

“PLASTIC WASTE IN REMOTES AND MOUNTAINOUS AREAS IN PERU”

Dirección de Instrumentos de Gestión de Residuos Sólidos y Circularidad
Solid Waste Management and Circularity Instruments Directorate



High mountain ecosystems in Peru

- High mountain ecosystems represent 20% of Peru's surface area (277,899 km²).
- 6.6 million inhabitants live in high mountain ecosystems, which represents 27% of the Peruvian population.
- Peru has a total of 4,231 glaciers with a total area of 1,157.81 km².
- Peru has 68% of the world's tropical glaciers.

Source: National Institute of Glaciers and Mountain Ecosystems Research (INAIGEM).



Main mountain ranges in Perú

Mountain range	Area (Km2)	# Glaciers
Blanca	527.62 (40,63%)	755
Vilcanota	279.40 (21.51%)	374
Vilcabamba	129.15 (9.94%)	355
Total	72,08%	1484

Source: National Water Authority - ANA (2014) Inventory of glaciers in Peru.



Blanca mountain range

Source: <https://bananomeridiano.com/huaraz/>

Main glaciers



Glaciar Pastoruri (Parque Nacional Huascarán)



Glaciar Quelccaya



Glaciar Yanapaccha



Glaciar Coropuna



Glaciar Huascarán (Parque Nacional Huascarán)

Importance of glaciers

- **Strategic freshwater reserves:** Glaciers act as natural reservoirs, storing water in the form of snow during the rainy season and gradually releasing it in the dry season. This cycle is fundamental for maintaining the flow of rivers and lagoons, especially in arid areas.
- **Support for life and human development:** Glacial water is indispensable for agricultural and livestock activities and the generation of hydroelectric power, as well as being a key source of supply for entire communities.
- **Natural indicators of climate change:** Because of their sensitivity, the retreat of tropical glaciers provides valuable data on global warming trends and their effects on Andean ecosystems.



Vilcanota mountain range

Source: <https://www.cuscotoursperu.com/explorando-la-cordillera-del-vilcanota/>

Challenges for plastic waste management in mountainous areas

- Lack of information on the amount and types of plastic waste generated.
- Limited resources and infrastructure for the segregation, collection, transportation, handling and disposal of plastic waste. Low solid waste collection rates (45-50%) in rural areas. 49% of plastics waste are mismanaged.
- Additional difficulties in controlling and managing solid waste from tourism activities, particularly in remote and higher elevations where excursions take place,
- Lack of environmental culture regarding proper waste management.

More than 1,000 kg of waste collected during the “Chao Plástico” campaign in Huascarán National Park

Más de mil kilos de residuos son recolectados durante campaña “Chao Plástico”, en Parque Nacional Huascarán

Nota de prensa

Más de 30 usuarios de pastos naturales participaron en jornada de limpieza que se realizó en el paso vehicular transandino Punta Olímpica.

