

THE SOVEREIGN TRANSITION TO SUSTAINABILITY

UNDERSTANDING THE DEPENDENCE
OF SOVEREIGN BONDS ON NATURE

THE CASE OF ARGENTINA

Discussion Paper | August 2019



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ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank aligning capital markets with planetary limits. It was launched in 2018 by the Investor Watch Group whose founders, Mark Campanale and Nick Robins, created the Carbon Tracker Initiative.

Planet Tracker was created to investigate market failure related to ecological limits. This investigation is for the investor community where, in contrast to climate change, the limits are poorly understood and even more poorly communicated, and not aligned with investor capital.

Planet Tracker Sovereign Bonds Programme

Planet Tracker is launching a new programme of thought leadership that explores the relationship between sovereign bonds, natural capital and environmental risks, and the macroeconomics – sovereign health – of a country and its key soft commodities.

Our first focus is on key Latin American countries, specifically Brazil and Argentina, where we will explain how natural capital intersects with sovereign bond risk.

Over time, we will expand the programme to analyse sovereign health applying similar quantitative and qualitative models to additional countries in Latin America as well as globally.

Our research focuses on how changes in environmental health, such as soil degradation, deforestation and variability in extreme weather impact the underlying public treasury balances of these countries and their subsequent ability to service sovereign bond liabilities. .

Acknowledgments

Planet Tracker would like to thank Nick Robins, Professor in Practice - Sustainable Finance, Grantham Research Institute, London School of Economics, for his expert contributions to this report.



EXECUTIVE SUMMARY

Argentina's near-term governance strength as it transitions through its next election cycle, in managing the country's exposure, sensitivity and adaptation ability to natural capital sustainability is a growing factor for sovereign bond investors currently owning \$160 billion in Argentinian sovereign debt, maturing 2019–30.

While Argentina's external debt and its external-debt-to-GDP ratio have respectively increased from \$237 billion (37%) to \$286 billion (60%) over the previous two years in part due to the IMF Stand-by Agreement (SBA) that mitigated Argentina's economy from entering into a possible default, over the long-term, the country's economy is stabilising, with inflation albeit painful slowing in Q2 2019 suggesting real peso appreciation.

Yet in the meantime, in Q4 2019, Argentina faces a national election. Whoever wins the election, they will have to choose how to continue mitigating inflation while supporting real peso appreciation to grow the country's domestic economy, strength foreign reserves and expand its external trade.

And in the midst of Argentina's challenging transition to a market based economy after a decade of state control, Argentina's faces two key natural capital risks that could negatively impact forecasted economic growth, decrease exports and cause a decline in USD-denominated treasury receipts that Argentina uses to finance its USD sovereign debt principal and interest payments.

- First, a key risk in the short-term to investors owning \$72 billion in Argentinian sovereign debt maturing 2019–22, which also correlates with Argentina's national election cycle, is sell-side production risks driven by extreme weather – such as drought and flood – which are same risks that caused \$8 billion in economic damage in 2018. From December 2017 to February 2018, precipitation totals were 50% below average in some provinces creating the worst drought in 25 years.

High or low soybean prices – Argentina's largest export – can sustain or collapse its government. So, according to Argentina's Instituto Nacional de Estadística y Censos, possibly as a result of the drought, Argentina's Q2 2017 to Q2 2018 non-seasonally adjusted agriculture contribution to GDP growth rates was almost negative 50% over these quarters because of the drought.¹

- Second, a key risk in the long-term to investors owning \$87 billion in Argentinian sovereign debt maturing 2023–30, are demand-side risks as the country's agriculture exports, which are grown on land degraded and deforested since 2008, may face import exclusions into the EU because of the EU recent Renewable Energy Directive II (RED II) legislation. This EU import exclusion could decrease Argentinian exports approx. \$3 billion over 2023–30.

The EU RED II is important to sovereign bond investors because from 2008–17, Argentina suffered 3,050,000 hectares of tree cover loss in the Dry Gran Chaco region², equivalent to an area the size of Belgium. This loss was primarily driven by soybean expansion, and as such, soybeans produced from this area may be prohibited from being imported 2023–30. This could in effect, unless other external buyers are found this soy, have a similar negative impact on the Argentinian economy and its balance of payments as the drought in 2017–18.



Given this, Planet Tracker hypothesises in this discussion paper that a ‘chain of impact’ exists between natural capital sell-side production risks and demand-side policy and regulatory risks – both in the short-term and long-term, and at the nexus of this supply and demand model sits Argentina’s fragile macroeconomic health.

Furthermore, if not addressed Argentina’s deteriorating natural capital sustainability, which is a contributing factor to its soft commodity production efficiency, is set to affect its economy where from 2008–17, nature dependent soft commodity exports made up 59% overall of Argentina’s exports generating \$400 billion. Even though Argentina has relatively closed economy, and in 2018, according to The World Bank, its exports of goods and service percent to GDP was only 14.4%, Argentina is relying upon its external trade to finance its \$72 billion short-term and \$87 billion long-term USD-denominated debt repayments.

