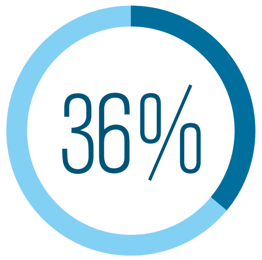
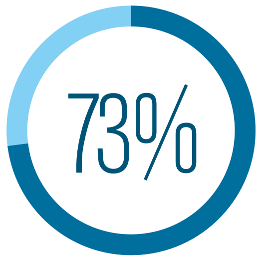
CARING FOR THE ENVIRONMENT



Non-Hazardous Waste Recycling Rate



Rubber Processing Sludge Reused

Water Recycling Rate

Waste, Effluent and Chemical Management

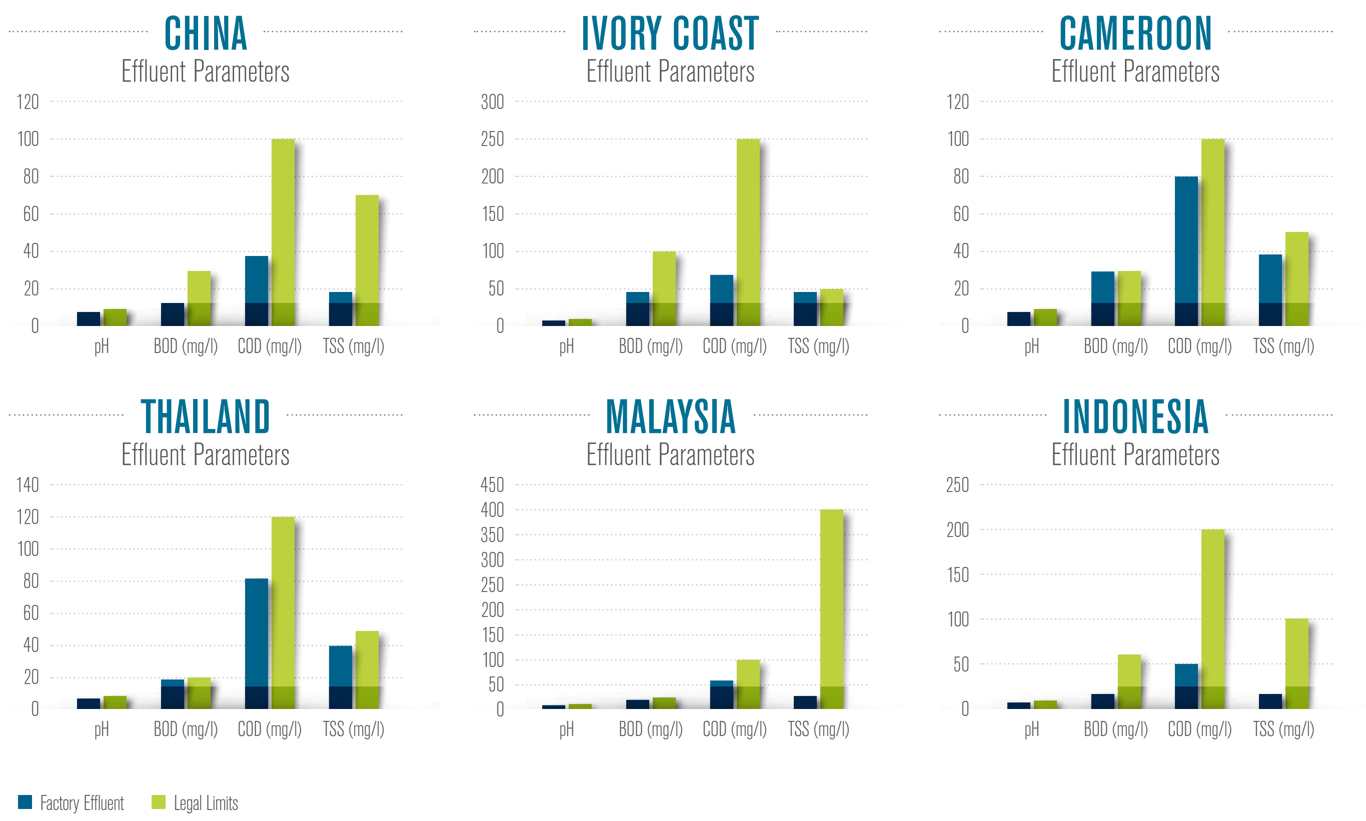
Rubber processing generates large volumes of waste. These include scrap rubber, pallets, rags, packaging material, used chemicals, oil and grease. We are committed to reducing waste in our operations by recycling and reintegrating waste into our production process. Waste chemicals are collected by licensed hazardous waste collectors and scrap rubber is reprocessed in our factories. Plastic is a material component of our packaging needs and we intend to track our plastic use moving forward to actively reduce the amount. In 2018, we achieved a 36% recycling rate of our non-hazardous waste across our factory and plantation operations. We aim to achieve a 5-10% increase in waste recycling rates by the next reporting cycle.

