

GLOBAL SOLUTIONS JOURNAL

RECOUPLING

— THE GLOBAL SOLUTIONS SUMMIT EDITION —

ABIDHADJAEV • ALTMAIER • ANBUMOZHI • ANDOR • ANHEIER • BARLEY
BEIER • BHATTACHARYA • BONDE • BRADFORD • CHANDRASHEKHAR
CIURIAK • DARNALL • DE JAGER • DJEFFAL • FRANK • GANTEN • HANNI
HENDRIYETTY • HENFREY • HORNO • INABA • ISCHINGER • JAITMAN
KASTROP • KELLY • KHAN • KICKBUSCH • KOMIYAMA • MAIRA • MARTNER
MATSUSHITA • MONJEAU • MORGAN • NAKATA • NEMOTO • NIKOLAEVA
OKUBO • OHNO • OKONEDO • PENHA-LOPES • PIÑEIRO • PONATTU
SCHMIDT • SNOWER • STEINHILBER • TIBERGHEN • VIGLIZZO
YANAGISAWA • YOSHINO • ZADEK

Paradigm change for a sustainable world order



Dennis J. Snower
President, Global Solutions Initiative



Markus Engels
Secretary General, Global Solutions Initiative

Dear Reader,

Welcome to the third Global Solutions Summit in Berlin. Our annual Summit aims to support the Japanese T/G20 Presidency. We are honored that State Minister Masahisa Sato will address our Summit as a representative of the G20 as well as the T20 Sherpa Dean Yoshino.

The theme of this year's Summit is global paradigm change to recouple social, political and economic progress.

There are many excellent contributions in this journal and we are deeply grateful to all the authors. At the beginning of this issue, you will find two keynote articles: the MSC Co-Chair Colm Kelly and the Global Solutions President Dennis Snower provide their complementary perspectives on guidelines for global paradigm change. Subsequent contributions are to be understood in this light.

We are delighted to welcome over 1,200 participants and more than 150 speakers. We are humbled by the enthusiasm and engagement of so many people from around

Copyrights: Tobias Koch



Global Solutions Summit 2018 closing plenary (from left) with Laura Jaitman, Argentine Ministry of Treasury; Colin Bradford, Vision 20; Naoyuki Yoshino, Chair T20 Japan; Jose Martínez, CARI; Dennis J. Snower, GSI; Sebastian Turner, Tagesspiegel.

the world in preparing this Summit, spanning researchers, policy makers, business leaders, and civil society representatives.

As in 2017 and 2018, we proudly welcome the Young Global Changers (YGC). More than 3,500 applicants from 155 countries applied to participate and it was exceedingly difficult to choose only 100 individuals for this year's program. During the Summit, you will see our Young Global Changers actively participating in the proceedings. Last weekend, during the Global Solutions Summer School, they prepared research and projects alongside the Summit and thereafter. We kindly ask the other Summit participants to support their work as needed.

This year we seek to build a bridge between the worlds of ideas and action by bringing the T20 researchers into closer relation with visionary implementers from politics, business and civil society. The implementers will challenge the proposals made by the T20 working groups and

bring their practical experiences into the global problem-solving discussion. There will also be a special forum for highlighting the implementers' innovations.

We are honored to welcome Heads of State and Government, representatives from various international organizations, G20 and T20 sherpas, ministers, think tank researchers, representatives from NGOs and global enterprises, mayors and experts who are working toward global solutions from a local and regional perspective.

This Summit connects researchers and decision makers from around the world to tackle global problems multilaterally in the interests of civil societies around the world. As such, it is an exercise in recoupling economic, political, and social prosperity. Thank you for joining us in Berlin.

Yours, in hope and confidence,

Global Solutions Journal

VISION BRIEFS

- 12 **Toward global paradigm change:
Beyond the crisis of the liberal world order**
Dennis J. Snower
- 33 **Repurposing our economies – and our businesses**
Colm Kelly

