

LONG SHOTS AND BOLD CLAIMS

**SCENARIOS ON FUTURE
CHALLENGES TO THE GLOBAL
ORDER**

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INTRODUCTION

Berlin, February 2017. Younger generations like ours have enjoyed the privilege of growing up in a relatively peaceful and prosperous era. The system of international order that has evolved since World War II has made it possible to overcome the turbulent times of the early 20th century. This system is underpinned by various forums for institutionalized international cooperation, most important among them the United Nations and the Bretton Woods institutions. Yet, these organizations do not reflect today's geopolitical power structure. The rise of China and other emerging economies has fundamentally altered the underlying balance of power. Are our international institutions still fit for purpose to manage the challenges the world is facing in the 21st century?

To date, international institutions have shown sluggishness in tackling mass migration, epidemics, climate change, new security threats as well as economic and financial crises. In response, political disaffection and the success of the Donald Trumps of this world has risen, offering protectionism, nationalism and militarism as an alternative.

The editorial team,
Kevin Müller, Fanny Ries, and Julian Schwartzkopff

Overall, the power of nation states, which form the foundation of the international order, has been gradually eroded. The increasing importance of non-state actors such as banks and large multi-national corporations, as well as increasingly sophisticated crime and terror organizations, is shifting power away from nation states while their fates are increasingly governed by factors that transcend national borders.

Against this backdrop, **Polis180** has assembled a team of young authors to analyze key global challenges, how they might affect the international order, and how they could evolve. This report deals with seven such issues, outlining two possible futures for each: one where they are addressed effectively (the Blue Sky scenario) and one where they are not (the Dark Sky scenario).

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EXECUTIVE SUMMARIES

The problems the international order faces are increasingly global in nature. They require effective collaboration of states with diverse and often opposed interests in order to achieve jointly beneficial solutions. **This is clearly illustrated by the scenarios in the following chapters.** At the same time, the problem-solving capacity of the system itself has increasingly been put into question. The influence of nation states is on the decline. Many future challenges pose difficulties to democratic decision-making processes as solutions are often unpopular, difficult to communicate, or produce benefits over longer time spans than short-lived electoral cycles. Rather than attempting to provide a coherent story across all chapters or to merely extrapolate current trends, our scenarios offer snapshots of many possible futures.

CHALLENGE 1: THE CARBON BUBBLE - THE NEXT FINANCIAL CRISIS WAITING TO HAPPEN?

Julian Schwartzkopff

This chapter details the risk of an economic crisis resulting from a carbon bubble in company valuations. The bubble stems from fossil fuel reserves counted at full value in balance sheets even though most of them can never be burnt if efforts to reduce CO₂ emissions are taken seriously. In the *Dark Sky scenario*, the bubble bursts starting with coal, followed by oil. The resulting shock transmits to financial institutions, causes a major slowdown of the world economy and stagflation in the OECD world. Widespread unemployment and a renewed outbreak of sovereign debt crises in EU countries fuel populism and protectionism. In the *Blue Sky scenario*, effective international coordination provides clear signals to markets to stop the carbon bubble from growing and to shift investment flows to low-carbon projects. A fundamental reform of accounting and banking regulation deflates the bubble, minimizing financial fallout.

CHALLENGE 2: HOW TAX EVASION UNDERMINES GOVERNMENTS AND SOCIETIES

Kevin Müller

This chapter describes how foregone tax revenues could exacerbate income inequality while eroding the budgetary resources that governments rely on. In the *Dark Sky scenario*, countries fail to adopt effective global tax regulation and shut down tax havens, instead preferring to attract business and investment via tax competition. This results in increased inequality and political discontent, shifting power to corporations and restricting the problem-solving capacity of governments. In the *Blue Sky scenario*, a concerted push for regulation by the EU and the US, coupled with the strict criminal prosecution of financial sector companies enabling tax evasion, manages to limit the problem. This revives the International Monetary Fund with a new mandate to oversee global financial flows while reducing the growth of income inequality and propping up government spending on infrastructure, social security and education.

CHALLENGE 3: PEAK OIL DEMAND AND THE PETRO-STATES

Julian Schwartzkopff

This chapter examines how low oil prices after reaching peak oil demand could destabilize oil-dependent governments in the Middle East, Latin America and Asia. The most likely cause for a decline in oil demand is a major increase in the market penetration of electric vehicles. In the *Dark Sky scenario*, the failure of petro-states to diversify their economies leaves them unable to uphold the subsidy and patronage systems on which their legitimacy is built. While some turn authoritarian, others simply collapse, leading to major conflicts, instability and power shifts in the MENA region as well as Latin America, along with a major increase in terrorism and conflict refugees. In the *Blue Sky scenario*, early steps are taken to diversify oil economies while Western countries launch a major investment initiative in the MENA region and climate finance is fully mobilized to promote sustainable investment. In this scenario, the consequences for petro-states are still painful, but largely manageable, while increased economic interdependence promotes stability and peace.

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**CHALLENGE 4: THE RISE OF CHINA MIRRORED
IN THE SOUTH CHINA SEA DISPUTE**

Fanny Ries

This chapter deals with the increasing assertiveness of China in the South China Sea and its clash with the US. It analyzes different possible development paths in the context of a major power shift from the West to China. In the *Dark Sky scenario*, China moves unilaterally, leveraging its economic and military power to lay claim to the South China Sea. The rift this causes between the world's two largest economies inhibits international cooperation on regional security issues and climate change, bringing to the fore the weaknesses of ASEAN and the UN in their current form. In the *Blue Sky scenario*, a cooperative management of the South China Sea issue triggers a new era of pragmatism in international institutions that take into account China's grown influence.

**CHALLENGE 5: SUMMER IS COMING - WILL AN
ICE-FREE ARCTIC BECOME A REGION OF
COOPERATION OR CONFLICT?**

Stephan Hoare

This chapter outlines that the increased accessibility of resources and shipping routes in the Arctic, prompted by climate change, could spark a renewed conflict between Russia and the West. The *Dark Sky scenario* describes a militarized Arctic, with unchecked extraction of resources at high environmental costs, divided into zones of Russian and Western influence. This Arctic has become a front in a new Cold War which has brought cooperation between East and West to a standstill. In the *Blue Sky scenario*, the Arctic becomes a region of cooperation where major economic benefits from free shipping routes and Arctic tourism are realized, where environmental safeguards are jointly administered by Russia and NATO, all while continuing tensions are effectively managed in the Arctic Council.

**CHALLENGE 6: THE GLOBAL INCREASE OF HYBRID
WARFARE - THE CASE OF RUSSIA'S WAR IN
UKRAINE**

Ann-Sophie Gast and Salome Minesashvili

This chapter takes a look at the worrying trend of nation states increasingly resorting to hybrid warfare. In the *Dark Sky scenario*, the authors outline a future where a massive cyber-attack on the Ukrainian power system precipitates an escalation of the conflict, turning into a bloody war between Russia and the Ukraine, causing a surge of displaced people and a major gas shortage in the EU. The lack of resolve on the part of NATO and the EU to intervene as long as there is plausible deniability only emboldens Russia to make moves on the Baltics. In the *Blue Sky scenario*, the Ukraine conflict comes to a peaceful resolution after tough negotiations with Russia that involve granting substantial autonomy to Donetsk and Luhansk, becoming a global precedent for restricting the use of hybrid warfare by state actors through international fact-finding as well as "naming and shaming" mechanisms.

**CHALLENGE 7: ANTIMICROBIAL RESISTANCE - ARE
WE APPROACHING AN ERA OF UNTREATABLE
GLOBAL EPIDEMICS?**

Jannes Elfgen

This chapter analyses how the projected shortage of effective antibiotics, coupled with increased global mobility and weak health systems in low-income countries can contribute to the spread of epidemics. In the *Dark Sky scenario*, failure to preventively address antimicrobial resistance leads to frequent pandemics, leaving countries to react unilaterally by cutting off trade and the movement of people from areas of risk. This leads to a major decrease in global trade and transport and effectively cuts off many developing countries from the international economy while increasing migration flows from disease-ridden regions. In the *Blue Sky scenario*, the problem of reckless antibiotics use is recognized and addressed early, limiting the extent of antimicrobial resistance. Pandemics still pose substantial challenges, but can be managed by effective international cooperation under the guidance of a substantially strengthened World Health Organization.

EXECUTIVE SUMMARIES

Several common themes emerge across our scenarios. In many of the **Dark Sky scenarios**, a failure to solve global challenges reduces global prosperity and security, with many scenarios depicting a rise in populism and isolationist policies as a result. This, in turn, leads to more acrimonious international relations, decreasing the problem-solving capacity of the international order as a whole. Other common elements are the increasing power of multinational corporations vis-à-vis nation states as well as the potential for significant power shifts, e.g. from traditionally dominant Western countries to China and the developing world.

While the scenarios all focus on one challenge to enhance analytical clarity, in reality, various challenges will unfold in parallel, with **manifold interactions** between them. The Dark Sky scenarios highlight negative spill-over effects where failure to achieve jointly beneficial solutions inhibits cooperation in other areas. For example, a carbon bubble shock would complicate global tax harmonization. Rampant antibiotic-resistant pandemics would impede the global cooperation required to address common security challenges and have negative impacts on global GDP growth. Security threats from military confrontations with Russia or an intensified outbreak of conflict in the Middle East would likewise impede international cooperation. The increasingly assertive and confrontational stance of China, if mishandled, can make it harder to find solutions where the cooperation of the world's most populous country is urgently required, such as in many security and economic issues and in the fight against climate change.

The **Blue Sky scenarios**, on the other hand, show that global challenges are manageable if international leaders can transcend narrow national interests and if problems are addressed with proactive long-term planning rather than political gut reactions. A common element in many Blue Sky scenarios is that some crisis or game-changing event catalyzes lasting international cooperation and pragmatic compromise solutions. This evokes Winston Churchill's timeless exhortation never to let a good crisis go to waste. Many of the Blue Sky scenarios also stress positive spill-over effects, where successful problem management in one area facilitates cooperation in others through trust-building, policy-learning and by providing templates of effective mechanisms that can be applied to other areas.

This suggests that an **effective international order** that realizes the benefits of collective action can be built step by step, dealing with challenges in an effective and pragmatic way as they come. While such a positive self-reinforcing process seems very desirable, there are no grounds for complacency – repeated problem-solving failures could just as well lead to a self-reinforcing spiral of international non-cooperation, acrimony, and strife. Faced with the complex issues of the 21st century, of which this collection of scenarios addresses just a few, decision-makers have to make a fundamental choice as to what kind of international order they want to promote for the future.

ZUSAMMENFASSUNGEN

Die internationale Ordnung steht vor Herausforderungen, die zunehmend globaler Natur sind. Der Einfluss einzelner Staaten verringert sich stetig und viele Herausforderungen stellen nationale demokratische Prozesse in Frage. Lösungen bedürfen effektiver Zusammenarbeit von Staaten mit diversen und oft widersprüchlichen Interessen. Gleichzeitig jedoch werden die Möglichkeiten internationaler Organisationen, Probleme nachhaltig zu lösen, zunehmend hinterfragt. Oft sind Lösungen unpopulär, schwer zu kommunizieren, oder ihr Nutzen wird nicht während eines Wahlzyklus, sondern erst auf lange Sicht sichtbar. **Einige dieser Dynamiken und ihre potenziellen Szenarien werden in den folgenden Kapiteln dargestellt.** Unsere Szenarien versuchen kein kohärentes Gesamtbild über diese Entwicklungen zu zeichnen. Stattdessen orientieren sie sich an derzeitigen Trends und bieten Momentaufnahmen denkbarer Zukünfte in verschiedenen Feldern.

HERAUSFORDERUNG 1: THE CARBON BUBBLE - THE NEXT FINANCIAL CRISIS WAITING TO HAPPEN?

Julian Schwartzkopff

Das Kapitel führt die ökonomischen Risiken auf, die aus einer Blase am Kohlenstoffmarkt entstehen können. Im **Dark Sky-Szenario** platzt die Kohlenstoffblase zuerst auf dem Kohlemarkt und überträgt sich dann auf den Ölmarkt. Der resultierende Schock überträgt sich auf Finanzinstitutionen, verursacht einen weltweiten Konjunkturabschwung sowie eine Stagflation in den OECD-Ländern. Die Arbeitslosigkeit steigt und die europäische Staatsschuldenkrise bricht erneut aus, Populismus und Protektionismus machen sich in vielen Staaten breit. Im **Blue Sky-Szenario** hingegen führt effektive internationale Zusammenarbeit zu klaren Signalen an den Rohstoffmärkten, zur Verlagerung von Investitionen in kohlenstoffarme Projekte und zu einem Schrumpfen der Blase. Eine fundamentale Reform des Rechnungswesens und der Bankenregulierung beruhigt den Markt schrittweise und mindert die Ausfallrisiken.

HERAUSFORDERUNG 2: HOW TAX EVASION UNDERMINES GOVERNMENTS AND SOCIETIES

Kevin Müller

Das Kapitel beschreibt, wie entgangene Staatseinnahmen durch Steuerflucht Einkommensungleichheiten vergrößern und Staatshaushalte aushöhlen. Im **Dark Sky-Szenario** verpasst es die Staatengemeinschaft, effektive Steuerregeln zu erstellen und Schlupflöcher zu schließen. Stattdessen bevorzugt sie es, Unternehmen und Investitionen durch Steuerwettbewerbe anzulocken. Die ansteigende Ungleichheit und Unzufriedenheit verlagert größeren Einfluss auf Unternehmen und limitiert die Problemlösungskapazitäten von Regierungen. Im **Blue Sky-Szenario** kann ein koordinierter Vorstoß der EU und der USA durch strikte Strafverfolgung jener Firmen, die Steuerflucht ermöglichen, das Problem minimieren. Dies belebt den Internationalen Währungsfond (IWF), der ein neues Mandat erhält, um globale Finanzströme zu überwachen und so zur Minderung von Einkommensungleichheiten beizutragen.

HERAUSFORDERUNG 3: PEAK OIL DEMAND AND THE PETRO-STATES

Julian Schwartzkopff

Das Kapitel untersucht, wie niedrige Ölpreise Petrostaaten in Lateinamerika, Asien und im Nahen Osten destabilisieren. Der wahrscheinlichste Grund für einen Rückgang in der Ölnachfrage wäre der disruptive Marktdurchbruch von Elektroautomobilen. Im **Dark Sky-Szenario** verpassen die Staaten die Gelegenheit, ihre Wirtschaft zu diversifizieren und stehen vor dem Zusammenbruch der Günstlingswirtschaft, die ihren Systemen Stabilität verleiht. Während sich in manchen dieser Staaten eine zunehmende Autokratisierung abzeichnet, zerfallen andere. Im **Blue Sky-Szenario** hingegen ergreifen die Petrostaaten rechtzeitig entschlossene Maßnahmen zur Diversifizierung ihrer Volkswirtschaften. Gleichzeitig investieren westliche Staaten in der MENA-Region und mobilisieren Klimafinanzierung, um nachhaltige Investitionen sicherzustellen. In diesem Szenario sind die Folgewirkungen für Petrostaaten immer noch schmerzhaft, jedoch weitgehend kontrollierbar. Gleichzeitig ansteigende ökonomische Abhängigkeiten fördern Stabilität und Frieden.

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**HERAUSFORDERUNG 4: THE RISE OF CHINA
MIRRORED IN THE SOUTH CHINA SEA DISPUTE**

Fanny Ries

Das Kapitel handelt vom Konflikt im südchinesischen Meer und der steigenden Entschlossenheit in Chinas Auftreten gegenüber den Vereinigten Staaten. Das Kapitel analysiert verschiedene Entwicklungspfade, die sich im Kontext der Machtverschiebung von West nach Ost ergeben. Im **Dark Sky-Szenario** verhält sich China unilateral und nutzt sein ökonomisches und militärisches Gewicht, um zentrale Regionen im südchinesischen Meer für sich zu beanspruchen. Das resultierende Zerwürfnis zwischen den beiden größten Volkswirtschaften der Welt hemmt die internationale Kooperation in Bereichen wie der regionalen Sicherheitszusammenarbeit oder dem Klimawandel. Dieser Graben unterstreicht die Schwäche von Bündnissen wie ASEAN oder der Vereinten Nationen. Im **Blue Sky-Szenario** begründet eine kooperative Lösung des Konflikts im südchinesischen Meer eine neue Ära des Pragmatismus in internationalen Organisationen, die Chinas wachsenden Einfluss berücksichtigen.

**HERAUSFORDERUNG 5: SUMMER IS COMING - WILL
AN ICE-FREE ARCTIC BECOME A REGION OF
COOPERATION OR CONFLICT?**

Stephan Hoare

Das Kapitel beschreibt, wie der durch den Klimawandel verbesserte Zugang zu Ressourcen und die Erschließung neuer Seewege in der Arktis einen neuen Konflikt zwischen Russland und dem Westen hervorbringen könnte. Das **Dark Sky-Szenario** beschreibt eine militarisierte Arktis, aufgeteilt in Zonen westlicher und russischer Kontrolle, mit unkontrolliertem Abbau von Ressourcen. Die Arktis entwickelt sich hier zu einer Front in einem neuen Kalten Krieg, der die Kooperation zwischen West und Ost zum Stillstand bringt. Im **Blue Sky-Szenario** hingegen entwickelt sich die Arktis zu einer Region der Kooperation, in der große ökonomische Vorteile durch freie Seewege und Tourismus entstehen und Umweltschutzzonen durch Russland und die NATO verwaltet werden. Der Arktische Rat wird aufgewertet und reift zu einem Gremium heran, in dem regionale Spannungen umfassend verhandelt werden können.

**HERAUSFORDERUNG 6: THE GLOBAL INCREASE
OF HYBRID WARFARE - THE CASE OF RUSSIA'S
WAR IN UKRAINE**

Ann-Sophie Gast and Salome Minesashvili

Das Kapitel betrachtet den Trend zur hybriden Kriegsführung am Beispiel von Russlands Eingreifen in der Ukraine. Im **Dark Sky-Szenario** beschreiben die Autorinnen eine Zukunft, in der Cyberangriffe auf ein ukrainisches Kraftwerk eine Eskalation des Konflikts herbeiführen. Diese endet in einer blutigen Auseinandersetzung mit zahllosen Vertriebenen und Gasengpässen in der EU. Das Zögern aufseiten von NATO und EU vor einem Eingreifen, solange die Urheberschaft der Cyberangriffe nicht endgültig geklärt ist, ermutigt Russland, sich den baltischen Staaten zuzuwenden. Im **Blue Sky-Szenario** kommt der Konflikt in der Ukraine zu einer friedlichen Lösung, indem die Provinzen Donetsk und Luhansk nach Verhandlungen mit Russland weitreichende Autonomie erhalten. Der Friedensprozess entwickelt sich zu einem Präzedenzfall, der es schafft, hybride Kriegsführung mittels internationaler Untersuchungsausschüsse und „Naming and Shaming“-Strategien einzudämmen.

