

# New Approaches to Productive Development

State, Sustainability,  
and Industrial Policy

Editors: Christian Denzin | Carlos Cabrera





# New Approaches to Productive Development

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State, Sustainability,  
and Industrial Policy

# **New Approaches to Productive Development: State, Sustainability, and Industrial Policy**

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Regional Project on Social-Ecological Transformation

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# Introduction

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We are currently experiencing a crisis in global development models: our present ways of life and economic models are not sustainable in the long term, as they are based on the exploitation of finite resources, high levels of emissions, and a singular focus on economic growth accompanied by excessive consumption and an unacceptable absence of distributive justice. This has led to an increase in greenhouse gas emissions and severe environmental damage, as well as an aggressive overexploitation of both finite and freely accessible resources, including the depletion of the atmosphere and water reserves. During the past few decades, these ways of life and economic models have increasingly been copied by a growing middle and upper class in emerging and developing countries, further complicating the necessary course correction process. The negative consequences of these development models are more strongly felt in Global South countries, at least for now. Extractivism and the expansion of industrial agriculture have led to a steady increase in the number of socio-environmental conflicts, especially in Latin America.

Rather than favoring structural change that create value chains at the national level, the development models of many Global South countries are focused on exploiting natural resources and implementing policies that maintain traditional sectors, further cementing unsustainable development practices. The end of the commodities super cycle and price drops in international markets have led to sharp cuts in state budgets, hindering necessary investments in sustainable processes. Although inequality among countries has declined, inequality within countries has increased. At the same time,

environmental costs continue to be externalized, jeopardizing the livelihoods of future generations.

Faced with the environmental, social, and economic challenges presented by the current state of the economy, it is necessary to explore alternatives that meet the needs of the majority of the population and provide access to basic services while also modifying patterns of production and consumption to conserve the environment and natural resources and mitigate the effects of climate change. The new Sustainable Development Goals (SDGs), adopted by the General Assembly of the United Nations, and the Paris Agreement, adopted in December 2015, are milestones in the international discourse regarding socially just and environmentally sustainable development. Although both the SDGs and the Paris Agreement reflect a certain level of political will and provide clear guidance on the main development challenges and the measures necessary to address them, the actual implementation of concrete public policies severely lags behind the urgency with which structural changes are needed in order to address global socio-environmental challenges.

Given the evidence that the benefits of economic growth affect only a small percentage of the population - especially in Latin America, Africa, and South-East Asia - as well as the major environmental damage resulting from the exploitation of natural resources, it is fundamentally important to rethink the economic perspective that growth in and of itself will improve the living conditions of the majority (trickle-down effect) and to broaden development approaches to include a more multidimensional and systemic vision.

This book is divided into four chapters: (i) The Role of the State in Economic Development, (ii) The Sustainable Development Goals, the 2030 Agenda, and Mega-Regional Trade Agreements, (iii) Productive Development Strategies and Opportunities for New Industrial Policies, and (iv) New Economic Paradigms. Each chapter contributes to the discussion of the challenges facing different development approaches and the nexus between the role of the State, industrial policy, and sustainability.

It is important to rethink the role that the State can play in promoting and redirecting the economy as a whole, as well as certain specific strategic sectors. It is also important to reflect on whether we are facing a paradigm shift from a neoliberal approach to an economy in which governments will actively participate once again, establishing incentives, making strategic investments, and regulating specific sectors such as the financial sector, the fossil-based economy, or natural resource-intensive sectors. In Chapter I, **Stephen S. Cohen** uses historical analysis to show that government policy has significantly shaped the business and economic development of the United States of America at various points in its history, including through highly successful industrial policies such as the New Deal in the 1930s and the policies that led to the development of the majority of the technologies of the digital age, which were primarily developed by government institutions.

Chapter II addresses the new SDGs from different regional and global perspectives. **Gabriel Porcile** covers three fundamental challenges to Latin America's current growth model: the economic slowdown observed since the end of the commodities boom, the inequality and chronic poverty present in the region, and environmental conservation efforts. According to Porcile, public spending could be used in Latin America to implement an environmental big push - an economic transformation focused on infrastructure with the aim of changing energy use patterns and sustainably transforming transportation systems. From a political economy perspective, Porcile highlights the imbalance of power between the sectors of the economy with a vested interest in protecting investments, revenues, and existing monopolies versus future generations and the sectors of the economy that would benefit from a redistributive model. **Bartholomew Armah** analyzes the trade-offs that exist in the pursuit of economic, social, and environmental goals from an African perspective, suggesting that comprehensive and sequential economic, social, and environmental policies are essential for State interventions. The results of this analysis show that development approaches that are driven by social policies and informed by economic and environmental interventions achieve better results across all three areas. Although

the 2030 Agenda represents a major multilateral effort, it is also important to acknowledge the constraints and challenges that it faces. Bilateral, multilateral, and mega-regional trade agreements such as the TPP, TTIP, and TiSA play a major role, limiting certain government interventions to promote the SDGs. **Barbara Adams** focuses on a critical analysis of the challenges, obstacles, and opportunities facing the SDGs and the complications to their implementation represented by the mega-regional trade agreements. Finally, **Alejandro Villamar and Adán Rivera** analyze the impact of trade treaties on government actions to combat climate change, presenting a series of proposals to address the situation.

Chapter III explores several perspectives on the role of industrial policy and how governments can use it as a tool to strengthen strategic productive sectors. Although industrial policy was at best ignored and at worst declared useless and counterproductive for decades, it has recently regained an important role in academic and political discourse. The recent economic crises and the inability of developing countries to close the gap with industrialized countries have increasingly raised doubts about the rules imposed by a neoliberal court system, particularly in terms of the role played by the State. Based on an analysis of the current international division of labor, as well as the new conditions created by global value chains, **Roberto Kreimerman** argues in favor of industrial and commercial public policies that advance economic, productive, ecological, and social transformation. **Jostein Hauge** focuses on the need for the African continent to develop an industrial policy that will encourage a competitive industrial sector in light of the failure of the economic policies implemented since the 1980s. **Rajiv Kumar and Ajay Kumar** analyze how India can increase the manufacturing sectors' share of Gross Domestic Product (GDP) and create jobs, despite the fact that the global manufacturing sector is facing increasing challenges. The authors propose the adoption of an active industrial policy and the implementation of effective public-private partnerships to successfully identify niches in global markets and establish a comprehensive and sustainable manufacturing strategy. In her contribution, **Anabel Marín** takes a minority opinion, focusing on Latin America's



opportunities to join global value chains by innovating within the transformation and value-added processes of the natural resources industry. Marín emphasizes the need to develop sustainable and environmentally friendly methods for the extraction and transformation of natural resources, as well as the diversification and specialization required. She also highlights the role that civil society must play in the move towards an economic transformation grounded in diversity, creativity, and democratic processes of debate.

Lastly, Chapter IV introduces two new development perspectives. With the concept of “technology justice,” **Simon Trace** reaffirms the right of the most vulnerable sectors of society to access technologies with the potential to substantially improve their quality of life while also promoting the sustainable use of natural resources and a shift towards more sustainable production and consumption patterns. This transition presents a major opportunity, as sectors that have been generally excluded from Western development processes can use new technologies to shift from simple production and consumption models to sustainable models, bypassing the more complex and polluting processes that more developed economies must address.

It is also important to ask ourselves if it is even possible to solve the problems we currently face within the context of the prevailing economic models. This fundamental concern has been expressed by various sectors of society that have appealed for more comprehensive changes to the current economic model.

**Christian Felber** introduces the concept of the Economy for the Common Good, which rethinks the basic principles upon which the global economy is based, abandoning the primary objectives of maximizing capital gains and increasing economic competition and replacing them with a framework of legal incentives that promote contributions to the common good and mutual cooperation and redefine how economic success is measured.

This publication is based on discussions held during the New Approaches to Productive Development: State, Innovation, Sustainability, and Industrial Policy conference, hosted in Mexico City from August 1-3, 2016. More than 50 experts from the Americas, Europe, Africa, and Asia participated in the international conference. Through both the conference and

this book, we hope to strengthen and contribute to the socio-political dialogue on the challenges and limits of existing global development models, creating inputs that refocus the conversation on development approaches grounded in social justice, collective needs, and a respect for nature.

We hope you enjoy.

**Christian Denzin**

Director  
Regional Project on  
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Friedrich Ebert-Stiftung

**Carlos Cabrera**

Coordinator  
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# Author Biographies

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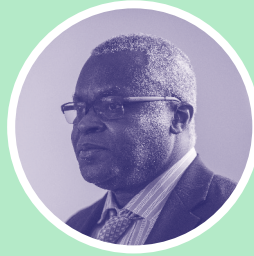


## Barbara Adams

Chair of the Board of Directors  
of the Global Policy Forum - United  
States of America

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Barbara Adams trained as an economist and is the Chair of the Executive Board of the New York Global Policy Forum. Her extensive experience in international development has earned her leading positions in international organizations such as the United Nations Development Fund for Women (UNIFEM), the United Nations Children's Fund (UNICEF), and the Global Policy Forum in Europe. She is a member of the Working Group on the 2030 Agenda for Sustainable Development and the Coordinating Committee of the Social Observatory. Ms. Adams is also the author of several publications on climate justice, sustainable development, human rights, and multilateralism.



## Bartholomew Armah

Chief of the Renewal of  
Planning in the United Nations  
Economic Commission for Africa  
(UNECA) - Ethiopia

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Dr. Bartholomew Armah is currently Chief of the Renewal of Planning (Macro-Policy Division) in the Economic Commission for Africa (UNECA), where he coordinates African region-wide consultations on the post-2015 development agenda in partnership with the African Union Commission, the African Development Bank and UNDP's Regional Bureau for Africa. Dr. Armah is also a consultant for the design, implementation, and follow-up of national development frameworks, and he coordinated the publication of the Millennium Development Goals Report - Africa. He has been an advisor to the United Nations Industrial Development Organization (UNIDO) and UNDP on energy issues in Ghana. Dr. Armah is a Doctor of Economic Development from the University of Notre Dame.



## Stephen S. Cohen

Deputy Director of the Berkeley Roundtable on the International Economy (BRIE) at the University of California, Berkeley – United States of America

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Stephen S. Cohen is Professor Emeritus at the University of California at Berkeley. He has extensive experience as a consultant on topics of international economy and has been a consultant for the Organisation for Economic Co-operation and Development (OECD), the United Nations, the Governments of France and Denmark, as well as for the U.S. White House. Professor Cohen has also collaborated with several major European companies and has authored numerous publications for scientific journals around the world.



## Christian Felber

Writer and Professor at the University of Vienna - Austria

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Christian Felber is a political scientist, sociologist, and dancer with advanced studies in Philosophy. He is the creator of the Common Good Economy (2010), an economic model with new indicators of value such as honesty, cooperation, solidarity, and sustainability, among others. He is a founding member of the global justice movement Attac in Austria. He has written more than 14 books, many of which are best sellers.



### **Jostein Hauge**

Researcher, Center for Development Studies, University of Cambridge - United Kingdom

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Jostein Hauge is a doctoral candidate at the University of Cambridge. His areas of research are technological change, international trade and globalization, as well as the political economy of institutions and industrial development, particularly in African countries.



### **Roberto Kreimerman**

Former Minister of Industry - Uruguay

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Roberto Kreimerman holds a B.A. in Chemical Engineering and a Master's Degree in International Trade and Finance from the University of Barcelona. Mr. Kreimerman also studied in Brazil, Argentina, Japan, and the United States. From 2010 to 2015, he served as the Minister of Industry, Energy and Mining of Uruguay during the government of José Mujica. Prior to entering government, Mr. Kreimerman worked in the Uruguayan industrial sector for almost three decades. He is currently an academic at the Institute of Chemical Engineering at the Universidad de la República and the Universidad ORT in Uruguay.



## Ajay Kumar

Senior Research Associate  
at the Centre for Policy Research  
(CPR) - India

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Ajay Kumar holds a Master's degree in Economics with a concentration in Econometrics from the Delhi School of Economics (DSE). His research interests include the manufacturing sector, foreign trade, and macroeconomic policies in India. He has worked for several research organizations, corporations, and development projects. Previously, Mr. Kumar worked as an Economist with the Confederation of Textile Industry of India and conducted research at the Center for Development Economics (CDE) in Delhi.



## Rajiv Kumar

Chancellor of the Gokhale  
Institute of Politics and Economics,  
University of Pune - India

---

Rajiv Kumar holds a DPhil in Economics from the University of Oxford and a PhD from the University of Lucknow. He is a member of the Centre for Policy Research (CPR) and is the Founding Director of the Phale India Foundation (PIF). Previously, Dr. Kumar was the Secretary General of the Federation of Indian Chambers of Commerce and Industry, Executive Director of the Indian Council for Research on International Economic Relations, and the Chief Economist of the Confederation of Indian Industries of the Asian Development Bank, and also held positions with the Indian Ministry of Industries and the Ministry of Finance. Dr. Kumar presently sits on the boards of several international and national institutions, including the Economic Research Institute for ASEAN and Asia in Jakarta, the State Bank of India, and the Indian Institute of Foreign Trade.



## Anabel Marín

Researcher at the National Scientific and Technical Research Council (CONICET) and the Center of Research for Transformation (CENIT) - Argentina

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Anabel Marín holds a PhD in Science and Technology Policy Studies from the University of Sussex in the United Kingdom. She is a member of STEPS América Latina, the Latin America hub of the Pathways to Sustainability Global Consortium hosted by CENIT, a non-profit foundation whose purpose is to contribute to debate on economic and social transformation in Argentina and Latin America. Dr. Marín is also a professor at the University of Buenos Aires and the National University of Mar del Plata. Her current work focuses on transitions towards sustainability in industries related to natural resources.



## Gabriel Porcile

Officer of Economic Affairs of the Productive and Business Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC) - Chile

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Gabriel Porcile holds a PhD in Economic History from the London School of Economics and Master's degree in Economics from the State University of Campinas, Brazil. Dr. Porcile has published extensively on issues including structural change, technology, and growth. His most recent co-authored books are *Latin America in a New Era of Globalization: Essays in Honor of Enrique V. Iglesias* and *Productivity and Structural Heterogeneity in the Brazilian Manufacturing Sector*.





## Simon Trace

Consultant and writer on technology and development - United Kingdom

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A civil engineer by training, Mr. Trace also studied anthropology. In 2016, Mr. Trace was recognized as a Commander of the Order of the British Empire (CBE). Mr. Trace's career has principally been in community development, in the fields of soil and water conservation, and he has spent time with a number of agencies, including CARE and Unicef. From 2005-2015, Mr. Trace served as Executive Director of Practical Action, a non-governmental organization that uses technology to challenge poverty in developing countries in Asia, Africa, and Latin America. Practical Action has won numerous prizes related to the environment and energy.



## Alejandro Villamar

Representative of the Mexican Action Network Against Free Trade (RMALC) - Mexico

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Alejandro Villamar holds a PhD in Development from Moscow State University and is a trained biologist from the National Polytechnic Institute. Since 1993, he has been a representative of RMALC, participating in multilateral summits within the United Nations system, as well as with regional and global trade and financial organizations. Dr. Villamar has been a researcher and professor at several Mexican universities, and also served as a parliamentary advisor to the Chamber of Deputies. Dr. Villamar is the founder of networks and associations such as the Mexican Network of People Affected by Mining (REMA), Mesoamerican Movement against the Extractive Mining Model (M4), the Continental Social Alliance (ASC), and Our World is Not for Sale (OWINFS). Dr. Villamar is also a member of the Latin American Network on Debt, Development and Rights (LATINDADD).

I.

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# THE ROLE OF THE STATE IN ECONOMIC DEVELOPMENT

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Infographic 1.  
“Economics is easy;  
Politics is hard”: The  
Economic Policy of the  
United States.

I. How Government  
Has—Repeatedly—  
Shaped Growth in the  
Business-Dominated  
Economy of the United  
States, **Stephen S.  
Cohen**

# "ECONOMICS IS EASY; POLITICS IS HARD": THE ECONOMIC POLICY OF THE UNITED STATES

## THE NEW REPUBLIC

Intelligent and pragmatic design of the economy by the state

A



### GEORGE WASHINGTON

created policies to promote industry, trade, and banking services, all aimed at strengthening the central government.

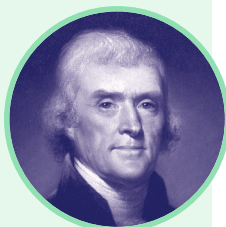
#### Measures

- High tariffs
- High infrastructure spending
- Assumed states' debts
- Created the Central Bank of the United States of America

"A national debt, if it is not excessive, will be to us a national blessing."



Alexander Hamilton was Secretary of the Treasury from 1789 to 1795



### THOMAS JEFFERSON

balanced the economic policies of Alexander Hamilton.

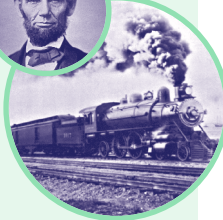
## REPUBLICAN SUPREMACY

From Abraham Lincoln to Herbert Hoover

A

Government made large-scale social design

- The transcontinental railroad was built
- Large tracts of land were privatized
- The Rural Settlements Act was created
- Universities were founded
- The agricultural extension systems were established



### THEODORE ROOSEVELT AND WOODROW WILSON

- Antitrust laws
- Regulations for railways, medicine, and food
- The Central Bank was reestablished

## THE AMERICAN DREAM

Dwight D. Eisenhower, Richard Nixon, John F. Kennedy

B

A

GOVERNMENTS THAT WERE NOT GUIDED BY IDEOLOGY

B

THE NEW DEAL BECAME THE IDEOLOGY OF LIBERALISM AFTER WORLD WAR II



GOVERNMENT TOTAL EXPENDITURE BEYOND 20% OF GDP

Productivity grew 2% per year

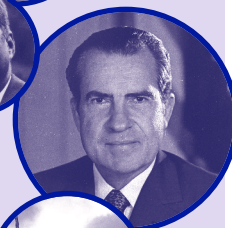


Salaries of 10% of the population with higher income grew by 2%



Average salary increased

- The Korean War was ended
- Technology research and development conducted with federal budget
- The Cold War began
- The National Institute of Health supported pharmaceutical development
- Highly regulated finances



## THE GREAT DEPRESSION AND THE NEW DEAL



### HERBERT HOOVER

- October 29, 1929, known as "Black Tuesday."
- Hoover took it as a temporary crisis
- Banks did not pay depositors
- Housing construction was completely stopped



-By 1933, the stock market had lost four fifths of its peak value in 1929



Half of all mortgages had delayed payments

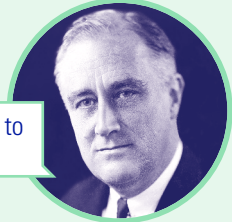


One third of agricultural workers were unemployed



Automotive production was 20% of what it had been in 1929

"The only thing we have to fear is fear itself"



### FRANKLIN D. ROOSEVELT

The New Deal was the interventionist policy that was launched to mitigate the consequences of the Great Depression

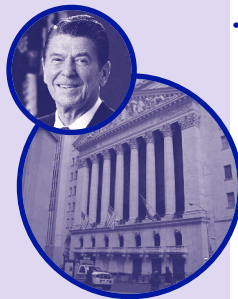
- Financial Regulation
- Instituted Bank Holidays
- Increased public works
- Increased social security
- Eliminated the monetary devaluation
- Created corporate structures for industry



## NEW REDESIGN OF THE ECONOMY

From the 80's

- Boosted value-added manufacturing
- Increased imports
- Decreased production of manufactured goods
- Japan, South Korea, and China started to strengthen their manufacturing industries
- Industries settled in Asia
- Debt grew
- Income was redistributed, but only for the upper classes



The United States focused on financial business, insurance, and real estate transactions

## CURRENTLY

- The political power of the military remains
- The political power of the militia remains the same
- Finance has captured the American political system









**Author**

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Stephen S. Cohen

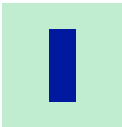
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**How Government  
Has—Repeatedly—  
Shaped Growth  
in the Business-  
Dominated  
Economy of the  
United States**









In successful entrepreneurial-driven, business-dominated economies, government plays a lead role: not just a passive, enabling role, but also an active, initiating role, shaping and directing growth. This is not some theoretical or ideological conception of the role of the state, but concrete history – the history of the United States, the biggest, most important and, arguably, most successful entrepreneurial-driven and business-dominated economy.

This essay reviews that history of government and entrepreneurship, but does not rehash the sturdy and well-known arguments that an entrepreneurial economy needs an environment characterized by a broad range of freedoms, protections, and incentives in order to thrive. It does. Add to that public order, good infrastructure, and the like. We will take all that as axiomatic.

Our focus is on the other important interplay of government and entrepreneurship: Active government taking the lead on reshaping the economy, again and again, and doing it through private entrepreneurs. This history—well over 200 years of it—is comprised of events that were well known at their time and well known well afterwards, but seem to have recently been forgotten. And, to our knowledge, they have not been strung together to form a pattern, as we will do here.<sup>1</sup>

Repeatedly, government in the United States opened a new economic space, doing whatever was needed to enable and encourage entrepreneurs to rush into that space, innovate, expand it and, over time, reshape the economy. Each time this was done—and there were many—it was done pragmatically. The choice of economic space seemed obvious. It was never the bright idea of some smart economist or distinguished committee. Most importantly, it was never guided by ideology, whether pure or in the guise of theory. And each time the best-placed interests made out like bandits. There was hefty corruption and unfairness. And each time this was done over the course of America's long economic history—except for the most recent one, which was based on ideology (wrapped in bespoke theory) rather than pragmatism—the results have been very positive indeed.

In successful economies, economic policy has been pragmatic, not ideological. It has been concrete, not abstract.

From its very beginning, the United States every now and then enacted policies to shift its economy onto a new growth direction—toward a new economic space of opportunity. These redirections have been big. And they have been collective choices. They have not been the emergent outcomes of innumerable individual choices aimed at achieving other goals. They have not been the unguided results of mindless evolution. To play with a phrase that became infamous, they have been “intelligent designs.”

Yes, there was an “invisible hand,” and enormous entrepreneurial innovation and energy. But the invisible hand was repeatedly lifted at the elbow by government and placed in a new position from where it could go on to perform its magic. Government signaled the

<sup>1</sup> This essay draws on my new book, (co-authored with J. Bradford DeLong), *Concrete Economics: The Hamilton Approach to Economic Growth and Policy*.

direction, cleared the way, set up the path, and—when needed—provided the means. And then the entrepreneurs rushed in, innovated, took risks, profited, and expanded that new direction in ways that had not and could not have been foreseen. The new or newly transformed sectors grew, often quickly. In growing, they pulled other new activities into existence around them. The effect was to reinvigorate, redirect, and reshape the economy. This is continuing development, not just growth: new and different, not just more of the same.

These actions have been implemented by the government, backed and pushed by powerful and often broad-based political forces and held together by a common vision of how the economy ought to change. They have then been brought to life, expanded, transformed in extraordinary ways by entrepreneurial activity and energy. The new direction has always been selected pragmatically, not ideologically, and most important, presented concretely. You could see it in advance—as in, “This is the kind of thing we are going to get.”

Until the latest redesign, beginning in the 1980s.

It started with Hamilton, way back at the creation of the new Republic, in the 1790s. Hamilton (to take a dramatic liberty) looked out the window and said, what kind of colonial economy is this? British mercantilism has forced us to do what our natural endowment of unlimited land and limited population density so well suited us for. We send them timber and beaver skins from the forests in the north, tobacco from the Chesapeake, and cotton from the Southern slave plantations. And they send us high value-added manufactures and high-end services such as banking, shipping, and insurance.

Hamilton set out to change, over time, the structure of the new nation’s comparative advantage. He set out to reshape the economy. No one had a greater role in shaping the American economy than Hamilton. He was the designer and implementer of a carefully constructed, interlinked set of policies to promote industry, commerce, and banking and to radically strengthen the new central government.

Jefferson has a splendid memorial and a huge place in all the elementary school texts, and U.S. national folk wisdom holds that America has always been Jeffersonian, i.e. a small

government, laissez-faire country that is deeply distrustful of government and permanently fighting to keep government small, weak, unobtrusive, and out of the economy and society. This folk wisdom is wrong.

It was Hamilton—not Jefferson—who was the architect of the American economy and society. But without the Jeffersonian current to tame Hamilton's strong-state, pro-finance vision, which would resurface time and time again, America would have been a very different society, very likely less free and open. Balance was the key. And such balance is very difficult to achieve, let alone sustain. We now seem to be losing it.

Hamilton's reshaping of the economy was an integrated system constructed on four powerful drivers:

1. High tariffs!
2. Big spending on infrastructure
3. The assumption of all the states' Revolutionary War debts by the federal government, which were very unequal. (One might recommend that the benighted leaders of the Eurozone review Hamilton)
4. A central bank

A high tariff was the key and it fit several locks. First and foremost, it would promote industry: the idea was not to level the playing field, but rather to tip it to America's advantage. The rate was about 35 percent by 1816; given the costs of 18th and early 19th-century shipping, it was a formidable barrier. An incentive to invest in manufacturing and a built-in subsidy for infant industries (as an aside, America was the high tariff nation in what now call the North Atlantic from Hamilton right up to the eve of World War II. The Smoot-Hawley Tariff, though it contributed to the world depression, was not a wild aberration. It was a big jump over the 1913 rate, but the 1913 tariff never had an impact on trade, as WWI had set in. While appreciably higher, it was not a wild increase on average rates between 1900 and 1912.)

The tariff was also to be the major source of federal revenues. It was, at the time, an overwhelmingly progressive tax. It became a central, explosive issue in American politics for several generations—witness the nearly Union-busting “Tariff

of Abominations.” The tariff hit the Southern planters the hardest—Jefferson’s buddies. It would support a strong federal government, massive infrastructure programs (mostly canals at the time), and pay for an army to remove the American Indian who stood in the way of small farmers. They would welcome that, and even support someone paying for it.

And the tariff was the instrument that would permit the federal government to credibly assume the states’ Revolutionary War debts and thus both strengthen the federal government (at the center of Hamilton’s plans) and also pay off handsomely the equivalent of today’s vulture funds who bought the state debt for pennies—these were, after all, Hamilton’s friends.

The creation of a federal debt would create a new and vigorous financial market, another of Hamilton’s objectives, and give the rich a powerful interest in the survival and success of the new American government. It was Hamilton who remarked, “a national debt, if it is not excessive, can be a blessing.”

The last piece of the plan was Hamilton’s Bank of the United States, which Hamilton designed to sit at the center of the financial system to impart solidity, sobriety, and control and tame—not fuel—the wildcat banks and their wildcat currencies. Hamilton was all for finance, but tamed, orderly, somewhat controlled finance.

And so the basic architecture of the American economy (and society) was put in place, not by spontaneous evolution, but by intelligent design. By government.

### Fast forward to the mid-to-late 19<sup>th</sup> century

The 19<sup>th</sup> century U.S. government—the Republican Ascendancy—took the lead in creating the transcontinental railroads. Railroad expansion reshaped the economy by opening vast regions to farming and settlement and by accelerating the development of feeder industries such as steel. Unforeseeable entrepreneurial industries emerged, such as the Sears Roebuck catalog (an early railroad app) and Swift & Company, yet another example. The government did not tax and spend to create these industries. It didn’t have to. Instead government gave railway companies huge tracts of valuable land, the best land, right along the railway.

They gave the railways more land than there was in Britain! And wrote quite a few checks too.

The Republican-controlled government also engaged in social design on a big scale. In the mid-19th century, when the federal government privatized millions of acres of land in what we now call the Midwest, it did not auction the land. Instead, under the Homestead Act, the government entailed the land rights precisely to prevent giant landholdings, not to mention the extension of slave plantations! The alternative—an auction, which might now seem the normal and right way to go about privatizing government property—would likely have resulted in a social structure more like that of Brazil or Argentina, with very large estates and great masses of landless agricultural laborers, with all its drear consequences.

The government also created the land-grant universities in almost every state (e.g. the University of Minnesota, the Massachusetts Institute of Technology, the University of Illinois, the University of Nebraska, Texas A&M, etc.) and set up the agricultural extension services, one of the most successful government-sponsored technology development and diffusion systems in all of history. A model, as each research and diffusion center was local, dedicated to the needs of the local economy and tightly integrated into it. Government-sponsored research and productivity improvement efforts in other countries successfully applied the lessons of those locally-oriented and locally-rooted tech promotion institutes, including the Fraunhofer institutes in Germany and the Kosetsushi (local technology transfer institutions) in Japan.

These were the policies that intelligently designed the 19th and a good part of 20th-century America. They were pragmatic and concrete in conception and execution, and of course, were realized with more than a little bit of corruption.

Too much history; too little time. We can't skip Teddy Roosevelt, Wilson, and the Progressives because their great accomplishments did not focus on opening up new growth sectors. Theirs was focused on that other key role for government in a business-dominated economy—preserving or restoring balance. In this case, anti-trust and regulations to deal with giant companies that were no longer controlled by their markets, but

rather had come to control those markets. Regulation for railroads, which were strangling the farmers who were now up in arms; regulation for food and drugs (following on the revelations by the “muckrakers” who revealed problems with food purity rather like those that have recently surfaced in China); breaking up the Standard Oil monopoly into several smaller, but still rather significant companies. And absolutely no ideological nationalizations.

Eventually (in 1907), Hamilton’s central bank was successfully established. It had been reestablished and disestablished in the early 19th century in the form of the Federal Reserve as an important step in trying to tame finance, which had grown to huge proportions on unstable legs and kept toppling in “financial panics” as they were then called (credit collapses and bank runs), triggering sharp and deep recessions.

Let’s also run quickly past the biggest case of restoring balance after the market had dramatically failed—Franklin Delano Roosevelt and the New Deal. FDR was no ideologue, and he did not believe in any particular economic theory. He was the consummate, ultimate pragmatist—radically and frenetically pragmatic. When FDR took office in 1932, the stock market had lost about four-fifths of its 1929 value. The banks were defaulting on depositors, about half the mortgages in America were in default, home-building had completely stopped, about one third of non-farm workers were unemployed (and there were few two-income families), auto production was at 20 percent of 1929, and farm prices had collapsed. Hoover and his Secretary of the Treasury, Andrew Mellon, tried austerity, as it is now known. Mellon was hysterically eloquent: “Liquidate labor, liquidate stocks, liquidate famers, liquidate real estate. Purge the rottenness out of the system...” That didn’t work.

Hoover had in his hands many of the programs of the New Deal, such as mortgage insurance and public works, but just didn’t do any of it on a scale that would matter. The New Deal had no ideology and no theory. The only major element that was announced at the very outset in FDR’s Inaugural Address (“Nothing to Fear but Fear Itself”) was regulation of finance (although even that was built on saving finance rather than just nationalizing the busted banks and insurers, not to mention

railways and industrial giants, as had happened after the economic catastrophe in other, more ideological or theory-driven countries under left or right-wing governments). On his first day in office, Roosevelt declared a “bank holiday” (he had a gift for nice, light phrases), shuttered the banks (for five days), insured the peoples’ savings, and saved the banks. The New Deal, consciously or not, saved capitalism and, I might add, democracy. In many ways, it was like emergency medicine. Try something that seemed obvious (bank insurance; regulation of finance; public works and immediate, direct job creation; ditching gold convertibility and devaluing the currency; social insurance; corporatist structures for industry) and see if it worked. If it did, keep it and grow it; if it didn’t, toss it and keep going. Speed was key; the patient was dying. An example of this can be seen in mortgage insurance: Hoover passed a home mortgage insurance act, but of the 40,000 applications received in the first six months only four (four!) were approved. FDR helped finance over one million mortgages in two years! FDR and the New Deal were not Keynesian *avant la lettre*. In 1937 when the economy had begun to revive smartly, in part due to massive deficits, FDR cut the deficit smartly, and the economy promptly tanked. Then, after 1938, spending was jacked back up, and then...

In sum, although the New Deal was not ideological, but rather the ultimate in pragmatic policy experimentation, it became the definition of the ideology that was post-World War II American liberalism. It became the model of what government could and should do.

Next stop: President Dwight David Eisenhower, known as Ike, and the establishment Republicans. What we can call the long age of Eisenhower, stretching from his inauguration in 1952 through his two terms and on through his successors, Richard Nixon and John Fitzgerald Kennedy.

Ike’s vision was a full-blown consensus, shared by auto-makers, oil companies, and appliance makers; by builders and bankers; and by vast legions of regular Americans—marching bands and booster squads and outpouring fans—gathered around him on the 50-yard line of American politics and society. The vision was of an imminent future that was not so much a break with the recognizable past as a projection and huge



extension of many of the most attractive aspects of where FDR and Harry S. Truman had led America.

Think of it as a triptych—three big panels, as in the U.S. Museum of Natural History, each clear and brilliant, each easy to grasp and appreciate. What you see is what you get; there were no questions of theory or ideology. There were no abstract forces or processes to unleash.

In the center, the “American Dream”: a house surrounded by a green lawn and containing a big overstuffed refrigerator, a washing machine, and a television. Kids, too, with braces. And of course, a big, sleek car in the driveway, and at the end of the driveway, a curving lane leading to a broad, smooth highway. Above this diorama the legend proclaimed: *For the American Family: For You.*

The right panel of the triptych, titled *Protect the American Dream*, offered a bold display of military might. Atomic bombs, jet planes, nuclear submarines, and huge networks of research laboratories inventing away to keep America safe by keeping it far ahead technologically.

And on the left panel, we see the civilian fruits of government spending (overwhelmingly by the military) on science and technology. Commercial jet airliners; amazing machine tools to sculpt airplane wings and other breakthrough marvels; electricity from nuclear plants that would be too cheap to meter; radar ranges to zap-cook a meal in an instant; and medicines and vaccines—after all penicillin was still new and the miracle of Jonas Salk’s polio vaccine was fresh and politically powerful. There were to be all kinds of new wonders that were impossible to fully understand, but thrilling to imagine. Wonders like telephone wrist-watches (famous in Dick Tracy comic books) and giant computers to do whatever it would be that computers would do. It was thrilling and easy, even uplifting to accept. It was pragmatic; it was concrete. It was consummately imageable. And it was successful beyond imagining.

Ike, leading the Republicans to power after a full generation in the desert, started by telling his fellow party members, who had other ideas, that they were going to keep the New Deal. Many in the party wanted to dismantle the New Deal, starting with the apparatus of financial regulation. Ike’s huge contribution

was to legitimize “big government”—active government, regulating government—and he went on to make it even bigger, and for “peace time,” even more intrusive.

Under Ike, total government spending accounted for over 30 percent of gross domestic product (GDP)—big government indeed. And it was successful government. And Ike was able to accept non-victory and ended the Korean War, something that only a Republican, ideally Ike, could do—just as only Nixon and Kissinger could open the U.S. China—as the Democrats would have had Nixon and the fury of the Republicans to contend with. Under Ike, the military budget was about double (as a share of GDP) of what it is today. Then again, there was the Cold War.

That colossal mansion of the military budget had many rooms, including many black rooms within which were other black rooms. And out of these rooms came massive support for research and development (R&D) and the entire revolution in computing and communications. In fact, not just some, not just many, but almost *all* the inventions that gave birth to and powered the digital revolution, from the first transistors through packet-switching and the Internet, emerged from federally-supported R&D. It is important to stress that this R&D overwhelmingly came from the Pentagon (and later NASA). The Pentagon played a key role as launch client.<sup>2</sup> The Pentagon provided huge support for technologies, and potential technologies, that were

“mission-focused.” It was not a general, economy-wide, market-oriented tech development agency. It stayed quite mission focused, and almost all the technologies it supported served its mission. These technologies were also spun-off into different uses in the civilian economy. But mission focus was first and very foremost.

The technologies of the digital age were not invented, or even developed, by kids drinking Coke in a garage with a few bucks of support from a pre-scient venture capitalist. They came

<sup>2</sup> The list is staggering, from the transistor to semiconductors, commercial jet aircraft, nuclear power, all satellite technology and computing. The authoritative source on this is the National Research Council’s *Funding a Revolution, Government Support for Computing*, 1999. MIT Lincoln Labs, “The SAGE Air Defense System,” <https://www.ll.mit.edu/about/History?SAGEairdefensesystem.html>. Mariana Mazzucato’s *The Entrepreneurial State* reviews this history very well, a bit in the spirit of our Concrete Economics in that it reminds us of what was once well known but seems to have been forgotten.

out of the federal budget, overwhelmingly the military budget. Later, for pharmaceuticals, these innovative technologies emerged from the National Institutes of Health.

This was the classic formula. The government opened up a new space, in this case what was to become the digital world of computing, semiconductors, communications, sensors, and software, and invited entrepreneurs to rush in; innovate; find new, unimagined applications; make the technologies more robust and much cheaper; and prosper proudly, all while reshaping and reinvigorating the economy.

The economic policies pursued by Ike and Nixon would be unimaginable to today's Republicans. There was no redistribution of income, especially towards the top. Productivity grew by two percent per year (doubling each generation); the incomes of the top 10 percent grew by two percent, as did the median income. Everyone saw his income at least double during his working career, if not more. Taxes helped keep incomes in line: the top rate was 90 percent (though only a very few paid that). Inheritance tax was 50 percent and kicked in pretty quickly. And of course, this being America, there were "loopholes," including expense accounts, generation skipping trusts, and the like. Still, try a 90 percent top rate now, or even a 60 percent or 50 percent rate. Finance was tightly regulated; for the most part, it was rather like a utility—unimaginative, boring, routine, and comfortable. Banks closed at 4:00 pm and bankers hit the golf courses. These same bankers earned pretty much the same as what was earned in other industries. Today, bankers earn double and triple the rates of other industries. CEOs did well back then, pocketing almost 50 times what their average workers were paid. Today, it is 300 times!

Beginning in the 1980s, and continuing across a generation, the United States once again redesigned its economy. But this time, the redesign was done very differently.

For starters, the U.S. government was not the only government targeting the shape of the U.S. economy. On the one hand, the policies of East Asian governments—first Japan, then South Korea, and then, with quickly accelerating force and scale, China—pushed their economies onto a manufacturing-export development path. On the other, the United States

accommodated this export-manufacturing push by implementing a set of targeted policies to open a new growth direction and shift the economy toward what were supposed to be the higher-value industries of the future. It was ideology that told us these industries were out there and what they were, but it was newly-minted abstract theories that told us that this ideology was scientifically correct.

But no concrete sketch of what that future shape for the economy would be was forthcoming. The invisible hand of economic magic was to pick up and realize what the stealth hand of politics had set in motion.

The two teams, Asian and American, performed a kind of cosmetic surgery on the U.S. economy—a body-sculpting. The American accommodation of the Asian export-manufacturing push—steel, shipbuilding, automobiles, machine tools, electronics—was sold as a liposuction, fat removal. It cut away a lot of muscle. Indeed, the weight of manufacturing in the economy dropped by nine percent: from 21.2 percent of GDP in 1979 to 12 percent at the peak of the last business cycle in 2007. That's a big number—almost two full Pentagons.

The Washington team performed the implant: deregulating finance, fueling real estate transaction processing, multiplying the share of economic activity devoted simply to the processing of health-insurance claims. Finance grew by about five percent of GDP, a full Pentagon. These three sectors now account for a full one-fifth of the entire economy. To repeat, finance, processing of real estate transactions (not building houses), and processing of health insurance claims account for a full 20 percent of the new great, powerful American economy. This is pure economic bloat. Impure flab. Much of it, when all goes well, is close to a zero-sum activity: no net gain. That is when all goes well; sometimes it doesn't.

In one way, and one way alone, this government-led redesign of the economy resembled all the others. Government opened up a new economic space, this time by deregulating finance, and entrepreneurs rushed in and innovated. They innovated like mad, because innovation is easy in finance. And the sector grew, and grew beyond anyone's wildest dreams. By 2007, finance accounted for a full 50 percent of corporate profits. And

many of the best bits of finance such as hedge funds, private equity funds, and venture capital funds are not corporations, while many of the core actors in finance—such as law firms—don't count as finance. This is government-enabled rent-seeking on a colossal scale.

This decline in American production of manufactured goods was not completely or primarily due, as some like to think, to a shift to a post-industrial society. That shift accounted for at most one-third of the relative decline in manufacturing. We can see this by simply noting that the relative consumption of manufactured goods in no way declined proportionally to production. We still wanted the manufactures, so we imported them. And these imports of manufactures constitute the lion's share of America's trade deficit – five percent of GDP before the Great Recession cut imports, as well as almost everything else.

To finance the purchase of all the manufactured goods we were no longer making, we did not produce something else that we could export. Instead, we accumulated debt—mountains of it. The East Asian economies were eager to build up their manufacturing capacity and capability, and our ideologically motivated redesign of the American economy told us that we didn't really care, because we didn't really want those sectors, and we should not think about the economy and economic policy in such concrete terms. The Asian governments were eager to extend credit and hold growing piles of dollars. In exchange, they received the immense treasure of industries and their associated engineering communities of technological practice. And we got the growth in sectors—real estate transactions processing, insurance claims processing, and finance, of course—and with that a stupendous redistribution of income, just about all to the top. The very top. This is rather well known.

And every time there is a huge growth of a new sector, or even the rapid growth of an old sector—manufacturers, military, finance—there is a big shift in political power towards that new sector. We certainly see that now. The political power of the manufacturing industry (both the companies and the unions—or what is left of them) has declined to relative insignificance. The political power of the military remains (the “military-industrial complex” Ike warned us about in his farewell address). And it is

arguable, and I would like to argue it, that finance has captured the American political system. It now dominates the American political system in ways not seen since the railway barons of the late 19th century.

In brief, the United States, and therefore much of the world, is still living with the consequences of that last failed redesign.

The state can be the enabler of entrepreneurial-driven economic growth and transformation. It can also be the powerful enabler of successful rent-seeking by elites, which stifles growth and transformation, and in a great many countries that is the role that it plays. “Trust the state.” No. Wish it away in a kind of neo-liberal fantasy. No. And the state, or the government, as they prefer to call it in the USA, cannot be reduced to an unthreatening scale and scope. And it cannot be assumed to be a benign factor. That is the fundamental balance of forces of political economy. Economics is easy; politics is hard.



II.

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# **THE SUSTAINABLE DEVELOPMENT GOALS, THE 2030 AGENDA, AND TRADE MEGA- AGREEMENTS**



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## Infographic 2. Sustainable Development

I. The 2030 Agenda  
And The New Style Of  
Development: Insights  
From Latin America  
**Gabriel Porcile**

II. Strategic  
Interventions  
for Sustainable  
Development:  
Insights from Africa,  
**Bartholomew Armah**

III. Innovative  
Approaches to  
Development,  
**Barbara Adams**

IV. Alternative  
Approaches to  
Mega-Regional  
Trade and Financial  
Agreements and  
Climate Change,  
**Alejandro Villamar**

# SUSTAINABLE DEVELOPMENT

INFOGRAPHIC 2

Synergies among the four dimensions of sustainable development are optimized when structural transformation initiatives are anchored through social sustainability interventions.

The eradication of poverty and the promotion of the sustainability of people and the planet will be the dominant vision of the development system of the UN in the new era.

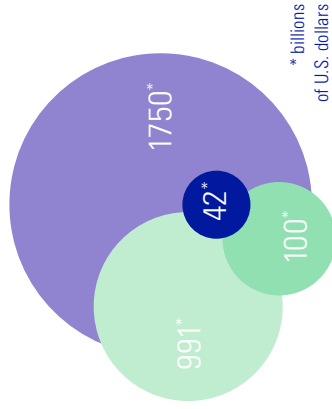
SOURCE: ECOSOC

GOVERNANCE

ENVIRONMENTAL

SOCIAL

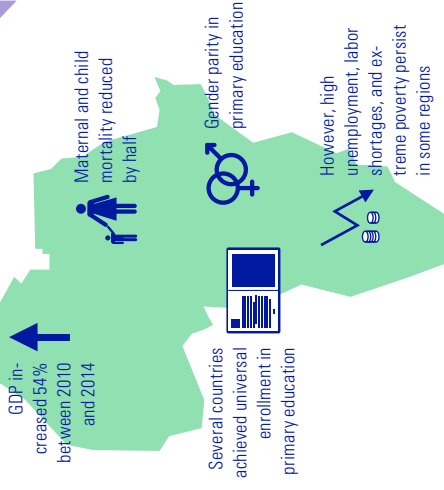
ECONOMIC



- Total budget of the UN system
- Annual expenditure on chocolate
- Illicit financial flow in developing countries
- Military expenditure worldwide

## Case study: Africa

Last decade



# OBSTACLES

- There is no democratic transparency in the negotiation procedures of the mega-agreements
- The negotiations are closed to the general public and to legislators from each country, but are open to lobbyists from large, transnational companies
- The well-protected rights of investors within the investor-state dispute mechanism has led to the privatization of the court system in favor of transnational corporate courts, mechanisms, and judges, without the right to appeal or review
- The mechanisms and consequences of the investor-state dispute settlement mechanism are an internal threat to the exercise of national sovereignty and the enforcement of environmental regulations

Trans-Pacific Partnership (TPP)  
Trans-Atlantic Trade and Investment Partnership (TTIP)  
Trade in Services Agreement (TISA)



Paris Agreement 2030  
Agenda for Sustainable Development Addis Ababa Action Agenda

# ACTIONS

United Nations Conference on Sustainable Development in Rio (Rio+20)	The Agenda 21 is adopted at the Earth Summit in Rio de Janeiro, establishing the concept of sustainable development	The United Nations Conference on the Human Environment is the first event to draw international attention to the issue of the environment
2012	1992	1972
The Addis Ababa Action Agenda is agreed on in July	The 2030 Agenda is adopted by the UN on September 25	The Paris Agreement on Climate is signed in December
2015		

Within the context of sustainable development and poverty eradication, the green economy is an important tool

## 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDG\*):

Represent the consensus of the search for a new development paradigm that acknowledges that the dominant pattern of production and consumption is exhaustive and threatens the development of future generations

Are transversal and require a systemic approach

SDGs are transversal and need a systemic approach.