Nature Dependent Soft Commodities Exports

Of all the countries in the G20, Argentina’s exports are most dependent on a healthy and living ecosystem – or *natural capital*. Soft commodities that rely on natural capital in their production – *nature dependent soft commodity exports* - account for six out of ten export dollars, half of which are soybeans.

From 2008–17, G20 countries’ nature dependant soft commodity exports were \$10.4 trillion, 10.3% of total G20 exports. By contrast, from 2008–17, Argentina’s reliance on these exports was the highest amongst its G20 peers at almost 60% (Figure 1).

But now, these soft commodity exports are threatened by short-term production risks driven by extreme weather and long-term policy and regulatory risks prohibiting import of deforestation and degradation-based soft commodities.

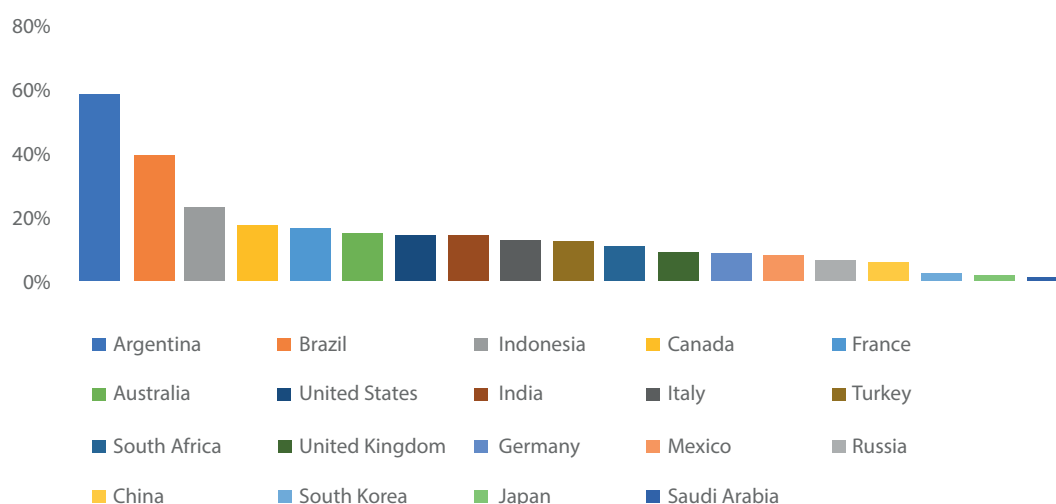


Figure 1: G20 Nature Dependent Soft Commodity Exports, 2008–17.³

Natural Capital is an Environmental and Economic Asset

Capital markets are not systematically measuring in their sovereign assessments the relationship between natural capital sustainability and Argentina's reliance on nature dependent soft commodity exports.

Soybeans are Argentina's top export. From 2008-17, Argentina exported \$181 billion⁴ from upstream⁵ and midstream⁶ soybean products – equalling 27% of the country's total exports.

Furthermore, the European Union (EU) is the largest consumer and producer of biodiesel in the world.⁷ In 2017, approx. 67% of the EU's biodiesel import in 2017 was comprised of Argentinian soybean biodiesel⁸ (90% of all Argentinian soybean biodiesel exports).

Since soybeans and its products are Argentina's number one export, Planet Tracker suggests that capital markets and sovereign analysts produce focused analysis on supply-side and demand-side risks to soybean product exports (see Section 3).

Planet Tracker has found that sovereign investors and the Government of Argentina have not explicitly accounted for these risks despite the IMF's 2018 \$50 billion Stand-By Agreement (SBA) – since increased to \$56.3 billion, which some in the Government of Argentina hope to extend. Credit risk is a fundamental investor factor in determining future sovereign debt rollovers. In the case of Argentina this dynamic extends to the IMF SBA.⁹

Research for this paper indicates that further natural capital declines could impact balance of payment volatility together with domestic and international treasury receipts generating credit risks not widely accounted for by capital markets.

At the same time, during a Planet Tracker in-country visit to Buenos Aires and Rosario, Argentina, all investment stakeholder institutions interviewed¹⁰ privately expressed strong support for the provincial governments of Argentina to issue green bonds focused on ecosystem restoration and sustainable agriculture production and soy certification, following behind the Argentinian provinces of Jujuy and La Rioja who in 2017 issued \$210 million 8.62% 2022 and a \$200 million 9.75% 2025 green bonds whose proceeds are ring-fenced support solar and wind energy production.¹¹

Yet, unless effectively governed and managed with concrete action taken now, Argentina's natural capital sustainability as a result of supply-side and demand-side risks as assessed in this discussion paper may lead to future macroeconomic volatility.

Emerging Insights Towards a High Road Scenario

This discussion paper seeks to explore how Argentina is at a crossroad at the nexus between natural capital sustainability and macroeconomic health.

