

WATER MANAGEMENT AND RECYCLING

Five key enablers of water management & recycling investments



Resource abundance

Benefit from Colombia's rich resources and material inputs



Market potential

Seize sector opportunities ready for investment



Investment incentives

Leverage financial and nonfinancial support



Talent

Access an experienced and educated workforce



Government support

Profit from public policies creating market opportunities



Colombia offers enormous renewable freshwater resources



A highly **water-rich country**, water resources are under only **4.4% stress** based on the ratio of freshwater withdrawals by industry versus renewable freshwater resources



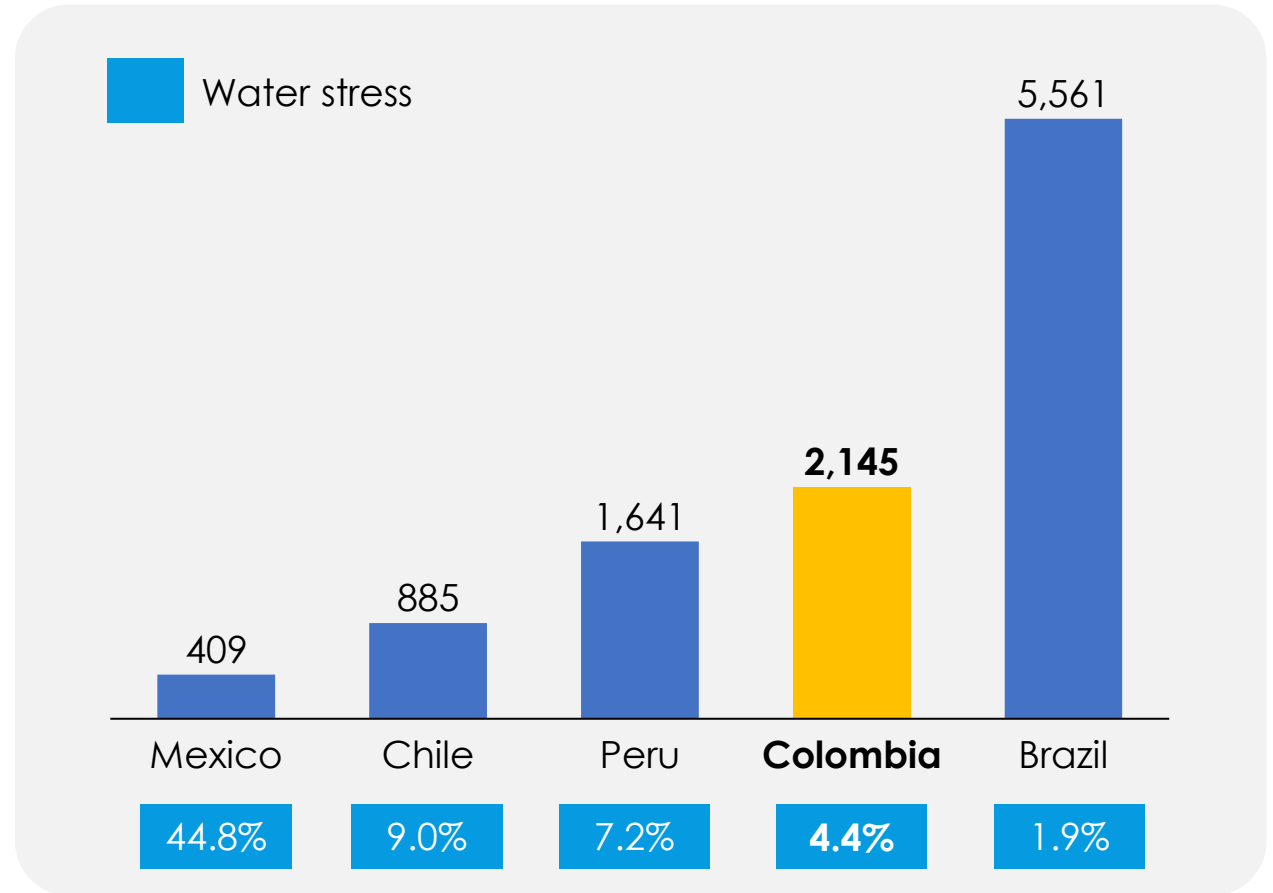
80% of the population could benefit from a wastewater treatment plant connection