**HERAUSFORDERUNG 7: ANTIMICROBIAL
RESISTANCE - ARE WE APPROACHING AN ERA OF
UNTREATABLE GLOBAL EPIDEMICS?**

Jannes Elfgen

Das Kapitel analysiert, wie ein Mangel an wirksamen Antibiotika zusammen mit dem Anstieg globaler Mobilität und schwachen Gesundheitssystemen in Ländern mit geringen Einkommen zur Verbreitung von Epidemien beitragen können. Im **Dark Sky-Szenario** bleiben Maßnahmen zur Vorbeugung von Resistenzen aus, was zur Verbreitung von Epidemien führt. Drittstaaten schützen sich mit unilateralen Reaktionen wie dem Abbruch von Handelsbeziehungen oder Reisebeschränkungen für Bürger betroffener Staaten. Dies schneidet Entwicklungsländer effektiv von internationalen Märkten ab und vergrößert Migrationsströme aus betroffenen Regionen. Im **Blue Sky-Szenario** wird das Problem des übermäßigen Gebrauchs von Antibiotika frühzeitig adressiert und das Ausmaß an Resistenzen eingeschränkt. Pandemien stellen weiterhin substanzielle Herausforderungen dar, können jedoch durch effektive Kooperation unter der Führung einer gestärkten Weltgesundheitsorganisation bewältigt werden.

ZUSAMMENFASSUNGEN

An vielen Stellen greifen unsere Szenarien **gemeinsame Themen** auf. In mehreren **Dark Sky-Szenarien** verringert das Ausbleiben globaler Lösungen den Wohlstand und die Sicherheit. Einige Szenarien stellen einen Anstieg von Populismus und isolationistischer Tendenzen dar. Vielerorts führt dies zu einer rapiden Verschlechterung der zwischenstaatlichen Beziehungen, was die Fähigkeiten der internationalen Ordnung zur Problemlösung verringert. Weitere verbindende Elemente stellen der ansteigende Einfluss von Wirtschaftsunternehmen gegenüber Nationalstaaten sowie potenzielle Machtverschiebungen von noch dominanten westlichen Staaten hin zu China oder aufstrebenden Schwellenländern dar.

Während sich die Kapitel dieses Polis Papers auf jeweils eine Herausforderung konzentrieren, werden sich diese Zukünfte in Wahrheit parallel entwickeln und **komplexe Wechselwirkungen** zeigen. Die Dark Sky-Szenarien unterstreichen solche negativen „Spill Over“-Effekte, die durch das Ausbleiben gemeinsamer Lösungsansätze internationale Zusammenarbeit zusätzlich erschweren. Ein wirtschaftlicher Schock durch die Kohlenstoffblase beispielsweise würde globale Steuerkooperation grundlegend erschweren. Zügellose Pandemien würden die Sicherheitskooperation verkomplizieren. Militärische Konfrontationen mit Russland oder der Ausbruch von Konflikten im Nahen Osten würden die Kooperation in andern Gebieten ähnlich beeinträchtigen. Ginge der Westen die zunehmend bestimmte Haltung Chinas falsch an, so würde dies die Suche nach Lösungswegen auch in anderen Feldern wie dem Klimaschutz erschweren.

Die **Blue Sky-Szenarien** zeigen andererseits, dass **globale Herausforderungen kontrollierbar** sein können, solange es internationale Führungsmächte schaffen, über ihre begrenzten nationalen Interessen hinwegzusehen und Probleme frühzeitig und im Konzert zu adressieren. Ein weiteres gemeinsames Element in vielen Blue Sky Szenarien ist, dass ein wegweisendes Ereignis nachhaltig katalysierende Effekte entfaltet, die internationale Kooperation und pragmatische Kompromisse ermöglichen. Sie erinnern uns an das Motto von Winston Churchill, niemals eine gute Krise ungenutzt zu lassen. Viele der Blue Sky Szenarien unterstreichen somit positive „Spill Over“-Effekte, die durch erfolgreiches Problemmanagement in einem Bereich Kooperation in einem anderen Bereich ermöglichen.

Dies deutet an, dass eine **effektive internationale Ordnung**, die die Vorteile von kollektivem Handeln realisiert, Schritt für Schritt entstehen kann. Natürlich erscheint solch ein positiver und sich selbst verstärkender Prozess wünschenswert, doch besteht derzeit weder Grund für Bequemlichkeit noch für überschwängliche Hoffnung. Wiederholte Misserfolge in wichtigen Fragen könnten ebenso gut zu einer selbstverwirklichenden Spirale von Nichtkooperation, Verbitterung und Konflikten führen. In Anbetracht der komplexen Herausforderungen des 21. Jahrhunderts, von denen wir in diesem Polis Paper nur einige wenige aufgreifen, stehen Entscheidungsträger heute vor der fundamentalen Entscheidung, welche Form von internationaler Ordnung sie für die Zukunft vorantreiben möchten.

A NOTE ON METHODOLOGY

For the purposes of this work, we adopt an empirical definition of **international order** as *“the sum of regulative features in international relations across the four major substantive issue areas of economics, security, culture and the institutional arrangements of political order.”* We selected a range of issues across the areas of economics and security. The following tables give an overview.

ECONOMIC ISSUES

- ▶ **Challenge 1:** A bursting carbon bubble may lead to a major economic crisis.
- ▶ **Challenge 2:** Global tax evasion undermines nation states and obstructs global governance.
- ▶ **Challenge 3:** Low oil demand disrupts oil-dependent governments and leads to power shifts.

To analyse different possible future developments, we have adopted the tool of **scenario analysis**. The following chapters each give a detailed analysis of the problem and current trends which form the basis of two scenarios – a Blue Sky scenario where the identified challenge is addressed effectively and a Dark Sky scenario where the problem is managed ineffectively, or not at all. Rather than just extrapolating current trends, this allows us to illustrate a range of possible futures, considering interactions between driving factors, as well as anticipating possible developments and turning points. The strength of this approach lies not in producing predictions or judging the likelihood of different developments, but rather in analysing and contrasting several plausible futures. Juxtaposing positive and negative scenarios showcases what difference decisive political action can make.

In our scenario analyses, we hold the nature and intensity of the problem constant at the outset. Only the political response to the issue varies, although its development over the course of the scenario is influenced by the effectiveness of the political

response. In other words, the problem is equally serious in both scenarios – but in one scenario it is addressed effectively and in the other it is not, for varying reasons.

The **Dark Sky scenarios** in the following chapters depict a perpetuation of the status quo for immediate political gain, the application of wrong solutions, the reliance on outdated approaches, and various forms of

SECURITY ISSUES

- ▶ **Challenge 4:** The South China Sea dispute, as a sign of a more assertive China, signals a power shift.
- ▶ **Challenge 5:** Access to the Arctic creates a distributive conflict and may challenge the global order.
- ▶ **Challenge 6:** Hybrid warfare changes the nature of conflict making peaceful resolution harder to achieve.
- ▶ **Challenge 7:** Antimicrobial resistance may lead to disruptions in trade, travel and daily life.

international cooperation breakdown. The **Blue Sky scenarios** paint a rosier picture. They describe a variety of futures in which the international order functions and is able to reform itself. States, recognizing and embracing interdependence, deal jointly with collective action problems and adopt innovative and pragmatic approaches to solving global challenges.

It should be noted that our scenarios do not form one consistent vision of the future across the seven chapters. For example, while challenge 3 pictures a world in which oil prices collapse, challenge 5 describes a future where a resurgence in oil prices renders the Arctic particularly attractive for neighboring states. The scenarios also cover different time horizons, ranging from six to 30 years into the future. This diversity is by design and reflects the inherent unpredictability of the future. The **common element** across the seven scenarios is that they depict the possible development of global challenges that the international order, in its current form, is unable to address effectively.

THE CARBON BUBBLE: THE NEXT FINANCIAL CRISIS WAITING TO HAPPEN?

JULIAN SCHWARTZKOPFF

PROBLEM ANALYSIS

Large amounts of assets in form of power plants and other infrastructure are at risk of sudden devaluation because of climate regulation or climate impacts. Research shows that two-thirds of all known fossil fuel reserves must be left in the ground if humanity is to have a 50% chance of limiting climate change to 2°C above pre-industrial levels.¹ This means that 80% of coal, half of gas and a third of all oil reserves have to remain unused.² If global leaders were to limit climate change to 1.5°C, as stipulated by the Paris 2015 Agreement, the amount would be even higher.³ However, the value and share prices of fossil fuel companies are determined under the assumption that all fossil fuel reserves they own will actually be consumed. This means that the implementation of an effective climate regime would translate into a negative value shock for coal-dependent companies such as Rio Tinto, Glencore, and RWE as well as their oil-dependent peers such as Saudi Aramco, Sinopec, Exxon Mobile, or Royal Dutch Shell.

The difference between the fossil fuels that can actually be consumed and the future profit expectations they

represent is referred to as the carbon bubble.⁴ Any concerted CO₂-reduction effort will render these reserves 'toxic assets' which would lead to a steep fall of share prices. Estimates of the size of the bubble range from US\$28 trillion over the next two decades⁵ to \$100 trillion until the middle of the century⁶. HSBC, Citi, Standard and Poor's, and the International Energy Agency as well as Mark Carney, the Governor of the Bank of England and Chairman of the Financial Stability Board, have all warned of the possibility of a financial crisis as a result of the carbon bubble.⁷

Fossil fuel companies are especially vulnerable in this regard as they tend to be very reliant on future revenues, which is exactly what estimated reserves represent in company balance sheets. More than half the share value of oil and gas companies, for instance, results from future cash flows generated after more than

¹ Christophe McGlade & Paul Ekins, "The geographical distribution of fossil fuels unused when limiting global warming to 2 °C, Nature 517, 187–190

² Ibid.

³ Adoption of the Paris Agreement 2015, United Nations Framework Convention on Climate Change, 21st Conference of the Parties <http://unfccc.int/resource/docs/2015/cop21/eng/I09r01.pdf>

⁴ CarbonTracker, Unburnable Carbon – Are the world's financial markets carrying a carbon bubble?, 2012, accessed 20 August 2016, <https://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>.

⁵ Kepler Chevreux, "Stranded assets, fossilised revenues", ESG Sustainability Research, 24 April 2014, accessed August 20 2016, https://www.keplerchevreux.com/pdf/research/EG_EG_253208.pdf

⁶ Giles Parkinson, "Citigroup sees \$100 trillion of stranded assets if Paris succeeds", RenewEconomy, August 25, 2015, accessed August 20 2016, <http://reneweconomy.com.au/2015/citigroup-sees-100-trillion-of-stranded-assets-if-paris-succeeds-13431>.

⁷ Jessica Shankleman, "Mark Carney: most fossil fuel reserves can't be burned", The Guardian, October 13, 2014, accessed August 20 2016, <https://www.theguardian.com/environment/2014/oct/13/mark-carney-fossil-fuel-reserves-burned-carbon-bubble>

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10 years.⁸ However, the effects of a carbon bubble shock would go far beyond the companies immediately affected. It would not only hit their share prices but also their ability to repay their bonds and loans. Many institutional investors such as pension funds, insurers, sovereign wealth funds and banks are heavily invested in fossil fuel companies. In the EU, exposures are estimated at €260-330 billion for EU pension funds, €460-480 billion for banks and €300-400 billion for insurance companies. This translates to 5% of total assets for pension funds, 4% for insurance companies and 1.4% for banks.⁹

The effects of a carbon bubble shock would reverberate through the global economy via the channels of trade and investment. However, stock exchanges around the world would be differently affected. First, there are large variations in total carbon exposure. The share in total value of oil, gas and coal mining firms at the London Stock Exchange is higher than 20%, compared to 11% in the S&P 500 index for US equities and less than 10% in the Paris stock exchange.¹⁰

Second, stock markets differ significantly in their relative exposure to coal, gas and oil assets. Broadly speaking, coal is the dominant fuel on Asian stock markets while oil predominates in Europe and the Americas. Among Western financial centers, London has a particularly high additional reliance on coal, and Moscow on natural gas.

Different carbon shock scenarios are possible. Some observers predict that the carbon bubble for all three carbon-based assets will burst all at once. This scenario

presupposes one encompassing global carbon price or a similar measure. That is currently not the case. A “staggered” shock scenario therefore seems more likely, as the coal, oil and gas sectors will be affected over different timescales. The coal sector is already largely in crisis as a result of climate regulation, pollution controls, falling costs of clean energy technologies as well as reduced coal demand in China, with several recent high profile mining company bankruptcies in Europe and the US.¹¹ Coal-dependent energy utilities are also coming under pressure in what has become known as the “utility death spiral” phenomenon.¹² However, this has so far been limited to industrialized countries – developing countries have yet to be seriously affected.

A bursting carbon bubble will thus most likely start by diminishing the value of coal reserves. Oil is likely to be next, depending on how quickly electro-mobility or other low-carbon transport options are taken up (see Challenge 3 “Peak Oil Demand and the Petro-States”). Gas, on the other hand, could even enjoy a temporary renaissance as its biggest competitor coal is taken out.

The size of the carbon bubble is still increasing as companies and governments are continuing to fund more fossil-fuel infrastructure and exploration projects than the world can realistically use while still protecting the climate. Globally, fossil fuel subsidies are estimated at US\$ 600 billion a year, about US\$ 100 billion of which is provided directly to producers.¹³ Climate accounting, which represents the external costs of carbon in company balance sheets through a shadow carbon price, is voluntary and only being taken up slowly by market actors. At the same time, it is not clear

⁸ McKinsey & Carbon Trust, Climate change – a business revolution? How tackling climate change could create or destroy company value, 2008, accessed August 20 2016, <https://www.carbontrust.com/media/84956/ctc740-climate-change-a-business-revolution.pdf>.

⁹ Francis Weyzig et al., “The Price of Doing Too Little Too Late: The impact of the carbon bubble on the EU financial system”, 2014, Greens/EEFA Green New Deal Series, Volume 11, accessed 20 August 2016, <http://reinhardbuetikofer.eu/wp-content/uploads/2014/03/GND-Carbon-Bubble-web1.pdf>

¹⁰ CarbonTracker, Unburnable Carbon; Caldecott et al., Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets?, (University of Oxford: 2013), accessed 20 August 2016, www.smithschool.ox.ac.uk/research/stranded-assets/SAP-divestment-report-final.pdf.

¹¹ Taylor Kuykendall, “Roster of US coal companies turning to bankruptcy continuing to swell”, SNL Energy, accessed 20 August 2016 at, <https://www.snl.com/InteractiveX/Article.aspx?cid=A-32872208-12845>; Terry Macalister, “World’s largest coal producer files for bankruptcy protection”, The Guardian, 13 April 2016, accessed 20 August 2016 at <https://www.theguardian.com/environment/2016/apr/13/worlds-largest-coal-producer-files-for-bankruptcy-protection>.

¹² Carbon Tracker, Coal: Caught in the EU Utility Death Spiral, 2015, accessed 20 August 2016 at, <https://www.carbontracker.org/wp-content/uploads/2015/06/CTI-EU-Utilities-Report-v6-080615.pdf>.

¹³ International Institute for Sustainable Development, “Fossil Fuels: At what cost?”, 4 July 2014, Article Series: Fossil Fuel Subsidies, accessed 20 August 2016 at <https://www.iisd.org/gsi/fossil-fuel-subsidies/fossil-fuels-what-cost>.

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that financial market regulation has progressed enough after the financial crisis of 2007 and 2008 to insulate the wider economy from the effects of the carbon bubble bursting. After the 2015 Paris Agreement, a concerted global effort to fight climate change has become more likely. The world's largest emitter China, for example, is set to hit its climate targets years ahead of schedule.¹⁴ China's international engagement is unlikely to weaken even in the context of a US Trump presidency, as its recent Five-Year Plan locks in very ambitious green spending programs.¹⁵ Even a 3°C warming trajectory would result in leaving the majority of the world's fossil fuel reserves underground. There would still be a substantial carbon bubble in all but the most extreme warming scenarios.

Without a controlled deflation of the carbon bubble, the outcome could be a new financial crisis, with significant knock-on effects on global stability and prosperity, including a significant rise in unemployment. Western countries in particular are still experiencing sluggish growth as a result of the global financial crisis. Countries at the periphery of the Eurozone that still have not recovered from the Eurocrisis are particularly vulnerable.

It is doubtful whether Europe could withstand a further economic crisis without the EU institutions taking lasting damage, and potentially falling apart. Such conditions fuel populism and impede international cooperation as countries focus on solving their internal economic problems. This will make it much harder for states to address rising global challenges that require international cooperation, like migration, hybrid warfare, demographic developments, climate change or terrorism. If the carbon bubble is left to burst, the problem-solving capacity of the international order could be undermined at a critical time.

¹⁴ Lauri Myllyvirta, "China is hitting its climate targets years ahead of schedule", 31 May 2016, EnergyDesk, accessed 20 August 2016 at <http://energydesk.greenpeace.org/2016/05/31/china-is-hitting-its-climate-targets-years-ahead-of-schedule/>.

¹⁵ Shinwei Ng et al., "Pulling ahead on clean technology: China's Five Year Plan challenges Europe's low-carbon competitiveness", E3G Briefing Paper, accessed 20 December 2016, https://www.e3g.org/docs/E3G_Report_on_Chinas_13th_5_Year_Plan.pdf

DARK SKY SCENARIO – FINANCIAL CARBON CRISIS

After a period of uncertainty in international climate diplomacy, with the 2018 and 2019 UN Climate Summits producing little tangible results, the 2020 UNFCCC "Conference of the Parties" (COP) marked a breakthrough. Supported by radically reduced costs of renewable energy production and energy storage compared to only a few years earlier, the international community withdrew all public support from coal power projects and adopted a commitment to phase out coal power and mining as quickly as possible. China and India, as well as Turkey and Japan, hitherto some of the biggest growth markets for coal power generation, adopted strong domestic policies to reduce coal use and stop new projects. Within days after the summit, the stock market value of utility and coal companies, who were already battered by difficult years after a period of low coal and electricity prices, collapsed.

This shock hit at a time of economic recovery in industrialized economies, amid continued growth in emerging markets. In a display of traditionally prudent monetary policy, many central banks had started raising interest rates again, which now became a precipitating factor in the unfolding stock market crash. Stock markets in Asia and Australia, which are particularly dependent on coal assets, were hit the hardest. The resulting panic among lenders led to a large withdrawal of credit from the crisis countries, causing a credit crunch and further bankruptcies, as well as considerable losses from public coffers since many of the affected companies were state-owned. Growth slowed as domestic consumption declined. Decreasing imports and exports from Asian markets, as well as a steep fall in foreign direct investment by Asian firms and governments, acted as a brake on the global economy.