We believe that sovereign bond investors can better support Argentina's government to improve natural capital resilience, thus protecting nature dependent soft-commodity exports. Transferring the emerging insights in this paper into actions supporting this assessment include:

Green Bonds

Investors and regional provinces in Argentina could collaborate to issue sovereign subnational green bonds expanding on previous green bond issuances. Proceeds from a sovereign green bond could be used to finance measures designed to mitigate short-term production risks and long-term policy and regulatory risks.

Investor Support for a Green Economy

Investors can engage and support the Government of Argentina and specifically senior parties at the Banco Central de la República Argentina to enact policies addressing Argentina's natural capital exposure, resilience and adaptation ability can positively impact managing balance of payment volatility, and thus decrease credit risk to Argentinian sovereign investors.

Sovereign Investors Incorporate Natural Capital Risks

Sovereign investors can incorporate explicitly short-term production risks and long-term policy and regulatory risks into their sovereign analysis.

IMF Applies Natural Capital Sustainability Measures to Future SBAs

The IMF can support high road scenario transitions globally by actioning binding covenants to future SBA agreements enabling governments to enact policies mitigating natural capital sustainability risks and supporting natural capital resilience.

Soybean Production Certified as Sustainable

Possibly applying ring-fenced proceeds from a regional green bond issuance, the Government of Argentina should aim to certify its soybean production as sustainable applying globally accepted independent, reputable third-party certification standards so as to directly mitigate natural capital supply side and product exclusion demand side risks.

Land Use Production and Exports Policies Expansion and Strengthening: Having served as President of the 2018 G20 summit, the Government of Argentina, under its new upcoming leadership, can continue to demonstrate its global leadership by actively and publicly supporting design of new governing standards and targets for sustainable land use. The Government of Argentina can provide leadership at upcoming seminal land use events setting environmental, land use, climate and sustainable development goals agendas post-2020 including:

- 2020 the Convention on Biological Diversity: Post 2020 Aichi Targets;
- Conference of the Parties to the Convention on Biological Diversity (COP 15): Beijing 2020 towards a new global pact between people and nature;
- Species Survival Commission Post-2020 Biodiversity Targets Task Force;
- UN Convention on Biological Diversity, Nature Action Agenda presented at COP 15;
- IPCC's special report on *Climate Change and Land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* that will be released in 2019.



SECTION 1

SOVEREIGN SUSTAINABILITY TRANSITION

Nature is the Foundation of Business Prosperity

Planet Tracker has found that investors are increasingly recognising the importance of healthy and stable natural capital in order to provide energy, food and fresh water to meet the requirements of a global population expected to reach 9.8 billion by 2050.¹²

In 2019 the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published a global report in part assessing how economies and industrial sectors have used nature to generate economic value whilst at the same time highlighting environmental costs and externalities arising from this value creation.

With more than a third of the world's land surface and nearly 75% of freshwater resources devoted to crop or livestock production, agriculture is one industrial sector closely examined by IPBES.

By 2018 the \$2.6 trillion annual economic value of agricultural crop production was threefold greater than in 1970. Soft commodities, such as coffee, cocoa, wheat, sugar, soybean and livestock, are fundamental to feeding society, employing 28% of the global workforce, and creating the backbone for many economies including within the G20 (see below).¹³

For many countries overall macroeconomic health depends on soft commodity production and trade. Agriculture is however simultaneously the major driver of global natural capital depletion as:¹⁴

- Global food crop production has increased 300% since 1970 and 50% of global agricultural expansion has occurred at the expense of forests contributing towards 60% loss of terrestrial biodiversity;
- 33% of degraded soils result from agriculture production which also discharges up to 30% of greenhouse gas (GHG) emissions;¹⁵
- Land degradation has reduced productivity in 23% of the global terrestrial area, and between \$235 billion and \$577 billion in annual global crop output is at risk as a result of pollinator loss.¹⁶

As natural capital declines, Planet Tracker is working with capital markets to measure the extent to which macroeconomic health, also referred to as sovereign health, depends on the sustainable management of natural capital.

Sovereign health is measured for example by credit rating agency (CRA) indicators including, but not limited to, GDP, trade balance of payments (BoP), exports, public finances and expenditure, currency and employment. Going forward CRAs are showing positive signs of directly incorporating natural capital measures into their analysis – for example via Moody's 'external vulnerability' assessments and S&P Global Ratings in their recent assessment of the Province of La Rioja's \$200 million 9.75% 2025 green bond.



Capital Markets are Waking Up to Sovereign Health Risks

Planet Tracker is assessing how declines in natural capital transition increase credit risks to sovereign investors. In agriculture-based economies, declines in natural capital can decrease production impacting on industry revenue, tax contributions, employment and soft commodity exports resulting in falling treasury receipts.