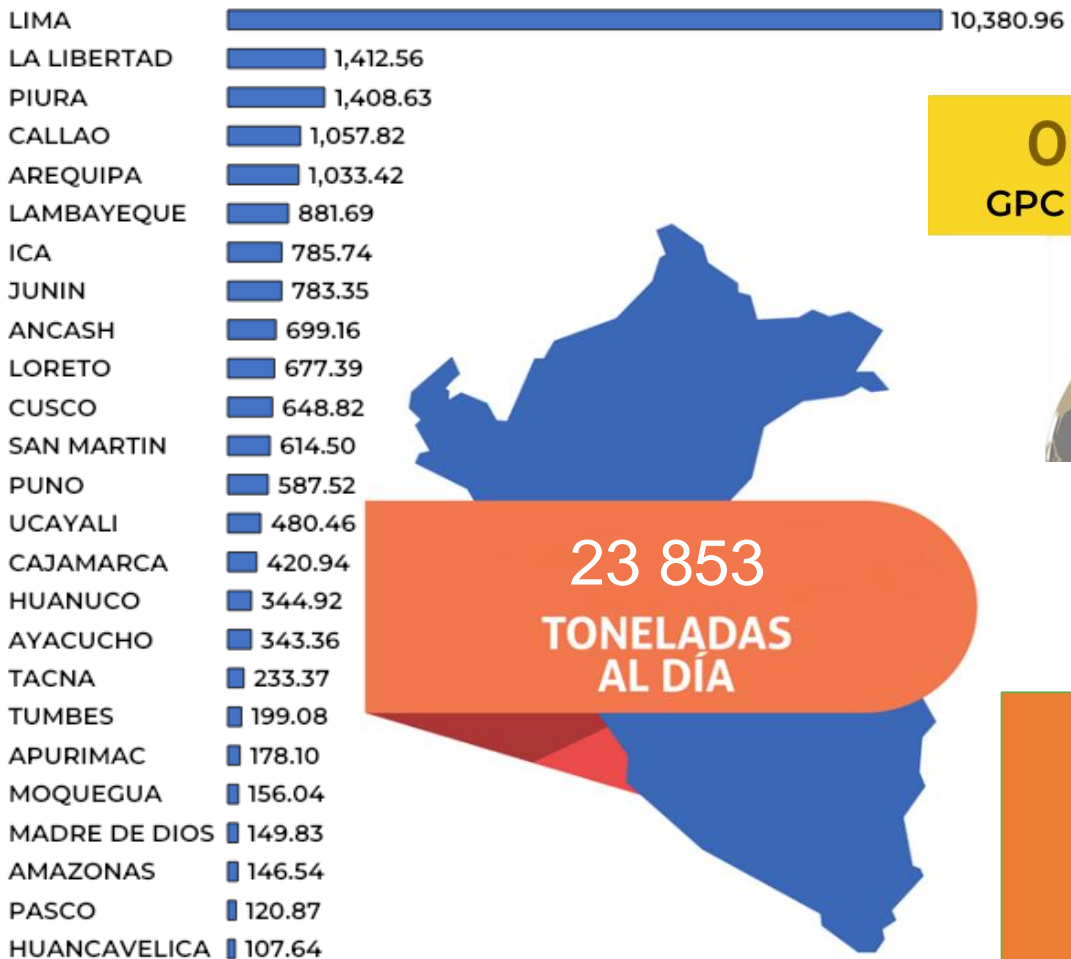


CURRENT SOLID WASTE SITUATION IN PERU

National municipal solid waste generation



Municipal solid waste generation by department, 2023 (T/día)



0,86 kg/hab./día
GPC Municipal Nacional

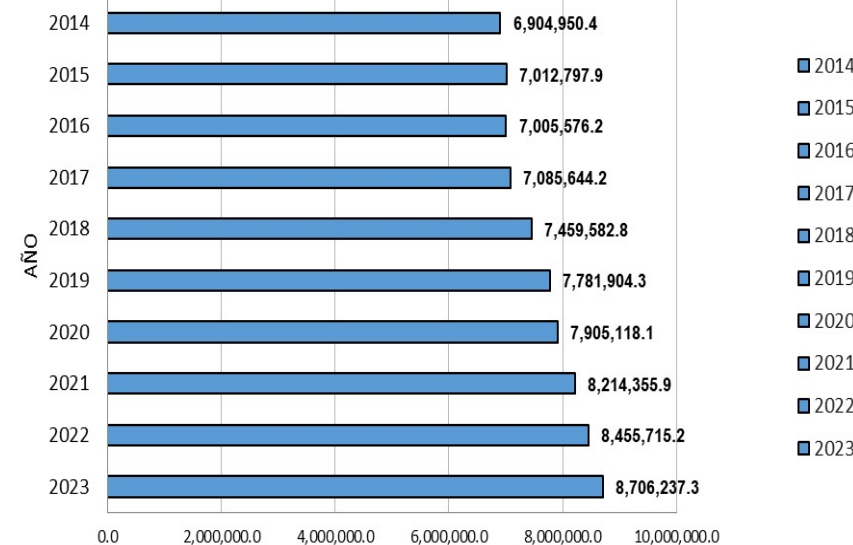


5 676 ton/d (23,79%) in mountainous areas

Annual generation of municipal solid waste 2014 - 2023 t/año

8,706,237.3 t/año 2023

GENERACIÓN ANUAL DE RESIDUOS SÓLIDOS MUNICIPALES 2014 - 2023 (t/año)



Advances in regulation and initiatives for sustainable plastic consumption and production



Law No. 30884, Law that regulates single-use plastic and disposable containers or packaging.

OBJECTIVE

Establish the regulatory framework for single-use plastic in the country.

PURPOSE

Convert the consumption and production of single-use plastic products into reusable, recyclable or compostable plastic products to move towards a circular plastic economy.

The Law bans the manufacture, importation, distribution, delivery and commercialization of:



Single-use plastic carrier bags



Single-use plastic straws



Non-recyclable plastic tableware and utensils



EPS containers and cups

And prohibits the use of:



Plastic wrapping for printed information

Project “Plastic waste in remotes and mountainous areas in Peru”

Objective

- Improve the capacity, infrastructure, and knowledge and experience of relevant decision makers regarding the environmentally sound management of plastic waste and the reduction of plastic waste generation in Peru.

Activities

1. Develop an inventory of plastic waste
2. Implement a pilot project on prevention and environmentally sound management of plastic waste in a selected mountain area.
3. Execute awareness and education activities for tourists and mountain guides.
4. Disseminate knowledge and results of the project

Cooperante:



BASEL CONVENTION

Ending date:
Diciembre 2024

Project “Plastic waste in remotes and mountainous areas in Peru”

1. Develop an inventory of plastic waste

Data:

- The estimated annual generation of municipal plastic waste in Peru is 775,242 tons:
- 47% of municipal plastic waste is generated in Lima (capital).
- 86 % of the waste generated is collected by formal and informal services.
- 59% of the municipal plastic waste generated goes to final disposal.
- 24% of the municipal plastic waste generated is recycled.
- 23% of the municipal plastic waste is not managed and leaks into the environment.

The informal sector plays a crucial role in the collection, sorting and recycling of plastics, especially in areas where the coverage of formal services is limited or non-existent.

To improve the inventory. There is a significant information gap, so a next version of the inventory should prioritize the collection of primary information from this sector. It is suggested to start with a nationwide diagnosis, with emphasis on rural areas, which will allow for a better overview of the current situation of this sector.



Project “Plastic waste in remotes and mountainous areas in Peru”

2. Implement a pilot project on prevention and environmentally sound management of plastic waste in a selected mountainous area.

Huascarán National Park (PNHUA)

Located in the north-central part of the country, is one of the country's most emblematic natural protected areas because it protects one of the most biologically and culturally diverse areas in Peru.

