



Global Trends 2021

The US National Intelligence Center produced its 4-yearly Global Trend report in 2021. Here is our short series of blogs based on the themes discussed in it.

Global Trends 2040 – “A more contested world”



Image by [Gerd Altmann](#) from [Pixabay](#)

Every four years, the US National Intelligence Center produces its Global Trends report. The 7th edition, published this year, reflects on the way global trends and dynamics are creating “a more contested world”.

This is a substantial piece of work that deserves serious consideration. The core report contains many important and interesting sets of data. So I will be examining its conclusions in a series of four blogposts that follow the structure of the report. This first one is an overview, and will be followed by Structural Forces, Emerging Dynamics and Scenarios for 2040. There is also a set of Regional forecasts.

As with most scenario work, the intent of the authors is “to help policymakers and citizens see what may lie beyond the horizon and prepare for an array of possible futures”. Aware of potential US-bias and blind spots, the project consulted widely. Those involved included civil society organizations in Africa, business leaders in Asia, foresight practitioners in Europe and Asia, and environmental groups in South America.

Naturally, this year’s report is considerably impacted by the Covid-19 pandemic. The authors compare the scale of its impact with the attacks of September 11th. But



before addressing that the report examines more **STRUCTURAL FORCES** likely to affect the future. Unsurprisingly, these are very similar to the “megatrends” identified by many organisations which SAMI summarised in our “Meta-megatrends” document.

They begin with **demographics** where they note that over the next 20 years the global population slows and rapidly ages. Some countries, in Latin America, South Asia, and the Middle East and North Africa, benefit from an increase in working-age population, creating the potential for a demographic dividend. These will only be realised if there is continued improvement in **human development** – health, education and household prosperity. The report is concerned that recent progress will be difficult to sustain. Differing levels of success will increase unequal economic opportunities within and between countries and create more pressure over migration.

The second major structural force examined is the **environment** and climate change. They note that the effects of more frequent extreme weather events will fall disproportionately on poorer countries. The costs and benefits of adaptation and mitigation will not align, so co-ordinated global action will remain difficult.

Several **economic trends**, such as increasing debt burdens, are thought to reduce flexibility in several countries. Global platform corporations are increasingly likely to try to exert influence in political and social arenas, but may face a backlash of regulation. Continued GDP growth in Asian countries is thought unlikely to bring them up to match the US and Europe.

Technology is seen as continuing to be “used, spread, and then discarded at ever increasing speeds around the world”. Despite offering the potential to mitigate many problems – such as climate change – the authors are concerned that technology development could create new tensions and threats to economic, military, and societal security.

These four forces relate closely to SAMI’s “Six drivers of change”. We split “technology” into digital and biotech, and we had a cultural, societal attitudes driver to capture different generational perspectives.

The next section addresses three **EMERGING DYNAMICS** – interacting and intersecting forces.

Their first is **societal** forces – akin to, but different from SAMI’s “societal attitudes” driver. Here it is taken to mean a collapse in optimism about growth and instead a retreat into like-minded, sometimes populist, group identities. This undermines civic nationalism and increases volatility.



The second is the **state** and its role. Increasingly empowered and more demanding populations are putting governments under greater pressure at a time when they have fewer resources. “This widening gap portends more political volatility, erosion of democracy, and expanding roles for alternative providers of governance”.

Finally at the level of the **International system**, a range of factors lead the authors to expect greater competition between China and a Western coalition led by the United States. Other powers will identify areas where they may exert influence. Overall they see a more conflict-prone and volatile geopolitical environment, with failing multilateralism, and a breakdown of transnational institutional arrangements.

This section also addresses the **future of terrorism**.

The structural forces and emerging dynamics are brought together to create five **GLOBAL SCENARIOS**. These are built out of considerations of three questions:

- How severe are the looming global challenges?
- How do states and non-state actors engage in the world, including focus and type of engagement?
- What do states prioritise for the future?

