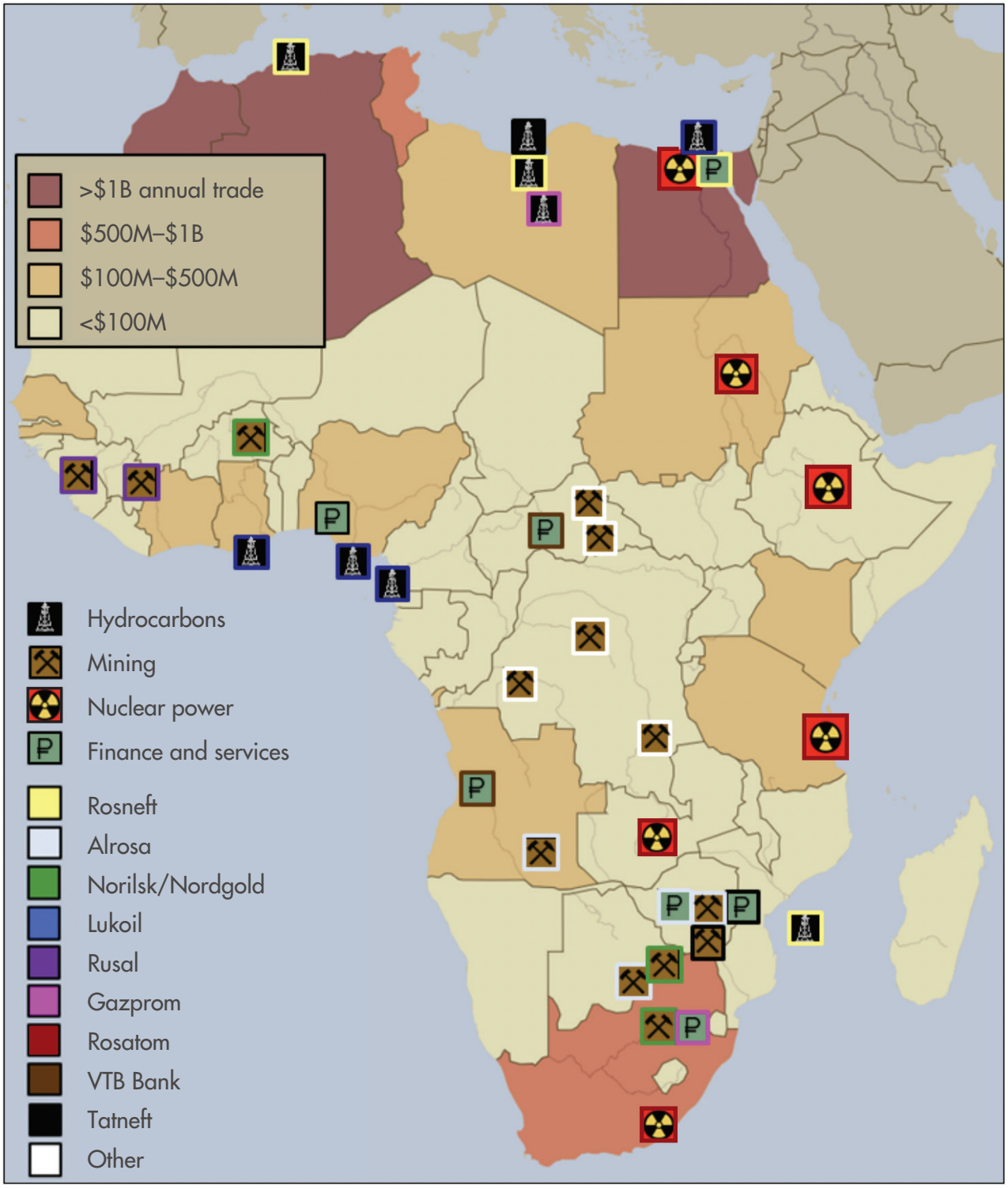
Beyond the general trade patterns, our analysis indicates that Russian commercial entities are engaged in 36 major projects in Africa, including 14 mines and nine hydrocarbon projects. Russian mining projects tend to be concentrated in Central and Southern Africa. The hydrocarbon projects are clustered in the Gulf of Guinea and the Mediterranean.[10]

Strategically, the most significant trend is that Rosneft, Tatneft, and Gazprom—all at least partly owned by the Russian government and run by important members of Putin's patronage network—are carrying out most of the hydrocarbon projects in North Africa. All three have major projects in Libya. Rosneft also has a major project in Algeria. Lukoil, which is less tightly tied to the Kremlin, leads in the less-strategic Gulf of Guinea.

As for the six nuclear power projects, Rosatom owns them all. These projects extend in a southward line from Egypt through Sudan, Ethiopia, Tanzania, Zambia, and South Africa.

FIGURE 5

Russian Commercial Presence in Africa



SOURCES: Data drawn from World Bank Integrated Trade Solutions (undated), Sayari (undated) and media reporting collated in RAGAT.
NOTE: Dollar amounts refer to 2018 U.S. dollars.

Russia's Diplomatic Posture in Africa

We analyzed Russia's current diplomatic posture in Africa, emphasizing on security-related agreements that contain provisions for aviation activity. Bilateral security agreements of this type codify existing cooperation and serve as enablers for expanded cooperation.[11] We also analyzed Russia's recent level of development assistance to Africa.

The MFA maintains a database of bilateral and multilateral agreements to which Russia is a party (MFA, undated). We analyzed this database and found 5,180 total agreements dating back to 1924. As of August 2019, we assessed 29 of those to be active security agreements with African governments, another 12 provisionally active, seven inactive, and eight unratified. To supplement the Russian MFA database, we consulted the Stanford Center for Legal Informatics (CodeX) electronic archive of Russian legal and technical documents (Stanford Center for Legal Informatics, undated). The CodeX database contains 17 million Russian documents, including 28 active security agreements with African governments, two unratified agreements, and one of unclear status.

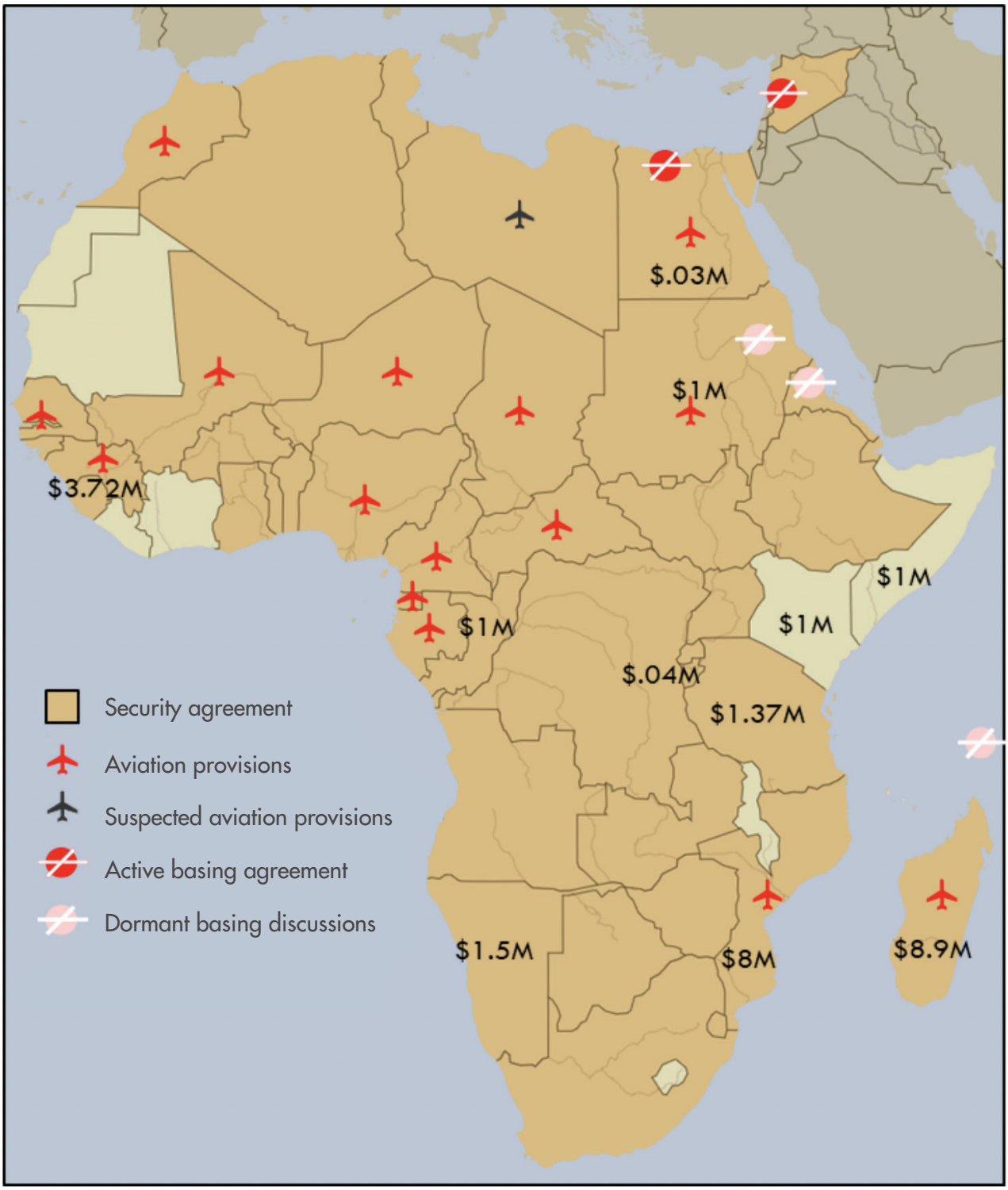
We consolidated the data from the two databases and found evidence that Russia has active security-related agreements with 43 African states (as shaded in Figure 6). Among those agreements, 15 contain provisions pertaining to aviation, marked by red aircraft in the figure. Many of the agreements are general security cooperation framework agreements that foresee some possibility of air domain activity but lack concrete commitments. In addition, we believe one agreement, with Libya, must contain aviation provisions, but we found no direct evidence of such a provision. This diplomatic posture of security-related agreements between Russia and 43 African countries compares with that of 176 security-related agreements between the United States and 49 African countries (Kavanagh, 2014).