- Highest peak in Peru - Nevado Huascarán (6768 masl)
- Within its limits there are about 660 glaciers and 300 lagoons of glacial origin.
- Tourist activities: mountain biking, skiing, climbing, adventure trekking and experiential tourism.
- It has about 25 trekking circuits and 102 climbing destinations.
- 33 archeological sites have been identified



Project “Plastic waste in remotes and mountainous areas in Peru”

2. Implement a pilot project on prevention and environmentally sound management of plastic waste in a selected mountainous area.

- Organization of two (2) consultative meetings with stakeholders
- Planning workshop with the National Service of Natural Areas Protected by the State (SERNANP).
- Acquisition of relevant equipment (e.g., containers, “botellones”, signs, etc.).



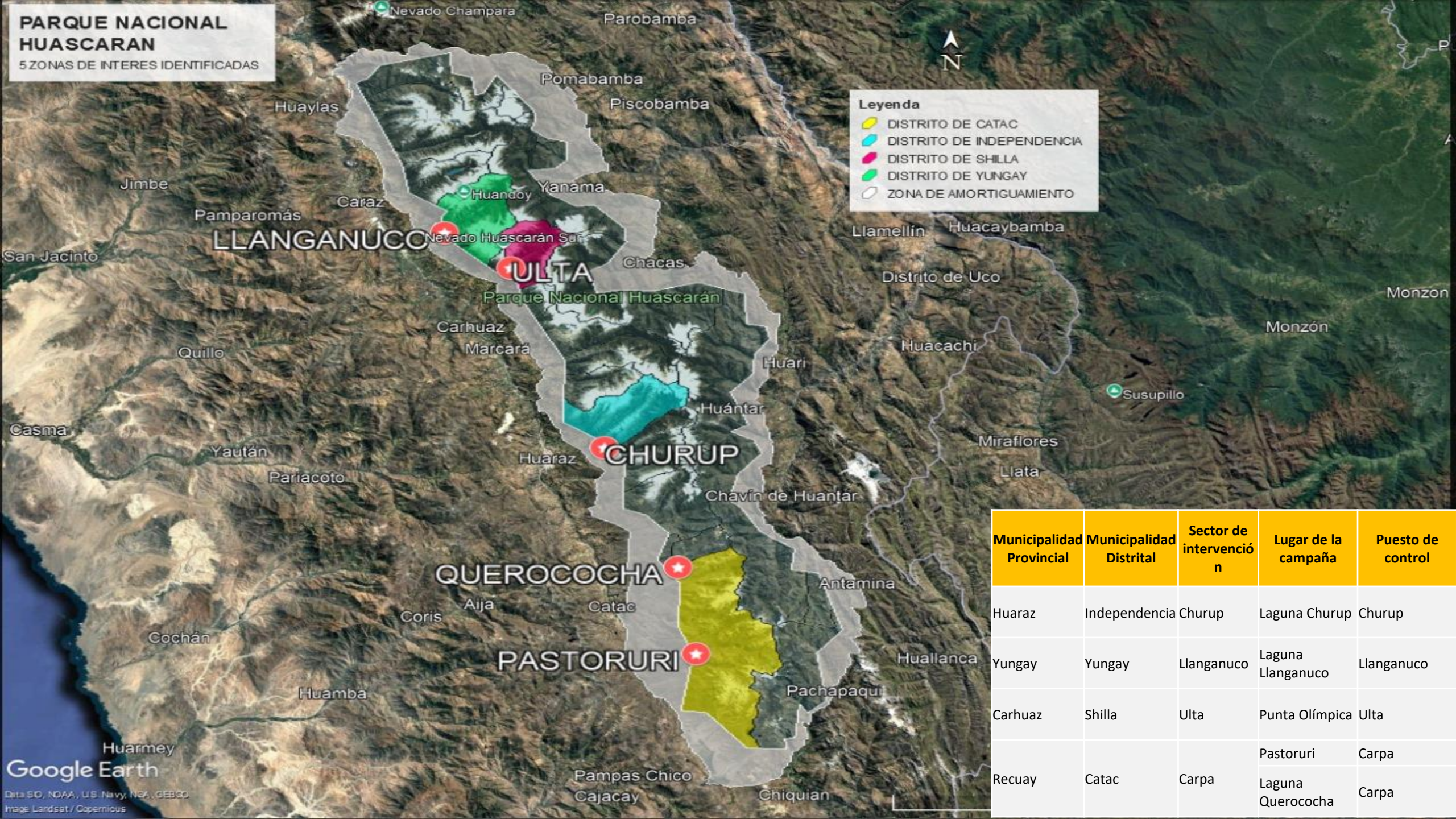
Project “Plastic waste in remotes and mountainous areas in Peru”

Stakeholder identification

- Tour operators (hotels, restaurant, travel agencies, transportation)
- Tourist guide association (conventional, mountain)
- Rural communities
- High mountain study centers
- Tour guide training institutes
- Park rangers and Community watchmen
- Associations of services: boating, horseback riding, food, etc.
- Local governments
- Associations of recyclers
- Regional Directorate of Foreign Trade and Tourism - DIRCETUR
- Interprovincial transportation agencies
- Others



