

Microplastics & a new ecosystem

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“ *Seafood eaters ingest up to **11,000 tiny pieces of plastic (microplastics) every year** with dozens of particles becoming embedded in tissues, scientists have warned...* ”



INTRODUCTION TO MICROPLASTICS

RESEARCH SYSTEM

SYNTHETIC FIBERS IN THE WASH

1million tons of synthetic fibers from textiles falls into the ocean every year, 34.8% of the plastic in the ocean (IUCN).

MICROBEDS

Microbeads are tiny pieces of polyethylene plastic added to health and beauty products, such as some cleansers and toothpastes.

TYRE DUST

Wear and tear from car tyres are the second main source of plastic in the ocean with a percentage of 28.3% (IUCN).

PLASTIC PRODUCTION

Plastic production is set to double in the next 20 years and quadruple by 2050

FOOD CHAIN

Microplastics climb up the food chain, more and more of these POPs accumulate in all kinds of marine. Eventually, they end up on our plates!

SLUDGE & FERTILIZER

Sewage sludge used as fertilizer, bead seep into soil, get into rivers and aquifers.

WASTE TREATMENT

Do not capture synthetic floating particles < 0.5mm

SECONDARY MICROPLASTIC

8 million tons of secondary plastic goes into the ocean every year

BOATS

20% of plastic pollution comes from ships.

PAINTINGS

10% of the plastic in the ocean comes from ship and house paint.

ACCUMULATION OF TOXINS

Once at sea plastic attract harmful Persistent Organic Pollutants (POP) on their surface which don't break down.

DDT - PCB - HCH - NPE

PLANKTON

Plastic fragments outnumber zooplankton 40/1

Figure 3

GLOBAL RELEASES OF MICROPLASTICS TO THE WORLD OCEANS:

PRIMARY AND SECONDARY SOURCES (IN KTONS)

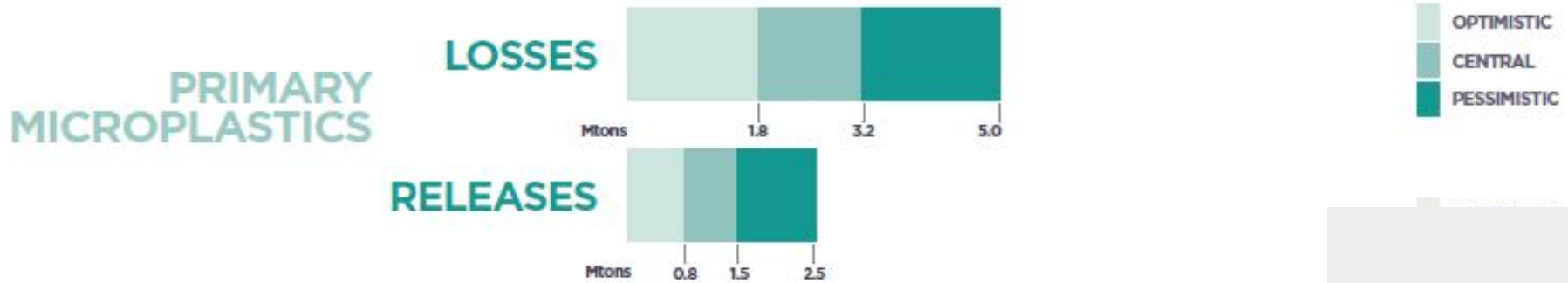
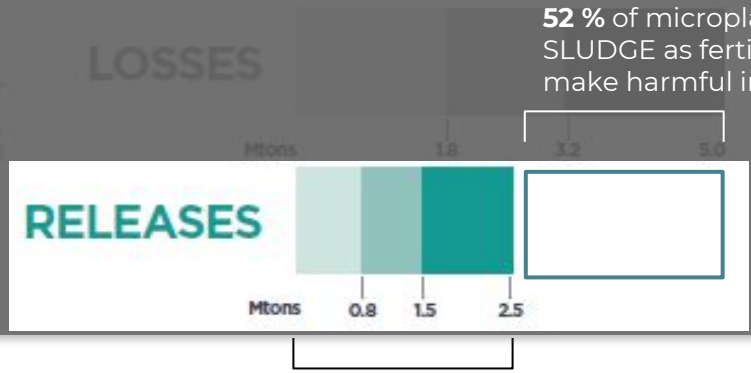