To analyze Russian development assistance in Africa, we analyzed the Overseas Development Assistance Database maintained by the OECD. We found that Russia's assistance of this type in Africa was quite modest, totaling $28 million in 2017 from a global overseas development assistance allocation of $734 million. By comparison, the United States in 2017 allocated $11.2 billion to overseas development assistance in Africa, out of a global total of $30 billion. The U.S. global assistance total was 40 times larger than that of Russia, while the U.S. total of assistance allocated specifically to Africa was 400 times larger than that of Russia. The relatively trifling amount allocated by Russia to Africa in 2017 was a striking contrast to the large assistance packages provided by the Soviet Union to some African states during the Cold War.[12]

From a strategic perspective, the most important development in Russia's diplomatic posture in Africa is its reported agreement with Egypt to allow reciprocal access to airfields and airspace. Russian government sources still list the document as a draft, but other sources indicate that the agreement has been signed by both parties. Russia has also reportedly conducted basing and access negotiations with Sudan, Eritrea, and Seychelles, but we assessed all these to be dormant as of August 2019. The various basing negotiations are annotated in Figure 6. The "dormant basing discussion" icon placed in the Indian Ocean refers to Seychelles.

FIGURE 6

Russian Diplomatic Posture in Africa



SOURCES: Data drawn from MFA (undated), Stanford Center for Legal Informatics (undated), and overseas development assistance database maintained by the OECD and then collated in RAGAT.

NOTE: Dollar amounts refer to 2018 U.S. dollars of overseas development assistance.

Russian Military Assistance in Africa

Arms sales, transfers, and other military assistance have long been primary instruments of external powers seeking influence in Africa. The Soviet Union was the most profligate of the external suppliers, providing thousands of aircraft and billions of dollars of support in weapons and training to African partners over the course of the Cold War. Russia has followed that lead in recent years, although on a much smaller scale and on a much more transactional basis, but Russia clearly still seeks influence on the continent via arms sales and support contracts.

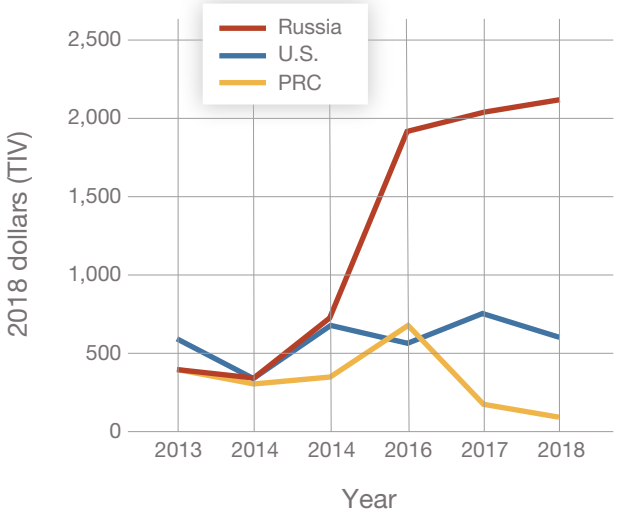
For this analysis, we define *assistance* to include arms transfers of all types (including grants and sales), individual and collective training (whether funded by Russia or the recipients), and advisory assistance provided by Russian military or paramilitary personnel.[13] We analyzed Russian military assistance activity using arms transfer data (1950–2018) maintained by the SIPRI, current fleet data compiled by the IISS, archives of the Russian defense industry journal *Eksport vooruzhenii*, and media and think-tank reporting from Russian, European, and U.S. outlets (SIPRI, undated; Centre for Analysis of Strategies and Technologies, 2010–2018; IISS, 2018).[14] SIPRI provided baseline data, while the other sources provided confirmation and supplementary entries.

Together, these sources make clear that Russian military assistance stands out as an exception to broader trends of limited Russian involvement on the continent. Although Russia is a small player in Africa when measured by visitors, trade, commercial projects, and even diplomacy, it is the leading external power in the domain of arms sales. As Figure 7 indicates, Russian weapons sales and transfers to African countries in recent years have increased from approximately $500 million to more than $2 billion annually, far outstripping U.S. and Chinese transfers both in nominal value and in growth.

Sales to Algeria and Egypt account for nearly 90 percent of Russian arms exports to African countries. Since 2013, Russian transfers to Algeria have totaled more than $4.4 billion for a wide variety of articles, including Su-24 strike aircraft, Su-30MK fighters, Yak-130 trainers, IL-78 cargo aircraft, and S-300PMU and Buk-M2E air defense

FIGURE 7

Russian, U.S., and Chinese Arms Transfers to Africa, 2013–2018



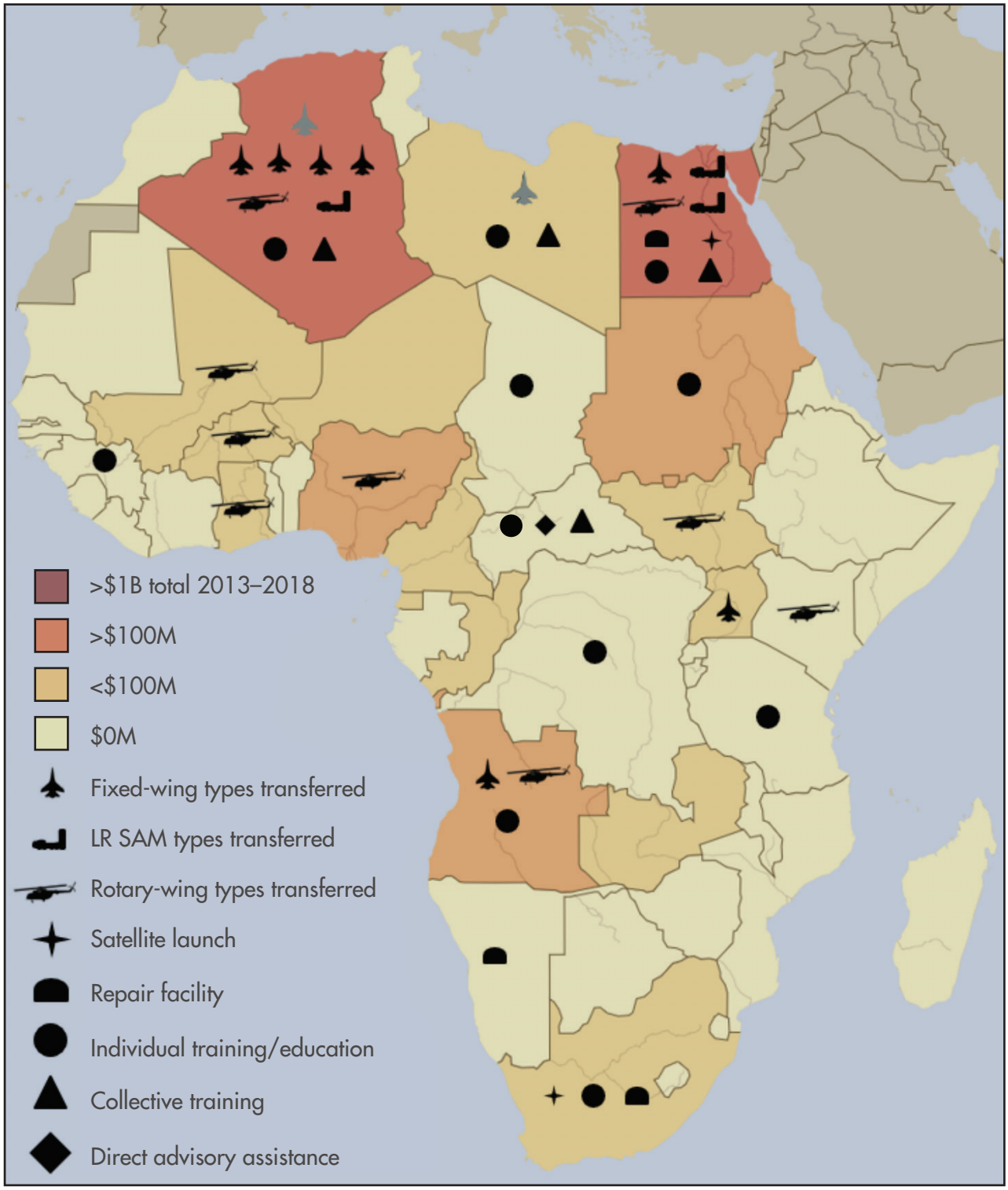
systems. Algeria signed another deal in September 2019 for MiG-29 aircraft projected to be worth more than $2 billion, denoted by the gray aircraft icon in Figure 8. Algeria has reportedly expressed interest in buying U.S. aircraft in the past, but human rights and other policy concerns lead the United States to be reticent about selling lethal systems to Algeria. European governments and Moscow have not been held back by those concerns.

Egypt has purchased roughly $2.2 billion in equipment from Russia over the same period, including MiG-29s, S-300s, and Buk-M3s. Transfers to countries in the rest of Africa have totaled far less than either Algeria or Egypt. Libya signed a deal for Yak-130s in 2010, but this deal has reportedly been put on hold because of the ongoing conflict between the Libyan National Army and the Government of National Accord. This aircraft is also shaded gray. If Russia succeeds in playing kingmaker in Libya, however, the Yakovlev sale is primed to be the Kremlin's first major equipment deal.

The picture is broadly similar for education and training assistance. Although establishing exact dollar figures for Russian training efforts is not possible (given existing data and media reporting), we have assessed that the lion's share of Russian training assistance since 2013 has occurred in Algeria, Egypt,

FIGURE 8

Russian Military Assistance in Africa



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.
NOTES: Dollar amounts refer to 2018 U.S. dollars. LR SAM = long-range surface-to-air missile.

and Libya. There are credible reports of both individual and collective training in all three of these North African states. The Central African Republic (CAR) stands out as the geographic exception, where Russians are conducting individual training, collective training, and direct advisory support to the regime of President Faustin-Archange Touadéra. The remaining examples of Russian training activities on the continent are quite limited and episodic. This compares with the United States, which averages more than $150 million per year in individual and collective training to partners in the USAFRICOM area of responsibility, including virtually all states not subject to United Nations sanctions. This amount does not count the $1.4 billion in security assistance provided by the United States to Egypt each year, the training aspects of which vastly exceed USAFRICOM's total security cooperation resources (Sharp, 2020).

From a geostrategic perspective, the most-notable patterns in Russian security assistance in Africa are the scale and geographic trends depicted in Figure 8. Consistent with demographic and commercial trends, Russian military assistance tilts heavily toward North Africa. Unlike other sectors, however, Moscow's arms sales greatly exceed those of other major powers and continue to grow while those of others stagnate. Algeria, Egypt, Libya, CAR, and, to a lesser extent, Angola emerge in data as key recipients of Russian assistance. Many other African governments have received African materiel and training assistance but generally in small amounts and only episodically.