Are considered to be the first truly post-colonial agreement, as they are universal and go beyond the paradigm of cooperation for development

"The Paris agreement was silent on trade, and the TPP ignored the climate. As countries take action to protect the climate, conflicts between trade rules and climate goals will escalate. The intentional separation of these two global priorities is becoming increasingly untenable."

Ben Lilliston

"Over the past 25 years, international bilateral treaties and free-trade agreements with investor-state dispute solutions have negatively impacted the international order and undermined fundamental principles of the UN, state sovereignty, democracy and the regulation of the law [...]. It is a fundamentally failed system with an adverse impact on human rights that has disrupted the national order by weakening its States, invading its normative space and aggravating inequality and injustice in the world."

Alfred de Zayas

\*See: <http://www.un.org/sustainabledevelopment/>





A background image of a man in a suit sitting at a conference table with a microphone and a nameplate. The image is faded and has a green tint.

**Author**

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**Gabriel Porcile**

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# **The 2030 Agenda and the New Style of Development: Insights from Latin America**





# A Style of Growth Facing Increasing Challenges

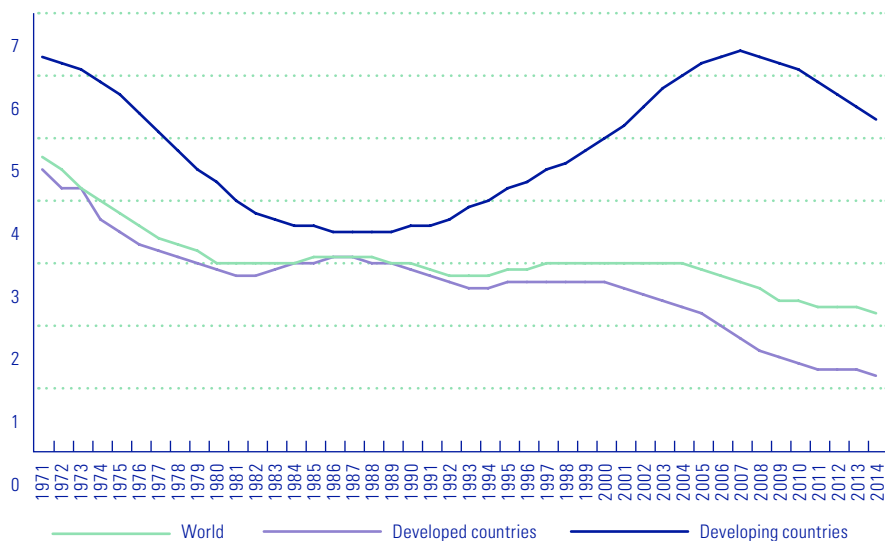
The global economy is facing considerable difficulties and imbalances that attest to the need for change in the predominant style of development. In particular, three challenges are worth taking a closer look (Economic Commission for Latin America and the Caribbean [ECLAC], 2016).

## Recessionary trend in the global economy

The recovery of trade and economic growth in the wake of the 2008 crisis has been slow and uncertain. Figure 1 shows how GDP growth rates around the world have been systematically

lower in the years since 2008 than in the 1990s and 2000-2007. One positive aspect is that developing economies have been performing better. Nevertheless, growth in Latin America has been less promising, which is above all attributable to the impact of Chinese growth.

Figure 1. GDP growth across the globe



Source: Created by the author based on data from the World Bank.

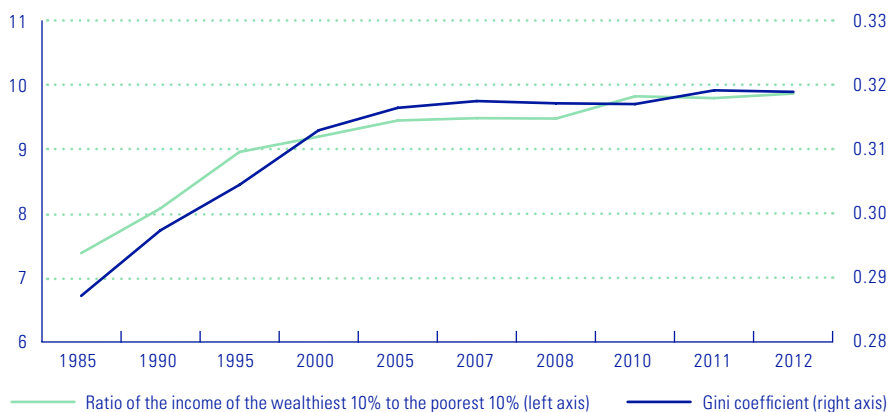
Beyond weak global economic recovery, concern about the possibility of a new crisis is mounting. Two factors fuel this apprehension: on the one hand, many economies are experiencing elevated debt levels and financial systems that operate in detachment from the real economy, leading to high degrees of uncertainty; on the other, the absence of coordinated economic expansion has forced countries with trade deficits to balance them primarily by curbing imports and growth, because they do not see favorable prospects in growing exports. This situation is one of the factors underlying the sluggishness of global aggregate demand.



## Surging inequality in the world's leading economies

Organisation for Economic Co-operation and Development (OECD) economies have become increasingly unequal since the 1980s. Figure 2 reveals how the Gini index has climbed since the mid-2000s, alongside the share of income held by the wealthiest 10 percent of the population versus the poorest 10 percent. These two indicators held somewhat steady from 2004 to 2008, but spiked again in the aftermath of the crisis.

Figure 2. OECD member countries: Evolution of the Gini coefficient and the ratio of the average income of the wealthiest 10 percent to the poorest 10 percent, 1985-2012



Source: ECLAC, from the OECD database. In It Together: Why Less Inequality Benefits All, Paris, 2015.

Heightened inequality plays a major role in the social and political tensions observed in recent years, even in economies that have already attained a high level of development (Stiglitz, 2012). Because it constrains the expansion of aggregate demand and elevates family debt levels, income inequality contributes to slower economic recovery and economic instability.

## Mounting environmental risks

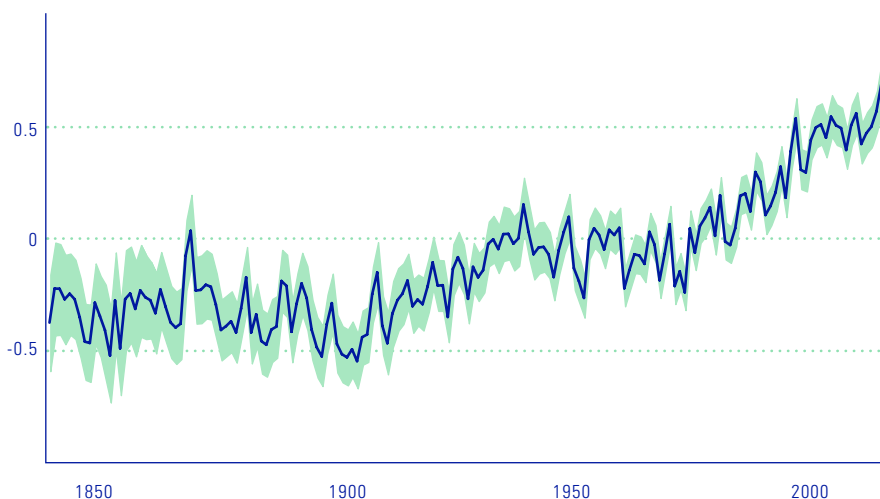
Finally, the third imbalance is associated with the environmental costs of the world's current growth pattern. Scientific opinion is undivided in its assertion that current growth patterns could, in the long run, prompt an environmental catastrophe capable of jeopardizing the development potential of future generations. Furthermore, there is a chance (by virtue of the non-linearities of the dynamics of environmental systems) that humanity is approaching a point of no return beyond which the environmental harm inflicted will no longer be reversible. For that reason, Nicholas Stern refers to climate change as “the greatest market failure that the world has seen” (Stern, 2006).

Figure 3 presents two key indicators that reflect the risks and losses wreaked on the environment: land and sea surface temperatures are heating up (quadrant A) and the extent of the Arctic sea ice in the summer is shrinking (quadrant B).

Figure 3. The environmental impacts of the predominant growth pattern

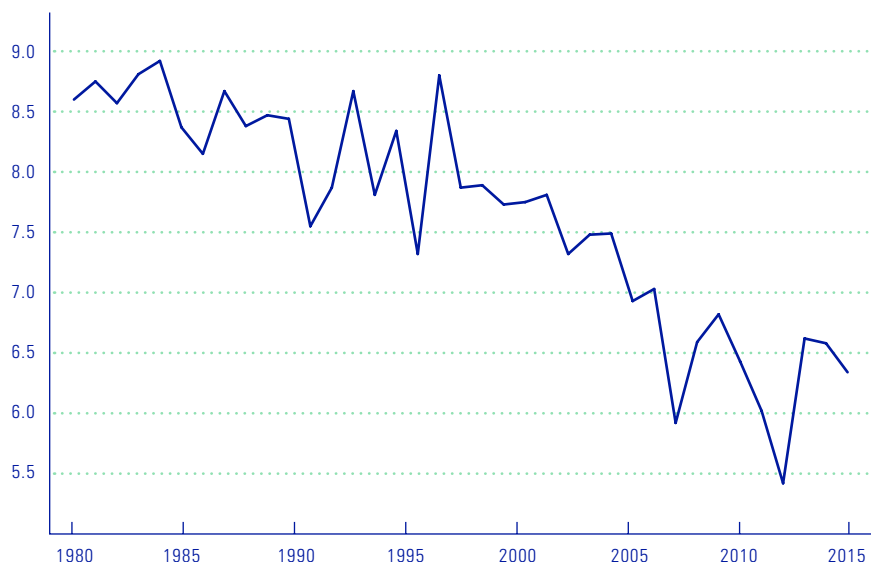
### A. Blended Land and Sea Surface Temperature Anomalies – 1850–2015<sup>a</sup>

*Yearly temperature difference with respect to the average of the period 1961–1990 (degrees Celsius).*



## B. End-of-Summer Arctic Sea Ice Extent – 1978-2015<sup>b</sup>

(In millions of square kilometers)



<sup>a</sup> Temperature data reflect the difference between the global average blended land and sea surface temperature based on annual averages from 1850 to 2015 and the average of the period between 1961 and 1990. Data taken from the HadCRUT4 database of the Hadley Center of the United Kingdom's Meteorological Office.

<sup>b</sup> Arctic sea ice data refer to the average of July, August, and September, taken from the National Snow and Ice Data Center (NSIDC).

Source: ECLAC, based on the World Bank Database, World Development Indicators, and the International Union for the Conservation of Nature (IUCN).

Land and sea surface temperatures have crept up in a sustained fashion since the beginning of the century, surging in the post-World War II era. This increase in temperatures occurred in parallel with the shrinking extent of Arctic sea ice (and its negative repercussions for sea levels and the consequently increased risks for coastal cities).

In response to prevailing instability, awareness of the environmental, economic, and social limitations of the world's predominant development style has spread in recent years. The international community has begun to mobilize to form a response: the 2030 Agenda for Sustainable Development and the

Sustainable Development Goals (SDGs) represent the emerging consensus in the pursuit of a new development paradigm.

## Global Public Assets and Industrial Policies for a New Development Style

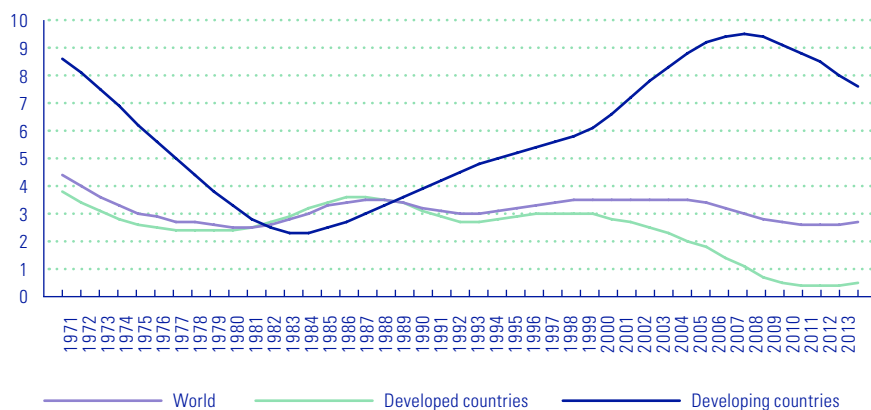
On September 25, 2015, the United Nations formally adopted the SDGs, a wide-ranging and ambitious agenda that defines the international community's commitment to combat inequality (in all of its dimensions), underdevelopment, and environmental destruction. The 2030 Agenda and the SDGs represent an emerging consensus among member countries, the result of a long debate that has involved every member. The Agenda acknowledges that the world is on the threshold of a new age in which the predominant production and consumption pattern is being exhausted and is threatening the development possibilities of future generations.

Essentially, in light of the problems underpinning the sustained recovery of growth, many analysts have called for the urgent adoption of expansive fiscal policies (Rodrik, 2016). Monetary policy and quantitative easing have done all they can to stimulate the economy. It is time for fiscal policy to play a more important role. Given the hazards of so-called “secular stagnation” and plunging global investment (see Figure 4), a fiscal policy predicated on boosting public investment is key to recovering prospects for growth.

Figure 4 demonstrates how the global investment rate has fallen. Similar to the case of economic growth, developing countries have performed better than developed; however, the Chinese economy also wields significant influence in this regard.

This investment push based on greater fiscal activism should focus on changing energy use and transportation systems in order to make them more environmentally sustainable. Although implementing a worldwide Keynesian fiscal policy would help short-term recovery and growth, if this growth continues as it did

Figure 4. Long-term growth rate of gross fixed capital formation for the world, developing countries, and developed countries – 1971-2013 (in percentages)



Source: Created by the author based on data from the World Bank.

previously – environmentally unsustainably – the consequences could be catastrophic for the planet. Any efforts to ramp up investment ought to lay the groundwork (infrastructure, consumption, and transportation) so that economies can move to low-carbon paths. The United Nations Climate Change Conference (COP21) was a major indicator that a new institutionalility is under way, one that is able to encourage a shift towards sustainable production and consumption patterns.

The domestic flipside of this global environmental Keynesianism, above all in developing countries, is a big environmental push. This idea is particularly relevant to developing economies, which require an articulated assortment of investments in various areas in order to escape from the low-growth and low-productivity trap so characteristic of their underdeveloped status, allowing them to weather the coordination problems that stall diversification and technology absorption (Rosenstein-Rodan, 1943). In light of the severity of environmental issues, an effort of this sort is not only an imperative, but also an opportunity to disseminate technological advances in economies throughout the region in a way that is congruent with human needs and environmental conservation. This combination makes investing in the environment a matter of economic development.

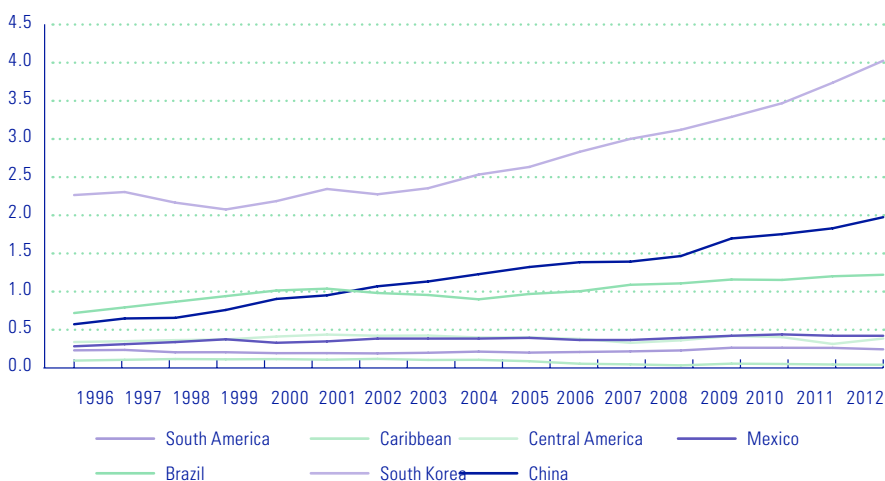
Transforming production and consumption patterns will only be viable in a context in which this transformation comes about in a way that helps close the income gaps and technological schisms between advanced and developing economies.

Closing this abyss is still far off. The region has lost a lot of ground in structural change and innovation. Figure 5 introduces an indicator designed to directly capture the magnitude of technological efforts vis-à-vis spending on research and development (R&D) as a percentage of GDP. China and South Korea are out in front of South America, Central America, and Mexico.

Although Brazil also lags behind China and South Korea, the gap is less than between the Asian economies and the other countries and subregions in Latin America. This is because Brazil has enacted a series of proactive policies to support R&D and research systems and boasts a more diversified industrial base than its neighboring countries in the region.

The fact that Latin America lags so far behind in terms of productive structure and technological capacities is especially

Figure 5: R&D as a percentage of GDP, 1996-2012



Source: UNESCO, OECD, RICYT, CEPALSTAT, official sources, World Bank

South America: Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Uruguay / Central America: Costa Rica, Cuba, Panama / Caribbean: Trinidad and Tobago

disheartening given this indicator's connection with productivity and long-term growth potential.

## Final Reflections: The Political Economy of a New Development Pattern

Building the global public assets and national strategies for a new style of development requires a new correlation of forces to redefine the international political economy. A sizable number of actors, both public and private, have a stake in protecting their investments and the current distribution of profit; other actors—both producers and consumers— have a lot to gain in the transition to a new, more inclusive and environmentally sustainable growth pattern. The problem is that the losses will be immediate and the benefits won't be seen until the future, not to mention that the distribution of losses and benefits will be inversely correlated with the distribution of power that exists in the current growth pattern, which favors those who wish to the status quo.

In addition, there is a strong lock-in effect, an inertia associated with current investments and price structures, which makes it more costly to move away from the dominant structure. For instance, within the framework of existing incentives, companies and governments invest in discovering new fossil fuel deposits, new ways of exploiting these deposits, and the infrastructure necessary; they reproduce and amplify the incentives that favor the pattern in place. These interests are given outsize weight, as one of the main beneficiaries of the trajectory of change (future generations) enjoys neither direct representation nor a voice in policy-making by definition. Accordingly, the forces of inertia prevail, despite the existence of positive sum games revolving around a new development style based on the SDGs.

In the meantime, there are reasons to feel more optimistic than in the past as regards the possibility of changing the

development style. Historically, far-reaching changes in the political economy and institutionality (domestic and international) have happened in moments of crisis or serious risk. The new age mentioned earlier contains both currents. First, the crisis unleashed in 2008—yet to be completely overcome—has led to the creation of much broader spaces to debate the machinations of the international system and the costs of inequality. There is real concern about the lack of aggregate demand related to the declining share of wages in income, as well as the dearth of coordination needed for economies to grow in complement to one another. Second, climate change entails risks that have mobilized public opinion and governmental administrations, to the degree that the environment is now firmly positioned in the public policy agendas of nearly all countries.

What Evans (2010) has termed the “21st century developmental state” could forge even broader alliances than those of the developmental state of the century prior (based on industrialization and the accumulation of physical capital). These wide-ranging alliances combine support for stakeholders involved in diversification and innovation with the universal provision of public goods as an asset that is both complementary and necessary to those processes. The policies of this 21st century developmental state would focus on capacity building, linking the state to society and to new forms of the social pact. Although it is generally known that access to public goods yields positive effects for productivity, this new complementarity between a state that provides said goods to all of society and the emergence of new innovative sectors is more solid than ever before.

Changing the development style is not risk free. It is likely that the leading companies and countries will oppose the spread of technological capacities to developing economies and seek to maintain their monopolistic positions (predicated on more stringent intellectual property and patent rights), and the private interests that maximize competitive assets can exist alongside the mercantilist interests of their governments. Development efforts and efforts to reduce international inequality cannot be dissociated from the pursuit of a growth path that is sustainable across three dimensions: social, economic, and environmental.



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Bartholomew Armah

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# **Strategic Interventions for Sustainable Development: Insights from Africa**





# Introduction

The adoption of the Agenda 2063 and the 2030 Agenda for Sustainable Development by African member states framed the continent's structural transformation agenda within the parameters of sustainable development. Both the global 2030 Agenda for Sustainable Development and Africa's Agenda 2063 are anchored by the three dimensions of sustainability: social, economic, and environmental. This essay analyzes the policy trade-offs and synergies associated with the achievement of the three dimensions of sustainable development and identifies the ways in which economic, social, and environmental sustainability measures encourage or inhibit structural transformation in Africa. Drawing on evidence from previous quantitative studies focused on Africa, we conclude that the continent's structural

transformation agenda will be optimized if it is driven by social development and mediated by environmental and economic interventions.

For over a decade, impressive progress has been made on a number of socio-economic indicators in Africa. Economic growth has been remarkable: real GDP increased by 54 percent between 2010 and 2014, which is more than twice the global rate of 24 percent (UNCTAD, 2016); maternal and child mortality was cut in half; and several countries achieved universal primary enrollment, as well as gender parity at the primary level of education (ECA et. al., 2016). Notwithstanding these impressive achievements, unemployment, underemployment, and extreme poverty rates in Africa are among the highest globally; extreme poverty rates declined only marginally and inequality in Africa remains high, second only to Latin America. Collectively, these outcomes suggest that the benefits of the aforementioned growth have not been broadly shared, particularly with the poorest segment of the continent (ECA et al., 2015, Ariyo & Olaniyan, 2014; Hull, 2009; Vries et al., 2015).

In recognition of the deficits in Africa's growth outcomes, member states adopted a 50-year development vision in January 2015, called Agenda 2063 (AUC, 2014). Agenda 2063 outlines the continent's vision for: an integrated, prosperous, and peaceful Africa that is driven by its own citizens and represents a dynamic force in the world. In June of the same year, member states adopted the first ten-year implementation plan to operationalize the vision of Agenda 2063. At the core of the Agenda is the economic and social transformation of the continent (AUC, 2013).

At the global level, the General Assembly of the United Nations adopted the 2030 Agenda for Sustainable Development in September 2015, the Addis Ababa Action Agenda (AAAA) in July 2015, and the Climate Agreement in December of the same year (United Nations, 2015b). The Paris Agreement reinforces environmental sustainability through commitments aimed at maintaining global warming at levels that do not exceed 2 degrees Celsius above pre-industrial levels and by supporting the provision of urgent climate finance and capacity-building support to



build resilience to climate change impact. Similarly, the AAAA contains financial and policy commitments to support the implementation of the 2030 Agenda.

In the above regional and global development initiatives, economic growth, social inclusion, and eco-friendly development are expected to be implemented in an integrated and coherent manner, and they are often presented as three interconnected dimensions within the concept of sustainable development.

The initiative to integrate these three dimensions within the development discourse can be traced to the 1992 Rio conference, also known as the Earth Summit. In 2012, the Rio+20 acknowledged the challenges to implementing an integrated approach to sustainable development and rededicated the commitment to implementation. Specifically, at Rio+20, Member States agreed to establish an inclusive and transparent intergovernmental process on sustainable development goals that should “incorporate in a balanced way all three dimensions of sustainable development and their interlinkages” and “should be coherent with and integrated into the United Nations development agenda beyond 2015” (United Nations, 2012).

Collectively these commitments frame Africa’s structural transformation within the boundaries of sustainability. This raises the question of how Africa’s structural transformation can be achieved without sacrificing the social, economic, and environmental attributes of sustainability. In other words, what are the trade-offs associated with achieving the three dimensions of sustainable development, and what conditions are necessary to manage such trade-offs to ensure successful outcomes? A review of the experiences implementing sustainable development initiatives and the challenges can help shed light on this question.

### From Stockholm to Rio+20: A challenging path towards sustainable development

Global efforts to achieve sustainable development can be traced to the United Nations Conference on the Human Environment,

held in Stockholm on June 16, 1972. The Stockholm Conference was the first to bring the subject of the environment to international attention. The outcomes of the Stockholm Conference were reinforced at the 1992 Earth Summit in Rio de Janeiro, where the landmark Agenda 21 was adopted. An ambitious manifesto for social equity and higher living standards in the developing world, Agenda 21 brought the concept of sustainable development into common parlance. It also tried to make environmental issues an integral component of the development discourse through the creation of the Commission on Sustainable Development (CSD) and through the development of international legal instruments to deal with specific sector issues, such as the Forest Principles, the Convention on Biological Diversity (CBD), and the UN Framework Convention on Climate Change (UNFCCC).

Notwithstanding its contributions, the success of Agenda 21 was limited in terms of integrating sustainable development into development practice; approaches to sustainable development continued to be fragmented years after the adoption of Agenda 21. This was in part because not enough attention was paid to assessing the trade-offs across the three dimensions of sustainability. Other contributing factors include the fact that environmentally sensitive sectors such as energy and mining were not included in Agenda 21. Furthermore, the Agenda did not explicitly take into account the institutional structures needed to deliver on its objectives. It particularly underestimated the inertia of institutional structures at all levels to implement the agenda and the pre-occupation of politicians with development-first approaches.

Collectively, these failings contributed to a lack of integrated policies and approaches that considered the interrelationships between issues such as finance, trade, investment, and technology, and how these interactions in turn promoted or undermined sustainable development.

Implementation of the Agenda was also plagued by the fact that some value systems with deep cultural roots did not adapt to the new thinking of sustainability, e.g. *some developed countries saw sustainable development as an unacceptable assault on their lifestyles*. Last but not least, successful adoption of



sustainable production patterns required a more permissive technology transfer regime and increased financial support, which never materialized; development partners continued to fall short of their commitments and technology transfer was limited. It is therefore not surprising that the development outcomes since the 1992 Rio Conference have continued to be unsustainable and characterized by trade-offs between growth, the environment, and social development.

### Responding to the sustainable development challenge

The United Nations Conference in Rio in 2012 (Rio+20) recognized that the implementation of sustainable development had been unsatisfactory and sought to address it by renewing the commitment of the international community to sustainable development; assessing the progress made; identifying remaining gaps in the implementation of the outcomes of the major summits on sustainable development; and addressing new and emerging challenges. The Rio+20 Conference called for strengthened international cooperation on mutually agreed terms, particularly in the areas of finance, debt, trade, and technology transfer. Arguably, however, an enduring legacy of Rio+20 was the commitment to develop a set of action-oriented development goals to pursue focused and coherent action on sustainable development. Some of the proposed sustainable development goals were: to build on Agenda 21 and the Johannesburg Plan of Implementation, while also taking into account different national circumstances; address and incorporate all three dimensions of sustainable development in a balanced way, along with their interlinkages; strengthen institutional coherence and coordination; and avoid duplicating efforts.

Furthermore, there was consensus among countries that the concept of a “green economy in the context of sustainable development and poverty eradication” was an important tool for achieving sustainable development, but Member States of the UN cautioned that its implementation should not be based on a rigid set of rules. The Rio+20 Conference also called on

development partners to support green economy initiatives through technical and technological assistance.

The adoption of the 2030 Agenda for Sustainable Development and the AAAA in 2015 put the frameworks in place for the implementation of the key recommendations from Rio+20. The 2030 Agenda gave rise to the Sustainable Development Goals (SDGs), while the AAAA supported the means of implementation. Implementation of the 2030 Agenda was placed under the overall oversight of the High Level Political Forum (HLPF) that replaced the Commission on Sustainable Development. Among others, the HLPF's responsibilities include enhancing the integration of the three dimensions of sustainable development at all levels in a holistic and cross-sectoral manner and providing a dynamic platform for regular dialogue to take stock and set agendas that advance sustainable development.

But will the recommendations and initiatives of Rio+20 and the 2030 Agenda really result in the successful implementation of sustainable development? How should countries operationally implement the three dimensions of sustainable development in a balanced and integrated manner? The following section illustrates some of the challenges that countries have faced while attempting to achieve the triple objectives of economic, social, and environmental sustainability.

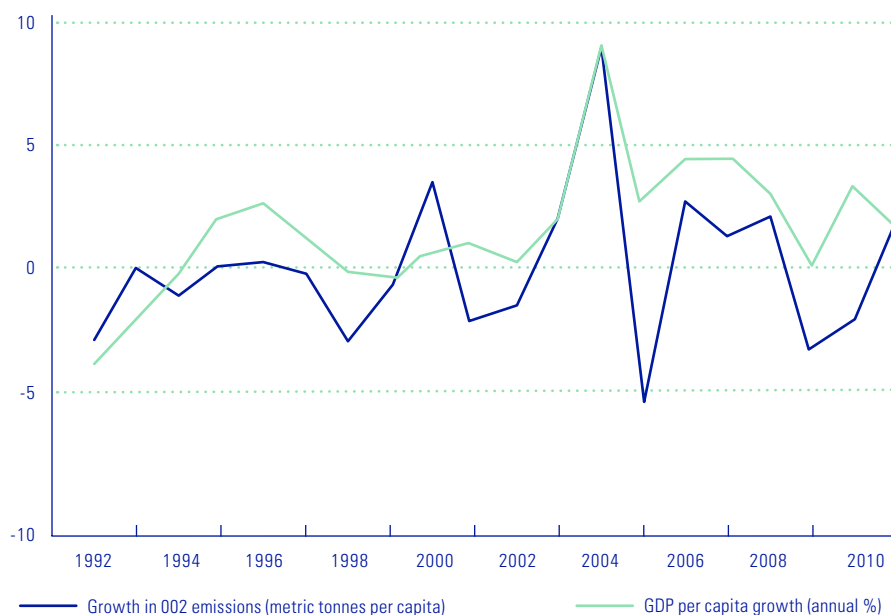
## Synergies and Trade-offs in the Implementation of the SDGs

### Growth and environmental conservation

Figure 1 below illustrates trade-offs between growth and environmental conservation (proxied by carbon dioxide emissions) in Sub-Saharan Africa (SSA) and the rest of the world. Although carbon emissions are generally low in SSA, Figure 1 illustrates

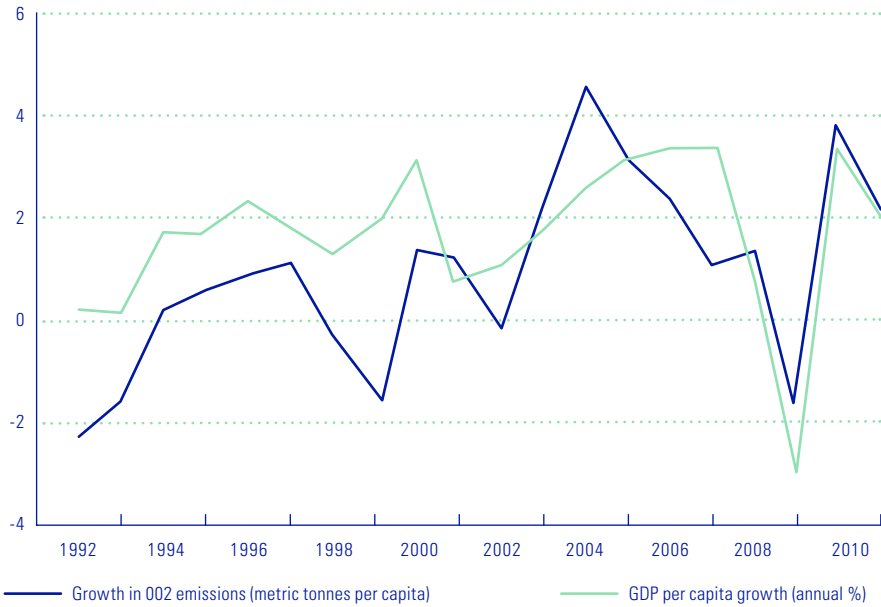
that GDP per capita growth in the region is positively associated with carbon emissions. Carbon dioxide emissions peaked with per capita income growth in 2004, declining sharply in 2005 and then resuming an upward trend. The positive relationship between carbon dioxide emissions and per capita income growth is mirrored at the global level and has been particularly striking since the 2008 financial crisis, as illustrated in Figure 2. Indeed, the sharp decline in per capita GDP growth following the 2008 crises was mirrored by a corresponding dip in carbon emissions, as was the subsequent increase in 2009.

Figure 1: Carbon dioxide emissions and per capita GDP growth trends in Sub-Saharan Africa



Source: World Bank Development Indicators 2016

Figure 2: Carbon dioxide emissions and per capita GDP growth trends globally



Source: World Bank Development Indicators 2016

### Growth and inequality

There is also evidence of trade-offs between social and economic development objectives, depending on the policy measures and technologies that inform these processes. Table 1, for instance, demonstrates that the relationship between growth and income equality, measured by the Gini coefficient, is country specific: in countries like Mali and Ethiopia, growth was accompanied by reductions in income inequality in the mid-1990s to early 2000s. In South Africa and Zambia, income inequality worsened in tandem with declines in growth.

**Table 1: Change of Inequality Index from 1990s to 2000s, selected African countries**

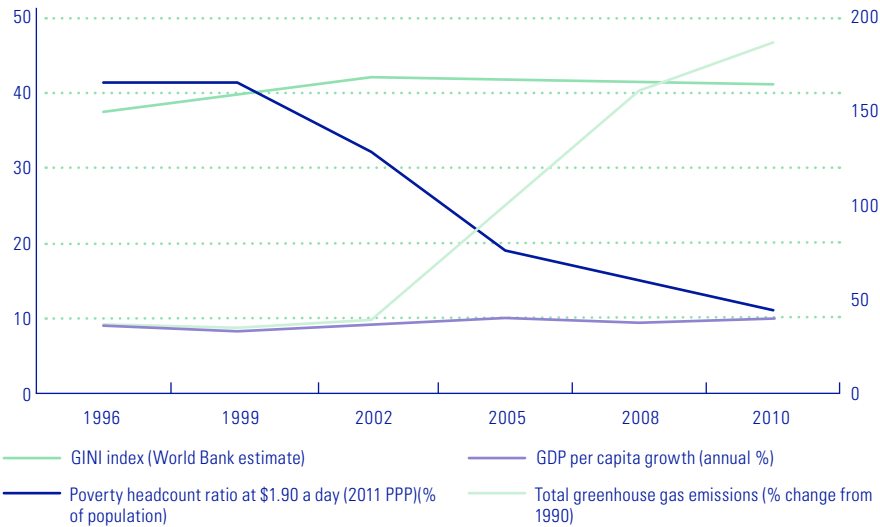
	Country	GINI Year	GINI - Index for Income	GDP Growth Rate (%)	GINI Year	GINI - Index for Income	GDP Growth Rate (%)
		1990s			2000s		
Lowered GINIs	Mali	1994	50.7	0.9	2010	33.0	5.8
	Ethiopia	1995	40.0	6.1	2005	29.8	11.8
Small Decrease in GINIs	Guinea	1991	46.9	2.6	2007	39.4	1.8
	Nigeria	1997	50.6	2.7	2010	48.8	8.0
	Niger	1995	36.2	2.6	2008	34.6	9.6
	Burundi	1992	33.3	1.0	2006	33.3	5.4
Increased GINIs	Côte d'Ivoire	1993	37.1	-0.2	2006	44.4	0.7
	Kenya	1994	44.7	2.6	2005	47.7	5.9
	Mozambique	1996	39.6	7.4	2008	45.7	6.8
	South Africa	1993	61.1	1.2	2009	63.1	-1.5
	Zambia	1996	49.9	6.9	2006	54.6	6.2

Source: Author's compilation based on World Bank's World Development Indicators

### Poverty and inequality

Furthermore, trade-offs can also be observed within specific dimensions of sustainability. For instance, efforts to reduce poverty have in some cases been shown to be associated with rising income inequality (Figure 3). The experience in China is illustrative. While per capita income growth has been associated with marked declines in poverty, income inequality has risen, and total greenhouse gas emissions have increased dramatically.

Figure 3: Trade-offs in poverty, income inequality, growth, and environmental conservation in China



Source: World Bank Poverty and Equity Database

The empirical illustrations of trade-offs associated with the achievement of economic, social, and environmental sustainability suggests the need for an analysis of the critical success factors necessary for the achievement of the three dimensions of sustainable development. This is particularly pertinent in the context of Africa, where countries have committed to transforming their primary-commodity-dependent economies into

modern industrial complexes. Unlike other emerging economies that achieved this objective at the cost of increased inequality and environmental degradation, the litmus test of transformation is currently more stringent; Africa's transformation must be achieved in the context of economic, social, and environmental sustainability. The next section of this essay examines the feasibility of this undertaking based on studies undertaken by Bartholomew Armah and Seung Jin Baek (forthcoming).

Using panel data from 29 African countries for the period 1995-2011, Armah and Baek empirically analyzed the impact of economic, social, and environmental sustainability on structural transformation in Africa. The study constructed an index of structural transformation using factor analysis and then estimated the impact of sustainable development using a fixed effects panel regression model.

A key finding of the study is that an inclusive and sustainable structural transformation agenda requires tackling the economic, social, and environmental dimensions of sustainable development in an integrated way. This conclusion derives from the fact that the relationship between indicators of economic, social, and environmental dimensions of sustainable development and structural transformation varies depending on the model specification. For instance, when the three dimensions are modeled separately, carbon dioxide emissions have a positive and statistically significant relationship with structural transformation. However, when the economic and social dimensions are modeled simultaneously, carbon dioxide emissions no longer have a significant impact on structural transformation.

Furthermore, including institutional variables in the model further improves the explanatory power of the model, as evidenced by increased value of both adjusted R-squared and log likelihood. Democracy and accountability and socioeconomic conditions have a positive and statistically significant bearing on structural transformation. Government stability and corruption carry the expected signs but are not statistically significant (see Annex 1).

Tabla 2: Classification and variable description

Dimension	Area of Importance	Proxy Indicator and description	Source
Economic	Economic growth	GDP per capita (annual %)	WDI
	Investment	Total investment (% of GDP)	WEO
	Green economy	Renewable energy consumption (% of total final energy consumption)	WDI
	Energy use	Energy intensity level of primary energy	WDI
	Poverty	Unemployment rate (% of total labor force)	WDI
Social	Sanitation	Sanitation facilities (% of population with access)	WDI
	Quality of life	Life expectancy at birth (years)	WDI
	Maternal health	Adolescent fertility rate (births per 1,000 women ages 15-19)	WDI
	Climate change	Emissions of carbon dioxide (metric tons per capita)	WDI
Environmental	Agriculture	Arable land (hectares per person)	WDI
	Forests	Forest area (square km)	WDI
	Water	Improved water source (% of population with access)	WDI



Dimension	Area of Importance	Proxy Indicator and description	Source
Structural Transformation	Higher agricultural productivity by achieving a higher cereal yield	Cereal yield (kg per hectare)	WDI
		Agriculture gross per capita production index (2004-2006 = 100)	FAOSTAT
	Higher share of value-added manufacturing	Value-added manufacturing (% of GDP)	WDI
	Increases in the share of ICT in services exports	Value-added services (% of GDP)	WDI
	Better telecommunications infrastructure	Internet users (per 100 people)	WDI
	Improving health services by decreasing infant mortality rate	Infant mortality rate (per 1,000 live births)	WDI
	More developed financial market	Domestic credit provided by financial sector (% of GDP)	WDI

Notes: WDI stands for the World Bank-World Development Indicators Database; WEO stands for the IMF-World Economic Outlook Database; and FAOSTAT stands for the FAO Statistics Division Database.

Building on a previous study, the authors used a structural equation modeling approach to test three hypothetical models that examine the synergies and trade-offs among the three dimensions of sustainable development and how these synergies and trade-offs directly and indirectly impact structural transformation in Africa.

Structural equation models facilitate the estimation of the direct and indirect impacts of one latent on another. Such models begin by constructing latent variables (e.g. structural transformation) using observed variables or proxies. Once the observed variables are estimated to be a good fit for the latent variable, the relationship among the constructs is then estimated using ordinary least squares techniques. The observed variables or proxies for structural transformation as well as social, economic, and environmental sustainability are provided in Table 2.

The first model examines the impact on structural transformation of sustainable development strategies that prioritize the economic dimension. The second model examines the impact on structural transformation of sustainable development strategies that prioritize the social dimension. And the third examines the impact on structural transformation of sustainable development strategies that prioritize the environmental dimension. While each model focuses on one dimension of sustainable development as the entry point, the interactions with the other dimensions are also estimated to arrive at the total (i.e. direct and indirect) effects of each dimension on structural transformation.

In Model I, the direct effect of economic sustainability on structural transformation is estimated at 1.091 (i.e. the standardized regression weight), which implies that structural transformation improves by 1.091 standard deviations when measure to improve economic sustainability increase by 1 standard deviation. But the results also indicate that there are two indirect effects: one is through the social dimension and the other effect is through the environmental dimension.

The first indirect pathway reveals that the impact on structural transformation of economic interventions,

\* This is calculated by multiplying the two indirect effects (i.e., 1.073 by -1.630)

including measures to increase growth, investment, and energy intensity, are weakened when such efforts are mediated by efforts to improve social development. Social interventions reduce the direct impact of economic measures on structural transformation by approximately -1.74 standard deviations.<sup>8</sup> A possible reason for this is that there is a lag between investments in social indicators (e.g. adolescent fertility rates and improved sanitation) and their impact on the structural transformation (measured by proxies such as increased agricultural productivity and an increase in the GDP share of manufacturing).

Similarly, the impact of economic interventions on structural transformation is weakened when such interventions are mediated by environmental considerations (proxied by carbon dioxide emissions, forest area, etc.) However, this impact is relatively higher compared to a situation where economic interventions take into account social sustainability considerations (-1.74 standard deviations). Cumulatively, the two indirect effects total -0.935 standard deviations, reducing the direct effect of 1.09 to a mere 0.155, a decline of approximately 86 percent (Table 3).

**Table 3: Impact of sustainable development initiatives on structural transformation**

Dimension of Sustainable development	Direct Effect	Indirect: Economic	Indirect: Social	Indirect: Environment	Total Indirect Effect	Total Effect
Economic	1.09	-	-1.74	0.81	-0.935	0.155
Social	0.021	2.78	-	-2.73	0.418	0.439
Environmental	-0.191	1.72	-1.25	-	0.459	0.275

Source: Armah and Baek (forthcoming).

Model II, which reflects a scenario where transformation is driven by social considerations, shows that social development has a positive, but relatively weak, direct effect of .021 on transformation. However, this effect is magnified when such interventions are mediated by measures to improve economic sustainability (2.78 standard deviations). Trade-offs are observed

when social interventions are mediated by environmental considerations (-2.37 standard deviations). Nonetheless, on average, the negative environmental effect is offset by the positive economic effect, resulting in a total effect of 0.439 (i.e. a net indirect effect of 0.418 and a direct effect of 0.21).

Unlike Models I and II, Model III suggests that environmental development has a negative direct effect of -0.191 on structural change, but this negative effect is reversed to 0.275 standard deviations when environmental initiatives are mediated by economic considerations (1.72). On the other hand, social interventions further reduce the environmental impact by -1.25, resulting in a total indirect effect of 0.459.

In the final analysis, the findings of the model suggest that structural transformation can be advanced through the interactions of policies aimed at promoting social, economic, and environmental sustainability. However, sequencing matters. The synergies among the three dimensions of sustainable development are optimized when the structural transformation initiatives are anchored by robust social sustainability interventions.

