Internationally traded agricultural commodities – such as soy, oil palm and beef – are a multi-billion dollar segment of the global economy, driving development in both producer and consumer countries, as they move along complex international supply chains into nearly every economic sector.

But production of these commodities, especially in developing countries throughout the tropics, is often linked to heavy social and environmental impacts. Over the last decade, for example, agricultural expansion has been responsible for some two-thirds of tropical deforestation, accelerating climate change and sometimes threatening the rights and livelihoods of local people.

In response, consumers, governments and companies are demanding greater levels of sustainability in the production and trade of these commodities. Major global companies in particular have made striking commitments to sustainable procurement and operations in recent years – including landmark “zero deforestation” pledges – as risks from faraway impacts become more immediate and the business case for building more sustainable supply chains more compelling.

And while better availability and analysis of satellite imagery in particular has given us a clearer picture of what is happening on the ground, until now the trade flows of the commodities have remained opaque, visible at best in glimpses. Only for a fraction of global trade in any given commodity are the places and actors involved along the supply chain known. Instead, the many public- and private-sector actors involved in the trade, transformation or consumption of agricultural commodities are at best only peripherally aware of associated impacts and business risks.

Both traders and consumer-facing companies can rarely say where the soy, leather, palm oil and other commodities that end up in retail products originates. Investors are unaware of what might be very high levels of environmental and social risk in the value chains of companies in their portfolios. Governments cannot monitor production impacts effectively, or leverage investments in sustainability by downstream companies whose links to their jurisdictions remain unknown.

Without a more complete understanding of the web of supply chain connections, and the various environmental and social risks associated with them, action to improve sustainability remains limited.

Introducing Transformative Transparency
Transformative Transparency is a powerful new online information and decision-support platform that aims to fill this gap. Transformative Transparency draws on huge sets of largely untapped production, trade and customs data to lay bare the flows of these key commodities through the global trade system from production landscapes to consumer countries. Along the way it identifies the ports of export and import, and the producers, traders and transporters involved.

Unlocking the potential of hitherto underused data and methods, Transformative Transparency will allow users to identify the environmental and social risk factors and levels of sustainability performance associated with the production localities. Information on the risks and opportunities associated with production landscapes can then be linked to the different actors (producers, traders, shippers, importers, consumers) who make up a supply chain.

Figure 1: The global trade in Brazilian soy
Trade flows for exported soy produced in different Brazilian municipalities, showing traders, shippers, importers and consumer countries. The pie chart zeroes in on imports to mainland China. The map represents a subset of Brazilian soy exports. It compares volumes of export production by municipality, with deforestation in 2013. Generated by the Transformative Transparency beta version.
Transformative Transparency is also being designed to integrate with other platforms that provide complementary information on everything from regional economic benefits of agricultural production, illegal deforestation, forest fires and workers’ rights to the commitments and performance of key actors. The beta platform includes a pilot integration with the Global Canopy Programme’s Forest 500 rankings (www.forest500.org) on progress towards deforestation-free supply chains for key companies, financial institutions and governments.

Our ambition is to facilitate a transformation in supply chain sustainability in the main areas of agricultural expansion and intensification across the tropics. The increased transparency provided by the platform can play a critical role in catalysing improvements in production practices, procurement and investment policies, third-party monitoring schemes, and strategic development planning by governments – helping actors to assess progress towards ambitious zero deforestation goals and other sustainability commitments.

**Capabilities of the platform**

As the platform develops, Transformative Transparency will deliver three inter-related services to help unlock the potential for more sustainable supply chains:

1. Using previously untapped datasets to identify connections between the places and actors that make up commodity supply chains (see figure 1).

2. Allowing users to link specific places and actors with detailed information on the environmental and social impacts, risks, and opportunities, associated with commodity production landscapes (see figure 2).

3. Building on the first two capabilities, providing decision-support tools tailored for different types of target user, including traders, governments, financial institutions and consumer-facing companies.

**Target platform users**

The Transformative Transparency platform will be accessible to any user. We believe it will be particularly useful for:

- Investors, including banks and pension funds who want to make pro-sustainability investments and avoid exposure to potentially unacceptable levels of environmental and social risk;

- Retailers, traders, importers and others striving to meet zero deforestation and other sustainability-related commitments, and to derisk their supply chains. The platform can help them to monitor progress, demonstrate their sustainability credentials to consumers and business partners, identify other actors along their supply chains to cooperate with, and plan more sustainable sourcing strategies;

- Producers who want to understand their links to global trade and consumers and to identify preferential trade, consumer and investment partners to build more sustainable land-management strategies;

- Producer country governments who want to promote sustainable production, reduce poverty, build effective partnerships with private actors, and monitor the activities of producers and exporters;

- Consumer country governments who want to understand and manage their countries’ socio-environmental impacts abroad, and make sustainable procurement decisions;

- Consumers and consumer groups interested in more sustainable consumption;

- Sustainable trade watchdogs and advocacy groups committed to providing independent monitoring and assessment of private- and public-sector actors involved in the trade of globally significant commodities.