Russian Operational Activity in Africa

A great deal of misinformation and confusion exists regarding Russian military activity in Africa. The Russian government is sometimes misleading about its presence on the continent, and Russian PMCs are typically circumspect about their operations.[15] Therefore, we adopted extraordinary measures to filter valid reports from speculation, assembling a database of government announcements, media and think-tank reports, corporate and financial documents, and aviation tracking records to corroborate the recent and ongoing operational activity of Russian forces and PMCs in Africa.

The Russian *uniformed* military presence in Africa is currently quite modest. Publicly available data indicate that there is a limited Main Directorate of the General Staff of the Armed Forces of the Russian Federation (GRU) Spetsnaz[16] operation in Libya, supported by one or more staging locations in Egypt's Western Desert (Stewart, Ali, and Noueihed, 2017). The GRU is Russia's Main Intelligence Directorate. The GRU operation is widely believed to be supporting Khalifa Hiftar's Libyan National Army against other factions in the Libyan civil war. It is not clear from open sources whether this presence is steady-state or episodic.[17]

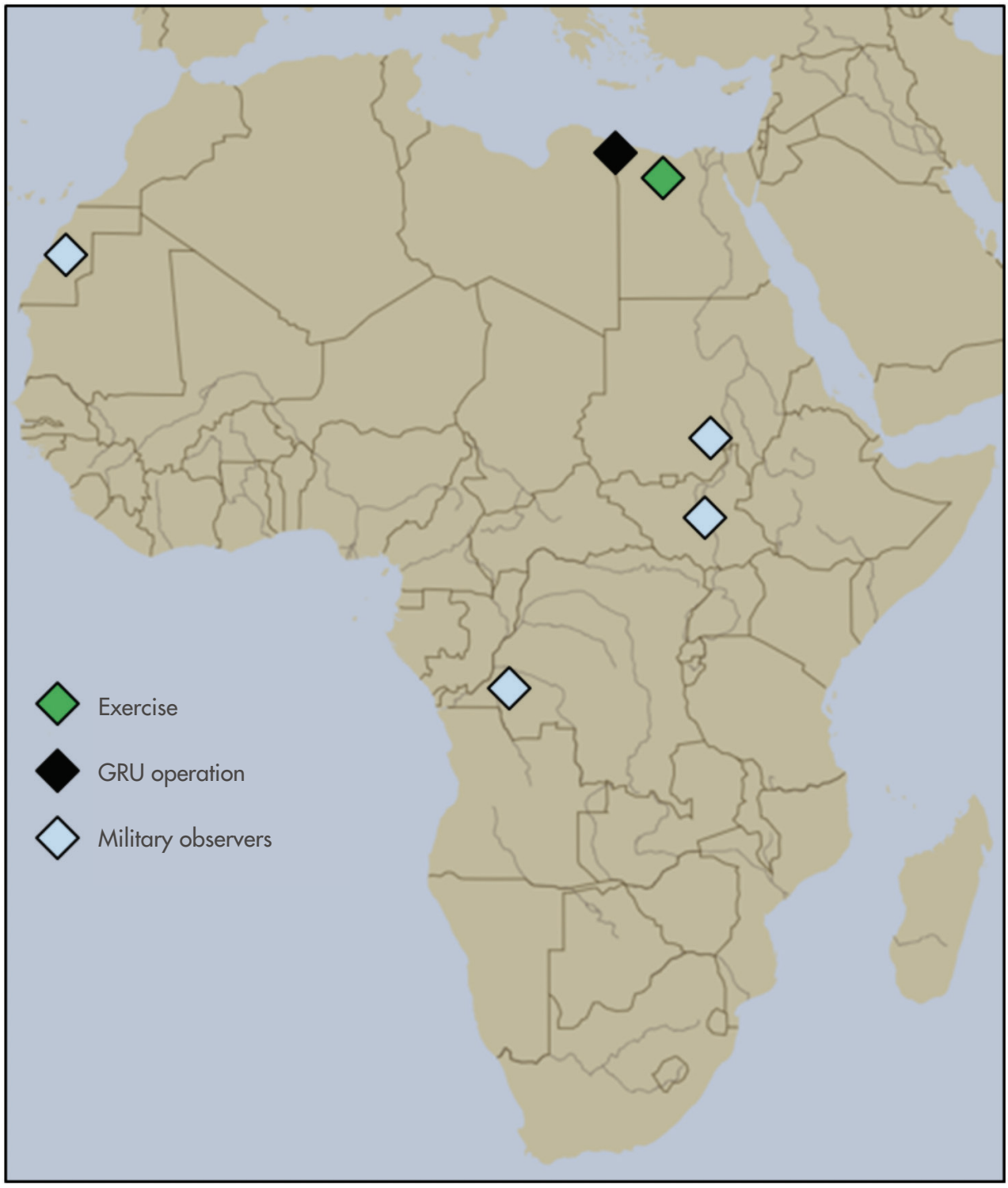
There are also credible reports of a small GRU cadre advising the government and security forces in CAR. The GRU team there appears to be tied into a PMC operation in the same location, as discussed in the next section.

Russian air force and airborne elements also conduct an annual field training exercise, called "Defenders of Friendship," with their Egyptian counterparts. The exercise series, which began in 2016, typically includes a large-scale airborne drop in addition to other collective training events. The 2018 exercise occurred near Cairo; the 2019 version occurred at Ryazan, Russia (Ministry of Defence of the Russian Federation, 2018; Ministry of Defence of the Russian Federation, 2019).

Finally, the Ministry of Defence provided a total of 63 military observers to United Nations peace operations in Democratic Republic of Congo (DRC), Western Sahara, Sudan, and South Sudan.[18]

As Figure 9 might suggest, Russia's uniformed presence in Africa is minimal compared with that of the United States, China, and many European states. For example, both the United States and France have more than 6,000 personnel deployed in Africa. Germany has 1,100 personnel deployed in West Africa, and Italy has 450 deployed to Libya (Gasinska et al., 2019).

FIGURE 9
Russian Uniformed Presence in Africa



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

In contrast with the minimal Russian uniformed military presence in Africa, the Russian PMC activities in Africa are more extensive. After thorough vetting and cross-validation of the available reporting, we assessed that there have probably been at least 34 Russian PMC operations in 16 African countries since 2005 (Figure 10). These 34 are only the Russian PMC operations that we assessed as likely, very likely, or virtually certain. There are reports and allegations of significantly more Russian PMC operations elsewhere on the continent, but we assessed those reports to be less than 60 percent likely to be valid. Thus, we set a relatively high bar for evidentiary proof of the existence of a Russian PMC operation. It is likely that we excluded at least some operations that actually did occur sometime between 2005 and today. On the other hand, given the increased media scrutiny over time, those "missed" operations are likely to have occurred earlier in our period of study.

Most Russian PMC operations in Africa are similar to those conducted by non-Russian PMCs, including those from Western and African countries. We assessed that approximately 60 percent of the Russian PMC operations involved ground or maritime security (mostly fixed-site and ship guards) and that 30 percent involved training or service support. Although many of these operations involved armed Russian PMC personnel, their activities fell within the traditional boundaries of security provision based on the inherent right of self-defense. Numerous Western and African PMCs provide the same services in broadly the same manner in Africa.

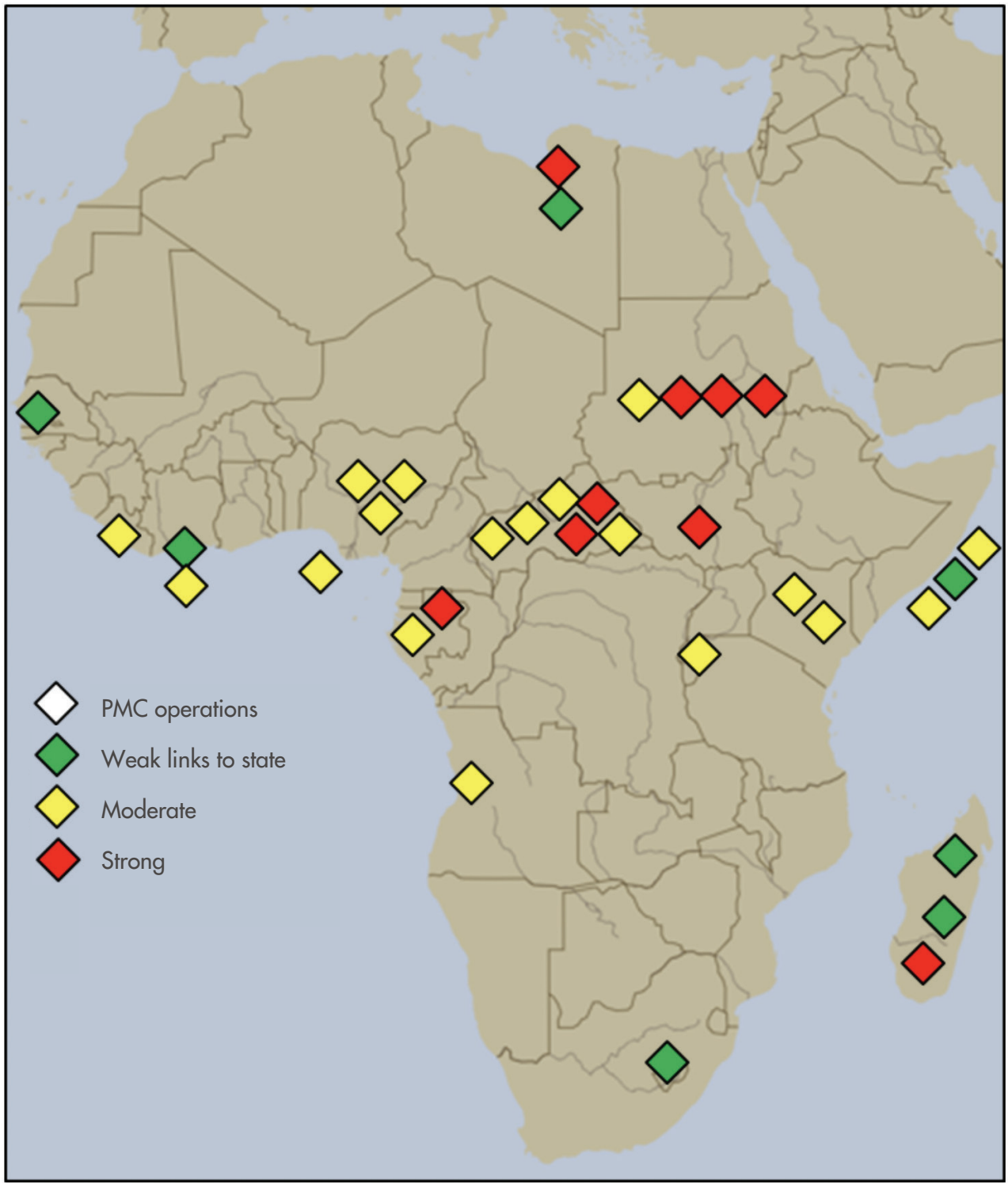
However, we assessed that the remaining 10 percent of Russian PMC activity across Africa included combat or other operational tasks beyond immediate self-defense, putting them in the category of mercenary operations. These mercenary activities were all conducted by the Wagner Group, a Russian paramilitary organization, or its subsidiary, Sewa, in CAR, Sudan, and South Sudan. The potential strategic significance of this mercenary percentage of all Russian PMC operations in Africa is obviously much greater than might be indicated by its share of the total.