CLIMATE CHANGE AND SUSTAINABILITY

- 64 **Multilateralism – We need to strengthen free, rules-based trade
to the benefit of everyone**
Peter Altmaier
- 66 **Realizing the sustainable future: How to put the G20 on the right track?**
Venkatachalam Anbumozhi
- 75 **Solutions for a paradigm shift toward sustainability**
Alexander Bonde
- 82 **Innovation toward a platinum society: Proposal for a community energy
system based on renewable energy**
Hiroshi Komiyama
- 89 **Toward a climate-resilient and sustainable future:
T20 Japan TF3 on Climate and Environment**
Kazuo Matsushita
- 97 **FABLE and Argentina's food and land-use systems**
Adrian Monjeau, Federico C. Frank
- 104 **Think 20 Japan 2019: The “Japan SDGs Model” and the Task Force on
the 2030 Agenda for Sustainable Development**
Izumi Ohno
- 114 **There are no jobs on a dead planet:
Trade unions as agents of social and environmental transformation**
Jochen Steinhilber
- 120 **The critical frontier: Reducing Belt and Road emissions**
Simon Zadek

Issue 4

ECONOMICS AND TRADE

- 130 **The US-China trade war: Technological roots and WTO responses**
Dan Ciuriak
- 136 **SMEs – Champions of sustainable business development.
Lessons for a regulatory framework**
Jost de Jager
- 140 **SME finance using bank account information: Credit-risk reduction effect
on small and medium-sized enterprise finance**
Naoko Nemoto, Naoyuki Yoshino, Yutaka Okubo, Daimei Inaba, Kentaro Yanagisawa
- 147 **Trade, food security and the comparative environmental advantage
of food-producing countries**
Ernesto F. Viglizzo, Martín E. Piñeiro
- 156 **High-quality infrastructure and land acquisition for infrastructure
development through land trusts**
Naoyuki Yoshino, Umid Abidhadjaev, Nella Sri Hendriyetty

DIGITAL TRANSFORMATION

- 166 **How are algorithms transforming our lives?
Welcome speech at the Global Solutions Summit**
Katarina Barley
- 173 **The digitalization of industries: Industrial policies for an inclusive
and sustainable digital transformation**
Christoph Beier
- 179 **Tech-driven disruption in social sectors:
The irresistible force meets the immovable object**
Rentala Chandrashekhara
- 186 **Sustainable development of artificial intelligence (SAID)**
Christian Djefal

FUTURE OF WORK AND EDUCATION

- 196 **Financial literacy for the digital age:
The need for digital financial education**
Peter J. Morgan
- 205 **New challenges for education systems:
What makes the next generation and the future workforce strong?**
Barbara Ischinger
- 213 **The future of work: A case for international cooperation**
Laura Jaitman, María Florencia Asef Horno
- 220 **Shaping business education to support recoupling**
Enase Okonedo

SOCIAL COHESION

- 230 **Decoupling and social arrest: Which ways forward?**
Helmut K. Anheier
- 237 **Next stage: European Social Union.
To overcome internal imbalances, the EU must address outside needs**
László Andor
- 243 **Reducing the global burden of chronic pain**
Beth D. Darnall
- 249 **Domestic resource mobilization and the redistributive impact
of fiscal policies in Latin America**
Michael Hanni, Ricardo Martner
- 254 **Recoupling through regeneration: Community-led initiatives and
the re-imagining of economic and social policy**
Thomas Henfrey, Gil Penha-Lopes
- 260 **Inequality and the productivity slowdown: The growing gap
between the most productive and the rest dampens social cohesion**
Christian Kastrop, Dominic Ponattu, Julia Schmidt
- 267 **Invest in universal health coverage now**
Ilona Kickbusch, Detlev Ganten

GLOBAL GOVERNANCE AND THE FUTURE OF POLITICS

- 278 **Effectiveness of development cooperation:
Need for a new conversation on how to assess it**
Debapriya Bhattacharya, Sarah Sabin Khan
- 287 **Changing the dynamics: From conflict to transformation**
Colin Bradford
- 293 **Changing the paradigm: Systems thinking, systems organizing,
systems transformation**
Arun Maira
- 298 **Cooperation with Africa in T20 Japan**
Ryosuke Nakata
- 304 **Causing and correcting G20 compliance**
Alisa Nikolaeva
- 312 **A key message from the Paris Peace Forum: Defusing cross-national
misperceptions and advancing inclusive global governance**
Yves Tiberghien
-
- 320 **The Global Solutions Initiative for the G20**
- 322 **Imprint**

APPENDIX

List of Task Force 3 co-chairs

Following is a list of six co-chairs in the Task Force 3 on Climate and Environment.