Since 2015 capital markets have increasingly recognised that ESG risks may be material, which is why this report is focusing on the E (environmental risks). For example:

- **The UN Principles for Responsible Investment (PRI):** Globally by 2019, 146 investors collectively managing \$29 trillion of assets including sovereign bonds have signed the *UNPRI ESG in Credit Ratings Statement*, including Fitch Ratings, Moody's, and Standard & Poor's (S&P).¹⁷
- **S&P Risk Atlas:** Created by S&P Global Ratings, the ESG Risk Atlas provides a country level appraisal and outlook of ESG factors.¹⁸
- **Stock Exchange Engagement:** By June 2019, 14 global stock exchanges including London, Shanghai, Luxembourg, Borsa Italiana, Japan Exchange Group, and Frankfurt had launched a dedicated green bonds section.¹⁹
- **Mainstreaming ESG Analysis into Sovereign Credit Ratings:** Fitch Ratings, Moody's, and S&P, the three major global credit rating agencies which cover 95% of the sovereign credit ratings' market, have all adopted ESG sovereign rating frameworks.^{20 21 22 23}

It is incumbent on sovereign states and their investors to ensure that sustainable management of natural capital is a government and investor priority. Capital markets place a high value on governance strength in their economic assessments. Strong governance commitment and demonstrated ability to deliver on climate and nature sustainability is a crucial starting point in determining a country's exposure, sensitivity and adaptation ability to natural capital volatility.

In an era of greater capital market engagement on climate and nature for example the Task Force on Climate-related Financial Disclosures (TCFD), sovereign credit issuers should also have a duty to disclose, at the least, climate and nature related aspects of land use change.

SECTION 2

NATURE DEPENDENCY OF EXPORTS

Capital markets use balance of payment volatility as one measure to gauge sovereign bond investments and macroeconomic health. BoP record economic transactions including the trade of goods between a country and the rest of the world.

Many export and import trade products calculated towards BoP rely on ‘dead’ natural capital (fossil fuels and non-renewable hard commodities) and ‘living’ natural capital (renewable soft commodities) in their production. These are ‘nature dependent exports’.

Focusing on ‘living’ nature dependent exports, of all the countries in the G20 six out of ten dollars of Argentina’s total exports are dependent on soft commodities, half of which are soybeans. From 2008–17, Argentina’s reliance on ‘nature dependent soft commodity exports’ was the highest amongst its G20 peers at almost 60% (Figure 1).

Nature dependent soft commodity exports across the G20 generated \$10.4 trillion of BoP receipts and formed 10.3% of total G20 exports in 2008–17.

While Argentina’s exports-to-GDP ratio is one of the lowest in the G20, Argentina’s soft commodity exports are however threatened by both diminishing production due to natural disasters and the global trend away from biodiesel fuel towards sustainable alternatives.

Whilst market analysis generally focuses on the governance strength of Argentina, this discussion paper offers emerging environmental insights relevant to assessing Argentina’s sovereign health.

Argentina’s Nature Dependent Soft Commodity Exports

From 2008–17, nature dependent soft commodity exports made up 59% overall of Argentina’s exports generating \$400 billion. These included products directly produced at the intersection of natural capital and sovereign health unimpeded by natural capital supply-side or demand-side constraints (Table 1).

2008–17		
Soft Commodity Embedded Exports	Value (\$ millions)	% Total
Foodstuffs	140,700	20.6%
Vegetable Products	137,230	20.1%
Animal and Vegetable By-Products	56,870	8.3%
Animal Products	47,030	6.9%
Animal Hides	10,146	1.5%
Paper Goods	5,392	0.8%
Wood Products	2,148	0.3%
Total Soft Commodity Embedded Exports	399,516	58.6%
Total Other Exports	282,084	41.4%
Total Exports	681,600	

Table 1: Soft Commodity Embedded Exports Dominate Argentina’s Total Exports 2008–17.²⁴



Soybeans and Soybean Products are Argentina's Number One Export

As shown in Figure 2, soybeans dominate Argentina's agriculture economy, which has grown rapidly since the 1990s through planned public sector intervention. From 2008–17, Argentina's nature dependent soft commodity exports' concentration risk was the highest amongst its G20 peers. And, from 2008–17, \$181 billion²⁵ – 27% – of Argentina's total exports were from soybean products alone.