Figure 10 plots the 34 Russian PMC operations that we assessed as likely, very likely, or virtually certain to have occurred since 2005. Each diamond represents one PMC operation. In cases where the same company appears to have conducted multiple distinct activities in the same country, we depicted these as multiple separate operations.[19] A handful of the operations were conducted offshore (as anti-piracy operations).

In Figure 10, each PMC operation icon is also color coded for the degree of connection between the Russian state and the company conducting the operation. We define weak links as occasional coordination with the MFA or other authorities and/or the presence of Russian armed forces reservist personnel on the mission. We define moderate links as more direct coordination with Russian state institutions and/or the presence of personnel who are senior reservists with elite units of the Russian security services. We define strong links as direct authorization or funding of the operation by the Russian state (i.e., operating in Russian state interests) and/or evidence that the Russian PMC personnel have received training and weaponry directly from Russian government entities. We assessed seven of the Russian PMC operations to have weak links, 18 to have moderate links, and nine to have strong links with the Russian state.

It is worth focusing on the contiguous countries of CAR, Sudan, and South Sudan. Nearly one-third of the 34 highlighted Russian PMC operations—11 in total—were found in these three countries. All of the Russian PMC activities in these countries had either moderate or strong links to the Russian state. Fully two-thirds of the PMC operations with strong links to the Russian state across the entire continent were in CAR, Sudan, or South Sudan. The remaining PMC operations with strong links to the Russian state were in Libya, Gabon, and Madagascar.

FIGURE 10
Russian PMC Operations in Africa Since 2005



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

Figure 11 focuses on current and potential future PMC activity across Africa. As noted earlier, Russian power brokers with links to the government and PMCs appear to be attracted to opportunities in African countries that feature a combination of (1) local elites who seek Russian financial or paramilitary support and (2) natural resource wealth that can be extracted with minimal investment and exploited for short-term returns (Schmitt, 2019). These conditions are partly the product of near-term micro-level dynamics within an African country (specifically, its elite patronage networks). Over the long run, however, these conditions are more likely to arise in countries with highly factionalized patrimonial political systems and natural resource endowments offering large-scale "rents" (i.e., where the market price of a commodity greatly exceeds its cost to produce). Academic work on politics in Africa strongly indicates that these conditions produce chronic political instability and a succession of authoritarian leaders who often turn to external sponsors for help in maintaining power (van de Walle, 2001). We further assessed that such political systems, beyond making Russian PMC activity more likely, make countries more likely to be inviting to Russian activity in the first place. Many types of current Russian involvement are facilitated by patronage activity, and states with these characteristics of elite patronage networks and accessible natural resources are, in general, more likely to be receptive to Russian advances.

To understand where these conditions (and, therefore, Russian involvement) are most likely to arise, we analyzed World Bank data on resource rents and Fund for Peace data on the fragility and patrimonialism of all African political systems. We integrated and tiered that data by quartile to produce the country color shadings in Figure 11, which correspond to the relative potential conduciveness of each country to Russia involvement in general, and to Russian PMC involvement in particular, based on the availability of large-scale resource rents and a permeable patronage-based political system.

Figure 11 maps these conditions against the 11 Russian PMC operations that we assess to be currently underway in Africa. All of these operations have moderate or close ties to the Russian state, reflecting the evolution of Russian PMC operations toward closer cooperation with Russian authorities since approximately 2017. As Figure 11 indicates, these operations are occurring in seven countries: Libya, Sudan, CAR, Nigeria, Gabon, Rwanda, and Madagascar. Of this current group of operations, those in Sudan and CAR appear to involve mercenary activities.

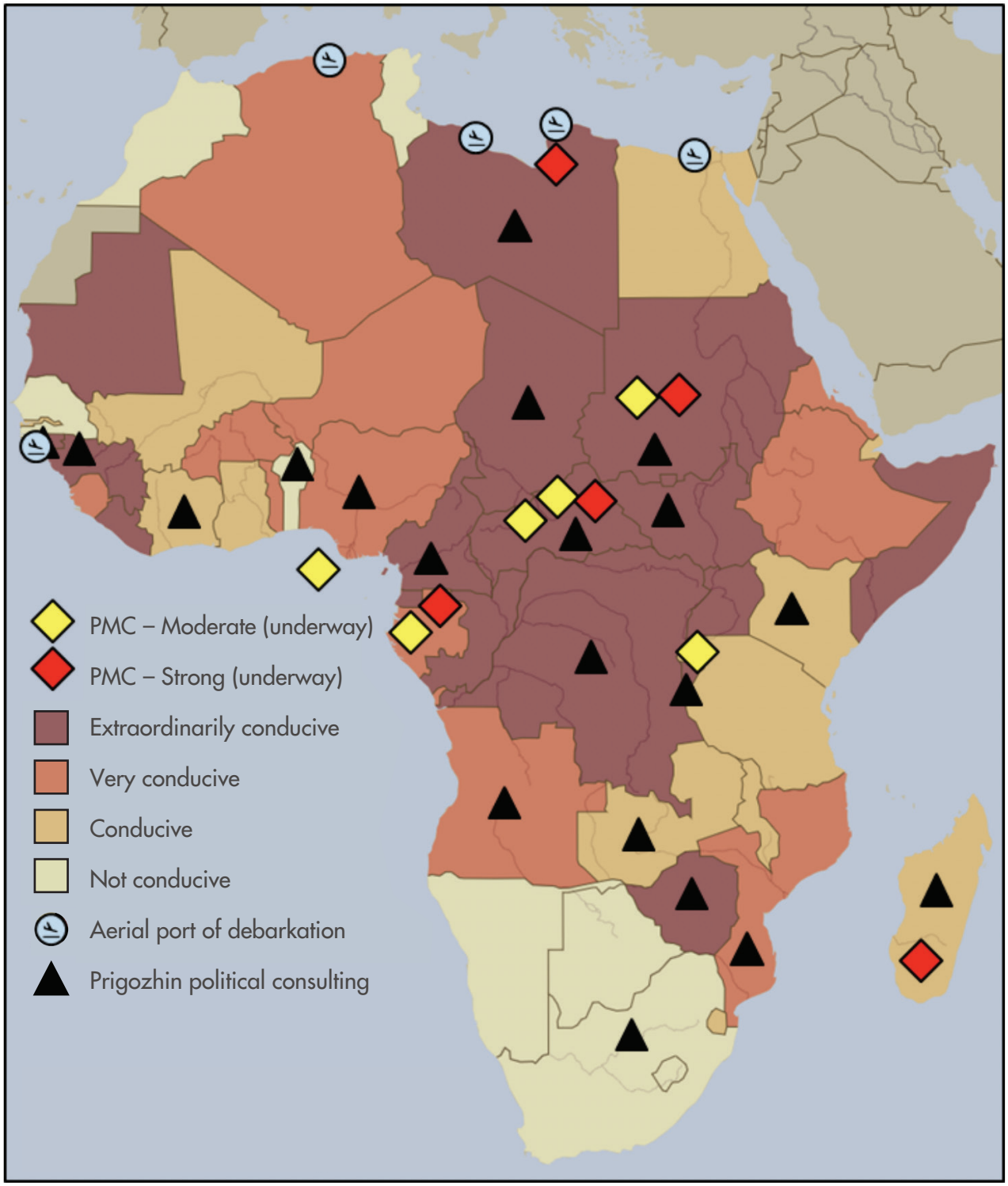
The circular blue icons in Figure 11 indicate aerial ports of debarkation, which we flagged during our assessment of Aireon flight records as likely locations of Russian PMC air activity. In some cases, we were able to identify the registration numbers of aircraft apparently involved in supporting the Russian PMC activity in Africa.

Figure 11 also depicts a parallel yet even more pervasive effort by Russian power broker Yevgeny Prigozhin to provide political consulting services to regimes in 19 African states. Prigozhin is the owner of the Wagner Group, the most prominent Russian PMC and the organization most heavily involved in mercenary operations in Syria, Sudan, and CAR. Although there is no demonstrated link between Prigozhin's political consulting services and subsequent paramilitary operations by the Wagner Group, it seems plausible that this linkage is Prigozhin's intent (Rozhdestvensky and Badanin, 2019).

The geostrategic pattern is clear in Figure 11: A swath of countries in the African interior—from Libya south to Chad, Sudan, South Sudan, CAR, DRC, Cameroon, Gabon, and the surrounding region—appears especially conductive to further growth in Russian PMC activity.

FIGURE 11

Local Conditions Conducive to Russian Involvement



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

NOTE: The map ranks countries by quartiles on an Africa-exclusive scale. On a global scale, all but six African states rank as extraordinarily conducive to Russian involvement.

Likely Areas of Future Russian Involvement

To identify areas where Russia is likely to become more involved in Africa in coming years, we combined the analyses of where local conditions are most likely to be conducive to Russian power broker opportunism with the analyses of where Russia is already involved.