27% of the population require safely managed drinking water services

Renewable internal freshwater resources & Water stress¹

Billion m3 (2020) and % (2020)



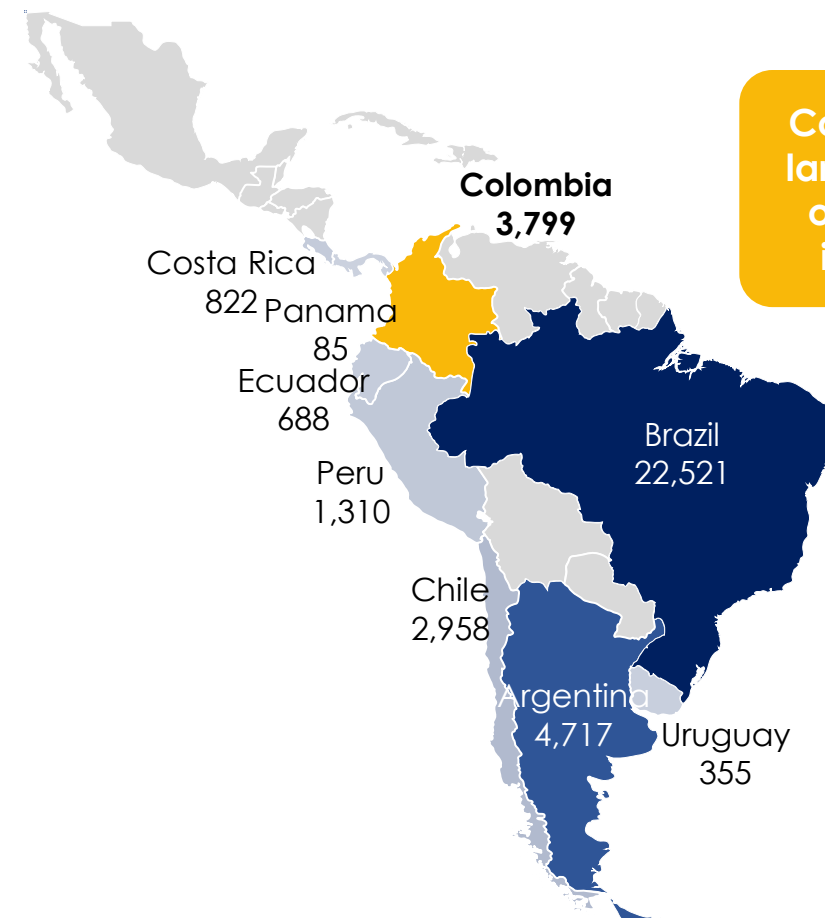
¹ Water stress is defined as the ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, after taking into account environmental water requirements

Source: World Bank Group, FAO

High availability of solid waste & plastic by-product inputs for recycling

Value of plastic products manufactured in South America

USD millions, 2020



Colombia is the third largest manufacturer of plastic products in South America



19% of the population could benefit from waste collection services

In 2021, an average of **33,939 tons/day of solid waste** was generated in Colombia, representing **an increase of 4.2%** with respect to 2020.

Colombia requires further investment from companies who wish to benefit from access to **plastic and other solid waste materials** to be used as **inputs for sustainable product manufacturing**