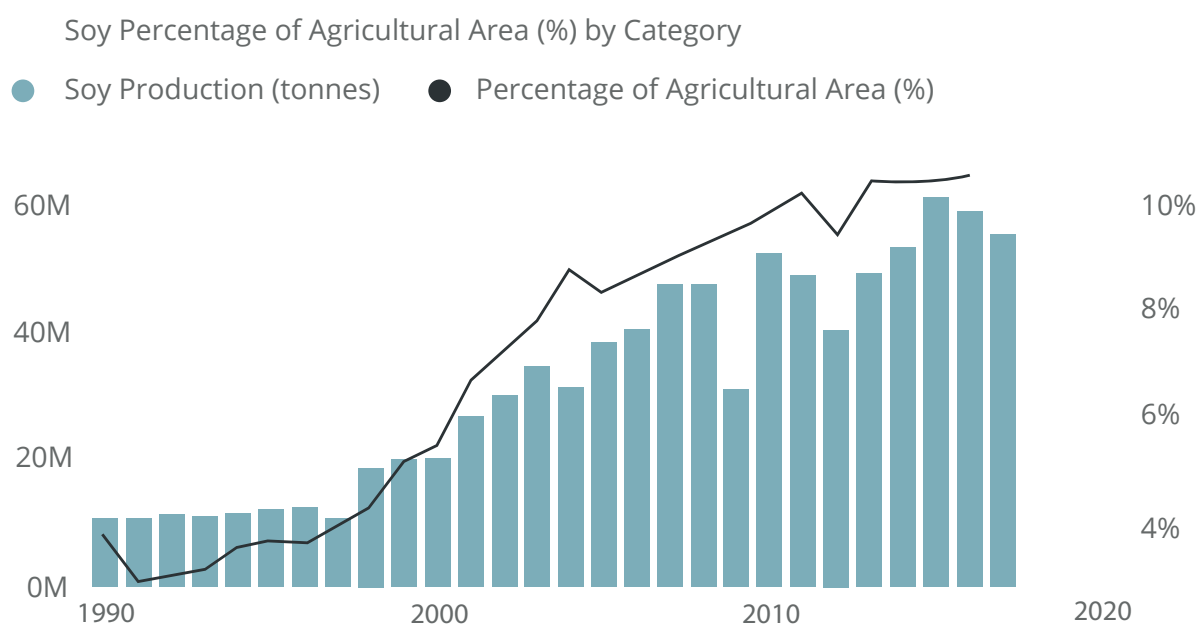


Figure 2: Soybean Production in Argentina as a Percent of Total Agricultural Area (black line in hectares) and Soybean Production (green bars in million tonnes), 1990–2016.²⁶

Recently from 2015–18, as shown in Table 2, midstream soybean products were 81% of overall soybean-related exports. During this period, soybean biodiesel exports were about \$4 billion.

Exports (\$ millions)	2015	2016	2017*	2018*
Total Exports	56,784	57,909	58,621	61,559
All Soybean Products	18,615	18,911	17,170	15,050
Upstream				
Soybeans	4,270	3,235	2,733	1,454
Midstream				
Soybean Meal	9,673	9,972	9,081	9,192
Soybean Oil	3,815	4,106	3,726	2,961
Soybeans	4,270	3,235	2,733	1,454
Soybean Biodiesel	506	1,240	1,224	971
Other Soybean Products	351	359	405	474

* Provisional

Table 2: Argentina's Soybean Exports Including Biodiesel 2015–18.²⁷



SECTION 3

UNDERSTANDING SUPPLY AND DEMAND DRIVERS

As shown in Figure 3, Planet Tracker utilises a natural capital supply and demand model to measure how nature dependent exports related to sovereign health.