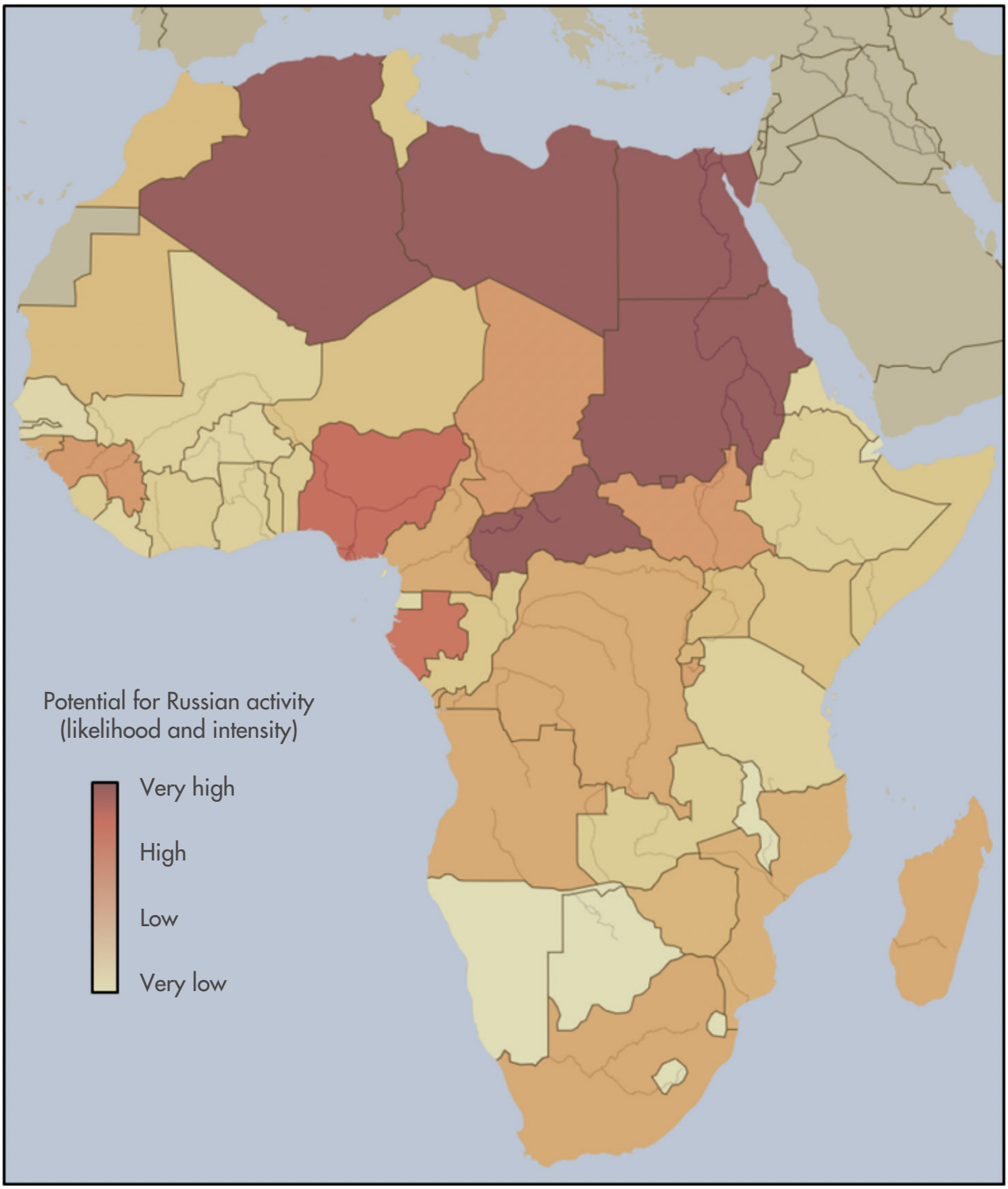
As previously illustrated in Figure 11, our analysis indicates that African states generally tend to be patrimonial and reliant on large-scale rents for natural resource extraction. These conditions make most of Africa a genial environment for Russian power brokers seeking opportunities for short-term gains. By global standards, all but a handful of African countries would qualify as highly patrimonial *rentier* states. As depicted in Figure 11, Libya and the central African interior are notable for very high levels of conduciveness to Russian PMC activity.

We combined this assessment of local conditions with the prior assessments of Russia's existing demographic, commercial, diplomatic, military assistance, and operational presence on the continent (Figures 4–10) to create Figure 12. This figure shows an additive summation of all of the assessment layers with the relative weights of the military assistance and operational activity layers doubled to account for their more-direct relevance to similar future activity. Therefore, Figure 12 provides our composite estimate of the comparative likelihood of expanded Russian involvement across the African continent. Although the figure displays eight discernible shades (excluding Western Sahara, for which no data are available), it suggests that African states can be broadly divided into four tiers of potential Russian activity:

- **Tier 1: very high potential.** These are states where Russia already has a substantial level of involvement and key PMCs are already extracting significant rents. It would be surprising if Russian involvement did not increase in each of these five countries, stretching mostly across North Africa, in the coming years: Algeria, CAR, Egypt, Libya, and Sudan (in dark brown in Figure 12).
- **Tier 2: high potential.** These are states where local conditions are extraordinarily conducive and there is at least a modicum of current Russian involvement, or where local conditions are highly conducive and there is significant Russian involvement. The primary factors weighing against expansions in these states are limitations on Russian resources and locations outside the priority area of North Africa. On balance, Russia should be expected to expand its involvement in these countries as clear opportunities arise. Spanning three shades on the map, these 14 states include Gabon and Nigeria (in rust); Chad, Guinea, Rwanda, and South Sudan (in dark tan); and Angola, Cameroon, DRC, Guinea-Bissau, Madagascar, Mozambique, South Africa, and Zimbabwe (in light brown).
- **Tier 3: low potential.** These are states with a very modest level of Russian presence and only moderately conducive conditions for expanded Russian involvement. Most of West Africa and East Africa fall into this tier. Spanning three lighter shades on the map, these 24 states include Kenya, Mauritania, Morocco, Niger, Rwanda, and Uganda (in dark beige); Benin, Côte d'Ivoire, Sierra Leone, Somalia, Togo, Tunisia, and Zambia (in medium beige); and Burkina Faso, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Ghana, Liberia, Mali, Republic of the Congo, Senegal, and Tanzania (in beige).
- **Tier 4: very low potential.** These are states with low Russian involvement and low conduciveness. Russia is unlikely to expand its activities in these six states: Botswana, Djibouti, Eswatini (Swaziland), Lesotho, Malawi, Namibia (in sand).

FIGURE 12

Likely Areas of Future Russian Involvement



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

AFAFRICA Strategic Priorities

To accurately assess the potential implications of Russia's expanding involvement in Africa, it is helpful to understand how that expansion might intersect with AFAFRICA's regional objectives and strategy. To identify those intersections, we reviewed unclassified planning guidance for Africa, analyzed RAND's FMTD (2010–2017) to assess where USAFRICOM and AFAFRICA have allocated their security cooperation resources in recent years, and leveraged our previous work conducted for AFAFRICA and USAFRICOM.

This analysis yielded three key insights regarding AFAFRICA's strategic priorities. The first pertains to security cooperation. The second pertains to operational infrastructure. The third combines both.

First, the security cooperation priorities of AFAFRICA and USAFRICOM are clearly evident in the FMTD. According to the database, AFAFRICA has four echelons of security cooperation priorities as follows (in descending order of priority:

1. North Africa, particularly Morocco and Tunisia (Egypt also belongs in this tier but is in the U.S. Central Command's area of responsibility)
2. key counterterrorism and overflight partners, particularly Cameroon, Djibouti, Ethiopia, Ghana, Kenya, Niger, and Nigeria
3. key regional powers, such as South Africa
4. other partners.

Second, DoD's global en route infrastructure is oriented from west to east in the Northern Hemisphere. Operations in Africa generally descend from that northwestern infrastructure to a fragile network of operating locations on the continent. This orientation makes Algeria and Libya not just strategically important in their own right, but also operationally vital for overflight in support of operations and locations in the interior.

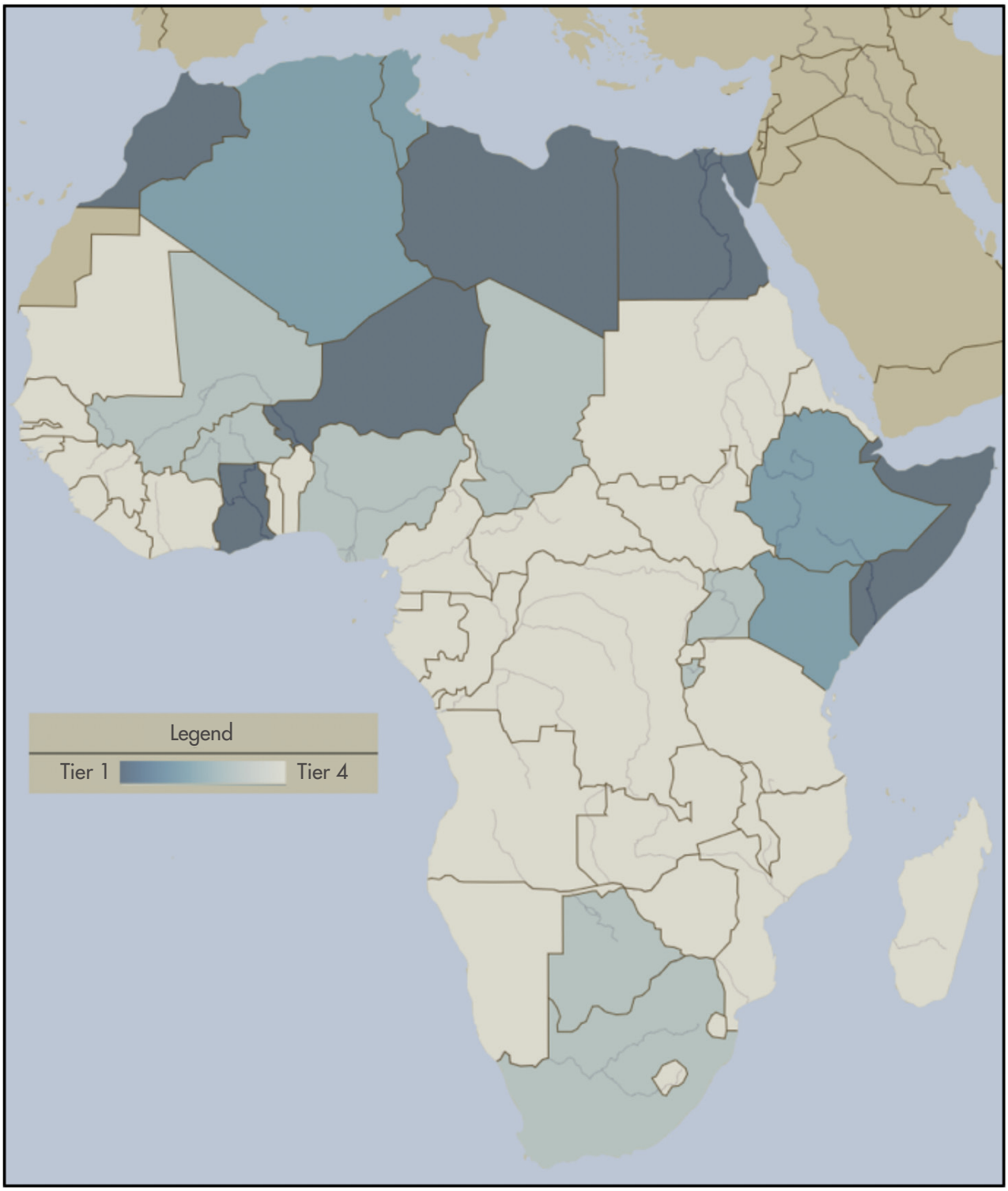
Third, building on the security cooperation priorities and operational infrastructure considerations, our analysis suggests it is possible to broadly categorize the importance of African states to AFAFRICA's regional strategy in the following four strategic tiers:

- **Tier 1: Essential partners.** These states are strategic allies, host key operational locations, are active theaters of armed conflict, and/or sit astride essential air routes. Egypt also falls into this tier, although it is in the U.S. Central Command Area of Responsibility. The seven top-tier priority partners are Djibouti, Egypt, Ghana, Libya, Morocco, Niger, and Somalia (in dark blue in Figure 13).
- **Tier 2: Primary partners.** These states are operational partners, possess important air infrastructure, and/or are the locations of operations outside declared theaters of active armed conflict. The four partners in this tier are Algeria, Ethiopia, Kenya, and Tunisia, (in medium blue).
- **Tier 3: Secondary partners.** These states are previous operational locations or important partners in the lower-priority region of southern Africa. The eight partners in this tier are Botswana, Burkina Faso, Burundi, Chad, Mali, Nigeria, South Africa, and Uganda (in light blue).
- **Tier 4: Tertiary partners.** The 30 remaining states (in light cream) are neither strategic allies nor operational hosts nor theaters of active armed conflict nor situated below essential air routes.

From a geostrategic perspective, AFAFRICA's regional strategy necessarily centers on the states in North Africa, the Horn of Africa, and Ghana as the keystone of the West African Logistics Network. Tier 2 partners connect the Tier 1 operational areas across Northwest Africa and across Central Africa, as depicted in Figure 13.

FIGURE 13

U.S. Air Forces Africa Operational Priorities



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

Likely Areas of Competition and Entanglement

Having established the broad geographical pattern of AFAFRICA's regional strategy, we then assessed the potential intersections between Russia's likely areas of increased activity (Figure 12) and AFAFRICA's existing areas of strategic priority (Figure 13). Overlaying the Russian and AFAFRICA maps produced Figure 14, along with four insights.

The primary insight that emerged from this analysis is the unique importance of Libya in the emerging U.S.-Russian relationship in Africa. Libya is the country where Russia is mostly likely to pursue an expanded involvement, given its current activity there and highly conducive conditions for Russian power brokers. Also, Libya is a uniquely important country for AFAFRICA because of its strategic location bordering the central Mediterranean, the presence of multiple networks of violent extremist organizations the United States is actively fighting in a declared area of active armed hostilities, and its position astride essential air routes between the USAF's European facilities and operational areas in the interior of the continent. Growing Russian involvement and influence in Libya would be problematic in each of those areas for the United States.

Second, our analysis highlights Algeria and Egypt as likely areas of strategic competition between Russia and the United States. Egypt is a major ally of the United States, but the relationship with Algiers has always been more distant. Both countries are central to Russia's involvement in Africa, ranging from private presence to trade and commercial projects, military assistance, and operational activity (in Egypt). Algeria and Egypt also sit astride essential air routes from European bases to West Africa and the Horn of Africa, respectively. Russia can be expected to seek more involvement with both countries for its own opportunistic purposes, which would pose significant potential strategic and operational challenges for the United States.

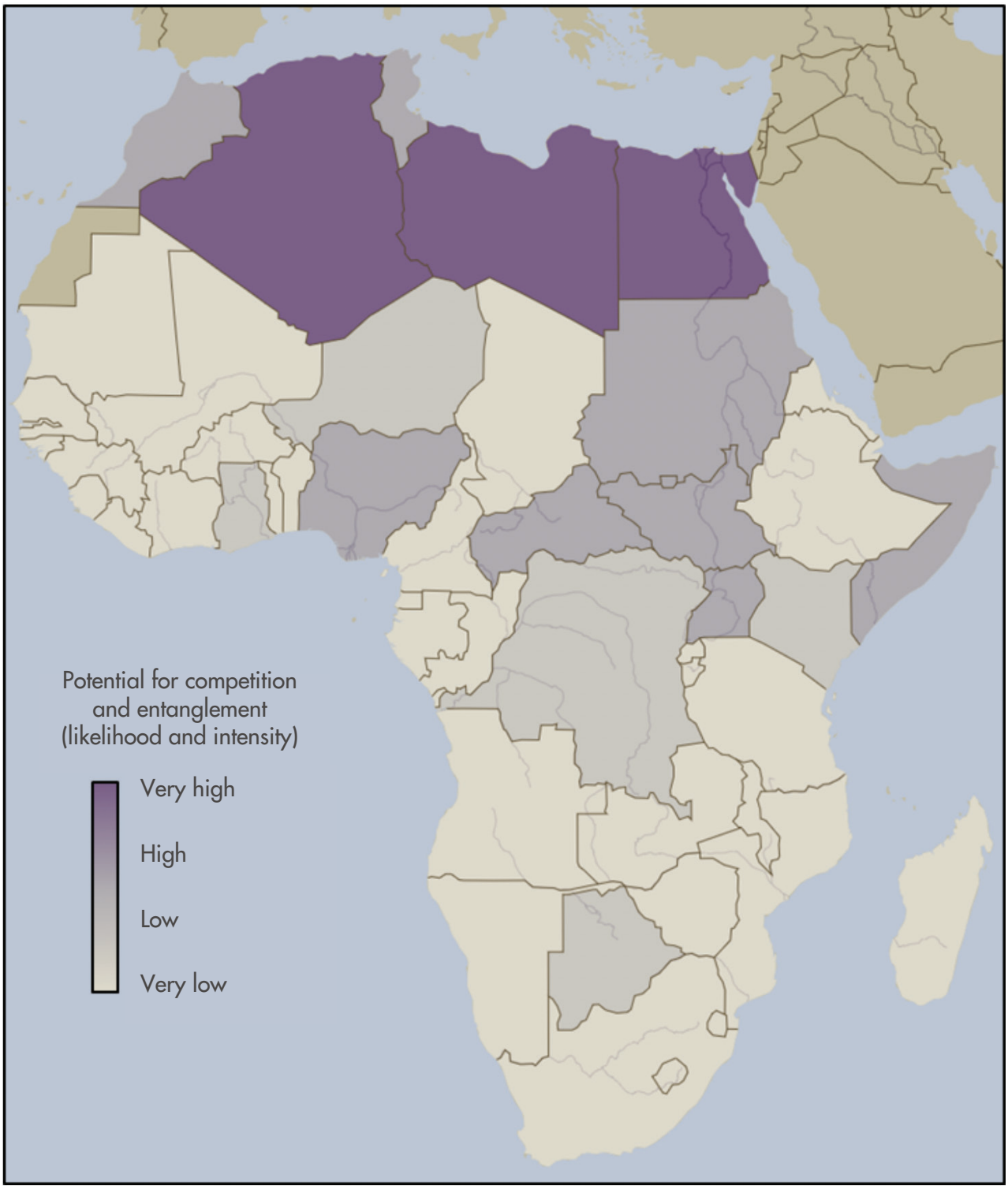
Third, a diverse tier of African states are either (a) of significant strategic importance to the United States but with only a moderate likelihood of expanded Russian involvement or, conversely, (b) of only moderate importance to the United States but with very likely Russian involvement. This group is composed of eight states: CAR, Sudan, South Sudan, Uganda, Morocco, Tunisia, Kenya, and Somalia. The Russians might expand their activity in some of these states, but the likelihood or significance of such a step does not rise to the level of a key strategic or operational concern for the United States. The primary risk in these states is the possibility that U.S. operations (particularly in extremis operations, such as a crisis response) might become entangled with Russian military or paramilitary forces in the area. There are precedents for such entanglements: Deir al-Zhour in Syria in February 2018 and Pristina Airport in Kosovo in June 1999.

Fourth, there are regions where Russian involvement is unlikely to raise concerns for the United States. Most of West Africa is unlikely to offer much to attract the interest of Russian power brokers, and domestic conditions there are less conducive than in other regions. South Africa has a small Russian expatriate community, modest Russian commercial activity, a degree of direct political connection with Moscow, and domestic conditions that are moderately conducive to Kremlin-style involvement. However, South African political and commercial elites have a hard-earned reputation for resisting the involvement of ostensibly friendly external powers in the southern region. This history, combined with the very limited level of U.S. security interest in the region, suggests that Russian involvement in South Africa should not be problematic for AFAFRICA.

In sum, our analysis indicates that Russian involvement will not be uniformly problematic for AFAFRICA. Some regions will see little Russian activity. Other regions will see greater Russian activity but of a nature that will have little impact on U.S. national security interests. Still others will be more attractive, conducive, and problematic. Among these, the North African states of Libya, Algeria, and Egypt emerge as the highest-priority countries of concern (Figure 14).

