Is there a business case for environmental sustainability?

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NewForesight
creating **shared** opportunities

- The **environmental impact** of the global agricultural sector generates economic costs for society
- **Stricter regulatory frameworks, sustainability policies and industry standards** are increasingly shaping the operational boundaries of companies, forcing them to shift towards more sustainable business models
- Agricultural producers are **struggling to comply with new and stricter environmental regulations** while maintaining their **economic competitiveness**.
- **Optimizing the environmental performance** of agricultural business models can generate financial value at company-level, besides having a large positive (economic) impact on society

This article will explain how companies can turn **environmental challenges into opportunities.** It tackles the challenge of how to calculate the monetary value of those benefits, and what it means in practice for each market player. Over the coming months we will dig into each aspect in detail with additional articles.

1. An economic approach to environmental externalities

The global agricultural sector has been undergoing change at an unprecedented rate in response to population growth and rising demand. Half of the world's habitable land is currently used for agriculture, providing jobs to around 1 billion people. At the same time, agriculture is one of the largest contributors to environmental pollution ("externalities"):

- **Air pollution**: emission of greenhouse gases (26% of total GHG emissions), particulate matter, and ammonia (main source)
- **Water consumption and water pollution**: agriculture is the largest consumer of water (70% of global freshwater resources) and the main source of groundwater and surface water eutrophication (through leaching of nitrates and phosphate)
- **Soil erosion and land degradation**
- **Biodiversity loss**

These **"environmental externalities"** generate tangible economic costs to society that are currently not reflected in agricultural commodity prices. Some of the most relevant (societal) economic costs caused by the environmental impact of agricultural activities include **human health expenditures, pollution abatement and remediation costs, and loss of ecosystem services.** For instance, a recent study from the Organisation for Economic Co-operation and Development (OECD) has estimated the impact of air pollution on the economy. In particular, *"a 1µg/m3 increase in fine particulates concentration causes a 0.8% reduction in real GDP per capita that same year".*

In this irreversible transition towards more sustainable markets, companies can turn the threat of stricter regulations into an opportunity for sustainable business growth by re-thinking their business models.

In a market with no environmental regulations, companies can dispose of an unlimited amount of waste or emit pollutants at no cost. In those *"deregulated"* markets, companies can increase their economic competitiveness without having to worry about their resulting **damage to the environment**. However, this is not the reality for the majority of companies around the globe, as governments are strengthening their environmental regulatory frameworks. In this context, **compliance with new and stricter environmental regulations is posing concrete challenges to producers** to maintain their economic competitiveness while improving their environmental footprint. At the same time, environmental regulations play a vital role in our economy by pushing companies to reduce their environmental externalities and therefore mitigating their long-term negative impact on society (e.g. human health costs, loss of ecosystem services, pollution abatement measures, etc.). Besides environmental regulations, sustainable innovations are also instrumental in improving the environmental performance of companies in a financially-sound way *(Fig. 1).*

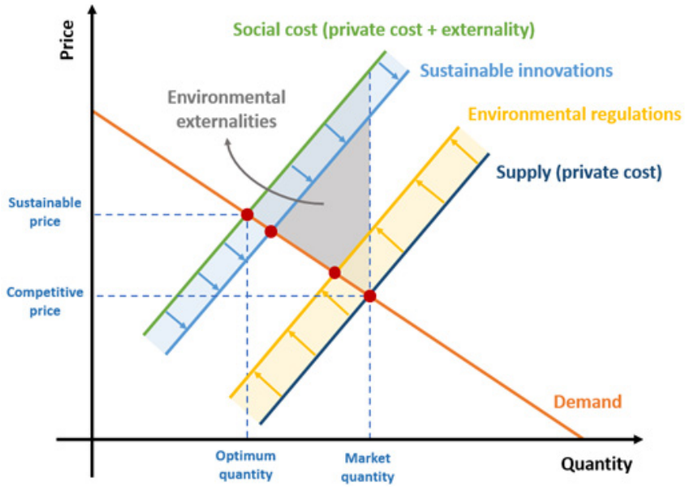

Figure 1: Visual illustration of the interlink between environmental regulations, sustainable innovations, environmental externalities and economic competitiveness of a company

