

STRATEGIC FORESIGHT

How to Enhance the Implementation of 2030 Sustainable Development Goals in Developing Countries*

Sergio Bitar

The UN report, “Strategic foresight for the post-2015 development agenda,” appropriately describes why we need to strengthen foresight capacities in developing countries. Undoubtedly, strategic foresight on science and technology is critical to solving pressing social and economic problems of developing countries. However, technological foresight must be placed in a wider and integral context.

This brief aims to complement the main ideas and proposals of the report.

1. Why strengthen foresight capabilities?

- A)** The fulfillment of sustainable development goals will require strong foresight units. Now that the sustainable goals have been established, in 2016 countries will determine how to achieve them. Strategic foresight will thus become a higher priority. Countries that start first will be better positioned.
- B)** The decline of traditional planning is a consequence of relying excessively on market mechanisms to adjust to uncertainties.

Prospective studies could help solve this weakness. While institutions in developed countries—governments, legislatures, corporations, universities, and think-tanks—have increased their capacity to explore scenarios, developing countries, like those in Latin America, have only recently dedicated efforts to preparing long-term reports. (See tables on Page 3.) Still, those produced are usually not linked to policy design. This situation can and should be remedied.

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A SUMMARY OF THE UN REPORT

How can strategic foresight help nations fulfill the agreed upon Sustainable Development Goals (see Appendix, page 9) for 2030? The United Nations Economic and Social Council (ECOSOC) of the UN Conference on Trade and Development (UNCTAD) published “[Strategic Foresight for the Post-2015 Development Agenda](#)” in 2015. This report highlights the importance of strengthening strategic foresight capabilities for policymakers,

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* Based on a presentation by Sergio Bitar to the United Nations Commission on Science and Technology for Development, a subsidiary body of the UN Economic and Social Council (ECOSOC) of the UN Conference on Trade and Development (UNCTAD), Geneva, May 2015. Bitar is a member and senior fellow of the Inter-American Dialogue who directs the Dialogue’s Global Trends in Latin America initiative. He has served as minister and senator in Chile.

Foreword

Many Latin American governments have made significant strides in developing policies that have successfully reduced poverty, strengthened democratic institutions, and implemented sound macroeconomic practices. Yet international financial institutions and the private sector have lamented that Latin America's infrastructure has lagged behind that of its peers in Asia and Eastern Europe. The impact of profound transformations in the global economy, climate change, and new information and communication technologies clearly demonstrates that the region's future will be inextricably connected to developments taking place beyond the borders of individual nations.

To ensure that institutions in Latin America keep pace with their peers in Europe, the United States, and Asia, its government agencies, policy and research centers, corporations, and financial institutions need to focus increasing attention on long-term global trends. More Latin American institutions should carry out the data collection, research, and analysis necessary to understanding future political, economic, social, and security scenarios, and use those insights to inform policy decisions.

Against this backdrop, with the support of the Inter-American Development Bank, the Inter-American Dialogue launched its Long-Term Global Trends initiative in 2011. The Dialogue's program aims to increase Latin America's exposure to the growing global trends network and seeks to provide governments and civil society institutions around the world, especially those in Latin America, fresh, continuing access to vital information and analyses on relevant trends and future scenarios, as well as strengthen capacities to conduct and disseminate similar studies. To that end, in December 2013 we released the report "*Why and How Latin America should think about the Future: Global Trends and the Future of Latin America*," which explores the nature and potential impact of trends and scenarios that could emerge and makes recommendations for building foresight capacity.

As part of this project, we have also created an online resource, the *Global Trends and Future Scenarios Database of Reports*, which includes over 800 publications from every region of the world. These documents present and analyze long-term global and regional trends and future scenarios. The database provides an easy way for governments, scholars, and others to access this vital information.

This publication is the third in a series of newsletters dedicated to raising awareness of global trends analysis and how future scenarios may affect Latin America. It summarizes a report by the UN Economic and Social Council on the importance of strengthening strategic predictive capabilities for policy makers, particularly in developing countries. The report, *Strategic foresight for the post-2015 development agenda*, delineates the priorities of the UN Commission on Science and Technology for Development. The summary accompanies a presentation by Dialogue senior fellow Sergio Bitar to the commission in May 2015 in Geneva, designed to complement the main ideas and proposals in their report. We are also pleased to include an essay by Amy Zalman, CEO and president of the World Future Society, on governance as it relates to anticipating global trends.