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**Figure 2: Revealing risk exposure**

The Transformative Transparency platform can re-project flows of a commodity from volumes traded to measures of environmental or social impact that are associated with the regions where the commodity was produced. This example shows the km² of deforestation that occurred in 2012 in the same Brazilian municipalities as the soy production that was traded and consumed by different actors. Note that this analysis cannot attribute responsibility; without further information on temporal patterns of deforestation, and location of individual farms, it is impossible to know which countries and exporters, if any, purchased soy from growers directly responsible for deforestation. However, by making the association between production and deforestation in different municipalities it provides a measure of risk that can be a powerful first step in decision making.
Our vision for the platform is currently focused on the supply chains for agricultural commodities associated with deforestation risk, and their impacts on land and water use, biodiversity, greenhouse gas emissions and rural development. However, the same methodologies, modelling and data types could be used to do the same for almost any other commodity.

Currently, Transformative Transparency is only accessible to selected users in a beta version (see box above).

How is Transformative Transparency different from other supply chain transparency initiatives?

Transformative Transparency charts a middle path between country-level footprint analyses and bespoke, commodity-specific traceability systems (see box below), providing both a comprehensive overview of flows of a commodity from producer to consumer country, and sufficiently fine-grained information to link individual supply chains to specific local actors, conditions and risks (e.g. water scarcity, deforestation risk). In doing so, it makes widely available for the first time a more actor-driven, sector-wide and jurisdiction-specific approach to supply chain governance.

Some other key benefits of Transformative Transparency:

Cost-efficient – The kinds of data employed by the platform can be used to map trade flows and impacts across entire countries and multiple commodities, decreasing the need for detailed investigations of specific supply chains.

Responsive – The platform can be updated quickly, and can be easily expanded to give comprehensive information on a new commodity or producer country when new data becomes available.

Footprint analyses

Footprint analyses are invaluable for understanding the total resource requirements or environmental impacts of a country or population’s consumption, estimating the impacts associated with consumed products along complex global supply chains. However, they rarely go deeper than identifying the country where the impact would be felt, and do not reflect the very different conditions that can exist from one production area to the next. Additionally, they do not include detail about the individual supply-chain steps or the actors involved.

Bespoke traceability systems

Bespoke traceability systems, often funded and developed by leading private-sector actors, give highly detailed information about supply chains and the actors involved, even going down to individual farmers and plantations. However, they have a narrow, specific focus and methods. Thus their findings are hard to compare, and they do not provide an overview of the flows of a commodity from a producer region or country, limiting the ability to draw conclusions around the performance of different actors and regions. They are also expensive to produce and, often, not publicly available.
Comprehensive – Today, interventions and scrutiny to improve sustainability are often disproportionately focused on high-profile producer regions such as the Brazilian Amazon, and on highly visible multinational actors. With its more comprehensive approach, the platform can shed new light on the performance of other “hidden” actors and on the situation in less well-analysed geographies, providing new entry points for action and decreasing the risk of “leakage” of environmental and social problems to new areas.

Standardized and comparable – Because the platform uses the same sources and types of data for different areas and commodities, it is possible to make valid comparisons regarding performance and risk across production landscapes and countries, companies and supply chains.

Publicly accessible – Enabling the wide access needed to support more sustainable procurement and investment, strengthen the work of governments and watchdog organizations and foster innovation by third-party users.

How does Transformative Transparency work?
Transformative Transparency’s supply chain mapping relies on several key sources of data. To trace exports back to production landscapes it uses subnational production data from national governments, as well as data on the subnational origin of shipped goods gathered at port level. The mapping of global trade flows relies chiefly on customs declarations and bills of lading, which are based on legal contracts between trading partners, and on official global trade data (e.g. from the UN Food and Agricultural Organization) to account for re-exports between countries.

This is supplemented with other data sets from official sources, such as data on national consumption patterns, and commodity processing and storage. Where necessary, some modelling is used to fill gaps in the data, for example in estimating subnational allocations in countries where this information is lacking. The supply chain mapping is underpinned by the SEI-PCS material flow model developed by SEI.1

As Transformative Transparency only covers countries where detailed data per individual shipment exists, it should be highly reliable. However, it is ultimately limited by the accuracy of the data, the quality of which inevitably varies between countries. In the longer term, we hope to enrich the platform with data from users – particularly companies and governments – to support more detailed and decision-relevant analysis.

Who is behind Transformative Transparency?
Transformative Transparency is being developed by a consortium convened by Stockholm Environment Institute (SEI) and the Global Canopy Programme (GCP).

The initial stage of development has been generously funded by the Swedish International Development Cooperation Agency (Sida), via the SEI Initiative on Producer to Consumer Sustainability and the EU REDD Facility at the European Forest Institute. The methodology for linking global consumption and subnational regions of production was supported by the Nordic Council of Ministers through the NORD-STAR project.

Supporting partners in initial development work include the International Institute for Sustainability, Gibbs Land Use and Environment Laboratory at Wisconsin University, Conservation International and Transitions. Key research contributions have been made by Patrick Meyfroidt, Louvain University; Martin Persson, Chalmers University; and Jorge Tizado, León University.

We are actively seeking to build relationships with new partner institutions and funders to further the development and applications of the platform to include new countries, commodities, capabilities and data. Transformative Transparency is conceived as an open-access platform that is compatible with other initiatives working on the sustainability of agricultural production systems and international trade.