In the last decades, several studies have been carried out to better understand and predict the impact of environmental externalities on the global economy, with climate change being one of the most investigated topics. However, it is time to bring **this discussion to the next level** by:

- Looking at this topic from a market & economic perspective
- Expanding the focus to include a wider range of environmental issues & improvements (e.g. acidification, eutrophication, soil health, biodiversity, ecosystem services, animal welfare etc.)
- Adopting a practical and business-focused approach to identify the links between environmental footprint, business operations, and financial performance at company-level

2. From economic damage to opportunity

Stricter regulatory frameworks and sustainability policies directly affect and shape the operational boundaries of companies, forcing them to shift towards more sustainable business models. Compliance with environmental regulations is often perceived by companies as potentially **economically damaging** to their business (e.g. increase in production costs, reduced net profit from reduced revenue streams, etc.). However, **optimizing the environmental performance of business operations can generate financial benefits at company-level**, besides having a larger positive (economic) impact on society.

In this irreversible transition towards more sustainable markets, companies can turn the threat of stricter regulations into an opportunity for sustainable business growth by re-thinking their business models. Specifically on the financial side, the **monetary value creation associated with the optimization of the business' environmental performance** can be observed at different levels:

Tangible economic benefits:

- **Cost savings:** by reducing dependency on raw materials, increased energy efficiencies, decreased water consumptions or reduced waste management expenses
- **Increased net profit:** by increasing business size or productivity levels (while being compliant with regulations) through efficiency gains, reducing losses (mortality rates, failures etc.), and improving growth performance (specifically for livestock producers)

Risk-related economic benefits:

- **Avoided opportunity costs:** by avoiding environmental taxes & fees, additional environmental inspection & monitoring costs or temporary (forced) stopped production from noncompliance with regulations
- **Improved work health, safety & animal welfare:** by reducing the use of industrial chemicals, or reduced airborne pollutants in the workplace. Low levels of health & safety in the workplace can lead to additional costs for companies including reduced productivity levels and additional staff costs

Societal (economic) benefits:

- **Reduced human health costs:** by reducing deaths and illnesses caused by airborne particulate emissions or other types of pollutants
- **Reduced pollution abatement measures costs & avoided loss of ecosystem services:** by decreasing environmental emissions and therefore reducing the impact of human activities on natural ecosystems (e.g. water or soil remediations, climate change, recreational services, biodiversity services, etc.)

Societal (economic) benefits are increasingly becoming an important topic of debate in several governmental agendas across the globe.

Intangible benefits:

- **Business reputation:** customers may be more likely to support a business that cares about its impact on the environment (growing trend)
- **Gain competitive advantage:** going beyond satisfying stakeholder expectations and market regulation compliance and become a sustainability leader

3. How do you calculate the monetary value of those benefits?

As mentioned above, monetary value from environmental sustainability improvements can be created at two levels *(Fig. 2):*

- Business-level: tangible benefits and risk-related benefits represent the direct economic value creation potential of optimizing environmental performance at company-level
- Societal benefits go beyond the boundaries of the business, creating economic value for the whole society

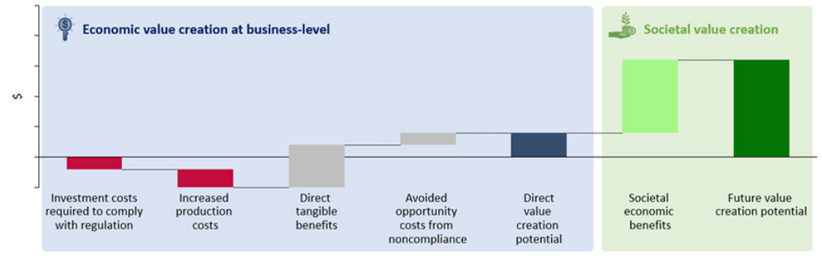

Figure 2: Business case for environmental performance optimization. Impact at company and societal level

