

The Environmental Sustainability of Digital Platforms-Challenges and Opportunities Ahead

Sustainability in the Age of Platforms
Brussels, 11 June 2019

Elisa Tonda, Head, Consumption and Production Unit, UN Environment

01. The use of natural resources has more than tripled from 1970 and continues to grow.

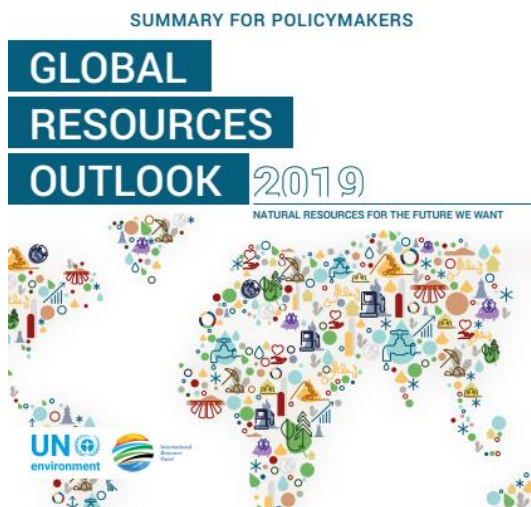
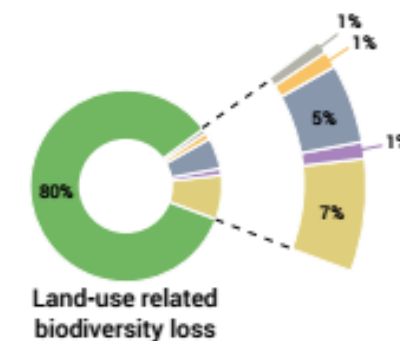
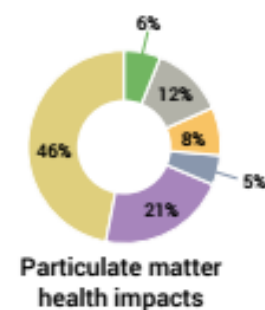
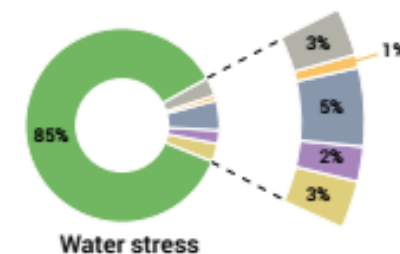
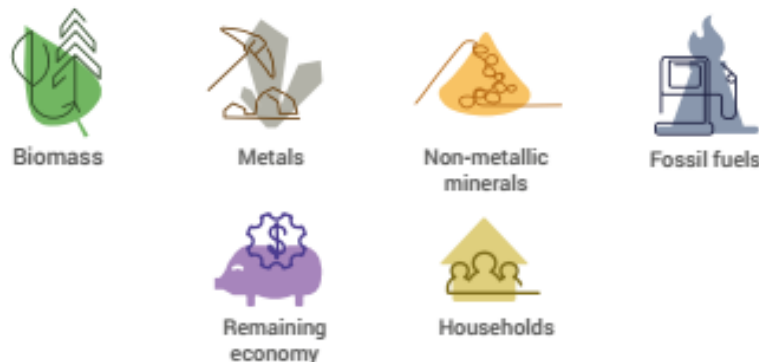


02. Historical and current patterns of natural resource use are resulting in increasingly negative impacts on the environment and human health.

The extraction and processing* of materials, fuels and food make up about half of total global greenhouse gas emissions (not including climate impacts related to land use) and more than 90 % of biodiversity loss and water stress.

An estimated 11 % of global species were lost by 2010 due to global land use.

* The focus is on resource extraction and processing up to "ready-to-use" materials and fuels (including waste disposal processes in the extraction and processing phase). This is also termed 'cradle-to-gate'.



04. In the absence of urgent and concerted action, rapid growth and inefficient use of natural resources will continue to create unsustainable pressures on the environment.