FIGURE 14

Likely Areas of Competition and Entanglement



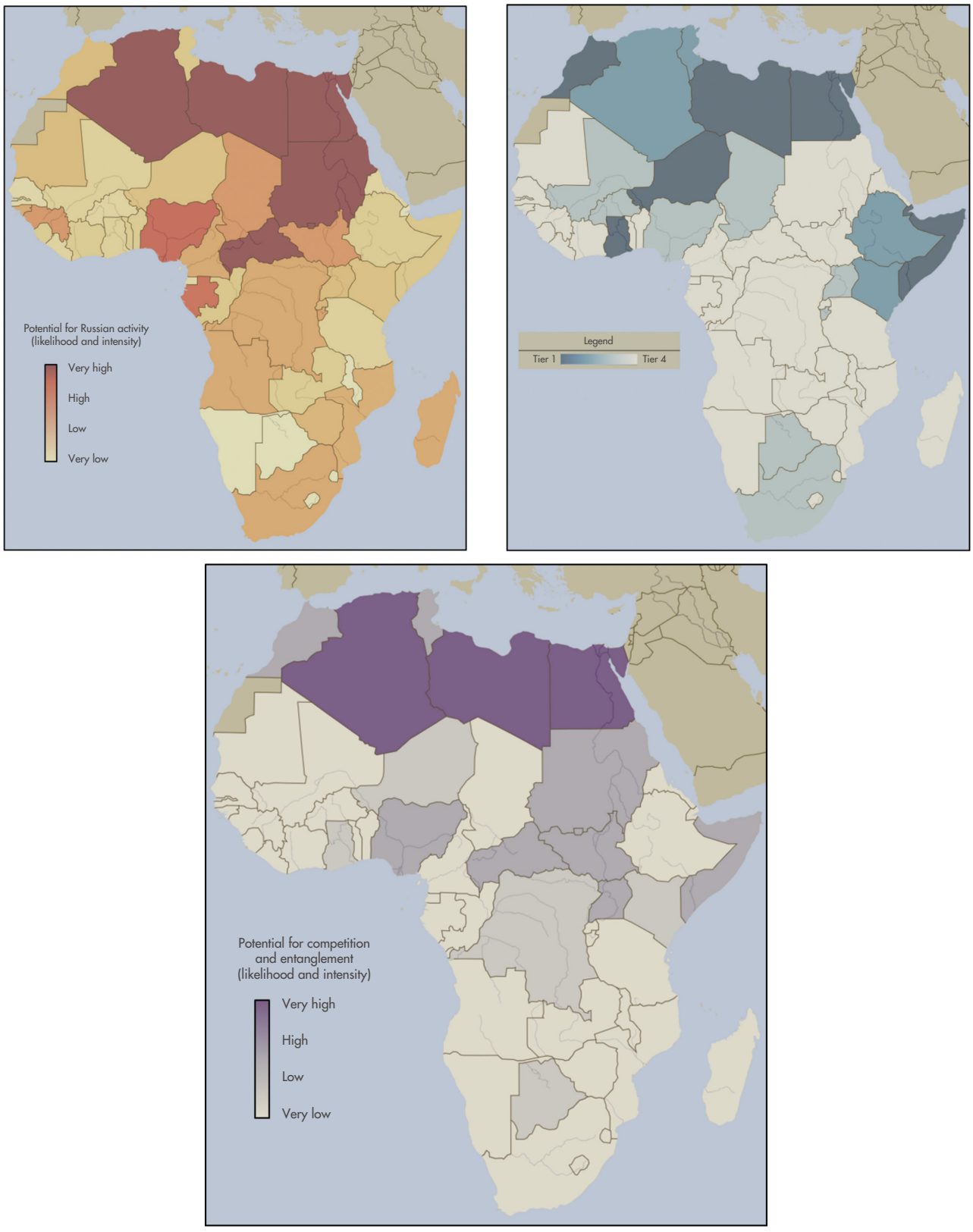
SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

Key Findings

- Russia's presence in Africa is very limited. Because Moscow strategically withdrew from the region from 1990 to 2015, recent growth in Russian activity started from a very low baseline and remains modest compared to that of the United States and China.
- There is little evidence that the Kremlin has a grand plan for Africa. Because the continent remains peripheral to Russian grand strategy, Moscow's approach in Africa is essentially opportunistic. The key players in Russian policymaking on Africa, all power brokers in President Vladimir Putin's patronage networks in security ministries and the commercial shadows of the Russian state, seek opportunities to (1) advance Putin-endorsed policy objectives, (2) reap low-risk status gains for themselves and for Russia, and (3) capitalize on opportunities for extraordinary profits in Africa's rentier economies.
- Russia's future activity pattern in Africa could be predicted by identifying where Russian power brokers are most likely to find conducive conditions, such as preexisting government and commercial relationships, lucrative opportunities in extractive industries, local elites seeking external sponsorship, and opportunities to burnish Russia's great power credentials. Russian power brokers would find such conditions particularly attractive wherever Western powers have left power vacuums by fleeing countries where they traditionally had been involved.
- Moscow will continue to find such opportunities across a wide swath of the continent, but conditions will be especially ripe in North Africa, particularly Libya, Algeria, and Egypt. In these states, powerful geopolitical and commercial opportunities overlap with Russia's most robust preexisting bilateral and commercial relationships. Therefore, North Africa will probably be the locus of future Russian involvement on the continent.
- Conditions in Central and West Africa will also be conducive to greater Russian involvement. For the most part, Russian activity in these locations will be problematic for AFAFRICA primarily because of the potential for *operational entanglement*, in which the operations of U.S. and Russian forces overlap in time and space pursuant to divergent objectives, creating the potential for interference, confrontation, and escalation.
- The upper-left panel of Figure 15 distills these findings into our summary visualization of potential Russian involvement across Africa. The darker the shading of individual countries, the greater the potential for Russian activity in furtherance of Moscow's opportunistic strategy.
- The upper-right panel of Figure 15 shows our summary visualization of AFAFRICA strategic priorities in Africa. U.S. security cooperation priorities, combined with the northwest orientation of U.S. operational infrastructure heading toward Africa, point to seven top-tier U.S. partners across the continent: Morocco, Libya, Egypt, Ghana, Niger, Djibouti, and Somalia.
- The lower panel of Figure 15 highlights the intersections of the upper two panels. Given the areas of greatest potential overlap between Russian opportunities and AFAFRICA priorities, the three most likely arenas for strategic competition and entanglement between Russia and the United States in Africa are Libya, Algeria, and Egypt.
- AFAFRICA should adopt a *Compete and Disentangle* approach to Russian activity in Africa: Compete where Russian activity jeopardizes key U.S. strategic objectives, primarily in North Africa, and focus on disentangling U.S. operational forces from Russian operational entities elsewhere, primarily in Central and West Africa.

FIGURE 15

Russian Opportunities, AFAFRICA Priorities, and Potential Overlaps in Africa



SOURCES: Data drawn from various sources as indicated in the report and collated in RAND's RAGAT.

Recommendations

Our analysis suggests seven recommendations for AFAFRICA. Each recommendation leads into the following one.

First, we recommend that AFAFRICA adopt a *Compete and Disentangle* approach to Russian activity in Africa. Compete with Russia where it jeopardizes core strategic and operational objectives, primarily in North Africa, but eschew competition with Moscow for its own sake elsewhere. To avoid unnecessary operational entanglements between U.S. forces and Russian entities, AFAFRICA should focus on disentanglement where growing Russian activity is of lesser strategic importance but where it could still interfere with USAF operations, primarily in Central and West Africa. As a broad rubric, then, the recommendation is to *Compete* in North Africa and *Disentangle* in Central and West Africa.

Second, as the most critical part of the *Compete* aspect of this approach, we recommend that AFAFRICA elevate the priority accorded to Libya in security cooperation planning, operational planning, and posture planning, partly to guard against the effects of greater Russian influence in that centrally important country. In particular, we recommend that AFAFRICA begin with early steps, such as wargaming and anticipatory planning, to enable the USAF to establish itself quickly as the primary partner of a post-war Libyan Air Force. U.S. government policy toward Libya is likely to undergo a reset in coming years. We recommend that the command prepare itself to play a proactive role in that reset.

Third, we recommend that AFAFRICA also elevate Algeria's role in its regional strategy. In particular, to guard against an Algerian tilt toward Russia and Algerian policies and procedures that would complicate USAF operations in the region, we recommend that AFAFRICA pursue an expanded program of security cooperation—including contacts, exchanges, and exercises—with the Algerian Air Force.

Fourth, we recommend that AFAFRICA pursue closer formal collaboration with DoD partners, such as the Civil Aviation Intelligence Analysis Center, to monitor the activities of key Russian entities in Africa, especially the Wagner Group and other PMCs engaged in mercenary activities.

Fifth, as part of the *Disentangle* aspect of the approach, we recommend that AFAFRICA incorporate assessments of Russian presence as a formal input to the command's posture planning. U.S. air posture in Africa is naturally fragile because of infrastructure limitations and political dynamics that necessitate the development of a small number of critical nodes in the continental air system. The expansion of Russian activity and influence on the continent will likely make U.S. air posture more fragile by placing more demands on those critical nodes. AFAFRICA should begin to account for this possibility by making its posture more robust, specifically by assessing, selecting, and cultivating alternative or additional basing and overflight options that could either replace or supplement its existing options, as required.

Sixth, we recommend that AFAFRICA incorporate considerations of possible entanglements with Russian elements in its planning processes for operations, security cooperation, and exercises.

Seventh, we recommend that AFAFRICA work with U.S. European Command to explore the establishment of a formal mechanism for notifying the Russian General Staff of concerns about potential entanglements with or objectionable activities of Russian entities in Africa, be they uniformed personnel or PMCs engaged in mercenary activities.

Notes

[1] *Geostrategic analysis* describes the strategic behavior of states in spatial terms, providing a lens for understanding broader patterns of behavior (Gray and Sloan, 1999, pp. 3–4).

[2] We devoted the greatest effort to those domains most likely to directly affect AFAFRICA: the operational and military assistance domains, with particular focus on Russian paramilitary activity. Inevitably, there were other domains of activity that also might have been profitably explored, including the information, organized crime, financial, and cultural domains. We hope this work provides a foundation for also exploring those dimensions.

[3] The team conducted this process through August 2019, locking the data for publication purposes on September 1 of that year.

[4] The framework assigns each credibility estimate as follows: almost certain (90–100 percent), very likely (75–90 percent), likely (60–75 percent), even chance (40–60 percent), unlikely (25–40 percent), very unlikely (10–25 percent), and remote (0–10 percent).

[5] The addition of sensitive data or information not available to the public is an example of additional work that could be done.

[6] The domains included in this analysis certainly do not exhaust the universe of potentially valuable data. Future work could incorporate cyber and information activities, social media, organized crime, nongovernment and international organizations, and various other forms of Russian activity. Data not available to the public could add important insight across all these domains.