Renaissance of Democracies describes a future where the US and allies enable technology to improve quality of life around much of the world, easing social division and increasing trust in democratic structures. At the same time China and Russia atrophy as innovation is stifled.

A World Adrift is a future in which multinational institutions fall into decay, China increases its influence, but fails to take global leadership and major issues such as climate change remain unaddressed.

Competitive co-existence is a balance of economic power between the West and China, each recognising the need to collaborate on trade and other issues. Potential for open conflict is reduced, though challenges of long-term climate change still remain.

Separate silos describes a world of political groupings looking to be self-sufficient, with fewer global supply chains and separate cyber domains. Vulnerable developing countries are caught in the middle and global issues scarcely addressed.

Tragedy and mobilisation. A global food catastrophe caused by climate change stimulates a concerted response revitalising multinational institutions. Rich countries



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help poorer ones and begin to address climate change and other global concerns, rolling out high-tech solutions across the world.

As always, the scenarios are not forecasts, expected to come true. Instead they highlight the wide range of possible outcomes and the need for flexible, robust and adaptive policies to deal with them.

Returning to the question of the **COVID-19 FACTOR**, the report examines its effects on global trends, accelerating or decelerating them.

In **Economic** terms, the pandemic has increased debt levels and disrupted global trade. The report suggests that governments will struggle with debt for years and that new supply chains will become fixed.

Nationalism and Polarisation were building before 2020, but have been accentuated by restrictions on travel, vaccine supply problems and the search for scapegoats.

Existing **inequality** has been exposed and deepened. The digital divide was highlighted and could spur efforts to improve internet access worldwide.

Governance is strained. In open societies trust in authorities has been challenged; in repressive ones, leaders had taken the opportunity to remove liberties.

Failing international co-operation. Bodies like WHO and UN have been scarred and failed to overcome protectionist inclinations. On the plus side there could be a reaction against this with new reforms.

Elevating non-state actors: Gates foundation and private sector pharma have been the main leaders through the pandemic and represent a better approach to future challenges.

Reversals to **human progress** on health and education are anticipated because of budget challenges.

Overall the authors lean towards the pessimistic – maybe this is a function of their role, alerting the Government to potential risks. There is no suggestion of “build back better”, “Green New Deal” or “we’re only safe when everywhere is safe”, though there is a nod to the EU’s economic rescue package and a suggestion this could improve integration.

The report ends the section with a manifesto for futurists everywhere:



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“We must be ever vigilant, asking better questions, frequently challenging our assumptions, checking our biases, and looking for weak signals of change. We need to expect the unexpected and apply the lessons of this pandemic to our craft in the future.”

Future blogposts will explore the NIC’s analysis in each of the sections in more detail.

Written by Huw Williams, SAMI Principal, Published 14 April 2021



Global Trends 2040 – Structural forces



Image by [Gerd Altmann](#) from [Pixabay](#)

We recently posted an overview of the US National Intelligence Center produces its [Global Trends](#) report – “A more contested world”. In this post we look in more detail at the “**Structural forces**”, the demographic, environmental, economic, and technological developments shaping the world we will live in.

DEMOGRAPHICS and HUMAN DEVELOPMENT

Ageing populations

Population growth is forecast to slow over the period to 2040 (UN Population Division) with global population reaching 9.2 billion. But the pattern of growth varies considerably:

- Median ages in developed countries will increase by 2040: Japan and South Korea over 53; Europe over 47, with Greece, Italy, and Spain ageing fastest. A greater share of national income will have to be diverted to pensions and healthcare.
- Working-age populations in South Asia, Latin America, and the Middle East and North Africa will be over 65%. With fewer dependents, these countries have the potential for higher household savings and investment in human development.
- More than one-third of Sub-Saharan Africa’s population will be younger than 15 in 2040, Other populous countries still below the median age threshold in 2040 include Afghanistan, Egypt, and Pakistan. These will



be challenged to meet the basic needs of their populations with pressure on infrastructure, education, and healthcare.