The growth experienced by industrialized economies like the EU and US slowed down, but the coal crash did not lead to wider systemic effects as the economy was strong enough to absorb the bankruptcy of several major coal and electric utility companies. The increased capitalization requirements for banks and institutional

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investors that had been enacted in the wake of the financial crisis of 2007-2008 paid off.

In 2025, a second fossil fuel crash hit as oil prices bottomed out. Already sensitized to the risks of fossil fuel assets, capital markets reacted strongly to technological breakthroughs in low-carbon vehicles and moves by several oil companies to scrap all new exploration projects. Many banks and institutional investors started actively selling large volumes of high-carbon assets, triggering further sales and a negative price spiral. Western financial centers, much more exposed to oil assets than coal, took a bigger hit than in 2020. Still reeling from the effects of the coal crash, the shock was too strong for the economy to absorb.

Some banks in Europe and the US could not recapitalize using traditional measures, forcing governments to intervene with bailouts. Many banks restricted new lending, especially to high-risk segments such as small and medium enterprises. As investment became constrained and consumer confidence and demand fell, growth came to a standstill, dipping into recession in many countries. Unemployment spiked to levels not seen since the 2007-2008 crisis. In an attempt to stimulate the economy, central banks reacted with expansionary monetary policies like lowering interest rates and quantitative easing.

Far from solving the problem, this led to a period of stagflation in the OECD countries which lasted for over ten years. Combining high unemployment and stagnant growth with high inflation, this presented seemingly insurmountable challenges to monetary and fiscal policymakers, as attempting to solve one problem exacerbated the other. As voters became more and more frustrated, populism enjoyed a new renaissance, leading to isolationism when cooperation was needed most.

By the end of the 2030s, the pressure on the Eurozone had simply become too much. Greece being the first, several Southern European and Eastern European countries that had previously adopted the Euro left the common currency area. This triggered further

transitional shocks through bank runs and currency crashes. The European project never recovered from this wave of disintegration. The US, meanwhile, kicked off a trade war with China in an attempt to protect domestic jobs by adopting protectionism measures. This weakened the growth prospects of the global economy even further.

At a time of critical challenges, the European Union and the US faced the world weak and divided. Climate action began to falter as countries were unable to sustain the investment levels required for deep economic decarbonization. Efforts to solve global problems, such as coordinating the fight against terrorism, stopping biodiversity loss, and international disease prevention programs remained too underfunded to show much success.

BLUE SKY SCENARIO - A SUCCESSFUL REORIENTATION TOWARDS SUSTAINABLE INVESTMENTS

Similar to the previous scenario, global climate policy enjoyed a major breakthrough in 2020, followed by technological advances that put the oil industry under immense pressure. However, sensitized by the disastrous effects of the 2007-2008 financial crisis, the international community took decisive steps to address the systemic threat to financial markets that the carbon bubble represented.

The Financial Stability Board's report on climate disclosure, published in December 2016, established best-practice principles for carbon accounting and disclosure in company annual reports ¹⁶ These recommendations were taken up by a range of businesses, though the most carbon-intensive companies proved reticent to implement them. Legislative initiatives by the US, the EU and China, followed by other countries were adopted over the next three years. These embedded carbon disclosure requirements and shadow carbon price accounting

¹⁶ Financial Stability Board, Recommendations of the Task Force on Climate-related Financial Disclosures, accessed 20 December 2016, <https://www.fsb-tcfd.org/publications/recommendations-report/>

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firmly in national legal frameworks governing the majority of companies, especially large multinationals.

In parallel, Germany took the lead in pushing for reforms to minimize the systemic financial risk posed by the carbon bubble. The 2017 G20 summit under Germany's presidency adopted a comprehensive plan to this effect. The G20 joint communiqué laid out a series of core principles that would guide financial and accounting rules reforms over the next decade. Fueled by progress on global climate deals within the UN process, this led to the adoption of a range of regulations covering the world's financial hubs.

The most important of the adopted principles was to end fossil fuel subsidization at home and abroad to stop the carbon bubble from growing larger still. At the same time, governments adopted measures enabling large volumes of investment to shift to sustainable alternatives. This required major changes to the financial market infrastructure for sustainable investments, including the development of new asset classes and a range of green investment indices to enable derivative products attractive to a wider range of investors. Capital charges for institutional investors such as insurers, as well as pension and sovereign wealth funds, were lowered, enabling them to hold more equity and infrastructure, and to generally invest with a longer time horizon in mind.

Efforts were also taken to gear financial market rules towards the long term. The EU's Solvency II framework for insurance, as well as the international Basel 3 framework on bank capital adequacy, stress testing, and market liquidity risk, were reformed to operate with a much longer time horizon of up to 30 years, enabling long-term risks like carbon exposure to be taken into account more systemically. Many legislatures, with the EU taking the lead, adopted regular climate stress-testing for large companies and institutional investors to assess the degree of high-carbon risk and vulnerability to climate impacts.

In 2020, when a breakthrough at international climate negotiations triggered a rush out of coal investments,

these measures had begun to be implemented. At this stage, however, the effect was mostly limited to enhanced risk disclosure, with implementation especially lacking among coal-dependent Asian companies. Australia, which had resisted any efforts towards climate risk disclosure and climate-proofing financial market rules, was likewise hit hard. These efforts, therefore, came too late to cushion the impact of the 2020 coal crash on Asian markets.

The resulting credit crunch led to an economic slowdown in Asia which also affected growth in the rest of the world. However, it did not lead to wider systemic effects as the global economy was strong enough to absorb the bankruptcy of several major coal and electric utility companies. In the aftermath of the coal crash, renewed efforts were taken to make good on the promises of the 2017 G20 summit.

Over the following years, large-scale investment flows began to be directed towards sustainable long-term projects, many of them low-carbon. Unlocking the potential of institutional investors proved especially useful in enabling this shift. With clear signals from international decision-makers, underpinned by strong climate and financial market agreements, investors stopped financing new oil and gas exploration projects. Amid changed market expectations and new accounting rules, national and international oil companies were forced time and again to reduce the value of their reserves in their annual reports. This successfully deflated the oil bubble, after the coal bubble had already burst. Gas companies were also affected, albeit less severely, as many countries had increased gas-fired power generation to complement rising renewable energy production and take up the market share that coal power plants had vacated.

When battery storage technology breakthroughs and increasing market penetration of electric vehicles had rendered further oil exploration uneconomic in the late 2020s, oil company valuations had already collapsed to a point where there was barely a financial market bubble left. While the oil sector suffered a series of bankruptcies, with only a few companies managing to

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clinging to the ever-shrinking oil business or reorienting towards other areas, the systemic effects were limited. Institutional investors, in particular, had had sufficient time to restructure their portfolios and reduce their exposure to oil company holdings. Banks, insurers, and pension funds managed to easily absorb the collapse of big oil without any restrictions in lending that could slow down economic growth.

Overall, the Western world weathered this period of financial market turmoil rather well. As growth in Asia picked up again, growth in industrialized economies returned to pre oil-crash levels without major central bank interventions being required. A major financial crisis had been avoided through long-term planning. The toolkit for dealing with long-term financial market risk that was developed to address the carbon bubble enabled better regulation of global financial markets. It came in handy in preventing other financial market bubbles from causing further damage. The crisis prevention effort also had the lasting effect of strengthening global economic governance, facilitating solutions to other problems and contributing to a cooperative global economic and political climate.

CONCLUSION

There is a serious risk of a financial crisis as a result of the growing carbon bubble in the world economy. Fossil fuel reserves are being counted at full value in company balance sheets as if efforts to stop climate change did not exist. However, a majority of these reserves can never be burnt if global efforts to reduce CO₂ emissions are taken seriously. If political or technological developments precipitate a market rush

out of fossil fuel companies, the impact on financial stability and economic growth could be severe. The main danger is that a carbon shock could transmit to financial institutions, causing them to restrict lending, which could translate into a major slowdown of the world economy.

The EU, in particular, is still recovering from the impact of the Eurocrisis, with many highly-indebted governments still precariously close to sovereign default. The EU cannot afford the risk of letting the carbon bubble run rampant. In already troubled times, the widespread unemployment and economic slowdown resulting from a carbon shock could become the straw that breaks the camel's back. Further political divisions would be a likely result – at a time when it is crucial for the prosperity and security of Europe to face the world united.

A mixture of clear signals to markets to shift investment flows to sustainable investments, as well as financial market and accounting regulation reform can limit the potential fallout from the already sizeable carbon bubble. As the problem is global, the solution must be global as well. Coordination of economic and financial policies in the G20, as well as reforms of the international regulatory frameworks for banks and insurers, are therefore key prerequisites. Decision-makers should draw the right lessons from the 2007/2008 financial crisis. With better foresight and risk-management procedures in place, the economic turmoil that continues to be felt years after could have been avoided. The carbon bubble is no different.

HOW TAX EVASION UNDERMINES GOVERNMENTS AND SOCIETIES

KEVIN MÜLLER

PROBLEM ANALYSIS

Financial markets and the global economy have never been as interconnected as they are today. Economies are increasingly dependent on each other's performance. This high level of connection along with the increasing power of information technology has led to efficiencies and growth. At the same time, it has enabled businesses and wealthy individuals to circumvent national tax legislation and profit from tax evasion and tax avoidance on a global scale.

Whereas tax evasion is strictly illegal, tax avoidance is the strategic compliance with the most beneficial national and international tax regulation. While in some countries most citizens believe that legal tax avoidance is generally acceptable,¹⁷ tax evasion is predominantly seen as a major issue and has been at the center of public debate in recent years. The current situation with international tax havens speaks to both issues. Opening bank accounts, companies or trusts in other countries is entirely legal. However, using the secrecy that many of these services provide to declare lower income or wealth levels to avoid paying national taxation amounts to fraudulent practice.

The amount of foregone tax revenues worldwide is staggering. The International Monetary Fund estimates the overall revenue lost for developing countries at \$200bn and for OECD member states at closer to \$400

billion a year.¹⁸ Since global tax evasion practices rely on an international network of legislation, the motivation of governments or international governance institutions to effectively curtail tax evasion can be the deciding factor between successful intervention and the continuation of the status quo.

What does a common tax haven structure look like? In order to transfer one million Euros to a Swiss bank account, the owner of, for example, a European company would follow three steps. First, they found a shell corporation, for example in Luxembourg, Delaware or Barbados. These jurisdictions offer particularly loose control mechanisms to attract businesses. These corporations are owned, but rarely operated, by those engaging in tax evasion. Secondly, they open a bank account with the newly-founded shell corporation in, for example, Switzerland. Lastly, the new company charges the original owner, say €1 million, for fictional services. This income is then no longer reported to national tax authorities in the original country.

In many cases, it is practically impossible for governments to differentiate money laundering practices from payments for actual exports. To access the money that is now transferred to the new Swiss bank account, the owner can either directly use a credit card or Lombard credit. The days of the infamous number accounts in Switzerland are long gone. Trusts,

¹⁷ YouGov Tax avoidance: Acceptable when legal? June, 2013

¹⁸ IMF - Working Paper: Base Erosion, Profit Shifting and Developing Countries, 2015

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funds or foundations have come to replace them, similarly hiding the owner of the account in question.

The Swiss banking secrecy laws have long protected the actual owners of the bank accounts since there was no direct information exchange between the Swiss bank and the revenue authority that ought to receive taxation from the actual owner of the money. This system contributed to tax evasion on a major scale.¹⁹ Due to a number of piecemeal changes adopted by the different jurisdictions involved, today tax havens tend towards a specialization in services. In 2012, Switzerland was the global market leader with 26% of all offshore assets managed, followed by Hong Kong and Singapore with 14% each.²⁰ Assets are predominantly managed by investment funds which work with the deposited wealth. Luxemburg is home to the second most investment funds, surpassed only by the United States.²¹

In a concerted effort that was poised to alleviate the problems surrounding banking secrecy laws, the G20 in 2009 established the information exchange on request.²² Following this process, a state has to justifiably suspect that a person is engaging in tax evasion. If it cannot supply any reasonable justification, the banking secret remains intact. However, it is often impossible to obtain precise enough information, particularly on a large scale. In 2015, the EU managed to conclude an agreement with Switzerland on the automatic exchange of information. Following this agreement, personal information and capital gains will be shared with EU member states from 2018 onwards.²³ Despite these positive developments looming on the horizon, the current toll of foregone tax revenue remains staggering

and the abundance of opportunities for further tax avoidance continues to be frustratingly high.

Estimates of financial assets and foregone taxation are inherently difficult to perform. One conservative calculation shows that currently 8%, or \$8 trillion, of all private financial assets are located in tax havens.²⁴ A second calculation estimates the size of global private financial wealth that is invested in tax-free off-shore constructs at \$21-\$31 trillion.²⁵ Both estimates still exclude material possessions, yet they offer the most reliable estimates of the size of hidden wealth. The costs to governments in overall revenue loss are estimated to be close to \$600 billion annually worldwide.²⁶ Tax evasion has led to \$100 billion in foregone revenues for developing countries from multinational enterprises alone.²⁷ Despite the absolute amount in developing nations being lower, the implied long-term revenue losses relative to their GDP are much higher.

Tax evasion directly exacerbates levels of income inequality between compliant and non-compliant individuals and companies. At the national level, tax evasion effectively undercuts national tax regimes and benefits only a few individuals. Governments around the world then lack these funds to finance economic and social reforms, to support struggling pension systems or to close investment gaps. Foregone taxation undermines the extent to which national governments can counteract the trends of inequality. Since nation states continue to remain the key actors in international affairs, increasingly weakened governments are likely to jeopardize the effectiveness of global governance systems.

In solving these problems effectively, there are largely two main forces at play. Firstly, the motivation of international governments to engage in serious attempts to reform their own reporting and transparency

¹⁹ The Economist, Don't ask, won't tell, 2012 accessed via:

<http://www.economist.com/node/21547229>

²⁰ The Boston Consulting Group's Global Wealth Report 2013

²¹ Luxembourg for Finance: accessed via:

<http://www.luxembourgforfinance.com/en/products-services/investment-funds>

²² OECD Global Forum on Transparency and Exchange of Information for Tax Purposes, accessed via:

<http://www.oecd.org/tax/transparency/exchange-of-information-on-request/>

²³ EU-Switzerland taxation agreement signed in joint effort to improve tax compliance accessed via:

<http://www.consilium.europa.eu/en/press/press-releases/2015/05/27-eu-switzerland-taxation-agreement/>

²⁴ Gabriel Zucman, "The Missing Wealth of Nations" 2014 p.47

²⁵ James Henry, "The Price of Offshore Revisited", 2012 p.3

²⁶ IMF - Working Paper: Base Erosion, Profit Shifting and Developing Countries, 2015

²⁷ UNCTAD World Investment Report 2015 - Reforming International Investment Governance

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standards. Secondly, the extent to which global governance institutions can pressure tax havens to close existing loopholes. The key challenge remains to make progress in all jurisdictions by improving information exchange and legislative reforms. Due to the myriad of different actors involved, this transnational challenge has the potential to develop in several different directions.

DARK SKY SCENARIO – FALLING GOVERNMENT REVENUE UNDERMINES STATES AND HAMPERS INTERNATIONAL COOPERATION

In 2017, instead of joining the OECD Common Reporting Standards, the United States continued to pioneer its own Foreign Account Tax Compliance Act (FATCA) which urges all international banks to report and identify all customers who gained taxable incomes to the United States Inland Revenue Service. From an early stage, the system had been widely criticized due to its lack of credible enforcement and control mechanisms. The last resort for customers of non-cooperative banks remained divestment from the United States. At the same time, the EU Savings Directive remained hamstrung by similar restrictions and failed to achieve what its political proponents had suggested. Despite having figured prominently on the global G20 agenda in past years, the failure to agree on a common set of reporting standards to fight domestic and international tax evasion meant that a more coordinated approach was off to a bad start.

Observers had perceived 2018 as a crucial year in the fight against tax evasion as automatic information exchange including personal details, a key provision of the EU-Switzerland Taxation Agreement of 2015, entered into force. At the time, this was hailed as a long-awaited breakthrough, with the potential to halt an important part of tax evasion practices in Central Europe. Three years later, however, the deal had not resulted in the desired impact of substantially increasing tax revenue.

Information sharing about bank accounts ownership turned out to be insufficient, as the plethora of trusts and shell companies obscured the links between

account holders and European countries. Furthermore, large proportions of financial assets were relocated to tax havens elsewhere, such as Hong Kong or Singapore, in response to the new provision. Until 2020, financial services exports in Asia grew gradually. Piecemeal attempts to fighting tax evasion had again proven insufficient.

In order not to fall into a similar trap, triggering mere wealth relocation, Western governments became increasingly cautious. Inspired by their fear to end up with little to no returns, they settled for international agreements that traded more secure yet smaller tax returns for the full access to information. In 2025, inspired by previous attempts on the old continent, the European Union went on to sign the “*cubic deal*” with Hong Kong and Singapore, per which offshore account holders pay an annual withholding tax and a defined lump sum to make up for unpaid taxes. Their names, however, stayed anonymous and no control mechanisms were won for European administrations. While the United States and Germany tried to forge powerful means to defend their tax revenues against foreign tax havens at the international level, they engaged in a race to the bottom on standards of secrecy at the domestic level. Both nations continued to pay lip service to domestic improvements, all while making headlines as active critics of international patterns of tax evasion. National legislation continued to allow for intransparent reporting and ill-conceived domestic control mechanisms.

Throughout the 2030s, the proportion of service delivery as a share of GDP continued to rise across the largest economies. The fees earned and the productivity of the banking sector became a large share of domestic economies. Governments, as a result, had an even stronger stake to protect the interests of the industry.²⁸ Due to a decisive first mover’s disadvantage, most countries remained timid in enforcing transparency and compliance in matters of taxation. Governments were scared that tightening regulation effectively meant losing business that others would gladly accept. A zero-

²⁸ BAKBASEL, The Economic Significance of the Swiss Financial Sector Executive Summary, 2015

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sum game mentality continued to dominate the agenda. Despite growing public interest and pressures, the situation remained largely unchanged.

In 2038, the international NGO Tax Justice Network published the 2038 Financial Secrecy Index report. Organized civil society had increasingly gained momentum in analysing international tax fraud cases. After some improvement over the initial few years, financial secrecy indices had risen again to previous levels. As economic downturns drew the focus of the attention, the tireless effort of civil society to report malpractices was squashed. Particularly emerging economies, amid popular dissatisfaction with living standards and economic development, resorted to relaxing financial regulation to attract investments. Due to the failure of spreading real wage increases evenly across societies, the rise of national solutions to globalized problems had kicked off a full-blown tax war in reporting standards and financial regulation.

International tax havens continued to flourish as the international community failed to take decisive steps. Instead, small island nations were publicly shamed for contributing to international tax fraud. Global governance fora like the G20 and the UN stood idly by and were incapable of acting effectively as their member states preferred individual approaches to protect powerful domestic interests. China's continued economic rise led to major disputes with the United States which further complicated international coordination. Due to continued internal divisions and the necessary support of small nations to keep the European project intact, the European Union failed to exert sufficient pressure on Luxembourg, Germany, and Austria to accept improved transparency standards.