### So how has Africa fared on the social dimension?

In reality, while Africa has made substantial progress on several social indicators, including child and maternal health, the continent lags behind most regions on several social indicators. Maternal deaths declined 45 percent between 1990 and 2015, largely due to substantial improvements in pregnant mothers' access to skilled birth attendants, which increased from 45 percent to 71 percent between 1990 and 2014. However, Sub-Saharan Africa (SSA) still accounts for two-thirds (66 percent) of all maternal deaths per year worldwide, and 19 African countries registered a maternal mortality ratio above 500 deaths per 100,000 live births in 2015. Linked to maternal deaths is the adolescent birth rate, which is in turn influenced by the contraceptive prevalence rate. In 2012, Africa registered the highest birthrate among adolescents worldwide (117.8 births per 1,000). The adolescent birth rate declined by a mere 5.5 percentage points over the 22-year period spanning 1990-2012. Reasons for the lackluster progress include the low contraceptive prevalence

rate in Africa. While the continent increased the contraceptive prevalence rate from 28 percent in 1990 to 43.6 percent in 2013, this figure is only higher than the rate in Oceania. Trends in extreme poverty have also been positive, but modest, declining by a mere 14 percentage points over a period of 22 years (1990-2012). Similarly, despite improvements in access to improved sanitation and water sources, the region as a whole failed to meet the Millennium Development Goal (MDG) targets. Access to improved sanitation in particular is extremely low in the SSA, with major health implications. (ECA, et al., 2016)

In effect, for the continent of Africa to sustainably transform its economies, it has to complete the unfinished business of the MDGs. Investments in social development will be vital to catalyze interventions in the economic and environmental spheres. A first step towards strengthening social sustainability alongside the economic and environmental dimensions is translating the international obligations and commitments of the Sustainable Development Goals (SDGs) into national policies on sustainable development. Secondly, countries must transition from normative standards to operational programs by integrating the principles of sustainable development into concrete programs and projects that are derived from national planning frameworks.

Furthermore, the interlinkages among the goals, targets, and indicators of the three dimensions of sustainable development require improved institutional coordination within governments and among governments, civil society, and the private sector to ensure coherent and integrated approaches to implementation. Explicitly identifying the interlinkages will also be useful to identify the interventions with the largest multiplier effects and sustainable development impacts.

Finally, investments in science, technology, and innovation will be critical to decouple GDP growth from environmental degradation. Where applicable, technology must be reoriented to respond to sustainability challenges. These efforts can be supported by strengthening capacities for technological innovation, including through a strong science-policy interface.

ANNEX

Table 4: Results (coefficients) of panel data analysis.

	Variable	MODEL I	MODEL II	MODEL III	MODEL IV	MODEL V
ECON	GDPPC	.0034			.0038 (2.003)**	.0035 (1.863)*
	INV	.0060 (4.369)***			.0038 (2.851)***	.0039 (2.962)***
	REC	-.0043 (-1.766)*			.0049 (1.983)**	.0047 (1.878)*
	EIL	-.3031 (-4.942)***			-.1684 (-2.520)**	-.1053
	UEMPL		.0566		.0452	.0873
SOC	SANIT		.0144 (4.104)***		.0115 (2.760)***	.0121 (2.899)***
	LIFE		.0073 (2.333)**		.0049	-.0042
	AFR		-.6066 (-6.268)***		-.4074 (-3.993)***	-.4303 (-4.220)***

	Variable	MODEL I	MODEL II	MODEL III	MODEL IV	MODEL V
ENV	CO2			.0881[2.614]***	.0302	.0095
	ARAL			-.2895[-4.766]***	-.1824[-2.857]***	-.2179[-3.365]***
	FORE			.0000	.0000	.0000
	WATS			.0138[8.327]***	.0063[2.848]***	.0064[2.643]***
	GOVS					.0005
INST	SOCIO					.0199[2.027]**
	CORR					-.0007
	DEMO					.0229[2.429]**
	C	5.8540 [36.236]***	6.8667 [12.160]***	3.7593 [14.894]***	5.8918 [9.454]***	5.5994 [8.593]***
	CHI-SQ. STATISTIC	10.6523**	47.4023***	14.0502***	58.4661***	55.5932***
Hausman Test	F-STATISTIC	145.7811***	136.6526***	101.1344***	61.7847***	62.4995***
	CHI-SQUARE	3936.091***	3689.621***	2730.628***	1668.188***	1687.487***
Wald Test						

	MODEL I	MODEL II	MODEL III	MODEL IV	MODEL V
Appropriate Model	Fixed Effect	Fixed Effect	Fixed Effect	Fixed Effect	Fixed Effect
Adjusted Rsquared	0.8965	0.9120	0.9086	0.9187	0.9199
Log likelihood	191.4405	231.3463	221.9623	255.1122	261.2915
F-statistic	134.2430	160.3597	153.8327	139.9591	129.5693
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000
Akaike info criterion	-0.6428	-0.8047	-0.7666	-0.8686	-0.8774
Schwarz criterion	-0.3616	-0.5235	-0.4854	-0.5193	-0.4940
Hannan-Quinn criter.	-0.5324	-0.6943	-0.6562	-0.7314	-0.7269
Durbin-Watson stat	1.2874	1.5254	1.4547	1.5991	1.6294

1. \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ ; and robust  $t$ -statistics in brackets.

2. ECON stands for economic dimension; SOC stands for social dimension; ENV stands for environmental dimension; INST stands for institutional dimension; GDPPC stands for GDP per capita; INV stands for investment; REC stands for renewable energy consumption; EL stands for energy intensity level of primary energy; UEMPL stands for unemployment rate; SANIT stands for sanitation facilities; LIFE stands for life expectancy at birth; AFR stands for adolescent fertility rate; CO2 stands for carbon dioxide emissions; ARAL stands for arable land; FORE stands for forest area; WATS stands for improved water source; GOV stands for government stability; SOCIO stands for socioeconomic conditions; CORR stands for corruption; DEMO stands for democratic accountability; and C stands for constant.



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# **Innovative Approaches to Development**





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Vidal Llerenas



Some new thinking on development is clearly underway – and not only on the part of civil society advocates. While reluctant to question the growth-led model of development, global attention is increasingly focusing on inequality as a problem, an obstacle to both development and growth. The 2030 Agenda for Sustainable Development, with its focus on transformation, its applicability to/in all countries (not just developing countries), and its breakthrough goals on tackling inequalities and promoting sustainable consumption and production reflects this new thinking, evident among both governments and conventional/mainstream institutions – particularly with regard to the long-avoided issues of income redistribution and government regulation.

For example, a recent International Monetary Fund (IMF) analysis on inequalities reiterates its conclusion that inequality



is a problem if growth is to be sustainable and also focuses on the need for redistribution:

Earlier IMF work has shown that income inequality matters for growth and its sustainability. Our analysis suggests that the income distribution itself matters for growth as well. Specifically, if the income share of the top 20 percent (the rich) increases, then GDP growth actually declines over the medium term, suggesting that the benefits do not trickle down. In contrast, an increase in the income share of the bottom 20 percent (the poor) is associated with higher GDP growth. (Dabla-Norris, et al., 2015)

Paying “particular attention to the income shares of the poor and the middle class—the main engines of growth,” the study concludes that widening income disparities in advanced countries are associated with “the rising skill premium” resulting from globalization and technological change, while rising inequality in emerging developing countries (EMDCs) is associated with “financial deepening,” or financial development (Dabla-Norris, et al., 2015).

Financial deepening generally means an increased ratio of money supply to gross domestic product (GDP). The more liquidity/money available in an economy, the more opportunities for continued growth. It can also support efforts to reduce risk and vulnerability for disadvantaged groups and increase the ability of individuals and households to access basic services like health and education, providing it is backed by/combined with well-crafted and targeted social and fiscal policies. The IMF is also revisiting its approach to financial deepening, altering its insistence that governments stay out of financial markets, and concluding that well-managed financial regulation is critical. Much depends on timing; if financial development proceeds too fast, it can lead to economic and financial instability, particularly if “poorly regulated and supervised. ...This puts a premium on developing good institutional and regulatory frameworks as financial development proceeds” (Sahay, et al., 2015).

Challenging the prevailing view that “tighter and more regulation to help safeguard financial stability can hamper financial

development,” the study finds that some regulation is critical for financial development as well as for financial stability. “Better regulation is what promotes financial stability and development” (Sahay, et al., 2015).

With regard to policymaking, the IMF paper on inequalities concludes that there is no one size fits all approach: “In advanced economies, policies should focus on reforms to increase human capital and skills, coupled with making tax systems more progressive. In EMDCs, ensuring financial deepening is accompanied with greater financial inclusion and creating incentives for lowering informality would be important” (Dabla-Norris, et al., 2015).

Other IMF studies have noted the correlation between income inequality and gender inequality across both rich and poor countries. A 2015 study, using the multi-dimensional Gender Inequality Index (GII), which ranges from 0 (perfect gender equality) to 1 (perfect gender inequality) finds that an increase in the GII is associated with “an increase in net [income] inequality (measured by the Gini coefficient) by almost 10 points” (Gonzales, et al., 2015). While in developed countries this is largely due to the gender gap in wages, as well as labor market participation, in less developed countries it is more closely related to education and health.

The same study finds that gender inequality has a strong association with income distribution, especially in the top 10% income group, perhaps as this group is more affected by gender discrimination:

If the GII index increases from the median to the highest levels, the income share of the top 10 percent increases by 5.8 percentage points, which is the difference between Norway and Greece. Gender inequality also goes hand in hand with lower income shares at the bottom of the income distribution. As before, if the GII index increases from median to highest levels, the income share of the bottom 20 percent declines by 2 percentage points. (Gonzales, et al., 2015)

It therefore argues that, in addition to redistribution, a targeted policy response is needed:

Redistributive policies can help lower income inequality directly and if not excessive be pro-growth. However, in order to ameliorate deeper inequality of opportunities, such as unequal access to the labor force, health, education and financial access between men and women, more targeted policy interventions are needed as a complement to redistribution. (Gonzales, et al., 2015)

This approach also applies to trade and investment policy. In July 2016, Roberto Azevedo, the head of the World Trade Organization (WTO), acknowledged that international trade generally favors multinational corporations. Addressing the widespread assertion that it is the private sector that creates the most jobs, he made it clear that it is micro, small, and medium enterprises, not large corporations, that do this:

Trade is sometimes thought of as an economic activity that only favors the large corporations. While we may disagree, the reality of international trading is often harder and more expensive for Micro, Small and Medium Enterprises (MSMEs). The smaller the business, the bigger the barriers can seem. MSMEs are responsible for the largest share of employment opportunities in most economies, up to 90% in some countries; this is especially true when looking at equal opportunities for young workers and women. (Azevedo, 2016)

These studies and statements from mainstream institutions like the IMF and WTO have important implications for the role of the state, particularly with regard to income redistribution and financial regulation. Are they indications of the need for transformation or are they indications of the depth of these “trying times”? Do they seek to save the existing model or spearhead transformation?

# The 2030 Agenda for Sustainable Development

Similar questions apply to the 2030 Agenda for Sustainable Development and its 17 goals. Can the 2030 Agenda be a game-changer? Can it be an agenda for structural transformation for people and planet, not one for either people or planet or for some people, and some regions before others?

Certainly the 2030 Agenda represents an important break with past agendas and reflects a political effort to come to terms with the new economic, political, and planetary realities at all levels. It is perhaps the first truly post-colonial agreement in that it is universal, going beyond the paradigm of development cooperation and requiring all countries to measure and report on progress, not just developing or “programme” countries and not only in aggregate or income terms. It also is an agenda for all countries on how to tackle inequalities and insecurities living together on a planet of finite resources, with some planetary boundaries already exceeded. *It is clear that countries cannot continue their current unsustainable consumption and production patterns as they work to eliminate poverty and reduce inequalities.*

Most importantly, perhaps, at least two of the goals—Goal 10 to reduce inequality within and among countries, and Goal 12 to ensure sustainable consumption and production patterns, go further than global agreements have done in the past and confirm the ambition and universality of the 2030 Agenda.

## **BOX: AMBITIOUS GOALS; INTERLINKED TARGETS**

### **Goal 10:**

#### **Reduce inequality within and among countries**

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations

10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions

10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and land-locked developing countries, in accordance with their national plans and programs

10.c By 2030, reduce to less than 3 percent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 percent (UN, 2016)

## Goal 12:

### Ensure sustainable consumption and production patterns

12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

12.4 By 2020, achieve the environmentally sound management of chemicals and all waste throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impact on human health and the environment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

12.b Develop and implement tools to monitor sustainable development impact for sustainable tourism that creates jobs and promotes local culture and products

12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impact, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impact on their development in a manner that protects the poor and affected communities (UN, 2016)

In addition, a comprehensive set of targets on creating an enabling environment for sustainable development, including finance, trade, and “systemic issues” such as policy, institutional coherence, and monitoring and accountability, is captured in a stand-alone Goal 17. This goal, along with implementation targets for each goal and the relevance of many targets across the entire goal-set, marks an enormous step forward – away from silo-minded programming towards integrated policy development.

### Cross-goal dynamics

For the most part, there is a systematic effort through the targets to link the goals in a more holistic manner. Thus Goal 8, for example, to promote sustained, inclusive, and sustainable economic growth, with full and productive employment and decent work for all, is closely linked to Goal 1 on poverty eradication, Goal 5 on gender equality, and Goal 10 on inequalities, as well as to Goal 9 on industrialization, infrastructure, and innovation.

The International Labour Organization (ILO) 2016 report on *The World of Work* makes clear how this world is undergoing major changes due to factors such as technology and the impact of climate change, as well as the changing nature of production and employment. Demographics are also an important factor:



“Current demographic trends bring 40 million people to the labor market each year, meaning that between now and the year 2030 the world economy needs to create over 600 million new jobs” (ILO, 2015).

But what kind of jobs? As the Secretary-General’s 2016 report on the Progress towards the Sustainable Development Goals (SDGs) points out:

The share of GDP that is attributed to labor has been trending downward over the past 15 years as processes have become more mechanized and capital assumes a growing share of GDP. Over this period, the labor share of GDP only increased in Oceania and Latin America and the Caribbean, where it was at 48 and 52 percent, respectively, in 2015. Eastern Asia saw flat growth of labor share of GDP and continues to maintain the highest share in the world at 61.4 percent of GDP. While the labor share of GDP fell from almost 58 percent in 2000 to just over 55 percent in 2015 for developed regions, developing regions experienced a slight improvement to 55 percent. Stagnating wages across all regions contributed significantly to these results. (UN Stats, 2016)

## Industrialization and innovation

What does this imply for Goal 9, which reads in full: “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”? This goal was fought for and welcomed as an advance by developing countries, who for at least three decades have been consigned though the Washington Consensus development model to “export maximization,” led by commodity production and mineral extraction for export.

Several of the targets for Goal 9 seek to monitor and address this issue. Target 9.2 mandates that countries “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.” Target 9.3 commits countries to: “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” (UN, 2016).

In addition, some of the Goal 9 targets focus not only on the share of industry in the economy but also on the jobs of people in these industries. Target 9.5 for example, to “enhance scientific research and upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries” through, among other things, “substantially increasing the number of research and development workers per 1 million people and public and private research and development spending” (UN, 2016). Two global indicators help monitor these targets, looking at “research and development expenditure as a proportion of GDP” (9.5.1) and “researchers (in full-time equivalent) per million inhabitants” (9.5.2).

With regard to the frequently cited trade-off between industrialization and a sustainable environment, Target 9.4 calls for greater adoption of clean and environmentally sound technologies and industrial processes and increased resource efficiency, while Target 9.a calls for assistance to “sustainable and resilient infrastructure development countries through enhanced financial, technological and technical support” (UN, 2016). The Technology Facilitation Mechanism created at the Third International Conference on Financing for Development in Addis Ababa, has the potential to support developing countries’ concrete technology needs.

In some cases, cross-goal dynamics serve to operationalize different goals in a sustainable manner. For example, the inclusion of Target 8.4, which mandates that countries “endeavor to decouple economic growth from environmental degradation,” has obvious implications for achieving Goal 9, on infrastructure, industrialization, and innovation. So too does Target 12.4 to “achieve environmentally sound management of chemicals and wastes and significantly reduce their release to air, water and soil” (UN, 2016).

# From cross-linked goals to an integrated system

The significance of an integrated approach to policies is made strongly by the 2016 Working Group paper *Towards Integration at Last?*, prepared for the United Nations Department of Economic and Social Affairs (UN DESA). David Le Blanc (2015) examines the SDGs as a “network of targets.” The paper excludes Goal 17 and targets the means of implementation (MOI) in each goal in order to highlight the links among thematic areas. Absent MOI, it finds that Goals 10 and 12 have the greatest number of linkages, and regards these goals as the most significant departure from previous approaches to development, in that they link all of the goals into a system, requiring trade-offs and interdependencies (Le Blanc, 2015).

This systemic approach highlights one of the most striking differences between the SDGs and the Millennium Development Goals (MDGs): “Insufficient understanding and accounting of trade-offs and synergies across the sectors have resulted in incoherent policies, adverse impact of development policies focused on specific sectors on other sectors, and ultimately in diverging outcomes....” Citing the UN MDG reports, he adds that many of the targets encapsulated in MDG 7, which relates to environmental protection, have not been achieved and have in some cases been negatively impacted by policies and actions aiming to achieve other goals (Le Blanc, 2015).

Noting that sustainable consumption and production (SCP), especially, “has suffered from being weakly integrated with other areas of work and addressed as an ‘add-on’” in development policies, Le Blanc (2015) suggests that “actors in many sectors will have to work with SCP-related targets under their goals, which may finally enable greater integration of SCP across the board” and explains:

In particular, the fact that resource efficiency is an integral part of SDG 8 on growth and employment can be seen

as quite revolutionary, in that this fundamental aspect of SCP, rather than being seen in isolation from growth, may now be more systematically considered by strategies and policies aiming to spur growth and employment, which have both high priority everywhere and strong anchoring in institutions at all levels. (Le Blanc, 2015)

He concludes that the multiplicity of targets that link several of the goals reflects that:

The recognition of the international community of the importance of links among the goals... The existence of these targets makes what could have been a collection of unrelated goals a system; in a sense, it grounds the political work that the SDGs represent firmer into a reality that is full of tradeoffs and interdependences. (Le Blanc, 2015)

The provision of a comprehensive and integrated policy framework through the SDGs stands in contrast to the streamlined or simplified approach that defined the MDGs and was advocated by many donors, offering a new opportunity to break through the current pick-and-choose approach practiced by donors. This is an approach that will be tempting to many governments as they develop strategies to report internationally and seek external funding. A commitment to domesticate policies and developing indicators that advance the SDGs does not require equal treatment for all targets and global indicators. It does necessitate the integration of the SDGs into national policy and budget processes, with a “whole-of-government” approach.

High-level political commitment and leadership is needed to ensure that one ministry does not monopolize the 2030 Agenda. All policies, including those promoted and led by trade and finance ministries must demonstrate accountability to the 2030 Agenda and the achievement of the SDGs in a democratic and transparent manner. This will require regular parliamentary hearings and reporting and meaningful consultation with members of civil society. Global agreement is a standard-setter for national policy, not a usurper of national democracy.

# Implementing the 2030 Agenda: Pushback and end-runs

Given these implications, it is perhaps not surprising that some Member States agreed to the 17 goals and 167 targets only reluctantly. For example, Goal 10 was dropped during the negotiations; it was thanks to the determination and work of civil society organizations across all regions that it was reinstated. The reality is that the UN is not the preferred forum for rich and powerful countries to do business on matters of the economy.

Now, as the implementation stage is underway, we see another area of push-back – a set of proposed global indicators that are in many cases weaker than the targets and in other cases serve to reinforce a weak target.

An agenda can be re-written and reduced by how it is financed and how progress is measured. The fact that the goal to reduce inequalities within and among countries does not include a measure of inequality – either the widely used Gini co-efficient or the simpler to understand Palma ratio – illustrates this particularly clearly.

With regard to financing, the struggle (led by civil society organizations in the Addis process) to agree on a global tax authority under the auspices of the UN, for example, was lost, as was the overwhelming emphasis on private resources and blended finance.

The Addis process on financing for development, and the one by which the targets were selected, however, did succeed on placing public-private partnerships (PPPs) under the microscope. Various studies have shown the risks of these partnerships, which include:

- PPP financing costs are higher than public costs due to higher interest rates involved in private sector borrowing;
- Debt and fiscal risks, or contingent liabilities, of PPPs are often poorly accounted for, while the public sector must

take ultimate responsibility when a project fails or if the private partner goes bankrupt or abandons the project;

- Social and environmental regulation and enforcement, such as workers' and women's rights, tax regulation, transparency rules and environmental safeguards are often lacking in PPPs;
- Government budgets are constrained by payments required over longer PPP contractual periods (25-30 years in some cases), compared to conventional service contracts (e.g., for refuse collection, 3-5 years), from higher transaction costs and from legal constraints against payment reduction schemes. (Global Policy Forum, 2016)

Similarly, a World Bank evaluation of PPPs (IEG, 2013) finds that:

PPPs are not a panacea: The literature points at the negative effects on public budgets because of contingent liabilities not being adequately assessed, insufficiently reported, or accounted for off-balance sheet. Furthermore, PPPs are reported as being more expensive due to high private sector borrowing costs and high transaction costs in general. There are also reports on PPPs having inadequate risk allocation due to lack of competition during bidding and on PPPs being subject to renegotiations which may put the public sector in a weak position and subsequently lead it to accept undue risks. (IEG, 2013)

The emphasis on PPPs has brought with it increased analysis of and attention to their efficiency, including from the UN and its Member States. A UN DESA working group paper in February 2016 examining the experience of PPPs across a range of countries, concludes: "Overall, the evidence suggests that PPPs have often tended to be more expensive than the alternative of public procurement while in a number of instances they have failed to deliver the envisaged gains in quality of service provision, including its efficiency, coverage and development impact" (Chowdhury, et al., 2016).

Accordingly, the Addis Ababa Action Agenda on Financing for Development highlights the need to “build capacity to enter into PPPs, including as regards planning, contract negotiation, management, accounting and budgeting for contingent liabilities,” and equally the need to “share risks and reward fairly, include clear accountability mechanisms and meet social and environmental standards” (as cited in Chowdhury, et al., 2016).

## Monitoring and accountability

While a commitment to rigorous monitoring and accountability in the 2030 Agenda failed to gain consensus among Member States, who pressed for “review and follow-up,” the SDGs include some useful targets. Under Goal 16, which includes a focus on governance, Target 16.6 calls on countries to “develop effective, accountable and transparent institutions at all levels.” This is particularly pertinent in light of the weakening of public institutions, including the UN, and an ongoing disconnect between the 2030 Agenda and the focus and programs of global development agencies. A more systematic approach and implementation and accountability to core and extended/linked targets may contribute to needed reforms of the UN development system (UNDS).

The Independent Team of Advisors appointed to support the United Nations Economic and Social Council (ECOSOC) Dialogue on the longer-term positioning of the UNDS found that **“increased earmarking of resources undermines flexibility and inter-linkages.”**

In 2014, some 84% of UNDS expenditures were funded with voluntary and earmarked resources. These non-core resources – typically determined bilaterally at the country level and outside the intergovernmental mandates and processes of UNDS entities – have grown significantly faster than core resources. This represents a growing bilateralization of multilateral aid.

Between 1999 and 2014, total non-core resources increased by 182% in real terms, while core resources increased by only 14%. In addition to that, significant



parts of core-contributions are also used for subsidizing earmarked funded projects. As a result, funds and programs are left with very little resources for implementing internationally agreed strategic plans. (United Nations Economic and Social Council [ECOSOC], 2016a)

In the face of being underfunded and poorly funded over decades, UNDS is marked by a high degree of fragmentation, competition, and a tendency to operate in silos, weaknesses that have been recognized — including by the same donors whose practices have helped create the situation. As the Independent Team of Advisors made clear: “This heavy reliance on strictly earmarked funding creates incentives for UN entities to continuously broaden their mandates, which over time has contributed to overlap and duplication of activities and other inefficiencies” (ECOSOC, 2016b).

The UN system is being challenged even more urgently to reform in order to be able to support the 2030 Agenda, starting with a unified vision. As the ECOSOC Bureau Summary of the 2016 ECOSOC Dialogue states:

The eradication of poverty, promotion of sustainability of people and planet will be the overarching vision of the UN development system in the new era. This will call for strong capacity in the UN development system at country, entity and global levels to target economic, social and environmental dimensions including global agreements, norms and standards, in program activities. (ECOSOC, 2016b)

The summary document also highlights the issue of governance:

In the post-2015 era, the UN development system will also need governance capacity that can effectively balance agency and system-wide interests as well as the national and global perspective in decision-making... The composition of governing bodies should also help ensure strong political and performance legitimacy

of entities of the UN development system. (ECOSOC, 2016b)

The summary concludes:

The term ‘governance’ needs to be better defined in the context of the UN development system, including the role of governing bodies at entity and system-wide levels. The overarching objective should be to strengthen the ownership of Member States, individual and collectively, of the work of the UN development system. (ECOSOC, 2016b)

The DESA Working Group paper on integration referenced earlier makes clear why this is necessary:

In designing and monitoring their work, agencies concerned with a specific goal (e.g., education, health, economic growth) will have to take into account targets that refer to other goals, which, due to the normative clout of the SDGs for development work coming forward, may provide stronger incentives than in the past for cross-sector, integrated work. (Le Blanc, 2015)

Yet there is deep resistance within the development entities to move from a collection of specialized silos to a system. This can be seen in the ongoing effort to simplify and reduce the 2030 Agenda — starting with the goals, going on to the targets, and then the indicators. This is despite the fact that one of the “drawbacks of the MDGs was that the ‘silo’ goals encouraged silo policies and did not make links and trade-offs across areas explicit” (Le Blanc, 2015).

UN funding patterns, determined by donor countries, create additional obstacles. The UN is chronically underfunded, and this pattern and its consequences were examined in a 2015 publication entitled *Fit for Whose Purpose?* The UN system’s entire budget is \$42 billion dollars – less than \$6 dollars per person. This compares with \$100 billion dollars spent globally each year on chocolate, \$991 billion dollars in illicit financial flows from

developing countries, and \$1.75 trillion dollars in world military expenditures.

The UN has been put through a process of structural adjustment, which has fueled its turn to the corporate sector (GPF, 2015).

## Accountability — but not for the corporate sector?

Margaret Chan, who heads the World Health Organization (WHO), has stated that corporate influence “is one of the biggest challenges facing health promotion... it is not just Big Tobacco anymore. Public health must also contend with Big Food, Big Soda and Big Alcohol. All of these industries fear regulation and protect themselves by using the same tactics” (Chan, 2013).

Saying that “Research has documented these tactics well,” Chan (2013) has highlighted many of them: “...front groups, lobbies, promises of self-regulation, lawsuits and industry-funded research that confuses the evidence and keeps the public in doubt” as well as “gifts, grants and contributions to worthy causes that cast these industries as respectable corporate citizens in the eyes of politicians and the public” and:

Arguments that place the responsibility for harm to health on individuals and portray government actions as interference in personal liberties and free choice. This is formidable opposition. Market power readily translates into political power. Few governments prioritize health over big business. [...] This is not a failure of individual will-power. This is a failure of political will to take on big business. (Chan, 2013)

# Everyone has staked their claim...

The breadth and ambition of the 2030 Agenda have attracted attention across the board. From all social groups to the G20, which has put it on top of its own agenda, to the head of a Danish pension fund that declared the SDGs a wonderful catalog for investors.

But where is the universality of policies accountable to achieving the SDGs? The Organisation for Economic Co-operation and Development (OECD) has revised the definition of official development assistance (ODA) to include some military and security activities outside the UN process, parallel with, not in collaboration with, the negotiations on the 2030 Agenda (Rumney, 2016). It is also producing a more comprehensive measure of aid called total official support for sustainable development (TOSSD), working with new and traditional donors, multilateral institutions, civil society, foundations, and the private sector to shape and operationalize it (see OECD). At the same time, however, it is negotiating trade and investment agreements that will have an impact on efforts to achieve the SDGs.

Universality and extra-territorial obligations have implications in Europe for the increasing waves of refugees and migrants and are understood as having an impact on policies and financial flows, but where is the recognition of the extra-territorial obligations of countries having a dominant say in shaping the rules of debt and trade and the spill-over of their tax policies on other countries' ability to protect the human rights of their residents and meet their obligations for sustainable development?

## Obstacles to achieving the SDGs

In July 2016, the first High-level Political Forum (HLPF) since the adoption of the 2030 Agenda was convened. Set up as the premier UN body for the follow-up and review of the 2030 Agenda, the 2016 session of the HLPF featured the presentation of 22

voluntary national reports from both rich and poor countries and from all regions. The process and reports were notable in terms of the degree of civil society engagement in their preparation, and they provided a reality check in terms of the planning for, and obstacles to, achieving the SDGs.

The implementation price tag has gone up from billions to trillions of dollars. Member States – and the international community – are looking for trillions, but operate with the assumption that the public sector is played out. The reality is that trillions of dollars have been detoured from the public purse by tax avoidance, tax evasion, illicit financial flows (addressed through Target 16.4), and the lack of a sovereign debt workout mechanism.

Taxpayer money – and government revenue – is also tied up in investor-state disputes and bilateral investment treaties (BITs), some of which block policies to support domestic and small-scale enterprises. Policies to support local industry and stimulate decent work are increasingly prohibited through legally-binding free trade agreements (FTAs), BITs and, to a lesser degree, the WTO's Agreement on Trade-Related Investment Measures (TRIM). This ceding of state power to enact legislation to protect its population and stimulate the domestic economy is particularly evident in several mega-trade deals under negotiation, including the TransPacific Partnership, the Transatlantic Trade and Investment Partnership, and the Regional Comprehensive Economic Partnership in Southeast Asia. For example:

- 2016 – WTO panel ruled in favor of the United States' charges against India for its state support to domestic solar energy enterprises... they violated India's national treatment obligations under the GATT 1994 and the WTO TRIMs agreement. India argued that under the Paris Agreement on Climate Change (2015) (see UNFCCC), it had an obligation to ensure the adequate supply of clean electricity generated from solar power at reasonable prices in order to mitigate climate change and achieve sustainable development.
- Canada was taken to arbitration court for violating provisions of the North American Free Trade Agreement (NAFTA) by American renewable energy company Mesa

Power Group for preferential tariffs and guaranteed grid access for energy production awarded by Ontario's 2009 Green Energy Act to domestic renewable energy producers. Canada argued that boosting production and jobs in its domestic green energy sector is integral to the national response to climate change (ICTSD, 2016).

Alfred de Zayas, a UN Independent Expert on the promotion of a democratic and equitable international order, has called for the abolition of the investor-state dispute settlement system, stating in his report:

Over the past 25 years bilateral international treaties and free trade agreements with investor-state dispute settlement have adversely impacted the international order and undermined fundamental principles of the UN, State sovereignty, democracy and the rule of law. ...a fundamentally flawed system having adverse human rights impacts and... has upset the international order by debilitating States, encroaching on their regulatory space and aggravating inequality and inequity in the world. (OHCHR, 2015)

## Moving forward

This partial survey of policy developments and demands, mainly through the lens of implementing the 2030 Agenda for Sustainable Development, the most recent comprehensive global agreement, illustrates the breadth and depth of needed changes – changes in mindset, responsibilities, and actions. Universality in application envelops not only all countries and previously excluded social groups; it also requires naming and shaming obstacles to implementation and pro-active strategies for overcoming them.

Confronted with achieving the SDGs within planetary boundaries, no country is sustainably developed, and the rich and powerful have special responsibilities.

Not only are rich countries now responsible for reporting on domestic efforts to end poverty in all its forms, ensure equal access to health care, guarantee labor rights, reduce gender gaps in wages and employment, and reduce unsustainable consumption and production and the use of fossil fuels, to name a few, they also have international responsibilities and extra-territorial obligations for past, present, and future actions and omissions affecting others beyond a country's borders.

Germany, for example, is requiring all ministries to align their programs to the SDGs and has started a discussion on how to adapt the goals to national realities. The government has also committed to engaging all sectors of society in national processes and global reporting. In Italy, although the government has not designated a coordinating body responsible for developing sustainable development strategy, a benchmark to measure national progress already exists: "In 2013, following a thorough participatory process, Italy [] adopted a set of indicators for measuring equitable and sustainable well-being (BES). The BES allows the analysis at the provincial and municipal levels and is now the basis for measuring national well-being in the academic world" (Bissio, 2016).

All countries also have responsibilities for actions and omissions of non-state actors, such as transnational corporations and their international supply chains. As civil society organizes to defend and promote the SDGs, they are increasingly pressing governments to address these responsibilities, as well as to establish a coordinating body that includes representatives from key ministries to ensure a whole-of-government approach.

How will these accountability challenges manifest as all countries report at all levels on their commitments and actions in implementing the SDGs? Will the goals, targets, and indicators apply to any public or private institution that is a partner in implementation? Will Member States step up to the challenge offered by the 2030 Agenda to re-claim their unique responsibility for democratic governance?



### KEY GLOBAL AGREEMENTS OF 2015

“Transforming our world: The 2030 Agenda for Sustainable Development (A/RES/70/1),” United Nations, September 2015.

“The Addis Ababa Action Agenda of the Third International Conference on Financing for Development,” United Nations, July 2015.

The Paris Agreement under the United Nations Framework Convention on Climate Change, UNFCCC, 2015.

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**Alternative  
Approaches  
to Mega-  
Regional Trade  
and Financial  
Agreements  
and Climate  
Change**







hen mega-regional trade and investment agreements undercut the fight against climate change and undermine development, it becomes both urgent and necessary to consider alternative approaches.

Capitalist accumulation and the exploitation of the atmosphere have prompted the largest planetary crisis in the form of climate change (SERVINDI, 2009; Vatican, 2015). The hyper-accumulation of wealth in the top 1 percent of the population and the unjust distribution of wealth among the majority of the global population have led to a social and ethical crisis for the planet and a crisis of credibility for institutions (Piketty, 2014; Kersley and Stierli, 2015; Reuben, 2016).

In response to these crises, as well as the global demand for global, regional, and national solutions, the international community recently signed the Paris Agreement on Climate Change



(UNFCCC, 2015), the 2030 Sustainable Development Agenda (UN, 2015; UNDP, 2016), and the Addis Ababa Action Agenda on Financing for Development (UNCTAD, 2015; ECLAC, 2016).

Contradictory to the direction, purposes, and commitments laid out in the truly multilateral agreements negotiated at the UN, the major powers have negotiated their own mega-regional trade and investment deals, including the Trans-Pacific Partnership (TPP), Transatlantic Trade and Investment Partnership (TTIP) (European Union, 2016a and 2016b<sup>1</sup>), and the Trade in Services Agreement (TiSA) (Kelsey, 2015; Menotti, 2015).

## Global Priorities

With every passing day, it becomes increasingly evident that the effects of climate change (both present and future) are threatening life on this planet across the entire world. Therefore, any alternative development policy must necessarily entail adopting and implementing policies, institutions, and actions against climate change and in support of sustainable development.

Countries have made significant and manifold pledges to change international policy by adopting and implementing their national agendas and accomplishing defined goals that are consistent with global objectives. For example, reducing greenhouse gas (GHG) emissions, fighting against the underlying causes of emissions, or adopting and implementing mitigation and adaptation policies to curb the impacts of climate change.

With every passing day, in turn, so too does recognition grow—from a multi-factor standpoint—that there is a need to address the issue of climate change and development and secure financing to construct coherent policies that complement one another and support the public actions pledged; namely, to transcend sectoral policies and give rise to articulated policies and progress in matters of climate change (as with sustainable development and its related social goals).

Paradoxically, at the bilateral and multilateral level, hundreds of trade and investment agreements (TIA)

<sup>1</sup> This textual proposal is the European Union's initial proposal for a legal text on climate, which would be included in the "Trade and Sustainable Development" chapter of the TTIP. It was made public on July 14, 2016.

have proliferated, giving rise to the so-called spaghetti bowl (a patchwork of entangled rules) (Bhagwati, 1995). Potent global forces are working to impose binding mega-regional trade and investment agreements, like the TPP, TTIP, and TISA, that are subject to the jurisdiction of their own tribunals and contain extreme penalties that threaten public action, the implementation of climate change and sustainable development policies, and even the erosion of international law and the functioning of multilateral institutions.

In these circumstances, there is a very real risk involved in continuing to sign voluntary international and domestic agreements that have a long-term vision and good intentions, but which are non-binding and able to be overruled by the power of mandatory supranational mechanisms that are crippling international legal and multilateral institutions and are detrimental not only to alternative development policies, but also to the survival of the entire planet.

To lay the groundwork for a climate-just alternative development policy, in other words, to confront the climate crisis from a standpoint of fair and equitable public interests, governments must urgently enact and implement policies to halt the exploitation of fossil fuels, make a complete transition to clean energy, reduce other sources of GHG emissions to a minimum, revamp their economies, and develop the capacity to mitigate and adapt to climate change.

However, the current model of trade and investment — created pursuant to the interests and influence of contemporary transnational companies and hegemonic financial institutions — involves a wide range of threats to these climate imperatives.

We are therefore on a “turbulent path full of obstacles” (R. Bisio dixit). One initial critical step is to unmask the true nature of mega-regional TIAs and craft real changes that prioritize climate change, fair and sustainable development, and democracy. For now, we offer several brief testimonials and an analysis of the environmental, social, and legal impacts of these trade and investment deals, as well as some of the general alternative policy statements that TIAs should contain.

## Proof Of The Illegitimacy Of Mega-Regional Agreements

It is an open secret that the negotiations of mega-regional agreements (and the texts produced) have been, and continue to be, conducted under procedures far-removed from any sort of democratic transparency. Pursuant to the strictest rules of absolute secrecy, the content of these negotiations is not only sealed from the general public, but is even withheld from lawmakers in each country, with one exception: lobbyists and direct representatives of major transnational corporations are allowed to participate quasi-directly (Corporate Europe Observatory, 2012; Muñoz, 2015; Brown, 2015; Open Secrets). In the face of a society calling for transparency and democracy, this secretive method lends itself to illegitimacy and ethical failings, a terribly enhanced example of the Orwellian process that the scholar Jagdish Bhagwati denounced 21 years ago (1995).

Once the content of the finalized mega-regional deals (TPP) and the deals that are still in the process of negotiation (RTIP and TISA) was leaked or released, the reaction of jurists, international experts, scholars, and social movements has been swift and critical, calling the deals illegitimate and even offering arguments that these deals are likely in violation of the government's international obligations as part of the UN (Public Citizen, 2016). In other words, a wholehearted legal, political, and social rebuke (OHCR, 2016a and 2016b, Communication of Rapporteurs..., 2016).

## The Environmental Rhetoric Of Mega-Regional Agreements

In response to more than two decades of environmental and developmental havoc induced by trade and investment deals dating back to the North American Free Trade Agreement (NAFTA) (Sierra Club, et al., 2014; Sustainable Business, 2014), alternative policy networks and social movements have created

alternative proposals concerning climate change, fair and sustainable development, and democracy.

Since the early days of the NAFTA negotiations, social organizations highlighted the inherent contradiction of the agreement, in that the official text lacks provisions to protect the environment and labor rights, among other things. In light of this issue, and combined with mounting social pressure, the authorities were eventually forced to add two parallel agreements to NAFTA (1994) that deal with these two themes. However, the parallel agreements lack teeth, meaning that these instruments designed to prevent or inhibit the violation of environmental or labor protections are non-binding, resulting in a rhetoric of soft power against hard power. The true power is in the hands of the market and investors, which have proved their obsolescence over the course of the 22 years since the implementation of the agreement.

In Mexico, the official estimate of the annual average cost of environmental depletion and degradation (COED) for the period 2004-2012 amounts to 10 percent of GDP, a clear example of the degree to which the rhetorical environmental provisions in trade and investment agreements like NAFTA and its parallel North American Agreement on Environmental Cooperation (NAAEC) are dysfunctional, ineffective, and dangerous. The laughably high annual average amount necessary to settle that internal ecological debt hangs over Mexico like a time bomb that jeopardizes the future of the country (Villamar, 2016). The North American Agreement on Labor Cooperation (NAALC) is similar, or perhaps even worse. A climate of corruption and institutional repression has permitted 95 percent of collective labor contracts to be contracts that protect employers, thereby voiding the pledges related to democracy and labor transparency made as part of NAFTA and the commitments to labor rights under the International Labour Organization (ILO) (ILO; Bensusan & Alcalde, 2013; Arroyo-Pickard, 2016).

The numerous rights granted to investors and the subsequent launch of the fabled investor-state dispute settlement mechanism ushered in an age in which national courts were privatized and traded in for transnational tribunals, mechanisms, and corporate judges, with no right of repeal or review.

The first NAFTA lawsuit was filed against the Mexican government by the company Metalclad, Inc. (see Gob.mx; U.S. Department of State, 1999); Metalclad sued not to establish their sovereign power to regulate a hazardous-waste landfill site – in breach of national regulations – but rather due to a violation of the company’s right to reasonably-expected economic benefits due to the government’s refusal to allow the site to open. The judges of the transnational tribunal ruled in favor of Metalclad, Inc., ordering the Mexican government to pay the company compensation of \$16.8 million dollars (the company hadn’t even invested \$2 million) for breach of investor rights, pursuant to Chapter 11 of NAFTA (Bejarano, 2001).

The immediate consequence of the ruling against the Mexican government was the fortification of an attitude that favors investor rights over the constitutional obligation to protect the environment and the health of its inhabitants. From an environmental perspective, the ruling established a precedent that allowed powerful transnational groups from the *maquiladora* and extractivist sectors (particularly mining) to repeatedly flout the law.<sup>2</sup>

The investor-state dispute settlement mechanism and its consequences constitute an international threat to the exercise of national sovereignty and the enforcement of environmental regulations. Between 1997 and 2016, a total of 511 cases were filed against governments (an average of 27 cases a year from 1997 to 2016, and 33 cases a year from 2005 to 2016)! Oil and mining companies initiated the majority of these proceedings against the governments of developing countries (see ICSID Caseload).

TransCanada is responsible for the most recent and exceptional environmental regulations lawsuit, suing the U.S. government for denying TransCanada the permit it needs to build the Keystone XL pipeline as part of the preventive actions it has taken in the national interest. TransCanada is demanding compensation to the order of \$15 billion dollars (CRS, 2016; Dlouhy, 2016).

Under the TPP and, seemingly, the TTIP, Chapter 11 from the pioneering NAFTA has been broken down and enhanced to

benefit transnational investors, with Chapter 9 on the Rights of Investors and Chapter 28 on Dispute Settlement, compared to the legally feeble Chapter

<sup>2</sup> Translator’s note: A *maquiladora* in Mexico is a factory that operates under preferential tariff programs established and administered by the United States and Mexico.

20 on the Environment, Chapter 23 on Development, and Chapter 19 on Labor.

## Mega-Regional Trade And Investment Projects Are Detrimental To The Environment And Development

The release of the official text of the TPP in November 2015 confirmed the previous conclusions made by various environmental and academic organizations in response to leaked drafts of the documents. The following example is telling of these changes:

Enormous changes were made to the themes of trade and climate change from the the draft that was leaked by WikiLeaks in November 2013 and the final official release of Chapter 20, Environment. In the draft version, the heading of Article SS.15 was “Trade and Climate Change,” while the term “climate change” was completely removed in the final text. The equivalent article became 20.15, and the new title appears to give equal weight to economic considerations: “Transition to a Low Emissions and Resilient Economy.”

Likewise, the following statement was scrapped:

1. The Parties acknowledge climate change as a global concern that requires collective action and recognize the importance of implementation of their respective commitments under the United Nations Framework Convention on Climate Change (UNFCCC) and its related legal instruments. 2. The Parties recognize the desirability that trade and climate change policies be mutually supportive, and that policies and measures to deal with climate change should be cost effective. The Parties further recognize the role that market and non-market approaches can play in achieving climate change objectives.

It was replaced by: “1. The Parties acknowledge that transition to a low emissions economy requires collective action.” References to climate change and to the UNFCCC and related legal instruments were eliminated, and there is no longer any recognition of a relationship between trade and climate change.

An additional report from the Chairs of the TPP Environment Working Group, also leaked by WikiLeaks, suggested that in 2013, Vietnam, Peru, and Malaysia wanted references to fossil fuel subsidies removed from the official text, but Australia and Canada did not agree.

Adapted from: Gleeson, 2015.

For their part, the draft TTIP chapters that have been leaked bear a close resemblance to the TPP chapters in terms of their content and purpose. To date, it remains to be seen whether the TTIP will include a special chapter on the environment. European environmental organizations (Green Peace; European Union, 2016c; Colwell, 2016; FOE Europe, 2016) managed to leak a draft of the EU textual proposal on Energy and Raw Materials, which has been deemed sabotage on Europe’s policy against climate change and efforts to transition to clean energy.

A detailed critical analysis of the EU proposal mentions the following points, among others (FOE Europe, 2016):

The leaked EU proposal for a chapter on energy and raw materials in the TTIP directly undermines the EU’s policies on clean energy and energy efficiency. It also runs completely against urgently needed measures based on the Paris Agreement on Climate Change. Finally, it will continue to higher energy costs for consumers and it will hinder a rapid transition from fossil fuels to renewable energies as it will lock the EU into further dependency on gas imports from the US.