Figure 3

GLOBAL RELEASES OF MICROPLASTICS TO THE WORLD OCEANS:

PRIMARY AND SECONDARY SOURCES (IN KTONS)



52 % of microplastics is reused in the SLUDGE as fertilizer on average and then make harmful impacts on agriculture.

releasing **4 million particles** per day.

- OPTIMISTIC
- CENTRAL
- PESSIMISTIC
- OPTIMISTIC
- CENTRAL
- PESSIMISTIC

WASTE WATER TREATMENT PROCESS

PROBLEMS

An overview of how waste water is cleaned and treated before returning to the water supply.

(Methods vary between countries depending on water standards)

36% of the World's population does not have adequate sanitation

Source - World Health Organisation



WASTE TREATMENT PLANT



SLUDGE

WASTE WATER TREATMENT PROCESS

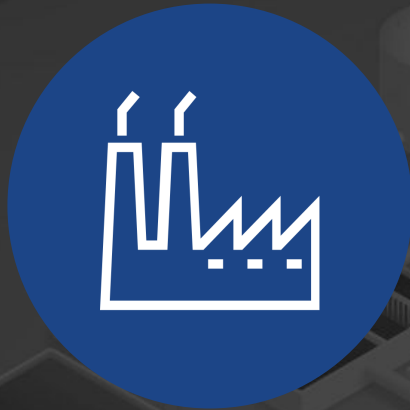
OPPORTUNITIES

An overview of how waste water is cleaned and treated before returning to the water supply.