3.1 Economic value creation at business-level

Monetizing value creation potential of sustainable improvements at business-level requires a thorough understanding of:

- **Business model:** technical characteristics of how the business operates, its costs and revenues
- **Regulatory boundaries:** the current (and anticipated) license to operate will define the space in which a business can operate and also the potential *"economic damage"*
- **The link between environmental emissions and financial performance of the business:** it is essential to collect quantitative data (from published scientific papers or trials) on the potential economic impact of environmental performance improvements on the business model

Case 1: Soil Health

Soil health plays a critical role in the long-term sustainability of agricultural production, from increased crop productivity, to reduced nutrient leaching, increased carbon sequestration and reduced soil erosion. Stricter regulatory frameworks and national soil health policies are creating the right conditions for producers to invest in soil health improvement practices. Investing to improve soil health is not only an opportunity to protect the environment, but it's also an opportunity for sustainable financial growth for a wide variety of businesses and sectors (e.g. food, fashion, fibers, biofuels, mining, energy).

Case 2: Animal welfare

In the last decade, an increasing number of food companies have integrated animal welfare in their business strategies and brand propositions. One of the main reasons for this is to comply with stricter legislations and industry standards stemmed from an increased attention from final consumers to animal welfare. Investing in improving animal welfare standards can bring several benefits for livestock producers including reduced disease management costs from reduced risk of disease outbreak, improved animal growth performance, increased product quality and reduced risk of mortality.

3.2 Economic value creation at societal-level

Besides monetary value creation at business-level, it is important to start adopting an **economic approach to understand the larger economic benefits from reduced environmental externalities.** Societal (economic) benefits are increasingly becoming an important topic of debate in several governmental agendas across the globe. In Europe, several research institutions are already looking at **how to incorporate environmental externalities into the cost of products.** This movement is still in its early stages, given doubts about the robustness of current analytical methods to monetize environmental externalities. However, the expectation is that in the next 10-20 years **environmental costs will be included in the real price of products, making it essential for businesses to further improve their environmental performance.** Companies that are already starting to seriously look at their environmental externalities from an economic perspective will gain a competitive advantage over those ones that are fully disregarding this growing trend. Monetizing value creation potential of sustainable improvements at **societal-level** requires a thorough understanding of:

- **Quantified environmental impact** that can be achieved by adopting a certain sustainable innovation or change in business operations (e.g. kgCO2 reduced, kg of PM10 etc)
- **The monetary value of specific pollutants** by gathering quantitative data from environmental economics literature studies. These type of data enables the conversion of environmental emissions data into monetary values.

3.3 From business to market-level insights

The estimation of the monetary benefits from improved environmental performance at business-level can also be scaled up for a **whole sector** or **country**. In this case, it is important to:

- Gather **country- or sector-level information** on the market
- Segment the supply-side of the market in different **business model archetypes** with their defined technical characteristics and different *licenses to operate*

By combining this information, we can carry out a **high-level estimation of the total market value potential** of sustainability improvements

for a given market or geography. The economic impact at company-level will be different for each of the business model models, depending on their characteristics and license to operate. Also, the economic impact will vary widely across different geographies, due to large differences in technical characteristics and regulations in different countries. Hence, **the same sustainability improvement might not create the same economic value, even for companies with the same circumstances.** On the contrary, **a sustainability improvement that generates positive economic value in a country might lead to negative economic impact in another country.** It is therefore important to take a **tailored and country-specific approach when assessing the value creation potential of sustainable innovation** (often, value creation potential can vary significantly across different regions in the same country).