### IT UNDERMINES ENERGY EFFICIENCY POLICIES

“Parties shall foster industry self-regulation of energy efficiency requirements for goods where such self-regulation is likely to deliver the policy objectives faster or in a less costly manner than mandatory requirements” (art. 6.2).

- This undermines the EU’s energy efficiency policies as it would threaten minimum energy efficiency requirements imposed on a large number of goods, appliances and equipment (ranging from fridges to cars, from TVs to washing machines), which save consumers billions of dollars while cutting hundreds of millions of tons of climate pollution each year.
- It will flood the market with cheap-to-build and expensive to run products...
- It is not based on any evidence, to the contrary, there is a body of evidence that self-regulation is not effective in order to achieve public interest objectives.

### IT PUSHES FOR UNLIMITED EXPORT OF FOSSIL FUELS.

“Parties must agree on a legally binding commitment to eliminate all existing restrictions on the export of natural gas in trade” (disclaimer).

- This will result in the inability of the US in taking climate change measures that would restrict further LNG export to Europe.
- It will promote more fracking in the us.

“A Party shall not adopt or maintain a higher price for exports of goods to the other Party than the price charged for such goods when destined for the domestic market, by means of any measure such as licenses or minimum price requirements” (art. XXX).

- This makes it impossible for both sides to restrict fossil fuel trade in order to achieve climate objectives by raising the price of fossil fuel export.

**IT UNDERMINES PROTECTION FOR CITIZENS AND THE ENVIRONMENT AGAINST FOSSIL FUEL EXTRACTION, LOGGING AND MINING IN THIRD COUNTRIES.**

“The Parties shall cooperate to reduce or eliminate trade and investment distorting measures in third countries affecting energy and raw materials” (art. 8).

- This encourages the US and the EU to jointly pressure countries around the world to abandon protections against destructive fossil fuel extraction, logging, and mining. It contributes to weaker or delayed energy standards or no standards at all.

According to Jane Kelsey’s initial analysis of the text leaked by WikiLeaks, “Trade in services agreements treat services as marketable commodities, and deny or subordinate or deny altogether their social, cultural, environmental, employment, and development functions. People are not viewed as citizens or members of their communities – they are ‘consumers’” (2015, p. 1). From another perspective, TiSA facilitates the violation of the human right to access basic services that the state is expected to guarantee, pursuant to domestic and international law.

Moreover, where energy is concerned, “among the most inappropriate ideas included in TiSA’s ERS proposal are to [] establish as Article 1 of the TiSA a principle of ‘technological neutrality’ whereby commitments would extend across all energy sectors regardless of the fuel source or technology, denying regulators the right to distinguish solar from nuclear, wind from coal, or geothermal from fracking” (Menotti, 2014). This is yet another rhetorical maneuver to conceal the real interests of those that oppose the energy transition and climate change policies.

The recently leaked text of the TiSA Annex on Environmental Services, and its contents were branded an environmental hazard.

As part of a “toothless” environmental rhetoric, Articles 2, 3, and 4, which refer to national treatment, access to markets, and most-favoured-nations, respectively, clearly establish the explicit limitations and prohibitions that governments face when adopting measures of public interest in the sphere of public services; governments face these same challenges faced when they seek to implement measures relating to commitments adopted under the Paris Agreement or the 2030 Agenda of Sustainable Development Goals (Waren).

We are facing a fundamental dilemma that we need to overcome.

The Paris agreement was silent on trade, and the TPP ignored the climate. As countries take action to protect the climate, conflicts between trade rules and climate goals will escalate. The intentional separation of these two global priorities is becoming increasingly untenable. (Lilliston, 2016)

It is obvious that survival must be prioritized over destructive and unsustainable markets and financial inertia. But we need to rethink trade and investment to come up with alternatives that do not undercut these priorities and place new trade and investment rules in a supporting role (Schillinger, 2016; Trace). Otherwise, there will be little chance of successfully implementing environmental, social development, industrial, and ethical alternatives.

No climate agreement will work if it is not supported by other policies. TPP and the WTO represent outdated trade regimes in the vein of nineteenth-century ideas concerning ‘extremely potent’ and commercially forceful agreements. The twenty-first century demands something very different: trade rules that move countries towards sustainability together, beginning with the pressing need to reduce greenhouse gas emissions and support adaptation to climate change. (Beachy, 2016; Terry, 2016; RMALC, 2016) We, the social movements of the hemisphere and of the world, together with a myriad of voices from academia

and UN rapporteurs and experts, call on governments to stop signing, ratifying, and implementing these mega-regional trade and investment agreements; we instead propose alternatives worth analyzing that can declaw these mega-regional deals and help establish a certain level of policy congruence. <sup>2</sup>

## Summary of Proposals

When it comes to protect restorative climate justice policies from TIAs, at minimum, the terms of these agreements should not apply to policies related to reducing greenhouse gas emissions (GHG) or climate adaptation, unless these policies are not sufficient to limit emissions or encourage climate adaptation. The following summary of proposals (Lilliston, 2016) illustrates that it is possible to safeguard the objectives of both climate change policy and sustainable development policy. As previously stated, the immediate focus is to stop signing mega-regional agreements.

TIAs	Alternatives to TIAs
Existing and pending trade and investment agreements (TIAs) include rules that restrict the policy instruments that governments can use to counteract climate change.	Climate defense policies: TIAs must include an ample variety of alternatives for policies in the public interest, including climate policies and policy instruments to confront challenges like climate change.
If a ruling is handed down that a certain climate policy violates these antiquated rules, governments may face trade sanctions or be forced to pay cash compensation to companies (fossil fuels, GHGs, or toxic fuels).	The climate portion could say that the terms of the agreement shall not apply to policies designed to reduce GHG emissions or foster adaptation.
No existing or pending TIAs contain effective protections against such rules for climate policies. At best, these agreements stipulate a weak “general exception” that does not even apply to the most restrictive rules and has failed to inoculate the policies in question.	Ensure that TIAs do not contain rules that can be used against solid climate and sustainable development policies.

Climate change is not even named	Explicitly name and prioritize climate change
<p>Not a single existing or pending TIA, including the TPP, TTIP, or TiSA, mentions climate change, in spite of the fact that the signatory countries are all top emissions offenders.</p>	<p>Significant climate commitments are necessary: climate-friendly business and investment plans.</p>
<p>Although the majority of the countries party to TIA negotiations are also signatories of the United Nations Framework Convention on Climate Change (UNFCCC), no U.S. or EU trade agreement requires them to meet their UNFCCC commitments.</p>	<p>Demand that signatory countries “adopt, maintain, and enforce” policies to fulfill their UNFCCC commitments. This would include an enforceable requirement for signatory countries, congruent with the national commitments they have submitted to the UNFCCC.</p>
Protect toxic investments	Protect investments and policies that are respectful of the climate
<p>TIAs grant sweeping rights to foreign investors in fossil fuels and entitle them to sue governments for climate, environmental, and other national policies in private tribunals that cannot be held accountable for their rulings.</p>	<p>These protections should only apply to investments that meet clear public interest criteria, like investments compatible with the transition to clean energy.</p>
<p>Companies are increasingly turning to the investor-state dispute settlement (ISDS) system to demand payment for environmental policies and try to dissuade countries from enacting new protective measures. TransCanada’s \$15 billion dollar suit against the United States illustrates the absurdity of this mechanism.</p>	<p>Limit the rights of foreign investors to protection against national discrimination and direct expropriation without compensation for immovable assets.</p>
<p>Half of new international arbitration proceedings in 2014 had to do with public policies that affected oil and gas extraction, mining, or power generation. TPP and TTIP would allow the world to become even more polluted.</p>	<p>Only enforceable in national courts. Investor protections, outside of national tribunals, only for differences from state to state and after exhausting the judicial process in the national courts. No investor should be able to directly sue governments in extrajudicial tribunals presided over by private lawyers.</p>

Encourage trade and investment in products that cause GHG emissions	Enforce controls on exporting and importing products that produce GHG emissions
<p>TIAs ease an increase in exports and imports of fossil fuels and polluting products, perpetuate global dependency on them, and undervalue national climate policies. TIAs generally prohibit restrictions on the export and import of such products, depriving governments of a tool to limit their production.</p>	<p>At minimum, trade rules against export controls should include an exception to permit governments to restrict exports of such products.</p>
<p>National treatment clauses in TIAs prohibit national regulations in favor of clean energy and stimulus measures for clean technologies; they drive dependency on fossil fuels with GHG and hydraulic fracking.</p>	<p>Exclude the national treatment clauses for gas trades arising from trade agreements so that individual countries can analyze the impacts of exporting gas.</p>
<p>TIAs prohibit or inhibit job-creating clean energy programs and local inputs: there are no performance requirements (jobs, national components, government purchasing, or environmental standards). TIA rules limit local purchasing as violations of national treatment.</p>	<p>Enable the creation of local jobs in clean energy: various measures are needed to put an end to the trade war. These include a return to provisions for buying local products in clean energy programs.</p>
<p>TIAs' overreaching rules prohibit restrictions on polluting goods (e.g. on gas-guzzling vehicles) and/or services (e.g. prohibiting hydraulic fracking). These are seen as a restriction on foreign companies' market access, even when applied equally to national and foreign companies. One recent example consists of sanctions against India for its solar cell program.</p>	<p>One key policy to counter climate change is to move to alternative technologies. The WTO must adopt an indefinite "peace clause" to prohibit disputes of this sort. This would permit governments to maintain and put into practice clean energy programs without the fear of retaliation by the WTO, ICSID, or similar bodies.</p>

Facilitate emission leaks	Create incentives to deal with emissions
<p>One of the impediments to firm action on climate change in many countries is fear that restrictions on GHG emissions put national companies at a competitive disadvantage to countries with more permissible climate rules.</p> <p>This disparity is behind the relocation of some jobs and “carbon flight” into spaces where it is possible to produce GHG emission-intensive goods (countries without these rules).</p> <p>Not one trade agreement addresses this problem, despite its frequent citation as a reason not to commission more audacious climate policies in the United States and other advanced nations.</p>	<p>To turn trade into a tool to mitigate emissions (rather than a source of emissions), TIAs should include cross-border adjustment mechanisms with components like a climate tax on the importation of commodities whose production entails GHG emissions (emissions from producing the good in the country of origin) that exceed some established threshold (a minimum level found in the signatory countries to an agreement).</p> <p>An independent panel of scientists and economists could calculate the emissions involved in each category of products in each country, with periodic reviews of the count, politics, and technology changes related to the same. Countries trailing behind in development or with historically insignificant emissions could qualify for exceptions from this climate obligation.</p> <p>Ensure that firm climate protections do not displace jobs or emissions abroad.</p>
Hinder or impede the spread of green technology	Create ways to foster green technology
<p>Traditional trade rules include excessive intellectual property protections, hindering the spread of technology that could boost energy efficiency or lower the costs of clean energy production. Maximalist protections for patents in TIAs have impeded, specifically, recent technological innovations (for example: thin-film solar cells) in developing countries.</p>	<p>New TIAs should explicitly indicate that intellectual property protections or restrictions on the transfer of technology or research and development policies shall not apply to clean energy technologies, establishing mechanisms for trade partners to collaborate on research and development in clean energy and energy efficiency.</p>



<p><b>Hinder or impede the spread of green technology</b></p> <p>Current investment rules in TIAs restrict policies that require the transfer of those technologies or requirements to invest in green research and development, even though these are signed goals of the Framework Convention.</p>	<p><b>Create ways to foster green technology</b></p> <p>To facilitate the creation and dissemination of green technologies, signatory countries to TIAs should establish policies that oblige fossil fuel-emitting companies (domestic and foreign) to contribute to research and development with funding.</p>
<p><b>Fail to effectively enforce environmental provisions</b></p> <p>In spite of the fact that since 2007, the trade agreements entered into by the United States subject environmental provisions to the state-state dispute settlement system, the “enforcement” of this mechanism has not managed to produce one single formal case against documented environmental violations.</p> <p>The U.S. commercial service, for example, has refused to respond to the reiterated petitions of environmental groups to use supposedly “enforceable” environmental provisions in the U.S.-Peru trade agreement to slow Peru’s evident rollback of environmental protection policies and curtail widespread illegal logging.</p>	<p><b>Establish and use a mandatory independent compliance system and a new dispute settlement system with the following elements</b></p> <p>Investigation: An independent body composed of environmental experts should have permanent oversight of countries and their climate obligations in trade agreements. Citizens should also have the right to request an investigation.</p> <p>Claims: Citizens, signatory governments, and the independent body should be entitled to file claims for failure to comply before a decision-making body.</p> <p>Rulings: the decision-making body should be composed of climate experts. Challenges would be solved with transparent procedures and direct oversight of non-compliance.</p> <p>Enforcement: the resolutions issued by the decision-making body must be subject to the same sanctions used to enforce the commercial provisions of deals.</p>

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III.

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# **PRODUCTIVE DEVELOPMENT AND OPPORTUNITIES FOR A NEW INDUSTRIAL POLICY**

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Infographic 3.  
Industrial Policy: From  
1980 to date

I. International  
Division of Labor and  
the Role of Global  
Value Chains, **Roberto  
Kreimerman**

II. Africa's Industrial  
Policy Challenge: Does  
the Expansion of Global  
Value Chains Call for  
New Approaches?  
**Jostein Hauge**

III. Emerging Trends in  
World Manufacturing  
and Challenges for  
India, **Rajiv Kumar y  
Ajay Kumar**

IV. Natural Resource  
Industries as a Platform  
for the Development  
of New Activities:  
Opportunities and  
Challenges for Latin  
American Countries,  
**Anabel Marín**

# INDUSTRIAL POLICY: FROM 1980 TO DATE

The reassessment of productive development and its sustainability has emerged as a response to the economic, ecological, and social crises of the capitalist development model.

1945  
End of the  
World War II

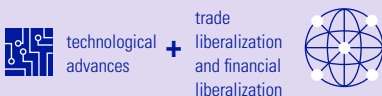
## Golden Age of Global Manufacturing

1980

## Neoliberal trends

Manufacturing is no longer the engine of growth or structural change  
The structural measures of the Bretton Woods institutions (World Bank and IMF) are established  
Global oil crisis

### 1 EXPANSION OF GLOBAL VALUE CHAINS (gvc)



### 3 SERVIFICATION OF THE ECONOMY



### 2 FINANCIAL SECTOR GROWTH

Global assets expanded from US\$ 12 trillion to US\$ 294 trillion

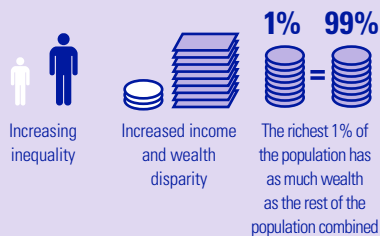
12 trillion → 294 trillion

The value of derivative contracts went from US\$ 1 trillion to US\$ 692 trillion

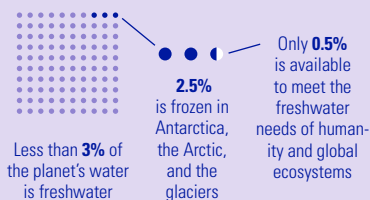
1 trillion → 692 trillion

### 4 NEW INTERNATIONAL LABOR DIVISION

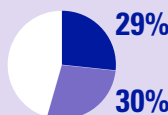
An increase in precarious employment and contract enforcement, and a decrease in local and national union negotiating power



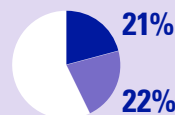
### 5 ENVIRONMENTAL INCOME



World energy consumption

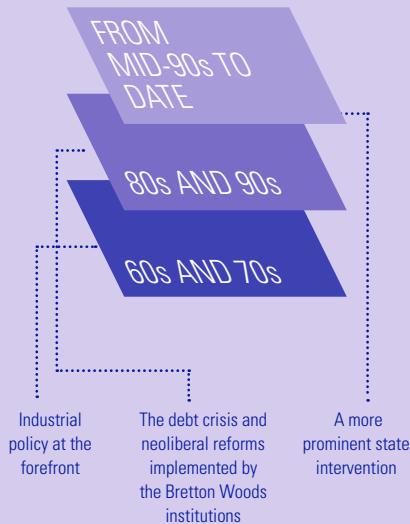


CO<sub>2</sub> emissions

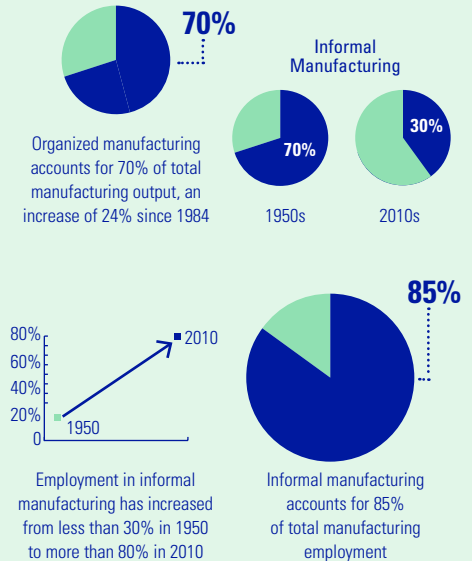


Present

## CASE 1 Industrial Policy in Africa

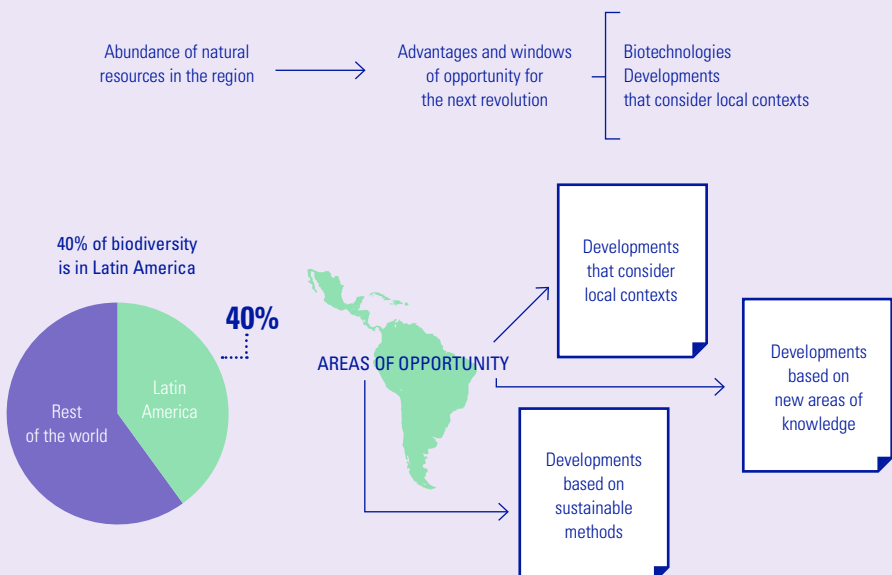


## CASE 2 Manufacturing in India



## CASE 3 Natural Resource Industries in Latin America

A DEVELOPMENT VISION RELATED TO NATURAL RESOURCES IS NECESSARY







A faded, light green-tinted portrait of Roberto Kreimerman, a man with a beard and glasses, wearing a suit and a patterned shirt, serves as the background for the text.

**Author**

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**Roberto Kreimerman**

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# **International Division of Labor and the Role of Global Value Chains**





# The Global System and Capitalism

Analyses of the theme of productive development, and concern for its sustainability, have multiplied since the 1990s, assimilating such aspects as the equitable distribution of wealth and environmental sustainability into what was once a purely economic concept. Much of this change in vision resulted as a response to the economic, ecological, and social crises that make sustaining a capitalist development model rather untenable.

At the turn of the 21st century, capitalism completed its task of reaching every corner of the planet. Since the beginning of the 1980s, the global economic structure has undergone major

changes. In the wake of the collapse of the Bretton Woods system and the oil crisis, large multinational companies sought to recover the profitability they had lost and countries at the center of the system pursued economic growth. Two profound and interrelated changes —the development of a new global system of production and widening asymmetries between the economic reality and financial reality —characterize the structural evolution over the past decades.

The new global model of production has brought with it the fragmentation of production processes and their relocation into “links” (stages of production) located in different countries and regions. These separate links are part of global value chains (gvc) that capitalize on the particular location advantages provided by the productive characteristics of the link in question: cheap labor, access to plentiful natural resources, financing, availability of technology with trained human capital, and/or proximity to consumer markets, depending on the location.

On the one hand, scientific and technological advances in fields such as chemistry, transportation, and information and communication technologies have ushered in this fragmentation of processes and the reconfiguration into GVCs. Tools like free trade, financial liberalization, the weakening of workers’ organizations, privatization, outsourcing, offshoring, and subcontracting have also been used by governments and transnational companies alike.

This configuration of productive value chains has prompted a rise in international intra-company and intra-industry trade. Much of global trade and production takes place within regional or global value chains. The mounting importance of GVCs in the global economy reflects the progressively closer ties between trade and gross domestic product (GDP), derived from the fact that intermediate goods can be transferred various times among countries before being assembled into a final good. Between 1980 and 2011, world trade (sum of exports and imports) grew at an annual average rate double that of the average GDP growth rate (5.7 percent vs. 2.8 percent), pushing the ratio between the two variables up from 27 percent to 65 percent within the same time period.

Although some have stressed the marginalization of the state in this process, in reality, the state is at the heart of the workings



of global capitalism. The state has always played a central role in the machinations of capitalism by maintaining the status quo regarding class relations, property rights, crisis containment, the enforcement of contracts, and the stabilization of the currency. Rather than benefitting from a non-existent state, transnational corporations depend upon and promote the role of the state for their own purposes. Today, the negotiations of the so-called mega-regional trade agreements are clear evidence of the role played by the state.

Within this framework, transnational companies have benefited enormously from investment subsidies, fiscal incentives, and a deregulated labor market. Today, these companies dominate the global economy, controlling around 80 percent of trade through their own operations and the operations of their business partners, organized into GVCs.

## Global Value Chains

In the global integration of the capitalist economy, a GVC is a dynamic network structure that connects the companies and institutions, inputs, goods, and services that are required to create a product or service, from its genesis to final sale. GVCs generate the new conditions that characterize contemporary capitalism.

International capitalist competition is governed by the same principles as domestic competition. The reality of the business world is that it is not a matter of comparative advantage but of absolute systemic advantage. Any given value chain is based on two types of competitiveness: systemic competitiveness – the comprehensive competitiveness of the GVC when competing globally – and the competitiveness of the GVC at the level of each of its links – based on specialization, the usufruct of scarce and/or less expensive resources at the chosen location, and economies of agglomeration.

Transnational companies control the GVC based on three fundamentals: mechanisms to maintain internal control of the chain, whether through subsidiaries and affiliates or power relations with suppliers (who tend to have less negotiating leverage), mechanisms to maintain control of the final markets (through

market share, research and development, brand, and scale), and mechanisms to control the global institutional system (the role of the state and international, plurinational, and multilateral bodies). Together, these factors define the economic and institutional aspects of globalization.

One of the fundamental features of the current global system is the close tie between international trade and foreign direct investment (FDI). The total value of FDI has quadrupled over the past two decades, exceeding an annual average of \$1.050 billion dollars between 2001 and 2010. Transnational corporations headquartered in developed countries have allocated a growing percentage of this FDI to developing countries, increasing from 21.6 percent of total FDI in the 1980s to 34.7 percent of a significantly higher total FDI in the 21st century. FDI inserts and organizes the companies that join the production and service chain according to systemic competitiveness criteria and depending on the potential specific competitive advantages that these companies, located all over the world, can provide to the chain.

The increasing presence and intervention of the financial sector in productive economic activities have complicated the relationship between real and financial activity. At least part of the behavior of the activities and variables thought to be determined by real factors is also the result of financial factors; in certain circumstances, the financial sector tends to take precedence over the real sector. This is part of the process of financialization, defined as the increasing importance of financial markets, financial institutions, and the financial elite in the economies and their governance institutions, both domestically and internationally.

Over the past three decades, the financial sector has recorded unprecedented growth. Between 1980 and 2014, global assets ballooned from \$12 trillion to \$294 trillion dollars (1.1 and 3.7 times the global GDP, respectively). In the same period, the value of derivatives jumped from \$1 trillion to \$692 trillion dollars. In other words, derivatives increased in value from being worth close to the total global GDP in 1980 to more than ten times the value of global GDP starting in the second half of the aughts.

The so-called servitization of the economy is another significant change that has accompanied, complemented, and empowered the new global system of production. The trend is evident

across all manufacturing industries and all OECD countries. Between 1975 and 2005, the percentage of services as a part of total inputs doubled. There are three groups of services: The first group includes traditional services, such as wholesale and retail trade, public administration, and transportation, whose shares in GDP have declined over time. The second group includes education, health, and tourism, which have grown slowly over time, holding a steady share of GDP. Finally, the third group is more directly related with changes in the global system of production, including information and communication technology, financial and business services, engineering and design, environmental and legal, etc. This latter group represents the highest-added-value services, which are also those that have grown fastest in recent decades, increasing the share of services in exports and the added value of these same services.

Beyond the basic fact that some services, like transportation, are essential to outside trade, there are various possible reasons why companies that produce goods are now turning their attention to services. The primary reason is to increase their productivity. This includes services such as logistics, management, and engineering to save on time and materials, improve coordination, and focus on competition. The second reason is to differentiate their offerings by adding services to their products, offering product bundles, for instance, or other packages related to the sale of manufactured goods. Moreover, the formation of gvcs has and the same logic of outsourcing, scale, and agglomeration has led to the creation of external functions that were previously internal functions at companies, under the premise that the systemic competitiveness of the value chain and the maximization of efficiency in each of its links now applies to production and/or services.

## The New International Division Of Labor

A new international division of labor has emerged. The result is an increasingly globalized world marked by a slow and unstable

recovery of economic growth combined with increasing inequality and environmental degradation.

The proliferation of GVCs has led to relocation, subcontracting, and geographic dislocation, which has exacerbated already precarious employment and decreased the negotiating power of local and national unions. At the same time, the globalization of the labor market, in combination with instant communication and low-cost transportation, has allowed corporations to make more short-term decisions and undermined wage levels and working conditions, as well as increased the use of flexible employment contracts and outsourced labor suppliers.

Accordingly, the evolution of the portion of wealth appropriated by capital and the evolution of inequality have developed in parallel. Although the trend remained relatively stable from 1947 to the early 1980s, it has been consistently increasing since the 1980s due to changing global production systems and their relationship with technology, trade, and finance, as well as falling direct and indirect wages. Economic growth is manifested through increasing wealth for the highest earners, a decrease in labor share of income, and soaring inequalities in our contemporary societies.

Economic inequality is not only understood as the portion of wealth appropriated by each social class, although this is a fundamental explanation. There has been a two-sided shift in recent decades. On the one hand, per capita income has stabilized across different countries; on the other, there is skyrocketing income and wealth disparities among individuals and social groups within countries. Currently, the richest 1 percent of the planet is wealthier than the entire rest of the global population. Since the turn of the century, the poorest half of the world population has received only 1 percent of the rise in global wealth, while half of that increase in global wealth ended up in the hands of the wealthiest 1 percent.

The environmental impact of society's predominant style is endangering the survival of humanity and the survival of other species. The environmental crisis is fueled by the type of relationship that capitalism has built with the ecological system, based on a technocratic functionalism that is reinforced and spread around the world due to the current global system



of production. Nature is privatized, commercialized, and monetized, and it is used to gain benefits through the intensive use of capital and energy, but the minimal use of labor. Usage of these natural resources tends to foster monoculture farming, intensive extraction, the expansion of the geographical boundaries of agricultural and mining exploitation, and the precedence for these activities over other uses of the land. The contemporary urban lifestyle maximizes an astonishingly wasteful overconsumption of material goods, leading to a more isolated and individualistic society.

In addition to reinforcing and spreading this approach to nature across all environments (all realms of human life and of the flora and fauna that inhabit the planet), the globalized system of production is fundamentally and crucially different from prior systems due to its exponential impact that places pressure on the environmental limits of the planet with dramatic consequences for both the future and the present. At this point, it is particularly important to note the severe effects of climate change, the loss of biodiversity, soil erosion, and the changing ocean dynamics.

## Technology and Development

Technology is key to development; it is not neutral, depending on the type of development sought. Although the process of technological change has maintained its basic fundamentals under capitalism, including increased intensity in the use of capital and a bias towards labor savings, it has changed over time, particularly with the rise in recent decades of the globalized system of production.

Technology is now a playing field for businesses, particularly for large corporations. Although both the state and innovative small and medium-sized enterprises play a crucial role in developing technology, this role is complementary – and in many countries subordinate – to the interests of transnational companies.

Major companies have not been the only organizations involved in the pursuit of game-changing technologies, nor will they be in the future. In advanced countries in the capitalist

system, collaborating with different government branches on research and development (R&D) is longstanding. In one significant example, the majority of the technology-intensive corporate sector in the United States has decreased their investment in basic technologies to focus on “extracting value” and applied technologies, leaving basic research to public agencies.

In recent decades, many government organizations (national, state, and local) have joined the well-documented efforts of the Department of Defense’s public purchasing unit to develop war technology that, in many cases, has also had tremendous civilian applications. These government bodies fund research and development in select sectors, using their control over financing to create and maintain connections with companies, universities, and venture capital investors.

The negotiations that are currently under way for the mega-regional trade and services agreements seek to change the global rules of the game, particularly for the high-tech sector. These mega-regional agreements drive the creation of integrated economic spaces with an extremely broad scope – beyond the reach of multilateral, universal membership agencies – and present a much broader and more complex agenda than what these bodies have historically negotiated. These negotiations seek to align the rules under which these value chains operate, minimizing operational costs and maximizing access to markets for transnational corporations.

These agreements are predicated on the liberalization, privatization, and deregulation of activities essential to humanity and society. In addition to their impact on the flow of trade and investment, the agreements that result from these negotiations will influence the degree of liberty that countries enjoy in implementing public policies across various sectors. These agreements have the potential to impact the education and health sectors, as well as financial regulation, public spending, telecommunications, labor rights, and environmental protection, to name a few.

Finally, should the rules established in these mega-regional agreements be implemented, any possibility for a national development agenda will be undermined outside of the dominant powers. In the words of Ha-Joon Chang (2002) said, this would

represent the acceptance of the tactic of “kicking away the ladder” for poor countries. Both in the past and the present, developed countries have resorted to this tactic as a way to expand their market dominance and perpetuate an international division of labor that benefits the interests of their transnational companies.

## Value Chains and Asymmetries among Countries

The geographic fragmentation of productive processes and their subsequent organization into global value chains (GVCs) contribute to the existence of an international division of labor among countries that corresponds to their level of development and reflects the technological asymmetries that exist between them.

While relatively high added-value services (conception, design, research and development, marketing, and post-sale) remain in more advanced economies, manufacturing is outsourced to developing countries with comparatively low wages. The benefits that developing countries can obtain from participating in GVCs depends on the location in the chain of the production stage that is performed in the country, as well as the required technology and level of training of the labor force.

The international division of labor diverges from the traditional dichotomy between industrialized and developing countries to become a true taxonomy of complementary roles, based on the degree of technology intensity of the productive structure and the capacities of each country. The production stages range from producing primary goods with no added value to mastering advanced technologies and constantly creating innovative products and business models, from industrialization based on foreign investment in the form of export enclaves to the stage in which local support industries and services begin to flesh out the domestic industrial structure in conjunction with production that draws on foreign technology.

In 2013, 67 percent of the total global value created from GVCs ended up in OECD countries, while the share that ended up in newly industrialized countries (NICs) and the BRICS (Brazil, Russia,

Indonesia, China, and South Africa) was a mere 25 percent. Only 8 percent of total added value was shared among the rest of the developing and less-developed countries. Within the service sector of OECD countries, value-added exports account for nearly 50 percent.

A similar scenario is seen in the analysis of added value by industrial sector. When compared with other low-tech industries, the production processes of high-tech industries are far more fragmented due to the existence of GVCs. The added value of high-tech industries in developing countries tends to be low. Although developing countries enjoy a higher competitive advantage in low-tech industries (like textiles and leather) due to the involvement of large-scale, low-wage jobs, the foreign added value used in exports is higher for backward linkages with developed countries than it is for developing countries. GVCs are fragmenting export profits, with the balance of power favoring developed economies.

Now that international bodies, policy-makers, and academics are paying attention to these matters, it is particularly relevant to focus on the argument that participating in GVCs with higher-added-value production and services linkages, via indiscriminate liberalization, decreased state involvement, and the multiple benefits of foreign investment, presents new opportunities for structural change in developing countries, bringing them closer to the levels of development achieved in core countries. However, in reality, this development strategy (clearly present in the proposals made by the dominant countries in the aforementioned international mega-regional agreements) would perpetuate and increase the peripheral and dependent role of developing countries in the global economy, condemning these countries to supply raw materials and low-added-value goods and sharp social inequalities and significant environmental degradation.

## The Role of Public Policy

Within this context, the public policy of each country plays a crucial part in advancing towards economic, productive, social, and ecological transformation, in spite of the tight constraints imposed by the capitalist system.

A country's productive structure will not automatically improve by joining the international system at any cost, welcoming foreign investment and indiscriminate liberalization. Nor will an improved productive structure automatically lead to social improvement, although it is an indispensable step along the way, and environmental sustainability will be even more difficult to obtain.

In this capitalist era of global systems of production and of the overlap of production with services and finance, economic power is enormous and concentrated. Within this context, proactive and cooperative economic policies to protect and represent workers are fundamental. Workers need to form stronger unions, secure their local and national power base, and forge international networks and organizations in and across global value chains to preserve their rights, fight for their essential interests, achieve new social progress, and foster change in our contemporary societies,.

In a system shaped by global value chains, it is increasingly difficult for developing countries to move towards a more technology-intensive productive structure, including the acquisition of capacities and higher-added-value activities, which is socially just and not environmentally destructive. It is crucially important for workers to organize and mobilize alongside other social and economic sectors to sustain the changes needed. A broad industrial policy (encompassing the production of goods and services) will provide a sense of direction and coordination and increases the effectiveness of these efforts.

Trade policy is complementary to industrial policy and should be used to accomplish technology transfer, build research and development facilities, and increase local content to help countries escape from the low-value added trap and increase the number of national companies taking part in productive processes. Moreover, given the role of technology described previously and its connection to industrial policy, science and technology policy is also crucial. With science and technology policy in place as a guide, countries must build a network of government agencies (national, local, and in coordination with regional efforts) to fund research and development in select sectors, wielding this control over financing to

forge and maintain partnerships with companies, universities, scientists, engineers, and investors.

On the other hand, the necessary industrial policy does not differ greatly from the policy of 50 years ago, even within the framework of GVCs. Perhaps it is more specific in its implementation and at the same time broader in the sense that it constitutes a productive development policy derived from the very characteristics of the new production system. However, industrial policy remains necessary because national development requires a complete industry, a dense and competitive industrial and productive structure, particularly in its early stages. Accomplishing this requires challenging static competitive advantages and undertaking majorly ambitious objectives and actions.

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**Africa's Industrial  
Policy Challenge:  
Does the  
Expansion of  
Global Value  
Chains Call for  
New Approaches?**





# 1. Introduction

Throughout the history of capitalism, the process of industrialization—the move away from dependence on rudimentary agriculture and natural resources towards, most importantly, manufacturing—has been one of the driving forces of sustained economic development. The role of the state in this process has been hotly debated for centuries, a debate first sparked by the first Treasury Secretary of the United States, Alexander Hamilton. He was the originator of the concept of industrial policy, as set out in his *Report on Manufactures* submitted to the U.S. Congress in 1791, which advocated “government patronage” to U.S. industry in attempts to catch up with the more advanced British industry.

Industrial policy has also been fundamental to development efforts of more recent catch-up economies, especially in

the 1950s, 60s, and 70s. In particular, the historic growth spurts of South Korea and Taiwan were a result of state-led industrialization. The manufacturing boom in these countries not only led to high growth rates and improved economy-wide productivity, but also laid a basis for egalitarian growth. According to Alice Amsden, one of the great scholars of the East Asian industrialization experience, one of the highest costs of income inequality in developing countries is a stunted manufacturing sector. Amsden argued that in developing countries with a large manufacturing base, wages are likely to be higher because skills are higher, and therefore, out of the manufacturing sector springs the middle class that tends to militate for political democracy.

When neoliberalism swept the world in the 1980s and 1990s, industrial policy acquired a particularly bad reputation, and it was basically shelved in most developing countries following pressure from international financial institutions like the World Bank and the International Monetary Fund (IMF). The policies that followed interventions from these international organizations were perhaps most acutely felt in Africa: in the early 1980s, African countries had amassed significant debt and requested help from the Bretton Woods institutions. The subsequent conditionality of loans and assistance to African governments—the structural adjustment programs (SAPs)—held the view that the appropriate role for the state was to provide an enabling environment for the private sector to flourish by giving market forces more room in the allocation of resources. Although Africa had its problems with industrial policy attempts in the 1960s and 1970s (which will be discussed in detail later), the change called for by the SAPs did more harm than good: GDP per capita in Africa *declined* at an annual average rate of 1.6 percent between 1981 and 1994 (WDI, 2016).

Economic growth in Africa has picked up since the early 2000s, but mostly as a result of a price hike in primary commodities. By and large, structural transformation has not happened; the share of manufacturing in economic output on the continent is currently 11 percent, the lowest of all developing regions in the world (United Nations Economic Commission for Africa [UNECA], 2015). Not surprisingly, the impact of economic growth on poverty reduction and employment generation has been meager. In

2011, the share of Africa's population living in extreme poverty (as measured by the \$2 dollar per day line) was 72.2 percent, only 5 percentage points lower than in 1981. In 2013, Africa's vulnerable employment rate was 77.4 percent, by far the highest of all developing regions in the world (WDI, 2016). Africa desperately needs to see industrial policy return to the development agenda.

It is therefore encouraging to hear talk of a rejuvenation of industrial policy (Noman & Stiglitz, 2015; Stiglitz & Lin, 2013; Wade, 2015). As opposed to the Millennium Development Goals (MDGs), industrialization is made explicit in one of the 17 Sustainable Development Goals (SDGs): Goal 9: build resilient infrastructure, promote sustainable industrialization and foster innovation (UN, 2016). Structural transformation has become a buzzword in the international development community, partly thanks to Justin Lin, the chief economist at the World Bank from 2008 to 2012, who pushed for an agenda at the Bank that stressed the importance of economic diversification and transformation of production activities (see Lin, 2010), much more so than former chief economists. Other prominent economists like Ha-Joon Chang, Joseph Stiglitz, Dani Rodrik, and Mariana Mazzucatto have all published recent bestselling books that explicitly support industrial policy. International organizations beyond the United Nations Conference on Trade and Development (UNCTAD), which has long been a bastion of industrial policy, including the Organisation for Economic Co-operation and Development (OECD) and the International Labour Organization (ILO), are publishing reports that focus attention on the importance of industrial policy (OECD, 2013a; Salazar-Xirinachs, Nübler, & Kozul-Wright, 2014). In Africa, Ethiopia, the fastest growing economy on the continent, puts industrial policy at the forefront of its development plans (see Oqubay, 2015).

But in the midst of talk about a rejuvenation of industrial policy, there is also vigorous debate on how the industrial policy environment has changed. This debate centers in particular on the increased fragmentation and globalization of production processes, also referred to as the expansion of global value chains (GVCs). With the expansion of GVCs, is it at all feasible or even desirable for developing countries to develop full-fledged industries, which is what traditional industrial policy has tended to



focus on? Do GVCs provide new avenues for industrialization by specializing in narrow tasks of an industry? Do “old” style industrial policies—like those formulated in Japan, South Korea, and Taiwan—hold less validity for today’s catch-up economies?

This essay will attempt to answer these questions within the context of Africa’s industrialization challenge. Section 2 provides background, analyzing Africa’s industrial policy experience in the post-independence period. Section 3 looks specifically at what opportunities and challenges the expansion of GVCs poses for Africa, and the concluding section looks at implications for industrial policy.

## 2. Reviewing Africa’s industrial policy experience since independence

Although most countries in Africa have a negligible manufacturing base today, this does not mean that industrial policy has never been attempted in Africa. However, the degree of state intervention has varied. Generally, the industrial policy experience in post-independence Africa can be divided into three phases: the 1960s and 1970s, with industrial policy at the fore; the 1980s and early 1990s, during which neoliberal policies dominated; and the mid-1990s to present, which has seen a more prominent role for the state, but a less prominent role for industrial policy.

### 2.1 1960s and 1970s: Industrial policy at the forefront

In the 1960s, many African countries embarked on state-led strategies to industrialize. Industrialization was regarded as synonymous with development at the time, especially if it was built on a socialist agenda resonating with the programs and achievements of the USSR and later China and India (Lawrence, 2005). The policies in Africa most notably involved Import-Substitution-Industrialization (ISI) strategies (see Wangwe &

Semboja, 2003), focusing on protecting domestic production of consumer goods that were previously imported. The idea was to start out with consumer goods and then gradually move to the intermediate and capital goods needed by the consumer goods industry. United Nations Industrial Development Organization (UNIDO) and UNCTAD (2011) provide the following list of instruments that were generally applied during the ISI period:

(a) Restriction of imports to intermediate inputs and capital goods required by domestic industries; (b) extensive use of tariff and non-tariff barriers to trade; (c) currency overvaluation to facilitate the import of goods needed by domestic industries; (d) subsidized interest rates to make domestic investment attractive; (e) direct government ownership or participation in industry; and (f) provision of direct loans to firms as well as access to foreign exchange for imported inputs. (p. 11)

The efforts yielded positive results for the manufacturing sector. Manufacturing Value Added (MVA) in Africa as a percentage of GDP rose from 9.2 to 14.7 percent from 1960 to 1975. The employment share in manufacturing also increased significantly in the same time period, from 4.7 to 7.8 percent (De Vries, Timmer, & De Vries, 2013). The increase in manufacturing production resulted in decent economic growth as well; GDP per capita grew at an average annual rate of 2 to 3 percent in the same time period. Countries in Southern Africa—South Africa, Zimbabwe, and Swaziland—were industrializing most rapidly. Their activities were based around low-tech, labor-intensive industries, such as food processing, apparel, and shoes.

But for many reasons, the ISI strategy proved unsustainable. First, few domestic firms became competitive in the world market. Governments offered protection to domestic firms with little discrimination, no requirements for international competitiveness and no time limit. Actually, not a single African country generated internationally-competitive industries (UNECA, 2011).

Second, the strategy did not place enough emphasis on generating foreign exchange (Meier & Steel, 1987; Stein, 1992). Agriculture was neglected and too heavily taxed, thereby reducing

export earnings and creating balance of payment problems for the economies that grew fast.

Third, the strategy was too intent on setting up physical production facilities, like factories, without paying enough attention to fostering entrepreneurial capabilities that would spur industrial dynamism (UNIDO & UNCTAD, 2011).

Fourth, foreign direct investment (FDI) was poorly managed. Foreign firms were given too favorable conditions, such as exclusive exploration rights (in the extractive industries), sole supplier contracts, and domestic market exclusivity. Moreover, these investments were almost entirely directed to the primary and raw materials sector, limiting the creation of linkages to the domestic economy (Stein, 1992; UNECA, 2011).

Admittedly, a few countries were successful with the anti-export strategy that characterized African economies in this phase, such as Mauritius and Zimbabwe. They managed to accumulate resources from the protected industries to generate enough investments for the development of the capabilities needed for exporting.

## 2.2. 1980s and 1990s: Debt crises and neoliberal reforms by the Bretton Woods institutions

In the early 1980s, African countries started to experience severe balance of payments problems due to aggregate effects of the global oil crisis in 1973,<sup>1</sup> the global decline in other commodity prices, and insufficient foreign exchange generation to meet the growing import demand of domestic industries. To alleviate these problems, many African countries sought help from the World Bank and the IMF. The recommendations from these organizations did not share the view that African industry should be promoted through government intervention.

As outlined in the Berg Report published in 1981, these organizations firmly believed that African countries' economic performance was poor as a result of an overemphasis on industry

at the expense of agriculture, overvalued exchange rates, interest rate controls, and trade protectionism. Furthermore, the report held the view

<sup>1</sup> The global price of crude oil spiked, leaving most African countries that were net importers of oil at the time at a disadvantage.

that the comparative advantage of African countries was in agriculture—not industry—and that government should consequently withdraw support for industry (World Bank, 1981).

The subsequent conditionality of the SAPs focused heavily on reducing government intervention through trade liberalization, privatization of state-owned enterprises (SOEs), and withdrawal of government subsidies (UNIDO & UNCTAD, 2011). The appropriate role for the state, according to the Berg Report, was to provide an enabling environment for the private sector to flourish by giving market forces more room in the allocation of resources. These policy prescriptions were in line with what the World Bank and the IMF recommended in more or less all developing countries at the time: limiting government intervention to macroeconomic stabilization policy, general education, and infrastructure investments, while relying on the “market mechanism” to eliminate inefficiencies and direct resources to productive uses.