From 2015 to 2060, *Historical Trends*:

↑ more than
doubles



Global material
extraction

↑ increases by
43%



Greenhouse gas
emissions

↑ increases by
more than **20%**



Area of
agricultural land

↑ increases by
25%



Global
pasture land

↓ reduces by
over **10%**



Forests

↓ reduces by
around **20%**



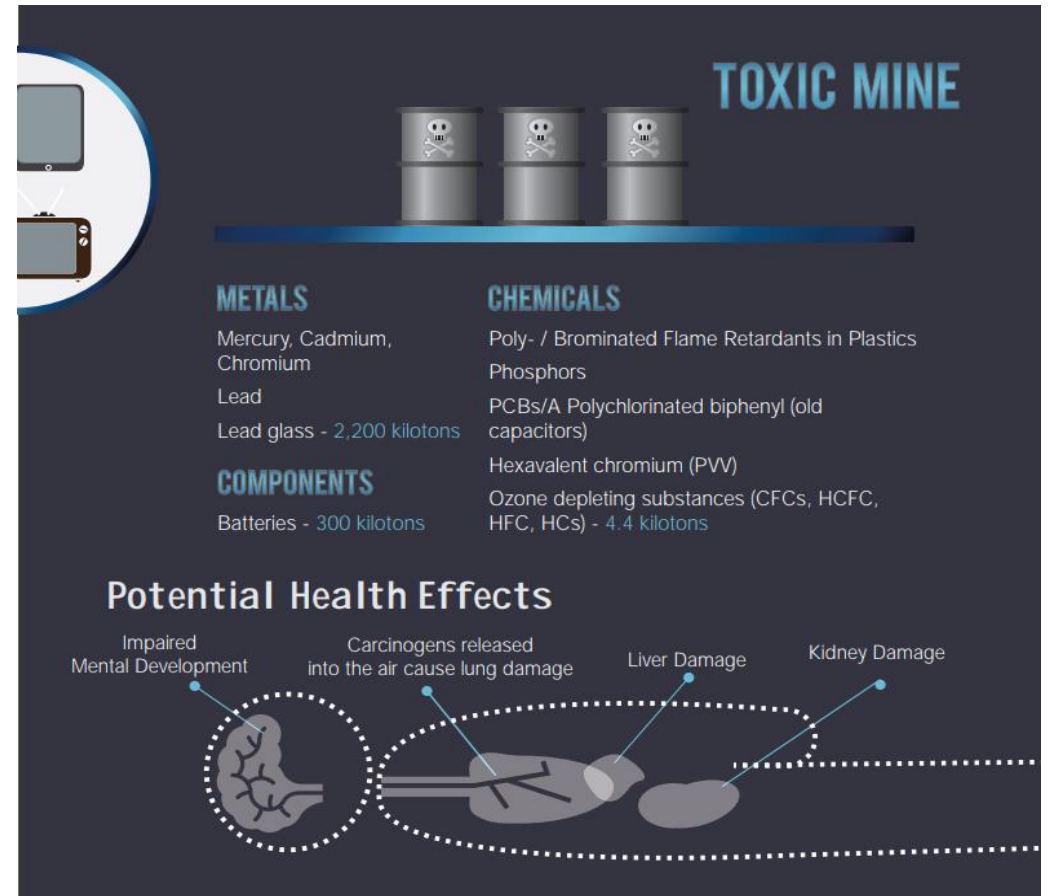
Other
natural habitat

With increasing pressure on natural resources and an urgent need to cut emissions, can digital transformation help set the world's economy on a more sustainable path?

Sustainability of the digital sector

Increased manufacturing, use and disposal of IT infrastructure

- Increased electricity and resource consumption for manufacturing and operation IT infrastructure - data centres use an estimated 200 TWh each year
- Increased electronic waste and challenge for its management - It is estimated this waste stream reached 50 million t in 2018.
- Increased use of chemicals and hazardous substances in hardware



Source: Baldé, C.P., Wang, F., Kuehr, R., Huisman, J. (2015), The global e-waste monitor – 2014, United Nations University, IAS – SCYCLE, Bonn, Germany.