[7] We drew on IATA's Nationality Traffic Report database for figures on Russian passport visitors to African aerial ports of debarkation from 2016 to 2018 (totaling 402,964 travelers). The IATA data include projections to 2023 that are not presented here.

[8] We drew on Aireon's database for all flights originating in Russia and terminating in Africa from 2014 to mid-2019.

[9] Our research turned up no examples of similar work on a Russian diaspora in Africa.

[10] There are also six nuclear construction or mining projects reportedly in some phase of development. It is not clear how many of these will proceed to construction. In particular, South Africa appears to be wavering on its project.

[11] Russia also has expanded its senior-level diplomatic engagement with Africa, ranging from prominent ministerial-level trips to the continent to the October 2019 Russia-Africa Summit in Sochi. However, assessing the implications of these meetings (individually and collectively) for Russian involvement in Africa requires detailed understanding of each action program and the degree of follow-up. Western governments conduct vast numbers of such engagements with little practical result. Therefore, we exclude meetings from our measures in favor of the more-enduring signals provided by security-related agreements.

[12] For example, from 1980 to 1985, the Soviet Union provided $2.09 billion in economic assistance to Sub-Saharan Africa, equivalent to $6.3 billion today (Central Intelligence Agency, 1986).

[13] It could be argued that arms and training purchased by African recipients should not be considered "assistance." However, this would be inconsistent with U.S. policy and legal authorities, which treat government approval of direct commercial sales as a policy decision to increase the military capabilities of the recipient.

[14] SIPRI technically estimates the value of all transfers in terms of "trend-indicator value" (TIV) to make data commensurate across countries. TIV is roughly equivalent to U.S. dollars.

[15] The Russian government is also deliberately ambiguous about its relationships with Russian PMCs, including whether they are operating in support of Russian state interests. Planners must therefore presume the Russian PMCs *are* operating as arms of the Russian government, barring definitive evidence to the contrary. We consider all Russian PMC activity in Africa as potential Russian government activity and carefully assess the available evidence of links between the Russian state and individual PMCs.

[16] *GRU Spetsnaz* is the Special Forces of the GRU.

[17] Data collection for this project ceased at the end of August 2019. In November 2019, credible media reporting indicated that Russian PMC personnel had deployed to Libya in September and October to provide front-line fighting services to Hiftar's factions (Kirkpatrick, 2019).

[18] The Russian Navy also maintains a small Mediterranean Task Force (Fedyszyn, 2013).

[19] Data collection for this project ended in August 2019. In November 2019, credible media reporting indicated that the PMC (the Wagner Group) had deployed a contingent of several hundred mercenaries to Mozambique in September 2019 (Sauer, 2019).

References

Aireon, "FlightAware Global Tracking," web-based database, undated. As of August 6, 2021: https://flightaware.com/commercial/global/

Arkhangelskaya, Alexandra, and Vladimir Shubin, *Russia's Africa Policy*, Johannesburg: South African Institute of International Affairs, occasional paper, No. 157, September 2013.

Central Intelligence Agency, *Soviet Economic Aid to Sub-Saharan Africa: Politics in Command*, Interagency Intelligence Memorandum 86-10003, March 1986.

Centre for Analysis of Strategies and Technologies, *Eksport vooruzheniy*, Moscow, Russia, journal archives, 2010–2018.

Dettmer, Jamie "Guns, Mercenaries, Minerals: Russia Embraces Africa," *Voice of America*, October 21, 2019. As of December 1, 2019: https://www.voanews.com/europe/guns-mercenaries-minerals-russia-embraces-africa

Fedyszyn, Thomas R., "The Russian Navy 'Rebalances' to the Mediterranean," *Proceedings*, Vol. 139, No. 12, December 2013. As of December 13, 2019: https://www.usni.org/magazines/proceedings/2013/december/russian-navy-rebalances-mediterranean

Friedman, Jeffrey, and Richard Zeckhauser, "Handling and Mishandling Estimative Probability: Likelihood, Confidence, and the Search for Bin Laden," *Intelligence and National Security*, Vol. 30, No. 1, 2015, pp. 77–99.

Gasinka, Karolina, Eva Hagström Frisell, Jakob Hedenskog, Jerker Hellström, Emma Sjökvist, Madelene Lindström, Anna Sundberg, Samuel Bergenwall, and Carina Gunnarson, *Foreign Military Bases and Installations in Africa*, Stockholm, Sweden: Swedish Defence Research Agency, FOI-R--4658--SE, August 2019. As of February 7, 2020: https://www.foi.se/rapportsammanfattning?reportNo=FOI-R--4658--SE

Gray, Colin S., and Geoffrey Sloan, eds., *Geopolitics: Geography and Strategy*, London: Frank Cass, 1999.

Hodzi, Obert, "Chinese in Africa: 'Chineseness' and the Complexity of Identities," *Asian Ethnicity*, Vol. 20, No. 1, 2019, pp. 1–7.

IATA—*See* International Air Transport Association.

International Air Transport Association, "Nationality Traffic Report (NTR)," database, undated-a. As of February 10, 2020: https://www.iata.org/en/services/statistics/intelligence/nationality-traffic-report/

International Air Transport Association, "Passenger Data Exchange Database, 2016–2023," database, undated-b.

International Air Transport Association, "IATA Forecast Predicts 8.2 Billion Air Travelers in 2037," press release, Montreal, Canada, October 24, 2018. As of February 6, 2020: https://www.iata.org/en/pressroom/pr/2018-10-24-02/

International Institute for Strategic Studies, *Military Balance 2018*, Vol. 118, London: Routledge, February 2018.

Kavanagh, Jennifer, *U.S. Security-Related Agreements in Force Since 1955: Introducing a New Database*, Santa Monica, Calif.: RAND Corporation, RR-736-AF, 2014. As of February 10, 2020: https://www.rand.org/pubs/research_reports/RR736.html

Kirkpatrick, David, "Russian Snipers, Missiles, and Warplanes Try to Tilt Libyan War," *New York Times*, November 5, 2019.

Massachusetts Institute of Technology Media Lab, "Observatory of Economic Complexity, 1990–2018," database, undated.

MFA—*See* Ministry of Foreign Affairs of the Russian Federation.

Ministry of Defence of the Russian Federation, "Paratroopers of Russian Federation and Egypt Carry Out Large-Scale Airborne Assault Within Defenders of Friendship 2018 Exercises," webpage, October 21, 2018. As of July 1, 2019: https://eng.mil.ru/en/news_page/country/more.htm?id=12200809@egNews

Ministry of Defence of the Russian Federation, "The Defenders of Friendship 2019 Russian-Egyptian-Belorussian Counter-Terrorism Exercise Active Phase Kicks Off Near Ryazan," webpage, August 26, 2019. As of September 1, 2019: https://eng.mil.ru/en/news_page/country/more.htm?id=12249287@egNews

Ministry of Foreign Affairs of the Russian Federation, "Agreements, 1926–2018," database, undated.

Rozhdestvensky, Ilya, and Roman Badanin, "Master and Chef: Evgeny Prigozhin Led the Russian Offensive in Africa," *Proekt*, March 14, 2019. As of December 13, 2019: https://www.proekt.media/investigation/evgeny-prigozhin-africa/

Russell, Martin, and Eric Pichon, *Russia in Africa: A New Arena for Geopolitical Competition*, Brussels: European Parliamentary Research Service, November 2019.

Russkiy Mir Foundation, "Russia's Footprint on Africa," webpage, December 17, 2008. As of February 10, 2020: https://russkiymir.ru/en/publications/139500/

Sauer, Pjotr, "In Push for Africa, Russia's Wagner Mercenaries Are 'Out of Their Depth' in Mozambique," *Moscow Times*, November 19, 2019.

Sayari, "Analytics Financial Intelligence," database, undated.

Schmitt, Eric, "Russia's Military Mission Creep Advances to a New Front: Africa," *New York Times*, March 31, 2019.

Sharp, Jeremy M., *Egypt: Background and U.S. Relations*, Washington, D.C.: Congressional Research Service, November 2019.

SIPRI—*See* Stockholm International Peace Research Institute.

Stanford Center for Legal Informatics, "CodeX, Legal and Corporate Document Database, 2010–2019," database, undated.

Stewart, Phil, Idrees Ali, and Lin Noueihed, "Russia Appears to Deploy Forces to Egypt, Eyes on Libya Role—Sources," Reuters, March 13, 2017. As of July 1, 2019: https://www.reuters.com/article/us-usa-russia-libya-exclusive/exclusive-russia-appears-to-deploy-forces-in-egypt-eyes-on-libya-role-sources-idUSKBN16K2RY

Stockholm International Peace Research Institute, "SIPRI Arms Transfer Database," undated. As of February 10, 2020: https://www.sipri.org/databases/armstransfers

Stronski, Paul, *Late to the Party: Russia's Return to Africa*, Washington, D.C.: Carnegie Endowment, October 2019.

Suslov, Mikhail, "*Russian World": Russia's Policy Toward Its Diaspora*, Paris: French Institute of International Relations, Russie.Nei.Visions, No. 103, July 2017.

van de Walle, Nicolas, *African Economies and the Politics of Permanent Crisis, 1979–1999*, Cambridge, UK: Cambridge University Press, 2001.

van Eyssen, Benita, "Russia's Comeback in Africa," *Deutsche Welle*, October 23, 2019. As of February 10, 2020: https://www.dw.com/en/russias-comeback-in-africa/a-50946116

Waldhauser, Thomas D., "Statement of General Thomas D. Waldhauser, United States Marine Corps, Commander, United States Africa Command," testimony before the U.S. Senate Committee on Armed Services, Washington, D.C., February 7, 2019.

World Bank and United Nations Conference on Trade and Development, "World Bank Integrated Trade Solutions," database, undated. As of February 10, 2020: https://wits.worldbank.org/

About This Report

Moscow is expanding the scope and scale of its involvement in Africa. Although there is ample reporting on certain aspects of this growing involvement, U.S. Air Forces Africa (AFAFRICA) has lacked an integrated geostrategic picture, literally and figuratively, of the phenomenon and what it portends for the command's objectives in the region. In fiscal year 2019, AFAFRICA asked RAND Project AIR FORCE to develop such a picture. Employing innovative geospatial visualization techniques, RAND researchers assembled an empirically rigorous description of where Russia is involved on the continent, where it is most likely to become involved in the future, and what implications this could have for AFAFRICA's regional strategy. In this report, the authors codify that research and analysis.

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