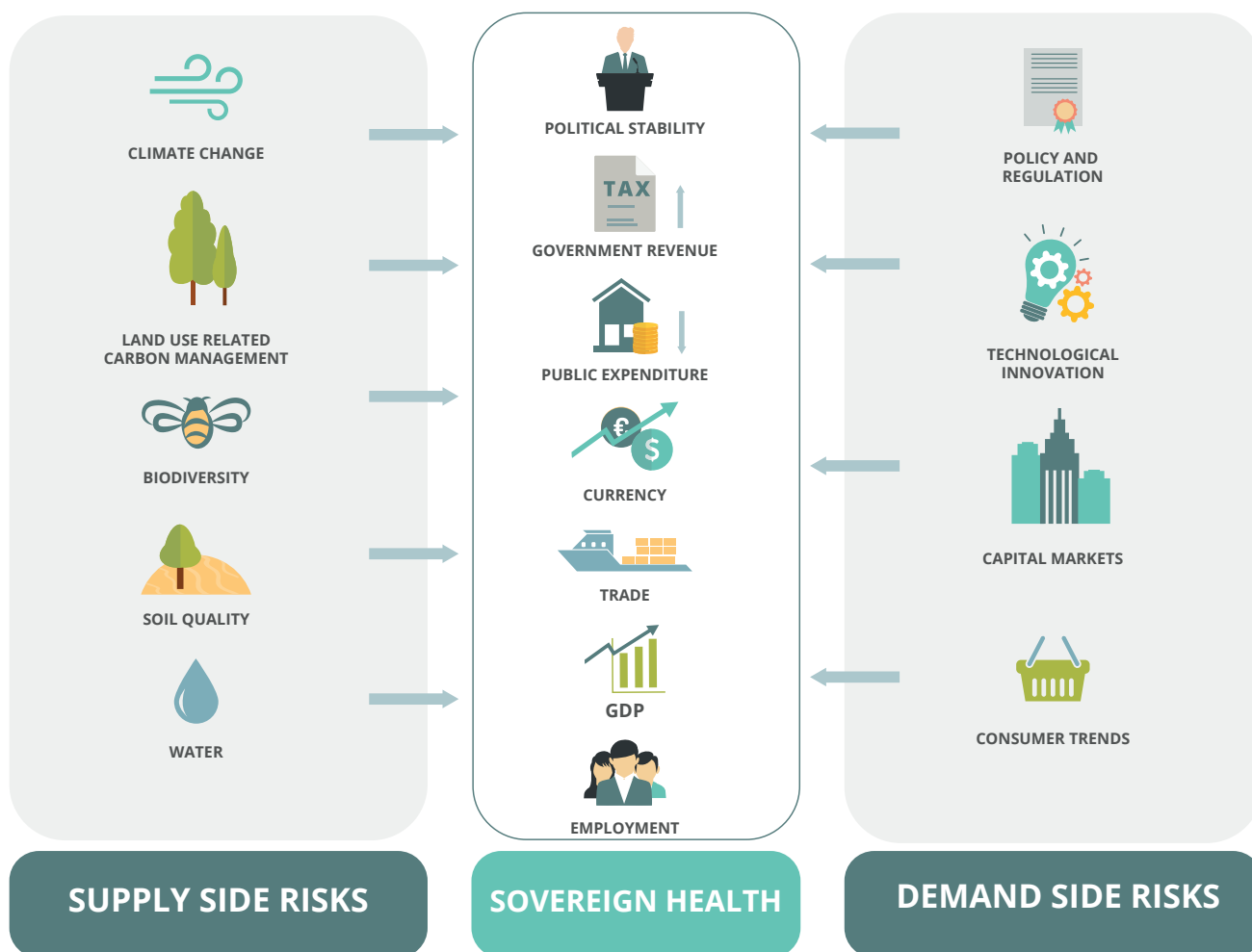


Figure 3: Planet Tracker Supply-Side, Demand-Side, and Sovereign Health Model.

In this model, generic supply-side risks include functional services, non-renewable materials, physical materials and biodiversity.

These generic risks can be broken down into the following categories with those highlighted in **bold** addressed in this discussion paper:

- **Climate change**
- **Land-use related carbon management**
- Water
- Biodiversity
- Soil quality

Generic demand-side risks include policy and regulation, capital markets, technological innovation and consumption trends. The risks discussed in this report are highlighted in **bold**:

- **Policies and regulations**
- **Capital market alignment with nature capital**
- Technological innovation
- Consumer behaviour change, trends, and forecasts

Planet Tracker's research hypothesises that a 'chain of impact' exists between nature and sovereign health at the intersection between these supply-side and demand-side risks.

Supply Drivers

Climate Change

Increases the frequency of extreme weather events. Argentina's soft commodity production has been badly hit by the growing frequency and intensity of floods and drought. Of the more than \$15 billion lost to natural disasters in Argentina from 2008–Q1 2019, about 75% occurred during 2017 through Q1 2019²⁸. The recent floods and drought caused \$13 billion in losses. Coupled with deforestation and tree cover loss, the costs from the increasing frequency, intensity and variability of flood and drought events in Argentina highlights how natural capital costs can impact sovereign health. In 2018, these risks resulted in Argentina importing soybeans as feedstock for its soybean processors from the United States for the first time in decades.

Floods

Q3 2017 floods caused a \$1.7 billion economic loss, equal to 0.25% of Argentina's GDP. This single event equalled almost all the costs of similar events from 2008–16. These floods caused the Government of Argentina to lose \$241 million in government revenues from income, export and value-added taxes. The floods destroyed 1.2 million hectares of crops impacting both soybean harvest and the beef and cattle sectors.²⁹

This disastrous flood was followed by another disastrous flood two years later. According to multiple news outlets quoting CONINAGRO, the Argentinian agriculture co-operative that supports 20% of Argentina's oilseeds and cereal producers (about 120,000 different co-operatives), 2019 floods in the Dry Gran Chaco region are forecast to decrease Argentinian GDP by \$2 billion with 2.4 million hectares of soybean fields flooded in January alone.⁰ As a result, floods are increasingly financially material to impacting Argentina's sovereign health.

Drought

The inherent links between natural capital and financial risk to investors were illustrated by the 2018 drought which caused economic losses estimated at \$8 billion – or 1% of GDP, and which was part of the reported reason why President Macri secured the IMF SBA agreement later in June 2018.³¹

2017–18 drought conditions in part reduced the soybean harvest forecast by 37%, equivalent to 19 million tonnes, against a forecast of 37 million tonnes. Because of the drought, the national average soybean yield fell from 2.78 to 2.12 tonnes per hectare.³²

As a result, the Government of Argentina announced a series of fiscal policies to support farmers. These included debt relief to drought-hit farmers by delaying maturities on agricultural loans and new lines of credit with longer grace periods. These policies put pressure on government revenues as they may not result in tax positive revenue.³³



The US Department of Agriculture (USDA) estimated that a total of 4 million tonnes of soybeans were imported by Argentina in 2017–18 from Paraguay, Brazil and the US in response to the 2018 drought.³ The Argentinian statistical agency Instituto Nacional de Estadística y Censos concurred, stated that oilseed imports, of which soybeans are the primary constituent, were \$2.6 billion in 2018 as compared to \$791 million in 2017, \$400 million in 2016, and \$77 million in 2015.³

Land-use Related Carbon Management - Tree Cover Loss

From 2008–17, Argentina suffered 3,049,297 hectares of tree cover loss in the Dry Gran Chaco region,³ equivalent to an area the size of Belgium. This loss was driven by soybean expansion. Table 3 shows tree cover loss by province in the Dry Gran Chaco region in the period 2008–17. This tree cover loss is concentrated in four provinces that suffered 92% of all tree cover loss during this period.