Neoliberal sentiments swept the world around this time, but the state had acquired a particularly bad reputation in Africa. According to Mkandawire (2001, p. 293), by the 1990s “the African state had become the most demonized social institution in Africa, vilified for its weaknesses, its over-extension, its interference with the smooth functioning of markets, its repressive character, its dependence on foreign powers, its ubiquity, its absence, etc.”

The results of the SAPs, both for economic growth and for the manufacturing industry, were disastrous.<sup>2</sup> GDP per capita in Africa *declined* at an annual average rate of 1.6 percent between 1981 and 1994.<sup>3</sup> Unsurprisingly, MVA as a share of GDP also dropped, from a peak of 17.6 percent in 1976 to 14.2 percent in 1994 (WDI, 2016). Some sort of response was appropriate to the mounting debt of African economies, but the SAPs did not address the shortages of technical skills and industrial entrepreneurship. It undermined economic diversification and technological accumulation and drove firms out of business. Without state support, African industry had no chance of catching up with

<sup>2</sup> The deindustrialization impact of the SAPs has been particularly rigorously documented (see Mkandawire (2005), Mkandawire and Soludu (2003), Riddell (1990), Stein (1992)).

<sup>3</sup> 1981 has been selected as the starting point for the period of low/negative growth in Africa, as this is arguably when economic growth significantly started to show a significant slowdown in the aftermath of the international oil crisis and then the SAPs.

the global technological frontier. As Lall (1995) argues, any potential for technological accumulation that lay with existing firms in Africa was destroyed through the SAPs. Through reliance on comparative advantage, the SAPs were supposed to attract foreign capital to gradually ensure the growth of the industrial sector, but similarly to the ISI phase, foreign capital was attracted almost exclusively to the extractive industries. Even in the agricultural sector, in which African countries were supposed to have comparative advantage, unfettered international competition created problems; Nziramasanga (1995) provides the example of the Kenyan sugar industry in the 1990s, in which both output and employment fell due to competition from imports.

Interestingly, the economic decline was observed in all sub-regions on the continent, and yet Mauritius, South Africa, Zambia, and Zimbabwe all avoided its impacts. These countries actually managed to maintain or even raise their share of manufacturing in GDP. One obvious reason is that three of these four countries—Mauritius, South Africa, and Zimbabwe—did not have SAPs enforced.

### 2.3. Mid-1990s–present: State intervention more prominent, but what about industrial policy?

By the mid to late-1990s, the SAPs had contributed to such a devastation of the African economies that the international business media even referred to the continent as hopeless (The Economist, 2000). The loans heaped onto African countries in the 1980s and early 1990s had not resulted in productive investments, and thus, by the mid 1990s, several African countries had become heavily indebted.

In 1996, international donors launched the Heavily Indebted Poor Countries (HIPC) initiative to provide relief to severely indebted countries. The program was enhanced in 1999 because debt reduction was progressing too slowly. As a precondition to partake in the enhanced HIPC initiative, beneficiary countries in Africa were required to prepare poverty reduction strategy papers (PRSPs) in which the recipient governments themselves had to detail out how debt relief would be used to reduce poverty (UNIDO & UNCTAD, 2011). Compared to the SAP phase, more

autonomy was given to African countries, partly because anti-neocolonialist and anti-neoimperialist attitudes were becoming more prevalent. African countries were especially encouraged to invest resources in social sectors, such as education (primary and secondary) and health. Not surprisingly, the PRSPs' focus on social sectors resonated with the focus of the MDGs—a set of eight international development goals to be achieved by 2015, established at the United Nations Millennium Summit in 2000 (UN, 2005).<sup>4</sup>

The turn of the century saw economic growth in Africa pick up, together with a range of other positive developments, like reductions in public debt, a decrease in violent conflicts, and progress in health indicators. However, manufacturing as share of GDP in Africa remains the lowest of all developing regions in the world. Although the government assumed a more prominent role during the PRSP/MDG phase, industrial policy was firmly neglected.

In recent years however, there has been talk of a rejuvenation of industrial policy, as previously mentioned in the introduction. But in the midst of such talk, there is also vigorous debate on how the industrial policy environment has changed. The debate centers in particular on the increased fragmentation and globalization of production processes, and consequently, whether “old” style industrial policies like those formulated by the Asian tigers are at all applicable to developing countries today. This issue is addressed in the next section.

### 3. What are the implications of the expansion of global value chains on industrial policy in Africa?

Since the early 1990s, a globalization of production has taken place, driven by falling transport costs, advances in

<sup>4</sup> Five of the eight goals centered on improvements related to poverty, health, or education.

information and communication technology, and lower trade and investment barriers. From 1990 to 2015, the world's trade dependence ratio<sup>5</sup> increased from 19.5 percent to 29 percent, and world FDI inflows as share of GDP increased from 0.9 percent to 2.7 percent (reaching a peak of 4.7 percent in 2007) (WDI, 2016). The increase in FDI inflows has mostly taken place in developing countries, whose share of world FDI inflows surged from 17 percent to 55 percent between 1990 and 2014 (UNCTAD STAT, 2016). This growth in international trade and offshoring is primarily underpinned by the fragmentation of production processes and the dispersion of tasks and activities within them. This has led to complex, borderless business networks and production systems that are popularly referred to as global value chains (GVCs).

A recent World Bank brief states: "Countries that embrace GVCs grow faster, import skills and technology, and boost employment" (World Bank, 2015, pg. 1). One of the few substantial reports in recent years that analyzes the impact of GVCs on industrialization in Africa, the *African Economic Outlook 2014: Global Value Chains and Africa's Industrialization*, writes: "The country-centric view of trade no longer reflects reality... Global value chains offer new opportunities for structural transformation in Africa" (African Development Bank [AfDB], OECD, & United Nations Development Programme [UNDP], 2014, p. 124).

When one starts studying closely what has *really* changed in the GVC era, the whole buzz around this new phenomenon—and the way it is often talked about, as seen above—can be a bit confounding. For example, Africa's GVC participation as measured by "trade in value added" increased by 80 percent from 1995 to 2011 (AfDB, OECD, & UNDP, 2014).<sup>6</sup> But does this signify a qualitative change in Africa's trade pattern? Hardly.

Africa's exports are still dominated by primary commodities. The difference seems to be that these exports go on to be further exported to a larger degree than before. UNECA (2015) confirms this trend: "African countries show high participation rates in GVCs, though at a very low level... the larger share of Africa's

<sup>5</sup> This is the average of imports and exports of goods and services, as share of GDP.

<sup>6</sup> A measure of international trade participation that takes into account both the share of foreign value added in a country's exports—backward integration—and the share of a country's value added in other countries' exports—forward integration.



GVC participation is in forward integration, driven by exports of raw materials” (UNECA, 2015, p. 172).

So we see that the expansion of GVCs has not really changed the productive structures of African economies at all, and this is not because Africa is failing to participate in GVCs. This goes to show that we must be careful, scrupulously analyzing what increasing GVC participation *really* implies in terms of the development of productive capabilities. The section below will analyze the impact of Africa’s increased GVC participation by looking at the opportunities and challenges for Africa’s industrialization.

### 3.1. How do GVCs really manifest themselves in Africa?: Opportunities and challenges

#### 3.1.1. *Opportunities: Capitalizing on increased foreign direct investment through task specialization and export processing zones*

During the last 50 years, it has become clear that the development of productive capabilities in developing countries has not happened through innovation, it has happened through imitation, a process of acquiring technologies that more developed countries already have and that are often embedded in the practices of transnational corporations (TNCs) and corporate research and development (R&D). This is why FDI (which normally accompanies GVC participation) can play an important role in upgrading the productive structures of developing countries. Although Africa accounts for a relatively small share of FDI inflows to all developing countries, its proportional increase has been 20-fold from 1990 to 2014 (from 1.4 percent to 4 percent of world FDI inflows) (UNCTAD STAT, 2016). So clearly, there is an increasing opportunity to capitalize on FDI in Africa.

Many of the countries that have capitalized on FDI inflows over the past 30 years have done so through specializing in a certain production stage of a GVC. In essence, GVCs are making it relatively easier for developing countries to specialize in particular segments of an industry (stages of production, tasks, or business functions—niche specialization, so to speak) without having all the upstream capabilities in place, thus allowing them to start to export more quickly at a lower cost. The African

Development Bank (AfDB) even claims that developing countries can break into high tech sectors this way: “The presence of high tech goods in a country’s export basket no longer implies the presence of a wide set of industrial capabilities, but merely the presence of the respective assembly operation” (AfDB, OECD, & UNDF, 2014, p. 129).

China is an oft-cited example to prove the benefits of niche specialization made possible by GVC expansion. The country’s export success in manufacturing products largely reflects its assembly activities:<sup>7</sup> the share of processing trade (exports that use inputs that are partly or fully imported) in China’s total trade has increased rapidly since the 1990s; in fact, between 2000 and 2008, China accounted for 67 percent of the world’s processing exports (Gereffi & Lee, 2012), reaching almost 50 percent in 2011 (OECD, 2013b).

We already know that Africa’s integration into global production networks and its FDI inflows are relatively low, so unsurprisingly there are not many successful examples of industrialization through niche specialization on the continent. There are, however, a few exceptions. The most notable ones are Egypt (electronics industry and video displays), Mauritius (apparel industry), Morocco (apparel industry and automotive industry), and Tunisia (apparel industry) (Observatory of Economic Complexity [OEC], 2016). The automotive sector in Morocco stands as the largest export-oriented manufacturing industry in any single African country, with estimated export earnings of \$5.43 billion dollars in 2015 and employing over 100,000 people (Financial Times, 2016). The growth of the sector has benefitted from attracting foreign automotive companies to export processing zones (EPZs),<sup>8</sup> most

notably French companies such as Renault (the largest) and Citroën. The cars are assembled in Morocco, using mostly imported inputs, before they are exported to Europe for sale.

EPZs are integral to GVC participation. Alongside the expansion of GVCs, the number of EPZs in the world has exploded. The number of countries with one or more EPZ in 2006 was 130,

7 By 2000, China’s manufactured exports had increased by 26 times over the value recorded in 1981 (Memedovic, 2004).

8 An EPZ is a geographically delimited zone (usually physically secured, for example by a fence) that provides special financial incentives to foreign companies (although sometimes to domestic companies) for them to relocate production, most often manufacturing activities, to host countries.

up from 93 in 1997 and 29 in 1975. Employment by EPZs reached 66 million in 2006, up from 22.5 million in 1997 (Boyenge, 2007).

In 1990, only three African countries, Egypt, Tunisia, and Mauritius, had zones with any significant employment or exports (Stein, 2012). Africa is still relatively small on the world EPZ map, but definitely not absent. The continent was estimated to have over 155 EPZs in 2006 (Boyenge, 2007). Of these, Stein (2012) estimates that there are 91 in Sub-Saharan Africa (SSR) spread over 20 countries, with aggregate employment of roughly 1.05 million. South Africa has by far the most employees, with an estimated 535,000 (Boyenge, 2007).

The export gains from EPZs are particularly important. In Africa, Mauritius is the most prominent example of reaping export dividends thanks to EPZs. The country saw its share of exports produced by EPZs jump from 3 percent to 53 percent of total exports from 1971 to 1986, while in the same period, total exports skyrocketed from Rs3.9 million rupees to Rs4.96 billion rupees (Engman, Onodera, & Pinali, 2007), mostly from Chinese investments in the apparel industry. Mauritius has also been successful in securing increasing local content in its apparel EPZs. By 1982, domestic producers were supplying 41 percent of all the intermediate inputs into the EPZs, including nearly all the cardboard boxes and a large proportion of the cloth, thread, buttons, and trimmings (Willmore, 1995).

### *3.1.2. Challenges: Getting stuck in low-value added activities and the increasing power of transnational corporations based in the West*

While GVC participation can certainly bring about benefits, there are many examples of countries that have participated in GVCs without much success. The main issue in the failed cases is the lack of technological spillovers or links to the domestic economy. These countries typically start and end doing a simple task for one or several foreign firms that requires little skill, most often providing cheap, unskilled labor. A typical result is that the FDI ends up creating some jobs within the confines of an EPZ, becoming a “cathedral in the desert” or an “enclave economy,” in the words of Gallagher and Zarsky (2007).

Econometric studies trying to find a link between the attraction of FDI and productivity growth in the host economy are ambiguous at best. Cross-sectional studies tend to find statistically significant evidence of positive spillovers, while those based on panel data are more likely to find negative spillovers (Farole & Winkler, 2014; Görg & Greenway, 2004; Paus & Gallagher, 2008).

For EPZs, while export numbers tend to increase, the high share of local content that, for example, the Mauritian case achieved, is an exception rather than the rule. According to Milberg and Winkler (2013), a range of 3 to 9 percent of inputs purchased domestically is more common, which was the case for El Salvador, Guatemala, the Philippines, and Sri Lanka in the mid-to late-1990s. The Dominican Republic is an extreme example. Thirty years after the creation of the first EPZ in the country in the mid-1980s, the average purchase of domestic inputs in all EPZs was no more 0.0001 percent of the value of all inputs used.

Cathedrals in the desert can partly be explained by a failure by the host government to formulate policies to transfer technology and increase local content (more on this in the next section). Another explanation is the asymmetric power relationship between the firms that participate GVCs and the TNCs based in the West that typically make sure that they retain the most profitable activities in the value chain.

Table 1 lists the largest companies in Africa. In the SSA region excluding South Africa (SSAXSA countries), made up of 47 countries and often considered to most accurately represent Africa in an aggregate manner, at least when talking about the continent from an economic point of view, Flour Mills of Nigeria, an agribusiness company, is the largest company outside of the extractive industries. The fact that it ranks as low as 95 illustrates the marginalized role that domestic firms in SSAXSA countries play outside the extractive industries. By contrast, the largest agribusiness company in Europe, Nestlé, ranked ninth out of all companies in the world in the same year, with an estimated turnover of \$100.6 billion dollars, 63 times larger than Flour Mills of Nigeria.

**TABLE 1.**  
**Africa's largest companies ranked by turnover, 2013**

Rank	Company	Country	Sector	Turnover	Net profits
1	Sonatrach	Algeria	Petroleum	\$72 bn	\$9 bn
2	Sonangol	Angola	Petroleum	\$33.3 bn	\$3.1 bn
3	Sasol	S. Africa	Chemicals	\$17.5 bn	\$2.4 bn
4	Grupo MTN	S. Africa	Telecoms	\$15 bn	\$2.5 bn
5	Grupo The Bidvest	S. Africa	Diversified	\$14.6 bn	\$0.4 bn
6	Eskom	S. Africa	Electricity	\$14.1 bn	\$1.6 bn
7	Shoprite Holdings	S. Africa	Retail	\$8.9 bn	\$0.3 bn
8	Grupo Vodacom	S. Africa	Telecoms	\$8.2 bn	\$1.2 bn
9	Imperial Holdings	S. Africa	Diversified	\$7.9 bn	\$0.3 bn
10	De Beers Consolidated Mines	S. Africa	Mining	\$7.4 bn	\$1 bn
.....	.....	.....	.....	.....	.....
95	Flour Mills of Nigeria	Nigeria	Agribusiness	\$1.6 bn	\$0.05 bn

Source: The Africa Report (2013)

Outside the extractive industries, foreign companies account for practically all investments of any significant size in Africa. A recent case in point is the stakes bought by Danone (the world's biggest yogurt company, based in France) in Africa's major dairy companies. In 2014, Danone bought a 40 percent stake of Brookside Dairy Limited, East Africa's largest milk company, giving the company access to over 140,000 milk farms across the East African region. Beyond this acquisition, the company has also set plans to increase its stake in the Moroccan dairy company Centrale Laitiere to more than 90 percent. Centrale Laitiere holds a 60 percent share of the Moroccan dairy market (UNECA, 2015). With respect to the African food and retail industry, UNECA (2015) writes:

Transnational foreign-owned firms in the longer run are not far from taking full control of almost all profit-making opportunities at the expense of the (...) weak African smallholder agriculture, totally crowding out along the way the emergence of indigenous-owned food giants or branded agribusiness (...) there is urgent need to see African governments intervene to prevent emerging success stories of the indigenous food sector be financially cannibalized and owned across Africa by the most financially endowed firms in the food and retail industry. (pp. 108-109)

The increasing presence of TNCs in Africa follows from a steady global expansion of TNCs, which has been nothing short of immense. From 1990 to 2015, total assets of foreign affiliates increased from \$5 trillion to \$106 trillion dollars (from 18 percent to 145 percent of world GDP), and employment by foreign affiliates increased from 21 million workers to 80 million workers (UNCTAD, 2016). In 2010, *The Guardian* calculated that Wal-Mart (the world's largest retail company) ranked as China's seventh largest trading partner, ahead of the United Kingdom (*The Guardian*, 2010).

Not only have TNCs expanded across the world and grown in size, their power has also been consolidated significantly. Since the early the 2000s, practically every global industry has only a handful of firms that account for 50 percent or more of



the industry's global market share (Nolan, 2007). These TNCs are predominantly based in the West: of the top 100 companies in the world, as ranked in the 2014 *Financial Times* 500, only eight are from developing countries—six from China, one from Brazil, and one from Russia (Financial Times, 2014). Of these eight, only one is outside the oil or banking sectors—the Brazilian beverage company Ambev.

Alongside the consolidation of TNCs, the global expansion of TNCs based in the West means that a lot of power lies in the hands of very few companies. In essence, the type of globalization we have witnessed during the last three decades has resulted in a small number of actors appropriating increasing shares of profits accruing from technological dominance (fortified by strong protection of intellectual property rights), brand name recognition, and privileged access to low-cost capital rather than a larger market.

The technological dominance of these companies is tacit in nature and acts as a natural barrier to entry. They offshore parts of the results of their innovations (that is, use them to produce things abroad) but not the innovative capabilities themselves, locating almost all their technology-creating activities in their home countries. Relatively little R&D, other than lower-level support laboratories, tends to be relocated to developing countries (Dicken, 2011). This trend was actually observed by Raymond Vernon as early as the 1960s. In his product life-cycle theory, he argued that products have a cycle of globalization, with (mass) production eventually being offshored to poorer countries and the richer countries retaining much of the profits (Vernon, 1966).

Unsurprisingly, the last decades of increased offshoring have coincided with increased corporate profits as share of national income in almost all major industrialized countries. Milberg and Winkler (2013) found that U.S. corporate profits as a percentage of corporate gross value added increased from 23 percent to 32 percent from 1970 to 2010, while at the same time, U.S. goods imports from low- and middle-income countries as a percentage of total goods imports increased from 10 percent to over 50 percent. TNCs based in the West are basically growing their profit shares from intangible activities that are increasingly knowledge and skill-based.

### 3.2. What does this mean for industrial policy in Africa?

In the African context, AfDB, OECD, and UNDP (2014) emphasize five key considerations that must guide policy measures in the era of GVCs:

1. Policies must be value chain specific and provide the best environment for developing/integrating into the identified value chain with the most potential.
2. Making the most of value chains implies trade-offs, as prioritizing one sector over another creates winners and losers.
3. Entrepreneurship and collaboration between the public and private sector is crucial and requires strong business associations.
4. The power and ownership of a GVC can determine which pathways to productivity growth are open and which are not. For example, upgrading to higher-value processing activities may not be feasible in certain GVCs due to the tight control of processing activities retained by large manufacturers, such as in the global coffee or cocoa industry.
5. Low-road strategies in GVCs risk a “race to the bottom.” Therefore, when African countries attract foreign firms in order to integrate themselves into GVCs, they must also focus on creating skills and domestic productive capabilities for upgrading within GVCs.

These five considerations are supremely important, but most of them were arguably equally relevant 50 years ago, and do not point out if or how industrial policy needs to adjust to the new era of globalization. The fourth point is an exception. As we have seen, the proliferation of GVCs has entailed a rise in the global power of the largest TNCs, which have restricted the options available to developing countries in terms of creating their own GVCs (e.g. the creation of its own automobile or electronics GVCs by South Korea).

Milberg, Jiang, and Gereffi (2014) more instructively discussed how industrial policy must be *changed* in an era of GVC expansion, emphasizing three points in particular. As a starting point for a discussion, I will look at each of these points in turn below.

### 3.2.1. *The importance of domestic linkages*

The first two points made by Milberg et. al. (2014) are: 1) industrial policy must shift from the traditional stance aimed at developing fully integrated production structures (i.e. an entire domestic industry) to a stance focusing on moving into higher-value tasks associated with a certain industry; and 2) while traditional industrial policy may have included the protection of domestic industry, success in the era of GVC expansion requires easy and cheap access to imports, in particular for necessary intermediates.

These two points are largely interrelated: specializing in a segment of an industry rather than developing fully integrated production structures in large part means being more liberal with imported inputs. Engaging in this type of vertical specialization, rather than hosting a fully integrated chain, can indeed bring about economic benefits. Many East Asian countries like South Korea, Taiwan, and China, in particular, have achieved some success from principally manufacturing assembly activities. Taking advantage of its large low-wage, English-speaking workforce, India has also reaped benefits from specializing in particular segments of global service industries (e.g. call centers for IT companies or banks and back offices of airlines).

Particularly in the GVC era, FDI attraction for developing countries has almost become synonymous with niche specialization (mainly in manufacturing industries). If a liberal stance towards importing intermediate inputs is not already a requirement by foreign companies, a failure to incorporate this stance makes it almost impossible to attract FDI, as foreign buyers can largely “pick and choose” which country to outsource to in a world where cheap labor is more easily accessible and plentiful than ever before. Even 60 years ago, when this was not the case, Taiwan made a strenuous effort to woo foreign investors by offering 100 percent foreign ownership, guarantees against expropriation, and five-year tax holidays (Wade, 1990).

Furthermore, a strategy focusing on task specialization is far easier for countries with lower levels of technology and skills and is a quick route to creating jobs and earning foreign exchange. Almost all the cases of task specialization, regardless of the long-term impact on the development of domestic productive capabilities, have been successful in generating export

earnings and local employment, especially those doing so through the creation of EPZs.

However, the benefits from specializing in segments of GVCs are limited, especially those that rely on cheap labor and low levels of technology. As Milberg et. al. (2014) actually emphasized, the call centers and other service activities that India has come to specialize in are low-skill and have not brought about much technological upgrading. In countries like South Korea, Taiwan, and Singapore, task specialization only brought about benefits because it was used as a basis for building higher-level productive capabilities, including nationally-controlled GVCs (e.g. electronics in South Korea or Taiwan), and as a part of ambitious industrial policy strategies. Malaysia is said to be in a “middle-income trap” because it has not been able to use its GVC participation to upgrade its productive capabilities (Cherif & Hasanov, 2015). China is still struggling to achieve high domestic content in high-technology manufacturing, even though it is close to acquiring control over full-fledged GVCs in textiles, apparel, and consumer electronics.

The key point here is that a careful balance needs to be struck between, on the one hand, the benefits that vertical specialization and a liberal trading regime can bring, and, on the other hand, the need to develop domestic productive capabilities; for low-income countries this especially means backward linkages to the domestic production of inputs needed for manufacturing activities. *Unconditional FDI attraction policies may lead to job creation and export earnings, but are not sufficient to ensure a domestic supplier industry.* Kaplinsky and Morris (2015) distinguish between the two different strategies as “thinning” (vertical specialization) and “thickening” (creating domestic linkages). They argue that for low- and middle-income countries, the thickening strategy is relatively more important.

From this point of view, the declaration made by Ethiopia—arguably the most successful African country in the early stages of industrial transformation—that a central goal in its industrial policy is to reduce its dependence on imported inputs in the highly prioritized manufacturing industries, textiles and apparel, and leather products seems to be headed in the right direction. This type of policy stance is taken, among other reasons, in order to create better linkages to the supplier industries (Ethiopia has

Africa's largest livestock population and good opportunities for cotton cultivation), to avoid using scarce foreign exchange reserves on importing inputs and to reduce the risk of foreign firms relocating their production activities to other countries, as frequently happens in these type of labor-intensive manufacturing industries.

Clearly, for this to happen, industrial policy must play a role, for example regulating tariffs on imported inputs and local content requirements. The latter is now prohibited by the WTO,<sup>9</sup> but to some degree remains a policy option for least developed countries. Additionally, not all African countries are members of the WTO (e.g. Ethiopia), and can therefore legally use them. However, as mentioned, putting requirements on foreign investors to use local inputs would be less contested if introduced more informally through negotiations with foreign investors and is not easy in a global context where possible sourcing locations are abundant. UNECA suggests that the host country put requirements on the foreign firm to report regularly on local sourcing and the degree of local value added, including a clear "roll-out" plan for future local sourcing: "Such a mechanism is likely to focus the minds of their chief executives, engender a climate of moral enforceability and help to encourage local linkages" (UNECA, 2013, p. 244).

But the wheel does not have to be reinvented. A current example from which to draw inspiration could be Brazil's *Inovar Auto* program, which aims to develop a domestic industrial base by incentivizing foreign automotive firms to use inputs from local suppliers by granting tax exemptions depending on the degree of local sourcing (Pascoal et al., 2014). Another example would be Bangladesh, which has achieved considerable success in creating backward linkages in the manufacturing of knit apparel by granting firms cash subsidies for exports made from locally produced yarn and fabrics (Staritz & Frederick, 2012). Furthermore, the case of both South Korea and Taiwan

<sup>9</sup> The regulations on tariffs for WTO members are somewhat more complicated than that of local content requirements. The WTO works towards lowering tariffs worldwide, and all WTO members are required to bind (that is, set the upper limit on) at least some of their tariffs. But some countries (many of them in Africa) have yet to bind their tariffs. This means that there is some "water in the tariff" profiles of African countries—the difference between bound and applied tariffs. Additionally, many of the countries that have bound their tariffs have done so at quite high levels.

serves as useful examples of how to bargain with foreign investors by striking a balance between handing out attractive financial incentives while also inducing investors to source local inputs (see Amsden, 1989; Wade, 1990).

### 3.2.2 *Negotiating or competing with with transnationals?*

The third point outlined by Milberg et. al. (2014) is that whereas traditional industrial policy sought to build domestic capacity in order to eventually compete with leading TNCs, current industrial policy should focus more on negotiating and linking up to TNCs, as the issues facing firms and governments these days requires moving up through the chain of production of a particular commodity or set of commodities.

This is perhaps the most valid point, and is similar to the fourth point made by the AfDB (AfDB, OECD, & UNDP, 2014). TNCs can provide quick stimulus to export earnings, creating jobs and stimulating a local supplier industry.

An issue so far not explicitly discussed in this section is that of technology transfer from foreign companies,<sup>10</sup> more specifically the extent to which low-income countries are able to develop locally-owned capabilities in the manufacturing activity at hand (not only the inputs, which were discussed previously, but all the way to the finalized product) by linking up to TNCs. An increasingly common model in many low-income countries is that a Western brand-name or retailer (a lead firm) identifies an outsourcing location and does not subcontract directly to national producers in that country, but rather facilitates the entry of suppliers from a slightly higher-income country, for example China, to carry out production. A critical question is if attracting TNCs allows low-income countries to induce techno-

<sup>10</sup> Only implicitly discussed because it wasn't mentioned that local content requirements can be a way of transferring technology from foreign firms to local suppliers. For example, in Taiwan, the local content requirements on Singer Sewing Company in the 1960s encouraged the company to assist local suppliers in raising the quality of their products (Wade, 1990).

logical spillovers and eventually build up nationally-owned manufacturing firms. In other words, should domestic firms only link up to TNCs insofar as the TNCs intend, or should they eventually aim to challenge the production activity initially carried out by TNCs in the host country?



This is where industrial policy comes into play. One way of inducing technological spillovers might be through joint ventures between domestic and foreign-owned partners. The idea is that these joint ventures will give domestic partners easier access to higher-level technologies. This was the case with the joint ventures between South Korea and Japan in the textile industry in the 1960s, not only in terms of learning production techniques, but also in terms of acquiring managerial skills. Another way might be to encourage R&D in the host country. In 1970s Taiwan, for example, foreign companies were offered tax write-offs on R&D activities. A third way might be through human capital requirements, for example, reaching an agreement with a foreign company on an increasing share of local employees in managerial positions after a certain number of years. Training programs should also be initiated, perhaps by sending local employees to model factories in TNCs' home countries. But it is also important to construct technical and vocational education and training (TVET) programs in the host country that match the demands of foreign companies, either through intermediary institutes or higher education institutions. In Singapore, TVET programs were established and run as collaborative ventures between the government and international partners. Additionally, clustering foreign and domestic firms together increases the chance of labor mobility between the foreign and domestic workforce.

But even if a host country manages to develop nationally-owned capabilities in all manufacturing activities, from the inputs needed in production to the finalized end product, will that be enough for sustained economic development? It definitely goes a long way, yes, but as Chang, et al. (2016) showed, profits in the manufacturing segment of GVCs are becoming increasingly squeezed, especially in the low-tech segment.

This is why industrial policy-makers should pay attention to the possibility of upgrading not just through the development of capabilities to physically produce goods, but also through the development of producer services, such as design, marketing, and branding. Government support for capacity developments in these producer services, especially for small and medium-sized enterprises (SMEs), should most importantly include subsidies and public service provisions for export marketing and design.

In this sense, it is not so much about linking up to TNCs as it is about challenging them. For low-income countries, this might seem like a thankless task given the global foothold that Western TNCs have established in the area of producer services, spending billions on R&D, design, and marketing to maintain brand loyalty (just think about Apple and Nike).

But it is not impossible. Sammy Ethiopia, a company specializing in hand-woven textiles and garments, is doing just that. Their products are spun, woven, dyed, and embroidered using techniques stemming from old Ethiopian traditions, but are also designed and branded by the company. The company exports their products to high-end retailers in Australia, France, Germany, Italy, and Japan. Although it is questionable whether an operation like this can be duplicated with more modern techniques (Sammy Ethiopia's products are largely marketed based on the fact that they are handmade), it is a good example of something 100 percent "made in Africa" that sells in Western markets and is a testament of the popularity of African brands in the West.

Industrialization strategies in African countries seeking to immediately compete in producer services where large TNCs have an immense competitive advantage might seem ambitious, but being ambitious and doing things that are not aligned with one's "factor endowments" or "comparative advantage" is exactly what has characterized the truly successful catch-up economies. In the early 1960s, there was little to indicate that Japan would be one of the world's largest automobile manufacturers, yet the country protected its automobile industry for nearly four decades. Could anyone have predicted that Nokia would be famous for cell phones, when it had to cross-subsidize its mobile-phone division for nearly 17 years before making a profit (Lin & Chang, 2009)? Similarly, in the early 1970s, the World Bank strongly advised the South Korean government against supporting its steel industry, as it was not aligned with the country's current comparative advantage. The government did not heed that advice, took on the risk by setting up POSCO, a steel SOE, and, as a result, South Korea became one of the world's largest steel producers (Wade, 2012). African countries and other low-income countries should not completely deviate from current comparative advantage, but these examples show that taking risks and going for activities

and industries which might seem out of reach can yield significant benefits in the long run.

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# **Emerging Trends in World Manufacturing and Challenges for India**





## Abstract

Global manufacturing has seen its share in global gross domestic product (GDP), employment, and exports consistently decline over the past few years. However, trends within manufacturing value added are differentiated in pace, processes, and products for industrialized vis-à-vis developing and emerging industrial economies. Employment-intense global manufacturing has been declining in response to persistent technological improvements reflected in rising efficiency and productivity across all economies. World manufacturing has become highly intensive in its use of capital (physical, human, and embodied technical progress) and of skilled workers. Major drivers of manufacturing activity globally, namely demand slowdown in advanced economies, automation and robotization, and efficiencies in resource

usages (sustainability), are changing the landscape for manufacturing. Slowdown and shifts in demand, labor-displacing technological changes, and carbon constraints are also emerging as more challenging factors. This raises major concerns for emerging economies like India that are trying to expand the share of manufacturing within their GDP while also targeting the large-scale generation of employment through the manufacturing sector. On-going globalization makes this situation even more difficult, compelling firms in emerging economies to adopt similar production processes as in advanced manufacturing economies to retain global price and quality competitiveness. The importance of achieving global competitiveness in a free, liberal, and globalized economy implies an active search for niches within world markets. This requires the adoption of an active industrial policy and effective public-private collaboration. Indian manufacturing must address these multiple challenges in order to successfully achieve the targets announced by the government.

## 1. Introduction

The “golden age of capitalism”—the period between post-World War II until the 1970s—is known as the golden age of global manufacturing. The sector led the economic growth of many countries during four decades by virtue of its inherent quality of rapid technological progression and its concomitant increase in both labor and total productivity levels. This also required an increased deployment of capital goods for embodied technical progress in production systems and saw the rise of vertically integrated behemoths in Detroit, Tokyo, and the Ruhr region in Germany. Conceptually, it is rather simple to understand the reasons why manufacturing became symbolic of rapid growth and rise in “consumerism.” An increase in use of financial capital and technology upgrades ensured the rise in both labor productivity and corporate profitability, supporting higher wages and income for the workforce on the one hand and larger volumes of investible surplus for the investors/promoters on the other. Higher incomes further fueled consumption demand



and thus demand for manufactured goods. The higher demand necessitated larger scales of production, which yielded their own economies, thereby lowering costs and prices and setting off another round of additional consumption and the necessary supply response. Thus, a virtuous positive cycle with a supporting feedback loop was established, creating successive rounds of global expansion in production and subsequently consumption through an ever-expanding manufacturing workforce until the 1970s. During this period, world manufacturing expanded by an average of over four percent annually, and a large majority of both advanced and emerging economies saw a steady increase in the number of workers employed in manufacturing. This helped these countries make the critical transition from agrarian economies and to absorb the work force that was either moving out of agriculture or was simply a result of demographic trends. The critical question now is whether Indian manufacturing will be able to absorb the 12-14 million young adults that enter the labor market every year.

Within this context, it should be recognized that the world manufacturing landscape has changed significantly over the last three decades (1980-2012). This change is part of a structural transformation of global GDP, which has seen a relative decline in the use of natural resources per unit of output and a higher share of technology and services. This is duly reflected in manufacturing as well. Industrialization, the driving force for structural change over decades, is now shifting resources from labor-intensive activities to more capital- and technology-intensive activities. In the past, manufacturing achieved its role as an engine of growth and structural change because it offered much greater opportunities for accumulating capital, acquiring new technologies, and exploiting economies of scale compared to other sectors. Specifically, this is changing the three main aspects of manufacturing: the nature of demand, the level of technology and automation, and the pressure to improve the sustainability or efficiency of resources. Changes in the nature of these predominant drivers are set to bring about radical structural changes in world manufacturing.

These drivers are characterized by phenomenal changes. Lower demand for manufactured goods is reflected in the lower

growth rate of world manufacturing. The average annual growth rate was less than 3 percent during 1990-2014, in comparison to an average of between 3.5 and 4 percent in earlier periods.<sup>1</sup> The consumption of manufactured goods in high-income economies has weakened over time and is unlikely to sustain any higher rate of growth. To some extent, this is compensated by rising demand in developing and emerging economies. Nonetheless, this is not sufficient to sustain pre-1990 growth rates.

In earlier decades, higher growth rates also translated into the higher absorption of both skilled and unskilled labor into manufacturing. This is no longer the case. Advanced technologies and automation processes are reducing employment growth across manufacturing sub-sectors at a higher pace than new jobs are being added in other sub-sectors. This is now apparent across countries, with the onset of “reshoring” in the United States, Industry 4.0 in Germany, and advanced robotization in Japan. Consequently, the compound annual growth rate (CAGR) of employment in global manufacturing, which was around one percent from 1970-1990, decreased to a mere 0.5 percent from 1991-2014 (see UNIDO, 2015). The relative factor intensity of manufacturing has markedly changed in favor of capital and technology and especially against unskilled labor. This has qualitatively weakened the labor absorption and employment-generating capacity of the sector and perhaps diluted its role as a driver of structural economic change.

In India, various governments, including the present one under Prime Minister Narendra Modi, have seen manufacturing as a potential driver of structural change and as a way to generate high quality employment on a large scale. As a result, the present National Democratic Alliance (NDA) government has announced an ambitious target of generating 100 million jobs in the manufacturing sector by 2022! This is perhaps due to manufacturing being known for generating more jobs in India in comparison to world averages. It has been estimated that Indian manufacturing has generated new jobs at a CAGR rate of around

2.4 percent from 1993-2012 (NSSO), much higher than the average growth rate of 0.5 percent of world manufacturing noted earlier (UNIDO, 2015).<sup>2</sup>

<sup>1</sup> According to the Manufacturing Value-Added (MVA) database at constant 2010 prices of the United Nations for Industrial Development

However, this employment growth has largely been within informal jobs in Indian manufacturing and thus does not quite satisfy the criteria of quality of good employment. Moreover, employment growth in Indian manufacturing is still much lower in comparison to the emergent need to generate an additional 100 million jobs over the next 8-10 years. Emerging trends in world manufacturing that reflect technologically driven changes in response to the changing pattern of consumption demand and the pressure for environmental sustainability are likely to have a deleterious impact on the employment elasticity of the sector due to increasing globalization and fragmentation of production processes. Firms in developing and emerging economies must also adopt similar production processes to effectively compete in global markets. This also applies to India, which will need to devise new strategic paths in order to meet its triple objective of: i) achieving a larger share of global manufacturing output, ii) rapidly expanding domestic manufacturing capacities, and iii) maximizing employment generation in the sector to absorb new entrants to the workforce and those that are released by a modernizing agrarian sector. It is useful to review the emerging trends and principal drivers of global manufacturing growth over the last 25 years (1990-2015) to identify pertinent challenges for growth in Indian manufacturing.

The rest of the paper is structured as follows: Section 2 discusses major trends in world manufacturing in terms of its share of value added in GDP, employment and exports, and changes in the production processes as they relate to use of human and financial capital and high technology, highlighting the emerging structural changes in world manufacturing. Section 3 presents the major drivers of global manufacturing, which include current changes in the demand for manufacturing products, the rapid technological advance of process and product technologies, and emerging environmental pressures; these changes are destined to have an impact on the supply and demand of manufacturing products. Section 4 covers a comprehensive analysis of the state of Indian manufacturing, covering

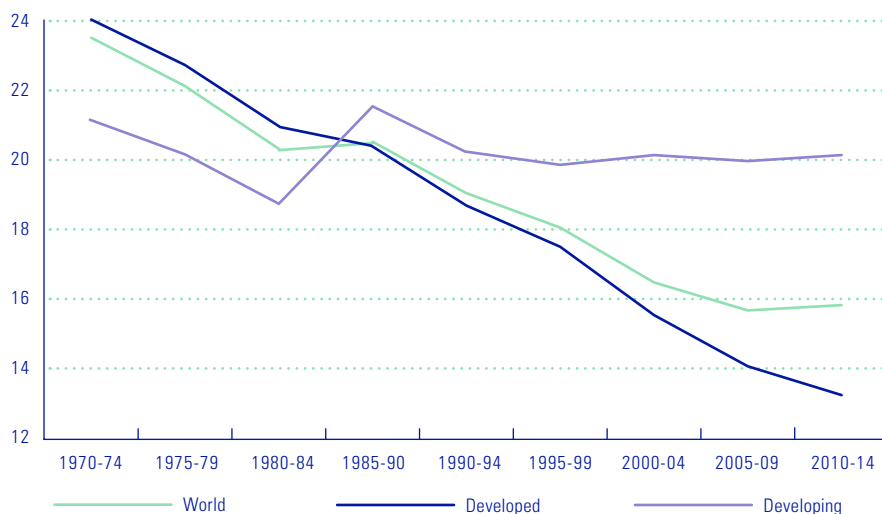
<sup>2</sup> According to the National Sample Survey Office (NSSO), 38.9 million people were employed in the Indian manufacturing sector in the 50<sup>th</sup> round of the NSSO in 1993-1994, and 59.8 million were employed in the same sector in the 68<sup>th</sup> round of the NSSO in 2011-12.

not only the manufacturing sector's contribution to Indian GDP and aggregate employment, but also identifying and analyzing factors that have driven or prevented the Indian manufacturing sector from achieving global competitiveness. Section 5 then outlines the major challenges for India as it tries to achieve the triple objective mentioned above. The final section concludes by highlighting the need for an active industrial policy to help Indian manufacturing attain global competitiveness, thereby enabling India to achieve a greater share of external markets and promoting greater openness and integration with regional and global production networks.

## 2. Emerging Trends in Global Manufacturing

The share of the manufacturing sector in global GDP and in the GDP of developed economies has been steadily declining since 1970. In 1970, global manufacturing's share of GDP was 27 percent, declining to 16 percent by 2015. However, in developing and emerging industrial economies (DEIEs), global manufacturing's share of GDP has been stable since 1990, hovering around 20 percent (Chart 1.) Global manufacturing value added (MVA) grew by an average of 3 percent from 1990-2010, decreasing to 2.4 percent between 2010 and 2014; this decrease reflects a further deceleration in the pace of global manufacturing (UNIDO, 2015).

Chart 1 - Manufacturing Value Added (MVA) Share of GDP, Percent, 1970-2014



Source: United Nations Industrial Development Organization (UNIDO)

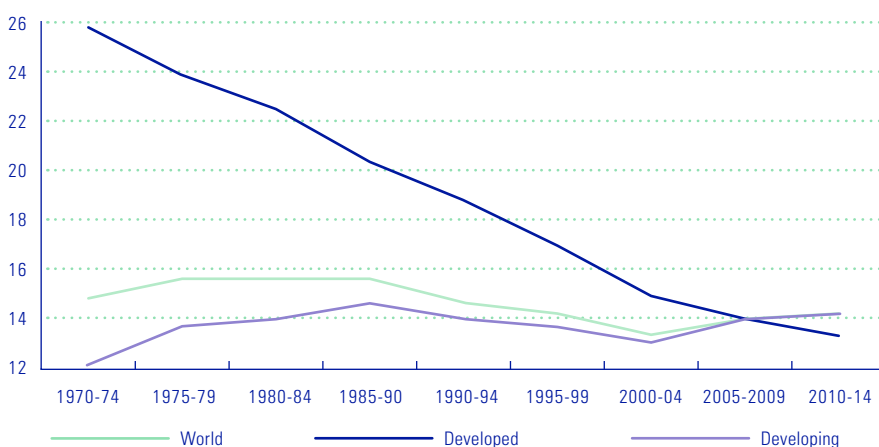
But the decelerating trend is differentiated in pace, processes, and products for DEIEs. In DEIEs, manufacturing growth has increased from 5.1 percent in 1990–2000 to 6.4 percent in 2000–2015, while the growth rate in industrialized countries fell from 2.3 percent to 1.3 percent during the same period. Higher growth has led to an increase in the MVA share of global manufacturing in DEIEs, increasing from 18 percent in 1990 to 36 percent by 2014. Declining growth rates were observed in 14 out of 22 broad sectors of manufacturing. These sectors include most of the labor-intensive industries, such as textiles, apparel, fur, wood products, and paper and printing. Manufacture of fabricated metal products and machinery and equipment also witnessed declines in their shares of aggregate global manufacturing.

On the other hand, significant increases were recorded in the manufacture of electronic hardware, basic metals, chemicals and chemical products, and motor vehicles. The increase in basic metals was driven mainly by the rapid growth of MVA in DEIEs, as well as investments in infrastructure (UNIDO, 2015). Among DEIEs, manufacturing is highly concentrated among the top five leading economies, namely Brazil, China, India, Mexico, and Turkey.

These five accounted for 71 percent of all manufacturing activity in developing and emerging economies in 2014, up from around 50 percent in 1990. This could be largely a result of high and sustained levels of MVA growth in China over this period (11.5 percent annually on average). Nearly half of all manufactured goods from DEIEs are produced in China, which has emerged as the “factory of the world.” Among the other large industrializing economies, only India managed to keep pace with China’s expansion with an average annual MVA growth of 7.4 percent between 1990 and 2014; India’s share of total MVA among DEIEs rise from 5.7 percent to 6.4 percent (UNIDO, 2016). Mexico and Brazil saw their share of MVA fall by more than half, from 10.9 percent and 12.2 percent in 1990 to 5.0 percent and 4.4 percent in 2014, respectively. Turkey’s share of MVA also declined from 5.2 percent in 1990 to 3.6 percent in 2014.

Manufacturing’s share of total global employment fell more sharply than its share of aggregate output, reflecting the rising trend in automation. The sector’s share declined from 14.4 percent to 11.5 percent between 1991 and 2014. Notably, manufacturing’s share was around 18.7 percent in 1970 (Chart 2). Apparently, manufacturing employment peaks at lower incomes and shares today (typically below 18 percent) than it did in the past (often over 30 percent) (Felipe J. et al., 2014).