The well-established practice of defending short-term individual interests resulted in a collective loss of revenue for governments around the globe. Especially more sophisticated welfare state systems struggled to keep up the promises of generational contracts, necessitating private subsidization of pension systems and health insurances. The continued failure of states to enforce their own national tax legislation contributed to

disillusionment with the state and a shift of *de facto* power away from governments as their spending power relative to corporations was reduced further and further. The collective gridlock undermined the legitimacy of governments and negatively impacted the effectiveness and authority of global governance institutions.

BLUE SKY SCENARIO - RISING LEVELS OF INCOME INEQUALITY LEAD GOVERNMENTS TO STEP IN

The June 2016 G7 statements followed up on the OECD recommendations to increase transparency and sharing of tax information between jurisdictions. Yet, observers criticized that they remained unlikely to be implemented any time soon. The agreed sharing of tax information was interpreted as a first step in the right direction and taken up timidly by some of the governments involved.

In 2020, both the United States and the member states of the European Union were increasingly cash-strapped and desperation for tax revenue mounted as aging populations made pension and welfare spending particularly difficult. The influx of younger migrant populations had leveled off in both regions and demographic forecasts were back to predicting the continuation of worryingly aging societies. A rising tide of nationalism and economic protectionism, especially from traditional losers of economic globalization, led to further insecurities for the political elite on both sides of the Atlantic.

The aging United States population necessitated a reform as the national health care system became unsustainable, which required increased national revenues. The contentious domestic debate on growing income inequality resurfaced and became the defining national issue. The states of Delaware and Nevada, in particular, faced increased federal pressure to accept higher levels of transparency and to halt the domestic undercutting of national standards in tax matters.

In 2021, the aftershocks of the Eurocrisis still defined the key dividing lines of European politics. Sluggish growth, combined with shrinking government revenues, required urgent action. The Council of the European

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Union reached an agreement, reacting to mounting debt pressures faced by member states. In this agreement, the European Union was entrusted with expanded competencies in financial regulation. As part of a package deal on another bailout package, Luxembourg, Austria and Germany agreed to increased information sharing standards and stricter financial regulation without exceptions for single member states.

At the same time, the volatility of digital currencies was brought under control and they continued to spread to formal parts of the economy. The new currencies decreased the regulatory control that national governments possessed over payments in their economies. The success of distributed ledger technologies and the changes they brought to overseen payments led to pressure on national governments to accept official exchange rates between purely digital and traditional currencies. In an attempt not to fall behind the new currencies, the G7 supported the IMF in spearheading the establishment of a worldwide register of financial assets and securities for formal currencies. In cooperation with national security depositories from participating nations, this global register formed the core of an ambitious project to allow record-keeping and oversight over all taxable returns in existence. In 2024, the register was still grappling with full access to information and struggling to establish a complete set of entries. However, it was applauded as the most comprehensive to date. The United States and the European Union ensured the register's success by pressuring non-cooperative countries into supporting its completion.

Due to mounting levels of income inequality, domestic pressure in the EU and the United States continued to rise. Both sides of the Atlantic thus adopted international tax justice as a key goal of their foreign policy. In a coordinated effort, they began to exert pressure and to pose credible threats using trade sanctions on smaller tax havens and demanded the adoption of automated information exchange for their nationals. The threatened economic sanctions were fixed at a cost equivalent to the foregone taxation through the secrecy laws in existence. An increasing

number of smaller states started to give in to the demands. Beyond this level of high politics, increased awareness and public attention to the topic led to further leaks by banking employees and whistle blowers, revealing malpractices in offshore economies and the banking industry. In a landmark case before a U.S. federal court, eight major companies in the financial industry were sentenced to disband their operations. Responsible individuals at the highest levels were convicted of involvement in international tax fraud, with many receiving prison sentences. Despite new companies emerging to fill the gap left by the disbanded companies, the case marked a turning point towards decisive and collective government action that started to punish rampant international tax crime.

Motivated by the combined challenges of missing revenue, demographic change and ailing social systems, the G7 joined forces, adopting tax justice as an integral part of a global agenda eventually reinvigorating global governance institutions. The new impetus from national levels revived the IMF with a renewed political mandate as a central agency in overseeing global financial flows. In 2035, the global cost to governments, i.e. their loss of tax revenue, was estimated at "only" \$60 billion annually, the lowest figure in many years. States proved capable of turning the tide of global income inequality by reinvesting the gains from their concerted efforts into welfare systems, infrastructure and government services, while the richest corporations were taxed much more effectively than before.

CONCLUSION

The fluidity of financial markets and the speed at which modern information technology allows transactions between countries creates a playing field on which only coordinated efforts can lead to successful regulation. Surely, every government has the responsibility to avoid the creation of a tax fraud-enabling architecture within their own jurisdiction. At the same time, any honest attempt to go effectively against international tax evasion must occur in a coordinated manner. If the structural challenges of aging populations and increasing welfare spending are to be met with a lowering of social standards and transfers,

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radicalization and frustration towards political elites are likely to only grow further.

Despite the common conviction that tax havens should unilaterally and immediately reform their tax laws,²⁹ an elimination of tax havens will unlikely have a sustained impact if major economies do not engage in a coordinated effort to promote tax harmonization and increased transparency. The public debate must shift from blaming tropical island nations for tax fraud assistance towards an honest analysis of winners and losers of the status quo. Small tax havens cannot be urged to change legislation if leaders of large industrialized nations allow similar practices to go on in their own jurisdictions. This inconsistency decreases legitimacy and trust in elites and governments even further. Organized civil society organizations play a particularly important role in pressuring governments to pursue reform domestically.

The creation of tax havens and the continuous failure to close them is a key example of the failure of national governments to address global challenges. Unless extreme wealth accumulation by illegal means is fought through concerted government intervention, tax havens are bound to continue, in one form or another. Since information technology and international finance has made it possible to move staggering levels of wealth to another corner of the world at the mere click of a mouse, only a common approach of global governance institutions will stand a chance at halting this worrying trend.

²⁹ YouGov Tax avoidance: Acceptable when legal? June, 2013

PEAK OIL DEMAND AND THE PETRO-STATES: A COLLAPSING OIL PRICE LEADS TO POWER SHIFTS AND INSTABILITY

JULIAN SCHWARTZKOPFF

PROBLEM ANALYSIS

The protracted period of low oil prices on world markets has already led to a near-collapse of government in Venezuela, curtailed the resources of the Russian state and threatens to end the oil-funded social contract on which political stability in Saudi Arabia and the Gulf States is built.³⁰ There are many indications that low oil prices are structural, not cyclical, and a growing number of experts are predicting that oil demand will start declining in the medium term.³¹

Key changes in the most important demand sectors for oil are projected to erode demand.³² In the plastics sector, which makes up 13% of global oil consumption, increasing recycling and packaging efficiency will lead to reduced demand for petrochemicals. However, by far the biggest impact is likely to come from increasing market penetration of electric vehicles (EV). Road transport currently accounts for 52% of global oil consumption.³³ Electro-mobility, as well as other low-carbon transport options, are set to erode and eventually eliminate this demand altogether. Typically, the introduction of new technologies follows a so-called S-curve, with breakthrough and quick uptake after slow

growth in the beginning, rather than slow steady growth throughout. Various scenario analyses, from Goldman Sachs to the International Energy Agency (IEA) predict around a 30% share of electric vehicles in new car sales by 2030, which would be in line with such a trajectory.³⁴

Real world developments back these estimates. In its new Five Year Plan, China aims to increase its EV production tenfold until 2020, to a level of 5 million cars each year.³⁵ It is worth remembering that the impressive price drop in renewable energy installations, amounting to 80% between 2009 and 2015 for photovoltaic modules,³⁶ was driven by a similar state-led effort to scale up production in China.³⁷ In addition, technological development is ongoing. Analysts at KPMG and Citibank expect breakthroughs in battery technology, the main bottleneck for affordable and

³⁰ Michael Klare, "The Desperate Plight of Petro-States", TomDispatch, May 26, 2016; BBC, "What has gone Wrong in Venezuela", BBC News, May 18, 2016.

³¹ Occo Roelofsen et al., "Is Peak Oil Demand in Sight?", McKinsey & Company Energy Insights, June 2016.

³² Roelofsen et al., "Is Peak Oil Demand in Sight?".

³³ OPEC, World Oil Outlook, 2015 figures.

³⁴ Adam Whitmore, "How Fast Could the Market for Electric Vehicles Grow?", energycollective, May 24, 2016; Tom Randall, "Here's How Electric Cars Will Cause the Next Oil Crisis", Bloomberg Feature, February 25, 2016; Jaakko Kooroshy et al., The Low Carbon Economy, Goldman Sachs GS Sustain Equity Research, November 30, 2015.

³⁵ Shinwei Ng et al., "Pulling Ahead on Clean Technology – China's 13th Five Year Development Plan Challenges Europe's Low-Carbon Competitiveness", E3G Briefing Paper, March 2016.

³⁶ International Renewable Energy Agency, The Power to Change – Soland and Wind Energy Cost Reduction Potential to 2025, 2016, accessed August 20, http://www.irena.org/DocumentDownloads/Publications/IRENA_Power_to_Change_2016.pdf.

³⁷ Felix Matthes et al., Die Umlage des Erneuerbare-Energien-Gesetzes (EEG – Hintergründe, Trends, Treiber und Perspektiven, 2015, accessed August 20, <http://www.oeko.de/oekodoc/2448/2015-605-de.pdf>.

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long-range electric vehicle production within the next ten years.^{38,39}

If these trends continue, oil prices might never again rise to high levels. We might still observe a temporary rise over the medium term due to supply reductions. US\$27 billion worth of oil exploration projects have been canceled in 2015 alone.⁴⁰ In line with classic pork cycle economics, this will constrict oil production in the years ahead.⁴¹ However, it is very unlikely that this will be enough to counteract the downward pressure on prices when peak oil demand hits.

This will affect the governments of petro-states, which typically depend on oil revenues to maintain power through subsidy schemes and patronage networks.⁴² It will also reduce export revenues (and the ability to buy imports), employment and the capacity for public spending. The challenges these states will face are compounded by the typically very close ties between their political leaderships and state-owned or state-controlled oil industries. In some countries, the reliance on oil rents is extreme (see Figure to the right).⁴³

In all of these countries, peak oil demand will likely cause political instability and economic disruption. The transition scenarios are varied, but rarely pretty. Where

governments are strong and willing to enact changes, radical course corrections to diversify economies and reduce subsidies might be possible. Where they are not, governments could collapse or resort to repression when public support collapses along with oil-funded subsidy regimes and public spending.

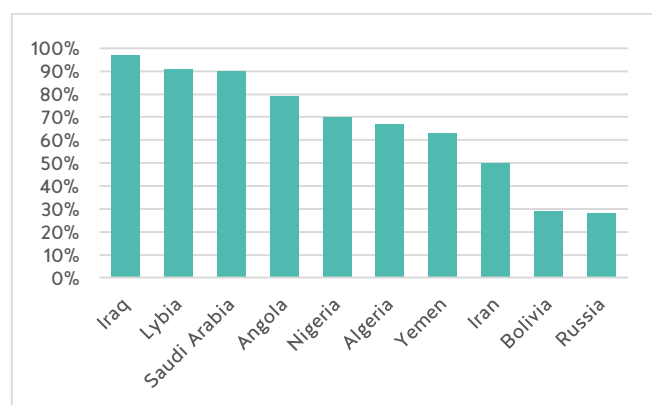


Figure: Percentage of oil and gas revenue in government income (2011), **Source:** Natural Resource Governance Institute

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This could be profoundly upsetting to the global order. It would fuel conflict in already troubled areas like the Middle East and North Africa (MENA), Latin America and Nigeria. It would overall reduce the influence of states belonging to the Organization of Petroleum Exporting Countries (OPEC) and could also reduce Russia's capability to project military force. Finally, there would be less incentive for Western political leaders to use diplomacy, military, and intelligence operations to secure sufficient access to oil. The following two scenarios outline what two different development paths might look like.

³⁸ Sofia Savvantidou et al., "Energy Storage: Game-Changer for Utilities, Tech & Commodities", Citi Research, September 25, 2014, accessed August 20, 2016, <https://ir.citi.com/UAXL%2F1gNFctVBgY9Y%2BYI2AVo44t83FCcT4C56TgoRho8dIlkm1tZOW%3D%3D>.

³⁹ KMPG, The Rising Sun – Disruption on the Horizon, 2015, accessed August 20, 2016, <https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/ENRich2015.pdf>.

⁴⁰ WoodMackenzie, "Pre-FID 2016: US\$380bn of capex deferred", WoodMackenzie Analysis, accessed August 20, 2016, <http://www.woodmac.com/analysis/PreFID-2016USD380bn-capex-deferred>.

⁴¹ Sherwin Rosen et al., "Cattle cycles", Journal of Political Economy 102 (1994): 468-492.

⁴² Terry Karl, The Paradox of Plenty: Oil Booms and Petro-States (University of California Press, 1997); Michael Ross, The Oil Curse: How Petroleum Wealth Shapes the Development of Nations (Princeton University Press: 2013).

⁴³ In Venezuela, the reliance on oil is extraordinarily high. While data on the contribution to government income is not available, oil exports accounts for 95% of export revenue and 25% of GDP in 2015. OPEC, Annual Statistics Bulletin, 2016, accessed August 20, 2016, http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2016.pdf.

DARK SKY SCENARIO – THE PETRO-STATE BUSINESS MODEL GOES BUST

In 2019, oil prices started to recover after an extended slump. While oil demand was still strong, supply disruptions caused by military conflict and intra-state violence in the MENA region and Nigeria hit in short succession. The wave of oil project cancellations in the years following the price collapse after 2014 exacerbated the supply shortage. Oil prices again recovered to US\$ 70 per barrel and stayed this way for almost two years.

This was the last time oil prices would reach such heights, but it offered a shred of hope for oil-dependent governments. Wracked by difficult years, petro-states resorted to their traditional modus operandi and picked up previously abandoned oil exploration projects. The Gulf States and Saudi Arabia, having drawn down their formerly flush sovereign wealth funds to uphold fuel and water subsidies in an effort to maintain stability, finally saw light at the end of the tunnel.

Political elites in Syria and Iraq used oil revenues to reward their supporters and engage in economic reconstruction after IS was scattered and forced back underground. Venezuela, teetering on the brink of civil war after years of economic hardship, again pumped billions of dollars into state-directed “missions” in an effort to cling to power. After leftist anti-establishment candidates won elections in Mexico and Brazil, they too enacted wide-ranging subsidy programs to cement electoral support among the poor and disaffected. Nigeria, having failed to quash the insurgency in the Niger Delta, returned to paying militant groups and the violence abated.

But this respite was short-lived. Petro-states were in for a rude awakening when oil prices started declining again in the early 2020s. As oil prices had risen, flexible US shale-oil start-ups had ramped up production. The supply shortages in Nigeria and the MENA region were eventually resolved amidst the spell of political stability that had settled in. As the oil price started dipping again, OPEC scrambled desperately to restrict production and stabilize prices. These efforts failed because of

continued rivalry between Iran and Saudi Arabia, hardened by recent years of proxy warfare, as well as an increased US oil market share.

Around this time, EVs had begun to make a noticeable dent in global oil demand. In 2025, the break-even point for EVs was reached after China massively scaled up production, becoming a global leader in clean transport. Western and Asian car manufacturers, taking advantage of cheaper battery technologies as well as government subsidies for electro-mobility, also started mass-producing competitive clean cars. EV market penetration increased rapidly worldwide, eating up oil demand and causing a collapse of the oil price, which never again rose above US\$ 30 per barrel.

In the post-2020 years, it became obvious that the business model of petro-states was bust. Attempts to diversify oil-centric economies had remained half-hearted and were conducted rather to avoid criticism than to effect genuine change. As a result, the old problems returned with a vengeance. Public discontent amid a regional food shortage in 2031 led to a second wave of Arab Spring protests. Saudi Arabia and the hitherto stable Gulf States, no longer able to fund the subsidy-based social contract on which their legitimacy rested, faced a wave of unprecedented mass protests. While some Gulf State governments managed to hold on to power through military repression, others like Saudi Arabia descended into years of civil unrest and violent protest.

Iran, strengthened by more than two decades of unrestricted trade with the outside world, took full advantage of this opportunity to weaken Saudi Arabia. After an uneasy stalemate had been reached between the two regional powers in the 2020s, Iran could now fund proxy wars in Yemen, Syria, and Libya with impunity, installing Shiite-led governments there.

In Nigeria and Angola, old conflicts reignited as the fight over dwindling oil revenues intensified. Nigeria, as well as the newly-destabilized Middle East, provided an excellent theater of operations for Islamic extremism, which reached unprecedented heights. Millions of poor

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and disaffected youths without employment prospects provided fertile recruiting ground for terrorist organizations like a resurgent Al-Qaeda. The upswing in war and violence led to a wave of refugees of a magnitude not seen since the Syrian civil war.

Latin America, meanwhile, saw civil disobedience and strikes of unprecedented magnitude as popular subsidy programs became unaffordable and tens of thousands of jobs were lost in the oil sector. In Venezuela and Mexico, military governments seized power. These initially enjoyed high public support, trust in democratic institutions having been comprehensively destroyed after years of political scandal, economic mismanagement, and rampant crime. In Brazil, now highly indebted, a neoliberal government gained power on promises strengthening the country's economic fundamentals and enacted harsh austerity measures at the expense of the poor.

Throughout this slowly unfolding crisis, global governance forums like the G20 and the UN stood idly by, their member countries preferring to focus on their own problems and rivalries. Multilateral development banks were unable to support a concerted push to diversify oil-dependent economies, due to the different views predominant in their member states. A sustained chilling in US-China relations over China's creeping expansion in the South China Sea weakened global economic coordination at a critical time. The EU, meanwhile, was paralyzed over internal divisions on migration policy and rising authoritarianism in some Eastern European member states. Initiatives that could have helped stimulate low-carbon growth in petro-states, such as the Green Climate Fund, or the EU's neighborhood policy, quickly ran into implementation problems. Committed funds stayed below expectations and were allocated haphazardly without long-term planning. Project management was generally lax and led to few lasting economic benefits for recipient countries. Technology transfer was neglected while fossil fuel subsidization by Western governments continued unabated.

BLUE SKY SCENARIO - ECONOMIC DIVERSIFICATION SUCCEEDS

As in the previous scenario, the oil price fell to below US\$ 30 per barrel after a transient period of higher prices after 2018. However, the political response unfolded very differently, aiming at an orderly transition rather than letting the business model of oil-dependent states run into a brick wall. Petro-states had largely learned the lessons of the hard years of low oil prices and undertook a genuine effort towards economic diversification. OECD countries as well as major emerging economies like China and India had recognized the potential of oil dependency for political and economic disruption and actively worked to minimize it.