PARQUE NACIONAL HUASCARAN
5 ZONAS DE INTERES IDENTIFICADAS



Leyenda

- DISTRITO DE CATAC
- DISTRITO DE INDEPENDENCIA
- DISTRITO DE SHILLA
- DISTRITO DE YUNGAY
- ZONA DE AMORTIGUAMIENTO

Municipalidad Provincial	Municipalidad Distrital	Sector de intervención	Lugar de la campaña	Puesto de control
Huaraz	Independencia	Churup	Laguna Churup	Churup
Yungay	Yungay	Llanganuco	Laguna Llanganuco	Llanganuco
Carhuaz	Shilla	Ulta	Punta Olímpica	Ulta
Recuay	Catac	Carpa	Pastoruri	Carpa
			Laguna Querococha	Carpa

Sector #1: Llanganuco – Laguna Chinancocha



Sector #1: Llanganuco – Laguna Chinancocha

Residuos plásticos



Sector #2: Churup

Instalaciones y material informativo



Sector #3: Ulta





Sector #4: Carpa

Contenedores o tachos



Sector #5: Laguna Querococha





Sector #5: Laguna Querococha



Project “Plastic waste in remotes and mountainous areas in Peru”

Key findings

- There is plastic waste, mainly food and beverage containers and packaging.
- There are waste containers but they are not used properly.
- There are financial limitations on waste collection by local governments.
- There is a lack of environmental culture among different actor.
- There is a need to strengthen the control and enforcement of the Plastic Law.
- There is a need to work with transportation companies whose routes pass through the PNHUA.
- Large variety of plastic products and materials.

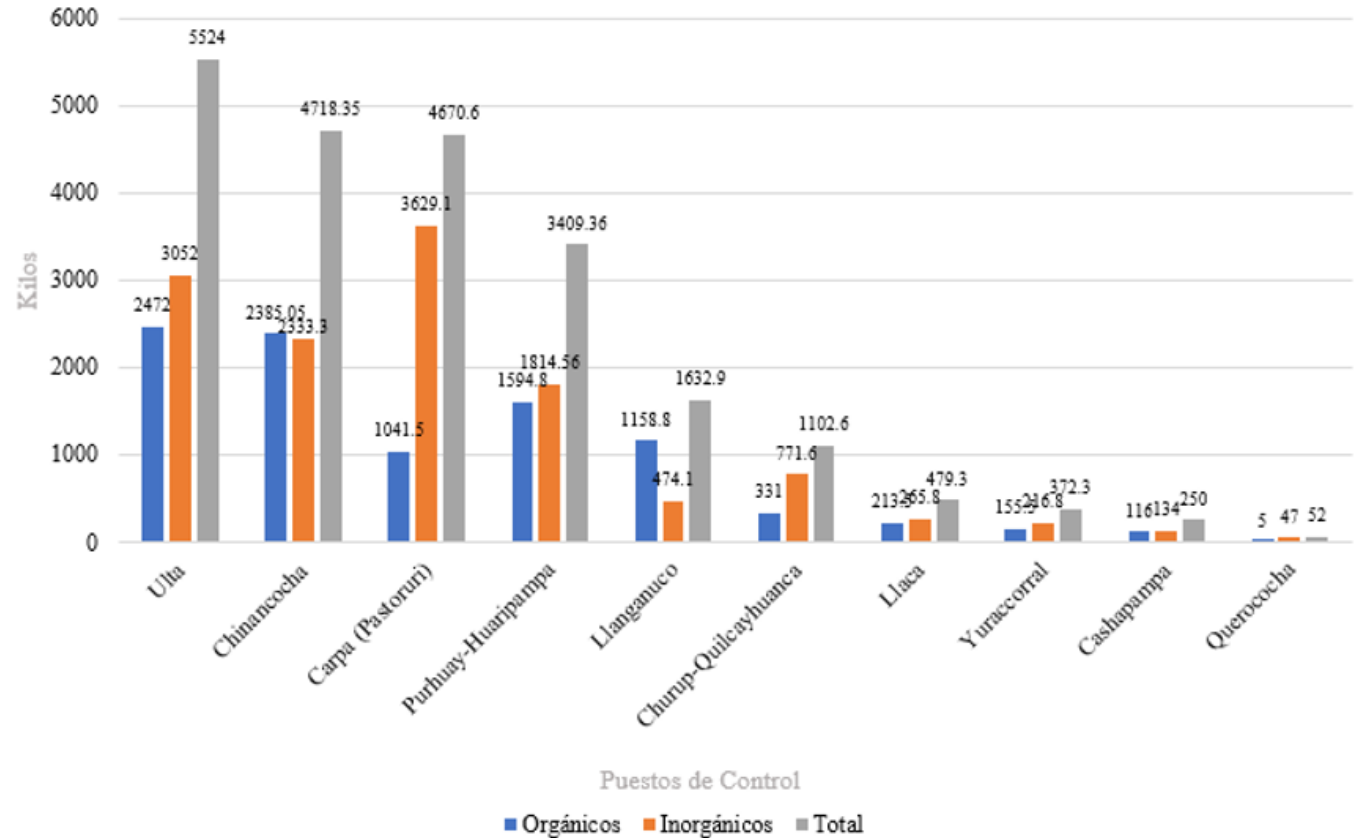


Project “Plastic waste in remotes and mountainous areas in Peru”

Key findings

According to data from 2023 regarding the collection of solid waste and the number of visits to the PNH, the sites most contaminated by solid waste are **Ulla**, the Chinancocha lagoon in the **Llanganuco** area, and the **Pastoruri (Carpa)** snow-capped mountain

Total solid waste collected by tourism sector(2023)