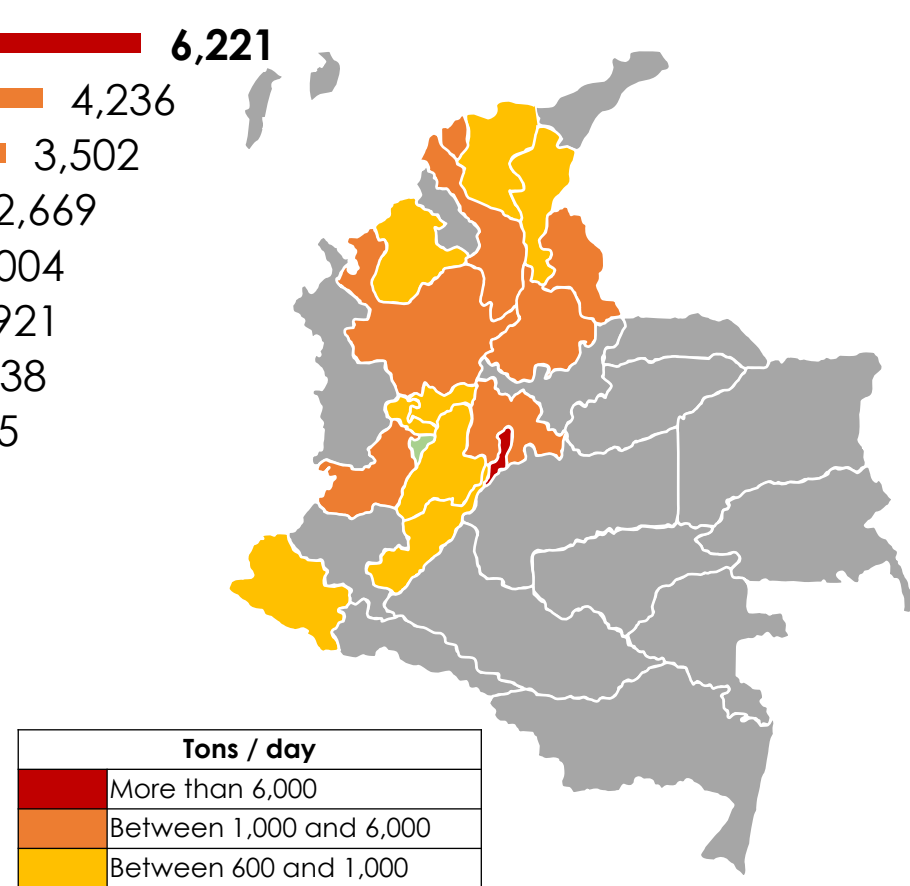
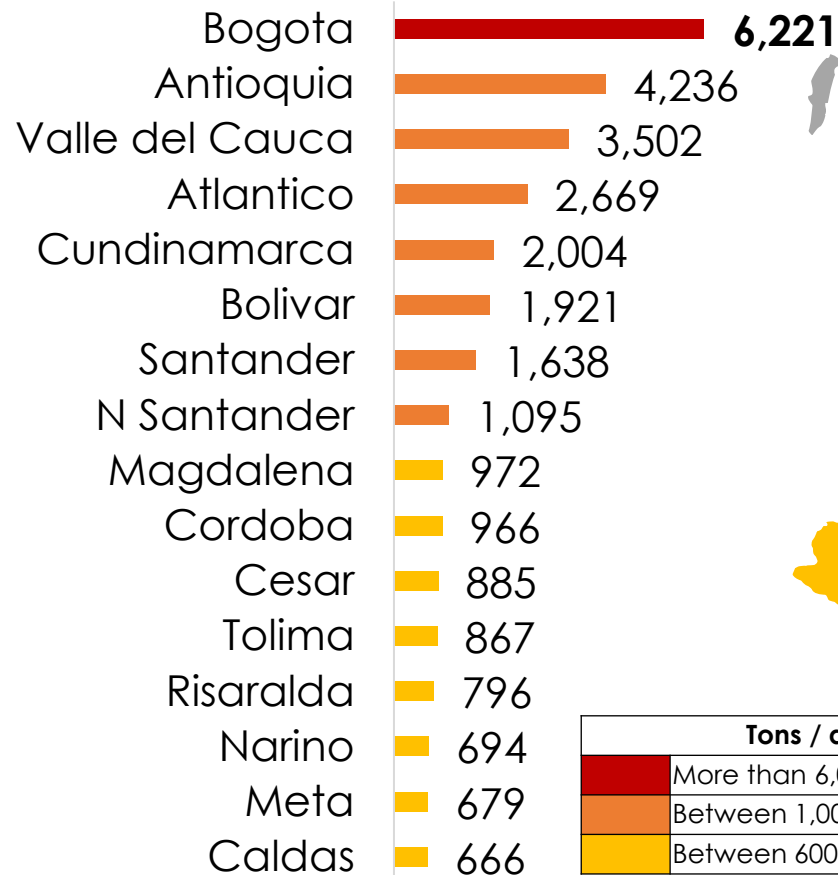
Solid waste recycling opportunities exist in numerous regions