Until 2020, OECD countries as well as major emerging economies scaled back fossil fuel subsidy programs that had previously amounted to US\$160-200 billion per year,⁴⁴ and completely abandoned financing or guaranteeing oil projects abroad. Most of the money thus freed up was immediately put to use to promote sustainable economic growth and low-carbon development.

With the cooperation of multilateral development banks, driven by strong engagement of their member states, and the private sector, developed countries undertook a concerted effort to reach the funding goals of the Green Climate Fund (GCF), slightly overshooting the target of \$100 billion in climate finance per year by 2020. They also took care to scale up resources for project management and implementation, making sure there was a sufficient pipeline of high-quality projects, with high value added and technology content. The GCF's early success provided the impetus needed for its continued operation after 2020. The European Union, meanwhile, adopted a Strategic Investment Plan for a Sustainable Neighborhood, focusing on resilient infrastructure, sustainable energy, communication, education and health. Following the successful model

⁴⁴ OECD, "Support to fossil fuels remains high and the time is ripe for change", accessed 10 December 2016, <http://www.oecd.org/environment/support-to-fossil-fuels-remains-high-and-the-time-is-ripe-for-change.htm>

of the European Fund for Strategic Investment, the fund pooled EU resources with those of the European Investment Bank, the European Bank for Reconstruction and Development, as well as several national development and investment banks. It acted as a guarantee to support long-term, high-value investment and mobilize a considerable private sector contribution. Realizing that Europe would rely decreasingly on fossil fuel imports, European leaders also agreed on a revamped energy diplomacy strategy towards the MENA region, focusing on cost reductions and job creation through promoting business partnerships in low-carbon technology, energy demand management, development of local clean energy supply chains, open trade and joint research and innovation programs.

Oil-dependent governments jumped at the chance to use climate financing to catalyze large-scale infrastructure investment and job creation. The shifting economics of clean energy technology opened up new business opportunities. The massive expansion in electricity grids, renewable energy installations, and energy storage installations that this entailed led to an employment boom in the construction, engineering and energy sectors, alleviating youth unemployment and political discontent. Some former petro-states were even successful in establishing leading research and production capabilities in clean technology sectors. In the MENA region, promoting investment in efficient lighting, air conditioning, desalination and sustainable agriculture technologies proved successful in addressing pressing economic and social issues. Local supply chains were established that offered a brighter future to their young populations and reduced the recruitment pool of radical Islamists. The revival of the Desertec solar power project and its eventual completion in 2027 was a hallmark of this success, establishing large-scale clean power trading between Europe and North Africa.

Saudi Arabia and the Gulf States deployed their substantial sovereign wealth funds in an active program of economic diversification, with a strong focus on solar power. Saudi Arabia in particular, through prudent economic management, realized its ambitious Vision

2030 plan⁴⁵ and became a regional solar energy hub. Through strategic investments, the country's leadership managed not only to cover over half of the country's electricity demand with renewable energy by 2030. It also to become a major regional electricity trader, alleviating power shortages in neighboring countries in the process. However, it also quickly became clear that the clean energy infrastructure boom provided ideal targets for terrorist attacks, with several high-profile bombing and sabotage attacks occurring in the 2020s and 2030s. This led to the establishment of an EU-MENA security organization in 2025, aimed at protecting the energy infrastructure that had by now become important to the power supply of both regions. Much more limited security cooperation also developed between Iran and Saudi Arabia, providing a stabilizing influence. While the deep rivalry between the two nations continued, it remained at the level of an uneasy standoff, with both sides preferring to turn their resources towards productive investments rather than financing insurgencies in other countries.

The Mexican and Brazilian governments, too, quickly realized the potential of clean investment. Large-scale energy infrastructure programs created hundreds of thousands of new jobs, offsetting lost oil sector employment. In Latin America's megacities, productivity gains from compact and connected urban development, public transport, buildings efficiency and improved waste management provided economic windfalls while improving the lives of the poorest inhabitants at the peripheries. Well-designed programs to stop deforestation and restore severely degraded land improved water quality for cities and living conditions of the rural population.

However, this approach was not universally successful. Governance problems in the administration of climate finance projects proved difficult to overcome in Nigeria and Angola, leading to many failed projects. The strong connections between political elites and the oil sector

⁴⁵ Hadeel al-Sayegh and Angus McDowall, "Saudi Arabia just announced its plan to diversify away from oil", BusinessInsider, April 25 2016, accessed 20 December 2016, <http://uk.businessinsider.com/r-saudi-arabias-cabinet-approves-reform-plan-state-media-2016-4?r=US&IR=T>

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proved impossible to disentangle. Political support for the oil sector continued until long after it would have been prudent and alternative economic opportunities were only explored half-heartedly. Both countries were pushed into a lasting recession when oil prices collapsed again after the 2020s, exacerbating poverty and fueling conflict.

Venezuela, similarly, proved too politically invested in the oil industry to change course. When oil prices rose again in 2019, political elites doubled down on oil-funded subsidy programs, burning up public resources needed for economic diversification. A deep distrust against aid by Western governments hampered the full utilization of available climate finance resources. After prolonged political turmoil and economic crisis during the 2020s, the military seized power in a coup.

By the late 2030s, it became clear that the petro-states had largely avoided a crisis. Even though they had lost the outsized influence in world affairs and the huge rents that their oil production had provided, most had successfully built up alternative industries. The international community's willingness to work together and mobilize sufficient resources to invest in alternative economic activities through the Green Climate Fund and development banks was crucial in enabling this success.

CONCLUSION

It is very likely that we are approaching a period of structurally low oil prices, mainly due to the expected growth of electro-mobility and changes in global plastics usage. This would completely overturn the

business model of petro-states, leading to widespread political instability and abrupt power shifts in the MENA region, as well as Latin America and Africa.

The alternative of continuously increasing oil demand is similarly unpleasant. In a future where oil consumption rises until well into the 2040s, it would be virtually impossible to keep global warming below the internationally agreed 2°C threshold. In a world that is 3-6°C degrees warmer, we would have to face frequent and extreme heat waves and floods, sea-level rise of over two meters as well as rainfall and temperature changes that would make whole regions largely unsuitable for agriculture.

International leaders of oil-producing and non-oil producing countries alike have a responsibility to avoid either of these outcomes. They should take steps to ensure that petro-states can embark on an orderly transition out of oil, rather than allow a disorderly collapse that would have profound negative impacts on the international order.

International institutions can play a key enabling role in this. The Green Climate Fund and multilateral development banks can influence the incentives of petro-states by offering meaningful support for alternative economic activities. Cross-border cooperation on energy and security issues, especially in the MENA region, can enable petro-states to reap additional rewards of diversifying away from oil. Business as usual is not an option for petro-states. The international community could do a lot to help them choose the right path among several tough alternatives.

THE RISE OF CHINA MIRRORED IN THE SOUTH CHINA SEA DISPUTE

FANNY RIES

PROBLEM ANALYSIS

Crystal waters, white beaches, and fishermen fishing far out in the ocean – this could be the image of the South China Sea, an area located south of mainland China and in the middle of the Asia-Pacific region; but this image lies in the past. Today, the South China Sea comprises runways, warships, and radar systems. It has turned into an area where seven countries – China, the United States, the Philippines, Indonesia, Malaysia, Vietnam, and Brunei – argue about territorial boundaries, access to resources, and the control of sea routes.

The South China Sea is an area of rich fishing grounds, oil and natural gas resources. More importantly, it is an important strategic location, because one-third of the world's trade volume is shipped through its waters. China is staking out claims because controlling the South China Sea would grant the People's Republic major power over the neighboring countries and suit Beijing's power-political ambitions very well, especially with regards to the United States' presence in the area. The US is the historical hegemon in the Asia-Pacific region and has been deepening its ties with both traditional security allies such as Japan and the Philippines as well as with newer friends, including Vietnam and Myanmar. The strong US presence in China's backyard is a thorn in Beijing's side, who wants to limit US influence in the region. To this end, controlling the South China Sea would be a desirable first step.

China claims around 80% of the South China Sea and refers to the historic "Nine-Dash-Line", a demarcation line on a map dating back to 1947, which, according to China, proves that most of the islands in the South China Sea have traditionally been part of Chinese territory. However, the Philippines, Indonesia, Malaysia, Vietnam and Brunei also claim parts of the South China Sea and refer to the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS defines that a country's Exclusive Economic Zone (EEZs) extends out to 200 nautical miles.⁴⁶ The Chinese "9-Dash-Line" overlaps with the EEZs of the five neighboring states – the Philippines, Vietnam, Malaysia, Indonesia and Brunei – but Beijing does not accept these claims, although it has ratified UNCLOS. China argues that the islands it occupies in the South China Sea are also surrounded by an EEZ and, thus, in accordance with UNCLOS, its own EEZ overlaps with the neighboring claims.

The territorial dispute in the South China Sea has intensified since President Xi Jinping assumed office in 2013. China started enlarging occupied islands through artificial land reclamation and the build-up of military infrastructure, including ports, runways and administrative buildings. The Philippines, Malaysia, and Vietnam have also built on islands they control, but these efforts have been dwarfed by the massive scale of China's activities.⁴⁷ In March 2014, China blocked the

⁴⁶ United Nations. "United Nations Convention on the Law of the Sea." 1982.

⁴⁷ Donald K. Emmerson, "Why Does China Want to Control the South China Sea?" The Diplomat, May 24, 2016,

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supplies of Philippine soldiers on a disputed island and in May 2014 started drilling for oil in an area claimed by Vietnam. Since then, Chinese warships and airplanes were deployed, surface-to-air missiles were established and radar systems were installed. Floating nuclear-energy platforms are also envisioned.⁴⁸ All these incidents have raised doubts about whether the rise of China in the Asia-Pacific region will remain peaceful.

The “rebalance to Asia” strategy adopted by the Obama Administration in 2011 was a major policy shift and is considered one of the reasons for Beijing’s current actions in the South China Sea. Major challenges and threats in the Middle East had occupied the US’ strategic attention in the early 2000s. As a response to China’s rising influence and concerns of US partner countries in the region, President Obama then launched the “rebalance to Asia” approach, as a combination of soft power like multilateral diplomacy and economic integration, and hard deterrence through military presence.⁴⁹ New security alliances were made and US warships and planes were sent to the South China Sea, to demonstrate the freedom of navigation in what Washington considers international waters. The Transpacific Partnership (TPP) is also considered an integral part of this new approach.

So far, there have been efforts to solve the dispute through bi- and multilateral meetings. In 2002, the “Declaration on the Conduct of Parties in the South China Sea” (DOC), which was meant to serve as the basis for a “Code of Conduct” (COC), was signed by China and the Association of Southeast Asian Nations’ (ASEAN) member states.⁵⁰ However, the parties have not fully complied with the DOC, therefore a COC still has not been agreed upon. Also, China has been pushing for

bilateral talks and remains skeptical about negotiations with ASEAN as a whole.⁵¹

In 2013, the Philippines, under the previous president Aquino, lost its patience and brought the case in front of the Permanent Court of Arbitration (PCA) in The Hague. The court’s decision in July 2016 was a milestone in this asymmetric power struggle. The court ruled that the historic rights in the South China Sea were extinguished as they were incompatible with the EEZs that are provided for, and accepted by China, in the UNCLOS convention.⁵² Additionally, it decided that the islands China is claiming in the South China Sea are not in fact islands, but merely rocks and low-tide elevations, which do not have an EEZ surrounding them. The court’s decision was a clear defeat for China, but Beijing announced that it would not accept the ruling.

The ruling of the PCA could have given the stagnating dispute a new turn – but it failed to do so. By denying the PCA’s decision, China practices a common tactic of the world’s most powerful states. For example, none of the UN Security Council’s Permanent Five Members has ever accepted any international court’s ruling when (in their view) it infringed their sovereignty or national security interests.⁵³ Ironically, the US has called on China to accept the ruling, although Washington has itself not ratified UNCLOS. The court’s ruling boosted the legal claims of the competing countries, but their reactions have been very reserved. Even ASEAN as a whole only submitted a statement in which the members declared their concern about the developments in the South China Sea in general, but did not criticize China’s behavior in particular or mention the PCA’s ruling.⁵⁴

<http://thediplomat.com/2016/05/why-does-china-want-to-control-the-south-china-sea/>

⁴⁸ Donald K. Emmerson, “Why Does China Want to Control the South China Sea?” *The Diplomat*, May 24, 2016, <http://thediplomat.com/2016/05/why-does-china-want-to-control-the-south-china-sea/>

⁴⁹ Tuan N. Pham, “U.S. ‘rebalance to Asia’ more important than ever,” *Japan Times*, July 3, 2016, <http://www.japantimes.co.jp/opinion/2016/07/03/commentary/world-commentary/u-s-rebalance-asia-important-ever/>

⁵⁰ Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

⁵¹ CPF Luhulima, “Toward a code of conduct on the South China Sea”, *The Jakarta Post*, June 30, 2016, <http://www.thejakartapost.com/news/2016/06/30/toward-a-code-conduct-south-china-sea.html>

⁵² Permanent Court of Arbitration, “Press Release: The South China Sea Arbitration,” July 12, 2016, <https://pca-cpa.org/wp-content/uploads/sites/175/2016/07/PH-CN-20160712-Press-Release-No-11-English.pdf>

⁵³ E.g. *Netherlands v. Russia* (International Tribunal for the Law of the Sea), *Mauritius v. United Kingdom* (Permanent Court of Arbitration), *Nicaragua v. USA* (International Court of Justice)

⁵⁴ ASEAN, “Joint Statement of the Foreign Ministers of ASEAN Member States on the Maintenance of Peace, Security, and Stability in the Region,” July 25, 2016, <http://asean.org/storage/2016/07/Joint-Statement-of-the-Foreign->

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This demonstrates the massive diplomatic pressure China exerted beforehand.

Besides the question of how influence over the South China Sea will develop, the dispute creates wide-ranging consequences. It challenges the US' role in the Asia-Pacific and whether long-term US allies will continue to rely on US protection or change sides in favor of China. Moreover, with China ignoring the PCA's decision and ASEAN backing down in the face of Chinese pressure, the dispute is not only about whether international institutions will find a solution, but whether the global institutional order will even apply against the supremacy of individual superpowers.

DARK SKY SCENARIO - A CHINA BURSTING WITH SELF-CONFIDENCE

After the arbitration ruling in 2016, China did not cut back its actions in the South China Sea. In 2018, the conflict was still unsolved, yet the risk of a military escalation remained low. In the same year, China completed the development of the Spratly and the Paracel Islands and was able to proclaim an Air Defense Identification Zone during three short periods. This massive provocation, however, did not lead to any more criticism than the usual diplomatic statements. China was challenging the US but was not interested in an escalation of the conflict either. Its aim was to preserve stability in the region and maintain a good relationship with its neighboring countries.

In late 2018, China had surpassed the US as the world's largest economy.⁵⁵ This rendered the US' approach to sideline Chinese influence economically impractical. China is the largest trading partner not only of the US but also of ASEAN countries and Europe. Any severe rupture to this interdependence would have prompted a global economic crisis. China's influence over other countries continued to grow with its economic clout and

most of them had accepted the fact that China was becoming the new hegemon.

The EU was no help to the former leader of the free world, as it was paralyzed by internal social, economic and political problems and was facing the dilemma of balancing their overwhelming economic interests with their geostrategic ones. The winners of the US-Chinese rivalry were the Asian-Pacific countries. They were ensnared with security alliances and military protection by the US on the one side and with economic benefits and investments by China on the other side. They successfully managed to defend their interests and balance their commitments to both sides.

China continued its expansion, particularly within its territorial waters. The US army, meanwhile, was overstretched. While the US was able to withdraw from Afghanistan in 2020, it still remained present in Iraq and Syria, and was further required to increase its troop numbers in Eastern Europe in line with its NATO commitments. With a large number of lurking crises, there was little public support for further military interventions. The US administration desperately tried to put China back in its place, by using threatening military gestures on the one hand and strengthening its own global alliances on the other hand. Naval exercises, Freedom of Navigation operations and overflights in the South China Sea were conducted on a regular basis, and billions of US Dollars were invested into the defense capabilities of the allied countries in the Asia-Pacific region, including the Philippines, Indonesia, and Singapore. Despite the American efforts, China was not impressed – things had changed. China was bursting with self-confidence and demanded unrestricted control in its backyard, the Asia-Pacific region.

By 2025, the Chinese presence in the South China Sea was accepted as a new normality. The competing states did no longer advocate their claims, neither did ASEAN condemn China's military actions, as they did not want to compromise their economic and social rise for the control of the South China Sea. China had pushed the US out of the Asia-Pacific, and had become, in line with the "One Belt One Road" project, the major actor

[Ministers-of-AMS-on-the-Maintenance-of-Peace-Security-and-Stability-in-the-Region-AGREED.pdf](#)

⁵⁵ Mike Patton, "China's Economy Will Overtake The U.S. In 2018," Forbes, April 29, 2016, <http://www.forbes.com/sites/mikepatton/2016/04/29/global-economic-news-china-will-surpass-the-u-s-in-2018/#7fd6ec1a474b>

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throughout South-East and Central Asia, as well as large parts of Africa. The US was struggling with its new role as the defeated hegemon and did not have a clear strategy of how to promote its interests in this new world order.

BLUE SKY SCENARIO – THE INTEGRATION OF CHINA INTO A NEW WORLD ORDER

For years, advanced democracies had struggled to accord China an appropriate position within the global institutional architecture. This attitude, in turn, only reinforced China's suspicions towards the current global order.⁵⁶ Developed countries gradually realized that if they wanted China to play by the rules, they needed to improve its integration into the institutions forming the global order.

The Asian Infrastructure Investment Bank, established in 2014, continued its transformation into the Infrastructure Investment Bank in Asia, Africa, and South America, demonstrating China's commitment to countries outside the Asia-Pacific region. Rather than continuing to try to sideline the new development bank, the US joined it as a member in 2017. In the same year, China was recognized as a market economy, bringing along new privileges within the WTO. In the following years, Chinese officials were appointed to senior-level positions in international institutions, including the IMF presidency.

After the 2016 crisis following the PCA's ruling, ASEAN was at the crossroads of sinking into oblivion or repositioning itself. Its member states decided to upgrade their political, social and economic ties, to try and become a global player of their own and to reduce their dependency on China. Economic development was fostered, new trading possibilities were developed and competition was reduced. As a result, ASEAN became the world's fourth largest single market in 2025.⁵⁷ The

claiming states wanted to continue their security cooperation with the US but did not want it to be directed against China.

