Global Militarisation Index 2020

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GLOBAL MILITARISATION INDEX 2020

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SUMMARY

Every year, BICC's Global Militarisation Index (GMI) presents the relative weight and importance of a country's military apparatus in relation to its society as a whole. The GMI 2020 covers 151 states and is based on the latest available figures (in most cases data for 2019). The index project is financially supported by Germany's Federal Ministry for Economic Cooperation and Development.

In this year's GMI ranking, the ten countries that provided the military with particularly large amounts of resources in relation to other areas of society are Israel, Armenia, Oman, Bahrain, Singapore, Saudi Arabia, Brunei, Russia, Kuwait and Jordan.

The authors Max Mutschler and Marius Bales put the regional focus of the GMI 2020 on Europe (eastern Europe/ NATO and EU-countries) as well as the Asia-Pacific region and look in-depth into the role of the United States there. Russia (ranked 8th) continues to sustain one of the largest military forces in the world. The European NATO countries, especially Baltic and eastern European countries, are continuing to arm themselves, pointing to ongoing tensions with Russia. The still smouldering conflict between Armenia (ranked 2nd) and Azerbaijan (ranked 16th) over the Nagorno-Karabakh region continues to keep militarisation in the South Caucasus at a very high level. One look at the Top 10 shows that all countries in the Middle East are highly militarised by global comparison—only four countries are not from this region. The strategic rivalry between China (position 98) and the United States (position 27) for influence in the Asia-Pacific region intensifies the mutual threat perceptions and contributes to an arms build-up there.

Finally, the GMI 2020 looks at the link between militarisation and health security. A comparison with the Global Health Security (GHS) Index shows that countries with an average level of militarisation perform best in health security overall. In the wake of the COVID-19 pandemic, the public budgets of many countries are likely to come under severe pressure in the coming years as a result of new borrowing. This may also affect militarisation. Should the economic performance drop proportionally more than military spending, this would increase the level of militarisation. But it is also possible that prevention against future threats to health security will be given precedence over defence policy, and that significant cuts in military spending will be introduced. Which of the two scenarios will play out is likely to depend on the political priorities countries will choose.

CONTENT

THE METHODOLOGY OF THE GLOBAL MILITARISATION INDEX (GMI)

The Global Militarisation Index (GMI) depicts the relative weight and importance of the military apparatus of one state in relation to its society as a whole. For this, the GMI records a number of indicators to represent the level of militarisation of a country:

- the comparison of military expenditures with its gross domestic product (GDP) and its health expenditure (as share of its GDP);
- the contrast between the total number of (para)military forces and the number of physicians and the overall population;
- the ratio of the number of heavy weapons systems available and the number of the overall population.

GMI indicators and weighing factors

Category / Indicator	**Factor**
Expenditures	
Military expenditures as percentage of GDP	5
Military expenditures in relation to health spending	3
Personnel	
Military and paramilitary personnel in relation to population. *	4
Military reserves in relation to population	2
Military and paramilitary personnel in relation to physicians	2
Weapons	
Heavy weapons in relation to population	4

The GMI is based on data from the Stockholm Peace Research Institute (SIPRI), the International Monetary Fund (IMF), the World Health Organization (WHO), the International Institute for Strategic Studies (IISS) and BICC. It shows the levels of militarisation of more than 150 states since 1990. BICC provides yearly updates. As soon as new data is available, BICC corrects the GMI values retroactively for previous years (corrected data on gmi.bicc.de). This may have the effect that current ranks may differ in comparison to previous GMI publications.

In order to increase the compatibility between different indicators and to prevent extreme values from creating distortions when normalising data, in a first step every indicator has been represented in a logarithm with the factor 10. second, all data have been normalised using the formula x=(y-min)/(max-min), with min and max representing, respectively, the lowest and the highest value of the logarithm. In a third step, every indicator has been weighted in accordance to a subjective factor, reflecting the relative importance attributed to it by BICC researchers (see Figure). In order to calculate the final score, the weighted indicators have been added up and then normalised one last time on a scale ranging from 0 to 1,000.

The GMI conducts a detailed analysis of specific regional or national developments. By doing so, BICC wants to contribute to the debate on militarisation and point to the often contradictory distribution of resources.

* \ The main criterion for coding an organisational entity as either military or paramilitary is that the forces in question are under the direct control of the government in addition to being armed, uniformed and garrisoned.

BICC GMI 2020

Militarisation is a complex phenomenon. Regional and internal conflicts drive global militarisation. But the resources available to society as a whole as well as the different threat perceptions also play a role in countries' decisions on how much to invest in their national military. The Global Militarisation Index (GMI) reflects the outcome of these processes and determines the relative weight of the military apparatus of a country in relation to its society as a whole. At the same time, the GMI deliberately distances itself from the normative assumption that a high allocation of resources for the benefit of the military sector always represents an overemphasis on the military—with negative consequences for the overall development of society in the countries affected, and for international security. The security policy requirements for a country like Israel (position 1), for example, are completely different from those of Mauritius (position 145).

Still, some normative statements about militarisation can be made based on the findings of the GMI. It should be noted, however, that the abundance of factors that may affect the militarisation of a country suggests that one should look closely at and critically examine these statements. This also applies to the connection between militarisation and health, which is the focus of this year's GMI \ > page 13. A comparison of the GMI with the Global Health Security (GHS) Index[1], developed by the Nuclear Threat Initiative (NTI), the Johns Hopkins Center for Health Security (JHU) in cooperation with the Economist Intelligence Unit (EIU) shows that the group of countries with a rather average degree of militarisation shows the best results with regard to health security.

In the following text, the GMI 2020 presents and analyses selected trends in militarisation. Most of the data evaluated relate to the year 2019.