Tree cover loss exacerbates for example soil erosion, surface water run-off, soil water retention as well as biodiversity loss and climate related factors.

Provinces	Dry Gran Chaco Tree Loss (ha)	%
Santiago del Estero	1,003,043	33%
Salta	871,749	29%
Chaco	498,465	16%
Formosa	437,109	14%
Sum of Top Four Provinces	2,810,366	92%
Sum of Bottom Nine Provinces	238,931	8%
Total Tree Loss	3,049,297	

Table 3: Top Four Provinces Total Tree Loss in Dry Gran Chaco, Argentina, 2008–17.³⁷

Demand Drivers

Policies and Regulations - European Union Renewable Energy Directive II

While soybean production (supply side) is under pressure exports are also threatened by international regulations designed to encourage sustainability. Argentina exports 90% of its soybean biodiesel to the EU, but the bloc's new Renewable Energy Directive II will gradually exclude imports of biodiesel from areas which have suffered high deforestation and degradation.

The *Renewable Energy Directive II* could decrease Argentinian soybean biodiesel exports to the EU from 2023–30 by \$3 billion based on annual average soybean exports from 2008–17 from the Dry Gran Chaco region. The Directive, which entered into force on 24 December 2018, gradually excludes high indirect land-use change biodiesel feedstocks from entering the EU between 2023 and 2030.³⁹ These feedstocks are defined in the Directive as those for which a significant amount of expansion is observed into high carbon stock/primary dense vegetation and high soil carbon stock areas, for example, Dry Gran Chaco forests and grasslands. The Directive will determine in the short-term the exact percentages year-by-year for the ramping down of soybean biodiesel exports into the EU 2023–30.

This matters to investors because in 2018, 62% of the EU's imported soybean biodiesel was from Argentina. This represented 90% of all Argentinian soybean biodiesel exports, underlining the importance of the EU market to Argentinian soybean biofuel producers. But the EU is also a major producer of rapeseed oil which can easily replace soybean biodiesel,⁴⁰ making the Argentinian dependency on the EU fragile.



Capital market alignment with natural capital - European Union Imported Deforestation Regulation

The EU is currently drafting a policy called the EU Action on Deforestation and Forest Degradation.⁴¹ This draft policy states that soybeans, palm oil, beef, coffee and cocoa production are responsible for 80% of deforestation in tropical countries and the EU intends to determine if these deforestation-linked products might face import exclusions or sustainability criteria. Similar to the Directive above, this creates further short-term export uncertainty for the Argentinian economy. The draft policy, under review during Q2 2019, presents clear risks to Argentinian soybean-related exports.

SECTION 4 INVESTOR CAPITAL CONSIDERATIONS

Argentina's underlying natural capital sustainability will determine future soybean production over agricultural land areas. In turn, this production will contribute towards public finances in the form of BoP and tax receipts.

Sovereign bond investors account for BoP volatility, duration and convexity factors in relation to natural capital sensitivity and resilience.

Shorter term maturity bond investors record USD BoP receipts to measure Argentina's ability to service USD denominated sovereign debt. Soft commodities generate six out of ten USD export dollars for the economy and are therefore financially material for investors in assessing currency liquidity and volatility.

On June 20, 2018, Argentina received a \$50 billion Stand-By Agreement (SBA) from the IMF to reduce its risk of sovereign credit default.⁴² The IMF then increased its SBA to \$56.3 billion in October 2018.⁴³ It is interesting to note that despite six out of ten dollars of Argentinian exports linked to nature dependent soft commodity exports, IMF does not transparently monitor natural capital as a component of the SBA. The Government of Argentina defaulted in 2001, so sovereign credit risk in Argentina is both real and material.

After the IMF's action, in August 2018, S&P upgraded Argentina's sovereign debt rating to 'negative watch' B+. As of November 2018, S&P rated Argentina's sovereign debt as 'stable' B as market fears of a sovereign default decreased because of the IMF's SBA.

But with investors owning roughly \$72 billion in Argentinian sovereign debt maturing 2019–22 which matures during or immediately after the IMF SBA expires and which also correlates with Argentina's national election cycle and sell-side production risks driven by extreme weather.

And investors also owning more than \$87 billion in Argentinian sovereign debt maturing 2023–30 after the IMF SBA expires and that face demand-side risks as the country's agriculture exports, which are grown on land degraded and deforested since 2008, may face import exclusions into the EU because of the EU recent Renewable Energy Directive II (RED II) legislation.