The Dialogue is grateful to the Inter-American Development Bank for its crucial support of this initiative. We also want to thank Sergio Bitar, a Dialogue member and senior fellow who directs our Global Trends and Latin America initiative. Bitar, who served as minister and senator in Chile, has devoted significant effort to conceiving and shaping this important initiative. We are especially grateful to Caitlin Reilly, program assistant in the Dialogue's Office of the President, for her tireless research, careful editing, and superb management of the many elements of our Global Trends and Latin America initiative. We also acknowledge the excellent contributions of Dialogue intern Ana-Vanessa Ploumpis, who prepared the UN report summary for this publication.

MICHAEL SHIFTER
President

TABLE 1: PROSPECTIVE STUDIES AND SCENARIOS—DEVELOPED COUNTRIES TAKE THE LEAD

<i>Japan 2035: Leading the World through Health</i> , Ministry of Health, Labor & Welfare, Japan (2015)
<i>The World in 2050: Will the shift in global economic power continue?</i> PwC (2015)
<i>Annual Energy Outlook 2014, with Projections to 2040</i> , Energy Information Administration, United States (2014)
<i>Global Trends 2030: Alternative Worlds</i> , National Intelligence Council, United States (2013)
<i>Canada's Energy Future 2013: Energy Supply and Demand Projections to 2035</i> , National Energy Board, Canada (2013)
<i>Disruptive Technologies: Advances that will transform life, business, and the global economy</i> , McKinsey Global Institute (2013)
<i>China 2030: Building a modern, harmonious, and creative society</i> , World Bank (2013)
<i>Global Trends 2030: Citizens in an Interconnected and Polycentric World</i> , European Union (2012)
<i>Asia 2050: Realizing the Asian Century</i> , Asian Development Bank (2011)

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- C)** Technological forecasting is a priority and must be strengthened. Increasing global competition among all parties, and especially between China and the United States, will accelerate innovation and may leave developing countries further behind, creating a larger gap in productivity and innovation and thereby increasing existing inequalities. Realizing such risk, as well as opportunities, should raise developing countries' political resolve and motivate them to act.
- D)** To improve foresight capacity, countries should consider taking the following actions:
- Move from traditional planning to prospective analysis and scenarios, and then to strategy and actions.
 - Move from a national analysis to a global perspective in order to identify exogenous factors (opportunities, risks) and discern how they may affect domestic goals.
 - Abandon business as usual and focus on developing plausible scenarios, reducing uncertainty, and defining a viable strategy.
 - Move from separate and disconnected sectoral analyses to a systemic approach that includes economic, demographic, social, technological, governance, urban, and environmental trends and game changers.
 - Move from a narrow debate among experts to a participatory and open consultation with political and social actors.
 - Move from simply writing a report to a continuous process of consultations, interactive debates, and communication.

The decline of traditional planning is a consequence of relying excessively on market mechanisms to adjust to uncertainties.

TABLE 2: LATIN AMERICA FORESIGHT PUBLICATIONS

COUNTRY/ INSTITUTION	PUBLICATION	YEAR PUBLISHED
Bolivia	<i>Agenda Patriótica 2025</i>	2013
Brazil	<i>Brasil 2040</i>	2015
Chile	<i>Energía 2050: Política Energética de Chile</i>	2015
Guatemala	<i>K'atun, nuestra Guatemala 2032</i>	2014
Mexico	<i>Visión México 2030</i>	2007
Paraguay	<i>Plan Nacional de Desarrollo: Paraguay 2030</i>	2014
Peru	<i>Perú 2021: País OCDE</i>	2015
CAF—Development Bank of Latin America	<i>América Latina 2040</i>	2010

2. What challenges do developing countries need to anticipate?

Exploring the potential impact of global trends on national goals can help identify priority areas for action.

A review of key reports reveals six global trends that will influence the future of developing countries:

- 1) “Disruptive” technologies, the spread of which will bring substantial changes in production, employment, well-being, governability, and human relations. Examples of disruptive technologies include tissue engineering, nano and biotechnologies aiming at specific cells, 3D printing, the Internet of Things, solar and other sources of green energy, and robotics.
- 2) Natural-resource scarcity affecting water, food supplies, energy, and minerals, as well as changes in demand and technological innovations pertaining to natural resources.
- 3) Demographic changes and the displacement of economic and political power to East and South, new markets, rising middle classes, aging populations, and migration.

Improving the organization and efficacy of the state, training public officials, and the quality of institutions and their ability to channel social participation will make a significant difference for achieving the sustainable development goals.