The Top 10

The ten counties with the highest levels of militarisation in 2019 are Israel, Armenia, Oman, Bahrain, Singapore, Saudi Arabia, Brunei, Russia, Kuwait and Jordan. These countries allocate particularly high levels of resources to the military in comparison to other areas of society. Methodological changes to the GMI \ > page 6 have not been without consequences for the Top 10. Oman (position 3, previously 27), Bahrain (position 4, previously 18) and Saudi-Arabia (position 6, previously 28), for example, are classified as significantly more militarised with the new methodology than before. All three countries do not have military reservists and, with the adjusted weighing of this factor, they have moved up some positions.

There are some countries, for which we do not have any reliable data to analyse the distribution of resources between the military and overall society. For some countries, however, particularly Syria, North Korea, Eritrea or the United Arab Emirates, it can be assumed based on earlier surveys that they have a very high level of militarisation. The United States (position 27) that still spends more money on its military than any other country (2019: US $718.7 billion, share of gross domestic product (GDP) of 3.4 per cent), [2] is not in the Top 10 due to its strong economy \ > page 18.

1 \ Global Health Security (GHS) Index (2019): https://www.ghsindex.org/wp-content/uploads/2019/10/2019-Global-Health-Security-Index.pdf; 25 November 2020

2 \ Unless otherwise indicated, all information on military expenditure in this publication has been taken from the SIPRI Military Expenditure Database.

Methodological innovations in the GMI 2020

This year, we made minor methodological adjustments to the calculation of the GMI. We, for instance, adjusted our formula for logarithms so that particularly low values for individual data categories do not result in a disproportionately low value in the overall calculation. The effect of this change is most noticeable in countries with no military reservists. As the ratio of the number of reservists to the overall population is a sub-indicator of the GMI, the value 0 (that is when a country does not have any military reservists) in the old calculation resulted in a disproportionately low value compared to countries with existing but few reservists.

As a result of the corrections made, these countries have moved up several positions in the ranking of the Global Militarisation Index. A few countries that in turn have relatively high numbers of reservists, and for which these were strongly reflected in the overall calculation, have fallen by several positions. As a consequence, such changes in the ranking of individual countries do not remain without effects on the overall ranking.

Table 1
Top 10

Country				GMI value	Rank
Israel	2.4	1.7	3.1	**363.2**	**1**
Armenia	2.2	1.7	2.3	**310.1**	**2**
Oman	3.4	0.9	1.8	**305.6**	**3**
Bahrain	2.1	1.3	2.6	**300.8**	**4**
Singapore	2.0	1.3	2.7	**297.2**	**5**
Saudi Arabia	3.1	0.7	2.1	**293.6**	**6**
Brunei	2.3	1.5	1.9	**286.7**	**7**
Russia	2.1	0.9	2.7	**285.1**	**8**
Kuwait	2.6	0.6	2.4	**284.2**	**9**
Jordan	2.2	1.1	2.3	**279.3**	**10**

In 2019, as in previous years, Israel is again the most heavily militarised country in the world. With a population of around nine million, Israel maintains—through its military service system, with 169,500 soldiers and 465,000 reservists—a comparatively very large military, on which it spent more than US $20 billion in 2019. This corresponds to a share of 5.3 per cent of its GDP. These, relatively speaking, high investments in the military continue as a result of Israel's still tense security situation and conforms to a generally high level of militarisation in the Middle East (six countries in the Top 10).

Focus on regional militarisation

Eastern Europe

Because of the tense security situation and escalating territorial disputes, militarisation in eastern Europe is on the rise. When, in the southern Caucasus, the unresolved conflict over the region of Nagorno-Karabakh flared up again in July 2020, it resulted in the most intense fighting between **Armenia** and **Azerbaijan** since the ceasefire in 1994. But even though the parties agreed to a Russia-brokered ceasefire on 10 November 2020, it is likely that Armenia (position 2) and Azerbaijan (position 16)—both in the Top 10 of most heavily militarised countries in the world—will continue to invest significantly in their military, given the conflict situation. In 2019, Armenia and Azerbaijan spent 4.9 and 4 per cent respectively of their gross domestic product (GDP)—in eastern Europe by far the most in this sector. The army and air force of both countries underwent comprehensive modernisation programmes. While Armenia mostly imported modern weapons systems from Russia, Azerbaijan expanded its relationships with other arms exporters, amongst them Israel, Ukraine and Turkey besides its traditional military cooperation with Russia. **Turkey** (position 20) itself became an active party to the conflict over Nagorno-Karabakh. Fighter aircraft and drones of the Turkish military attacked Armenian fighting positions by air. On the ground, Baku was supported by Syrian rebels who had entered the region with the help of Turkey. Besides the conflict over Nagorno-Karabakh, Turkey is also involved in other conflicts, such as in Syria and Libya.

The level of militarisation in **Belarus** remains high (position 17). With 45,350 active soldiers, 110,000 paramilitaries and around 290,000 reservists, the country has a relatively large military considering that its population consists of only 9.5 million people. The military has more than 2,500 major conventional weapons systems at its disposal, most of which were imported from Russia. At the time of writing, military spending as a proportion of GDP is 1.2 per cent.

Since the outbreak of the conflict in Donbass in February 2014, the level of militarisation of **Ukraine** has risen markedly (position 22; 2014: position 41). The number of military and paramilitary personnel has increased significantly; the existing major conventional weapons systems have been comprehensively modernised. Since 2014, the military budget of Ukraine has grown by 62 per cent to US $4.6 billion, representing a share of 3.4 of its GDP (2014: 2.2 per cent).