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WASTE TREATMENT PLANT

Collect more microplastics from secondary effluent

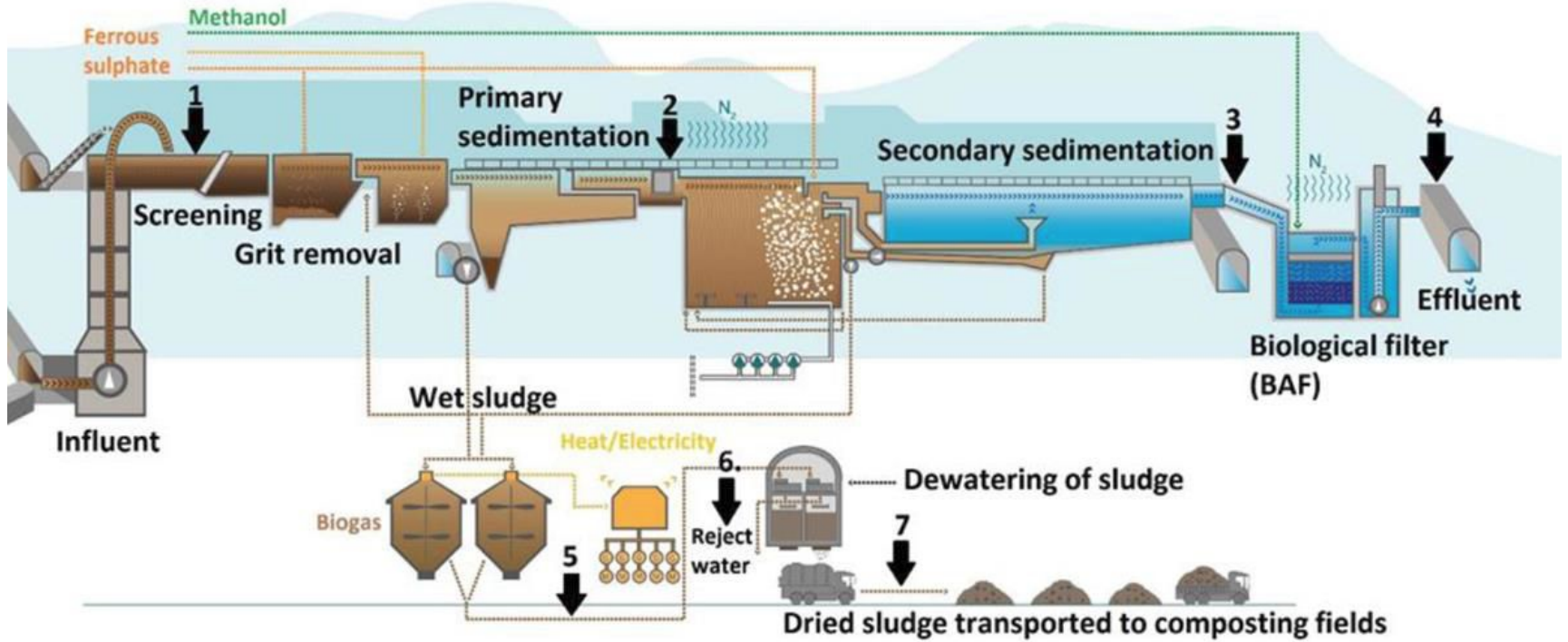


SLUDGE

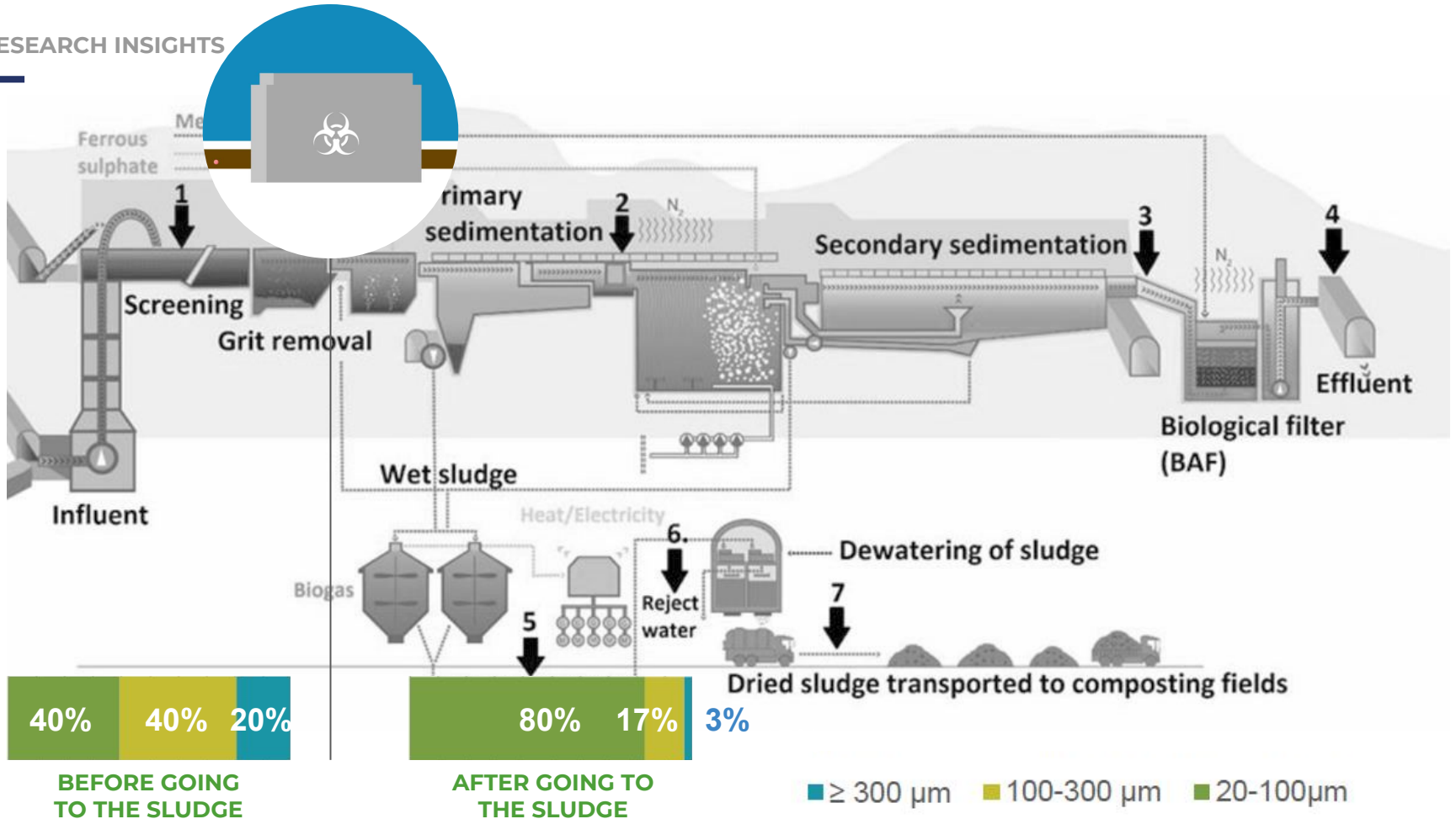