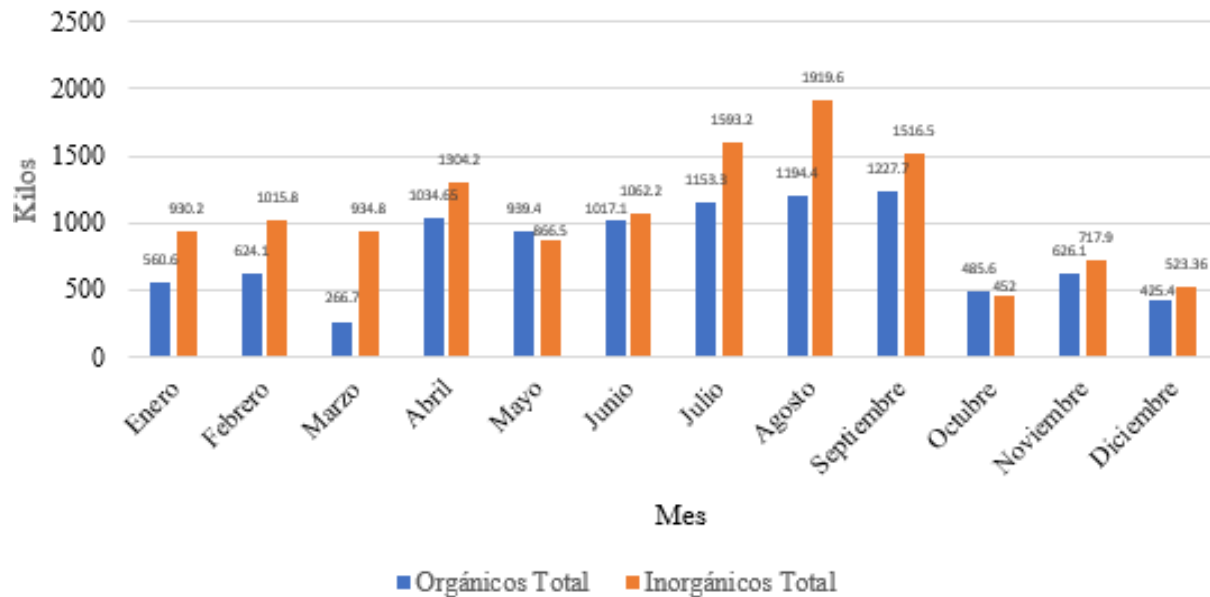


Fuente: SERNANP(2024). Análisis del estado de la gestion de residuos sólidos en el PNHUA.

Project “Plastic waste in remotes and mountainous areas in Peru”

Key findings

Solid waste collected per month (2023)



What type of snack do you prefer to bring to the PNHUA?

Area	Prepared food in disposable containers	cookies, soda, chocolates, chewing gums	Water	Fruits
Llanganuco	5	18	33	18
Querococha	8	12	34	32
Carpa	24	22	36	30
Uta	21	16	31	30
Huari-Cashapampa	41	46	48	40
Churup	32	29	45	43
Total	131	143	227	193

Project “Plastic waste in remotes and mountainous areas in Peru”

Activities

- Removal of small and dilapidated containers
- Support in the removal of complex non-municipal waste (electronics, tires, lights, furniture).
- Implementation of containers at key control points.
- Implementation of specific containers for plastic bottles and other recyclable waste.
- Control the entry of certain plastic products (Plastic Law).
- Training for key actors
- Education and awareness campaign “Deja Huellas No Residuos” (leaves footprints, not residues).



Project “Plastic waste in remotes and mountainous areas in Peru”

Activities

- Seven (7) containers for the exclusive segregation of plastic bottles.
- Five (5) solid waste segregation stations: Each station consists of two containers (10 in total) for waste classification. The black garbage cans are for general or non-recyclable waste, and the green garbage cans are for recyclable waste, including plastics.



Project “Plastic waste in remotes and mountainous areas in Peru”

Activities



Project “Plastic waste in remotes and mountainous areas in Peru”

Activities



Áncash Noticias AN ACTUALIDAD HUARAZ ÁNCASH POLICIALES DEPORTES DENUNCIAS WHATSAPP

A photograph showing a recycling bin with a large plastic bottle wrapped in a wire mesh cage. The bin is labeled 'RESIDUOS NO APROVECHABLES'. The bottle has a sign that says 'RECICLA YA! YA!'. The background shows a mountainous landscape.

Composición: Áncash Noticias

ÁNCASH

Contenedores para residuos en el Parque Huascarán: una iniciativa para proteger la naturaleza

Se implementa un plan piloto para reducir la contaminación en áreas recreativas turísticas, promoviendo la responsabilidad ambiental entre los visitantes.

“Waste bins in Huscarán Park: an initiative to protect nature”



Educational materials (containers)

RECICLA YA!

DEJA HUELLAS NO RESIDUOS

RECICLA YA!