The level of militarisation of **Russia** (position 8), which has one of the largest military forces in the world with more than 70,000 heavy weapons systems, 900,000 soldiers, two million reservists and more than 550,000 paramilitaries, remains very high. Despite the difficult economic situation due to the low commodity prices and Western sanctions, military spending rose again slightly in 2019 to US $64.1 billion (3.9 per cent of GDP) after having fallen markedly in 2017 and 2018 from its peak of US $79 billion in 2016. In the course of large-scale modernisation in organisation, personnel and military equipment in 2008, around two-thirds of all conventional weapons systems have now been upgraded or replaced. In particular, Moscow has invested heavily in its air force and strategic nuclear forces. The military developed from a mass mobilisation army to a modern combat-ready army. With the large-scale procurement of precision weapons and automated command-and-control systems for network-centric warfare, Russia's military capabilities are at their best since its armed forces were formed in 1992. [3] In practice, this has already become visible in various conflicts, such as those in Syria, Libya, on the Crimea and eastern Ukraine. Russia spent more than US $684 billion on this in the past decade. A further US $306 billion are planned to be spent in the coming years on modernising and professionalising the armed forces under the new procurement programme GPV 2027. Among other things, Russia plans to procure 76 new Su-57 fighter aircraft by 2028.

3 \ Military Balance Blog (2020): Russia's armed forces: more capable by far, but for how long?, https://www.iiss.org/blogs/military-balance/2020/10/russia-armed-forces; 25 November 2020

Table 2

The ten most militarised countries in Europe

Land				GMI value	Rank
Armenia	2.2	1.7	2.3	**310.1**	**2**
Russia	2.1	0.9	2.7	**285.1**	**8**
Greece	1.6	1.1	2.7	**269.1**	**12**
Cyprus	1.2	1.5	2.7	**268.2**	**13**
Azerbaijan	2.1	0.9	2.1	**254.8**	**16**
Belarus	1.0	1.4	2.3	**231.8**	**17**
Montenegro	1.0	1.5	1.3	**226.4**	**19**
Turkey	1.8	0.7	2.0	**223.8**	**20**
Ukraine	1.9	0.8	1.8	**221.6**	**22**
Finland	1.1	0.7	2.3	**203.0**	**29**

Despite the COVID-19 pandemic, another large Russian military exercise (Caucasus 2020) took place this year in which 12,900 soldiers from other countries, such as China, Pakistan, Belarus, Armenia and Myanmar, participated. Both Russia and NATO are increasingly focusing on deterrence through military build-up and the mutual demonstration of military strength rather than on reciprocal checks, verifications and restrictions.

NATO and EU-countries

With "Defender 2020", NATO had also planned a major multilateral military exercise. Some 37,000 military personnel were to take part in this. Due to the coronavirus pandemic, however, the largest redeployment of US forces to Europe in 25 years was cut short. The relationship between NATO and Russia has deteriorated massively since the annexation of Crimea and the violent conflict in eastern Ukraine. In eastern Europe in particular, since then, strong tendencies towards an arms build-up can be observed that have contributed to a surge in militarisation.

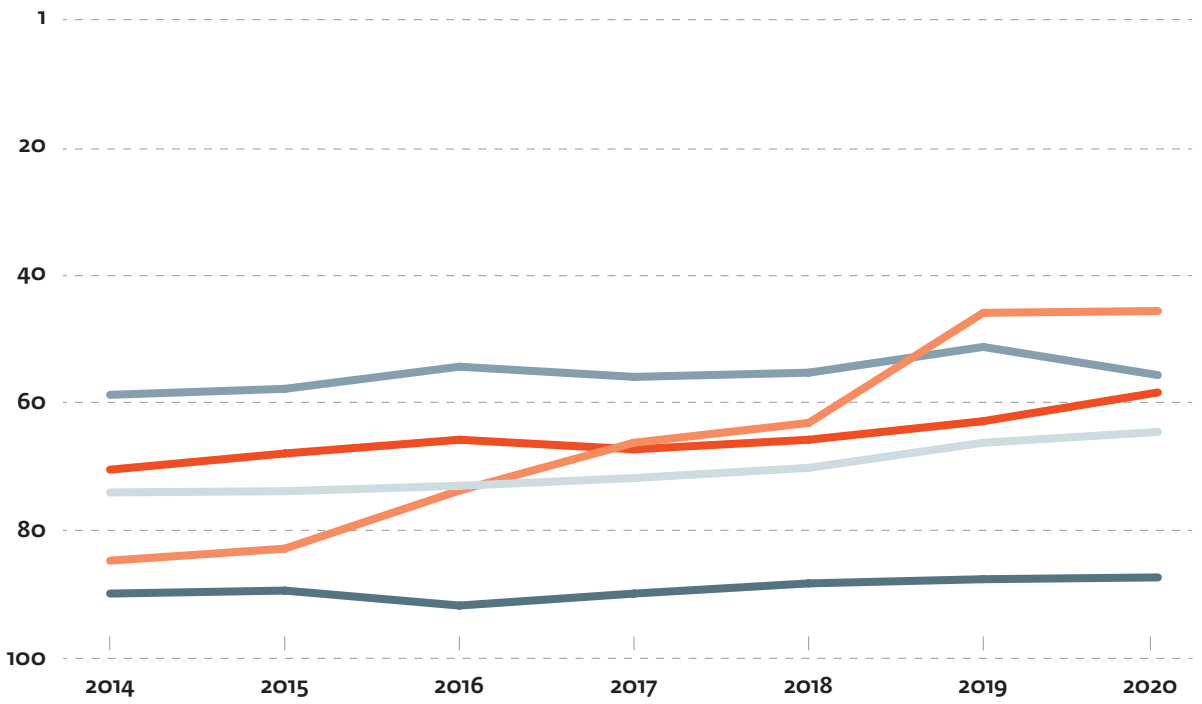
Since 2014, militarisation has increased in 22 of the 27 EU member states. While the average GMI ranking in the European Union in 2014 was position 82, the average level of militarisation was at position 72 in 2019. Militarisation increased very noticeably in the Baltic and eastern European countries, as the following figures show:

Latvia (position 60; 2014: position 129) and **Lithuania** (position 32; 2014: 82) invested 0.9 per cent of their GDP in the military in 2014. In 2019, investment amounted to two per cent. Defence expenditure of **Estonia** (position 32; 2014: position 43) with 2.1 per cent was above the NATO two-per cent goal in 2019 (2014: 1.9 per cent). In all three Baltic countries, the number of military personnel and that of heavy weapons systems, mostly armoured personnel carriers, have increased. All in all, this has led to a significant rise in militarisation throughout the Baltic region.