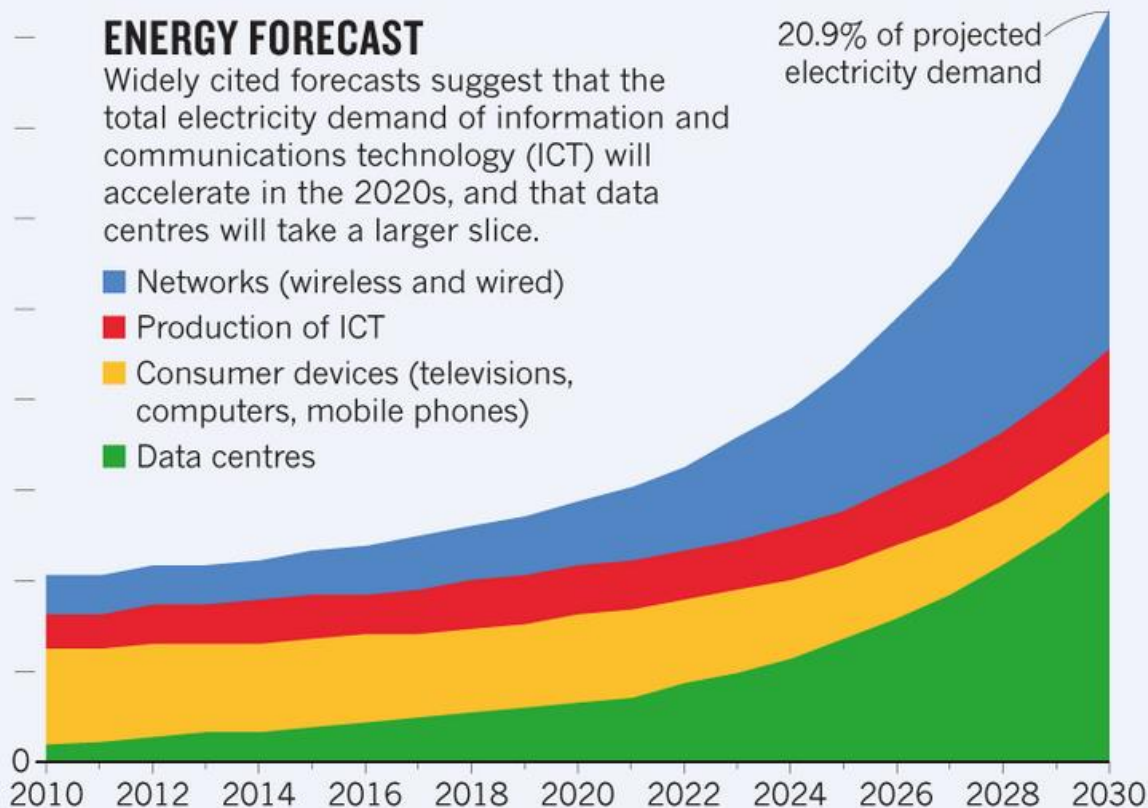
9,000 terawatt hours (TWh)

ENERGY FORECAST

Widely cited forecasts suggest that the total electricity demand of information and communications technology (ICT) will accelerate in the 2020s, and that data centres will take a larger slice.

- Networks (wireless and wired)
- Production of ICT
- Consumer devices (televisions, computers, mobile phones)
- Data centres

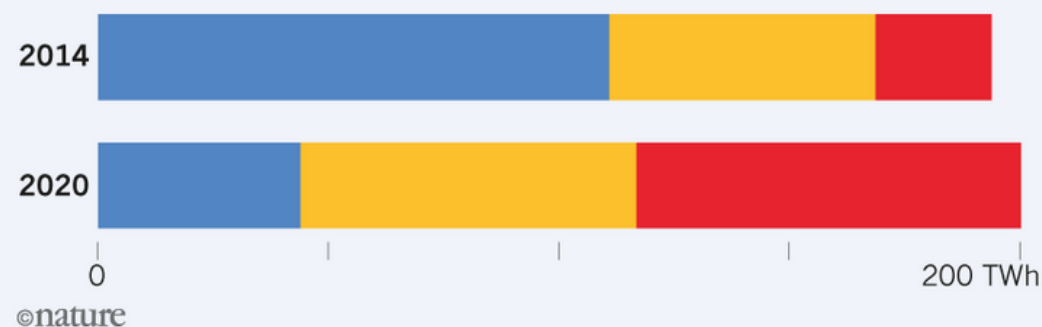
20.9% of projected electricity demand



HYPERSCALE SHIFT

Efficient 'hyperscale' data centres are predicted to swallow up half of data-centre electricity demand by 2020, as smaller, less-efficient centres shut down.