Wastewater is treated in our water treatment facilities in our factories. Aerobic, anaerobic and microbial activated sludge processes are utilised to treat our wastewater to meet regulatory effluent parameters before it is recycled or discharged into water bodies. All our factories are subject to inspections from regulatory authorities periodically to ensure compliance.

The treatment of wastewater generates significant volumes of sludge. Due to the low calorific value of the sludge, we are unable to use it as biofuel, an option we had explored. The sludge is recycled as fertilisers and distribution to our factory workers and local communities for their farming activities. In 2018, we reused about 73% of sludge generated from the wastewater treatment process. Moving forward, we target to reuse 100% of all the sludge generated.

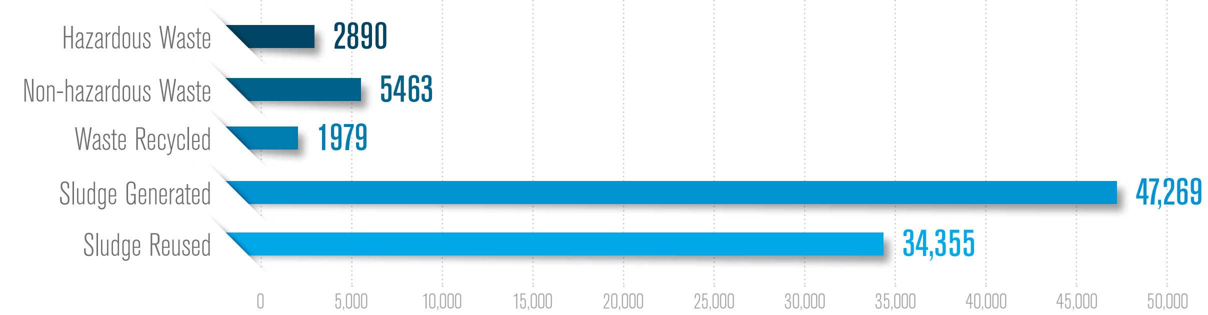
Wastewater contains higher concentrations of biological matter and suspended solids. Our rubber factories are located near rivers and other water sources into which industrial wastewater is discharged. If effluence is not sufficiently treated, this poses a threat to natural ecosystems and to the communities who live around water bodies and use it for their daily needs. The output is monitored daily for the following parameters: Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), pH and Total Suspended Solids (TSS).

Moving forward we target to have improved effluent quality of at least 5% below legal limits for BOD, COD & TSS parameters across all the geographies we operate. We intend to achieve this by reviewing our wastewater treatment system processes to enhance their treatment efficiency. We also plan to reduce contamination of raw material at source by improving our contamination picking procedures that would result in better effluent quality.

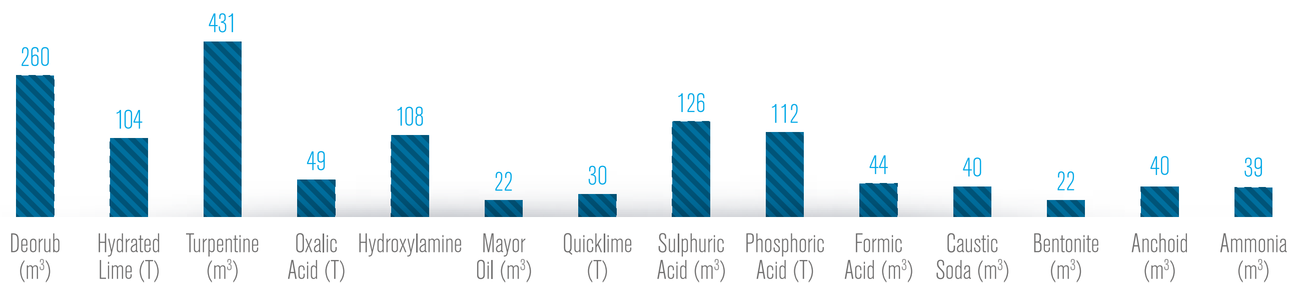


Chemicals are required in rubber processing and latex storage. Chemicals provide the required specifications of our customers for the finished products. Chemicals play a crucial role in altering the natural polymer structure of our raw materials. They affect the properties of the final products such as plasticity, nitrogen, dirt & ash content and plasticity retention index (PRI). Key chemicals used include Deorub, turpentine, oxalic acid, sulphuric acid, phosphoric acid and hydrated lime. In 2018, we monitored the use of key chemicals used as they have a direct correlation to the amount of hazardous waste generated in our operations. We aim to reduce chemical use as much as possible without compromising the quality and durability of our finished products.