4. How does this transition affect different actors and what should they do?

This economic and business-focused approach to environmental externalities and sustainability performance has multiple **business implications** for companies, service providers and investors, which are the key enablers of this paradigm shift. As we are transitioning towards sustainable agriculture, different market players have different **roles & responsibilities.** Governments are strengthening sustainability regulations to reduce the environmental impact of agricultural supply chain. In response to this, service providers are developing innovative solutions that can be used by value chain actors in their business models to reduce their environmental footprint. Impact investors are looking for financially-sound investments to improve sustainability of agricultural supply chains while leveraging innovative business models and technologies. In this dynamic context, the needs and implications vary widely:

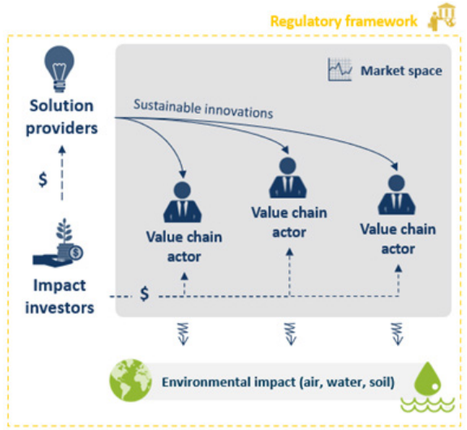

Figure 3: Overview of market players and their interactions

	Needs	Implications
Service providers	• Identify **key challenges** of different value chain actors (associated with a strict regulatory framework) and spot which **market needs are currently unmet** • Understand & quantify **market value creation potential** (in monetary terms) of addressing these market needs	• Gain in-depth understanding of current challenges and unmet needs in a given market to **expand product/service value proposition** • Gain primary market insights to inform **corporate marketing decisions** on their existing product/service portfolio or new innovative areas to be developed
Value chain actors	• Comply with a **stricter regulatory environment** while maintaining **economic competitiveness** • Select the most **financially sound** solution available on the market	• Gain a **(holistic) quantitative understanding of value creation potential** of different sustainable interventions on their financial & environmental performance. This will enable **data-driven decision-making** to improve the economic competitiveness of their business models while complying with regulations
Impact investors	• **Quantify the full value creation impact potential** of sustainability interventions in different markets and geographies • **Prioritize sustainable investments** based on forecasted value creation potential	• **Update portfolio management frameworks** to incorporate forecast market analyses to **predict the full economic value creation potential** of reduced environmental externalities. This will enable to **compare** the potential economic and environmental impact of sustainable interventions across different markets or geographies.

As we are transitioning towards sustainable agriculture, different market players have different roles & responsibilities.

5. Together, we can drive the change

At NewForesight, we help private and public organizations with:

- **Contextual analysis |** We analyze the current situation and provide insights on:
  - **Regulatory environment:** the current (and anticipated) license to operate will define the space in which a business can operate and also the potential "economic damage" of compliance
  - **Business model:** we model how agricultural businesses operates, its costs and revenues and environmental impact
  - **The link between environmental emissions and financial performance of the business:** we collect quantitative data on the potential economic impact of environmental performance improvements on the business model at company and societal level
- **Monetization |** We provide a quantitative methodology to monetize the impact of sustainable interventions (environmental performance improvements) and provide quantitative insights on:
  - **The additional cost of optimizing environmental performance:** what's the potential economic damage for different business model archetypes from stricter environmental regulations (e.g. investment required to comply with new regulations, increased production costs, etc.)
  - **The monetized benefits of such optimization:** quantify the positive and negative economic value creation potential of reduced environmental externalities or improved sustainability performance for different business model archetypes and for the whole market or country. We can quantify and categorize economic value creation potential of sustainability improvements in tangible economic benefits, risk-related economic benefits, societal economic benefits and intangible benefits
- **Strategic support |** We help impact investors or service providers to prioritize their efforts on certain markets or geographies based on the expected market value creation potential from sustainable interventions

If you have any questions or need help in determining what this would mean for your organization, please contact **Davide De Mauro** at NewForesight.

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About NewForesight

In a world that is confronted by increasing complex and global sustainability challenges, the question is not if you should deal with them, the question is how.

NewForesight Consultancy (est. 2008) is a strategy consulting firm specialized in turning world's toughest sustainability challenges into opportunities for all. From strategy to implementation.

In dedicated partnerships with our clients we initiate, shape, and drive the transformational strategies required for lasting impact.

Do you have a tough sustainability challenge to tackle?

Let's get in touch!

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