Deposita aquí tus botellas de plástico
Deposit your plastic bottles here

Yo cuido la montaña

I take care of Huascarán

Yo cuido la montaña

DEJA HUELLAS NO RESIDUOS

RESIDUOS NO APROVECHABLES

Non-Recyclable waste

✔ COLOCA SOLO

 Restos de comida <small>Leftover food</small>	 Envases o plásticos de un solo uso <small>single-use containers or plastics</small>	 Envolturas de productos <small>Product wrappers</small>	 Papeles contaminados <small>Contaminated papers</small>	 Colillas de cigarro <small>Cigarette butts</small>	 cutieros de plásticos <small>Plastic cutlery</small>
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✘ NO COLOQUES

 Papel y cartulina	 Cajas de cartón	 Botellas y envases de vidrio	 Envases de tetrabrik	 Latas
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DEJA HUELLAS NO RESIDUOS

RESIDUOS APROVECHABLES

Recyclable waste

✔ COLOCA SOLO

 Papel y cartulina <small>Paper and cardboard</small>	 Botellas y envases de plástico <small>Plastic bottles and containers</small>	 Botellas y envases de vidrio <small>Glass bottles and containers</small>	 Cajas de cartón	 Latas	 Envases de tetrabrik <small>TetraBrik packaging</small>
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✘ NO COLOQUES

 Pilas, focos fluorescentes	 Envases o plásticos de un solo uso	 Restos de comida	 Envolturas de productos contaminados	 Papeles contaminados	 Empaques de plaguicidas
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Proyecto “Residuos Plásticos en Áreas Remotas y Montañasas”

3. Awareness-raising and education activities for tourists and mountain guides

- 10 Training workshops by type of stakeholders identified (park rangers, volunteers, mountain guides, among others).
- 12 environmental education, awareness and information activities were carried out for the different stakeholders identified (tour operators, transportation, travel agencies, park rangers, communities, associations, mountain guides, tourists, and others)
- Development of educational content and teaching materials on plastic waste for use in mountain guide schools and outreach materials aimed at tourists.
- Printing package of educational games and didactic material designed for the project to raise awareness among tourists and mountain guides at each intervention point.

ANCASH Gobierno Regional
Dir. Cetur Ancash

CAPACITACIÓN DEL PROYECTO “RESIDUOS PLÁSTICOS EN ÁREAS RÉMOTAS Y MONTAÑOSAS”

Auditorio de la Dirección Desconcentrada de Cultura - DDC Ancash

Viernes 08 de noviembre

Turno mañana: 9:30 a.m.
Turnos tarde: 3:00 p.m.

Colaboradores:

PERÚ Ministerio del Ambiente
SERNANP Parque Nacional Huascarán

Proyecto “Residuos Plásticos en Áreas Remotas y Montañasas”

3. Awareness-raising and education activities for tourists and mountain guides



Proyecto “Residuos Plásticos en Áreas Remotas y Montañasas”

3. Awareness-raising and education activities for tourists and mountain guides



Proyecto “Residuos Plásticos en Áreas Remotas y Montañasas”

3. Awareness-raising and education activities for tourists and mountain guides

- Educational content and didactic material were developed for tourists and mountain guides, taking into consideration a multicultural and gender equality approach, under the campaign logo: “DEJA HUELLAS , NO RESIDUOS” (LEAVE TRACKS, NOT WASTE).
- In this regard, game kits with educational content to educate and raise awareness among tourists and mountain guides, as well as outreach materials:



Proyecto “Residuos Plásticos en Áreas Remotas y Montañasas”

3. Awareness-raising and education activities for tourists and mountain guides

Educational and awareness-raising materials:

- Educational flip charts (7 pages)
- Educational posters (4 designs)
- Educational flyers (4 designs)
- Good practices triptychs (1 designs)
- Educational panels

Merchandising and clothing:

- Reusable bottles,
- Thermal balaclavas
- cloth bags,
- Polar caps,
- Rain ponchos,
- Patches, aprons, sun caps, jackets and legionnaire caps.





Educational materials

DEJA HUELLAS NO RESIDUOS

TURISTAS QUE NO SON BIENVENIDOS
Tourists who are not welcome

Evita el uso de bolsas de plástico de un solo uso, cañitas de plástico y envases de tecnopor. Opta por alternativas reutilizables y duraderos.

Usa bolsa de tela y envases reutilizables

Una bolsa de plástico tarda 400 años en degradarse

DI NO al plástico y sí a un futuro MAS verde

Pequeños cambios hacen grandes impactos

*Ley que regula el plástico de un solo uso y los recipientes e envases descartables (Ley N° 30896)

DEJA HUELLAS NO RESIDUOS

ACCIONES POSITIVAS DE UN TURISTA

ENVASES REUTILIZABLES
Llena botellas y bolsas reutilizables. Plásticos de un solo uso están prohibidos.

LO TRAES, LO LLEVAS
No dejes residuos en la montaña. Mejor ponlos en tu mochila o boteillo.

CONSUME LOCAL
Evita productos con envolturas, consume natural y llévate las cáscaras.

CUIDA EL CAMINO
No tires tus residuos en las carreteras ni en las calles.

DEJA HUELLAS NO RESIDUOS

YO CUIDO LA MONTAÑA
I take care of the mountain

En áreas de alta montaña, los residuos tardan mucho más en degradarse:

- Una sola bolsa de plástico demora entre **100 + 400 años** en degradarse
- Los envases de tecnopor tardan hasta **1000 años** en degradarse
- Las cañitas demoran **200 años** en degradarse

"No lèves plásticos de un solo uso, envases de tecnopor a las montañas. Ayúdanos a proteger su belleza natural."