- Prof. Kazuo MATSUSHITA (IGES) (Lead co-chair of Task Force 3, Prof. Emeritus, Kyoto University, Senior Fellow, Institute for Global Environmental Strategies (IGES))
- Prof. Hiroshi KOMIYAMA (Chairman, MRI, Former President, Tokyo University)
- Mr. Gabriel LANFRANCHI (Cities Program Director of CIPPEC, Argentina)
- Prof. Miranda SCHREURS (Prof. for Environment and Climate Policy Bavarian School of Public Policy, Technical University of Munich, USA/Germany)
- Prof. John KIRTON (Director, G7 Research Group, Co-director, G20 Research Group, Co-director, BRICS Research Group, Co-director, Global Health Diplomacy Program, Munk School of Global Affairs, Canada)
- Dr. Ajay MATHUR (Director General, The Energy Resource Institute (TERI), India)

¹ Johan Rockström et al. "A safe operating space for humanity", Nature, September 24, 2009, Vol 461, and Will Steffen et al. "Planetary boundaries: Guiding human development on a changing planet", Science, February 13, 2015, Vol347, Issue6223.

² Kate Raworth "A Safe and Just Place for Humanity", Oxfam, 2012.

³ https://www.env.go.jp/en/policy/plan/5th_basic/plan.pdf, https://www.env.go.jp/policy/kihon_keikaku/plan/plan_5/attach/ref_en-02.pdf

FABLE and Argentina's food and land-use systems

The authors:



Adrian Monjeau

Head of Department of Complex Systems Analysis, Fundación Bariloche Researcher, CONICET Coordinator, FABLE Argentina



Federico C. Frank

Researcher, INTA Associate Professor, Universidad Nacional de La Pampa

The institutions:



Fundación Bariloche, created in 1963, is a non-profit private academic institution devoted to education and scientific research in several areas of Economy, Energy Planning, Socio-ecological Modelling, Human Development, Philosophy & Environment.



INTA is the National Institute for Agricultural Technology, a decentralized organism under the Secretary of AgroIndustry founded in 1965. Its objective is to develop innovations for commodities, value chains and territories, to foster rural productivity, competitiveness, equity and sustainability through research, extension and communication.

Is it possible to provide healthy food to all humanity, respecting the planetary limits, the Paris Agreement and the Sustainable Development Goals (SDGs)?

»The challenges of unequal access to food and the negative effects on the environment are expected to be exacerbated in the near future.«

“Over 800 million people are undernourished, some two billion suffer from micronutrient deficiencies, and an estimated two billion are obese or overweight”¹. “Plus, the current food system is vastly inefficient, with up to one third of food lost or wasted. It is also highly unequal, with a surplus of calories available for many, while the poor go hungry: food can be abundant and scarce at the same time in different parts of the planet”¹.

On the other hand, food production is one of the greatest threats to the environment. Deforestation, agriculture, and other land-use changes account for a quarter of

global greenhouse gas emissions (GHGs). It threatens freshwater supplies, drives an unprecedented loss of biodiversity, and contributes to large inflows of nitrogen, phosphorous and other nutrients into freshwater and marine systems. “Many countries experience large-scale degradation of agricultural lands and air pollution that is partly driven by land clearing and poor agricultural practices. Unsustainable land-use also drives habitat loss, and reduces the biosphere’s ability to store carbon from the atmosphere”¹.

As if this were not enough, the challenges of unequal access to food and the negative effects on the environment are expected to be exacerbated in the near future, as most population growth occurs in areas with low-yield agricultural production¹. The global target of ending hunger and other food problems, the second of the UN 2030 Agenda’s SDGs², implies a profound transformation of the world’s food and land-use systems. It is evident that these issues must be jointly addressed by all the countries if we also want to achieve agendas like the Paris Agreement, the Aichi Biodiversity Targets and most of the SDGs (2, 3, 6, 7, 12, 13, 14, and 15).

The challenges of unequal access to food and the negative effects on the environment are expected to exacerbate in the near future.

The Food, Agriculture, Biodiversity, Land Use and Energy Pathways (FABLE) Consortium mobilizes top knowledge institutions from the G20 and other countries to support the development of data and modeling infrastructure for long-term pathways toward sustainable food and land-use systems. The consortium’s aims are (i) to promote more ambitious, inte-

grated national strategies, and (ii) to ensure alignment with the global objectives of the 2030 Agenda and the Paris Agreement¹. It provides a sharing platform, training, technical support, and modeling approaches, like an Excel-based tool (the FABLE Calculator), as well as sophisticated geospatial economic models (e.g. the GLOBIOM model). The rationale behind this modeling approach is to make international markets and trade more efficient, under diverse scenarios, so as to be able to feed the world’s population by 2050, but without surpassing certain environmental boundaries, like “well below 2°C”, “no biodiversity loss”, etc. (Figure 1).