42.5% of solid waste is disposed in **the 8 largest municipalities** in Colombia:

- Bogotá
- Medellín
- Cali
- Barranquilla
- Cartagena
- Cucuta
- Soacha
- Soledad

Average waste disposal in the top 16 Colombian regions

Tons/day, 2021



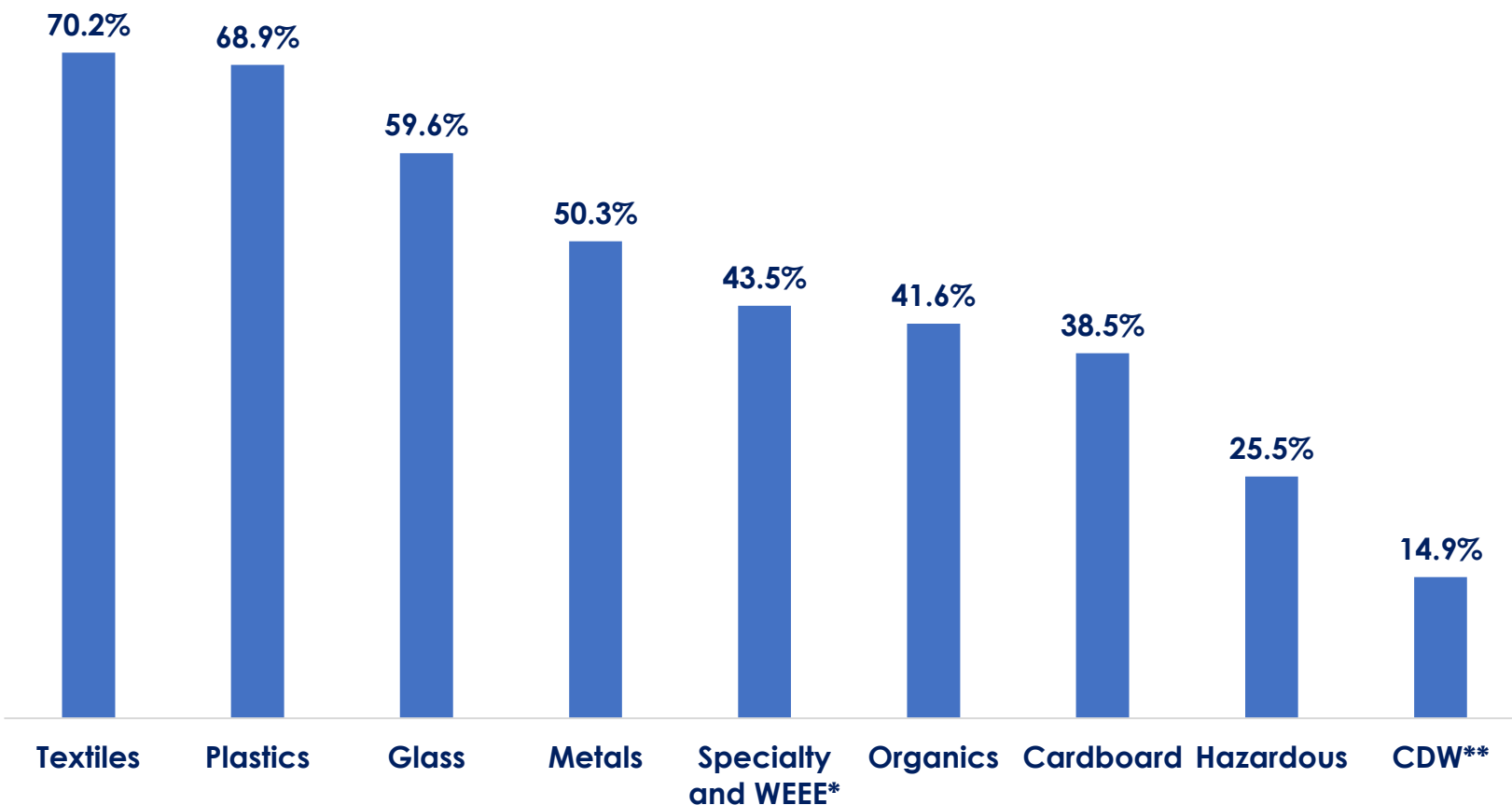
Tons / day	
More than 6,000	Red
Between 1,000 and 6,000	Orange
Between 600 and 1,000	Yellow