Thus, the dispute in the South China Sea was institutionalized through the establishment of the "South-East-Asian Security Network" (SEASN). High-level meetings between the US, China, and Asian countries were set up on a regular basis and multilateral defense arrangements were established, including joint military exercises, shared intelligence and interoperability of systems and equipment. The SEASN opened up a new platform for diplomatic and military exchange, which made the dispute in the South China Sea more transparent and manageable. Eventually, the ASEAN states agreed on a mutual stance regarding the dispute in the South China Sea. Their unity increased their bargaining power, resulting in a more confident position vis-à-vis China. They proposed that the Spratly and the Paracel Islands were to be divided between the claiming countries, with the Scarborough Riff remaining neutral territory. All islands and reefs in the South China Sea, however, would not have an EEZ, but only territorial waters within the 12 miles zone. This proposal was accepted by China as it enabled a face-saving way out of the dispute. It allowed China to stay in control of the islands it claimed but did not give it control over the entire South China Sea, as the largest part was now international territory.

In 2025, the conflict in the South China Sea was no longer considered as the theater of a power struggle between two superpowers and several minor powers. Instead, it had become an example of successful international dispute settlement. Pragmatically acknowledging China's increased importance and strengthening regional cooperation turned out to be key factors.. The role of international institutions loomed large since the dispute was institutionalized and solved through the creation of a new organization, the SEASN. Regional institutions were strengthened and their influence in shaping the global order remained high. ASEAN, in particular, emerged as a more powerful actor, bringing its member states closer together and

⁵⁶ Vikram Nehru, "A New Approach to Problem-solving in the South China Sea," Carnegie, August 14, 2014,

<http://carnegieendowment.org/2014/08/18/new-approach-to-problem-solving-in-south-china-sea-pub-56411>

⁵⁷ Allurentis, "Investing in ASEAN", 2013, <https://www.usasean.org/system/files/downloads/Investing-in-ASEAN-2013-14.pdf>

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becoming a more effective counterpart to its giant neighbor, China.

CONCLUSION

The dispute in the South China Sea is not a military one. It cannot and will not be solved militarily. Rather, it lies at the intersection of historical US hegemony, the institutionalized global order, and China's demands for more responsibility and influence in the world. The dark sky scenario outlines what may happen when the US and China drift further towards confrontation. In this scenario, the US will have to invest a lot of effort – financially and militarily – in opposing China's expansion in the South China Sea. Nevertheless, China's sheer size and its growing economic power will not be contained. It is questionable whether the US' current allies will remain loyal to the superpower of the old world, or will rather decide to cooperate with the rising Chinese state. In the dark sky scenario, the South China Sea conflict remains a stalemate, at high cost to the US.

The blue sky scenario, on the other hand, focuses on the future potential of power-sharing in the world and its effect on the South China Sea. Instead of having to carve out its new role by force, China is recognized and welcomed into the existing institutional order. In this scenario, the successful reform of multilateral decision fora and in particular the increased role played by ASEAN helps achieve a stable solution to the dispute. China moves away from the perception of power as the ultimate way to shape international relations, towards understanding that cooperation not only benefits economic interests but also national security interests.

Such an approach has the potential of strengthening not only the relationship between China and the US, a crucial axis of power for addressing global problems, but also regional and international institutions more broadly. Beyond this example, strong institutions have the potential of facilitating peaceful dispute settlement around the globe and are essential for the future success of the globalized, interlinked world we live in.

SUMMER IS COMING: WILL AN ICE-FREE ARCTIC BECOME A REGION OF COOPERATION OR CONFLICT?

STEPHAN HOARE

PROBLEM ANALYSIS

The Arctic, this unique region and its international waters, inherently poses transnational challenges. It is not only surrounded by Canada, Denmark, Norway, Russia and the United States (the Arctic Five), the Arctic is also on the agenda of the international community as a whole.⁵⁸ Taking a closer look at the Arctic Council we also note observer states such as Germany, China and Singapore that lack, at first sight, any connection to the Arctic.^{59, 60}

Melting polar ice caps due to climate change, will increase the accessibility of the Arctic, enabling the exploitation of natural resources and rare earths, maritime routes, as well as scientific and geo-strategic opportunities.⁶¹ Shipping routes between Europe, Asia and North America will be shortened. In the future, Northern shipping routes could become just as

important as the Suez Canal.⁶² The chance to exploit the Arctic's untapped natural resources makes the region attractive to many governments⁶³ as 13% of the world's undiscovered oil and 30% of its undiscovered gas reserves as well as a large part of the world's rare earths reserves are expected to be in the High North.⁶⁴

Given the economic opportunities at stake, neither the Arctic Five, nor other players show any interest in withdrawing from the region. If oil prices render exploration profitable again and new maritime routes emerge, no country will want to miss out on the economic opportunities the Arctic has to offer.^{65, 66} However, there is also potential for closer international cooperation, especially on environmental issues. The Arctic Council is responsible for matters such as sustainable development and protection of the marine

⁵⁸ Joachim Müller-Jung: Kampf um die Arktis, Frankfurter Allgemeine Zeitung (No. 211, 2015): p. 5.

⁵⁹ The Arctic Council: Members and observer states, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers>, 7 August 2016.

⁶⁰ The Arctic Council was established in 1996. The Arctic five plus Iceland, Finland and Sweden are currently members. Twelve non-arctic countries have been approved as Observers to the Arctic Council: France, Germany, The Netherlands, Poland, Spain United Kingdom, People's Republic of China, Italian Republic, Japan, Republic of Korea, Republic of Singapore, Republic of India.

⁶¹ The Federal Government of Germany: Leitlinien deutscher Arktispolitik (November 2013), http://www.auswaertiges-amt.de/cae/servlet/contentblob/658714/publicationFile/185871/Arkti_sleitlinien.pdf, (7 August 2016); The Kingdom of Norway: norway's arctic policy (November 2014), https://www.regjeringen.no/globalassets/departementene/ud/vedlegg/nord/nordkloden_en.pdf, 7 August 2016.

⁶² Malte Humpert and Andreas Raspotnik: The Future of Arctic Shipping, (11 October 2012), <http://www.thearcticinstitute.org/the-future-of-arctic-shipping/>, 27 August 2016. Map of the shipping routes in the Arctic in Annex 2.

⁶³ Wulf Lapins: Ein Lied von schmelzendem Eis und Feuer (3 August 2016), <http://www.ipg-journal.de/kommentar/artikel/ein-lied-von-schmelzendem-eis-und-feuer-1527/>, 7 August 2016.

⁶⁴ Jonas Kassow: Multilateralism in the Far North, DGAPkompakt (No. 12, September 2015) <https://dgap.org/en/article/getFullPDF/27328>, 20 August 2016, p. 2-3.

⁶⁵ Hannah Hoag: Arctic Development Stalls With Tumbling Oil Prices (22 January 2016), Huffington Post, http://www.huffingtonpost.com/entry/arctic-development-stalls_us_56a2b40be4b076aadcc6c444, 7 August 2016.

⁶⁶ Kassow: Multilateralism in the Far North, p. 2-5.

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environment.⁶⁷ It does not have a mandate for high politics or for military and security issues, however.

In the future, the Arctic could turn into a hotbed of conflict or become an example of successful international dispute settlement. As former US Deputy State Secretary James Steinberg put it: "The Arctic cooperation [...] symbolizes a test case of the ability of the international community to deal with the great transnational issues of the twenty-first century."⁶⁸

Currently, the Arctic is a conflict-free zone, but it is increasingly attracting international attention. In 2005, the Norwegian government declared the High North to be Norway's most important strategic priority in the years ahead. By planting a Russian flag on the seabed at the North Pole in August 2007, Russia made a clear statement regarding its politics towards the Arctic.⁶⁹ In August 2015, following this symbolic gesture, Russia staked claims to a vast area of the Arctic Ocean, including the North Pole at the United Nations (Commission on the Limits of the Continental Shelf - CLCS).⁷⁰ In doing so, Russia followed Denmark, which submitted its claims in 2014. Experts expect that Canada will present its own submission in 2018.^{71,72} However, the

treaty on maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean signed in 2010 between Norway and Russia shows that territorial disputes can be solved consensually.⁷³

The security architecture of the Arctic is primarily dependent on relations between Russia and the West. Recent military exercises in the Arctic and modified foreign-policy agendas have eroded the established system of cooperation in the region.⁷⁴ Today, the Arctic is a sideshow to the global conflict between Russia and the West, but with climate change and its resulting effects on the High North, the Arctic could become a central theater of politics and conflict.

DARK SKY SCENARIO - FROM PROMISED LAND TO WASTE LAND

In 2046, the Arctic is a region of conflict. There is no civil life beyond the 69th parallel north. Everything north of this line is a restricted area. There are no research missions and only military-controlled ship traffic. An initial economic upturn in the High North has abated and considerable migration to the South has set in. The Arctic Council has been placed on hold, resulting in little international cooperation in the region. International efforts to combat climate change have failed, resulting in close to 3°C of global warming in 2046, with projections reaching 5°C by the end of the century. Sea levels have risen by 70 centimeters, swallowing populated low-lying areas, while massive heat waves and floods have become commonplace. The melt-off of the polar ice caps has decimated many ice-dependent species, causing grievous harm to the Arctic's sensitive ecosystem.

By 2036, international climate agreements had not been successfully implemented, mainly as a result of the continuing political conflicts between Russia and the West, political instability in the Middle East and North

⁶⁷ The Arctic Council: Arctic Environmental Hazards and National Mitigation Programs, (2015), https://oaarchive.arctic-council.org/bitstream/handle/11374/399/ACMMCA09_Iqaluit_2015_EPPR_Arctic_Environmental_Hazards_and_National_Programs.pdf?sequence=1&isAllowed=y, 7 August 2016.

⁶⁸ Steinberg, James: U.S. Strategic Interests in the Arctic, keynote address. CSIS conference, <https://www.csis.org/events/us-strategic-interests-arctic>, 19 August 2016.

⁶⁹ Tom Parfitt: Russia plants flag on North Pole seabed, the Guardian online (2 August 2007), <https://www.theguardian.com/world/2007/aug/02/russia.arctic>, 19 August 2016.

⁷⁰ A state can make claims to an extended continental shelf. This does not mean that a state's Exclusive Economic Zone is extended (200 miles). The seabed (continental shelf) under the sea will be subject to the applicant's oversight for activities like oil drilling but the legal status of the superjacent waters or of the air space above those waters stays untouched, in: United Nations Convention on the Law of the Sea (1982), http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf, 19 August 2016, Art. 76-78 & Annex II.

⁷¹ Atle Staalesen: Russia submits claim for North Pole, Barents Observer (4 August 2015), <http://barentsobserver.com/en/arctic/2015/08/russia-submits-claim-north-pole-04-08>, 7 August 2016;

⁷² Tom Parfitt: Russia plants flag on North Pole seabed, the Guardian online (2 August 2007), <https://www.theguardian.com/world/2007/aug/02/russia.arctic>, 19 August 2016.

⁷³ The Kingdom of Norway: Treaty on maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean signed today, <https://www.regjeringen.no/en/aktuelt/treaty/id614254/>, (15 September 2010), 7 August 2016.

⁷⁴ Jochen Bittner: To Whom Does The North Pole Belong? , Zeit Online, (9 April 2016), <http://www.zeit.de/politik/ausland/2016-04/arctic-russia-america-conflict-zone>, 7 August 2016.

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Africa (MENA), and conflicts between China and its neighboring countries, all detracting political attention from containing global warming. A world population of around 9 billion people increased the world's primary energy consumption by nearly 20%.⁷⁵ Fossil fuels (coal, natural gas, and oil) still accounted for three-quarters of the worldwide energy mix. However, renewables and natural gas saw the greatest share of growth; with developing and emerging countries accounting for two-thirds of the consumption.⁷⁶ Exploitation of Arctic resources intensified, driven by the growing world economy's demand for natural resources and rare earths.

With an oil price at \$110/barrel, oil and gas were production only took hold in the Barents Sea and the onshore areas in the Canadian, Russian and the US Arctic regions. However, due to the world's digitalization accompanied by the increased electrification the focus shifted more to rare earths and other mineral commodities needed for modern society. In this light, the worldwide shipping traffic further increased, especially in the Arctic. Arctic cities such as Hammerfest or Murmansk, and structurally weak regions evolved into new economic centers focused on exploration and goods traffic. The local population welcomed this boom.

Nevertheless, a decision of the CLCS on the extended continental shelf remained pending. Hence, the Arctic Five refused to sign any agreement limiting the economic use of Arctic waters beyond Exclusive Economic Zones.⁷⁷ Tensions between Russia and the West rose. Between 2016 and 2036, the US and NATO had massively expanded their military capacities in the Arctic and elsewhere to counterbalance Russia,

resulting in an uneasy standoff. New maritime routes contributed to the Arctic's strategic importance. Arctic shipping routes had become ice-free in the summer season. Even during winter, the Northern sea route and Northwest Passage were shippable. The uncertainty regarding the CLCS decision prevented the Arctic Five from establishing a functioning surveillance system. As a result, a number of accidents involving cargo ships occurred, leading to pollution in coastal areas. The NATO-Russia Council met, though irregularly, while the Arctic Council unsuccessfully tried to find common ground regarding sea routes.

In January 2037, the CLCS approved the Danish claim for the North Pole and declined the Canadian and Russian submissions. All Arctic countries but Russia accepted this ruling. The Russian government claimed that the West had manipulated the Commission and asked for a review, which was denied. Instead, the Danish government declared that there would be no industrial fishing, no exploration or extraction of hydrocarbons or other minerals within its new, extended continental shelf. Denmark then attempted to implement Greenpeace's idea of an Arctic Sanctuary "(...) covering the central Arctic Ocean beyond the 200 nautical mile limit of Arctic coastal states' exclusive economic zones"⁷⁸, stopping further accidents and pollution in the High North. Within the Arctic Sanctuary, there was to be no military activity and all shipping traffic was placed under strict surveillance.

Not only Russia but also other Arctic Council members and observers like the US, China or the United Kingdom were skeptical towards this proposal. In an already heated atmosphere, the Danish expedition that replaced the Russian flag on the North Pole seabed with a Danish one was the last straw. In response, a large part of the Russian Arctic fleet headed for the waters around the North Pole.

To de-escalate the situation, Norway called for an immediate top-level meeting of the Arctic and NATO-Russia Council in Hammerfest. Political leaders

⁷⁵ In this scenario I will use the New Policies Scenario of the IEA World Energy Outlook 2015. New Policies Scenario: The New Policies Scenario – the central scenario – describes a pathway for energy markets based on the continuation of existing policies and measures, as well as the cautious implementation of announced policy proposals, even if they are yet to be formally adopted.

⁷⁶ International Energy Agency: World Energy Outlook 2015, (2015), p.52-69.

⁷⁷ Greenpeace: Arctic Sanctuary.Global commons, environmental protection & future proofing, (June 2014), <http://www.greenpeace.org/international/Global/international/publications/oceans/2014/Arctic%20Sanctuary.pdf>, 27 August 2016, p. 2-5; Annex 1.

⁷⁸ Ibid.

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convened a “North Pole Working Group” to make recommendations by 2041 on how to define the political status of the High North. The goal was to guarantee shipping traffic and protect the environment while at the same time allowing its economic use. After three years, negotiations failed. More incidents between the Danish and Russian militaries started occurring. Russia broke international law by starting scientific drillings on the new Danish shelf in 2041.

At that point, the Danish government called for NATO to install a blockade around the North Pole waters, which closed down the Transpolar Sea Route⁷⁹ used for international shipping in summer. This step was heavily criticized by China, Russia, and other states as it clearly violated the right for free navigation in this area. In return, Russia shut down the Northern Sea Route for shipping traffic, antagonizing China, Europe’s most important trading partner at that point. To protect the remaining Arctic Bridge Route, Transpolar Sea Route and North-West Passage, NATO extended its military bases on the east coast of Greenland and in Iceland.

In 2042, a whistleblower revealed to the public that NATO planned to install a military base on Svabard, clearly violating the Svabard treaty.^{80,81} To prevent this, Russia occupied Svabard “Crimea-style”, ensuring its free access to the Atlantic Ocean and stating that it was merely protecting Russian citizens on the island. It would only leave the islands if security for its citizens was guaranteed. The West and a large number of other countries reacted by enacting sanctions against Russia. As a result of the Arctic developing into a militarized

zone and increased numbers of shipping accidents incurring devastating consequences for nature and wildlife, in 2043 most shipping companies stopped using the Arctic routes. The Arctic was divided into two parts between Russia in the East and NATO allies in the West. The political atmosphere was colder than ever before.

In 2046, following five years of conflict, civil society and business leaders urged their politicians to re-establish the North Pole Working Group and to put an end to the standoff. Societal and electoral pressure towards a conflict-free Arctic grew substantially, particularly in the US, Russia and Denmark. However, the icy political climate on the world stage that resulted from the drawn-out stand-off had paralyzed the international order, exacerbating other problems that required international cooperation, such as cross-border crime and terrorism, climate change and pandemics.

BLUE SKY SCENARIO – NEW FRONTIERS

In 2046, the Arctic is a region of cooperation. Increased shipping has brought it years of economic prosperity. Through trade, strictly controlled exploration and tourism, the High North has developed from a militarized zone into an economic hot spot. Although political and military decisions are still being made by the NATO-Russia Council, there still being tensions between Russia and the West, the Arctic Council is now the center of an evolving Economic Union. An Arctic Sanctuary was established and is strictly controlled by NATO and Russia. This bipolar order is massively criticized by other countries like China, Saudi-Arabia, and Brazil, but has not been seriously challenged so far.

As in the previous scenario, international efforts to combat climate change have failed, resulting in close to 3°C of warming in 2046, with projections reaching 5°C by the end of the century. The ice cap melting and ecosystem damage in the Arctic has been especially severe. With the higher demand for natural resources, and especially rare earths, the exploitation in the Arctic increased and shipping traffic gained importance. Amid tensions between Russia and the West, exacerbated by

⁷⁹ Map of the shipping routes in the Arctic in Annex 2.

⁸⁰ The Svalbard Treaty was signed in 1920 after 15 years of negotiations. Over the years, 40 countries signed the agreement, including Russia, USA, China and Germany. The treaty recognizes Norway’s sovereignty of the archipelago. It establishes the archipelago as a demilitarized zone and free economic area. All citizens and companies of every signatory country are allowed to become residents and undertake any kind of maritime, industrial, mining or trade activity. The Treaty establishes that the signatories, including Germany, have onshore mineral rights. This might be the cause of future tensions between signatory countries in the future, in: Store norske leksikon: Svalbardtraktaten (25 March 2015), <https://snl.no/Svalbardtraktaten>, 27 August 2016;

⁸¹ Terry Macalister: Oil rush in the Arctic gambles with nature and diplomacy, The Guardian Online (5 June 2012), <https://www.theguardian.com/world/2012/jun/05/arctic-oil-rush-dangers-svalbard>, 27 August 2016.

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the pending CLCS decision, no strict surveillance system to control increasing shipping traffic was initially implemented. Instead, there was an arms race with both Russia and the US expanding their military presence in the Arctic over several years.