Thus, these investors are facing credit risks from both short-term production risks and long-term policy and regulatory risks.



SECTION 5

EMERGING INSIGHTS

The Government of Argentina, and specifically leading policy authorities with responsibilities towards environmental and economic resilience in the Banco Central de la República Argentina (BCRA) and its sovereign investors, should factor and price natural capital risks.

Planet Tracker suggests further analysis is required to assess governance strength in relation to natural capital sustainability and fundamental issues such as deforestation, water availability and soil health.

At domestic and international level actions can be taken to support a sustainability transition or 'high road scenario' versus the business-as-usual 'low road scenario'. In a high-road scenario Argentina mitigates soft commodity embedded exports and soybean supply-side and demand-side risks to reinforce its sovereign health.

In a low-road scenario, Argentina's nature dependent soft commodity exports and soybean supply-side and demand-side risks surge, resulting in increases in both the cost of capital, as investors price in declining health of natural capital, and trade regulation which restricts importing Argentinian products related to tree cover loss and deforestation.

Planet Tracker has identified the following actions for further assessment supporting a transition towards a high road scenario:

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Investors and regional provinces in Argentina could collaborate to issue a sovereign subnational green bonds expanding on previous green bond issuances. Proceeds from a sovereign green bond could be used to finance measures designed to mitigate short-term production risks and long-term policy and regulatory risks.

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- IPCC's special report on *Climate Change and Land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* that will be released in 2019.

In Q4 2019 Planet Tracker is launching a major report on
The Sovereign Transition to Sustainability: Understanding the Dependence of Sovereign Bonds.

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LEXICON

Biodiesel: Biodiesel refers to a vegetable oil or animal fat-based diesel fuel consisting of long-chain alkyl (methyl, ethyl, or propyl) esters. Biodiesel can be used in standard diesel engines, and so is distinct from the vegetable and waste oils used to fuel converted diesel engines. Biodiesel can be used alone or blended with conventional diesel in any proportions.

Credit rating agencies: A credit rating agency (CRA) rates a debtor's ability to pay back debt by assessing timely principal and interest payments, and likelihood of corporate or sovereign default.

Crush capacity: This is the volume of soybeans that can be processed by refineries annually.

Deforestation: The clearance, clearcutting, or removal of a forest or stand of trees from land. Deforestation can involve conversion of forest land to farms, ranches, or urban use. The removal of trees may result in habitat damage, biodiversity loss, erosion and aridity, and can have adverse impacts on the capture and storage of carbon dioxide and water by biological processes.

Environmental, social and governance (ESG): ESG refers to the three categories of factors used to measure the sustainability and ethical impact of an investment in a company.

Gross domestic product (GDP): GDP as an aggregate measure of production equal to the sum of the gross values added of all resident and institutional units engaged in production plus any taxes, and minus any subsidies, on products not included in the value of their outputs.

Indirect land-use change: Indirect land-use, defined in the EU Renewable Energy Directive II (RED II), occurs when the cultivation of crops for such products as biofuels, bioliquids and biomass fuels displaces traditional production of crops for food and feed purposes.

Natural capital: Natural capital is the stock of renewable and non-renewable natural resources (plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people. These benefits are commonly known as ecosystem services.

Soft commodity embedded exports: Soft commodity embedded exports are defined using the Harmonized Commodity Description and Coding System (HS). Soft commodity embedded exports have a direct reliance on soft commodities, which rely upon natural capital in their production. Soft commodities are commodities that are grown, rather than mined/extracted. They include coffee, cocoa, sugar, corn, wheat, soybean, fruit and livestock. On the other hand, commodities that are mined, such as oil, gas, minerals, and precious metals are known as hard commodities.

Sovereign credit rating: This gives investors insight into the level of risk, including economic and political risks, associated with investing in a country. High-quality ratings improve a country's access to external debt markets and foreign direct investment. A sovereign credit rating highlights the potential for a government to be unable to meet its debt obligations. Investors review a country's credit rating and its component parts, such as its debt service ratio, domestic money supply, import ratio and export revenue.

Tree cover loss: Tree cover is defined as all vegetation greater than 5 meters in height and may take the form of natural forests or plantations across a range of canopy densities. Loss indicates the removal or mortality of tree cover and can be due to a variety of factors, including mechanical harvesting, fire, disease, or storm damage. Please note: Tree cover loss does not equate to deforestation as defined above.



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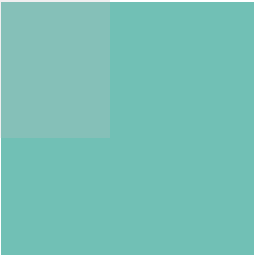
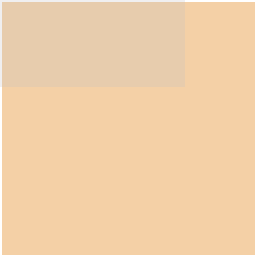
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