Source: Informe Nacional de Disposición Final de Residuos Sólidos 2021

Different opportunities exist by types of waste material treated

Waste disposal treatment by material type in Colombia

% of municipalities citing



The use and treatment of materials such as **textiles, plastics, glass and metals** are the most reported by the Colombian municipalities

*WEEE: Waste Electrical and Electronic Equipment/ **CDW: Construction and Demolition Waste

Source: Encuesta A Municipios Sobre Gestión de Residuos Sólidos Domiciliarios

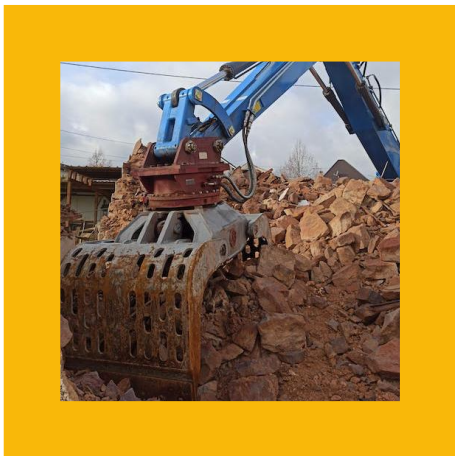


Plastic products recycling

Opportunities exist in collecting and transporting useable waste for being reused in new products or materials

Market developments

- Since 2000, the **World Bank has committed** more than **USD 4.7 billion** to more than **340** solid waste management programs, many of which are implemented through public tenders
- It is estimated that the circular economy industry will create a net total of **4.8 million jobs in Latin America and the Caribbean by 2030**
- Currently, approximately **300,000 to 350,000 tonnes of plastic material is recycled in Colombia** every year
- The entire **plastics industry generates 220,000 direct jobs** in Colombia and **recycling alone generates 80,000 jobs in the country**

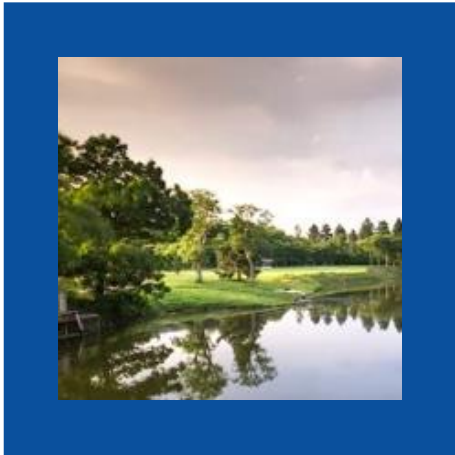


Recovery and reuse of industrial waste

Opportunities exist in recovering construction and industrial waste such as steel and granular minerals from rubble and debris for subsequent reuse

Market developments

- Colombia has **5 steel mills**, and around **1,600 metalworking companies**
- In Bogotá, **3.3 tons of aluminum are left unused every day** although the metal can be reused numerous times without losing its original properties
- In Colombia, approximately **7.4 million tons of construction debris** are produced with the **potential to be recovered**
- **Rubble** is the waste most likely to be used and **reused in the construction process** due to comprising mostly **steel and granular minerals**



Water management and treatment

Opportunities exist in cleaning freshwater sources and upgrading water treatment and sewage networks

Market developments

- Sanitation of both **water sources** and **soils** had an **average investment of USD 4.556 billion** between 2015 and 2019 in Latin America and the Caribbean
- According to the Interamerican Development Bank, **USD 374 billion needs to be invested in water and sanitation** in Latin America and the Caribbean between 2019 and 2030
- In Colombia, sanitation will have an investment of approx. **USD 380 million** over the next years for **158 works in 132 municipalities**
- Colombia is planning to increase the share of treated wastewater, with a target of **54% in 2022** and **68% in 2030**