Urbanisation

The urban population share will rise from 56% in 2020 to nearly two-thirds by 2040, with the world's least developed countries having the fastest growing urban populations. Urbanization has historically been a key driver of economic development. However, rapidly urbanizing poorer countries will find funding the necessary infrastructure and public services difficult. Food insecurity is an issue. Many of these cities are also at risk from climate change, but protective infrastructure—flood control and sturdy housing—has not kept pace.

Human Development

During the past 20 years, at least 1.2 billion people were lifted out of poverty. Basic improvements in healthcare, education, and gender equality generated rising per capita incomes. However, the report suggests that this progress will stall due to uneven economic growth and the fact that the easiest gains have already been made.

Lower birthrates have led to greater educational opportunities for women (and vice versa). However, there remain many patriarchal societies which limit women's rights, notably to land ownership. Infant mortality has fallen, but again the report's authors are pessimistic about the prospects of it falling much further. Similarly, they suggest advances in education have peaked.

Future health challenges include: stalled progress on combating infectious disease; growing antimicrobial resistance; rising levels of non-communicable disease; increasing strains on mental health, especially among youth.

Middle class and income inequality

The rise in middle class and decrease in proportion of poor people seen over 2000 to 2020 will both flatten off. Across many countries, the high per capita income growth of the past 20 years is unlikely to be repeated, as global productivity growth falls and the working-age population boom ends in most regions.

Migration



Migration flows clearly reflect wage differentials between countries— from smaller, middle-income economies to larger, high-income economies. Rapid population growth will drive continued emigration from Sub-Saharan Africa, but many other developing countries are nearing the end of peak emigration.

Greater need for workers in aging countries is a pull factor in European and Asian countries. Ageing European countries and Japan are expanding policies to attract immigrants. These could clash with strong cultural preferences for maintaining national identity and ethnic homogeneity.

ENVIRONMENT

The report's basic argument in this area is that the combined effects of climate change and environmental degradation will erode human security which, despite mitigation efforts, will result in unequal burdens and increased instability and conflict. Neither the burdens nor the benefits will be evenly distributed within or between countries, heightening competition, contributing to political instability, and straining military readiness.

Global warming and its effects on climate are now fairly well accepted: melting arctic ice, rising sea levels, more extreme weather events, soil degradation, water misuse and pollution. Consequences such as food and water insecurity, threats to health, loss of biodiversity and migration are also much discussed.

We can see some more united political responses globally, though the speed of change to “net zero” is still debated. The authors identify the usual renewable energy technologies, but argue that carbon capture will still be needed. They also suggest exploring geo-engineering solutions such as solar radiation management (reflecting the sun's rays back into space), despite “possibly catastrophic unintended side effects”.

Second-order effects identified include:

- Tensions between climate activists and those bearing increased costs (eg *gilets jaunes*)
- Increasing demands that developed countries provide financing to help vulnerable populations adapt
- Heightened competition over food, mineral, water, and energy sources, notably in the Arctic.

Less often discussed is the effect on petro-states of a shift to renewable energy. Leverage in energy markets will instead shift to competition for key minerals, particularly cobalt and lithium for batteries and rare earths for magnets in electric motors.



ECONOMICS

The report predicts an “evolving international economic order” with:

- Increasing national debt (even before the pandemic)
- Fragmenting trade environment
- Changes in global competitiveness
- More powerful private corporations
- Employment disruptions

leading to:

- Constrained government spending
- Diversified globalisation
- Economic activity shifting to Asia
- Large firms shaping connectedness.

The report is particularly concerned about high levels of debt. The economic costs of aging will strain public finances in all G20 economies raising difficult questions around reducing benefits and healthcare support or raising taxes. Continuing low interest rates reduce the burden of servicing the debt. However, some emerging and developing economies have financed debt with external borrowing so could face a debt crisis because local currency depreciation.