In 2026, the US Senate ratified the United Nations Convention on the Law of the Sea. From that point on, the US government was given ten years to hand in its submission at the CLCS,⁸² a step eagerly awaited by the other Arctic Five. A US claim for the North Pole would have further delayed the CLCS decision and prompted increased tensions. For the time being, no agreement to open Arctic waters for economic use beyond the 200 nautical mile limit was reached.

However, the US government surprised the world when it declared in 2028 that it would not submit any claim to the CLCS. In 2030, the CLCS announced that it would not approve any claims for an extended continental shelf, denying the request of Canada, Denmark, and Russia. Instead, but without success, the CLCS proposed that the UN General Assembly declare Arctic waters to be used exclusively for peaceful purposes and not to become a scene or object of international discord or ecological destruction – similar to the Antarctic.⁸³ With the Arctic Five accepting the ruling, tensions eased slowly.

The thawing political climate kicked off a rush for the Arctic waters – not only for the exploration of natural resources but also in terms of tourism and shipping traffic. Caravans of cargo and cruise ships passed all Arctic routes in the summer and parts of the Northern Sea Route and the North-West Passage in winter. Due to an insufficient surveillance system, the traffic on these harsh routes could not be controlled effectively, however. After a number of collisions and incidents, two catastrophic accidents led to a rethinking within the Arctic community. In summer 2038, a passenger ship in the North-West Passage collided with an iceberg and

sank with all its 4,000 passengers aboard. Shortly after, a Chinese cargo ship crashed with a Russian nuclear submarine just off the shore of Svabard. A nuclear explosion occurred, which not only killed the whole crew of both ships but also contaminated the waters around and Svabard itself. The island had to be evacuated completely.

In the wake of these catastrophes, a top-level meeting of the Arctic and NATO-Russia Council in Hammerfest in January 2039 implemented an Arctic Sanctuary approach. Following the plans of Greenpeace, it installed a new surveillance system for the Arctic routes. Subsequently, the Transpolar Sea Route was restricted to expedition or military vehicles of Russia and NATO members. After years of expanding their military capacities in the High North, the Arctic states decided to use their new capabilities to coordinate shipping traffic in the remaining routes. Russia and NATO had agreed on a new governance structure for the Arctic, exclusively controlled by the two parties.

While the NATO-Russia Council managed security issues, the Arctic Council dealt with ecologic and economic development. The Arctic Council developed into a closer economic union, similar to the pre-Maastricht EU. It managed trade-offs between economic development and environmental challenges, striving to protect environment, economy, culture and health of Indigenous Peoples and the Arctic member states at the same time.

Under this institutional regime, the Arctic region has witnessed years of economic prosperity as it has slowly developed into a closely-knit Economic Union. While climate change has caused irreversible ecosystem damage to wildlife, the Arctic Sanctuary has helped to save what was left. Russia-NATO cooperation in the Arctic has contributed to a cooperative working relationship between the two blocs. It enabled them to tackle global challenges in concert while minimizing security-related confrontations elsewhere in the world.

⁸² United Nations Convention on the Law of the Sea, Art. 76-78 & Annex II.

⁸³ The Antarctic Treaty, (1959), http://www.ats.aq/documents/keydocs/vol_1/vol1_2_AT_Antarctic_Treaty_e.pdf, 27 August 2016.

CONCLUSION

In both scenarios, the Arctic rises to the top of the international agenda – in sharp contrast to the relatively little attention that it attracts now. Yet, if climate change is not contained, a growing world population will render the Arctic increasingly interesting for the Arctic States. It depends on these actors whether the region will develop into a political minefield or a beacon of cooperation. The greatest potential danger is certainly that competing claims on the Arctic could spark a major confrontation between NATO countries and Russia.

Given the harsh Arctic environment and the lack of basic infrastructure, intense cooperation between the Arctic nations and other countries would make eminent political sense. No one country has the resources to manage navigation of trade fleets, coast guard responsibilities, science and the environmental protection of this unique region alone.⁸⁴

Regional cooperation on a functional and technical level should continue. The Arctic Council should transform into an Economic Union. The Norwegian Barents Secretariat could also play a key role in improving future Arctic cooperation, with Norway having comparatively good relations with its Eastern neighbor Russia. The NATO-Russia Council, on the other hand, is the appropriate institution to provide a regional security architecture. It possesses the necessary resources in terms of manpower, networks and reputation for high-level dialogue and military cooperation.⁸⁵

Whether we will see increased cooperation or confrontation in the Arctic remains an open question. The relinquishment of territorial claims to the North Pole as well as a US ratification of the United Nations Convention on the Law of the Sea could provide essential steps towards a more constructive political climate in the High North.

⁸⁴ The Arctic Council: Arctic Environmental Hazards and National Mitigation Programs.

⁸⁵ Tobias Etzold & Stefan Steinicke: Regional Security and Cooperation in the Arctic and Baltic, SWP Comments (September 2015, No. 44), www.swp-berlin.org/fileadmin/contents/products/comments/2015C44_etz_ste.pdf, 7 August 2016.

THE GLOBAL INCREASE OF HYBRID WARFARE: THE CASE OF RUSSIA'S WAR IN UKRAINE

ANN-SOPHIE GAST AND SALOME MINESASHVILI

PROBLEM ANALYSIS

The past years have seen the emergence of hybrid warfare, a conflict strategy that exploits both conventional and unconventional tactics, combining elements of ideological, psychological, informational, cyber and irregular warfare to achieve synergistic effects against a conventionally based opponent.⁸⁶ While this mode of war is not new in principle, a changed context and application have given it new momentum. The world has become more interconnected, while capabilities and technological development have improved, increasing the effectiveness and lethality of non-traditional modes of war.⁸⁷ With new options provided by information technology and social media, hybrid warfare often aims to create a “war without a battle”⁸⁸, blurring the dividing lines between the military and non-military spheres.

Traditionally, hybrid warfare had been associated with non-state actors, such as rebel or terrorist groups. Lately, however, it has been increasingly applied by states, which have greater means and resources at their disposal. Autocratic regimes have a comparative

advantage in this regard, as they can mobilize state resources without democratic control or public scrutiny. Iran's employment of surrogates in Syria, Hezbollah's tactics in the conflict with Israel, the Islamic State's blending of regular warfare with terror attacks and China's gradual expansion in the South China Sea are only some examples of modern hybrid warfare.

Intentioned to exploit weaknesses in the opponent's governability, hybrid warfare is particularly efficient in contexts of shifting governance structures and political instability.⁸⁹ Cultural, religious and ideological differences in target states can be used for easier access and effective destabilization, while economic hardship and crises fuel political instability. Modern information technologies allow aggressor states to wage an information war against a target state. Besides these contextual factors, hybrid warfare is driven by the goal to create chaos, social unrest, weaken the opponent government and win the hearts and minds of certain minority groups within the target state without engaging in an open war. Hybrid warfare allows states not only to avoid costly direct combat, but also to prevent attribution as well as domestic and international responsibility. States that apply hybrid warfare try to stay below the threshold of NATO Article 5 and UN Article 51, both prompting responses by the international community. Denial and deception of

⁸⁶ Timothy McCulloh and Richard Johnson, “Hybrid Warfare”, JSOU Report 13-4, August 2013, accessed August 2, 2016, http://jsou.socom.mil/JSOU%20Publications/JSOU%2013-4_McCulloh,Johnson_Hybrid%20Warfare_final.pdf

⁸⁷ Octavian Manea, “Hybrid War as a War on Governance”. Small Wars Journal, August 19, 2016.

⁸⁸ Flemming Splidsboel Hansen, “Russisk Hybridkrig - Fremtidens krig er i fuld gang”, DIIS Policy Brief, Copenhagen: Danish Institute for International Studies, March 2016.

⁸⁹ Octavian Manea, “Hybrid War as a War on Governance”. Small Wars Journal, August 19, 2016.

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operations are typically employed to keep diplomatic and trade relations with international partners intact.

The latest example of state-led hybrid warfare is Russia's aggression against Ukraine, which followed the "Euromaidan" protests against the suspension of the EU-Ukraine Association Agreement in November 2013 and the subsequent overthrow of President Viktor Yanukovich. When Ukrainians in the largely russophone eastern and southern provinces of Ukraine rebelled against the ousting of Yanukovich, Russia started military drills on its border with Ukraine and sent armed men in unmarked uniforms to Crimea, seizing airports and government buildings. After a referendum, which was denounced as illegal by the international community, Russia annexed the Crimean Peninsula in March 2014. Unrest in Ukraine's eastern provinces subsequently escalated into a war between the new Ukrainian government and pro-Russian separatists in Donetsk and Lugansk, leaving 22,154 wounded and 9,553 killed.⁹⁰ Despite official denial, it is widely assumed that Russia does not only support the separatists with weapons, but has also sent paramilitary soldiers to the Donbas region. Both ceasefire agreements, Minsk I and II from September 2014 and February 2015 respectively, have failed. While using diplomatic channels to negotiate a political settlement within the Normandy Format, the Russian government simultaneously wages an information war with psychological elements, consisting of disinformation, subversion and rallying support among russophone Ukrainians, as well as Russian-speaking citizens in other states.

The war in Eastern Ukraine is mainly driven by a fundamental disagreement over Ukraine's future strategic orientation and diverging security interests. While the current Ukrainian government seeks closer ties with the EU and NATO, Russia does not want to see yet another of its neighboring states escape its sphere of influence and join the transatlantic security complex. Furthermore, the Kremlin has a clear interest in

maintaining Ukraine as a buffer zone between its own and NATO territory. However, the conflict is not only about Russia and Ukraine; it is also the manifestation of a global power struggle between Russia and the West, which had long been simmering below the surface as a consequence of the failure to integrate Russia into the transatlantic security order after the end of the Cold War.

The Ukrainian case shows that hybrid warfare has a profoundly destabilizing potential as it, by its very nature, relies on obfuscation and denial of responsibility. The degree of obscurity, uncertainty and disagreement on the facts of a conflict makes it much harder to find common ground for peaceful settlements. Furthermore, if successful, hybrid warfare allows the aggressor state not only to maintain political and economic ties with its international partners, but in fact to accumulate more power and shape its image as a global actor. On the international level, the recent elections of Russia-friendly presidents in both Moldova and Bulgaria and on the domestic level, the skyrocketing approval rates of President Putin bear witness to this difficulty. In this context, the war in Ukraine could set a positive or negative precedent for how to address hybrid warfare in the future.

DARK SKY SCENARIO - ESCALATION OF THE CONFLICT AND DIFFUSION OF HYBRID WARFARE

In October 2022, a Truth and Reconciliation Commission, with the goal to uncover the crimes of the conflict parties and to address questions of reconciliation, justice, and reparation, is finally able to start its work after three years of difficult peace talks between Russia, Ukraine and separatists of the Donbas People's Republic. The past six years have witnessed a devastating war, which has claimed more than 90,000 victims. The conflict, since its beginning in March 2014, had been simmering at a low level, demanding comparatively few fatalities until it broke out in earnest in April 2017. Neither the Normandy format nor the EU or OSCE were able to ensure implementation of the Minsk II Agreement until then.

⁹⁰ United Nations Office of the High Commissioner for Human Rights, "Eastern Ukraine casualties highest since August 2015", August 3, 2016, accessed August 4, 2016, <http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=20329&LangID=E>.

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In April 2017, an unprecedented cyber-attack hit Ukrainian servers and caused a massive power outage in several parts of the country, leaving more than 5 million residents in the dark and leading to supply shortfalls, economic losses in manufacturing industries and fatalities in hospitals. The Ukrainian government, with intelligence support by several EU member states, found that the attack originated in Russia. While the EU sharply condemned the assault and expanded anti-Russian sanctions, the new US administration under President Trump publicly cast doubts on its Russian origin. Russia, backed by American idleness, did not only vehemently deny its involvement and express outrage about ostensibly wrongful accusations, but also increased its military presence at the border with Ukraine. Shortly afterwards, the Russian intelligence service FSB detained yet another group of Ukrainian “saboteurs” on Crimea and accused them of plotting terror attacks against Russian citizens. In August 2017, the Russian government quit the Minsk peace negotiations for good, claiming there was no common ground to continue peace talks with a government that officially sponsors terrorism. France and Germany expressed deep concern and the UN Security Council as well as the EU Political and Security Committee held special meetings to discuss the renewed intensification of the conflict. Nevertheless, due to Russian blockade policy and American inaction, the international community failed to take concrete measures.

In the following months, the military conflict in Donbas intensified as Russia increased its support for the separatists of the Lugansk People’s Republic (LPR) and the Donetsk People’s Republic (DPR). The high level of patriotism in the Ukrainian society, the radicalization of the political discourse and the increase in anti-Russian sentiments enabled Ukrainian authorities to mobilize considerable human and financial resources for their army. As fighting expanded to a larger area, the conflict caused more victims. In November 2017, the LPR and the DPR announced their unification and proclaimed the creation of the Donbas People’s Republic (DBPR). Due to constant shelling, a sharp increase in fatalities and shortcomings in medical care, the Donbas region

experienced a humanitarian crisis and an unprecedented exodus of civilians.

In February 2018, independent pro-Russian militias committed a terror attack in the Kiev Metro, claiming 16 victims, followed by four small-scale attacks in different Western Ukrainian cities. Even though Russia, as well as the DBPR, condemned the attacks sharply, Ukraine amplified its military efforts and asked NATO for support. As the organization could not agree on coordinated weapon deliveries, some NATO members, among them France and Poland, in April 2018 decided to unilaterally supply Ukraine with lethal weapons. Russia, in turn, accused NATO of fueling the conflict and bearing responsibility for the high number of casualties.

What began as a hybrid war evolved into an open war between Russia and Ukraine, in which the Kremlin is increasingly openly fighting on the side of the separatists. While diplomats managed to avoid an armed conflict between Russia and EU member states, cyber-attacks and media defamation campaigns on both sides indicated that a hybrid war was in full swing. In several European countries, particularly in those with large Russian minority groups, the conflict caused social unrest, as demonstrations by ethnic Russians against the perceived terror government in Ukraine and its Western supporters escalated. In November 2019, the German government reported that approximately 276,000 Russian migrants had left Germany in the previous three years to return to Russia.

Another consequence of the war was a surge in internally displaced persons within Ukraine. Additionally, dramatic increases in military expenditures, a decline in foreign investments and the destruction of key infrastructure drove the Ukrainian economy close to collapse and required UN and EU to provide humanitarian aid. Several times, Russian gas supplies to Europe were interrupted during the winter months and several EU member states dependent on Russian gas saw the terms of their supply contracts worsen as Gazprom pushed through rate hikes.

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It took several years more, thousands of victims, billions of dollars spent on ammunition and equipment and desperate NGO warnings about the humanitarian crisis on the ground, for Russia and Ukraine to recognize the necessity of a ceasefire and political settlement. In June 2021, Helsinki peace talks between Russia, Ukraine, and representatives of the DBPR finally started. The participants agreed to establish an independent Truth and Reconciliation Commission to reveal wrongdoings by both conflict parties, build trust, enable forgiveness and develop common narratives of the past. The Commission was able to start its work one year later. However, by then hybrid warfare had already been established as an effective and less costly mode of conflict inspiring other states to apply similar tactics against their enemies.

On the global level, Russia's success in using hybrid warfare with impunity, along with the repeatedly demonstrated inability of NATO, OSCE and UN to deal with this mode of warfare emboldened other authoritarian governments to apply similar tactics. Turkey, under President Erdogan, subsequently extended its sphere of influence into the Kurdish areas of Northern Syria using irregular forces and misinformation. Saudi Arabia and Iran intensified hybrid warfare operations against each other, including proxy attacks on critical water and energy infrastructure that had widespread regional ramifications. China, for its part, intensified cyber-attacks against any country opposing its expansionary ambitions in the South China Sea.

BLUE SKY SCENARIO - SOLUTION OF THE RUSSIA-UKRAINE CONFLICT AND SUCCESSFUL CONTAINMENT OF HYBRID WARFARE

In April 2017, the United Nations, with a majority vote of the General Assembly, set up an independent international fact-finding mission to investigate human rights violations, the use of asymmetric forces, war crimes and responsibility in the Ukrainian conflict. After a year of investigation, the information mission, employing the most recent technology and enjoying considerable operational support, revealed Russian

sponsorship of separatists as well as the use of cyber-attacks and violations of human rights by both the Ukrainian and the Russian side. Based on the report of the commission, the international community, including the UN and OSCE, set up a campaign involving active naming and shaming policies towards both sides of the conflict. The campaign called on Russia to recognize its role in the conflict based on the uncovered facts, blaming it for the outbreak of the conflict and appealing to start peace negotiations. At the same time, the Ukrainian side was pressured to recognize and take responsibility for covert operations in Crimea and human rights violations committed by its own forces.

Vladimir Putin decided to abstain from participating in presidential elections in March, 2018 and presented a new candidate, who became elected on the promise of ending Russia's economic woes while preserving its global power status. In the midst of protracted protests and demands for social and economic reforms, the new president came into power with a major promise of rescuing the country from economic hardship caused by Western sanctions. In order to end international isolation, the new president demonstrated his willingness to support peace talks on the Ukrainian issue and to stop support for the separatists, but demanded the lifting of economic sanctions, Ukraine's neutrality and autonomy for Ukraine's eastern provinces in exchange.

Under the auspices of the UN, peace talks including representatives of the Ukrainian and Russian governments, officials from Lugansk and Donetsk regions, as well as UN special envoys and EU and NATO representatives started in May 2019. Notably, Russia finally accepted its status as a conflict party. After ten months of intensive negotiations, all sides agreed to a compromise, according to which Russia had to withdraw its forces and weapons from Lugansk and Donetsk in exchange for Ukraine granting the two provinces highest autonomous regional status. Furthermore, Ukraine accepted Russian demands of local elections and enactment of a general amnesty law. Both actors consented to the deployment of a EU police mission to back up the OSCE Special Monitoring

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Mission (SMM) with the task to safeguard the ceasefire as well as to monitor the withdrawal of troops and weapons from Donetsk and Lugansk.

LPR and DPR representatives agreed to a ceasefire and to the restoration of border control by Ukrainian forces in exchange for a guarantee from the Ukrainian government to protect the status of Russian language and culture. It was decided that the implementation of the agreement's terms would be followed by lifting economic sanctions on Russia. Moreover, Russia demanded a separate security agreement over Ukraine's future neutral status and foreign policy. A special taskforce of the OSCE took the responsibility to draft an agreement on a new security architecture, under which Russia gave Ukraine an official guarantee of no interference regarding its economic ties with the EU and its territorial integrity. In exchange, Ukraine agreed to refrain from joining NATO and maintain a neutral status in the Russia-Transatlantic security architecture. In a sign of thawing relations, the EU and the Eurasian Economic Union reached an agreement on free trade between the two unions.