Colombia offers an educated and growing talent pool

- **Over 90,000 employees** in the sector covering water treatment, collection and supply and waste collection remediation and disposal
- **Colombia has over 270,000** science and engineering professionals



Training for more than 3,000 people through a free national certified course on circular economy by the **national learning service (SENA)**

- Colombia hosts **5,000 international students** from across North and South America

3 Colombian institutions rank among Latin America's **top 15 universities** in QS World University Ranking 2023 across all fields of study:

- Universidad de los Andes
- Universidad Nacional de Colombia
- Pontificia Universidad Javeriana



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SKILLED LABOR FORCE

Colombia has numerous education programs in resource management

In 2021, 21,659 people graduated from environmental and resource management programs at 115 institutions, including:

Colombia has introduced a range of government initiatives for water management and recycling:



Colombia is in the process of adopting a **circular economy approach** to make the most of materials and resources in order to keep them as long as possible in the economy, **ensuring that 94% of the country's municipalities adequately treat their solid waste** and that public sanitation **recycling activity reaches 25%**



Colombia is formalizing its signature to the **Global Commitment**, an initiative led by the Ellen MacArthur Foundation with the long-term objective to ensure **100% of plastic packaging** is reusable, recyclable or compostable



Colombia's water management goals (National Development Plan 2022-2026)

A strategy for the treatment of **industrial wastewater will be implemented** to prevent methane emissions and cover the energy demand of wastewater treatment plants

A key goal is to ensure that **60% of urban wastewater will be treated**

it is expected that more than **3.5 million people** will receive new access to adequate wastewater management solutions

Colombia offers a range of incentives to support water management and recycling companies:



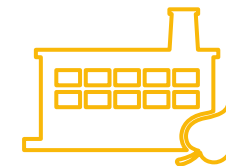
Importation of equipment or machinery for water management, recycling and waste management, or with a positive environmental impact, is **not subject to VAT**.



Scientific and technological development projects: 30% of the investments made in research, technological development or innovation may be deducted annually from income tax.



The **national tax on single-use plastic products** used for packaging, wrapping or packing goods **shall not be caused** when the taxable entity presents the Circular Economy Certification.



Industrial free trade zone regime

Benefits to businesses involved in the production of goods or the provision of services located in free trade zones:

- **Single income tax rate of 20%** until 1st January 2024 (after that, 20% on the proportion of income from exports of goods and services)
- **No customs duties** (VAT or tariffs) levied or paid on goods introduced into the free trade zone
- Advantage of **re-exporting to third-party countries**
- **Goods** of foreign origin introduced into the free trade zone may remain there indefinitely
- **VAT exemption for raw materials, parts, inputs, and finished goods** that are sold from the national customs territory to industrial users of free trade zone goods or services

Colombia continues to attract major investments in this sector



Apropet, a post-consumer PET recycling company and subsidiary of Peruvian company San Miguel Industries, announced its investment of between **USD 15 and 20 million** to expand the current operations at its **recycling facility in Bogota**.

The company is dedicated to the collection of PET for the **treatment and industrial reuse of recyclable resins for reuse**.



Idrica, an international water technology company, opened a regional office in Barranquilla in 2021.

This company's services focus on the supply of drinking water to **23,000 customers** and wastewater sewage treatment for **7,000 customers**.

The project includes the operation of **8 drinking water treatment plants** and **3 wastewater treatment plants**.



Ingram Micro, a subsidiary of Hainan Airlines Group, opened a new **IT Asset Disposition (ITAD)** processing plant. The new facility provides a full range of ITAD services including data sanitization as well as end-of-life **asset collections, processing, remarketing and recycling**.

The **Bogotá facility** extends the company's commitment to provide directly-managed services on a global basis as Ingram Micro continues the strategic expansion of its ITAD presence into **underserved markets**.

Investors can benefit from a powerful stakeholder network

Industry associations



Academic institutions



Foreign investors



Government bodies



Ministerio de Ambiente y Desarrollo Sostenible

Private sector service partners*



Legal services



Human resources



Communications



Real estate & construction



Environmental consultancy

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