DEJA HUELLAS NO RESIDUOS

AQUÍ, CADA UNO ES RESPONSABLE DE LLEVAR SUS RESIDUOS
Here everyone is responsible for their waste

- Guarda tus residuos en tu mochila
- No arrojes residuos en el camino
- Usa botellas reutilizables
- Evita plásticos de un solo uso
- No arrojes nada que por la naturaleza se encuentre ya en un vehículo

DEJA HUELLAS NO RESIDUOS

PROYECTO: "Residuos Plásticos en Áreas Remotas y Montañosas en el Perú"



DEJA HUELLAS NO RESIDUOS

PROYECTO: "RESIDUOS PLÁSTICOS EN ÁREAS REMOTAS Y MONTAÑOSAS"

PERÚ Ministerio del Ambiente

SERNANP

PAVEL MINISTERIO ESPECIALIZADO CONVENCIONES

PERÚ

RECENTENARIO PERÚ 2024



Educational materials

BUENAS PRÁCTICAS

El poder de visitar el Parque Nacional Huascarán implica la responsabilidad de cuidarlo. Por ello, te compartimos algunas recomendaciones para ser un **viajero responsable**.

DISFRUTA EL CAMINO

- No alimientes ni toques a los animales que ves en el camino.
- No arranques plantas ni flores
- Ambos seres vivos cumplen un rol vital en este ecosistema.

RESPECTA EL RECORRIDO

No arrojes residuos en el camino, guárdalos en tus mochila o bolsillos hasta encontrar los contenedores de basura.

CONSUME LOCAL

Prioriza los productos de la zona para apoyar la economía del lugar.

USA REUTILIZABLES

Evita el uso plásticos de un solo uso. Utiliza tomados, bolsas de tela.

DEJA HUELLAS NO RESIDUOS

PROYECTO: "Residuos plásticos en Áreas Remotas y Montañas en el Perú"

¡PROHIBIDO!

- Bolsas de plástico de un solo uso.
- Sorbetes de plástico de un solo uso.
- Envases, recipientes y vasos de EPS (tecnopor).
- Vajillas y utensilios de plástico de un solo uso no reciclables Ley 30884.

Sigue las indicaciones y descarta los residuos en los contenedores adecuados, ahí pueden ir las imágenes del contenedor negro y verde que se van a instalar.

DEJA HUELLAS NO RESIDUOS

AQUÍ, CADA UNO ES RESPONSABLE CON SUS RESIDUOS

Here everyone is responsible for their waste

DEJA HUELLAS NO RESIDUOS

TURISTAS QUE NO SON BIENVENIDOS

Tourists who are not welcome

Prohibidos según Ley 30884

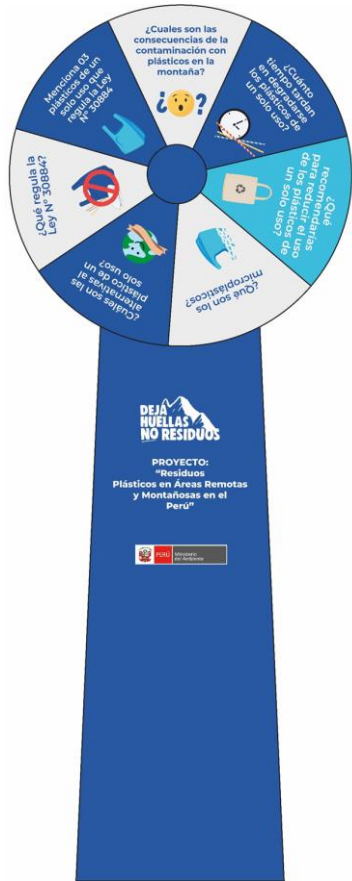
Bolsas de plásticos de un solo uso

Cañitas de plástico

Envases de tecnopor



Materiales educativos (juegos)



Merchandising



Upcoming campaigns 2025



Landscape Reserve Nor Yauyos Cochas



1 de mayo

Aniversario de la
Reserva Paisajística
Nor Yauyos Cochas

Junín y Lima

National Park Cordillera Azul



21 de mayo

Aniversario del
Parque Nacional
Cordillera Azul

Huánuco, Loreto,
San Martín y Ucayali

Otras áreas remotas y montañosas





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Otras áreas remotas y montañosas



Salkantay

Ubicación: Cordillera de Vilcabamba _ Cusco

Pariacaca

Ubicación: Cordillera de Pariacaca _ Lima- Junín

Montaña de los Siete Colores (Vinicunca)

Ubicación: Cordillera de Vilcanota _ Cusco



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**DEJA
HUELLAS
NO RESIDUOS**



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Título de la diapositiva

- **Texto en Montserrat**
- Texto
- Texto
- Texto



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Título de la diapositiva

Texto en párrafo

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum vehicula, odio placerat porttitor porttitor, purus massa elementum velit, eget mattis purus risus eget enim. Morbi quis lacus vitae mi fringilla molestie. Donec convallis ipsum nec aliquam blandit. Nunc sit amet nisl in nibh volutpat commodo id nec neque. Aenean nec orci consectetur, varius sem id, volutpat est. Sed sollicitudin velit non consequat tristique. Morbi at neque non ante blandit sagittis. Morbi diam ex, dictum vitae enim non, suscipit molestie felis.