The disruptive effects of technology – automation, AI – on employment patterns are also identified. The WEF report estimating that automation will create more jobs than it destroys is quoted. However, that still implies significant displacement, and the growth of “virtual” jobs – non-geographically specific work facilitated by online platforms. New production technologies could diminish the attractiveness the Far East and accelerate reorientation of supply chains.

The faster economic growth in Asia could lead to some of the world’s most populous countries being among the world’s largest economies by 2040. Indonesia, the fourth most populous, could be one of the top 10 economies by 2040. However, their standards of living are likely to remain well below those of advanced economies. These economies could increasingly demand more influence over international organizations like the IMF and WTO, to reflect their economic interests, rather than those of advanced economies.

TECHNOLOGY



The report reviews major developments in AI, smart materials and manufacturing, and biotechnology (there is a very interesting infographic on the benefits and risks of biotech applications). But it goes beyond that to consider the wider social and geo-political implications.

The race for technological dominance will lead to competition for talent, knowledge, and markets. State-led economies may have an advantage in directing and concentrating resources but may lack the benefits of more open, creative, and competitive environments. With technology timelines shrinking, planned economies may be able to react faster to emerging technology developments, potentially at the cost of reduced technological diversity and efficiency.

A hyper-connected world could raise concerns about privacy and anonymity. New tools to monitor populations will enable better service provision and security but at the same time enable enhanced surveillance and control. Patterns of crime will change. Cyber-security is a fundamental concern – global enforcement will be a major issue.

The speed of technological advance will continue to increase, as epitomised by the rapid development of Covid-19 vaccines.

Inequalities within and between states could be increased as those with the access, ability, and will to adapt win out at the expense of those who are unable or unwilling to change. Regulation and ethical guidelines will struggle keep pace.

Technological disruption to industries and supply chains could disproportionately affect less advanced economies. New jobs will require new skills at an ever-increasing rate: perhaps a limit to growth.

Finally, there are high impact low probability existential risks, from AI, nano-tech, biotech and cyber-attacks on nuclear facilities. The Covid-19 virus may not have escaped from a Chinese laboratory, but in future some other deadly manufactured virus could have an even worse impact.

Overall, this section of the report covers mainly familiar ground on “megatrends”. Its context means that conclusions are oriented towards geo-political dynamics, especially the threats to the current status quo. Despite many positive developments in the last 20 years, the authors tend to conclude that they have run their course. They lean towards a pessimistic view of the future, possibly because they see their role as flying warning flags. If one were more optimistic, there are plenty of areas where the same trends could lead to a better, fairer and more sustainable world.



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The next blogpost in this series – “**Emerging Dynamics**” – addresses societal, state and international changes.

Written by Huw Williams, SAMI Principal, Published 28 April 2021



Global Trends 2040 – Emerging dynamics



Image by Gerd Altmann from Pixabay

This latest post in our series on the US National Intelligence Center Global Trends report – “A more contested world” covers the section they call “**Emerging Dynamics**”. Having looked at the structural forces – “megatrends” – in the previous section, here they address how those forces play out with regard to the cohesiveness of societies, resilience of states and types of interaction between states at the international level.

They see people in many countries as pessimistic and distrustful of leaders, and communities increasingly fragmented and in conflict, with competing goals. Governments face tighter resources and mounting governance challenges. The rivalry between the United States and China forces starker choices on other actors. Increased competition over international rules and norms will undermine global multilateralism, and international order.

SOCIETAL: DISILLUSIONED, INFORMED, AND DIVIDED

Potentially slower growth and smaller gains in human development means populations

are increasingly pessimistic about their prospects, frustrated with government performance, and believe governments are favouring elites or pursuing the wrong policies. Covid-19 is increasing these pressures. Less than a quarter of those polled in France, Germany, and Japan believe they will be better off in 2025. More than half



of the public say the “system” is failing them. AI and greater internet access could increase distrust as people find it harder to establish what is “real”, have channels to vent their anger and become more concerned about state surveillance.