Following years of reduced military spending, other eastern European EU-countries, too, launched major state procurement plans to modernise their armed forces' military equipment and, at the same time, replace outdated Soviet weapons systems by modern military technology. The **Czech Republic** (position 89; 2014: position 98) invested, for instance, in new infantry fighting vehicles, light combat and utility military helicopters as well as new radar systems in 2019. **Hungary** (position 78; 2014: position 92) ordered amongst others new air defence systems and

Figure 1

Average GMI-ranking of NATO (total) and EU-countries according to region, 2014-2020



	2014	2015	2016	2017	2018	2019	2020
NATO	75.3	75.1	74.2	72.9	71.2	67	65.2
Baltic	86.7	84.7	75	67	63.7	45.3	45
Northern Europe	59	58	54.3	56	55.3	51	55.7
Eastern Europe	71.5	68.8	66.5	68.1	66.5	63.4	58.6
Central, western and southern Europe	92.2	91.7	94.2	92.2	90.5	89.8	89.5

Baltic countries: Estonia, Latvia, Lithuania; **Northern Europe:** Denmark, Finland, Sweden; **Eastern Europe:** Bulgaria, Croatia, Poland, Romania, Slovakia, Slovenia, Czech Republic, Hungary; **Central, western and southern Europe:** Belgium, Germany, France, Great Britain, Greece, Italy, Ireland, Luxembourg, Malta, the Netherlands, Austria, Portugal, Spain

Source: Own presentation.

rockets, combat and transport helicopters, self-propelled howitzer and heavy battle tanks. **Romania** (position 36; 2014: position 46) bought new fighter aircraft and armoured personnel carriers. Its military expenditure increased to two per cent of its GDP (2014: 1.3 per cent). Measured by GDP, **Slovakia** (position 64; 2014: 79) spent 1.8 per cent on its military in 2019, which is significantly more than in 2014 (1.0 per cent). **Bulgaria**, too, (position 40; 2014: position 60) spent 3.2 per cent on the military, which is significantly more than in 2014 (1.2 per cent). Similarly to **Croatia** (position 44; 2014: 53), it used the funds to increase the number of heavy weapons systems. In 2019, Zagreb also set up reserves of more than 18,000 people.

Meanwhile, militarisation has also increased in the north of Europe. EU member country **Finland** (position 29; 2014: position 33) in particular, with its more than 1,000-kilometre border with Russia, has increased its military budget and is now pursuing many long-planned projects designed to modernise its armed forces with urgency. In 2019, it spent US $4.1 billion, that is 1.5 per cent of its GDP, on the military. In the coming year, Helsinki plans to provide another US $2 billion, representing an increase of 41 per cent. Plans include the purchase of new fighter aircraft made in the United States. The NATO-state **Norway** (position 45; 2014: position 50), too, spent more on its military in the previous years. In 2019, Oslo invested US $7.4 billion (1.7 per cent of its GDP) while in 2014, military spending was still at US $6.3 billion (1.5 per cent of its GDP). The number of heavy weapons systems increased to over 800. Procurement included F-35 fighter aircraft from the United States as well as armoured personnel carriers from Italy and Sweden. In October 2020, the EU-country **Sweden** (position 68; 2014: position 77) passed a new defence law that is to strengthen the readiness to defend the country against Russia in light of increasing tensions in the waters of the North Atlantic (Arctic), the Baltic Sea and the airspace over Scandinavia. It is planning to increase its military budget by 40 per cent by 2025. Funds are to be used to purchase modern weapons systems, among them fighter jets and a new submarine as well as to strengthen cyber defence. In March 2017, Sweden had already decided to reintroduce conscription for 2018. In 2020, it introduced reserves of 10,000 persons. By 2035, the number of troops is to be increased by 30,000 active soldiers.

In central, western and southern Europe, **Cyprus** (position 13) and **Greece** (position 12) are high up in the ranking. For years, these countries have been in dispute with Turkey over the huge natural gas reserves in the eastern Mediterranean. As a result of growing tensions, the government in Athens announced arms purchases and an increase in its military personnel in 2020. In addition to 18 French fighter jets type Rafale, it intends to order new frigates and helicopters, amongst others. The Greek Army is to be increased by 15,000 soldiers. In general, militarisation has increased only marginally on average since 2014 in this part of Europe \ > see Figure 1. While militarisation in **Portugal** (position 59; 2014: 52), **Italy** (position 88; 2014: position 84) and **Luxembourg** (position 104; 2014: 101) decreased slightly, there were increases in the **Netherlands** (position 92; 2014: position 106), **Belgium** (position 93; 2014: position 103) and **Austria** (position 101; 2014: position 108). In **France** (position 66; 2014: position 71), too, militarisation has risen since 2014. Reasons for this include the increased threat perception towards Russia and the declared goal of European strategic autonomy for which France sees itself as a key player. Besides the modernisation of its fleet of submarines and its Force de Frappe, the French armed forces are also currently establishing a space command against this background. With US $52.2 billion (2019), Paris is investing the most money in its military already, in absolute terms, of all EU-countries. In the course of a military framework law, military spending is to increase from currently 1.9 per cent of GDP to 2.0 per cent by 2025. In **Germany** (position 106), too, where militarisation has remained at a comparatively constant level for years, this could change in the coming years. In 2019, Germany invested US $51.2 billion in its military—ten per cent more than in 2018. This represents the largest increase of all EU-countries. It should be noted, however, that given the economic strength of the country, the share of GDP is only a moderate 1.3 per cent (2014: 1.1 per cent). In absolute terms, this means that the Federal government has increased military spending since the outbreak of the war in Ukraine by more than US $10 billion.