- Traditional data centres
- Cloud data centres (non-hyperscale)
- Hyperscale data centres



Source: IEA

GREEN GROWTH

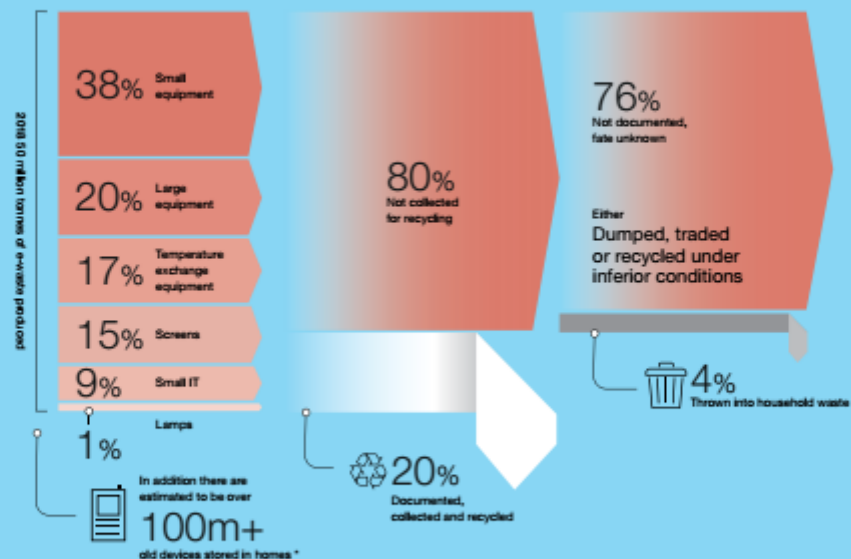
The ICT industry dominates corporate agreements to purchase renewable electricity.

- ICT
- Other



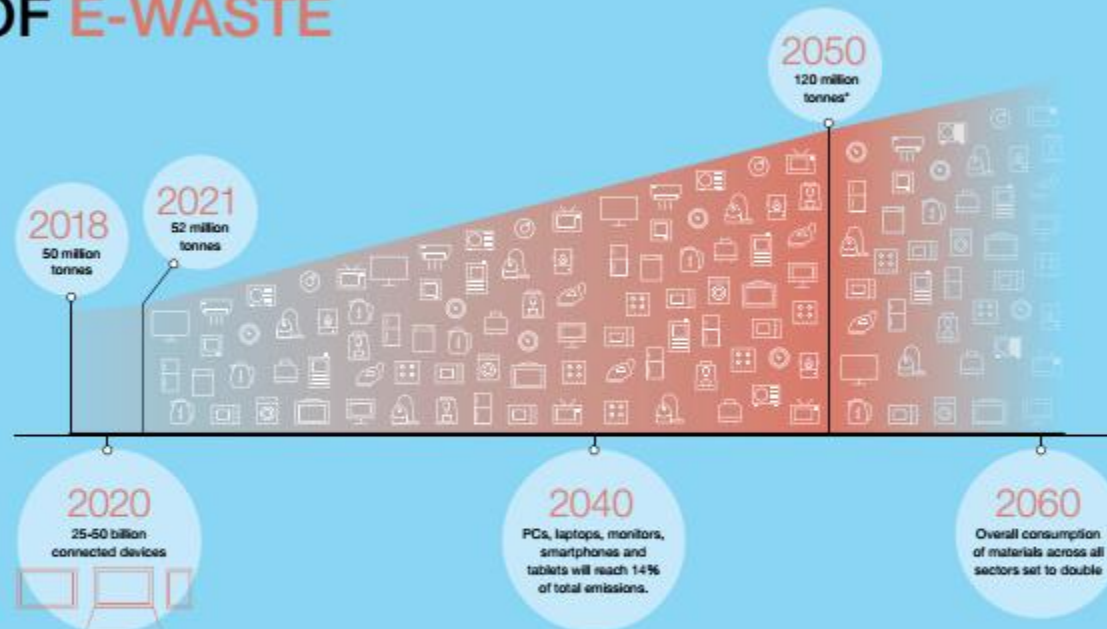
Source: IEA

GLOBAL E-WASTE FLOWS



Source: Global E-waste Monitor, 2017

THE FUTURE OF E-WASTE



Source: UNU, 2018; OECD, 2018

Driving changes in markets and actions

- Increased dematerialisation – less demand for raw materials manufacturing, and transport emissions
 - Digital technologies can ensure access to innovative solutions and increase efficiency of supply chains
 - Increased efficiency in supply chain results in lower prices and therefore higher demand (rebound effect)
 - Digital solutions can create enabling conditions for circularity and spur new business models
 - Websites can provide more environmental information than a label, enabling
 - Environmentally conscious consumers to make better informed decisions
 - New platforms for institutional and public procurement
 - Access of institutional users to sustainability information from businesses, including through sustainability reporting
-

2030Vision believes

DIGITAL TECHNOLOGY*

will be a critical enabler on this journey.