People in every region are turning to familiar and like-minded groups for community and a sense of security. In turn, this is leading to more influential roles for identity groups in societal and political dynamics but also generating divisions and contention. In developing regions where populations are growing fastest, including Africa, South Asia, there is greater participation in religion. Intensifying and competing identity dynamics are likely to provoke increasing polarisation, societal divisions, and in some cases, unrest and violence.

These competing identities are challenging conceptions of national identity, but in some countries exclusionary notions of nationalism are creating dangers for minorities and increasing anti-immigrant attitudes. In countries like India and Turkey these forces are deliberately harnessed to bolster the regime.

Improved access to technology is empowering the public, providing new opportunities for political participation, and making them more demanding, more concerned to protect what they have. Combined with different interest groups and identities this means demands are more varied, contradictory, and difficult to address. This will put even more pressure on governments, and we could see more mass protests, boycotts, civil disobedience, and even violence. “During the next two decades, these multiple paths for channelling discontent are likely to present an increasingly potent force with a mix of implications for social cohesion.”

STATE: TENSIONS, TURBULENCE, AND TRANSFORMATION

All these societal tensions make governing difficult increasing demands on established order. At the same time, governments’ capabilities are reducing as demographics, climate change and slow economic growth, not to mention recovery from the pandemic, take their toll. The report suggests that this “disequilibrium” could result in either:

- Democracy in crisis, authoritarian regimes may also be vulnerable
- “Adaptive governance” – with non-state actors and more local activity
- New models of governance

Key democratic traits – including freedom of expression and the press, judicial independence, and protections for minorities – are deteriorating globally with countries sliding in the direction of greater authoritarianism. Illiberal leaders undermining democratic norms and institutions and civil liberties have been enabled



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by public distrust of established parties and elites, and anxieties about economic dislocations and immigration. China, Russia and other actors, in varying ways, are undermining democracies and supporting illiberal regimes.

On the other hand authoritarian regimes are at risk too. Greater access to information could challenge the corrupt aspects of many governing parties.

The report suggests that the rise of “adaptive governance” where non-state actors complement, compete with, and in some cases replace the state. Insurgent groups and criminal organizations are filling in the governance gap and expanding their influence by providing employment and social services, ranging from healthcare and education to security and trash collection. In the pandemic, corporations, philanthropies, technology companies, and research and academic institutions worked in concert with governments to produce breakthroughs at record speeds.

Civil society and local governance has filled gaps providing humanitarian relief and welfare services, often supported by new technology. Local governance offers the chance new models that are closer to the community and building greater trust and legitimacy.

INTERNATIONAL: MORE CONTESTED, UNCERTAIN, AND CONFLICT-PRONE

Internationally the report argues we will see a more volatile and confrontational geopolitical environment. The rivalry between the US and China will strain and re-align existing alliances. Other powerful actors – Russia, EU, India, regional powers and non-state actors – will contribute a dynamic and unstable international environment. Multinational organisations like the WTO and UN will struggle, and the possibility of violent conflict becomes worryingly real. There are major problems in developing new international norms in new fields: Biotechnology; Artificial Intelligence; Cyber security and conflict; Arctic access and resource extraction.

The authors believe that the UK is likely to continue to punch above its weight internationally given its strong military and financial sector and its global focus. They suggest that its nuclear capabilities and permanent UN Security Council membership add to its global influence, but that a splintering of the union would leave it struggling to maintain its global presence.

Global conflict will be more multi-layered – no longer is the only option full-on nuclear war. There is a spectrum of conflict:



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- From Cyber attacks and economic coercion (Belt and Road Initiative, vaccines)
- Through irregular forces, militias and assassination
- To blockades, formal military action
- Up to nuclear and WMD.

In a multi-polar, dynamic and confused world, deterrence becomes much more difficult. Arms control treaties are increasingly unsustainable. Terrorism remains a major threat.