Asia-Pacific and the role of the United States

Two small states head the list of the most highly militarised countries of the Asia-Pacific region. On top position is the city-state of **Singapore** (position 5). With more than 50,000 active soldiers and more than 250,000 reservists, the country has a very large military, measured against its 5.7 million inhabitants. The government intends to compensate for the declining number of conscripts that is due to demographic change—the army plans to reduce its personnel by 30 per cent by 2030—by procuring state-of-the-art military technology. The military has already been cut by 20,000 active soldiers and 50,000 reservists, bringing the state down from second (2019) to fifth position. In 2019, Singapore invested US $11.2 billion in its armed forces (3.2 per cent of its GDP), and there is an upward trend. The military is already considered the best equipped in South-East Asia with the army having about 3,000 major conventional weapons systems. **Brunei** (position 7) is in second place. In 2019, the small state spent some US $419 million on its military; a good 17 per cent more than the previous year. Its military spending as a proportion of GDP rose from 2.6 to 3.3 per cent. As a result, Brunei climbed from position 11 to position 7 in the GMI. In terms of arms imports, the coastal country has focussed in recent years primarily on the modernisation of its navy.

China's (position 98) rapid economic, political and military development is also reflected in the development of its military capacities, especially of its naval and air forces. The People's Republic's military expenditure has almost doubled in the past ten years. While China invested US $136.8 billion in its military in 2009, this figure rose to an impressive US $266.4 billion in 2019. This puts China in second place in the world—behind the United States—but it is only on position 98 in the GMI as its military expenditures represent only 1.9 per cent of GDP. While the military budget increased by 5.1 per cent, general economic growth amounted to 6.1 per cent. The situation is similar with regard to the other sub-indicators of the GMI. Considering the financial and personnel resources of its entire society, the tremendous military spending, as well as the high military personnel and material capacities, are put in perspective. With a population of just under 1.5 billion, the most populated country in the world has more than two million active soldiers, 660,000 paramilitaries and 510,000 reservists. This makes it the world's largest military in terms of numbers, with over 30,100 major conventional weapons systems at its disposal, which will be comprehensively modernised in the wake of the military reform initiated by President Xi Jinping in 2015. Most of the new weapons systems to be procured by China are now produced by its own arms industry, even though the People's Republic is still one of the world's largest importers of weapons. Russia is by far the most important arms supplier to Beijing. By 2035, Beijing aims to have completed most of the modernisation of its military. By 2050 at the latest, the quality of the Chinese military across all military branches and theatres of operations is to be 'world-class'. This ambition is also linked to a strategic reorientation. Against the background of the "New silk road" economic- and geopolitical major project, a change in maritime strategy from a focus on securing its own coastal waters to intensified, foreign projection of power can be observed.

Table 3

The ten most militarised countries in the Asia–Pacific region, plus USA

Country				GMI Value	Rank
Singapore	2.0	1.3	2.7	**297.2**	**5**
Brunei	2.3	1.5	1.9	**286.7**	**7**
Korea, Republic	1.6	1.5	2.1	**259.7**	**14**
Cambodia	1.5	1.7	1.3	**223.5**	**21**
United States	1.7	0.5	1.9	**205.6**	**27**
Thailand	1.2	0.9	1.1	**159.5**	**58**
Australia	1.3	0.2	1.5	**151.3**	**65**
Malaysia	0.9	0.6	1.0	**125.5**	**90**
China	1.4	0.3	0.8	**121.3**	**98**
Nepal	1.2	0.7	0.5	**116.1**	**105**
New Zealand	1.1	0.2	0.9	**107.8**	**109**

In the other countries bordering the South China Sea, the tensions resulting from territorial disputes with China have not yet significantly increased the level of militarisation. The GMI values of **Malaysia** (position 90), **Japan** (position 118), the **Philippines** (position 128) or **Indonesia** (position 123) have remained relatively constant over the last few years. This is certainly also due to the increased maritime presence of the United States in the Pacific and the ever-closer strategic alliances of the Indo-Pacific democracies. But it cannot be ruled out that this will change in the future. For not only China, but also other countries in the region, such as Indonesia or the Philippines, are currently modernising their navy. Japan, too, whose airspace and waters are increasingly subject to incidents with China, intends to build up its military capabilities in the coming years, based on the White Paper published in 2018.

The complex strategic rivalry between China and the **United States** (positon 27) for influence in the region is also very pronounced in the maritime sector. In the South China Sea, the US-American claim to free access to the world's oceans clashes with China's desire to establish a security zone and to exacerbate the costs of a US-intervention in the event of conflict to a level unacceptable to the United States. The United States Navy last reacted to the Chinese quest for military dominance in the South China Sea and around the island country of **Taiwan** with large-scale military manoeuvres which China, in turn, responded to with its own military exercises. For a few months now, both states have repeatedly been testing their latest weapons systems in the Pacific—both water- and air-born. While this increasingly offensive competition for power that keeps intensifying the mutual threat perceptions and contributes to a weapons build-up in the entire region is certainly not primarily the result of the US policy towards China under Donald Trump, it has been fuelled by it.

Since the inauguration of Donald Trump in 2017, US-militarisation has increased. While in 2016, the United States was still ranked 33 in the GMI, in 2019, it rose to position 27. During Trump's four-year term of office, military expenditure increased from US $669.4 billion (2016) to US $718.7 billion (2019). Since 2017, Trump's national defence strategy has not only bolstered the Pentagon's financial resources but also increased the number of troops. The navy received an additional 10,000 soldiers. The army expanded by 6,400, the air force by as many as 15,700. Altogether, the United States has more than 1.38 million military personnel—only China (2.3 million) and India (1.45 million) have more soldiers. The number of heavy weapons systems has increased markedly by 1,670 since 2016 so that the United States are now in possession of more than 53,100 modern major conventional weapons systems—including 3,780 combat aircraft. Trump's political agenda foresaw the return to the 'rivalry of Great Powers', which also affected the nuclear weapons policy of the United States. Thus, he continued modernising the US nuclear arsenal announced in the Nuclear Posture Review in 2018, action that had already been initiated by the Obama Administration. In 2018, the Pentagon began to procure more powerful and versatile types of warheads with the justification of enabling a more specific deterrence of Russia and China. In 2021, the funds for the modernisation of nuclear warheads are to increase again markedly by 25 per cent to about US $15.6 billion.