The Global e-Sustainability Initiative and Accenture estimate that digital solutions with positive impact on the Goals could unlock

US\$2.1tn

additional annual revenue for the technology sector in 2030²

UNITING TO DELIVER TECHNOLOGY FOR THE GLOBAL GOALS

2030VISION
Global Goals Technology Forum



REDUCING FOOD WASTE

Roughly one third of food is wasted each year²⁷, accounting for 8% of global GHG emissions²⁸. Sensors, data analysis and RFID monitoring can reduce food waste from field to fork through smart harvesting, shipping, distribution and inventory management.

SMART SENSORS CAN REDUCE WASTE BY

25% to 40%

ACROSS THE VALUE CHAIN²⁹

1/3

ROUGHLY OF FOOD IS WASTED EACH YEAR



TRANSPARENT SUPPLY CHAINS

IoT and blockchain can enable the traceability and monitoring of complex, global supply chains to expose risks of human rights abuses or unsustainable natural capital management.

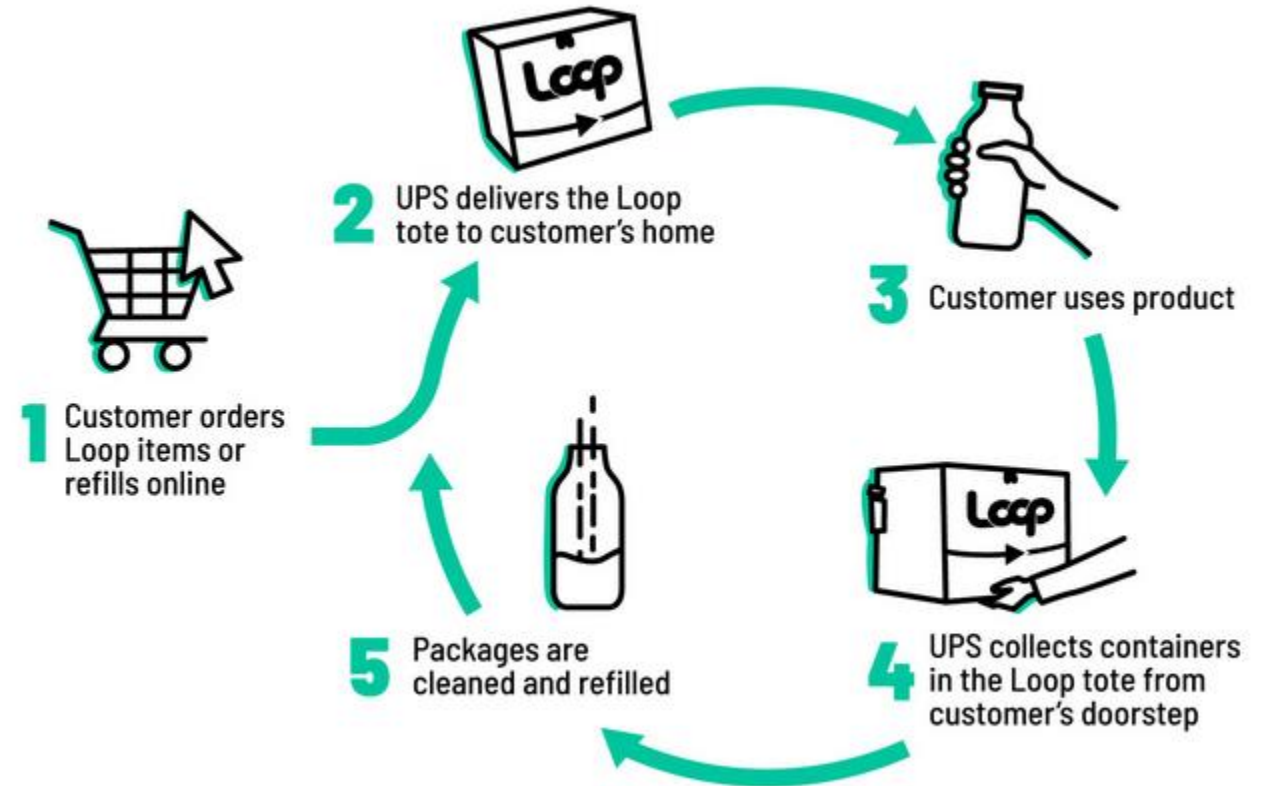
Provenance uses blockchain to work towards an open traceability protocol that can be used to track anything from coffee beans to a roll of fabric³³.