Again, the report takes a pessimistic view of the future, though I have to confess that at the inter-state level I am no more optimistic. SAMI has done a lot of analysis of geo-political dynamics off the back of an EC project. We hope to be able to share that with you shortly. At a societal level however I do see more signs of collaboration and cohesion.

In the last of my reviews of the report I will be looking at the **Scenarios for 2040**.

Written by Huw Williams, SAMI Principal, Published 12 May 2021



Global Trends 2040 – Five scenarios



Image by [Gerd Altmann](#) fr

This is the last post in our series on the US National Intelligence Center [Global Trends](#) report – “A more contested world”. NIC produced five scenarios for 2040, as a way of “Charting the future through uncertainty”.

The scenarios were shaped by exploring three key questions or uncertainties:

- How severe are the looming global challenges?
- How do states and non-state actors engage in the world, including focus and type of engagement?
- What do states prioritize for the future?

Common to each were the themes of shared global challenges, fragmentation, disequilibrium, adaptation, and greater contestation.

Three of the five scenarios are based around the balance between China and the West:

- **Renaissance of Democracies:** where the United States leads a resurgence of democracies
- **A World Adrift:** where China is the leading but not globally dominant state
- **Competitive Coexistence:** where the United States and China prosper and compete for leadership

The other two posit more radical, severe global discontinuities:

- **Separate Silos:** globalization has broken down, and economic and security blocs emerge to protect states from mounting threats



- **Tragedy and Mobilization:** bottom-up, revolutionary change follows on the heels of devastating global environmental crises.

RENAISSANCE OF DEMOCRACIES

In this scenario, technological advances spurred economic growth. The West (and its Asian allies) strengthened its global leadership in the fourth industrial revolution and biotechnology. This enabled democratic governments to deliver services and provide security more effectively. In this context they were able to improve transparency, reduce corruption and generally increase civic confidence and social cohesion. Increased international collaboration and strengthened global institutions made major progress on climate change mitigation, cyber-security and developed consensus on the Arctic, AI ethics and space.

China on the other hand increased digital repression, limiting any free expression and inhibiting innovation. Its aging population, high public and private debt, and inefficient state-directed economic model blocked the country's transition to a consumer economy. Russia also declined because of a stagnating workforce, overreliance on energy exports, and post-Putin elite infighting. Both regimes continue to make belligerent noises – on behalf of ethnic Russians in Eastern Europe, or around islands in the South China Sea – but draw back from any serious confrontation.

Non-aligned, populous countries – Brazil, Indonesia, India, and Nigeria – saw the success of the US and allies, contrasted with years of unfulfilled Chinese promises and so turned to fully embrace transparent democracy. Rapid diffusion of advanced technologies to developing economies enabled faster than expected improvements in education and job skills, building on remote learning.

A WORLD ADRIFT

This scenario describes a future in which OECD countries struggled to recover from the pandemic, experiencing an extended period of recession. Environmental, health, and economic crises had emerged gradually and sporadically, limiting governments' ability to invest in social advances. Economic hardships widened societal divisions, leading to a more polarised society with frequent rounds of protests and unrest. This in turn inhibited investment and a further period of stagnant growth.

China also had climate change issues, but its centralised command system enabled it to mobilise resources more readily. Huge infrastructure projects aimed at managing the effects of climate change, like the great Shanghai sea wall, became the envy of the world. Its continued GDP growth allowed it overtake the US as the



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world's largest economy. China has little interest in supplanting the US in international organisations, instead preferring to promote its industries and setting technology standards that advanced its development goals. It continued to focus on countering perceived security threats around its periphery and at home, and undermining the US's influence in the Region. China's economic and military coercive power was a turning point for the region, enabling it to intimidate Taiwan into unification talks. Although generally aligned with China, Russia increasingly became a junior partner.

Developing countries with large unemployed youthful populations feel compelled to appease Chinese demands in hopes of securing much needed investment and aid. The lack of global leadership has meant that state failures are not infrequent and the world is more vulnerable to individual hackers, terrorists, and criminal groups. Belligerents feel emboldened to pursue their goals with force, particularly in the Middle East and Africa.