Militarisation and health security

Although there is no uniform definition of the term 'health security', it usually refers to measures or capabilities that are to protect the population against a number of natural and human-made threats to their health. These threats include natural disasters and environmental pollution, but also, and in particular, (newly emerging) contagious diseases that can develop into epidemics and pandemics. The possible link between the level of militarisation of a country and its capacity to ensure the health security of its population lies in the way the state distributes its resources, particularly its financial resources. Funds designed for the defence budget are not available for the civilian sector and thus not for the health sector—and vice versa. There are indeed overlaps between military and health security—for example, when the military is deployed for disaster relief, or military personnel are involved in fighting a pandemic. However, the questions also arise whether the distribution of resources in favour of the military in highly militarised countries is at the expense of health security and whether less militarised countries correspondingly show a higher level of health security. To pursue these questions and to identify possible links between militarisation and health security, we will compare the GMI in the following with the values of the Global Health Security (GHS) Index.

The GHS Index is a project of the Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security (JHU), developed in cooperation with the Economist Intelligence Unit (EIU). It collects data on the health security capabilities of 195 countries. These capabilities are divided into six categories: Prevention, Detection and Reporting, Rapid Response, Health System, Compliance with International Norms and Risk Environment. For example, in the Detection and Reporting category, data on lab systems and the epidemiological staffing levels are collected. The Health System category includes data on the capacity of hospitals, infection control and access to healthcare. All data have been obtained from publicly accessible sources of the respective countries or international organisations, such as the World Health Organization (WHO) and the World Bank.[4] In the following, we will compare the GHS and the GMI—albeit in a limited fashion—to point to some possible, basic links.

Table 4
30 most heavily militarised countries (positions 1–30)

Most Prepared	3
More Prepared	22
Least Prepared	5
Average score GHS Index	44.3

The average score of all 195 countries of the GHS Index is 40.2 (of 100 possible points). According to the GHS study, this illustrates the low level of preparedness and ability to deal with health threats globally. According to their score, all countries are divided into three categories: Most Prepared, More Prepared and Least Prepared. If we compare the GMI with this, we find that the **30 most heavily militarised countries** on average show a GHS Index value of 44.3 (corresponds to 78th place in the GHS Index). South Korea (14th place), the United States (27) and Finland (29) are the only countries of that group that are classified as Most Prepared in the GHS. By contrast, Brunei (7 place), Algeria (15), Iraq (18), Botswana (24) and Mauritania (30) are Least Prepared. The large majority of the 30 most militarised countries can be found in the More Prepared category.

4 \ Besides many other factors, the data on health expenditures and medical personnel are also part of the calculations of the GMI, which describes the relation between military spending and military personnel of a country with these data. A precise, more in-depth investigation needs to break down the two indexes further.

Most of the **30 least militarised countries,** namely 20, can also be found in the same category of the GHS Index (More Prepared). Still, we have not identified one single country here that qualifies for the Most Prepared category of the GHS. By contrast, we can find ten countries that have been classified as Least Prepared. Among these are Haiti (151th place), Papua New Guinea (142), Lesotho (133) or Guatemala (132). The average score of this group of countries in the GHS Index is only 38.2—and thus markedly below the average GHI Index score of the 30 most heavily militarised countries in the world.

So, the equation that highly militarised countries score worse when it comes to health security as they spend too many resources on the military is wrong. Rather, at first glance, it seems to be the other way around: It is the least militarised countries that have worse overall health security scores. We believe that there is a plausible explanation for this: The countries with a particularly low level of militarisation are predominantly countries whose governments generally have few resources available due to the general economic situation. In other words, countries such as Haiti or Lesotho only have a comparatively low GDP of which they only spend a small proportion on their military. At the same time, the remaining resources—in absolute terms—are not sufficient to achieve adequate standards of health security.

This is in line with earlier findings on the connection between militarisation and state fragility, according to which the majority of the least militarised countries are so-called low-capacity states \> Global Militarisation Index 2019. These are countries that can only provide limited public services.

Table 5
30 least militarised countries (positions 122–151)

Most Prepared	**0**
More Prepared	**20**
Least Prepared	**10**
Average score GHS Index	**38.2**

However, this does not mean that a high level of militarisation is totally unproblematic or even desirable in terms of health security. If we take a look at the countries with an average level of militarisation, we find that precisely this group performs best when comparing the GHS scores. Among the 30 countries in the positions 61 to 90, there are seven countries that, according to the GHS Index, are in the Most Prepared category: Switzerland (63rd place), Australia (65), France (66), Sweden (68), Denmark (70), Slovenia (72) and Great Britain (77). And even though there are also eight countries that are Least Prepared, according to the GHS, the average GHS Index score of 48.4 is higher than the average score of the group of the 30 most heavily militarised countries. Moreover, this not only applies to the overall score of the GHS Index. The countries on positions 61 to 90 of the GMI are also on average above the 30 most militarised countries in all six sub-categories of the GHS (Prevention, Detection and Reporting, Rapid Response, Health System, Compliance with International Norms and Risk Environment). So, with all the caution that is required for such a cursory comparison of data, it is at least possible that high investments in the military by some of the most heavily militarised countries, such as Russia, Greece or some countries in the Middle East, are at the expense of health security.