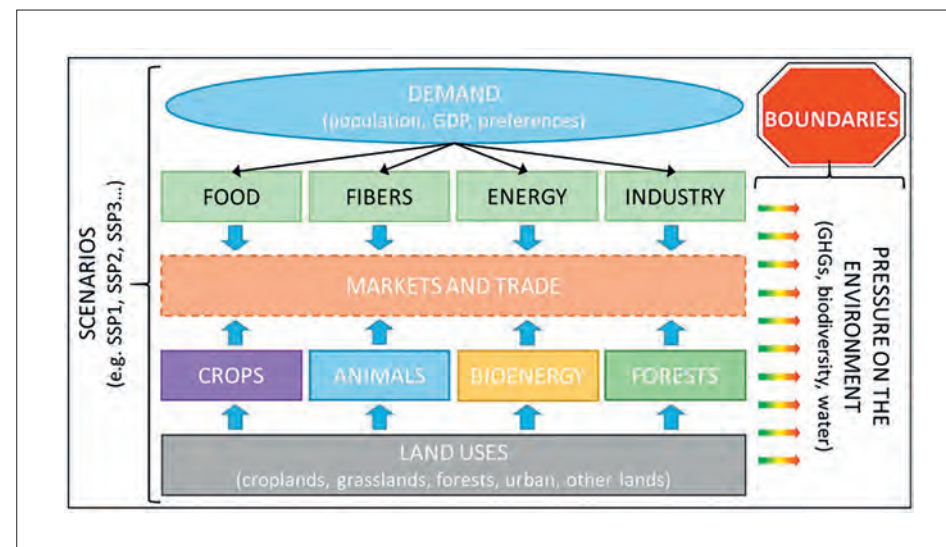
Each country team is expected to undertake its own analyses as part of the global consortium. This ensures local ownership, but also ensures that projec-

tions of trade in agricultural products are in balance, and that the sum of countries’ pathways will achieve the SDGs and the objectives of the Paris Agreement. The International Institute for Applied Systems Analysis (IIASA) and the UN Sustainable Development Solutions Network (SDSN) coordinate the FABLE Consortium¹. Fundación Bariloche (FB) and Instituto Nacional de Tecnología Agropecuaria (INTA) constitute the FABLE country team for Argentina.

FABLE supports the development of data and modeling infrastructure for long-term pathways toward sustainable food and land-use systems.

Argentina plays an important role in the global food and land-use system, since it is one of the main producers and exporters of agricultural products. Driven by the

Figure 1: Modeling logic of the FABLE Consortium.



international price of commodities, the country increased the proportion of land devoted to agriculture in the last 30 years (Figure 2), with soybean playing the leading role in these changes. Following Brazil and the United States, Argentina is now the third-largest producer and exporter of this commodity and its associated products (soy oil, cake and biodiesel), thanks to the country's considerable endowment of natural resources and an efficient low-input agro-industrial system. Consequently, the cultivated area has grown steadily since the introduction of a technological package in the mid-nineties, which combines genetically modified soy, agrochemicals (mainly glyphosate) and direct sowing practices. Since then, it spread reaching up to 20 million hectares, nowadays representing more than 50% of the area of all cash crops (Figure 3). These changes have

brought about a profound transformation in the land-use system in Argentina, impacting the economic activity, human health and the environment³.

For Argentina, like for the rest of South America, contributing to global sustainability and at the same time maintaining or increasing its income represents a source of controversy, with the central point being the asymmetry between global and local sustainability goals. Must global sustainability goals (like the SDGs) be fulfilled by sacrificing local or regional ones? That is what is happening nowadays, with high-income countries like France or Germany on the top of the SDG Global Rank, while Argentina and Brazil have much lower scores. However, should we consider the "spillover effects" of food consumption, that is, the effects (positive or negative) of the decisions in one country or region,

that spread to other countries or regions, the perspective could be much different. If we consider that most of Argentina's soy is consumed (or used as animal feed) elsewhere, it is only logical to assign the environmental impacts of this consumption to the consumer (the importer), not the producer. Although this criterion is not universally accepted, efforts are being made to "correct" the SDG's performances to account for such spillovers.

Must global sustainability goals be fulfilled by sacrificing local ones in low-income countries or regions?