Digital technologies for new business models: Loop

Unveiled at the World Economic Forum's 2019 Annual Meeting
Launched in New York and Paris in May 2019

It teamed up with world-leading manufacturers and retailers (as well as startups and local companies) to promote reusable solutions.



Digital technologies for new business models: Algramō

- New smart packaging is equipped with a RFID chip.
- Instead of throwing the container when the detergent is finished, with the chip it can be recharged in stores or via e-tricycles that deliver to users' doors.
- It has already provided the solution for reuse packaging in over 2,000 shops in Chile.



Digital platforms create new marketplaces

- Second hand effect project – Marketplaces by Schibsted and Adevinta
- 10 marketplaces: Milanuncios in Spain, Leboncoin in France, Subito in Italy, Jófogás in Hungary, Blocket in Sweden, Finn in Norway, Tori in Finland, Avito in Morocco, OLX in Brazil and Segundamano in Mexico.
- This project was driven by a fundamental question: *how much material and emissions can potentially be saved annually through second-hand trade if each second-hand product replaces the production of a new one?*
- In 2018, users from 10 Schibsted's and Adevinta's secondhand trade marketplaces saved 20.5 million tons greenhouse gases and 1.1 million tons plastic.



Digital solutions to monitor sustainability performance

Enhancing Capacities to
Manage Information from
Corporate Sustainability
Reporting in Latin American
Countries



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

12.6.1 Number of companies publishing sustainability reports

THE ISSUE



✓ 60-70% of sourced products are imported



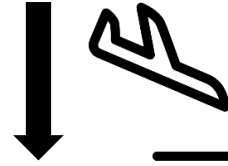
✓ Food waste



✓ GHG emissions

Goal: to bridge the gap between producers and consumers of agricultural produce in Saint Lucia

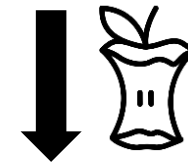
Digital Platforms Used for sustainability in Procurement



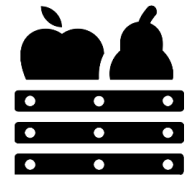
✓ 15% reduced imports



✓ 800,000 USD worth of produce traded



✓ Food waste reduced by 15%



✓ Increased diversity of local produce



✓ 400 farmers with increased income



✓ Real time data




Digital platforms to inform consumers




One planet
inform with care

Informs consumers on sustainability of the supply chain of high consumption products


Initiative supported by the Government of Chile



MÁS INFORMACIÓN
EN MICODIGOVERDE.CL



One planet
inform with care



**Mi
Código
verde**

Certificaciones
de sustentabilidad

La certificación es el
procedimiento mediante el cual
un organismo da una garantía por
escrito, de que un producto, un
proceso o un servicio está
conforme a los requisitos
especificados.


Cuando hablamos de
certificaciones de sustentabilidad
nos referimos a aquellas que
validan estándares con requisitos
vinculados a buenas prácticas
medioambientales, sociales y/o
económicas.

PRINCIPALES RESULTADOS

¿CUALES SON LAS CATEGORIAS DE PRODUCTO CON MÁS SELLOS?

	ESPUMAN- TES Y VINOS	LECHE Y SUCEDÁNEOS	JUGOS	TÉ	CAFÉ	CHOCOLATE
FSC						
Código Nacional de Sustentabilidad de vinos						
Carbon Neutral						
EU Organic						
USDA Organic						
NON - GMO						
Rainforest Alliance						
Ethical Tea Partnership						
OTROS						

¿QUÉ CRITERIOS SON LOS QUE MÁS SE CERTIFICAN?



CRITERIOS AMBIENTALES
CRITERIOS SOCIALES
CRITERIOS ECONÓMICOS

**Instructivo de Aplicación de
Criterios Sustentables**

Es una guía para que las entidades del Estado puedan incorporar la sustentabilidad en sus procesos de compra, a través de la aplicación de criterios sustentables.

BENEFICIOS DEL USO DEL INSTRUCTIVO

- Reducir los impactos de los productos adquiridos.
- Mejorar la imagen de la entidad pública.
- Podría generar un ahorro económico en el mediano plazo.

¿CÓMO COMPRAR PRODUCTOS MÁS SUSTENTABLES?