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Imágenes



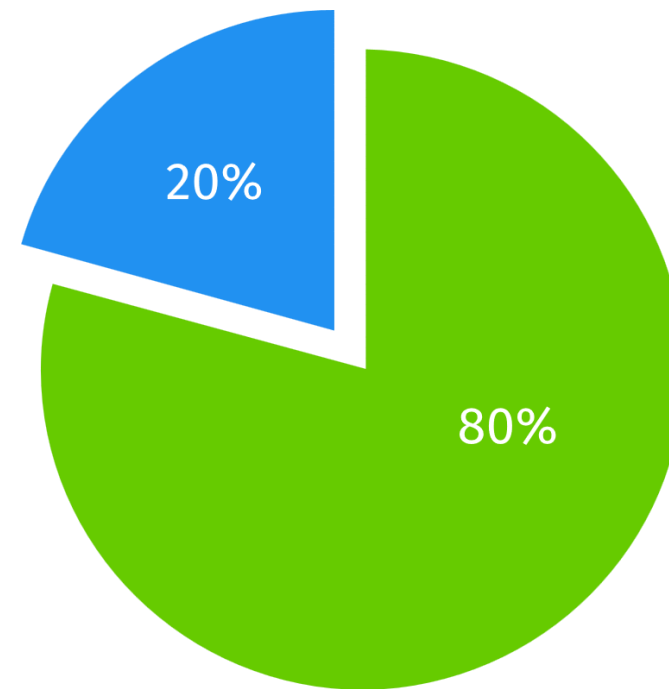
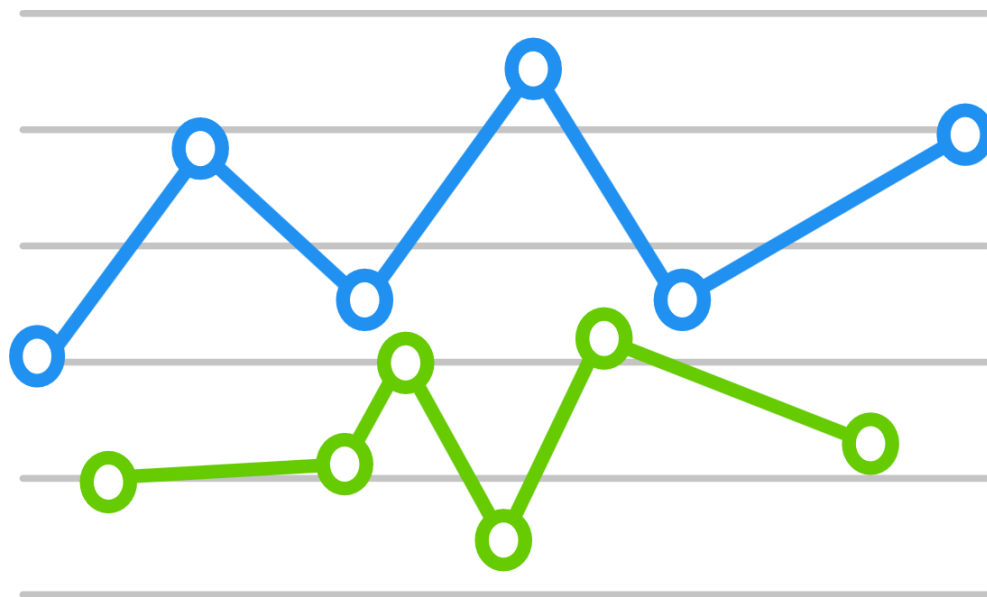
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Ministerio del Ambiente



- **Texto en Montserrat**

- Texto



Texto en Montserrat

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Interacción



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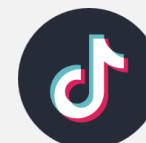
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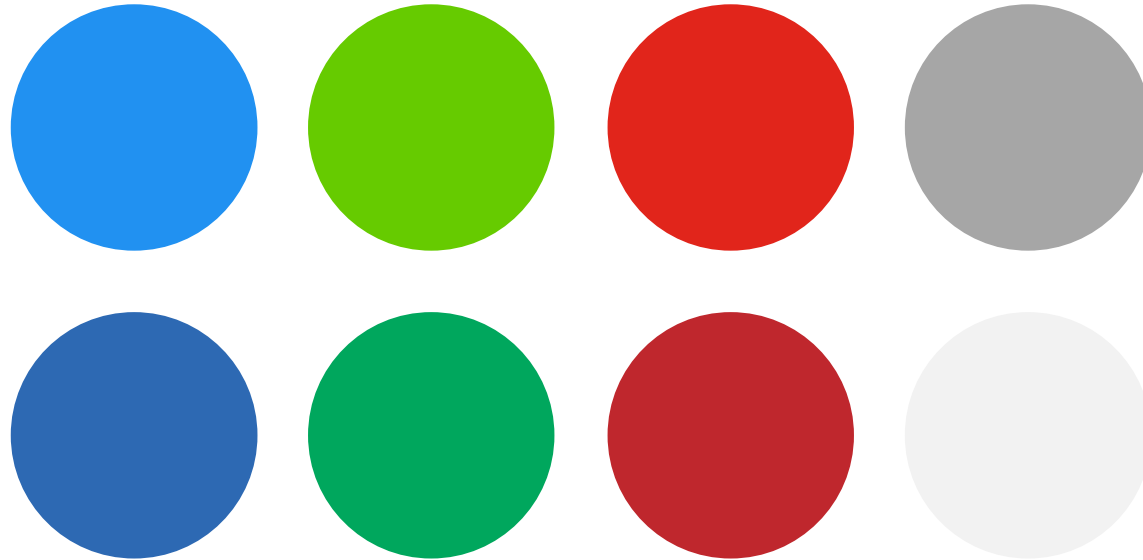


3403



- **Paleta de colores**

- Texto
- Texto
- Texto





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- **Texto en Montserrat**
- Texto
- Texto
- Texto

Imágenes