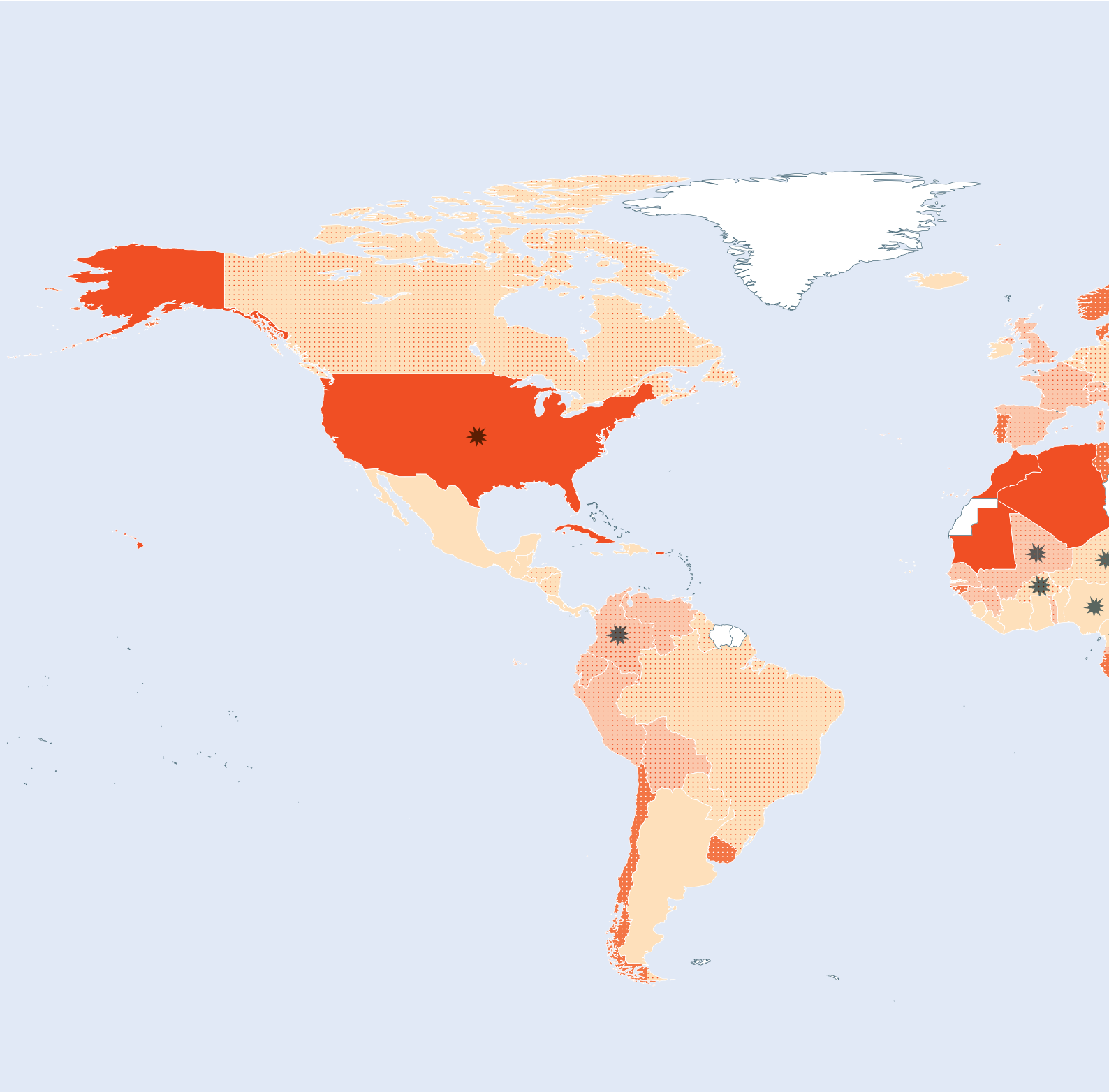
Table 6
30 countries of average militarisation (positions 61–90)