VEHÍCULOS

Preferir vehículos de bajas emisiones:

- Motores < 140 gr CO₂ / km
- Sedán < 140 gr CO₂ / km
- Station wagon < 140 gr CO₂ / km
- Pickups < 140 gr CO₂ / km
- Camionetas < 250 gr CO₂ / km

COMPUTADORES

1. **EFICIENCIA ENERGÉTICA** Preferir equipos con sello Energy Star (o equivalente)

MULTIFUNCIONALES

1. **EFICIENCIA ENERGÉTICA** Preferir equipos con sello Energy Star (o equivalente)

RESMAS DE PAPEL

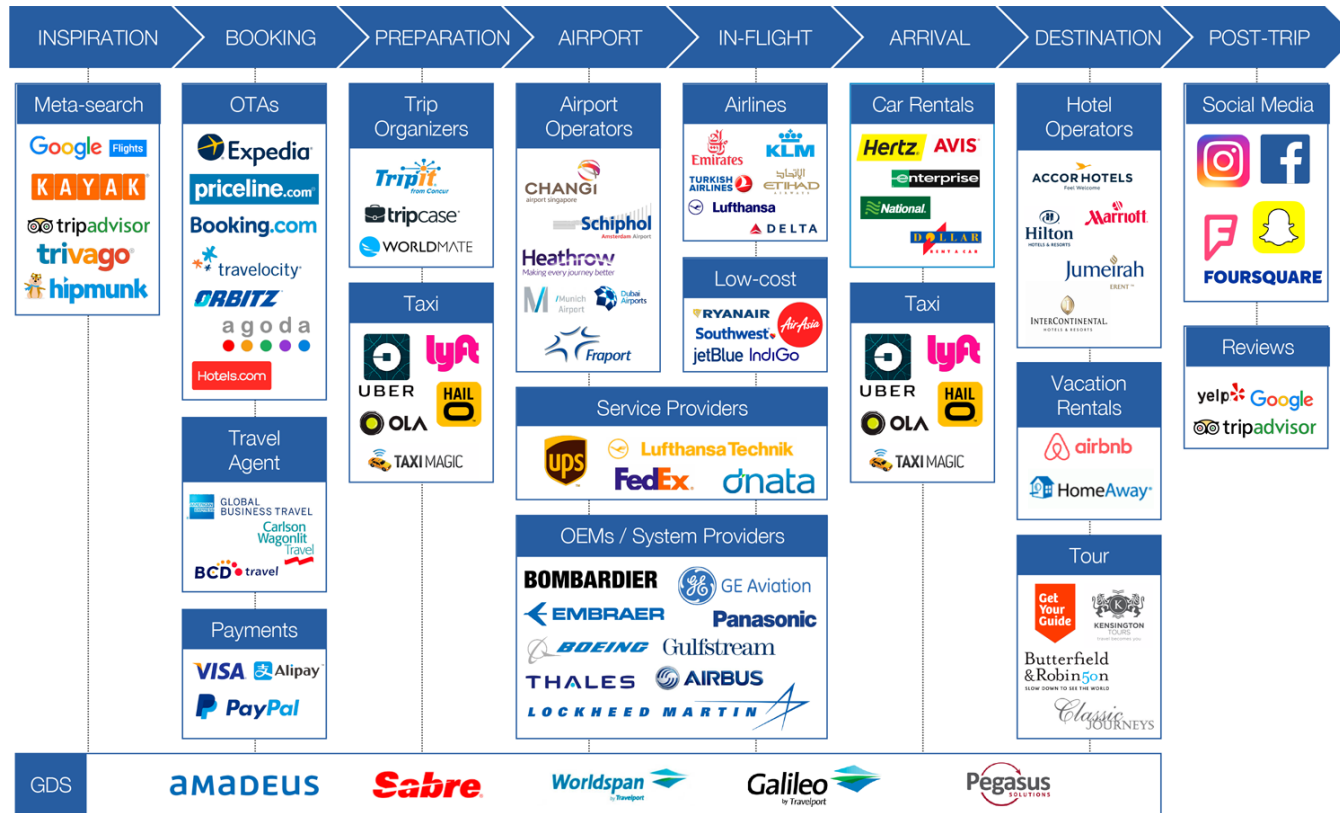
1. **MANEJO SUSTENTABLE DE BOSQUES** Preferir papel con sello FSC o PEFC

2. **CONTENIDO RECICLADO** Preferir papel con contenido reciclado en al menos un 50%.