After the ceasefire, Ukraine undertook a massive federal reform program, which granted Donetsk and Lugansk regional autonomy including self-rule without an army. The two regions acquired the right to govern all spheres of social and economic life on top of locally applied legislative changes, except foreign policy and national defense. Furthermore, Ukrainian federal forces remained in charge of border control. Meanwhile, the demilitarization of the separatists was monitored by the OSCE SMM and the EU police mission. After Russia had fully withdrawn its forces from eastern Ukraine, it was accepted into the G8 once again.

In May 2021, Russia, the EU, and the United States agreed to intensify cooperation in the fight against terrorism. A new alliance was formed that included regular exchange of information from surveillance and intelligence operations, coordination of anti-terrorist missions and planning of joint operations against ISIS and Al-Qaida. After recognizing hybrid warfare as a phenomenon that challenges world peace and security,

the international community decided to modify institutional structure accordingly. Subsequently, the UN introduced a new specialized International Agency on Hybrid Warfare with three main tasks: *firstly* to identify hybrid war actors and level of their involvement, *secondly* to organize international response to hybrid war sources; and *thirdly* to facilitate reconciliation. Under the Agency, the UN set up a permanent fact-finding mission for hybrid war cases equipped with substantial resources, qualified personnel and intelligent forces. The mission became the tool of choice to cut through the fog of war that hybrid warfare thrives in. By demonstrating the willingness and ability to expose the underlying truth behind obfuscation and misinformation as well as taking specific measures, such as naming and shaming and organizing economic sanctions, the international community succeeded in making hybrid warfare not only a risky, but also a very costly conflict strategy to be employed only under exceptional circumstances.

CONCLUSION

Hybrid warfare is on the rise as more and more states are employing this comparatively effective and less costly mode of war instead of engaging in full-scale conflict. Due to its efficiency in destabilizing and weakening target states and its key advantages, such as the avoidance of domestic and international attribution and responsibility, a short-term containment of this conflict strategy is unlikely. Hybrid warfare is a threat to global order as it undermines recognized principles, norms, and institutions of governance and diplomacy. Denial of operations and deception of international partners present major obstacles to stop the aggressor state as well as to reach sustainable political settlement.

Russia's aggression against Ukraine is a prime example of hybrid warfare. The conflict has reached a point where it could evolve in several directions, depending on the development of contextual factors as well as on the response of the international community. Both escalation and containment are conceivable. While our scenarios describe two extreme developments, they illustrate what could happen in such a tense and politically charged situation if either political responses

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by the international community vary or contextual conditions change. Contextual factors are, for example, personality and disposition of leaders in charge, the economic situation in both the aggressor and the target state as well domestic conflicts and tensions.

While most of the contextual factors cannot easily be modified, the international community and existing international organizations have means at their disposal to alter the conflict. One-sided efforts are unlikely to produce results, but the conflict could be solved by changing the Russian perception and vision of itself and the outer world as well as by supporting the creation of a narrative that is acceptable to both conflict sides. Furthermore, in order to counter the key advantages of hybrid warfare, its application has to be made more costly in terms of sanctions and international isolation as well as a loss in credibility and influence. However, efficient naming and shaming policies against the

aggressor state and sanctions to follow up require an active and well-coordinated response by the international community. In order to decrease the ambiguity and achieve cooperation and acknowledgement of the facts of all conflict parties, increased intelligence efforts are necessary to uncover war crimes and state responsibility as well as the systematic use of asymmetric forces and tactics.

Finally, the creation of new institutions under the auspices of existing international organizations, such as international fact-finding missions or truth and reconciliation missions, which are perceived as neutral and inclusive, can facilitate a political settlement, in which neither side of the conflict loses its face. Peace negotiations have to recognize all actors' stakes in the conflict.

ANTIMICROBIAL RESISTANCE: APPROACHING AN AGE OF UNTREATABLE GLOBAL EPIDEMICS?

JANNES ELFGEN

PROBLEM ANALYSIS

Since the discovery of Penicillin in 1928, antibiotics have seemed to provide a permanent cure for bacterial diseases. In 1969, US policy makers optimistically announced the end of infectious diseases.⁹¹ However, like all other microbes (viruses, fungi, and parasites), bacteria develop resistance to antibiotics over time. Today, resistance is growing faster than researchers can develop new antibiotics. It is estimated that antimicrobial resistance will lead to 10 million deaths in 2050, compared to 700,000 in 2014.⁹² Bacterial diseases constitute a most pressing issue compared to other infectious diseases such as HIV/AIDS or Malaria.⁹³ When looking at the pace of antimicrobial resistance (AMR) and the drug pipeline for the upcoming years, it becomes clear that a period in which effective antimicrobials will be in short supply is already unavoidable. A hazardous combination of three main developments is driving the world towards a post-antibiotic era.

The first development is over-medication or wrong usage of antibiotics, which speeds up mutations in

microbes. In some countries, antibiotics are still available free of prescription, encouraging their misuse in human medicine. In addition, the heavy reliance of the agricultural industry on antimicrobials increases the number of resistant microbes that can be transmitted to humans. Moreover, insufficient hygiene in sensitive settings such as hospitals allows multi-resistant microbes to develop where there is no antimicrobial cure.

A second development is the higher mobility of carriers of bacteria, e.g. through air transport. Domestic epidemics, through ill-prepared disease management, can turn global more rapidly than ever before. The negative externalities of an inadequate public health system in one country for other countries increases in a globalized world. Low-income countries are thus at particular risk of spawning epidemics.

Lastly, the development of new antibiotics has become increasingly difficult and costly for the pharmaceutical industry. In the case of antibiotics, usage cycles are rather long and new antibiotics are only introduced when old ones turn ineffective.⁹⁴ At that time, patent protection is often almost expired and generics can enter the market. This makes high investment into research becomes unattractive for pharmaceutical companies. The World Health Organization (WHO)

⁹¹ Braun, D. "Health Security: Abwarten ist keine Option" DGAPkompakt 10 (2016). Accessed 09.08.2016 at <https://dgap.org/de/think-tank/publikationen/dgapkompakt/health-security-abwarten-ist-keine-option>

⁹² O'Neill, J. "Tackling drug-resistant infections globally: final report and recommendations." London: Wellcome Trust & HM Government (2016).

⁹³ O'Neill, J. "Securing new drugs for future generations: the pipeline of antibiotics." London: Wellcome Trust (2015).

⁹⁴ O'Neill, J. "Securing new drugs for future generations: the pipeline of antibiotics." London: Wellcome Trust (2015).

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reports that the last breakthrough antibiotics were developed in the 1980s.⁹⁵ Since then, there has been a void of discoveries in antibiotics research. On top of this, antibiotics research tends to focus on those microbes that promise high sales volumes so that infectious diseases prevalent in low-income countries are not sufficiently addressed.

Taken together, these three developments indicate that the protection from bacterial diseases amounts to a global common good. Singular action by one, or even joint action by a few countries, cannot secure the continued effectiveness of antimicrobials. The usage of antimicrobials in one country impairs its durability in others, while exclusion from usage is not only feasible but even counterproductive. Thus, an effective response would require joint global governance instruments of some sort. The economic effects under a business as usual scenario are projected to lead to a drop in GDP of 0.06%, i.e. 3.1% until 2050.⁹⁶ Besides negative effects on the quality of life and the economy, outbreaks such as in the recent Ebola crisis have shown how sensitively countries with highly populated areas like China or Japan have reacted to epidemic threats, raising the importance of health security. Epidemics are considered a serious threat to public security and led to strict border controls and restrictions on the movement of people. In many respects, the issues and conflicting interest we are facing in the field of AMR are similar to other common good problems such as climate change. The major risks associated with both issues, such as economic losses, forced migration or threats to human life are the same. Still, a concrete plan to address the global challenge of AMR, similar to the Paris Climate Agreement, is not yet in place.

However, signs that this problem has been recognized by government leaders can be seen in the prominence

of this issue at the 2015 G7 Summit in Germany 2015.⁹⁷ Moreover, numerous initiatives have been established in cooperation with the WHO. For example, the WHO Global Action Plan on Antimicrobial Resistance (GAP-AMR) includes national recommendations to combat AMR. The Drugs for Neglected Diseases Initiative (DNDi) and the Global Antibiotic Research and Development Partnership (GARD) seek to improve funding for research and access to drugs for low-income areas. In response to the Ebola crisis, the WHO launched a global surveillance program for AMR (GLASS) in May 2015 as well as a contingency fund and an emergency workforce to assist countries affected by epidemics.

These initiatives are not yet sufficient in terms of resources or political power to provide adequate protection against bacterial epidemics. Nevertheless, they offer some hope that global governance on this issue is feasible. The following two scenarios depict what the consequences could be if global governance would not evolve further on the one hand, and how progress on global governance instruments could safeguard public health on the other.

DARK SKY SCENARIO - UNILATERAL ADAPTATION

In the year 2030, a large-scale epidemic spread rapidly due to mutated bacterial microbes transmitted from livestock in Mexico to humans. Although this bacterium was no “super bug” and would have been easily treated 20 years ago, in 2030 there were no effective antimicrobials available. The main broadband antibiotics had become ineffective much faster than anticipated. The continued high usage of antibiotics in livestock farming had increased the rate at which microbes mutate. As a result, this was already the fifth major epidemic since the mid-2020s.

The higher frequency of bacterial epidemics had also led to a significant increase in the usage of antibiotics in

⁹⁵ World Health Organization. "Antimicrobial resistance global report on surveillance: 2014 summary." (2014).

⁹⁶ Taylor, Jirka, Marco Hafner, Erez Yerushalmi, Richard Smith, Jacopo Bellasio, Raffaele Vardavas, Teresa Bienkowska-Gibbs, and Jennifer Rubin. "Estimating the economic costs of antimicrobial resistance." Model and Results. Cambridge: RAND Corporation (2014).

⁹⁷ Final declaration of G7 Germany:
http://www.bmg.bund.de/fileadmin/dateien/Downloads/G/G7-Ges.Minister_2015/G7_Health_Ministers_Declaration_AMR_and_EBO_LA.pdf

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human medicine so that antibacterial resistance could develop even faster. This divided the world into two sets of countries. The first set of richer countries had managed to invest into research and was, therefore, able to retain a small repertoire of effective antimicrobials. They retained the ability to secure their borders and public health, which allowed them to maintain a relatively high level of trade and travel amongst themselves. To secure the effectiveness of the antimicrobials they had to enact strict marketization restrictions for pharmaceuticals. These were only made available for countries that could ensure the highest level of disease control. On the other side stood a group of poorer countries without comprehensive public health capabilities or a baseline safeguard of antimicrobials. The frequent occurrence of epidemics had cut them off from major travel and trade routes. As a result, these countries suffered a major decrease in life expectancy, quality of life and economic prospects.

As epidemics had become a regular occurrence, governments started responding routinely by unilaterally protecting their public health. The US, for instance, stopped all traffic at the Mexican border and only allowed critical goods to pass after lengthy contamination controls. Similar measures around the globe led to a 20% reduction in world transport and trade. Except for the main business areas in the largest cities in Mexico and other Latin-American countries, these countries were generally declared high-risk areas. Especially Southeast-Asian countries with high population densities declared strict travel bans. After two major outbreaks in the 2020s reached megacities such as Jakarta or Shanghai, it became clear that containment was virtually impossible in these settings as antibiotics had become far less effective than they used to be. Public health officials therefore became overly sensitive towards outbreaks of bacterial epidemics around the world and started deploying comprehensive travel bans more quickly than ever before.

The eroding trust among governments, and particularly in low-income countries' abilities to effectively contain epidemics, contributed to these drastic measures.

Although governments of industrialized countries had made pledges to support disease management capacities of developing countries, these commitments were not backed by sufficient financial support and were not granted political priority. In addition, the WHO continued to rely on soft non-binding instruments such as recommendations. The inadequate or even failed implementation of comprehensive action plans on AMR by several developing and middle-income countries were not sufficiently scrutinized by the international community. Instead, Western African countries never reached sufficient economic prosperity and quality of governance to raise the standards of their public health systems after the Ebola crisis. Their institutions were still ill-prepared when the next epidemic hit in 2019. Trade flows in Western Africa virtually came to a standstill over several months, causing a vicious circle of recession and public health system vulnerability.

Although the WHO had successfully created an emergency workforce and the Pandemic Emergency Facility at the World Bank had taken up work in 2016, both instruments were not able to respond to the increased frequency at which epidemics broke out in the 2020s. Given the lack of effective antimicrobials, epidemics became increasingly hard to contain so that WHO health workers had to remain in one crisis area much longer, restricting their availability for other crisis areas.

The same held true for the 2030 outbreak in Mexico. Despite the fact that Mexico had invested in additional public health management capacities, it was still in need of international support to contain the spread given the magnitude of the new epidemic. However, international funds and human resources had already been exhausted by the previous major epidemic in 2029 on the Philippines, which still was not fully under control by that point.

The increased frequency of major outbreaks largely resulted from the failure of governments to agree on concrete targets for antibiotics usage in livestock farming. Countries with less competitive farming sectors usually demanded compensation in return for strict

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targets, which industrialized countries could not agree to due to pressure from domestic interest groups. As had been projected in 2015, only three new antimicrobials from the pipeline proved to be effective in 2030. Given the overstressed global capacities to react to the 2030 outbreak in Mexico, countries around the world anticipated that the epidemic would persist and spread for a long time to come. Adaptation and readjustment to travel and trading practices moved to the top of political agendas in many countries. Developed economies, in particular, revised their trade relations towards the designated high-risk areas.

Nevertheless, the highly complex movements of goods and people around the world made it hard for countries to isolate themselves successfully. Severe measures to manage mobility of people and goods had to be put in place to achieve sufficient control. Individual tourism was largely forbidden for two years and restricted to designated safe zones in resorts that could guarantee high safety standards for their personnel and food. At the same time, the consequences of climate change and ongoing pandemics forced an increasing number of people from Africa and the Middle East out of their homes. Internal displacement and migration flows to Europe and North America reached three times 2015 levels in 2030.

Overall, average life expectancy in 2030 had decreased by 10 years compared to 2015 – even in developed countries, as chronically ill and older people die disproportionately from simple bacterial infections. On the whole, people became highly skeptical of longer hospital stays or surgeries given the risk of possible infections. The loss in life quality in developed countries and the fear of catching infections provided for a political climate in which little opposition was voiced against the restrictions on the movement of people and goods which had slowly become the norm.

BLUE SKY SCENARIO – A GLOBAL HEALTH GOVERNANCE REGIME

In the year 2030, Mexico reported a major outbreak of a bacterial epidemic transmitted from livestock to humans. The global pandemic mechanism under the

WHO was quickly activated to respond to the threat – for only the third time in 10 years. Developed on the basis of a critical review of the capacities of the international community after the Ebola crisis, the global pandemic mechanism combined a comprehensive set of measures that were reactivated in 2030 to contain the spread of the epidemic. The WHO deployed several international teams of medical and crisis management experts to the site within one week. Additional financial resources were quickly made available to support domestic organizations in educational campaigns and emergency aid to the affected regions, where public life had come to a standstill.

A set of unified security clearing measures for people traveling to and from Mexico, in particular for airports, were activated to avoid a global spread. With help from the international community to support public disease management capacities, most countries were able to implement these measures. In addition, countries were supported to perform monitoring and reporting duties on a unified set of data on AMR to the WHO. In this way, it was possible to track developments in AMR and guide research on crucial germs. Although the research pipeline of antimicrobials had only led to three new antimicrobials as projected in 2015, a baseline effectiveness of antimicrobials could still be secured. As the WHO provided a high level of transparency among countries about their disease management capabilities, national governments adhered to coordinated measures instead of imposing blunt or unspecific restrictions on international transport.

Global governance instruments worked successfully because OECD countries and emerging markets had both committed to making substantial financial and political contributions to the fight against AMR. In a joint summit at the WHO meeting in Geneva 2018, governments agreed on a parallel document to the Paris Climate Agreement, which significantly boosted the role of the WHO. The parties agreed on a fixed ceiling on the quantity of antibiotics per kilogram in livestock farming and limited the use of antibiotics in human medicine. Crucially, states agreed to make these targets

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binding for themselves while granting the WHO the authority to monitor compliance. Regular reporting and reviews by national governments to the WHO ensured further transparency. This also facilitated compliance by reducing concerns that other countries might be gaming the system to gain an advantage. The combination of conditional financial incentives offered a conducive environment for the implementation of this agreement by all parties.

In addition to the 2018 Geneva agreement, the WHO Assembly increasingly relied on the usage of international health regulation to preserve the effectiveness of existing antimicrobials. Hence, key aspects of AMR action plans such as the prudent use of antimicrobials with the requirement for a prescription and the broad application of advanced detection methods were integrated into international health regulation. This measure, in particular, ensured that the effectiveness of antimicrobials could be prolonged so that the research void of the last decade did not lead directly into a post-antibiotics era. Moreover, the reduced application of antibiotics in livestock led to fewer occurrences of mutated bacteria being transmitted to humans.

The key to the establishment of this agreement had been the recognized vulnerability of major emerging markets such as China, India, and Brazil to bacterial epidemics. Incidents like the Zika virus outbreak in Brazil revealed the importance of international cooperation. In recognizing their position in the global governance system on health, governments from emerging economies had made substantial financial contributions, which in return drew forth similar contributions by Western countries to WHO bodies. The WHO's contingency fund was stocked up substantially to set up an effective global financing facility for antimicrobial research. This facility promoted further private research and applied new financing mechanisms which safeguarded the availability of antimicrobials in low-income areas.

Issues resulting from marketization considerations were resolved, which resulted in a dozen new promising antimicrobials in the research pipeline.

CONCLUSION

Presumably, elements of both scenarios are likely to materialize over the next twenty years. A comprehensive global governance response will depend on multiple factors. The outset seems rather bleak. In general, increasingly diverging positions on major global security issues reduce the likelihood of positive spill-overs to comprehensive forms of global governance. In particular, breakthrough discoveries in antimicrobial research remain uncertain. Even in case of new discoveries, positive effects will likely materialize with some delay. Thus, for the next decade, strategies of adaptation will be crucial in both scenarios. Governments would be wise to upscale their capacities to respond to epidemics and to adapt to situations of hamstrung international mobility.

The Ebola crisis has taught us, once again, the costly lesson that global governance often requires extreme events to materialize. It would be very dangerous if the issue of AMR continues to worsen gradually under the surface of headline news until a point is reached where antibiotics are broadly ineffective. At that point, the only short-term responses available would be national containment as shown in the first scenario. Activist groups and the WHO leadership should work towards overcoming short-termism of national governments and push for an effective resolution of this issue. Short-term political costs, especially for industrialized countries, have to be moderated by a clear communication of the joint long term gains. In any case, a failure to form an effective global governance response will be most felt by the poorest countries, while adaptation strategies will only be feasible for the richer ones. Health problems rarely adhere to national borders. Neither should policy responses.

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