- 4) Urbanization and growth of cities resulting in population concentration and increasing demands for infrastructure and basic services to improve the quality of life and competitiveness of cities.
- 5) Climate change: its effect on agriculture, “green-growth” opportunities, natural disasters, water and droughts, and citizen awareness of global problems caused by climate change and consequent behavioral changes.

- 6) Democratic governability: the impact of new technologies on connecting citizens, forging social relations, elevating transparency, and strengthening security, as well as opportunities for organized crime and cyber-attacks.

Threats that accompany such trends must be regularly analyzed in order to anticipate institutional reforms and behavioral changes.

Most governments of developing countries, especially in Latin America, state five main strategic goals, often without due attention to global trends:

- 1) **Advancing democracy.** Institution building; citizen empowerment; strengthening local governance and the development of civil society; increasing transparency; protecting women’s and indigenous persons’ rights; protecting security; and securing international agreements on democratic global governance.
- 2) **Transformation of the productive structure.** Increasing competitiveness and specialization; instituting sound macroeconomic management; creating decent jobs and training workers; securing high-quality education for all; supporting technological innovation and the development of small and medium enterprises (SMEs).
- 3) **Social inclusion.** Reduction of poverty and inequality; elimination of discrimination; creation of a social welfare network; provision of high quality public goods and services, including housing, health care, and education; creation of collective public spaces in cities; expansion of public transportation and digital communications networks.
- 4) **Regional cooperation and integration.** Enlarging the regional market; reaching agreements on trade, investment, tax, infrastructure projects and energy; and political coordination and joint action to ensure fair global norms bring about changes in international institutions and support world governability.
- 5) **Action on climate change.** Protection of food security; preventative action to avert natural disasters; development of green technologies to reduce pollution, deforestation, and loss of biodiversity; and the efficient use of energy, water, and infrastructure.

The UN Report “Strategic foresight for the post-2015 development agenda” identifies what new technologies could be effective to work towards some of these

objectives and solve future problems. In particular, the report refers to: food security, health improvements, energy diversification (sources and efficiency), water (production, recycling, human consumption for all), climate change, and urbanization.

Among the critical technologies mentioned are: biotechnology, information and communications technology, nanotechnology, robotics, and advanced materials.

However, the following areas deserve greater attention for their significance in implementing the sustainable development goals.

- **Education:** Global trends reveal the rapid multiplication of innovative technologies that will improve teaching (neurosciences, personalized education, preschool, digital platforms, massive open online courses) and also highlight what contents should be reinforced for their importance for innovation and entrepreneurship. In addition to hard skills (mathematics, science, and reading), they emphasize soft skills (liberal arts, problem solving, and group work). Sustainable development goals for 2030 in education will include advances in science, technology, engineering, mathematics (STEM), long life learning (LLL), and reducing the percentage of students with unsatisfactory performance in math and reading.

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particularly in developing countries, and delineates the priorities of the UN Commission on Science and Technology for Development. The document defines strategic foresight as the systematic assessment of science, technology, and innovation in the long term and their potential impacts on society. It presents this forward-looking analysis as a mechanism to propose trajectories for a defined future that will generate the greatest societal benefit. The report further asserts that foresight enhances competitiveness and growth by guiding technological decisions, building equipment and infrastructure, supporting innovation, and providing incentives and assistance to enterprises in the domain of technology management and transfer.

The UN text assesses the status of global foresight studies and evaluates the top foresight methods used regionally, including expert panels, scenarios, trend extrapolation, futures workshops and interviews, and analyses of strengths, weaknesses, opportunities, and threats. Amidst the global trend of depleting natural resources and environmental degradation, these methods are particularly relevant. Policymakers must respond with innovative practices, particularly in the developing countries most acutely experiencing these shortages. The commission identifies key science, technology, and innovation trends that can contribute to the development agenda, including the development of technologies related to natural resources to address food security and water supply; sustainable energy systems to address energy demand and supply; technology for climate change mitigation, adaptation, and carbon offset; converging technologies, such as biotechnology and nanotechnology; and urbanization, a driver of economic development for cities and surrounding areas.

The UN strategic foresight report acknowledges that policymakers must tailor these strategies to suit each country's specific socioeconomic and cultural context. Foresight exercises in Europe, for example, are increasingly institutionalized through specialized organizations and think tanks and emphasize coordinated decision making for better governance. Foresight in Latin America has evolved slowly, and with the support of different international organizations has developed a unique style that addresses its particular political, economic, and environmental imperatives. Many developing countries have structured their foresight practices to best respond to their particular needs, such as the diffusion of information and communications technology, increased electrification, unconventional fuel sources, and urbanization.