COFFEE BREAK

1. **MENAJE REUTILIZABLE** Preferir servicios que sólo utilicen menaje o utensilios reutilizables para servir bebidas y alimentos.

Digital platforms and tourism



Source: World Economic Forum



Source: Tripadvisor Trip Barometer

Filters for more sustainable and low-carbon travel products, need to become a standard.

42 % of travelers use their smartphone to book or organize a trip, with mobile travel sales rising 10% between 2012 and 2019

Source: (UN Environment, 2019)

bookdifferent



SleepGreen

HOTELS FOR A BETTER FUTURE



Digital Platforms Used for Sustainable Accommodation

Bookdifferent is a reservation platform that assigns CO₂ emission values to hotel nights. All listed hotels are depicted with their carbon footprint, expressed in kg CO₂, as well as a clover sign depicting “greener” choices.

Sleepgreenhotels is a platform offering low-carbon accommodation in Austria, Germany and Italy. All hotels seek to be specifically sustainable in everything they do, and often rely on new and innovative technologies.

Viabono offers environmentally friendly hotel choices in Germany. In order to join the platform, hotels are asked to join one or several standards, such as Klima-Hotels, KlimaNeutral, CO₂-Fußabdruck, DehogaUmweltcheck, bett+bike, or EU BIO.

Digital platforms to address Food Waste



Name	Category	Description	Stats
OLIO https://olioex.com/	C2C and B2C	Mobile app for food-sharing, aiming to reduce food waste by allowing individuals and businesses to advertise their surplus food individuals can pick up for free.	<ul style="list-style-type: none"> - Over 1 million users - Over 1.5 million portions of food redistributed
Too good to go https://toogo.odtogo.co.uk/en-gb	B2C	International online platforms that allows restaurants and cafes to advertise food that otherwise would be wasted at discount prices to consumers in the local area	<ul style="list-style-type: none"> - 14 million meals sold that would otherwise would have been waster - Equivalent of over 36,000 tonnes of CO2 emission (2.5Kg of CO2 per meal, source: EPA)
FoodCloud https://food.cloud/	B2B	An online platform that links supermarkets with excess food to local charities who can collect the food for free.	<ul style="list-style-type: none"> - Redistributed 45 million meals

Digital platforms extend products lifetime

iFixit is a wiki-based site that teaches people how to fix things. Anyone can create a repair manual for a device, and anyone can also edit the existing set of manuals to improve them. The site empowers individuals to share their technical knowledge with others.



Snowboard Binding Strap Replacement



How to Restring Your Lacrosse Stick



How to Fix A Warped Frisbee Disc



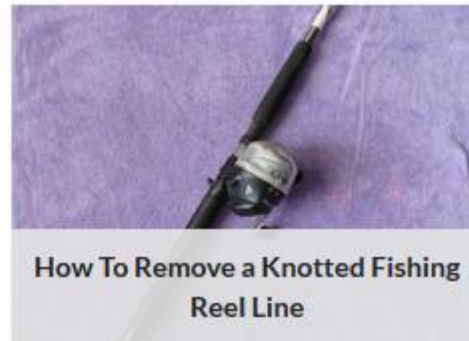
Boosted Board 1st Generation Pulley Bearings Replacement



Golf Club Grip Replacement



Western Saddle Fender Replacement



How To Remove a Knotted Fishing Reel Line



How to Restring a Badminton Racquet



51,972

FREE MANUALS

148,367

SOLUTIONS

14,413

DEVICES

Research is still needed ...

Limited insight is available on:

- Ease of online shopping can results in people consuming more with shortening product lifetime
- Web-based marketing can encourage excessive rather than savvy consumption
- Consumers spend less time going to shops, and use this time doing other energy-demanding activities

...



What people think of digital platforms

Survey of 500 people on the perceptions on the environmental impact of ecommerce

- Do you think potentially positive environmental impacts of e-commerce are much more than potentially negative impacts?
 - Yes = 22%
 - No = 22%
 - Unsure = 40%
- Who do you think should be responsible for doing something about reducing negative impacts of e-commerce on the environment
 - Government = 2%
 - Businesses = 2%
 - Individuals = 12%
 - Governments and businesses = 6%
 - Governments, businesses and individuals = 78%
 - No one = 0%



Thank you



Elisa Tonda,
Head, Consumption and Production Unit
Economy Division, UN Environment
Elisa.tonda@un.org

<https://www.unenvironment.org/>