Chart 2 - Manufacturing Employment Share of Total Employment, Percent, 1970-2014



Source: UNIDO



The loss of manufacturing jobs in advanced economies accounts for the bulk of the reduction in the share of manufacturing employment as part of total employment. According to statistics from UNIDO, manufacturing employment in advanced economies decreased from 128 million jobs in 1970 to 91 million in 1991, further declining to 63 million in 2014. The sector's share has been reduced by virtually half, from 25.6 percent in 1970 to 12 percent in 2014.

While the share of employment in the manufacturing sector in DEIEs has increased over this period by 4.5 percent, it has clearly been unable to compensate for the loss in advanced economies. The increase has seen its share go up to 9.4 percent of total employment by 2014. However, the increase in manufacturing employment in developing countries has been accompanied by an increasing informalization of employment, with the share of informal employment as part of total global manufacturing employment increasing to 40 percent in 2010 from around 29 percent in 1970. DEIEs have been the primary contributors to this trend.

The share of manufactured exports in total global exports increased from around 60 percent in 1960-64 to about 79 percent in 1996-2000, but subsequently declined to 64 percent in 2014. This increased share of manufactured global exports has come principally from a rise in exports from DEIEs, mainly from the Asia-Pacific region (i.e. China), whose share has increased from 18 percent in 1990 to 36 percent in 2014 (Table 1). Consequently, the share of low- and medium-technology exports and of natural resources from DEIEs has seen a sustained decline over the last 25 years.

**Table 1 Global Manufacturing Exports, Percent,  
Shares by Development Group**

Year	1990	2000	2010	2014
Industrialized Economies	82	79	66	64
Developing & Emerging Industrializing Economies (DEIEs)	18	21	34	36
Asia-Pacific	9	11	22	24

Source: UNIDO

Studies also show that, on average, countries across all income categories have a lower participation in manufacturing and, unlike previous decades, reach their maximum level of employment and shares of value added at a lower level of income (Ghani & O'Connell, 2014; Rodrik, 2015). Factors driving this trend vary across economies: higher productivity growth in manufacturing as a result of automation has resulted in lower employment growth in some economies like China, while in other economies like India, faster growth in the services sector has led to a fall in the share of manufacturing as part of aggregate GDP.

The above mentioned indicators of the manufacturing sector's current state are symptomatic of the fact that global manufacturing is perhaps in the midst of yet another historical structural transformation. Some authors like Jeremy Rifkin have characterized it as the "third industrial revolution," with a similar, if not greater, potential for economic and societal transformation as the two prior industrial revolutions. The first revolution occurred when steam replaced human and animal power as the motive force for machinery and transport, which was later replaced by petroleum. The Second Industrial Revolution came about with the emergence of the assembly line process of production in combination with the advent of electricity, unleashing massive economies of scale and converting production to a 24x7 activity. The Third Industrial Revolution, currently underway, has been principally the outcome of the microchip breakthrough, which has released enormous and unprecedented amount of "artificial intelligence" that has replaced human mental labor and skills with robots. Moreover, in line with Moore's Law, the cost of automation has fallen substantially since 1990 (over 50 percent), facilitating its application to an exponentially expanding universe of processes and products. The use of new materials and nanotechnology; advanced robotics and 3D printing; and new information technologies that can generate new forms of intelligence, such as data-gathering sensors in production machinery and the "Internet of Things" (IoT), have not only made production more efficient and of consistent quality, but also far more high-skill intensive and automated. It is, therefore, important to take a look at the key drivers

of global manufacturing at the beginning of the 21st century and the corresponding emerging trends.

## 3. Drivers of Global Manufacturing

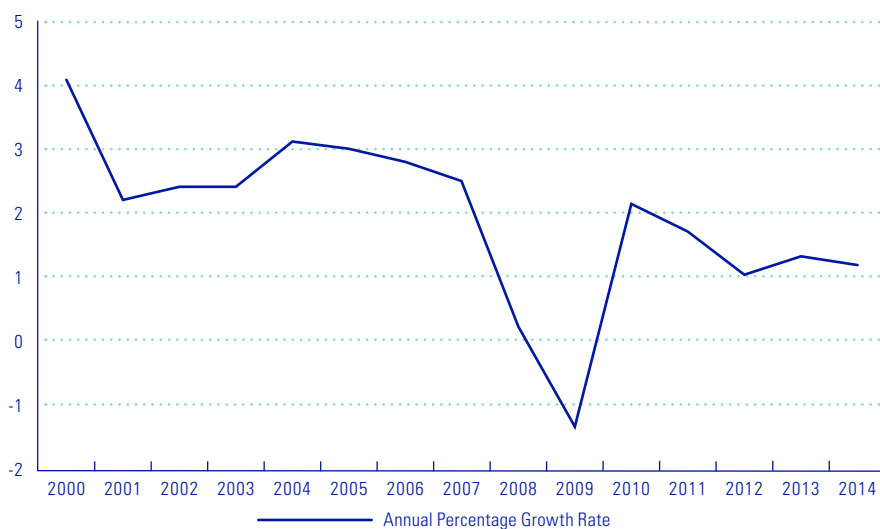
The principal drivers of manufacturing can still be described in terms of a trifecta of factors, namely the changing nature of demand for manufactured goods, the transformation of production capabilities, and the decline in the use of resources per unit of manufactured output. These drivers are further supplemented by advances in logistics and communication technologies that have combined to make the world market a much smaller space and push globalization inexorably forward.

### 3.1 Emerging Trends in Demand for Manufactured Goods

Demographic shifts are changing global consumption patterns, as well as the nature of the global labor market. An aging population in the Organisation for Economic Co-operation and Development (OECD) economies has implied a marked shift in the nature and composition of demand that is increasingly skewed in favor of the elderly and their higher purchasing power. This is true in countries like Italy, Japan, and even Russia. In the DEIEs, which boast a much larger youth population, there is hardly any danger of a demographic constraint on domestic demand. This provides the opportunity to ensure that large numbers of the young workforce in DEIEs are directed to the sectors that exhibit rising productivity. But the manufacturing sector's future growth prospects depend directly on demand for manufactured products in DEIEs increasing at a substantially faster rate than the probable decline in demand from advanced economies. The decline of demand in advanced economies is pretty much certain given the rapidly aging demographic profile and the rising share of services in the consumption basket of the middle class in these economies.

From the above discussion, it is evident that unlike in the past (Kaldor et al., 1996), external demand from advanced economic markets is now unlikely to play a significant role in the expansion of manufacturing sector capacities and employment in DEIEs. This is due to the aging and plateauing of consumption demand in OECD economies, which have seen a secular decline in consumption demand since 2010 (Chart 3). Moreover, an emerging trend in OECD economies show a consumer preference for local products, a trend that is beginning to gather support from civil society and local governments. The demand for investment in manufactured goods in the OECD is not as strong as before due to the fact that most infrastructure and housing needs have already been met.

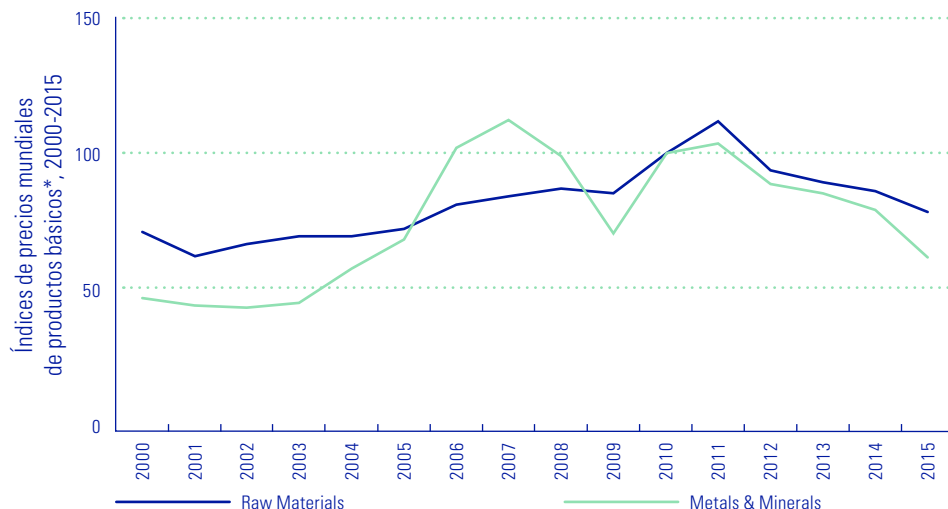
Chart 3 Decline in Household Final Consumption Growth in the OECD



Source: Authors' calculations based on the OECD database

Rising demand for manufactured products in DEIEs has sustained the sector's growth. However, this has been severely affected by the economic slowdown in China and the crash in world commodity prices (Chart 4) that has weakened demand from commodity exporters in Africa, Western Asia, Latin America, and Russia. This cyclical softness in demand for manufactured goods is likely to continue.

Chart 4 Decline in World Commodity Prices Since 2011



\*World Commodity Price Indices, Real 2005 U.S. Dollar

Source: World Bank Commodity Price Data (the Pink Sheet)

### 3.2 Emerging Production Capabilities with New Technologies

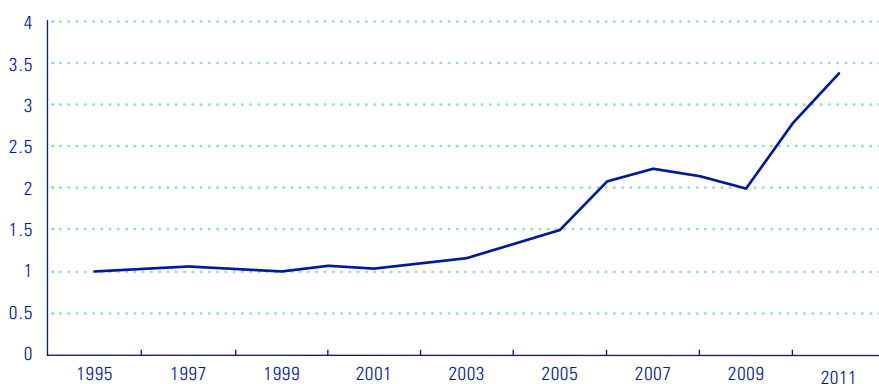
Advanced technologies are increasingly driving competitiveness in medium- and high-tech industries around the world. Share of medium- and high-tech industrial products in global MVA has increased from around 46 percent in 1990 to 51 percent in 2014 (UNIDO, 2015). The rising share of medium- and high-tech industries in global manufacturing or in a country's MVA reflects the technological complexity of manufacturing. These emerging innovative technologies have the potential to bring about exponential change throughout the entire industrialization process, as they affect both the manufacturing process and technology embodied in products. The recently coined term "Industry 4.0" (most common in Germany) includes emerging technologies such as cloud platforms/computing, artificial intelligence, wireless intelligence, IoT, advanced human-machine interfaces, authentication and fraud detection, 3D printing, smart sensors, big data analytics and advanced algorithms, multilevel

customer interaction and customer profiling, and augmented reality and wearables. Automation and robotization are seeing rapid diffusion within the manufacturing system, leading to labor-displacing technological change.<sup>3</sup> With the further deepening and expansion of globalization, trends in automation and robotization in advanced economies are likely to result in similar trends in DEIEs, which will need to adopt these advanced manufacturing technologies to remain competitive in global markets across both quality and price.

### 3.3 Emerging Trends in Resource Use and Sustainability

DEIEs, in the midst of their industrialization, must now also contend with the environmental and ecological sustainability constraints that are becoming increasingly prominent. This is also referred to as the “carbon constraint,” and is emerging as a binding constraint for all manufacturing processes, promoting the declining use of natural resources and a rise in resource efficiency and the use of renewable energy and exotic or composite materials. As a result, resource efficiency has grown by 3.5 times from 1995-2011 (Chart 5).

Chart 5 - Trend in Resource Efficiency for Global Manufacturing, 1995-2011



Resource efficiency is measured as the ratio of value added globally at basic prices divided by the total input in manufacturing in current prices.

Source: UNIDO based on World Input-Output Database (Timmer et al., 2015)



The economic costs for industrialization under carbon constraints are going to be challenging, especially for DEIEs. For example: coal provides 30 percent of the world's primary energy, 40 percent of global electricity, and 68 percent of steel in 2014. This dependency must be replaced by renewable energy sources like solar and wind. At this stage, DEIEs are dependent on imports of technologies and tools that utilize renewable energy resources and lower quantities of natural resources per unit of output. Rising energy costs and access to sustainable energy supplies now have a greater influence on strategic decisions concerning the location of manufacturing sites, as well as the development of supply chains. The distributed production of energy, manufactured products, and knowledge is inexorably changing the global economic and manufacturing landscape.

Although the discussion above on the drivers of global manufacturing activity does indicate increasing difficulties in terms of the sector being able to sustain the high growth rates of the past and playing the role of the leading sector for employment generation in DEIEs, its role in raising productivity levels and technology diffusion across the economy will not only remain similarly as important as in the past, but could in fact increase. This is not an argument for export pessimism or for a lack of policy attention to promoting capacity expansion in the manufacturing sector. Nonetheless, it does imply that expectations about growth and employment generation in the manufacturing sector may need to be tempered. It surely calls for a more detailed enquiry into the specific conditions under which the manufacturing sector is most likely to grow in particular emerging economies. The next section presents a detailed discussion about the nature and potential of the manufacturing sector in India.

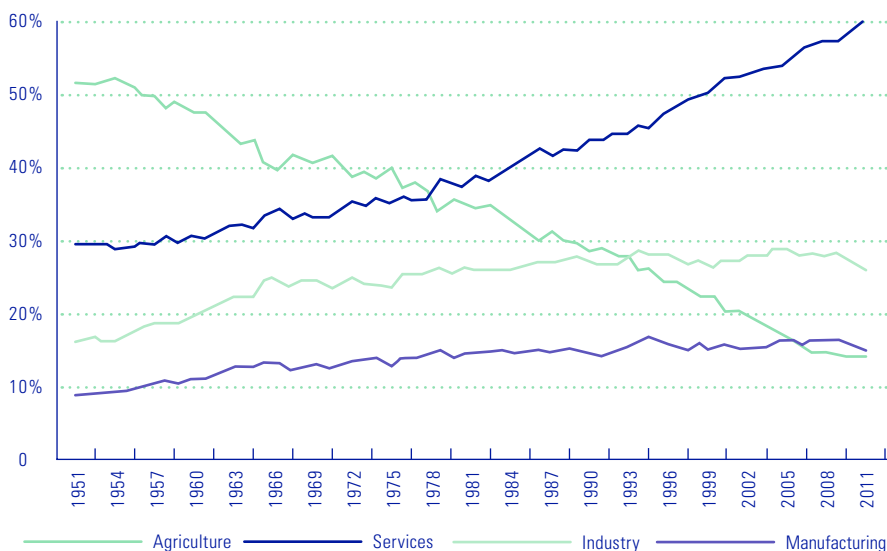
## 4. Manufacturing in India

In India, the share of manufacturing as part of aggregate GDP has hovered around 15-16 percent for the past 25 years (since 1980). Manufacturing has been unable to achieve a higher

<sup>3</sup> Automation is reaching a level where robots can be used in conjunction with workers on the assembly line. This generates a substitution of roles by machines in contrast to the generation of jobs.

rate of growth than aggregate GDP and has even seen its share dropping below 16 percent in some years (Chart 6).

Chart 6 - Sectoral Share\* of GDP in India, 1951-2014



\*Sectoral composition of GDP at factor cost, constant prices, 2004-05.

Source: Central Statistical Organization (CSO), India

Clearly, the fundamental and/or structural constraints affecting the sector have not been addressed effectively. Most studies on Indian manufacturing have highlighted major constraints, such as a difficult business environment; rigidity and legacy issues related to labor and land, extensive infrastructure deficit; the high cost of capital; poor access of micro-, small, and medium enterprises (MSMEs) to formal credit, technology, and external markets; and the lack of development and funding for R&D, particularly by private business.

**Table 2. Average Share (% 5 years) of Manufacturing of GDP, Total Employment and Merchandise Exports for Global, China, and India, 1990-2015**

		1990-1995			2000-2005			2010-2015		
		Global	China	India	Global	China	India	Global	China	India
1	Manufacturing, Value Added	21.4	33.0	15.9	18.4	32.0	15.1	16.1	31.1	16.4
2	Industry, Value Added	33.6	44.0	26.2	29.7	45.4	26.6	28.3	44.0	30.4
3	Employment in Manufacturing*	14.7	14.4	11.0	13.3	19.6	12.6	14.2	18.8	12.1
4	Employment in Industry	22.1	20.0	15.7	26.7	30.0	17.5	28.8	45.6	22.9
5	Manufactured Exports	71.6	78.8	73.3	71.9	90.1	74.9	67.0	93.9	64.5

\*Employment in manufacturing (percent of total employment) is taken from UNIDO elaboration based on Trends Econometric Models database (ILO, 2014)  
Source: Authors' calculations based on World Bank Database and UNIDO

As reflected in Table 2, India is perhaps one of the few emerging economies that has seen a decline in the share of manufactured exports, from around 80 percent in 2000-05 to about 65 percent in 2010-15. The share of non-petroleum (manufactured) exports in total exports has declined from around 81 percent in 2000 to around 50 percent in 2015. The share of petroleum exports in total merchandise exports increased from less than one percent in 2000 to around 18 percent in 2014. This is particularly telling because petroleum exports are the least labor intensive due to three reasons: 1) India cashed in on China's iron ore price boom during the late 1990s and 2000s. 2) Indian firms have, by and large, failed to participate in regional or global production networks. 3) In recent years (i.e. since 2009) the growth of world trade has appreciably slowed down as compared to earlier years. Average global trade growth from 2009-2015 has been around 2.7 percent, compared to an average of 16 percent during the prior two decades (1988-2008). In 2015, for the first time post-WWII, average global trade growth declined to below the average growth rate of global GDP. External conditions have stymied India's efforts to expand its manufacturing capacities based on external demand for manufactured products. However, this rather negative and unacceptable trend should not lead to export pessimism, which has characterized Indian policymaking in the past, particularly in the pre-liberalization decades prior to 1991. India's share of global merchandise trade has remained below two percent and is currently a dismal 1.6 percent.<sup>4</sup> At 64 percent, India's share of manufactured products within merchandise exports is quite low in comparison to the global average of around 72 percent. Given this extremely low presence of Indian manufactured products in global markets, there is vast scope for further expansion, and export pessimism is unwarranted.

However, there has been a marginal increase in the share of manufacturing employment in aggregate employment, from 11 percent in 1991 to 12 percent in 2014. This might imply that

4 Even for the services sector, where India has performed better, its share of global trade in services is around 3 percent.

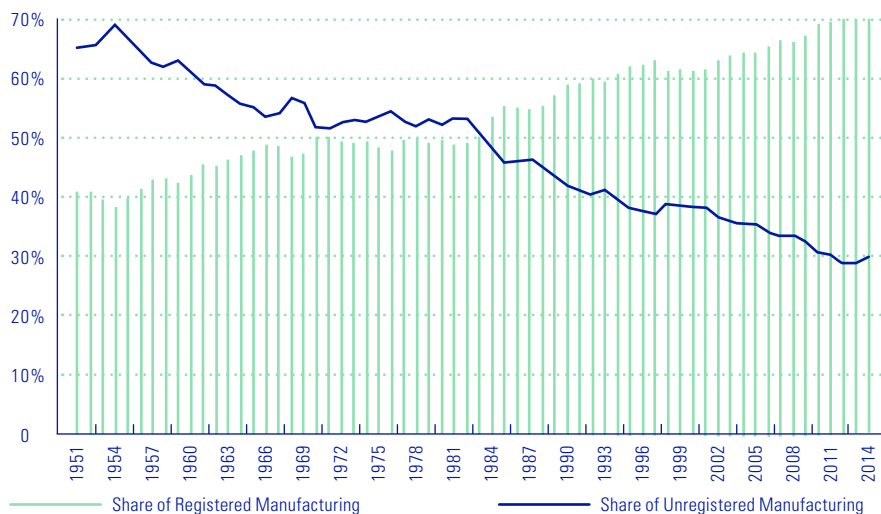
pessimism about the employment generating potential of the manufacturing sector may be overstated,

particularly if these could be derived from increasing manufactured exports. However, both expanding manufactured exports and maximizing employment generation in the manufacturing sector require that the structural constraints that have afflicted the sector be adequately and urgently addressed. Therefore, it would be useful to revisit the structural issues and challenges for Indian manufacturing to try and draw a “realistically optimistic” picture of its export and employment potential.

#### 4.1 Structural Issues in Indian Manufacturing

The Indian manufacturing sector is characterized by a marked dualism that has seen the co-existence of organized/formal and unorganized/informal industrial entities. The relative share of these two sub-sectors has, however, changed significantly over the years. As can be seen in Chart 7, organized manufacturing now accounts for 70 percent of total manufacturing output, an increase of 24 percent since 1984; unorganized manufacturing share has experienced a secular decline.

Chart 7. Shifts in Output towards Organized Manufacturing in India



Source: Authors' calculation from CSO, value of output at 2004-05 prices

This marked dualism is reflected in the huge gap in terms of productivity, investments, output, and the distribution of employment between the organized and unorganized manufacturing sectors. Labor productivity in registered manufacturing was 4.2 times that of unregistered manufacturing in 1984, increasing to 7.7 times in 2011 (Amrit & Arvind, 2015). The unorganized sector's share of aggregate manufacturing has declined from 70 percent in the 1950s to 30 percent in the 2010s, but employment share has increased from around less than 30 percent to above 80 percent during these periods. An estimated workforce of 45-48 million is engaged in the unorganized/informal segment of Indian manufacturing. This accounts for nearly 85 percent of the total manufacturing sector employment of around 58-60 million, making India the country with the largest informal sector employment in manufacturing globally by far.

The unorganized manufacturing sector is primarily the domain of MSMEs, which have exclusively contributed to the rise in manufacturing employment in contrast to a declining trend worldwide. However, MSMEs, and by association the unorganized sector, have not received the required policy attention necessary to encourage them to expand their capacities, improve productivity levels, and become globally competitive. Also, the preponderance of MSMEs in the unorganized sector contributes to India's inability to engage in global production networks, as their working conditions, labor practices, and outdated technologies make them unsuitable for collaborating with foreign joint ventures. It is time for special policy attention to be directed to addressing the binding constraints faced by Indian MSMEs, as they have the potential to expand both globally-competitive capacities and employment in the manufacturing sector.

## 4.2 Indian Manufacturing Policies during the Last Decade

The United Progressive Alliance (UPA) (2004-2014) established the National Manufacturing Competitiveness Council (NMCC) in 2004 and announced the New Manufacturing Policy (NMP) in 2011. One of the major goals was to raise the manufacturing



share of GDP to 25 percent by 2022.<sup>5</sup> The establishment of manufacturing facilities for domestic and export-led production and associated services and infrastructure, was envisioned with the creation of the National Manufacturing and Investment Zones (NMIZs). Over the 10-year tenure of the UPA government, manufacturing sector growth averaged 6.6 percent (2004-2014). This was lower than aggregate economic growth (GDP growth), which came in at 6.8 percent during the same period. Despite the government plans and policies, the manufacturing sector's share has come down marginally!

The **National Democratic Alliance (NDA)** has been in office since May 2014 and has adopted all the goals envisioned under the UPA's NMP 2011. The major policies to encourage growth in manufacturing has been through the "Make in India" program (MIIP). Four other supplementary programs launched by the NDA to bolster manufacturing in both the organized and unorganized sectors are "Skill India," "Digital India," "Startup India," and "Stand Up India." The central government has tried to bring all the state governments on board in an attempt to reinvigorate manufacturing growth in India. All these initiatives are expected to yield results in the medium to long-time horizon.

The initiatives of the "Make in India" program are intended to help improve the difficult business environment. For example: Self certification, third-party inspection provision, "single window interface" that combines 18 forms into one composite application for industrial licenses that are accepted online (24x7), etc. are all helping to improve the business environment. These initiatives have already resulted in India moving up 12 places in the World Bank Ease of Doing Business index in 2015. The Prime Minister himself is leading the effort for better inter-government and inter-department coordination and for the government to become a more proactive partner in clearing out the infrastructure project pipeline. This is still a work in progress, as reflected in the inability of private investment to gain the earlier momentum of the 2003-2008 period.

State governments are now also on board for being ranked according to the ease of doing business. The

<sup>5</sup> The vision of the Industrial Production and Promotion Department to increase manufacturing participation in GDP from 16 percent to 25 percent was supported by the State Industry Ministers Conference on November 17, 2009.

World Bank has helped the Department of Industrial Policies and Promotion (DIPP) develop a 98-point criteria, grouped under 18 broad headings, for assessing the governance performance of various states in terms of “ease of doing business and regulatory requirements.” The first rankings were released in September 2015 and have laid the foundation for promoting competitive good governance across states to promote manufacturing. This is crucial to successful industrialization, as a large majority of the actions required for facilitating investment in manufacturing ventures is firmly in the realm of state governments.

All these measures reflect the government’s commitment to improving the business environment across the country to help increase investments. The government has also taken a number of steps to further liberalize the inflow of foreign investment capital, which brings new technology and market access. Except for multi-brand retail, 100 percent of foreign direct investment (FDI) is now permitted across the board. One hundred percent FDI is also accepted in defense production, although on a case-to-case basis. But all these measures essentially represent works in progress that require persistent follow up in order to be successfully implemented.<sup>6</sup> While these measures, which are presently in the pipeline, will surely help to raise the growth rate of the manufacturing sector in the medium to long term, some of the challenges currently faced by Indian manufacturing must be addressed as soon as possible. These challenges are discussed in the next section.

## 5. Challenges for Indian Manufacturing

Faced with multiple challenges, Indian manufacturing requires a concerted and coordinated public policy push and a robust

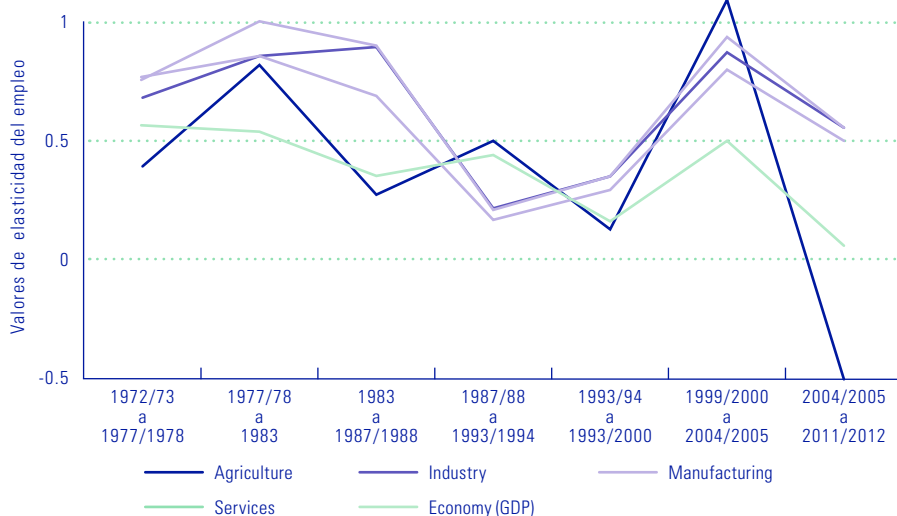
response from the private sector to establish a more comprehensive and sustainable manufacturing strategy. Will this occur?

<sup>6</sup> For example, simplifying labor laws, overcoming structural deficits and high logistical costs, increasing access to credit and markets for MSMEs, and supporting innovation and R&D, etc. are all ongoing efforts.

1) Marked dualism has come to characterize the Indian manufacturing sector and is reflected across a range of parameters. It is difficult to visualize the sector playing a leading role in growth and employment generation without reducing this dualism or significantly strengthening MSMEs.

2) It is worth noting that the elasticity of employment in Indian manufacturing remains high at 0.50, compared with a mere 0.05 in the Indian economy overall (Chart 8). The sector has the potential to contribute significantly to the objective of employment generation in the economy. However, given this employment elasticity, even a 14 percent growth rate (at constant prices) will at best only result in a 7 percent growth in employment in the manufacturing sector. This may not be enough to generate an additional 100 million jobs by 2022, which is the publicly-stated target of the NDA government. Can a set of policy measures be designed to improve employment elasticity while maintaining global competitiveness, especially in light of the global trend of rising automation and robotization?

Chart 8. Employment Elasticity in Different Sectors of the Indian Economy over Time



Note: Employment elasticity is estimated using a CAGR approach. This is basically ratio of two growth rates, namely, employment and value of output at price 2004-05, for different sectors.

Source: Authors' estimate based on CSO and NSSO data

3) The increasing openness of the Indian economy, as a result of policy liberalization and bilateral and regional trade agreements, implies that any capacity expansion in the manufacturing sector will not have the advantage of the protected domestic market that was available in the earlier import substituting period. This has several policy implications—including a challenge to the extant notions of comparative advantage—and should force a re-think on the nature of policy support for the expansion of a globally-competitive and globally-integrated manufacturing sector. The present need is to direct policy attention to creating globally-competitive infrastructure facilities and logistics structures that can help Indian MSMEs successfully integrate themselves into global and regional production chains.

5) The imperative of global competitiveness often means that new capacities incorporate cutting-edge technologies that may not be in sync with the objective of employment maximization. This calls for far greater attention than has been previously dedicated to developing a stronger culture of R&D and innovation culture, as well as an environment that encourages both product and process innovations in Indian industry. It also requires a sustained openness towards FDI, as it brings cutting-edge technologies and access to global markets.

6) As a consequence of demographic changes in advanced economies, the growth of global demand for manufactured goods is perceptibly slowing down. This deceleration weakens the role played by external demand in promoting manufacturing growth. India will have to actively explore alternate external markets and search for niches within the markets of advanced countries where demand may still be rising, e.g. products demanded by senior citizens, including pharmaceuticals and health care.

7) The sharp increase in the use of digital and networking technologies means that manufacturing is becoming highly skill and technology intensive, which may render the sector incapable of absorbing the multitudes of unskilled labor that are being released from agriculture. This calls for a massive effort at to increase the skills of local human capital and ensure that these skills are in sync with industry requirements. The innovative approaches needed for successfully implementing this

task include the development of massive open online courses and other hybrid techniques for skill and vocational training.

8) The mandatory carbon constraint will increase manufacturing costs, as new capacities will be required to use non-fossil fuels, and existing capacities will have to be retrofitted to comply with increasingly tough carbon emission compliance standards. Moreover, the composition of demand will change in sectors that use manufactured products, such as construction and consumer durables, as these industries also try to cope with their own carbon constraints. Consequently, the production processes and the nature of products produced by the manufacturing sector are likely to undergo significant changes. India will benefit from a focus on these changes, encouraging firms to adopt emerging carbon compliant production methods and produce environmentally friendly products.

## 6. The Way Forward

The literature on manufacturing is replete with arguments for and against the adoption of an active “industrial policy.” A standard argument is that the adoption of sound macro-economic policies provides both the necessary and sufficient conditions for achieving rapid and sustained industrial growth. This sound macro-economic policy package includes flexible labor markets, a proactive exchange rate policy stance, and an increasingly open and liberal foreign trade policy regime. There is, however, an equally strong alternative argument that states that rapidly evolving global conditions may militate against the growth of domestic industrial capacities and, given the growing importance of global and regional production networks, a relatively passive policy stance may not produce the desired outcomes. In these conditions, a sound macro-economic policy package may at best provide the basic, but certainly not sufficient, conditions to expand the share of the manufacturing sector in the economy. This school of thought advocates for a more interventionist approach that seeks to directly address the carefully identified constraints that impede rapid capacity expansion and prevent domestic firms—especially MSMEs—from achieving global competitiveness and integrating with regional production

networks. These direct interventions may include the provision of relevant skills; investment capital at reasonable costs; support for technological and innovations, particularly through R&D funds; globally comparable physical infrastructure and logistics; active government assistance for access to foreign markets; and preventing dumping by foreign competitors in domestic markets. This interventionist stance assumes the existence of adequate governance capacity and also implies a degree of selectivity in tailoring the policy support.

Emerging trends in global manufacturing pose challenges for manufacturing goals in India. However, the consistently higher growth rate of MVA compared with global average growth from 1990-2014 is cause for realistic optimism (7.4 percent vs. 3 percent). This higher growth rate has already increased India's share in global MVA to 2.6 percent, and there is evidently scope to raise this share further. To do so requires an active and forward-looking government policy that is geared to addressing the challenges outlined above, paying particular attention to the modernization of MSMEs and their integration into regional production networks. The recently announced National Capital Goods Policy 2016,<sup>7</sup> intended to fund technology acquisition; technology transfer; the purchase of intellectual property rights, designs, and drawings; as well as the commercialization of capital goods technologies, is a step in the right direction. It is being supplemented by the "Scheme on Enhancement of Competitiveness of Capital Goods," which includes setting up centers of excellence, common engineering facility centers, integrated industrial infrastructure parks, and the Technology Acquisition Fund Program. This has the potential to both reduce

India's dependence on capital goods imports and to also upgrade embodied technology in domestically produced machinery and equipment with a focus on increasing their with environmental sustainability.

The government will have to work closely with private industry to identify niches within manufacturing where labor-intensive capacities

<sup>7</sup> The Government of India, through the Ministry of Heavy Industries and the Department of Heavy Industries and Public Enterprises, implemented the National Capital Goods Policy 2016 to increase the production of capital assets.

<sup>8</sup> A special package for the generation of jobs and the promotion of exports in the textile and clothing sector, which was announced by the government of India on June 22, 2016



can be expanded. For example, the Indian textiles industry is labor-friendly, and expansion would promote employment generation, economies of scale, and would boost exports. The New Textiles & Apparel policy of 2016<sup>8</sup> is a very positive policy stance that includes production and employment (generation) incentives and labor reform, an important step that can potentially be replicated in other industries (e.g. the electronics and automotive industries).

A more robust innovation, technology, and R&D policy is also needed. Many local innovations in manufacturing process and products have to be generated to limit the spillover effect of labor-displacing global technologies. A significant increase in R&D outlays and a greater effort to create effective modalities for collaboration between government agencies and privately sponsored R&D and innovation initiatives are majorly needed. And finally, as has been emphasized in this paper, special policy attention must be focused on the development and technological upgrade of MSMEs in order to eliminate the prevailing dualism of Indian manufacturing.

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### Databases and Web Sites

- Ministry of Statistics and Programme Implementation: <http://mospi.nic.in/>
- Reserve Bank of India: <http://dbie.rbi.org.in/>
- World Development Indicators: <http://data.worldbank.org/data-catalog/world-development-indicators>
- Organization for Economic Co-operation and Development: <http://stats.oecd.org/>
- United Nations Industrial Development Organization: <http://www.unido.org/resources/statistics/statistical-databases.html>





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Anabel Marín

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# **Natural Resource Industries as a Platform for the Development of New Activities: Opportunities and Challenges for Latin American Countries**









At a time when natural resources are gaining increasing importance in the majority of developing economies, there has also been an increased interest in understanding and supporting the development opportunities afforded by these natural resources.

The traditional approach of using the revenue earned from natural resources to finance other, higher added value economic activities, such as manufacturing, has not lived up to expectations. It is therefore time to devise new ideas and approaches to understanding and supporting the development processes related to natural resources (NRs).

We are in the midst of profound economic, social, and technological transformations tied to a new phase of development and the proliferation of information and communication technologies (ICTs). In this essay, I discuss some of the unprecedented

opportunities for NR-based development that are emerging in this new era. In particular, I stress the remarkable possibilities that NRs offer to diversify into new knowledge-intensive activities.

## Why diversification, why knowledge-intensive goods, and why natural resource based?

The history of developed countries shows that growth and productive diversification go hand in hand, at least up to a certain per-capita income level, at which point countries start to concentrate more on what they do best and begin to focus on several activities that are more profitable. There is general agreement on this point. (Imbs & Wacziarg, 2003)

A trickier matter, then, is into what activities ought a country to diversify? Nevertheless, consensus is emerging on the need to diversify into knowledge-intensive sectors, in the understanding that these sectors furnish the greatest return on investment and generate the most externalities. In knowledge-intensive industries, the possibilities to innovate multiply more rapidly. In practice, this means that it is easier to obtain the results of innovation on every dollar invested, creating, in turn, what the literature refers to as more opportunities to innovate (Klevorick, Levin, Nelson, & Winter, 1995).

But the most difficult and contentious question is how to move towards knowledge-intensive activities with higher growth potential and more externalities. Latin American countries have historically tended to specialize disproportionately in NRs. Although this tendency tapered off to a certain degree during the age of import substitution industrialization, it has recently begun to take off again.

The traditional approach to NRs—drawing on the dictums of the structuralist thinkers of Latin America in the mid-20th century—has been to employ them as a source of taxes and

foreign currency to fund other activities that are considered to be of higher potential for using and generating knowledge and innovation, such as manufacturing. However, this policy has not met the expectations of the majority of the countries in the region, which were to build a globally competitive manufacturing industry that would sustain the rest of the economy.

At the moment, the region is thus facing a significant dilemma: how can Latin America replicate the experiences of the Asian countries or come up with new possibilities? In this essay, I maintain that the first option is no longer viable (Pérez, 2010; Marin et. al., 2015a), because the development path taken by the Asian countries is no longer available. Latin American countries do not have an abundance of labor—and therefore lower wages—than the rest of the world, and the price of the simple manufactured goods with which many of the Asian countries conquered the global market has declined significantly in recent years. Moreover, the open lanes of global trade in which these Asian countries specialized are already filled by companies from those same countries. It will thus be crucial for Latin America to identify what new spaces are opening up in international trade and focus on entering them.

One major challenge looming ahead for the global economy will be how to feed a growing population and sustain the production of material-intensive manufacturing. It is very likely that the consumption of materials associated with the growth of the Asian countries will continue to expand for some time. Latin American countries can capitalize on their historical specialization in NRs, the knowledge they've accrued exploiting them, and the growth in markets that will continue for some years to develop knowledge-based activities related to NRs, in particular those tied to the technologies that are at the heart of the current technological revolution (information technologies) and those that will be at the heart of the revolutions yet to come (e.g. biotechnology and new materials) (Pérez, 2010; Marin et. al., 2015b).

In the past, the majority of developed countries grew by harnessing the opportunities that emerged in connection with the technologies at the forefront of prior technological revolutions. This can be seen in England during the first industrial revolution, where the country rode the wave of opportunities

that flowed in with the mechanization of the textile industry, in addition to the use of water channels and water mills (even upstaging then-leader Holland). Germany and the United States harnessed the opportunities presented by the third and fourth industrial (technological) revolutions, with their involvement in the burgeoning electrical and chemical industries (both science based). And more recently, the Asian countries successfully took advantage of the new opportunities made possible by ICTs. Although the ICT revolution began in the United States, it was the Asian tigers and China that used advantages such as an abundant workforce and low wages to maximize the potential of this revolution, including the incorporation of new technologies to manufacture ICT products (Pérez, 2010).

However, the windows of opportunities these countries seized in the past have since closed to new entrants. Latin American countries must therefore identify the new areas of opportunity based on the advantages and circumstances that have yet to occur. Technology will likely be at the center of the next revolution, whether it be biotechnology, nanotechnology, bioelectronics, or new materials closely coupled with NRs. Countries in the region with abundant NRs and significant knowledge regarding their exploitation could develop these technologies and be ready when the next growth phase arrives (e.g. it is impossible to make significant genetic improvements without access to biodiversity, and 40 percent of the world's biodiversity is located in Latin America).

However, considering that NR-based activities have historically been negatively related to technological development, is this situation even possible? This article argues that this is, due to changes in the technological, demand, and production conditions.

## Natural resources, innovation, and growth: What changed?

Broadly speaking, the productive development and innovation literature has generally classified NRs as an industry with low

potential for development based on two fundamental reasons: the first is the argument that NRs are neither technology nor knowledge intensive (low tech) and therefore offer scant possibilities for technical progress and growth, and the second is that some would assert that NR activities generally operate as enclaves, with limited ties to other sectors, and therefore offer few opportunities for linkages and diversification.

Several very influential economists summed up this still-predominant vision very well: “Natural resource wealth does not need to be produced, but extracted...it occurs quite independently of other economic processes in a country” (Humphreys, Sachs, & Stiglitz, 2007, p. 4).

This type of perspective does not consider the enormous changes that the global economy and technology have undergone, which are affecting opportunities for innovation across all sectors. In particular, there are three important changes to bear in mind when it comes to NRs.

First, the demand for NRs has evolved significantly in recent years, creating more and more incentives to innovate. Increased demand has created incentives for process innovation insofar as producers are forced to seek new sources for materials or make existing materials more productive. Even more importantly, the pattern of demand has shifted. Value is increasingly placed on differentiation and NR-related services, creating never-before-seen niches for product innovation. Both the highly mechanized and standardized “perfect tomato” and the tasty organic variety that harks back to its original forgotten flavors are eaten, but value is starting to be placed on metal-rich minerals, clearer or “cleaner” petroleum, the best grapes for a certain variety of wine, the most fair and equitable and environmentally respectful processes, etc. (Marin et. al., 2015b).

Second, major strides have been made in the NR-related knowledge base, which has helped increase opportunities to innovate on the supply side, as well. Progress in ICTs, for instance, is opening the door to previously unthinkable possibilities in process control, communication, and adaptation. Digital technologies like 3D printers are opening opportunities in terms of flexibility and adaptation, while the science of new materials presents possibilities to develop new products adapted

to consumer demands and biotechnology opens new ways to handle materials.

The third reason is related to the two changes above: as innovation processes have become more complex, the big companies in the sector have begun to move to a less vertical structure of production and innovation, creating opportunities for the development of suppliers and webs of innovation, and consequently, diversification and structural change.

All of these changes challenge the commonly held notions historically associated with NRs (i.e. low tech and enclaves) and require a rethinking of a development strategy based on these resources.

## How to approach NR-based development within this new context

An NR-related vision of development is necessary to capitalize on new opportunities. The literature on development and innovation has not developed this sort of vision, to the extent that it has broadly conceptualized NRs as a curse. Nevertheless, several studies that have analyzed the experiences of countries that did manage to grow based on NRs have come up with a few very important points.

First, these studies emphasize that it is imperative to draw on a linkage-centered approach. An approach predicated on linkages sees sectors not as islands, but as part of a larger production system in which linkages between actors and sectors are essential to the evolution of the system as a whole and each of its components. Second, they stress the importance of the type and quality of the linkages, not just quantity. An activity generates different types of linkages, including demand, fiscal, knowledge or lateral and vertical linkages. The first two are important, but in general, do not require incentives, as they emerge automatically. The interesting pair from the standpoint of production and innovation is horizontal (knowledge) and



vertical linkages. Knowledge migration from one industry to another occurs when some type of knowledge generated in one industry or application is used in another. Various instances of this migration have been described (Andersen, 2012), but these phenomena have only recently begun to be studied. It is necessary to investigate in greater depth the extent to which NR industries are generating linkages of this sort and when.

Vertical linkages have been the subject of wider study. NR literature in general, and NR policies in particular, has paid significant attention to forward linkages (or those related to NR processing) than to backward. If we produce soybeans, why not go one step further and develop soy oil? If we have and extract lithium, let's make batteries. This emphasis is owed in large part to the widespread idea that natural resources are extracted, not produced, and therefore operate as enclaves and do not use complex methods. There are some success stories in this regard: in Finland, for example, the paper and pulp and forestry industries gave rise to a chemical industry, while Brazil produces bioelectricity, biodegradable plastics, and ethanol from its cane sugar. However, these types of linkages typically suffer from the downside that they perpetuate and exacerbate the country's reliance on NR-based economic activities. These linkages do not have secure demand; they are an opportunity, rather than a need; and will likely have to deal with some sort of knowledge gap. Because there is no location advantage if local producers do not have preferential access to the resources, it is in fact very difficult for these activities to prosper. Within the current context, in which resource extraction processes have become much more complex (e.g. copper mining), it is crucial to give equal or greater importance to the potential that NR-based activities offer for the creation of backward linkages that encourage the development of knowledge-based local suppliers.

NR companies generally must establish relationships with local providers. Although these relationships can start simple, they must evolve towards more complex. In general, the literature studying this phenomenon has pointed to the importance of local capacities for these types of linkages to

flourish, although it is also important to consider the following: the competencies of users and the large RN firms' needs for transformation are as important as the needs of the knowledge-based suppliers and the technological opportunities. The backward linkages with the greatest opportunities to grow will be those that address the needs of innovative users that use technological opportunities to confront complex needs in the areas of knowledge or innovation (Andersen et. al., 2015), i.e. those that exploit growing knowledge areas (e.g. biotechnology, information technologies) that are not already dominated by incumbents.