Although the report does note the need to establish clear country- and region-specific foresight methodologies, it also emphasizes that these two approaches can complement each other. Foresight publications are useful when examined in isolation, but their utility increases exponentially when engaged comparatively. The report's focus on the global convergence of technologies and methodologies demonstrates the practical implications of sharing strategic foresight studies. Analyzed in conjunction, strategic foresight publications can transcend an academic purpose and generate systematic, comprehensive, and effective solutions to both regional and global challenges. ❖

Demands for transparency, respect for human rights, action against corruption, and social mobilizations for enhancing equal rights and women's empowerment will continue to increase.

- **Natural resources:** As global demand continues to grow, especially for food, countries will turn to using advanced technologies to increase productivity and reduce CO2 emissions, as well as promote new companies that provide goods and services for the production of commodities. This will require infrastructure and more energy and water efficiency. In addition, countries will search for new ways to industrialize and thus escape the curse of natural resource dependency by augmenting the use of advanced technologies to diversify their productive structure. Governance of natural resources will demand better management of public firms and tax reforms that allow governments to retain a larger proportion of corporate profits as tax revenue for investment in education and technology.
- **Asia (China particularly):** The continued rise of China and other Asian countries will have a substantial impact on the structure of economic, technological, and political global power, as well as on innovation. This phenomenon calls for persistent monitoring and prospective studies to explore risks (growth cycles and commodity prices) and opportunities for Latin America, Asia, and Africa to expand trade and investment.
- **Governance:** As education improves, together with the growth of middle classes, urbanization, personal autonomy, and the accelerated expansion of communication technologies, governing will become increasingly complex. Demands for transparency, respect for human rights, action against corruption, and social mobilizations for enhancing equal rights and women's empowerment will continue to increase. Trust has declined. Collaboration should prevail. Improved governance is not only a desirable end but also a necessary means to accomplish sustainable development goals.

In their recent study, "Improving Governance for the Post-2015 Sustainable Development Goals: Scenario Forecasting for the Next 50 years," Devin Joshi, Barry Hughes, and Josef Korbel cover 183 countries and highlight the following factors that must be addressed in order to achieve better governance:

- Women's education;
- Youth unemployment and social conflict;
- The middle income trap: no jobs and no skills;
- The weak capacity of developing countries to overcome dependency on commodities and low productivity; and
- Hybrid and unstable democracies (elections but authoritarian rule).

Improving the organization and efficacy of the state, training public officials, and the quality of institutions and their ability to channel social participation will make a significant difference for achieving the sustainable development goals. Governance will be a major challenge and perhaps is the most important factor in complying with agreed-upon goals.

3. New institutions dedicated to foresight and strategy.

The creation or expansion of foresight and strategic capacities in developing countries requires new institutions. The following criteria are necessary for the creation or enhancement of such institutions.

- Planning offices or ministries should be replaced or transformed into advisory bodies to the president or prime minister. Such institutions should provide the higher echelons of government with consistent analysis of medium and long-term global challenges in different areas, useful reports to anticipate opportunities or potential crises, and data and criteria to design and implement policies.
- These institutions should gather autonomous experts to prepare scenarios that help identify complex problems that demand interdisciplinary knowledge and authority in order to coordinate ministries and agencies. They should not distance themselves from short-term decision making. Otherwise, they will be considered irrelevant and lose influence.

- They should use participatory procedures that engage political, economic, and social actors. The foresight institutions must promote dialogue among stakeholders, and public-private dialogue should be institutionalized. They should generate national debates about scenarios and options that contribute to wide political accords on major long-term national goals.
- As technological advancements accelerate, the links between scientists, public policy makers, and politicians become critical. Technological forecasting should involve coordination among civil society organizations and government agencies on priority issues. For example, universities and research centers can collaborate with ministries of science and technology, while ministries of finance and economics can liaise with the private sector on fiscal issues. Regional networks will be useful for countries presenting similar social and productive challenges.
- International organizations should contribute technical assistance to organize these units, teach methodologies to forecast, and build national and international networks.

Foresight capacity should also be developed in:

- Legislative bodies;
- Autonomous centers and study groups in universities, companies, and social organizations; and
- New networks of governmental and non-governmental think tanks. Thinking together and sharing views facilitates common action.

The implementation of policies that ensure progress towards the 17 sustainable development goals will require working closely with foresight groups, exploring horizons, and monitoring implementation.