Remove microplastics in the SLUDGE

THE ROLE OF CERN TO INTERVENE WASTEWATER TREATMENT PLANT

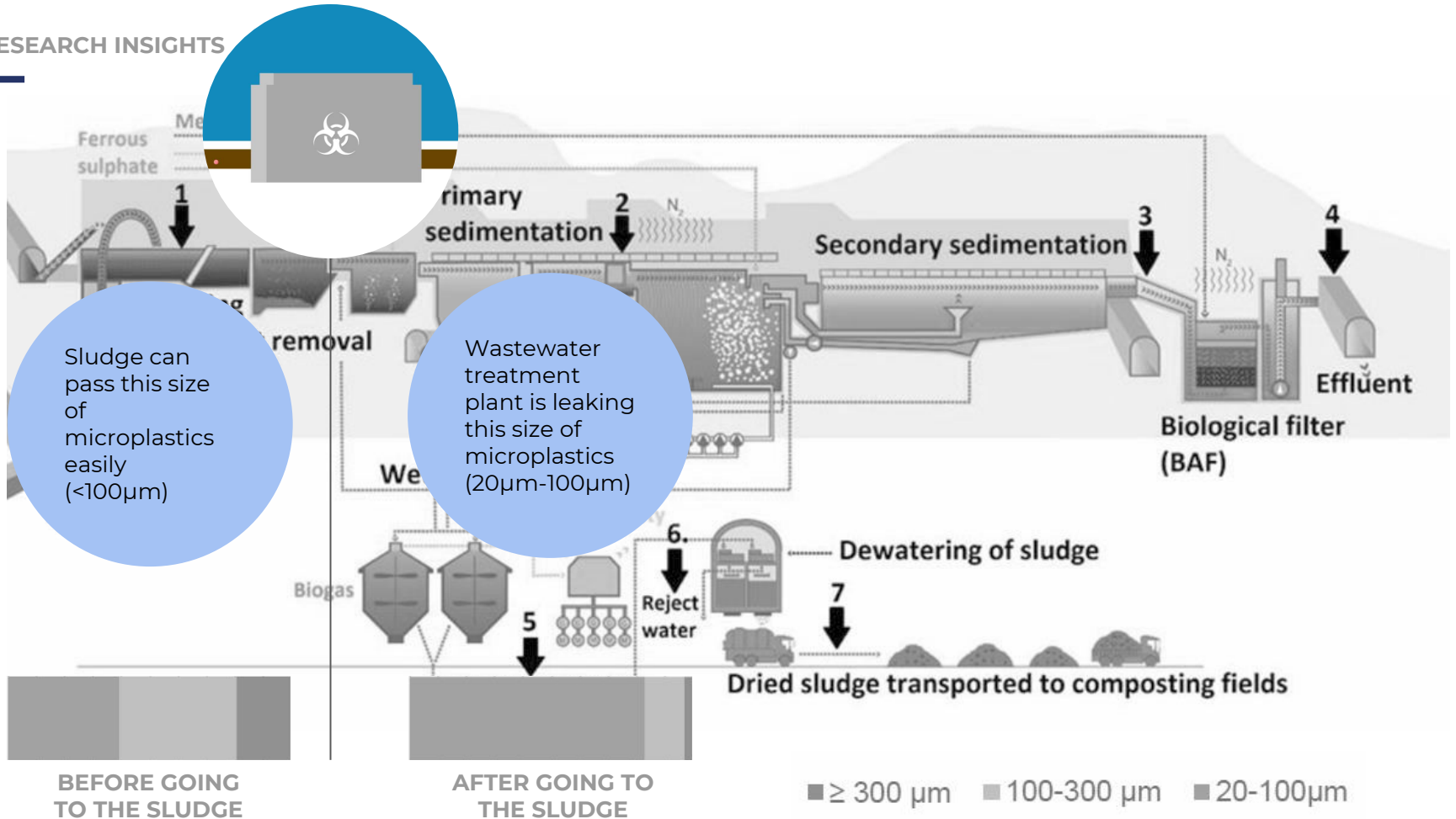
RESEARCH INSIGHTS



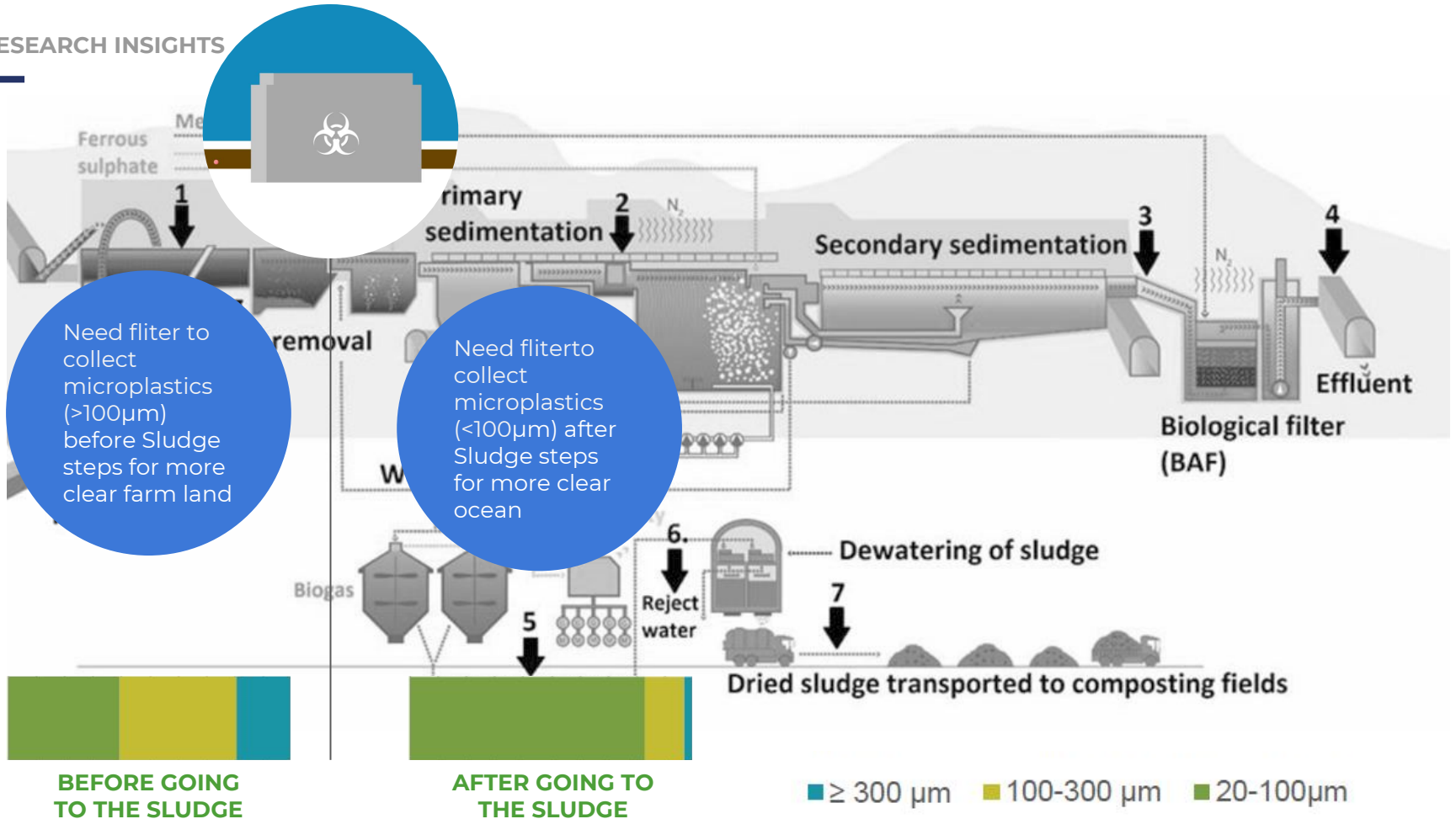
RESEARCH INSIGHTS