Most Prepared	7
More Prepared	15
Least Prepared	8
Average score GHS Index	48.4

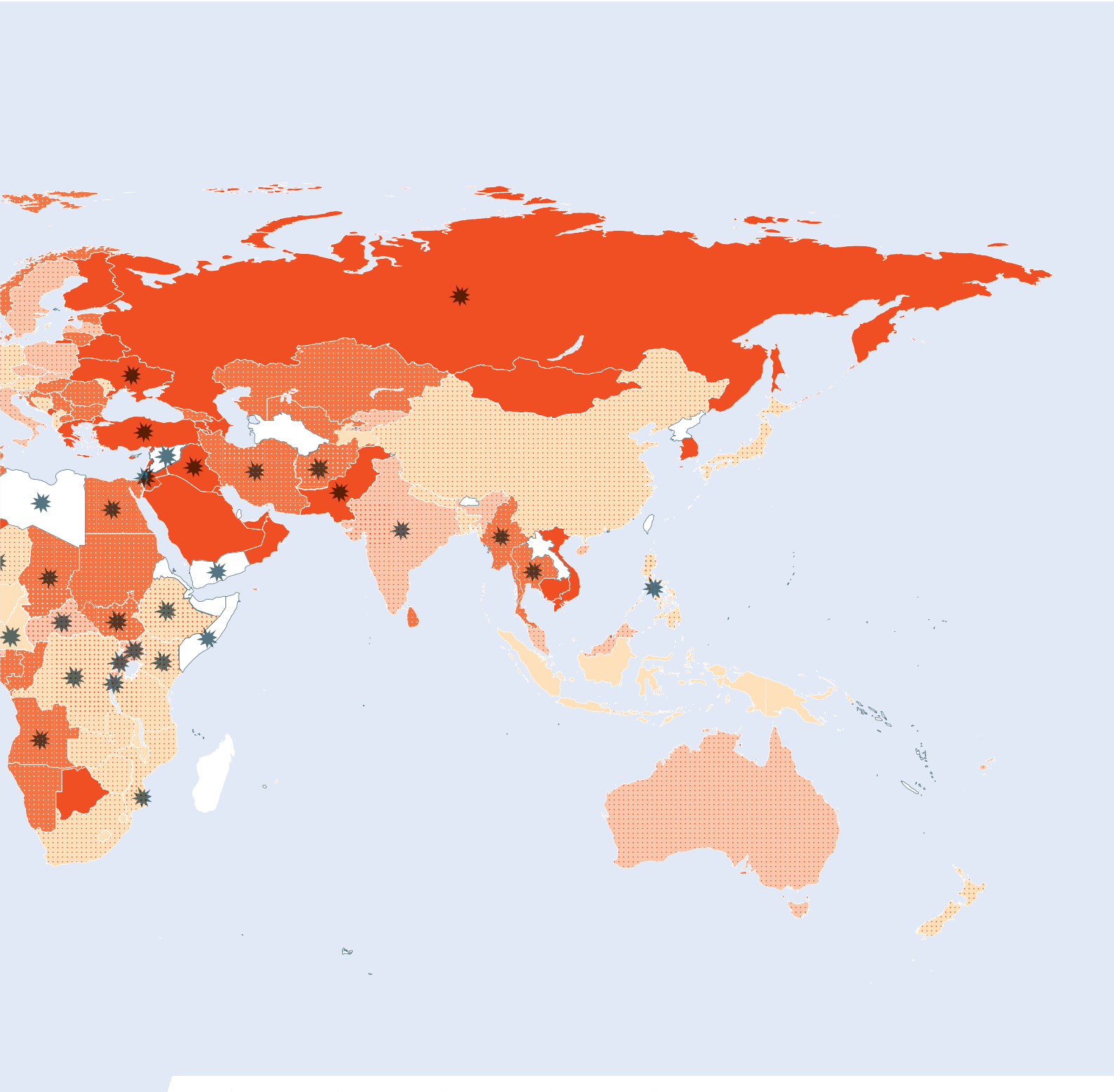
Finally, the question arises which effects COVID-19 and especially the economic consequences of this crisis will have on global militarisation. Even if the indirect and direct economic consequences of the pandemic cannot be predicted at the present time, it is almost certain that the public budgets in many countries will be under great pressure in the coming years as a result of new borrowing to combat these consequences. This is also likely to have an impact on military spending. Two scenarios are conceivable: In the first scenario, there will even be an increase in militarisation as the economic effects of COVID-19 will lead to a proportionally greater decline in economic performance (measured by GDP) than in military expenditure. The second scenario is the opposite, where military spending will fall more sharply than GDP, leading to a drop in militarisation. Which of the two scenarios will play out is likely to also depend on whether the constraints on public spending will lead to a real shift in political priorities, thus giving health policy and the prevention of future threats to health security precedence over defence policy.

The depiction and use of boundaries or frontiers and geographic names on this map do not necessarily imply official endorsement or acceptance by BICC.

Map 1
Overview GMI-ranking worldwide



Source conflict data: *UCDP/PRIO Armed Conflict Dataset* **Sources of administrative boundaries:** *Natural Earth Dataset*


Rank 1–30
Rank 31–60
Rank 61–90
Rank 91–120
Rank > 120
no data available
Participation as a main actor in armed conflicts (2019)

MILITARISATION INDEX RANKING

Rank	Country
1	Israel
2	Armenia
3	Oman
4	Bahrain
5	Singapore
6	Saudi Arabia
7	Brunei
8	Russia
9	Kuwait
10	Jordan
11	Lebanon
12	Greece
13	Cyprus
14	Korea, Republic of
15	Algeria
16	Azerbaijan
17	Belarus
18	Iraq
19	Montenegro
20	Turkey
21	Cambodia
22	Ukraine
23	Morocco
24	Botswana
25	Cuba
26	Pakistan
27	United States of America
28	Mongolia
29	Finland
30	Mauritania
31	Egypt
32	Lithuania
33	Namibia
34	Estonia
35	Iran
36	Romania
37	Georgia
38	Serbia
39	Uruguay
40	Bulgaria
41	Sri Lanka
42	Macedonia
43	Angola
44	Croatia
45	Norway
46	Poland
47	Tunisia
48	Chad
49	Congo, Republic of
50	Uzbekistan
51	Chile
52	South Sudan
53	Gabon
54	Sudan
55	Kyrgyzstan
56	Guinea-Bissau
57	Afghanistan
58	Thailand
59	Portugal
60	Kazakhstan
61	Colombia
62	Togo
63	Switzerland
64	Slovakia
65	Australia
66	France
67	Burundi
68	Sweden
69	Latvia
70	Denmark
71	Mali
72	Slovenia
73	Guinea
74	Peru
75	Fiji
76	Bolivia
77	United Kingdom
78	Hungary
79	Uganda
80	Equatorial Guinea
81	India
82	Rwanda
83	Venezuela
84	Senegal
85	Spain
86	Ecuador
87	Central African Republic
88	Italy
89	Czech Republic
90	Malaysia
91	Bosnia and Herzegovina
92	Netherlands
93	Belgium
94	Nicaragua
95	Canada
96	Tanzania
97	Burkina Faso
98	China
99	Moldova
100	El Salvador
101	Austria
102	Guyana
103	Albania
104	Luxembourg
105	Nepal
106	Germany
107	Honduras
108	Zimbabwe
109	New Zealand
110	Brazil
111	Niger
112	Bangladesh
113	South Africa
114	Ethiopia
115	Mozambique
116	Congo, Democratic Republic of the
117	Paraguay
118	Japan
119	Kenya
120	Zambia
121	Jamaica
122	Argentina
123	Indonesia
124	Malawi
125	Benin
126	Cote D'Ivoire
127	Gambia
128	Philippines
129	Belize
130	Cameroon
131	Seychelles
132	Guatemala
133	Lesotho
134	Timor-Leste
135	Ireland
136	Dominican Republic
137	Nigeria
138	Mexico
139	Ghana
140	Madagascar
141	Liberia
142	Papua New Guinea
143	Cape Verde
144	Trinidad and Tobago
145	Mauritius
146	Malta
147	Sierra Leone
148	Panama
149	Costa Rica
150	Iceland
151	Haiti

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