To date, the literature has primarily focused on the competencies of suppliers, but when it comes to NRs, the importance of big users cannot be ignored: suppliers innovate alongside users. Mature economies where NR industries hold significant weight have managed to diversify into knowledge-intensive sectors, which are those industries that have redirected the course of innovation through their demand for complex goods. Understanding the transformation process in mature industries is therefore just as essential as understanding other nodes of the innovation system.

All of this will require overhauling the current innovation system. In general, when discussing national or sectoral innovation system, greater importance is placed on the linkages between the scientific system that generates knowledge and the industries or activities that make intensive use of that knowledge to develop goods or services, e.g. suppliers of knowledge-intensive goods. However, in countries where NR and traditional sectors play a larger role in local economies, the linkages between large companies in these sectors and their suppliers are just as important as the knowledge-based linkages mentioned previously. Furthermore, in the face of the increasingly heated social and environmental conflicts swirling around NR-related activities, the linkages between these companies, regulatory agencies, and civil society are important. If these conflicts are handled properly they can create opportunities for development, rather than create roadblocks.

# Areas of opportunity for the development of NR-associated knowledge suppliers

This section presents three major areas of opportunity: a) development that considers specific local conditions; b) development predicated on new knowledge areas; and c) development based on sustainable methods. I will also address the most significant challenges facing the development of these linkages based on several studies conducted in Latin America.

The first area of opportunity consists of specific and changing local conditions. Manufactured goods can more or less be produced in the same fashion in any location. In contrast, the inputs and processes of NRs interact with the local biosphere, meaning that each region may require solutions adapted to its local conditions; mineral deposits are very different, and humidity, salinity, and pests vary from region to region, even within the same country. Likewise, because of climate change and other activities, the biosphere is constantly evolving, which means that the optimal technologies to exploit NRs must also evolve over time. Therefore, standardized solutions provided by global technology suppliers for issues related to NRs are generally not optimal, since the inputs and knowledge required are specific to each location and are likely to change over time.. This constitutes a temporary advantage, an entry opportunity for local suppliers that are familiar with local specificities and develop the capacities to satisfy them. Many suppliers in developing countries have used this approach as a way to make inroads into these markets.

In the oil-rich regions of Norway, extreme climate conditions encouraged the development of local suppliers for the offshore oil industry, because the solutions developed by U.S. oil companies operating in the Gulf of Mexico did not translate well to Norway. Studies have shown that these conditions, together with extremely exacting local safety regulations and standards, favored the development of top-quality local suppliers (Andersen, 2012). In South Africa, low-quality coal deposits

with high levels of impurities led to the development of local coal washeries that then began to expand globally using these and other complementary capabilities (Kaplan, 2012). In Argentina and Brazil, the varied agro-ecological and weather conditions in the different regions where soybeans and corn are produced were used as an opportunity for local suppliers to develop seeds that were adapted to local conditions. These local suppliers then became major international players (Marín et. al., 2015b).

Another important field of opportunity is related to new technologies. The emergence of new technologies and significant advances in the knowledge related to NRs and/or that can be used for NR-related activities is opening up new opportunities to develop completely novel processes and products. In the past, suppliers in developing countries seized these opportunities during prior technological revolutions and paradigm shifts. In the United States, the mining machinery industry was developed during the electrical and chemical industry boom (both science based) using steel, the most plentiful input at the time. More recently, in Australia, the growing boom and spread of ICTs has led to the development of a service industry based on these technologies. The opportunities that other regions took advantage of in the past are no longer available to Latin American suppliers that failed to act when the moment was right. The objective now should be entering into new and emerging niches. There are still significant opportunities related to ICTs, and multiple new opportunities associated with the technologies that will be at the cutting edge of the next technological revolution are emerging, such as biotechnology and new materials. Several examples of successful Latin American companies that are now growing underscore the importance of seizing these opportunities for development in the region.

Aguamarina, a Chilean company, specializes in biotechnology services for the mining industry. When the company began, it provided just a few services, but has since expanded and developed multiple innovative products related to dust control, bio-corrosion, and water treatment. For instance, the company devised a pioneering solution to control pollution that is derived from bacteria and micro-algae. Aguamarina sells its products to the major mining companies present in Chile, including

BHP Billiton, CODELCO, and Anglo American. The company has nine patent applications pending, four that have already been granted, and has received multiple awards, including the Innovative Exporter award from ProChile in 2014.

Don Mario, based in Argentina, is now the leading supplier of soybean seeds in South America. Although it started small, the company has now cornered the regional market, displacing multinationals like Monsanto, as well as historical, large-scale competitors such as Embrapa, thanks to the ongoing development of innovative products that use the most advanced tools molecular biology has to offer (biotechnology). The company now has 40 percent of the regional market, nearly 50 percent of the Argentine market, 40 percent of the southern Brazil market, and is the company with the most new seed registrations in the region.

Finally, significant opportunities exist related to the increasing need to develop eco-friendly technologies. Climate change and environmental concerns can no longer be disregarded and it is clear that environmental impact regulations will become increasingly rigorous. Local communities in developing countries increasingly have greater access to information about the impacts of NR activities, and can use this increasing connectivity to better defend against harmful activities. In 2010, 139 of the 337 mining projects slated to begin were in dispute with local communities due to pollution and health risks. The demand for technological solutions that address the environmental issues generated by NR activities, such as waste management or the mitigation of air and water pollution, will only increase. The existing large-scale companies that provide technology and services to the NR industry must adapt to these changes, and they are. However, compared to the new entrants, these incumbents have a more limited ability to adapt, as they have already made significant investments and operate within different paradigms.

In short, new opportunities exist to develop pioneering knowledge and new suppliers for the NR industry, as well as opportunities for insertion into new links in the value chains. There is, of course, tension, because the users, customers, and large multinational companies will generally prefer modular,

standardized solutions and known suppliers. However, the pressures and opportunities for change are compelling, and the imperative is great, considering that the sustainability of the entire system is in jeopardy. The time is right for a new development cycle for NR activities, an opportunity that should be seized by regional suppliers.

## The challenges ahead

One crucial question remains: what do the new entrants need to do to harness these opportunities? Innovation studies tend to focus entirely on science and technology capacities, and they are not wrong to do so, because these factors are indeed important. However, a series of more recent studies has started to point to another equally important but less known challenge. The need for what is being called the “capacity to build markets.” Little is known about this ability, because the innovation studies conducted in the region generally operate on the basic assumption that developing countries copy the technology and innovation of developed countries. However, as previously discussed, the region is already starting to see the emergence of companies that are creating cutting-edge innovations that meet the shifting local needs of the NR industry. To exploit these innovations, companies must draw on a wide range of capacities that complement their technological and scientific capacities and that are much less understood. These capacities include learning how to negotiate with large clients, establishing the value of innovations, gaining access to shared research and development spaces, managing everything related to intellectual property rights, building legitimacy and brand power, being able to address and manage biosafety regulations, etc. The ability to manage these processes must evolve in parallel with a company’s strictly technological skills so that the innovative companies diving headfirst into these new market niches can continue to grow and evolve.

It is also important to identify the most relevant policy challenges. A core challenge currently facing the NR industry is how to handle the severe environmental and social problems



created by NR activities, which can lead to conflicts that threaten the survival of the business.

Certain international institutions with an exclusive focus on major technological solutions (like GMOs) favor interventionist models based on top-down, regulatory-centered planning. These models can be useful for managing certain aspects of a potential transformation, however, they are not the only option, nor are they the most intelligent option within this new context, as they do not take advantage of the enormous potential offered by ICTs to mobilize the entirety of civil society and promote more radical, large-scale change.

ICTs benefit more decentralized forms of production and innovation, favoring a new type of innovation that is more compatible with the green economy. However, that is not the only form of transformative potential that these new technologies bring to the table. ICTs also support the dissemination of information and the development of more participatory methods of generating this information (e.g. Wikipedia); they permit interconnectivity with and between the most remote places in the world and increase the opportunities for communication and engagement across all areas. These new technologies are also being used to encourage greater transparency and accountability in decision-making, as the key information involved in the decision-making processes that are of interest to citizens can now be made available to the majority of these same citizens.

Those that recognize the potential of these technologies are advocating for a transformation centered on the participation of the majority through civil society organizations, accountability, and democratic decision-making, as well as a respect for diversity.

Within this context, the diverse perspectives, local institutions, experiences, and responses of multiple citizens, regions, etc. can be harnessed, rather than repressed and channeled into a single homogeneous model that is not compatible with the new possibilities afforded by ICTs (Leach, 2015).

In short, the participation of civil society can facilitate more creative and progressive responses to environmental problems (e.g. changes to the constitutions of Bolivia and Ecuador to include the rights of nature on a similar level as human rights).

Moreover, this approach considers the values and interests of stakeholders, which is fundamental in order to gain traction for and prevent resistance to any proposed change (Stirling, 2014). Only with this type of transformation is it possible to take full advantage of the potential of ICTs to prevent the inequalities, injustices, and patterns of economic exploitation characteristic of Fordism from passing over into the new low-carbon economy.

At the end of the day, civil society has been responsible for the development of the change agenda that now plays a central role in any transition to a green economy. Take, for example, matters related to labor risks, resource degradation, chemical consumption, radiation, atmospheric contamination, water pollution, climate change, etc., and it quickly becomes clear that all of these issues were raised by civil society and the people affected, not by governments or international institutions.

The active participation of civil society is necessary to generate significant changes in the ways that NRs are exploited; just as with the changes of direction observed in nature, a true social transformation can only be achieved through diversity, creativity, and democratic debate.

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IV.

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# NEW ECONOMIC PARADIGMS

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## Infographic 4. New Economy Paradigms

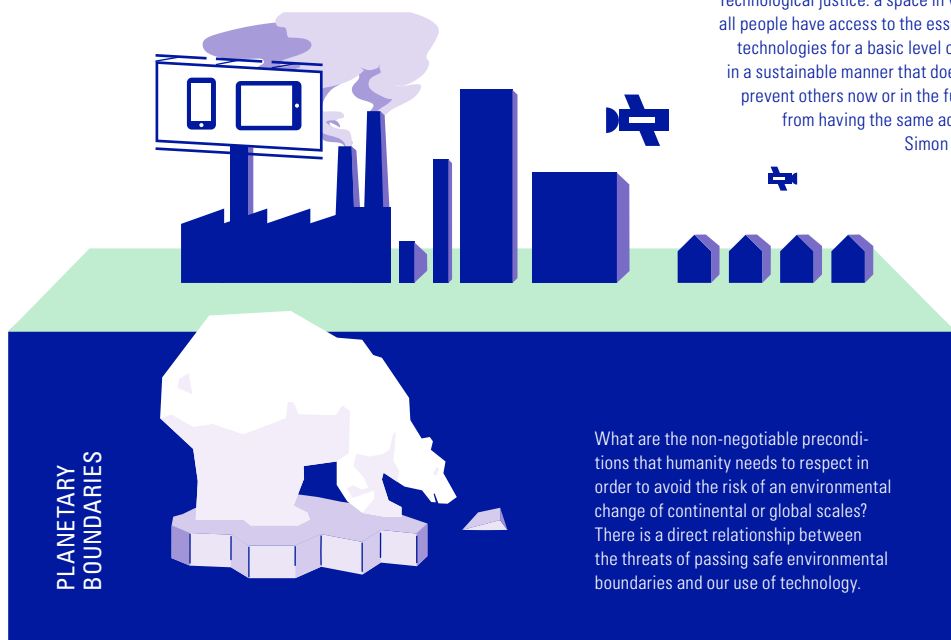
I. Rebooting Our  
Relationship with  
Technology , **Simon  
Trace**

II. Creating an  
Economy for the  
Common Good,  
**Christian Felber**

## TECHNOLOGICAL JUSTICE

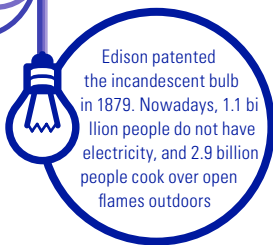
Technological justice: a space in which all people have access to the essential technologies for a basic level of life, in a sustainable manner that does not prevent others now or in the future, from having the same access.

Simon Trace



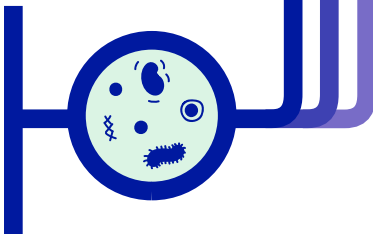
What are the non-negotiable preconditions that humanity needs to respect in order to avoid the risk of an environmental change of continental or global scales? There is a direct relationship between the threats of passing safe environmental boundaries and our use of technology.

## TECHNOLOGICAL INJUSTICE



Edison patented the incandescent bulb in 1879. Nowadays, 1.1 billion people do not have electricity, and 2.9 billion people cook over open flames outdoors

In ancient Rome, there were rudimentary latrines offering safe sanitary facilities. Currently, 2.5 billion people do not have access to toilets, 750 million do not have access to uncontaminated water, and 800 million children under the age of five die of diarrheal diseases



## We must reboot our relationship with technology

## How to achieve justice in the access to technology

1. Agree on a social base using the SDGs as a frame of reference
2. Create a data revolution
3. Improve the understanding of how technology adapts and is adopted
4. Reconsider finances

## How to achieve justice in the use of technology

1. Build consensus on risk management
2. Move towards a circular economy
3. Establish pressure to generate commitments

## How to achieve justice in technological innovation

1. Improve global coordination
2. Reconsider competition and intellectual property
3. Reconsider the role of the state as entrepreneur



# PARADIGMS

## ECONOMY FOR THE COMMON GOOD

### WHAT TO DO?

- Redefine economic success
- Use alternative indicators to measure the common good

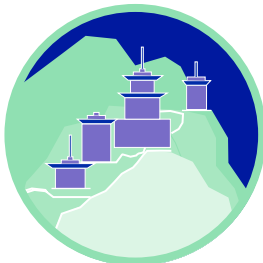


Herman Daly:  
Index of  
Sustainable  
Human Welfare



Foundation  
for a New  
Economy:  
Happy  
Planet Index

OECD:  
Index for a  
Better Life



Bhutan: Gross  
Domestic  
Happiness Index

Enquete  
Commission  
of German  
Parliament.  
W3 indicators

### HOW TO DO IT?

- “The Common Good Balance Sheet is the first instrument of corporate social responsibility.”  
The pre-requisites for its success are:

1

#### **Binding force.**

Numerous corporate social responsibility instruments have shown that the objectives are not met when the activities are voluntary

2

#### **A holistic approach.**

It isn't enough to measure only environmental aspects, quality of workplaces, etc. All core values count!

3

#### **Quantifiability.**

It should be possible to measure the results—i.e. to evaluate them objectively

4

#### **Standardization.**

All companies should be responsible for to the same objectives/indicators. Otherwise, the most successful companies might not be rewarded

5

#### **Understanding.**

Business consultants and Common Good auditors should not be the only ones that understand the Balance Sheet. Customers, employees, and interested members of the public should also be able to understand it

6

#### **Advertising.**

The Common Good Balance Sheet must be accessible to all and should be downloadable from the Internet

7

#### **External audit.**

Companies should not be able to evaluate themselves, as is currently true with some other corporate social responsibility instruments

8

#### **Legal consequences.**

A company's ethical performance and contributions to the community should be rewarded



**Author**

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Simon Trace

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# **Rebooting Our Relationship with Technology**







FEDERATION OF THEATERS  
**Gonzalo Martner**



FEDERATION OF THEATERS  
**Ana Echeverri**

# Introduction

In this paper I will argue that getting technology<sup>1</sup> right is critical to dealing both with the huge global inequalities of poverty and the great environmental challenges that face the world today. But I will also argue that technology is not working for us at the moment and that we need to rethink or reboot our relationship with it if we want a sustainable and equitable future for everyone on this planet. I will propose a new governance approach to make technology work as if people and planet mattered. That new approach is based around a principle of Technology Justice.

<sup>1</sup> It is important to clarify what is meant by the term “technology.” As used in this paper, “technology” is taken to mean physical infrastructure, machinery, and equipment, but also knowledge and skills and the capacity to organize and use all of these.



## Defining Technology Justice

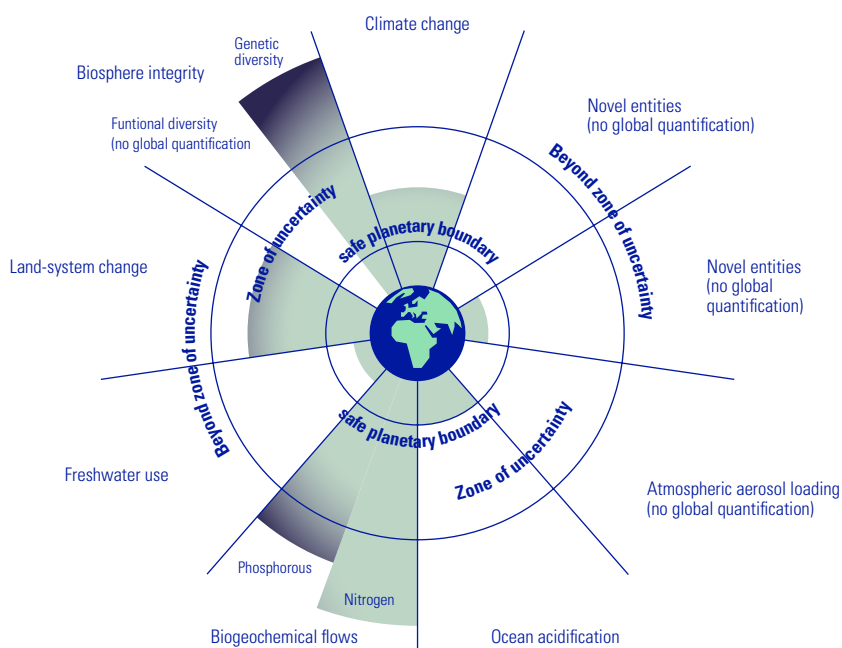
There are a number of ways of developing the principle of Technology Justice. It is possible, for example, to use the American philosopher John Rawls' theory of "justice as fairness" as one starting point. But for the purpose of this paper, I want to use another approach by thinking about technology in the context of the two greatest challenges humankind faces today: ending global poverty and finding a path to an environmentally sustainable future for everyone on the planet. I'm going to do that by looking very briefly at two really interesting concepts: "planetary boundaries" and "doughnut economics."

In 2009, a group of environmental scientists and earth system academics led by Johan Rockström of the Stockholm Resilience Centre proposed a framework of "planetary boundaries" (Rockström et. al, 2009). The boundaries stem from answering the question: "What are the non-negotiable planetary preconditions that humanity needs to respect in order to avoid the risk of catastrophic environmental change at continental or global scales?" Rockström's team identified nine broad earth processes. The idea behind suggesting boundaries for these processes is that tipping points exist at which very small further incremental increases produce a large and possibly irreversible and catastrophic change as a response: the release of CO<sub>2</sub> into the atmosphere leading to global warming that triggers a collapse of the polar ice sheets, for example. As the earth's system is very complex and these variables do not exist in isolation from each other, the exact location of tipping points is difficult to predict. The planetary boundary approach therefore establishes a range of possible values within which the tipping point is thought to lie for each process, with the lower end of that range being defined as the edge of the safe space and the beginning of a zone of uncertainty and danger for humanity. As the shaded wedges of Figure 1 show, a number of the processes are already judged to have breached the safe limits proposed.

While working at Oxfam, the economist Kate Raworth was intrigued by this idea of a set of environmental planetary boundaries as a ceiling beneath which we should try to confine human



Figure 1: Planetary boundaries (Stockholm Resilience Centre, 2015)

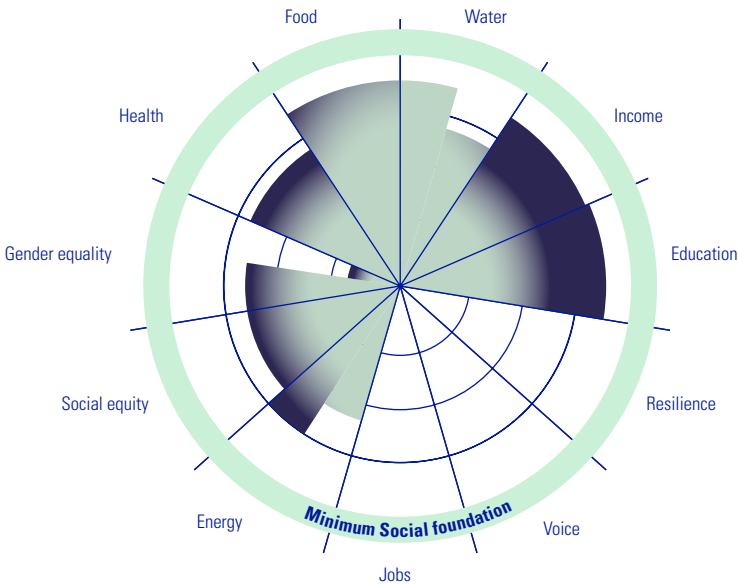


activity. But she suggested that another set of boundaries also had to be considered, a set of boundaries that formed a floor or social foundation for humanity that we should strive to at least meet, if not exceed (Raworth, 2012). There are potentially many ways of describing this minimum social foundation, but Raworth used the submissions of national governments to the United Nations Sustainable Development Goal process as the basis to create a set of minimum standards. She also demonstrated that, to date, we have failed to achieve universal access to any of those individual standards, or the minimum social foundation as a whole (see Figure 2).<sup>2</sup>

The novel part of Raworth's analysis though is the bringing together of her idea of a social foundation with Rockström's safe planetary boundaries to create "the doughnut" (Figure 3). Raworth suggests that there is a safe, inclusive,

<sup>2</sup> It should be noted some of the measures for the standards have yet to be defined, hence the gaps for jobs, voice, and resilience.

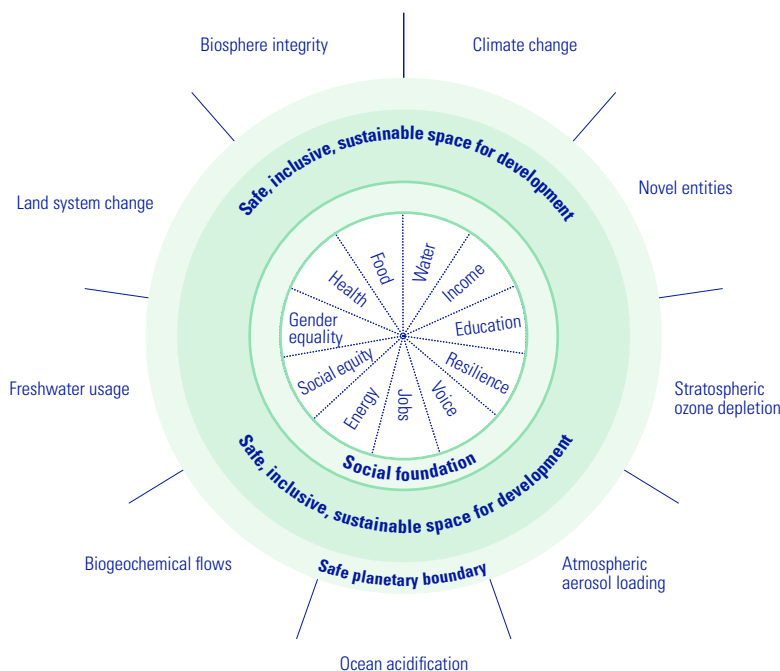
Figure 2 Raworth's social foundation (Raworth, 2012)



and sustainable space for development that lies in the ring of the doughnut, between the social foundation and the safe planetary boundary. This is a place where everyone meets or exceeds a minimum acceptable living standard while humanity as a whole stays within the carrying capacity of the planet. Raworth's argument is that the purpose of economics or development should be to position all of humanity in this ring of the doughnut (hence the term "doughnut economics").

What is also interesting is that both planetary boundaries and the social foundation can be examined from the perspective of technology. If we take planetary boundaries first, there is clearly a very direct relationship between threats to exceed the safe environmental limits and our use of technology. If we look at our use of fossil fuel technology for energy supplies, for example, we can see many links to breaches of safe planetary boundaries. For example:

Figure 3: “The doughnut” - a safe inclusive and sustainable space for development (Raworth, 2012)



- a direct link between CO<sub>2</sub> emissions from fossil fuels and climate change,
- a rise in ocean acidification as excessive CO<sub>2</sub> is absorbed into the seas,
- an impact on freshwater resources as massive amounts of water are used for both cooling processes in power stations and for the production of hydroelectricity,
- large-scale land system changes resulting from a whole range of factors, from the construction of reservoirs for large hydroelectric dams to the mining of coal or oil shale for fuel.

To take another example, if we look at our food production systems and technologies we can see how the overuse of fertilizers

has contributed to the breaching of safe boundaries for biogeochemical flows, leading to acidification of soils and the leaching of fertilizer into waterways, which in turn causes algal blooms in coastal and freshwater systems that deplete oxygen levels and kill aquatic life. We can also see how irrigation impacts freshwater availability, how the clearance of forests for agriculture leads to large scale land-system change that in turn releases CO<sub>2</sub> that contributes to climate change, and how this change, along with industrialized mono-cropping, impacts biodiversity. It would also be possible to look at a whole range of other uses of technology and their relationship to these planetary boundaries, ranging from the use of chemicals in industry to current experiments in synthetic biology and the possible release of novel entities into the environment.

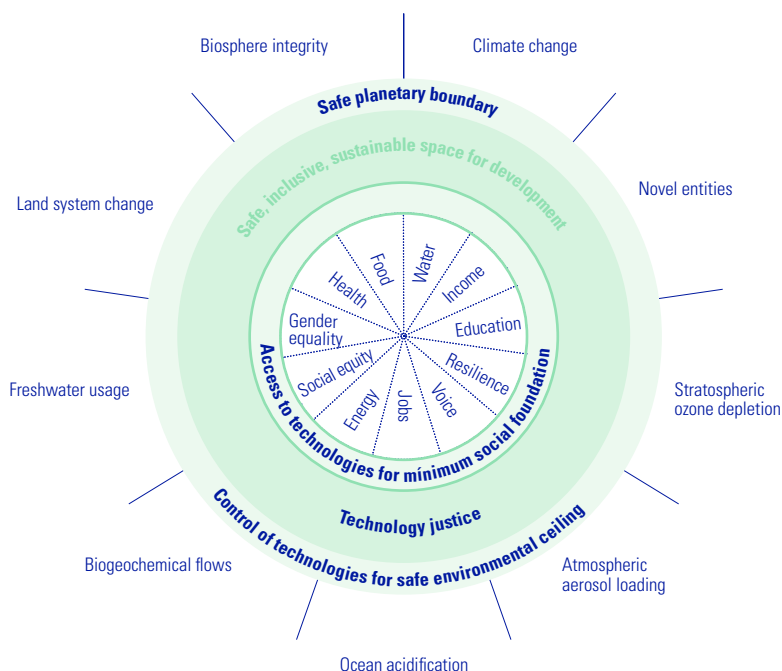
Moving on to the social foundation, it is fairly easy to show that, although establishing such a foundation is by no means simply a technical exercise, access to technology is an essential precondition for achieving it. We need technology for clean water supplies. We need technology to provide clean and useful energy. We need technology for the medical equipment and drugs required to provide a basic health service. We need access to equipment such as plows and sprinklers to produce food, but also access to technical knowledge to improve productivity or to fight pests and diseases in crops and livestock. Indeed, we know access to technical knowledge and information is itself an important part of the social foundation and that the availability of communications technologies can open up huge opportunities for improvements in quality of life, ranging from improvements to the quality of education or the availability of financial services, to the provision of remote health diagnostics or the acquisition of a digital identity that allows easy access to government services and subsidies and the possibility of a voice in political processes.

Given all of this, it is possible to recast Raworth's doughnut (see Figure 4). The inner circle can also represent a minimum set of technologies that must be accessed universally in order to achieve the social foundation. The outer circle can represent the controls we have to exert on our use of technology to remain within safe planetary boundaries. And the core of the doughnut

then represents not just a safe and inclusive space for development, but also a space for Technology Justice, which is then defined as follows:

**Technology Justice:** a space where everyone has access to the technologies that are essential for a basic standard of life, in a *sustainable* way that does not prevent others now or in the future from doing the same (Trace, 2016).

Figure 4: Defining a space for Technology Justice (Trace, 2016)



So how well does today's world conform to that principle of Technology Justice in practice? Not well, I'm afraid, and I would like to illustrate that by using the second part of this paper to look at a range of examples of technology *injustice* related to access to technology, use of technology, and innovation of technology.

# Understanding Technology Injustice

## Injustices in Access to Technology

I will start by looking at injustices related to access to technology, or rather lack of access. Consider energy. We need energy in the home to cook, to refrigerate, and for lighting, heating, and communications. We also need energy in the workplace for the same functions and perhaps mechanical power to pump water or run a lathe or a press or a mill. Energy is also needed for community services—for security and street lighting, for lights and computers in schools, or for refrigerators to maintain the cold chain for vaccines or to power medical equipment such as sterilizers in clinics. Achieving access to these multiple forms of energy service is fundamental to achieving a basic standard of living.

This is not a new technology. Edison patented the incandescent light bulb in 1879. So surely it is an injustice that, nearly 140 years later, 1.1 billion people are still living in the dark with no electricity and 2.9 billion people are still cooking over open fires (UNSE4ALL, 2015). How have we not managed to find a way to provide universal access to a technology that's been around for close to one and a half centuries and that is so essential to a basic standard of living?

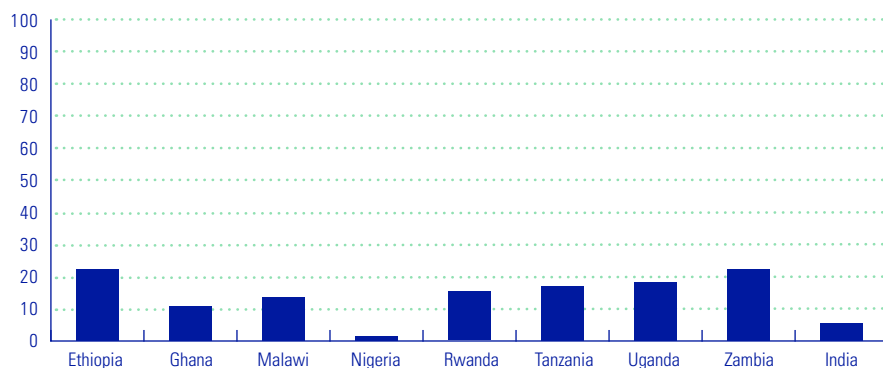
Failing to allocate enough money is one reason. The International Energy Agency (IEA) estimates that \$44.5 billion dollars need to be spent every year on new electricity supplies and \$4.4 billion dollars each year on access to clean cooking facilities to achieve universal access to basic energy services by 2030 (IEA, 2011), which is now a SDG target. However, current spending falls far short of these necessary goals, at around \$12.7 billion dollars per year on electricity and just \$0.4 billion dollars per year on clean cooking facilities. It is not just the volume of funding that is an issue, but how this funding is spent as well. Because of the dispersed rural nature of much of the population that lacks electricity, solutions based on extensions to national electricity grids will be very expensive and uneconomical. The



IEA therefore estimates that around 65 percent of all spending will have to be on off-grid solutions to meet the 2030 target (IEA, 2011). Nobody knows exactly how much is currently being spent on off-grid technology, but it is fairly certain that the amount is nowhere near 65 percent of current investments. A recent study of the energy loan portfolios of the main development banks probably reflects the actual situation, with the best performers allocating only 25 percent of their funds to off-grid technology and the worst allocating none at all (Sierra Club, 2014). There are a number of reasons why this misallocation of funding happens, ranging from built-in biases in the training of engineers, to the difficulties funding institutions have in engaging with small scale infrastructure, to the lack of voice of marginalized rural populations, to the greater opportunities for corruption offered by larger scale infrastructure. In essence however, by going for grid over off-grid technology, a choice is being made. A choice to provide more to those who already have electricity over providing new access to those who have none.

Such injustices are not confined to energy services. Vestiges of lead pipes in the remains of Roman baths attest to the fact that the Romans knew about piped water supplies. They also had rudimentary latrines to provide safe sanitation. So why, 2,000 years later, do we still have 750 million people without access to clean

Figure 5: Low rates of access to technical advice for African farmers (ActionAid, 2013)



water, 2.5 billion still having to defecate in the open (UNICEF and WHO, 2014), and 800,000 children under the age of 5 years dying every year from diarrheal disease (Liu 1, 2012)?

Likewise, why is it that the vast majority of farmers in the developing world have no access to technical advice to help them improve their productivity (ActionAid, 2013), or that 30 percent of the world's population still does not have access to WHO's list of essential medicines (WHO, 2011), or, given the rising importance of digital identity and access to information, that over 80 percent of South Asia and over 75 percent of Sub Saharan Africa cannot access the internet (Banks, 2015)?

### Injustices in the Use of Technology

Clearly we still have a long way to go to achieve universal access to the basic set of technologies necessary to achieve the social foundation Kate Raworth talked about in her doughnut economics. Technology injustices are not limited to issues of access. The way technology is used by some today can itself impact on the ability of others to live the lives they value, either today or in the future. The most obvious example of this is our current addiction to fossil fuel technologies and the hugely negative impact that climate change is already having, and will continue to have on future generations. But there are many other, less obvious examples.

In the health sector the misuse of antibiotics is one. We persuade our doctors to prescribe them when we should not be using them (Gilberg, Lauri, Wade, & Isonaka, 2003). In the developing world, their cost leaves many unable to afford a full course of treatment, leading to underdose (Okeke, 2010). Moreover, in the field of agriculture, antibiotics are used with abandon in animal feed, not just to prevent infection but also as a growth promoter. Eighty percent of all antibiotics used in the United States are administered to animals as prophylactics or growth promoters (The Scientist, 2014). As a result of over use and improper use, bacteria are becoming increasingly resistant to existing antibiotics. Alarming, the heyday of antibiotic discovery was in the 1940s and 1950's. Only three new classes of antibacterial drugs have been discovered in the last 40 years, with a complete discovery void since 1987. Unless this dearth of discovery can be

reversed, it is predicted that global deaths from antimicrobial resistant bacterial infections could grow from 700,000 a year today to 10 million a year by 2050, exceeding annual deaths from cancer (Review on antimicrobial resistance, 2014).

The agriculture sector provides another example of the use of technology leading to injustice—notably the long-term impact of industrialized farming technologies and techniques on the genetic base for our food system. The Green Revolution's focus on wheat, rice, and maize and commercial breeders' focus on soybeans, alfalfa, cotton, and oilseed rape has pushed other traditional food crops into the margins since the 1960s. But the focus on yield has also meant that even within the world's leading crops it is estimated that genetic diversity has been decreasing by two percent per annum since the 1990s and that perhaps three-quarters of the germplasm pool for these crops is already extinct (ETC Group, 2012). This severely limits the genetic pool we can draw on to develop crops that can cope with new climatic conditions and new pests and diseases in the future. The same issue faces us in the livestock sector, where the search for uniformity and productivity has led to a focus on a very narrow range of breeds globally. On average, just five breeds dominate commercial production in each of the five main species of livestock around the world. Holstein-Friesian dairy cows are found in 128 countries, for example, while the Large White pig is farmed in 117 countries, and the White Leghorn chicken is found almost everywhere. Although the result has been an increase in productivity, the narrowing of the gene pool carries with it real risk. Avian influenza and swine flu (H1N1) are just two recent examples of global pandemics largely provoked by extreme genetic uniformity in commercial breeds raised in confined spaces (ETC Group, 2012).

Clearly, although we need to promote access to technology to achieve a universal social foundation, we also need to find a way to govern the use of technology to prevent the breach of planetary boundaries and all that that entails for human life.

### Injustices in Technology Innovation

So what about technology innovation? Is that helping with these twin great challenges of environmental sustainability and ending

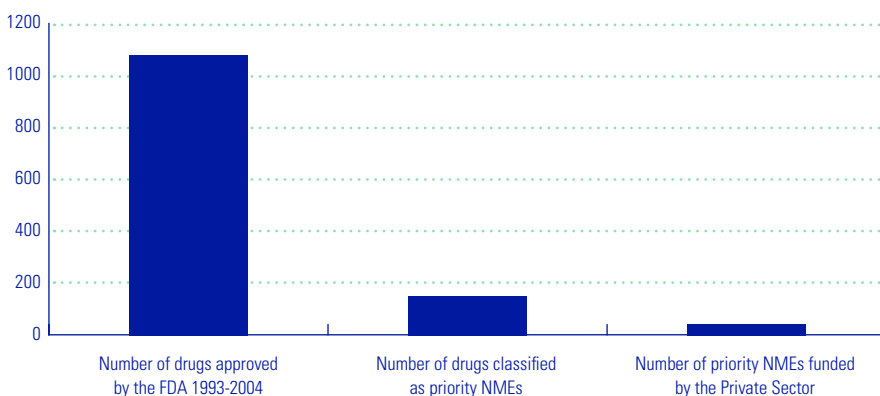
poverty? Can we see Technology Justice here in terms of the innovation process finding solutions to pressing social or environmental problems? Sadly the answer to that question is also, often, a resounding “no!”

Let’s take a look at technological innovation in the health sector as an example. In 1990, a report by the Commission on Health Research for Development discovered what became known as the 10/90 gap (Commission on Health Research for Development, 1990). At that time, it was found that although low and middle-income countries accounted for over 90 percent of global preventable deaths every year, the health problems of low and middle-income countries attracted well fewer than 10 percent of the global health research budget. Things have changed a lot since 1990. Global spending on health research has increased eight-fold for a start (Viergever, 2013) and the nature of the burden of disease has changed (The Lancet, 2015). But the disparity remains. Today 90 percent of the global spend on health research takes place in the developed world. But, according to the Lancet, only around one percent of that \$214 billion dollars a year is spent on research on neglected diseases of poverty—diseases such as HIV/AIDS, malaria, tuberculosis, diarrheal disease etc. (Røttingen & et al, 2013). The other interesting thing to note here is who is making the investment. The GlaxoSmithKlines of the world account for 60 percent of global health research and development (R&D) spend, but only 15 percent of the spending on research into the diseases primarily affecting populations of the developing world. As Bill Gates noted in 2013, there is no market incentive to develop drugs to treat the poor (Chu, 2013)

Market signals are not just weak drivers of innovation for diseases of the poor. They are pretty weak drivers for research into any genuinely new medicines. For example, over the 10 years from 1993 to 2004, only 14 percent of the drugs approved by the U.S. Food and Drug Administration were classed as priority new molecular entities (NMEs). That is to say, only 14 percent of the drugs produced in that period represented a significant step forward as completely new medicines (see Figure 6). The remainder were mostly minor variants on existing medicines, e.g. the same drug repackaged in different dosages. What is more, only 25 percent of the NMEs could trace their origins back to research by

private corporations. The remaining 75 percent originated in the *publicly funded* laboratories of the National Institute of Health. So in a funding environment dominated by the private sector, the dependency on market forces not only tends to focus research on products for markets in the developed world with more buying power, but also, within that market, mostly delivers “innovation” that is of only marginal value—drugs that offer little additional

Figure 6: Markets forces provided limited impetus



therapeutic value but provide a good financial return because their development costs are relatively low (Mazzucato, 2013).

Intellectual property rights also create more problems than solutions in this environment. The original purpose of patents was to encourage innovation by giving innovators the opportunity to recover their investment through a time-bound monopoly during which they alone could commercially exploit their invention. But today, research shows little or no correlation between the number of patents lodged by a company and the number of new products it brings to market (Boldrin & Levine, 2013). Indeed, these days patents are often registered not in anticipation of producing a new product, but to form what are known as patent thickets, making it more difficult for competitors to advance their products (Kenny & Barder, 2015).

What is more, the inclusion of intellectual property rights in the General Agreement on Tariffs and Trade has had a huge impact on the costs of health care in developing countries, as it effectively extended the mandate of (mainly U.S. and European) pharmaceutical companies patents to developing countries, blocking the right to manufacture cheaper generic drugs. The example of antiretroviral drugs is often cited. The cost of a year's treatment using Western brand name drugs in the late 1990s was around \$10,000 dollars compared to generic medicines, which cost less than \$200 dollars at the time (Stiglitz, 2008). Although progress was made on antiretrovirals following a campaign in South Africa, the issue of the impact of intellectual property rights on the costs of medicines in developing countries does not go away. For example, a 2006 report on a U.S. - Colombia trade deal highlighted the fact that, as a result of the inclusion of intellectual property rights in the agreement, the South American nation would need to spend an additional \$919 billion dollars by 2020 just to maintain the same level of medical care it had at present (Carter, 2012). Indeed, the impact of the misuse of patents by corporations on the prices of drugs is not limited to the developing world. In 2016, the UK Competition and Markets Authority (CMA) fined a number of pharmaceutical companies for anti-competitive conduct in relation to the supply of the anti-depressant drug paroxetine. The CMA's decision related to activity between 2001 and 2004 in which GlaxoSmithKline plc., the supplier of branded paroxetine, agreed to provide compensation totaling over £50 million to suppliers of generic versions of paroxetine. The CMA found that this compensation was aimed at delaying the potential entry of cheaper generic competitor drugs into the UK market (Competition and Markets Authority, 2016)

Although the above examples focus on the health sector, similar stories around technology innovation pointing in the wrong direction exist in other sectors too. In agriculture, for example, the richest 22 countries in the world spend around twice as much on R&D than 117 developing countries combined (Pardey, Beintema, Dehmer, & Wood, 2006). And once again, private sector investment dominates R&D in the rich countries, but is almost entirely absent in developing countries, meaning that the global innovative effort focuses mainly on the greatest



financial return rather than the greatest poverty or environmental need. Similarly, the public investment in the energy sector to advance renewable energy options is dwarfed by public subsidies supporting fossil fuels, whether the comparison is made using the IEA's estimate, which suggests direct fossil fuel subsidies are over four times those for renewable energy (IEA, 2014), or the IMF's estimate that includes the costs to the public purse of fossil fuel environmental damage and shows fossil fuel subsidies to be thus 40 times as great as subsidies for renewables (IMF, 2015).

## Rebooting Our Relationship With Technology

### The Need For Change

Humanity has lost control of technology; or rather, we have relinquished it to the vagaries of the market, assuming the “invisible hand” will ensure the most efficient development and dissemination of technology that best meets people's needs. The result is failure. Failure to provide universal access to a set of basic technologies that are key to achieving a minimum standard of living and a social foundation, failure to control the use of technologies to avoid the risk of breaching planetary boundaries, and failure to guide technology innovation in a direction that addresses the massive challenges of global poverty and environmental sustainability that the world now faces.

We have to reboot our relationship with technology. This is not incremental change, but rather a radical shift in the oversight and governance of innovation and the access to and use of technology. The lens of Technology Justice has to be used to recognize that some choices are more likely to lead to that safe and equitable space for human development, whilst other choices are more likely to lead in the opposite direction. Responsibility needs to be taken for those decisions, rather than hoping market mechanisms can make them by default and without intervention.

This is a massive undertaking, systemic change on a global scale. A daunting prospect to think about, but every journey, no

matter how long, starts with just a few steps. So this paper finishes by offering some thoughts on what the first few steps on this journey might be.

## Achieving Justice in Access to Technology

### *Agreeing the Social Foundation*

The first challenge must be to agree what the social foundation is and what key technologies are needed to support it. The Sustainable Development Goals (SDGs), as an internationally agreed vision of a different future, might be a good place to start. Generalized references to technology abound or are strongly implied across the SDGs, but are somewhat more sporadic at the detailed level of the targets and indicators that will be used to drive action and monitor progress. Targets for SDG 2 (zero hunger), for example, include reference to improving access to technical knowledge through agricultural extension services, the spread of more sustainable agricultural practices, and the maintenance of biodiversity in food crops and livestock. But the targets for SDG 7 (affordable clean energy) make surprisingly little reference to technology in relation to access, particularly considering the current debates around the role off-grid infrastructure will need to play in delivering universal access (UN Stats, 2015). We need to explore what could be done to better highlight the role of technology in achieving these goals and what data and communications activities around technology and the SDGs might best grab media interest and help create peer pressure for change over the next 15 years.