This led to many waves of migration, mainly to Europe and the US, further increasing polarisation.

Large global problems, particularly climate change and health challenges, remain unaddressed. Some states, companies, and private organizations do use the freedom from over-restrictive regulation to discover novel ways to enhance human health and to experiment with new approaches to economic development and governance.

COMPETITIVE COEXISTENCE

The third of their US-China scenarios is more of a middle way. Stimulus packages enable OECD countries to (eventually) recover from the pandemic. Increased collaboration amongst this group has stimulated trade and established a fairly stable society. After years of low petrol prices, post-Putin Russia saw its path to growth through joining the economic consensus, as did influential economies such as Brazil. China of course stood apart, but its priorities of economic growth and trade meant that it established an uneasy balance of forces with the US. There were regular flashpoints and concerns, particularly in the South China Sea, but underlying self-interest meant that overt conflict was avoided, though covert cyber operations and similar continued.

Africa continued to be seen predominantly as a source of raw materials and cheap labour, now much in demand as other societies age.



Carbon emissions were reduced substantially, but not fast enough to avoid many extreme events. Richer countries have been able to adopt adaptation technologies, but much of the world is suffering.

SEPARATE SILOS

By 2040 the world has fragmented into several economic and security blocs of varying size and strength, centred on the United States, China, the European Union (EU), Russia, and a few regional powers. Each enclave focusses on self-sufficiency, so international trade is disrupted.

Trade disputes, health and terrorist threats led to increasingly strict border control. Supply chains were disrupted, increasing costs and limiting growth, which were seen as necessary consequences of the need to protect citizens. While larger countries with sufficient resources managed well, other poorer countries in Africa and South Asia struggled, increasing migration forces and causing a further round of border restrictions. Failure to deal with climate change created yet more migratory pressures.

Digital technology overcame the physical barriers for a while, but increasingly the internet itself split into separate walled gardens for each bloc. Smaller countries sought to ally themselves with a major bloc, offering up scarce resources. Low-level conflict simmers along bloc boundaries.

International organizations and collective action to tackle climate change, healthcare disparities, and poverty falter. Countries independently adapt to the catastrophic impacts, significantly increasing the incentive for risky solutions.

TRAGEDY AND MOBILIZATION

This scenario describes a future where climate change caused such a major global food catastrophe that rich countries felt obliged to work together to manage the crisis. Rising ocean acidity devastated fisheries; changes in precipitation damaged harvests; global famine led to instability even in richer countries.

Eventually younger generations mobilized, reinvigorating global institutions and supplanting existing governments. Global attitudes about the environment and human security were being transformed by growing recognition of the unsustainability of past practices. Green movements swept to victory in democratic societies. Corporate goals expanded to include a wider range of stakeholders. China itself suffered famines, so fell in behind an EU/UN push for new



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Sustainable Development Goals. Russia and OPEC however were reluctant to abandon fossil fuels and are having to fend off internal dissent, and may yet be unstable.

The NIC approach to scenario generation – by exploring answers their three key questions – is not one I have encountered before. The resulting scenarios don't seem to me to be very innovative: the US-China balance dominates their thinking and results in two extreme cases and a middle one. The final two scenarios are less well developed and I feel they may contain inconsistencies. Exactly how the scenarios were chosen is not made clear. Surprisingly for such a sophisticated organisation there was no attempt to produce visual descriptions of the different scenarios.

Nonetheless, it's interesting to note the emphasis on geo-politics and climate change rather than on technology as so many "futures" are. SAMI also included analysis of geo-political dynamics in a recent EC project. We hope to be able to share that with you shortly.

The report also includes a section on Regional Forecasts. These 20-year projections of key demographic trends in nine regions include a wide range of very useful data, presented in appealing infographics.

Written by Huw Williams, SAMI Principal. Published 26 May 2021