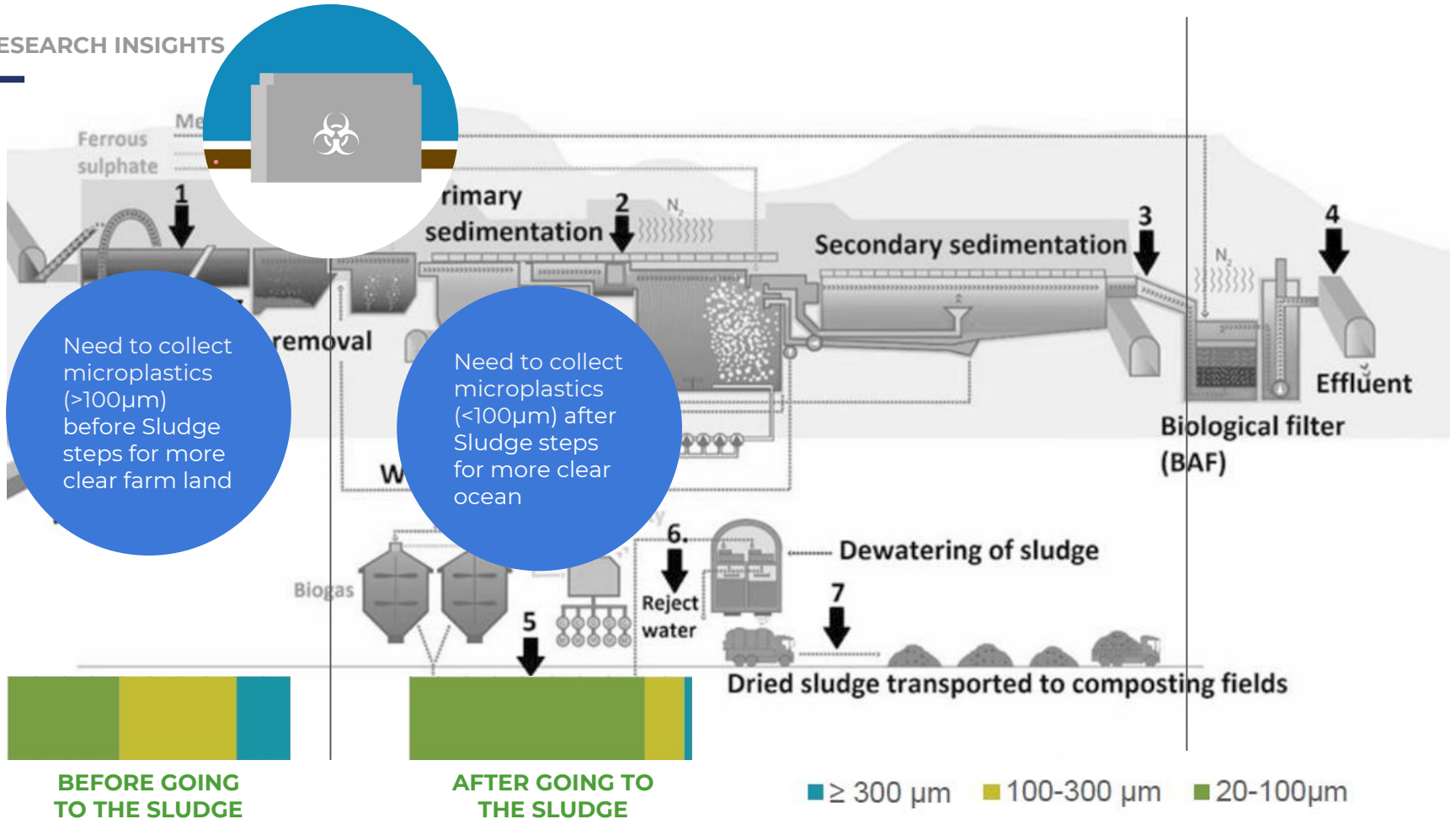
RESEARCH INSIGHTS



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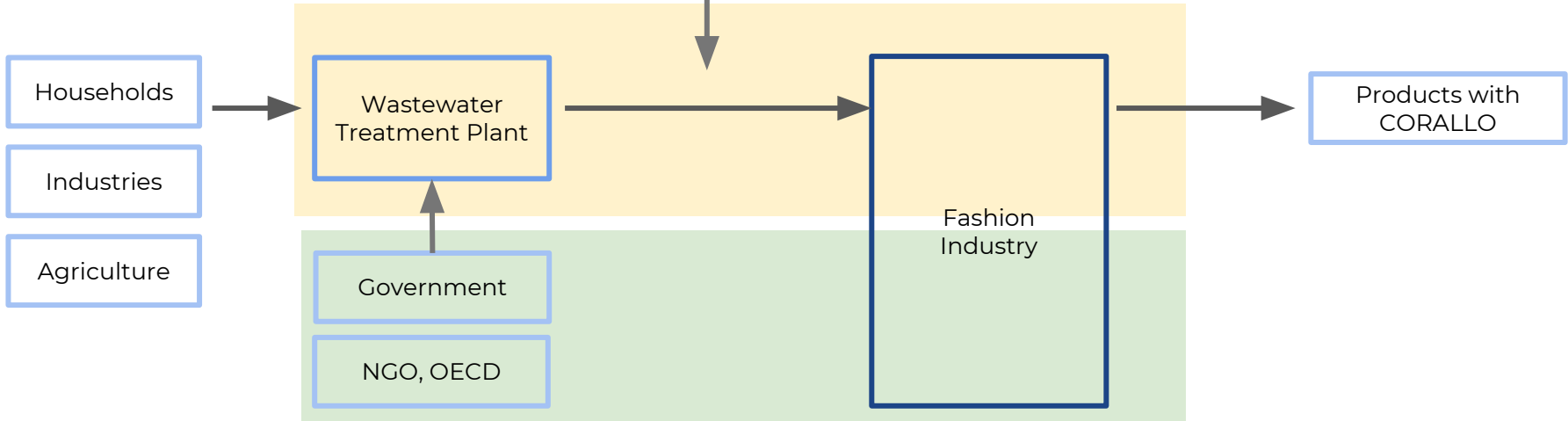
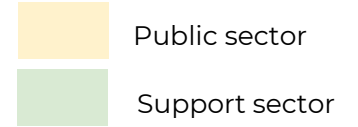
CORALLO

microplastics to macro impact

SYSTEM OF CORALLO



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OUR INTERVENTION ON THE SDGs

ECONOMY

Encouraging an ethical purchase

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



BIOSPHERE

Reducing the leaking of microfiber from washingmachine

6 CLEAN WATER
AND SANITATION



14 LIFE
BELOW WATER



SOCIETY

Getting more clean water and seafood

3 GOOD HEALTH
AND WELL-BEING



Thank you!