### *Creating a Data Revolution*

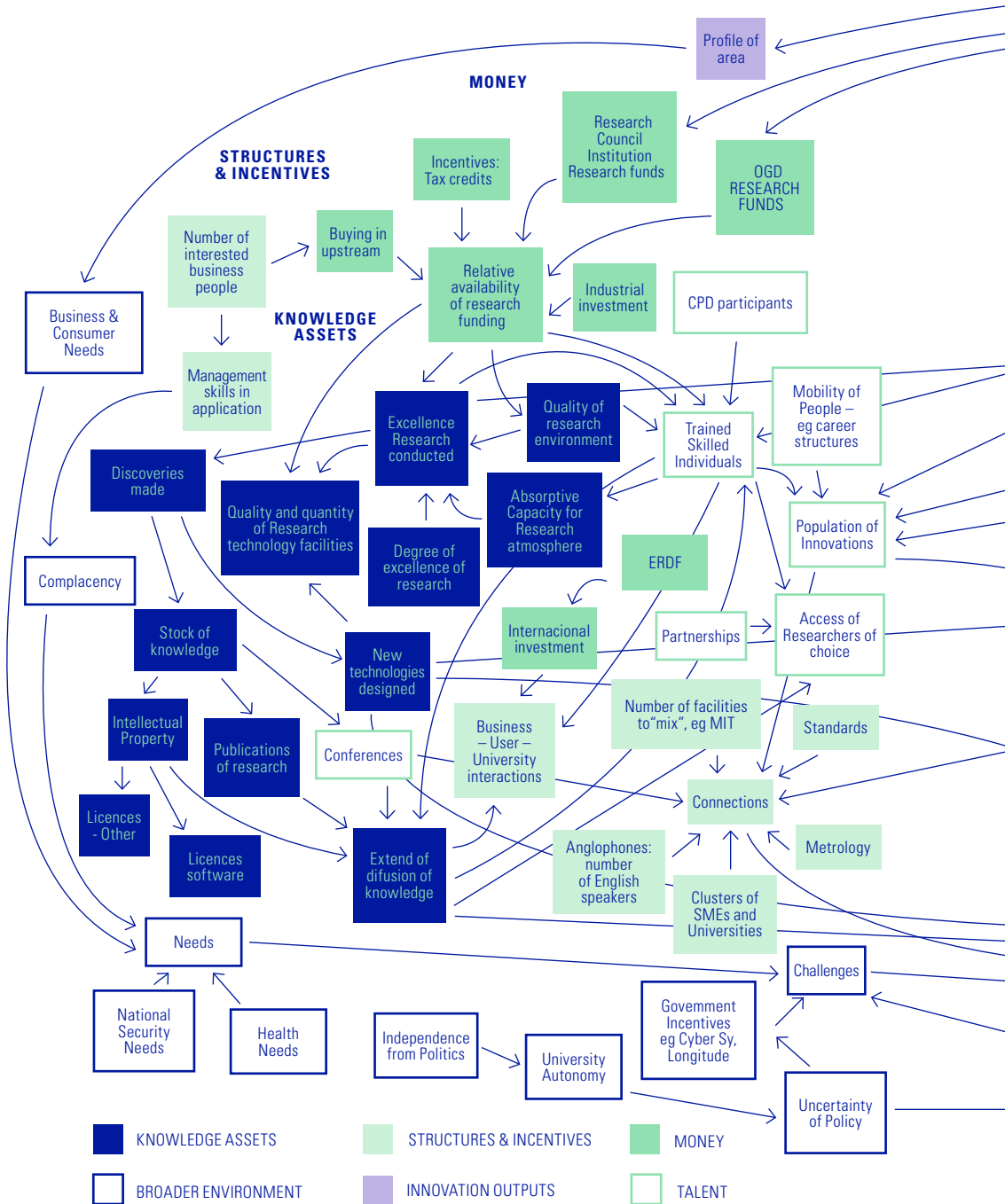
If we are going to stimulate public debate on some of the technology choices that will need to be made, for example the grid vs. off-grid investment decisions referred to earlier for energy, then work needs to be done to create more useful information on progress and to make it more generally available to the public. Existing data sets are often weak or provide little useful information. Staying with the access to electricity example for a moment, it is known that the traditional way of measuring access (electricity utility reports on the number of households connected to

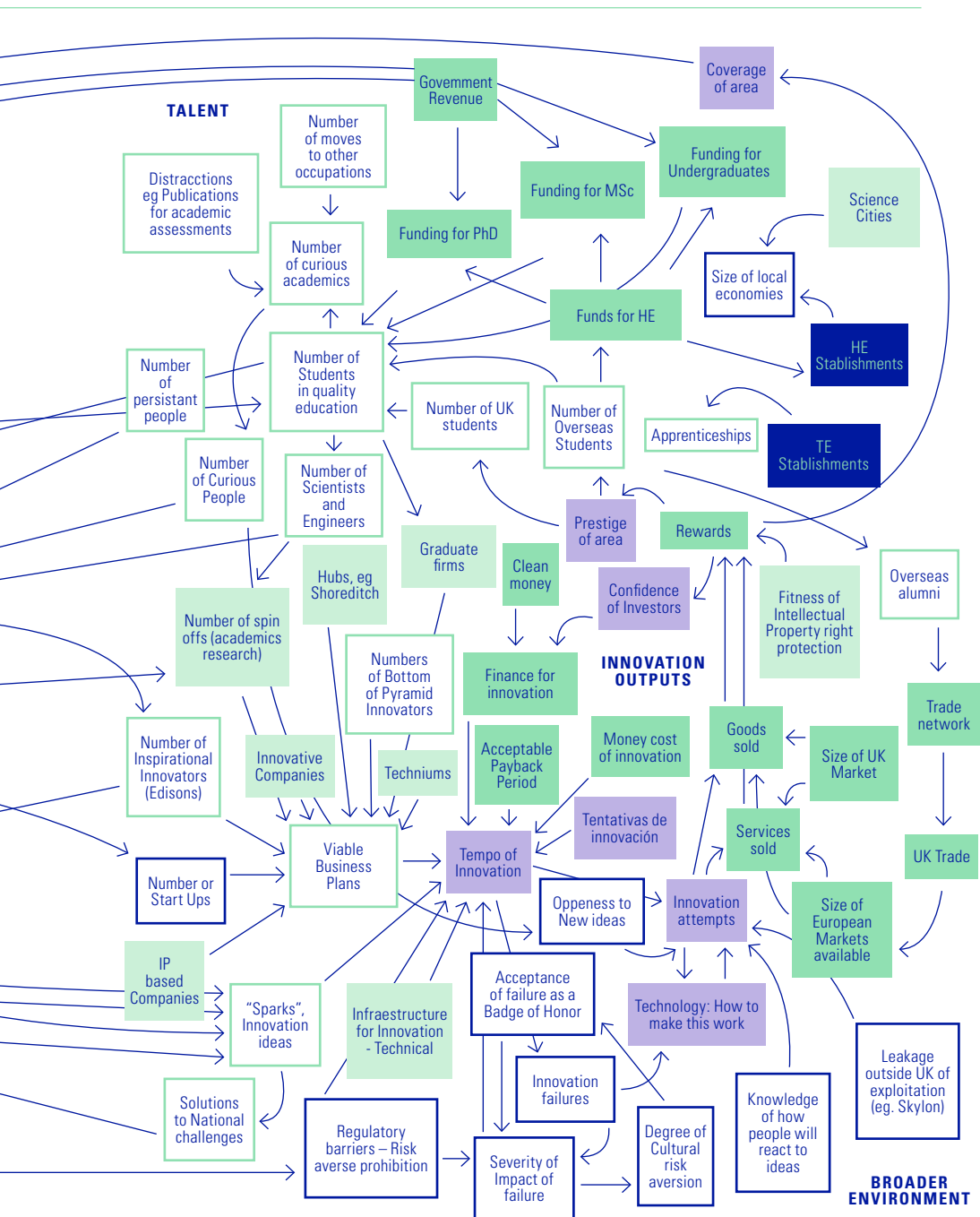
the grid) is not a good indicator of access for two reasons. Firstly, that utility data fails to capture those who have electricity access via off-grid technologies (solar home systems, mini grids etc.). Secondly (and more importantly) a grid connection itself does not guarantee real access if the supply is only available for a few hours a day or is too expensive to use for anything except lighting. True energy access is instead measured by people's ability to access key energy services to light, heat, and cool their homes; to cook; to refrigerate food; and to communicate with the outside world. The Global Tracking Framework for the UN's Sustainable Energy for All initiative recognizes this (UNSE4ALL, 2015) and has developed a new "tiered" framework that draws on additional data from national household surveys supported periodically by the likes of USAID (Demographic and Health Surveys), the World Bank (Living Standards Measurement Surveys), and UNICEF (Multi-Indicator Cluster Surveys). The UNICEF/WHO Joint Monitoring Project does something similar to track global water and sanitation coverage figures (JMP, 2015). But household survey mechanisms are already overstretched; if meaningful data is to be collected that can stimulate public interest in and debate on the key technology choices ahead, a data revolution is required that goes beyond traditional census and household survey approaches. Greater use of satellite imagery, mobile phones as a data collection platform, crowdsourcing, smart metering, smart sensors, and data mining techniques will be needed, along with more engagement between civil society and the private sector as co-creators of data sets alongside national statistics offices (Open Data Watch, 2015).

### *Improving Understanding of How Technology is Adapted and Adopted*

We also urgently need to improve our understanding of what influences the success of innovation and technology transfer in developing economies. There is a lot of research and a good understanding of how national innovation systems work in the developed world. Figure 7, for example, is a UK systems map produced by the UK Government's Department of Business, Innovation, and Skills as part of an assessment of relative strengths and weaknesses of the national innovation system compared to competitor

Figure 7: UK National Innovation System map (Allas, 2014)





nations. In contrast, there is almost no research available on national innovation systems in the developing world, including how they work and what the best approach is to strengthen them both to build national capacity to innovate, but also to absorb and make best use of technology transfer (TEC UNFCCC, 2015). Given that trillions of dollars' worth of clean technology transfer is envisaged under the climate change negotiations alone, it is high time that we attempted to understand how those systems work and how they could be strengthened to cope.

### *Rethinking Finance*

We also need to change the terms of debate around finance. We know that not enough finance is being drawn into provision of services for the poor, as was demonstrated earlier in this paper with the case of energy. The prevailing narrative is that there is not enough public finance to bridge the gap and we have to use what is available to lever private investment. That may be true

In some cases, but in that case, we need to re-examine the market rules because they are clearly not sending the right signals at the moment. In other cases, we need to have a serious conversation about reassigning the massive subsidies that are available to the right technologies, notably the \$5 trillion dollar annual global public subsidy that goes into supporting fossil fuels.

### *Achieving Justice in the Use of Technology*

#### *Creating a Consensus on Managing Risk*

Moving on to think about achieving justice in the use of technology, it is clear that we need to foster public debate and consensus on how to manage the risks associated with the development and use of new technology. There is an increase in academic literature on what's known as Responsible Research and Innovation (RRI) (see European Commission, 2012; Owen, Macnaghten, & Stilgoe, 2012; Sutcliffe, 2015) but we need to work out how to tap into RRI quickly to help with the enormity of some of the choices facing us at the moment. These are choices that could well have profound and as yet unanticipated impacts—choices that include what the right future energy mix is, or whether to allow large scale experimentation with technologies such as carbon capture



and storage or geo engineering, or the technological basis for our future food systems.

## Moving to a Circular Economy

We also need to pay much more attention to alternative economic models as a way of providing stronger incentives for the *positive* use of technology. The concept of a circular economy provides one such vision. Forms of production and consumption traditionally have been largely linear—materials are collected, goods are produced and used, and, at some point, discarded. Little of the energy or material inputs are recycled into new forms of production. In Europe, for example, the recapture of energy or raw materials from waste accounts for only five percent of the original raw material value and there are significant inefficiencies in resource use. For example, the average car remains unused and parked for 92 percent of the time, 31 percent of food is wasted, and the typical office is occupied only 35–50 percent of the time during working hours (Ellen MacArthur Foundation, 2015).

A circular economy, by contrast, seeks to decouple economic development from continued increase in consumption of what is a globally finite stock of natural resources by “keeping products, components, and materials at their highest utility and value at all times” (Ellen MacArthur Foundation, 2015). This is achieved through the application of the following three principles:

1. Preserve and enhance natural capital by choosing processes that use renewable resources or use resources more efficiently than others and by delivering services virtually rather than physically wherever possible (for example, electronic music or books rather than hard copies). It also means looking for opportunities to regenerate resources, for example, by adding nutrients back into soil.
2. Optimize resource yields by designing products, and the components and materials that constitute them, so they can be circulated in the economy at their “highest value of utility.” This means making products that are easy to repair, maintain, or, perhaps, upgrade, as this retains the

most value already embedded in the product, including the energy already used to manufacture it.

3. Foster system effectiveness by trying to understand the externalities of the production process that are generally ignored in financial or economic analysis—potential negative impacts on the environment or health, for example—and then trying to redesign those processes to remove or minimize the negative impacts.

Given that the primary purpose of the circular economy approach is to minimize or eliminate negative environmental or social impacts through product and process design, the principle of Technology Justice is embedded at its core—the tenet that everyone should have the right to use technologies that help them live the life they value, provided that it doesn't impact others' ability now or in the future to do the same.

### *Building Pressure to Engage*

Building consensus around the nature of the risks faced and an understanding of the options to act does not in itself guarantee action. Continued pressure therefore needs to be applied to build on and strengthen existing levers for change as well as to create new ones. Civil society has an important role to play in continuing to campaign around the environment and development, and campaigns that cross the environment/development and developing/developed country divides are going to be increasingly important in establishing the relationship between environmental sustainability and living standards for everyone on the planet.

But new, creative approaches are going to be needed to leverage change at the rate required. The Carbon Tracker is one interesting example of such an approach. It attempts to (re)educate major investors in the energy sector by addressing them in their own language of risk and return. In this way, the tool highlights the increasing likelihood that a large proportion of today's recognized oil and gas reserves (on which many of the global oil and gas companies rely to underpin their financial position) will have to stay in the ground as un-exploitable "stranded assets" if international agreements on target greenhouse gas emission levels are implemented (see Carbon Tracker, 2013; Carbon Tracker, 2015).





**Author**

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Christian Felber

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# **Creating an Economy for the Common Good**





*All economic activity will serve the common good.*

CONSTITUTION OF BAVARIA, ART. 151

## The Objective of Economic Activity

When I ask students studying economics at business schools or universities what the objective of economic activity is, they almost always tell me the same thing: “Money!” “Monetary gains!” “Profit!” When I ask them who told them that, they respond, “That’s what they teach us.”

“What sources do your professors cite when they tell you that?” I ask.

Silence.

“What justification is there to view higher income or profit as the principal objective of economic activity?”

Silence.



I looked for evidence of these ideas in the constitutions of various democratic states. To begin, I looked at the Constitution of Bavaria, Germany, and I found the following: “All economic activity will serve the common good” (Constitution of Bavaria, art. 151). When I first read that, I thought it was a mistake, but other constitutions affirm the same. The Basic Law for the Federal Republic of Germany says: “Property entails obligations [...] its use should also serve the public interest” (German Basic Law, art. 14 [2]). According to the Italian constitution, “public and private economic activity should be oriented to the common good” (Constitution of Italy, art. 41). In Colombia, the constitution stipulates: “Economic activity and private initiative are free, within the limits of the common good” (Constitution of Colombia, art. 333). The Irish constitution states:

We, the people of Éire [...] seeking to promote the common good [...] give to ourselves this Constitution // All powers of government [...] derive [...] from the people, whose right it is [...] to decide all questions of national policy, according to the requirements of the common good. // The State, accordingly, [...] delimit by law the exercise of the said rights with a view to reconciling their exercise with the exigencies of the common good. // The State shall, in particular, direct its policy towards securing: [...] That the ownership and control of the material resources of the community may be so distributed amongst private individuals and the various classes as best to subserve the common good. (Constitution of Ireland: Preamble/ art. 6.1/ art. 43.2.2. /art. 45. 2.ii.)

Finally, the Constitution of the United States of America contains in its preamble the words “promote the general welfare.” There is broad consensus across the constitutions of democratic states where the objective of economic activity is concerned: developing the common good. In any event, no constitution asserts that the objective of economic activity is increasing capital or obtaining profits. In fact, if we look back to Ancient Greece, Aristotle thought that focusing on gaining money was “anti-natural” and made a distinction between *oikonomia* and

*chrematistike* (Dierksmeier & Pirson, 2009). In the West, there has been a consensus with regard to the objective of economic activity for over 2,000 years. It is clear that the economy for the common good does not suggest anything new; it merely proposes that the constitutional economic objective be implemented in the existing economic order.

## Setting the system on a new path

To do so, we would have to set our current economic market on a different path, move away from the pursuit of profit and competition, and seek in their place the common good and cooperation. The framework of legal incentives would need to abandon “maximizing self-interest” as its guidepost and in its place welcome the “common good;” likewise, the purpose of any enterprise should be to contribute as much as is possible to that common good. This is nothing new. Quite simply, the objectives of individual economic actors would be in tune with constitutional objectives. This would be the first step towards a new ethical direction for free markets and would redefine economic success.

### Redefining economic success

If democracy defines the common good as its objective, then it would be logical to measure economic success based on whether or not, and to what degree, this objective is achieved. Moreover, this success should be measured at every level: the domestic economy (macro), individual companies (meso), and at the level of each investment (micro).

At present, economic success is measured at the macro level in terms of gross domestic product (GDP), at the company level in terms of financial benefit, and at the individual level in terms of profitability or return on capital. What these three standard indicators of success have in common is that they are all monetary indicators. However, money is not the objective of economic activity, but rather just one of its means.

Now comes the decisive question: Is it more valuable to measure the success of a project in terms of the means it uses and the accumulation of the same, or in terms of the objectives it sets and the degree to which they are accomplished? Perhaps this confusion between the ends (objectives) and the means is the error at the heart of our current economic order. The ways we measure success in the current system muddle objectives and means. The main objective of capitalism is to turn capital into more capital. Advancing the common good may be used as a means to achieve this goal, but not in 100 percent of cases. In the Economy for the Common Good, advancing the common good would be the main objective, and capital a valuable means to do so. In some cases, capital gains do constitute a way of achieving that goal, but in others, they may not even be necessary. Capital usage and gains would not be mandatory: *the success of companies, investors, and national economies would be measured in terms not of capital gains but of the objective of promoting the common good.*

The inadequacy of monetary indicators as parameters for measuring economic success is owed to the fact that money, although able to express the exchange value of a commodity (the value at which something can be sold or bought), has no use-value in and of itself. Nor is it capable of expressing the use-value of commodities and services. The use-value or utility of a commodity is nevertheless of vital importance to people: it is the objective of economic activity. Exchange values cannot keep me warm or feed me, which is why I need food, clothing, a roof over my head, intact ecosystems, etc.: in other words, use-values. GDP and financial benefits tell us reliably little about the availability of use-values. For example, is rising GDP a reliable indicator to measure whether a country:

- is free of hunger and homeless people?
- is at war or peace?
- is a democracy or dictatorship?
- is seeing resource consumption rise or fall?
- has a fair distribution of assets?
- has equal rights or discriminates against women?
- is a society in which fear or trust is increasing?

The use-value we consider is of little importance. Regardless, a rising GDP is not able to measure what really matters!

According to economics textbooks, the objective of economic activity is to satisfy human needs. This is the “ultimate end” of the enormous enterprise we call “business.” And if people’s vital needs are satisfied, then the fabled vision of “prosperity for all” (Ludwig Erhard, former Chancellor of the Federal Republic of Germany), general welfare, or simply the common good, is achieved. Until now, the mantra has been “the purpose of business is doing business.” Our response to this is: the purpose of business is the common good.

## Let’s measure the objective, not the means

The pitfalls of using GDP as an index of welfare have been known for a long time. The search for alternative indicators of prosperity began in the early 1970s with Herman Daly’s Index of Sustainable Economic Welfare (see Daily, et al., 1994, p. 443). The New Economics Foundation, a London-based group of experts, coined the Happy Planet Index; the OECD developed the Index for a Better Life; the German Enquete Commission defined “growth, prosperity, and quality of life” as its W3 indicators (Comisión Enquete, 2013, p. 28); and former French President Nicolas Sarkozy tasked the Stiglitz-Sen-Fitoussi Commission with finding alternatives to GDP (Stiglitz, et al., 2009).

The country that has made the most progress in this direction is the small nation of Bhutan, with its Gross National Happiness index. Rather than devising a mathematical model to develop the index, six households were studied every two years with the following questions:

- How is your health?
- How well are you doing compared with last year?
- Will your children have a better life?
- Do you trust your neighbors?
- Do you have time to rest, meditate, or pray during the day?

Many economists still assert that “happiness cannot be measured!” And yet, if we take a look at the 33 indicators related to every aspect of quality of life—like Bhutan did—we will be closer to understanding what constitutes “happiness” than if we use GDP as the index. I believe that approximately 20 indicators would be sufficient to come up with the Common Good Product for any nation’s economy. Developing this product would be the central task of the Common Good movement.

Common Good Communities, described below, could be a good place to start. In decentralized meetings, citizens would be asked to list the 20 quality of life indicators most relevant to them, and based on that, a Quality of Life or Common Good Index could be defined. Later, hundreds or thousands of local Common Good Product indices could be summarized at the domestic level, the level of the European Union, or even worldwide.

It is worth repeating this exercise in the corporate realm. Is the amount of profit a company earns a reliable indicator of whether:

- the company is creating or cutting jobs?
- its working conditions tend towards the humane or the stressful?
- the company is environmentally conscious or exploitative?
- its income is fairly distributed?
- the company produces local organic food or manufactures weapons?

The obvious answer is no. Monetary gains only give us a small amount of reliable information about the development of, at most, a use-value, the satisfaction of a basic need, or the fulfillment of a constitutional value. A surging GDP is systematically incapable of measuring the objective of economic activity.

In an Economy for the Common Good, the success of a country’s economy would be measured in terms of the Common Good Product, methodically and in concordance with many constitutions (the United Kingdom is an uncommon exception of a country without a constitution). The success of a company would be measured with the Common Good Balance Sheet. In this day and age, a company can be “successful” even if it is cutting

jobs, destroying the environment, undercutting democracy, or manufacturing irrelevant products; that means that a company can be seen as successful even if it is fueling the exacerbation of social and ecological problems. The automatic mechanism in which Adam Smith believed, specifically, that everything will take care of itself as long as we take care of ourselves, does not exist. There *may* be a connection between earnings and the common good, but there is not *necessarily* one. The Common Good Balance Sheet would forge a reliable connection: the “invisible hand” that Adam Smith hoped for thanks to the creation of an visible hand, a method that measures and rewards the success of economic activity predicated on what it contributes to society.

## Measuring the common good

If the common good is the objective of economic activity, then it is logical that it should be measured vis-à-vis a Common Good Balance Sheet, which would later become the main business balance sheet. What up until now has served as the main balance sheet, specifically, the financial bottom line, could then be the auxiliary balance sheet. It would continue to symbolize how companies develop their financial resources and cover costs, investments, and provisions, but it would not be the principal representation of a company’s “success.” Just as in the past, companies that strive to promote the common good would not want to suffer financial losses. Without profit, companies active in the economic market would quickly fail. However, profit should not be sought for profit’s sake: it is just the means to achieve an end. What society currently views in capitalism as “excessive,” “exorbitant,” and “greedy” would go away if use of profits were controlled to a certain extent by society. We will discuss financial balance sheets below.

The Common Good Balance Sheet measures how companies manage to achieve key constitutional values. As I said before, the five values that would be “measured” by this balance sheet are nothing new: they are the most prevalent constitutional values of democratic states: human dignity, solidarity, justice, ecological sustainability, and democracy.



The Common Good Balance Sheet measures how a company's stakeholders live these basic values. Stakeholders consist of any group of people affected by a company's activities or who have a direct relationship to them: e.g. suppliers, investors, employees, customers, the competition, local communities, future generations, and the environment.

To make the Common Good Balance Sheet more transparent, we have created a Common Good Matrix showing basic values on the x-axis and the stakeholders on the y-axis. The 17 Common Good indicators are the intersections of the two axes. For example:

- if products and services fulfill human needs;
- how humane working conditions are;
- how environmentally friendly working conditions are;
- how ethical sales activities are;
- how well the company cooperates with other companies;
- how income is distributed;
- whether or not women receive equal treatment and wages;
- how democratic decision-making processes are.

However, what authority could “define” what is meant by the common good? There are answers to both questions: 1. A plethora of measurable and well-defined indicators have already been crafted in other corporate responsibility standards and instruments, ranging from the Global Reporting Initiative (GRI) and Social Standard SA8000 to the OECD Corporate Governance Principles and ISO environmental management systems (Felber, 2008, pp. 221-238). They all have the same values and objectives: How socially responsible is the conduct of a company? How ecologically sustainable are its production and distribution processes? How fair is its profit distribution? What is the quality of its workplaces? How is joint management lived? Does it support political responsibility (corporate citizenship)? The more a democratic society focuses on defining these indicators, the more precise and differentiated the results will be; by the same token, physical measurement instruments will become more sophisticated once enough people have perfected them.

The team that worked on the matrix has developed 17 indicators that can be easily measured through a point-scoring system.

Companies fall into one of four categories for each indicator: First Steps, Advanced, Experienced, and Exemplary. The handbook, developed over the course of many years, dedicates various pages to describing each indicator, including information about the concept, definition, form of measurement, examples, and sources (See *Economy for the Common Good*). The handbook is a work in progress, which, like all of the documents related to the *Economy for the Common Good*, is still under development in the hands of a burgeoning group of people and is open-source, in agreement with the spirit of the creative commons.

## Defining the common good

Who “defines” the common good? In the *Common Good* movement, we believe that the common good can only be defined through a democratic process of debate and decision-making, because the concrete meaning of each concept does not *a priori* exist and can evolve over time. Historically, the concept can be traced back to Aristotle and his teacher, Plato. It began to be used precisely by Thomas of Aquinas in the 8th century: “*Bonum commune est melius quam bonum unius* (The common good is better than the individual good)” (*Summa Theologica*). Since then, the common good has been the “north star” of Christian social ethics (Zenit, 2014). However, regardless of how sublime the tradition, a dictator or totalitarian regime that claims to know what is good for everyone could theoretically postulate the common good. In fact, dictators hailing from both sides of the spectrum, rightists and leftists, have harnessed the concept of the common good, but such is the inevitable fate of any appealing idea. “Freedom,” “love,” and “God” are concepts that have been stolen and abused with the same frequency; this should not stop us from using them, but we do need to define them democratically.

The model of the *Economy for the Common Good* requires a definition of the common good applicable to the instruments used to measure success at three levels:

investment, company, and national economy. The rest of the economic

<sup>6</sup> Cf. Felber, 2008, pp. 221-238

<sup>7</sup> See *Economy for the Common Good*

or political measures do not need such a definition. The basic work necessary to conceptualize the Common Good Product can be carried out in Common Good Communities. The Common Good Bank is currently developing the Common Good Solvency Assessment in conjunction with other ethical banks. The Common Good Balance Sheet is the core of the growing movement for the Economy for the Common Good, which emerged in 2009 with a group of 15 business leaders involved in the activist organization Attac. The first version of the Balance Sheet, published in 2010, was developed before the founding of the movement, and was then introduced at the kick-off party for the Economy for the Common Good movement held on October 6, 2010. In 2011, two-dozen companies spontaneously and voluntarily agreed to use the Balance Sheet. With the help of an editorial team of four people, the preliminary concept was improved. On request of the pioneering companies involved, the number of indicators was reduced from 50 to 17 to make it easier to handle. By 2011, the latest version of the Common Good Balance Sheet was 3.0, with some 60 companies applying it.

Versions 4.0 and 4.1 of the Common Good Balance Sheet were released in 2012 and 2013, respectively. The editorial team has grown with the movement, and now has one editor in charge of each indicator. Each editor coordinates a team of experts and stakeholders to incorporate feedback into his or her assigned criterion. To date, hundreds of individuals, companies, and institutions have taken part in the movement. In the years to come, we are expecting thousands and even tens of thousands of companies, individuals, and organizations to contribute with their experiences and knowledge online, through public events, and as pioneers. In this way the Balance Sheet will continue to be improved in the future.

However, this will not endow the movement with democratic legitimacy. Once we believe it is ready, meaning that it is representative, precise, and easy to use, we can call for the selection of an economic convention whose task would be to formulate a law, taking into account other preliminary tasks, too. That law should be agreed by democratic sovereignty and ensconced, appropriately, in the constitution. On few occasions has a law or section of the constitution been created in such an orderly

fashion. The Common Good Balance Sheet could be revised and readapted at any time. But these steps must always be initiated and resolved by sovereign people.

Let's return to the basic idea for a moment: a democratic society should be in a position to formulate the 10 to 30 expectations it has of companies to demand that they be held accountable and foster their fulfillment through a proposed incentive instrument. If this is not done, the only alternative is to create sanctions and dictate decrees, which are more rigid regulations. The current form of regulation is frequently not recognized as such, and yet the "benefits orientation," mandatory "financial reporting," and "competition" (including cannibalism and "bankruptcy") resulting from the current structure constitute an extremely effective regulatory order that incentivizes certain behaviors or even makes them obligatory. The unfortunate results are sweeping measures and strategies that harm society, destroy confidence, and hurt relationships, and yet rarely are they attributed to a misguided legal framework. Rather, they are explained as part of imperfect human nature. The Common Good Balance Sheet is part of an attempt to correct this faulty programming of the market and "the laws of the market," as well as to ensure that these laws are in harmony with the values of democratic relationships and societies.

### **Demands made in a universal balance sheet**

The Common Good Balance Sheet would join a spectrum of product labels in development (organic food, fair trade), environmental management systems (EMS, ISO), quality management systems (QMS, Balanced Score Card), codes of conduct (OECD guidelines), and sustainability reporting (Global Reporting Initiative). However, broadly speaking, the first generation of corporate social responsibility instruments has proved ineffective. All of the standards are non-binding and none is subject to legal oversight. Unfortunately, as soon as these standards start to enter into conflict with the main—read financial—balance sheet, they stop being useful, because this would attack the brain stem—the infamous "bottom line"—of the company and would hurt it in the framework of the dynamics of our current system. Anyone who

puts the brakes on financial profit in support of the non-binding auxiliary balance sheet removes himself from the running. That is why corporate groups insist on auxiliary balance sheets being non-binding, because that is how they stay ineffective.

The Common Good Balance Sheet aims to be the first second-generation corporate social responsibility instrument to have a true impact. The prerequisite to do so is the fulfillment of eight essential requirements:

1. **Binding force:** Numerous corporate social responsibility instruments have proven that doing things voluntarily does not get the job done.
2. **A holistic approach:** It is not enough just to measure environmental aspects or the quality of the workplace. All basic values count!
3. **Quantifiability:** It must be possible to measure results, meaning an objective evaluation.
4. **Comparability:** All companies must be held accountable to the same objectives/indicators; otherwise, the most successful companies will not be rewarded.
5. **Comprehensibility:** Common Good business consultants and auditors should not be the only ones able to understand the balance sheet; customers, employees, and stakeholders from the public should also be able to understand it.
6. **Publicity:** The Common Good Balance Sheet must be accessible to everyone and available for download online.
7. **External auditing:** This is to prevent companies from evaluating themselves, as they are accustomed to doing with some corporate social responsibility instruments.
8. **Legal consequences:** Anyone who contributes the most to the community should be rewarded for these efforts pursuant to the principle of performance justice.

The Common Good Balance Sheet covers eight requirements, which is why it can have the desired effect of ethically redirecting the economy towards a path to sustainability, distributive justice, and the significant task of promoting good health.

The Economy for the Common Good movement aims to incorporate this approach into the current directives of the European

Union. In 2014, the EU parliament presented a directive on “non-financial reporting” requiring all companies with 500 employees or more to publish information that goes beyond key financial data (see European Commission, 2016). In the first version of the directive, supposedly, companies will be offered a selection of various instruments, one of which they will be obligated to use. The Economy for the Common Good movement aims to guarantee that these eight essential requirements are incorporated into the EU directives, regardless of whether the financial reporting forms of the future are called the “ethical balance sheet,” the “social balance sheet,” or the “common good balance sheet.”

## Create market transparency

The Common Good Balance Sheet functions in the following way: depending on the degree to which goals are fulfilled, auditors award a certain number of points for each indicator on the balance sheet. Each company—whether a single person, a charity, a supply company, a medium-sized enterprise, or a company publicly traded on the stock exchange—has the chance to earn a maximum of 1,000 Common Good points. To begin, the results of the Common Good Balance Sheet can be shown in the form of a label on all of the company’s products and services. Labels come in five colors, for the categories. For example:

- Red: negative score, Level 1
- Orange: 0 to 250 points, Level 2
- Yellow: 250 to 500 points, Level 3
- Light green: 501 to 750 points, Level 4
- Green: 751 to 1,000 points, Level 5

This would give consumers rapid and concise insight into the Common Good performance of a company whose product they are thinking about buying. The Common Good color could appear next to a barcode or QR code on the product. When customers scan the code on their cell phones, the Common Good Balance Sheet would appear in full; it would be mandatory for this information to be available to the public. Consumers could immediately



determine if a product was not only manufactured in a sustainable and local fashion, but also whether the company that made it offers wage equality to working women or responsible working hours for families.

The rationality and efficiency of the market economy are justified in textbooks under the premise that all information is “fully and symmetrically” available to market participants. The reality is that this is not the case. If we look at any supermarket product, we will see that we are not given information about who manufactured it, nor what labor conditions it was manufactured in or the environmental effects it produced. Nor are we told if women were treated the same way as men during the manufacturing process, if the company cooperated with the competition or cannibalized it, if the company paid taxes as it should have or hid its earnings in a tax haven, or if it hired lobbyists and/or funded political parties.

If we measure the market economy as a function of its own theory, it can be neither rational nor efficient, because the prerequisite for rationality and efficiency—transparent information—is missing. It is not uncommon for advertising to provide incorrect information about the effects, contents, and origins of a product. The Common Good Balance Sheet would bring the reality of the market economy closer to its theoretical ideal and would do so efficiently.

## Rewarding contributions to the common good

Now comes the decisive step: uniting the results of the Common Good Balance Sheet with differentiated legal treatment. In the conservative sense of “only if you’ve earned it,” a company could enjoy more legal privileges the more Common Good points it earns. The companies that do best by the community will be rewarded by society. There are already appropriate instruments for this, but they would need to be implemented more systematically for performance directed at the Common Good. For example:

- lower VAT (0 to 100%)
- lower customs tariffs (0 to 1000%)
- bank loans with better terms
- preferential position in public tenders and contract awards (one-fifth of economic production!)
- cooperation in research with public universities
- direct financing, etc.

Nowadays, companies are admitted to the market under the same conditions, regardless of the degree to which they comply with or disregard constitutional values, and without taking into consideration their ethical performance or lack thereof. The consequence of this “equal treatment” is that the most barbaric and irresponsible actors in the market have the best chance of winning because they offer cheaper goods and services. Unethical behavior is rewarded. This is the effect of the false “guiding light” of the economy.

In the Economy for the Common Good, only “peers” would be treated equally; “non-peers” would be treated unequally. In other words, the best performance would be rewarded. These legal advantages would help those oriented to the Common Good to cover high expenses. The consequence would be that products manufactured in an ethical, sustainable, and regional way would systematically have greater support in the market. The “laws of the market” would be in harmony with society’s basic values.

If the rewards were sufficiently generous so as to allow a company to generate considerable profit, these rewards would only be permitted to be used for certain things. Maximizing gains for personal benefit would not do at all. Profit would be obtained by “maximizing” Common Good points: the better the scores on the Common Good Balance Sheet, the better the company’s chance of survival. In contrast with the current situation, a company’s financial balance sheet would no longer be the decisive factor in its survival. An unethical company would be unable to achieve a positive financial result.

The incentivizing effect would be reinforced: a company’s Common Good Balance Sheet could improve to the extent that it would also improve the Common Good Balance Sheet of the suppliers, subcontractors, credit institutions, and other companies

that cooperated with the company in question. The interaction of consumer decision-making, legal advantages, preferential positions for the “most successful” suppliers, subcontractors, and lenders, as well as the Common Good audits conducted by lending banks, would result in a strong and growing circle of incentives for the Common Good. Finally, society could achieve its objectives in business.

## Common Good audits

The question frequently arises as to who would conduct the Balance Sheet audits. If companies were allowed to do their own Balance Sheets, then they would also have to evaluate it themselves. Would it not be necessary to create a Leviathan state to monitor and oversee companies throughout the entire process?

The answer is no, there is (almost) no need for a state like this. In this case, the market would regulate itself! To illustrate this better, let's begin by looking at the procedure currently used for financial reporting: companies prepare a financial balance sheet, which is audited internally and then sent to an independent public accountant. When the balance is “checked,” then the government comes and demands the payment of taxes. The tax authority completes the process.

The process designed for the Common Good Balance Sheet is similar but much simpler. Companies would come up with their own Common Good Balance Sheets (ideally with the aid of all of their employees), which would be audited internally (by a Common Good officer, for example), and then externally, by a Common Good auditor. That would be all. Once the Common Good auditor checks the balance, the company would automatically enter a particular VAT and customs tariffs category and would enjoy certain credit conditions. The state would not do anything at all except where public contracts and calls for bids are concerned. In these situations, the state would see the Common Good Balance Sheet first and the bid price second.

Besides legal accreditation and the guarantee of quality furnished by Common Good auditors, the state would only retain the function of random monitoring. If a company were to falsify its

Common Good Balance Sheet, bribe the auditor, or if the auditor were to certify a false balance sheet, then there would be an oversight procedure with the potential to penalize corrupt auditors. However, if there were a threat of a considerable fine for the first offense and revocation of the professional license for the second, auditors would think twice before committing such a crime. With regard to the issue of fraudulent falsifications, unlike with financial balance sheets, the Common Good Balance Sheet offers its own advantages:

- They are public, and everyone has access to them.
- They are clear to everyone, because the criteria used are simple and human.
- Many actors have a specific interest in the precision of the Common Good Balance Sheet, so any attempt at forgery would come to light.

Another aspect worth discussing is peer evaluation. Everyone connected to the company could participate in the evaluation to give the auditors the widest possible base of information with which to do their work.

Companies would have an “intrinsic” interest in scoring as many Common Good points as possible thanks to the opportunity to gain certain benefits. However, the implementation of each criterion would be voluntary, which is why no official state auditor or bureaucracy (the “Common Good Ministry,” for example) would be needed. The Common Good Balance Sheet controls the behavior of companies without permitting the existence of excessive regulatory bodies.

Similar to the separation between consulting and oversight standard with financial balance sheets, these services would also be separated in Common Good audits. Legal grounds to certify Common Good auditors and guarantee the quality of their work would probably be necessary. Given the complexity of this theme, it is also possible that audit teams would be necessary in place of individual auditors. This would also help improve the results of the inspection and prevent bribery in the process.

### Income as a means

The Common Good Balance Sheet brings us this far, but what about the financial balance? To begin with, companies would continue preparing it, especially because the Economy for the Common Good would be one form of market economy—a cooperative, ethical, and not capitalist economy—in which private enterprises, money, and market-generated product prices would still exist, but pursuant to conditions and prerequisites different than those that currently exist. However, because financial gains would no longer be the main objective, the financial balance sheet would be complementary, or rather a balance of means, similar to money, that would be merely a means of exchange and not the purpose of it. The purpose of exchange is to fulfill needs. The financial balance sheet meets a key condition for that, but it is not the purpose of company activities. The Common Good Balance Sheet represents the purpose of said activity, its social function. The purpose of financial gains would be inverted, becoming the means and not the objective.

What does that mean? We have worked hard to perfect this aspect of the economy for the common good. Because profit can benefit or harm a company, either by increasing or decreasing the common good, its usage would differ as a function of this criterion. The use of profit would be restricted if the common good were reduced. Thus, the “excessive nature” of capitalism—accumulating for the sake of accumulating—would be directed towards a more relevant path. Profits could not be used for violent acquisitions, demonstrations of power, exploitation, environmental destruction, and crisis. On the other hand, financial excess would be approved and promoted if it were used to increase environmental and social value, for investment and collaboration, in other words, to augment the common good. These distinctions would be made everywhere: a knife could be used to cut vegetables, but not to kill people. Laws would regulate the permitted and prohibited use of tools and conditions, as well as limitations on the usage of tools and weapons. The same would happen with the profits companies earn, because in the Economy for the Common Good, certain tools, like money in general, would

be precisely that: tools, not the purpose itself. Otherwise, they could become lethal weapons.

Excerpt from “Change everything. Creating an Economy for the Common Good,”  
Christian Felber, 2015. Zed Books, London.

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Through this process, the Tracker aims to speed up disinvestment in fossil fuels and encourage investment in clean alternatives.

## Achieving Justice in Technology Innovation

### *Improving Global Coordination*

Looking at Technology Justice in innovation, a clear priority is the identification of the mechanisms that could be used to get a global agreement on the most urgent technology innovation needs necessary to make best use of the limited time and resources we have to find solutions that allow humanity to remain within Rockström's safe planetary boundaries whilst simultaneously providing universal access to a social foundation. The establishment of the Global Health R&D Observatory in 2012 by the World Health Council was an attempt to do just that for the health sector (WHO, 2012), as was the establishment of the UNFCCC's Technology Executive Committee to identify key technological needs with respect to mitigating climate change (UNFCCC, 2010). Meanwhile there are a number of global mechanisms that are supposed to play similar but broader roles under the Sustainable Development Goals, including a Technology Facilitation Mechanism and a Technology Bank (UNOHRLLS, 2015).

While these examples show that it is possible to create global mechanisms that ostensibly provide direction to global technological innovation efforts, in practice, all of these bodies also demonstrate how difficult it is to ensure the necessary power and resources are assigned to match the responsibilities given. In reality, none of these institutions have much power at the moment compared to, for example, international regulators such as the World Trade Organization, a body that has an immense impact on how access to innovation is governed. We need to make up our minds to either really back some of these new mechanisms, allowing them to be much more radical and providing them with the resources and power to do the job, or to find another, more effective approach.

### *Rethinking Competition and Intellectual Property*

In the face of all the problems associated with weak market signals and intellectual property rights, another approach worth

exploring is a collaborative, rather than competitive, means of fostering innovation. In a traditional competitive market, the emphasis is often on maintaining commercial secrecy around R&D efforts to avoid competitors exploiting the results of your research investment and developing their own products (without the same level of R&D costs) before you are able to do so. A downside to such forms of commercial secrecy is that it is possible for a number of companies to continue to invest in pursuing a line of research that another company has already found unviable, because such information is not shared. Given the time constraints that exist to address the threat of climate change, this is not the best or most efficient use of scarce resources.

An alternative approach is open source innovation, pioneered in the software industry but now much more widely used as a way of accelerating innovative processes by building on common platforms of shared learning. Open and crowdsourced initiatives can still be commercial in nature, but involve a very different and collaborative approach to R&D. They are now used to foster innovation across a wide range of topics and sectors, including the maintenance of genetic diversity in seeds (Open Source Seed Initiative, 2015), further exploitation of the human genome map (SGC, 2015), the spread of 3D printing technology (Jones & et. al., 2009), and the development of new drugs to treat malaria and tuberculosis (OSM, 2015). We need to decide if it is time to design regulation and point more public funding towards backing such collaborative approaches to technological innovation.

### *Rethinking The Role Of The State As An Entrepreneur*

Finally, there is a need to think again about the relationship between the private sector and the state when it comes to stimulating certain forms of technological innovation. As has been shown, market forces do not necessarily deliver the necessary impetus to drive innovation in a way that addresses environmental degradation or inequity and poverty. Moreover, there are those who argue that the “financialization” of the corporate sector (where it is sometimes easier for a CEO to meet their shareholders’ expectations through trading in their own stock and leveraged buyouts than from delivering a new product line) means that companies are increasingly entering into a parasitic relationship with the

state. This is a relationship where large corporates rely on the state to make the risky investments in R&D and then seek to profit from the commercialization of viable technologies arising from such public investments. The example given earlier of 75 percent of the truly original new drugs registered by companies in the United States having origins in the publicly funded research of the National Institute of Health is one such instance. Another would be the American Energy Innovation Council's demand that the U.S. Government triple its spend on clean energy technology research and provide an additional \$1 billion dollars to the Advanced Research Projects Agency of the U.S. Department of Defense (for the same purpose) at a time when seven of the companies that formed the Council were able to spend \$237 billion dollars on repurchasing their own stock to boost share prices (Mazzucato, 2013).

Achieving justice in technology innovation will thus require a genuinely new and symbiotic relationship between the private and public sectors, rather than the existing parasitic relationship. Making that transition will require a change in the dominant narrative of today, a shift away from seeing the role of the state as primarily to regulate and de-risk the environment for the private sector and towards a recognition that the state already invests heavily in innovation and should get a better return on investment from the companies that are able to commercialize the fruits of that investment. Even more importantly, there must be a new recognition that the state has a vital role to aggressively act, invest, and take risks where the complexities or costs are too high for the private sector to act alone, as is the case with the two greatest challenges facing humankind today—ending global poverty and finding a path to a sustainable future for everyone on the planet.

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