In ecological terms, it makes far more sense to address sustainability at biome- or eco-regional scale, since most ecosystems' natural borders don't always match national margins. Maintaining the functionality of ecosystems and the provision of their services to humankind is a key aspect of sustainability, so a multi-national governance of shared biomes is essential

to achieving the SDGs (e.g. 14 and 15). With this in mind, FB and INTA teamed up with their FABLE South American counterparts, creating the ABC FABLE Team (standing for Argentina, Brazil and Colombia) within the consortium. The purpose of this coalition is to address these issues at a continental scale, since most of the biomes are shared between these and other countries (which would be incorporated in the future).

With this in mind, the ABC FABLE Team is working with the FABLE models to simulate possible scenarios and their effects on the countries' food and land-use systems. Preliminary results from the FABLE Calculator for Argentina can be used to analyze, for example, land use and GHG emissions under different global scenarios (Figure 4). In this exercise, two contrasting scenarios were considered: a) an unrestricted projection of food production with high importing demand from the rest of the world,

Figure 2: Recent expansion of main crops (soybean, maize, wheat and sunflower) in central and northern Argentina. Each dot equals 500 ha.

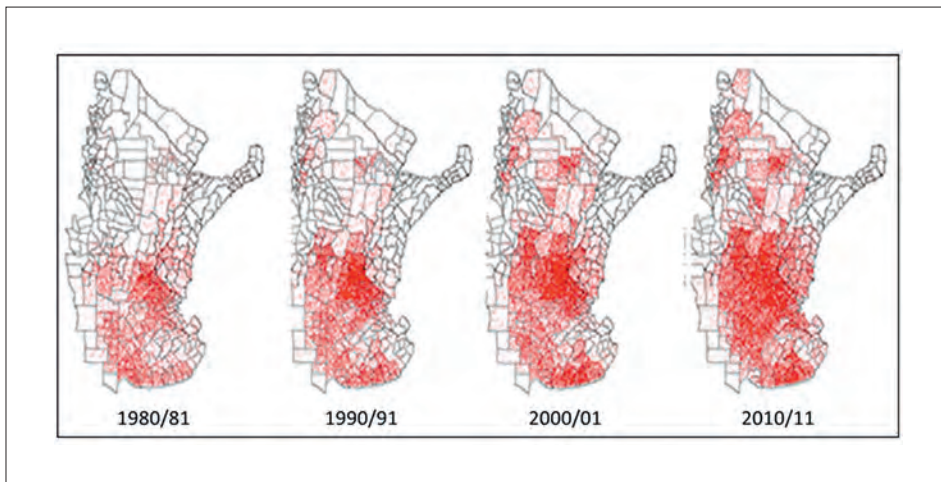
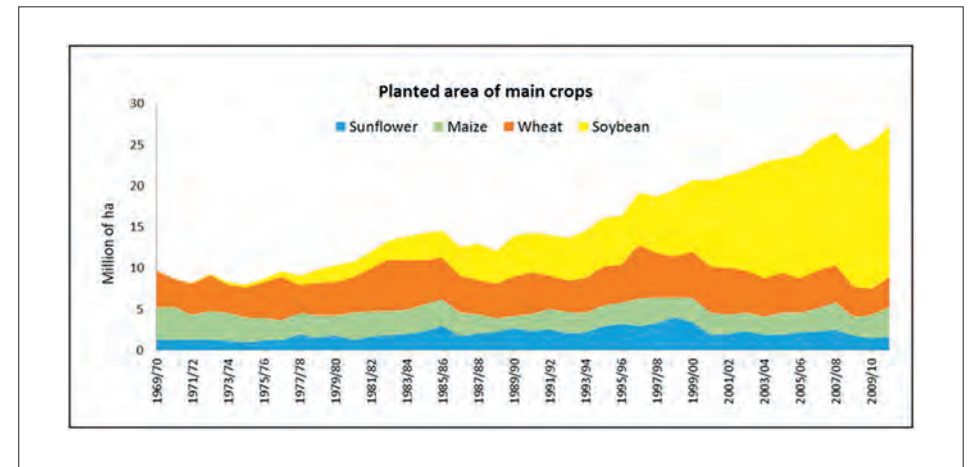


Figure 3: Cultivated area of main cash crops in Argentina in the recent past.



and b) a sustainable projection, restricted by ambitious country-level emission goals and zero deforestation. As can be seen, Argentina's contribution to achieving some of the global SDGs (e.g. 13, "climate action") may not be compatible with its contribution to achieving other goals (e.g. SDG 2, "zero hunger"). Moreover, if global versus regional (or national) trade-offs within these SDGs were considered, a whole new level of complexity and uncertainty would arise. For example, if Argentina were to follow a "sustainable scenario", international demand could pressure Brazil, Paraguay and other countries to increase their production. This other type of spillover effect can also be analyzed through the models used in the consortium.