4. Strategic foresight and politics.

Political commitment to strategic foresight is critical for preparing policymakers and citizens alike, installing institutions, and improving governance.

As technological advancements accelerate, the links between scientists, public policy makers, and politicians become critical.

Political leaders and policymakers should be sensitive to the following arguments:

- First, if the essential purpose of politics is to build a better society, then vision is a key instrument for leadership. Prospective studies provide attractive elements for a narrative. These elements must relate to the most relevant national challenges.
- Second, future studies can facilitate building a convergent vision and therefore enhance social and political agreements. Such outcomes constitute a force for change and could spur good governance.
- Third, citizen participation and open and transparent debates that inform and educate public opinion may help solve complex problems.
- Fourth, good governance requires satisfying social demands and achieving electoral support. Prospective studies and strategies can help improve policies designed to reduce the gap between expectations and capacity to deliver.
- Fifth, science and technology are evolving so rapidly that governments must include their plausible effects in policy design. Scientists and public leaders must forge a closer relationship and new institutions should be created to incorporate technology forecasting into policy making.
- Sixth, foresight and prospective studies provide a better understanding of trends and game changers. They help devise strategies consistent with national patterns, realities, structures, behaviors, and values.

Political commitment is crucial to enhance strategic foresight. To achieve positive results, governments, legislators, and political parties must provide essential support. The sustainable development goals present an important opportunity to increase political awareness of the need to strengthen foresight capabilities. ❖

THE KEY ROLE OF GOVERNANCE IN FORESIGHT STUDIES

By Amy Zalman, CEO and President, World Future Society

The May 2015 UN ECOSOC and UNCTAD report, *Strategic Foresight for the Post-2015 Development Agenda*, raises important questions about the relationship between development, strategic foresight, and governance at global, regional, national, and local levels.

The report itself (summarized elsewhere in this newsletter) makes an irrefutable case for the important role of technology forecasting as a critical element in generating strategies and processes that ultimately strengthen nations and grow economies.

The World Future Society (WFS) supports agendas such as this. In our view, institutional government capacity comprises four general functions: information intake that at the outset includes extra-governmental stakeholders, analysis, execution, and learning from experience. Creating internal capacity on this scale can provide governments the ability to create formally sanctioned space for “meta-foresight” or “triage” wherein, for example, technology assessments and recommendations based on strategic foresight can be examined through the lens of other social, political, and economic trends and needs, thus giving them the best possible chance for success at the outset.

In order for such agendas to unfold effectively, there is an equally critical need to focus on governance itself as an object of futurist inquiry and process improvement. Clearly, all STI (science, technology, innovation) projects and objectives reside in complicated webs of social, political, market, and other forces. The management of these forces, and the competing or simply different interests they represent, within and across national borders, is a delicate project that cannot be taken for granted.

As trends in the international system unfold, these may change the nature of the policymaker’s task specifically in relation to their ability to effect technology policy and STI projects, especially those requiring regional and

international collaboration, but also those that require public-private cooperation, citizen engagement, or significant shifts in incentive or regulatory regimes. These trends include the redistribution of geopolitical power, the devolution of power from central governments, and the rise in “borderlessness,” the increasing power of non-state stakeholders in governance, from global corporations to super-empowered individuals, from citizen groups to violent actors, and the risk of regional conflict.

Moreover, once initiated, particular projects may result in second order effects that require further management. For example, the report notes that operating under a progressive nuclear phase-out regime to reduce world total capacity by 2050 could produce gaps in electricity generation in China, Brazil, India, Indonesia, the Russian Federation, and South Africa. Depending on their severity or other factors, such gaps may be recipes for social protest or unrest.

WFS applauds findings in the report that focus specifically on the capacity of foresight to create opportunities for “structured debate among all stakeholders, including representatives of government, science, industry and civil society and the private sector ...”. We further encourage foresight be used as an opportunity to create improvements in governance structures and processes that all too frequently doom intelligent and necessary ideas.

The World Future Society, founded in 1966, is the world’s first and longest-running global membership organization to support futurists and encourage dialogue and action on future-critical issues. WFS has a longstanding commitment to work on public sector and global issues. Among our current projects is a joint exploration of the future of power and non-state actors in collaboration with the Stanley Foundation and the US National Defense University. Not least, WFS is building out its own ability to support, through research and services, institutional foresight capacity. ❖

APPENDIX

UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

Source: <https://sustainabledevelopment.un.org/?menu=1300>

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
 - 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
 - 9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
 - 9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
 - 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
 - 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
 - 9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
 - 9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
 - 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development



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