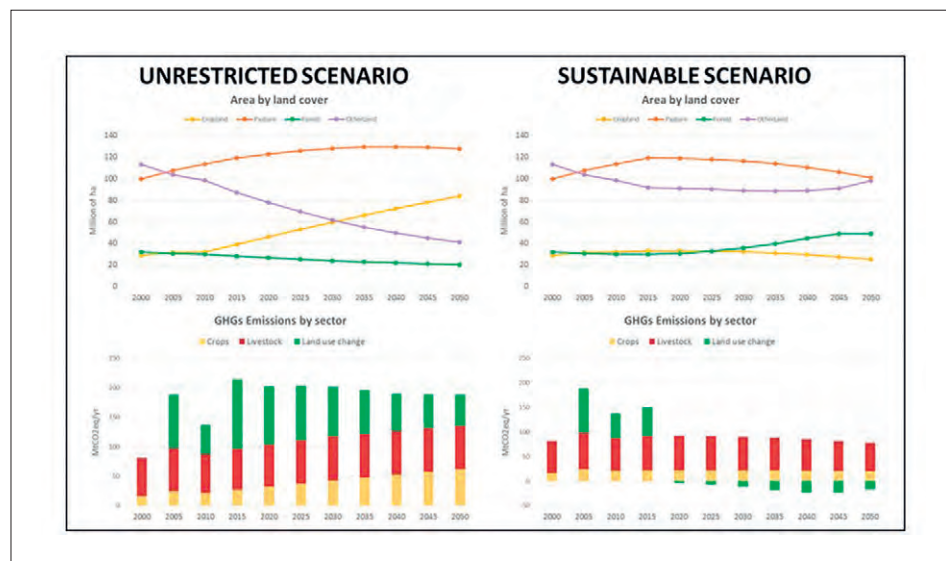
The results from the countries (or groups of countries) in the FABLE Consortium are then integrated in a platform called Scenathon (coined as a blending of the words "scenario" and "marathon"), in which the global demands, exports, imports and environmental performances are combined to check if global targets are accomplished. This process is iterative, and currently under validation, but preliminary outcomes show the possible effects of decisions in one country on others. For example, given the previous sustainability scenario for Argentina, other countries are expected to increase their own production of commodities to satisfy their demand. On the other hand, if Argentina were to opt for an unrestricted production of food,

this could allow other countries to be more concerned about their GHG emissions, biodiversity, protected areas, etc. The capital achievement of these exercises is the capability to put numbers to these trade-offs (with a reasonable level of confidence), in order to inform decision makers about the effects of their decisions on their own country, on other countries, and on the planet as a whole.

In parallel, the team has started working with the GLOBIOM model, whose objective is to incorporate a spatially explicit approach to the modeling that is being carried out. However, considerable effort is needed to collect, sort, and manage the data needed to run this model. Thanks to financial support from the German Society for International Cooperation (GIZ), a

coalition of institutions joined the Argentina FABLE team to address the soybean value chain as a study case (SDSN Andes, INPADE, Instituto Balseiro, ISA, PIK, SEI). Soybean is a source of strong controversy between two opposing groups, one holding that it allowed Argentina's economy to blossom, and the other asserting that it is responsible for the rapid deforestation of native forests, favoring the concentration of wealth, destroying rural employment, and deteriorating environmental quality. Hence, it is an excellent example for use with the modeling tools and collective knowledge of the FABLE Consortium, to assess the previously mentioned subjects, including the spillover effects of Argentina on other countries, and vice versa.

Figure 4: Layouts of the FABLE Calculator corresponding to a) unrestricted and b) sustainable scenarios, showing land use and GHGs projections up to 2050.



¹ FABLE Consortium Concept note. Internal Draft.

² Sachs, J., G. Schmidt-Traub, G. Kroll, G. Lafortune, G. Fuller (2018). SDG Index and Dashboard Report 2018, New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).

³ Viglizzo, E., F. Frank, L. Carreño, E. Jobbagy, H. Pereyra, J. Clatt, D. Pincén, F. Ricard (2011). Ecological and environmental footprint of 50 years of agricultural expansion in Argentina. *Global Change Biology* 17: 959–973.