2018 Global Factory Waste Generation & Reuse (tonne)



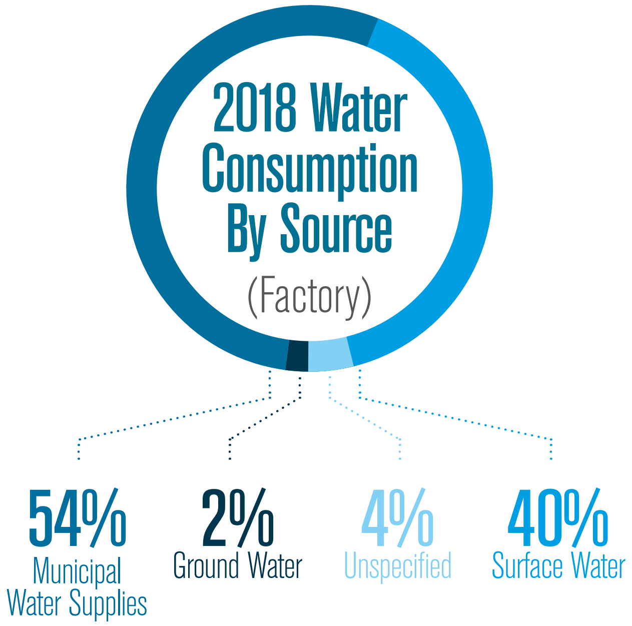
Amount Of Chemical Used In Factory Processing Operations 2018 (m^3)

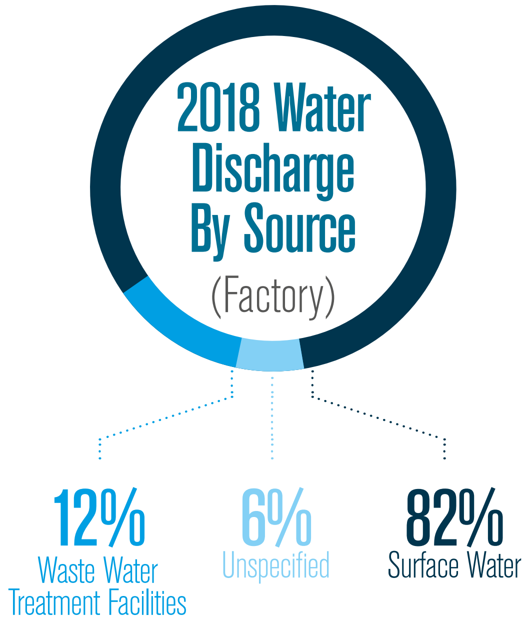


Water Consumption and Management

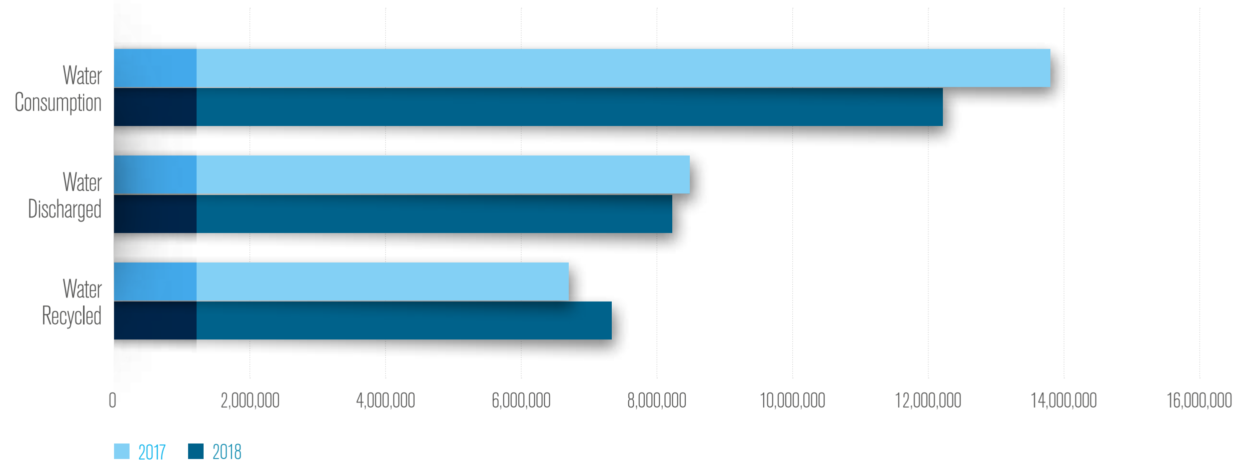
Water is a crucial component of rubber processing. Significant volumes of water are required to clean rubber before it is processed. With climate change intensifying, it is crucial for Halcyon to manage its water risk and resources. Most of our factories are located in areas of high concentration of communities. It is essential that we conduct our business responsibly and are mindful of stakeholders who depend on water bodies and basins for their livelihoods. We actively monitor water consumption in our factory operations during each shift.

To minimise the withdrawal of fresh water from local utilities and water bodies (rivers), we also recycle water back to our factory operations after treatment where possible. The respective EHS officers and factory managers are responsible for managing the effluent discharge from our factories. Our factories are subject to regular inspections by local regulatory authorities. Through our HEVEA*PRO* standards, better sensitisation of factory workers on sustainable water management and efficient wastewater treatment facilities, we had improved our water recycling rate from 49.5% in 2017 to 59.5% in 2018. We target to increase by another 5% in our water recycling rate for the year 2019.





2017 vs 2018 Water Management (m^3)



With climate change exacerbating, it is essential that we manage our exposure to water risk in our operations. In 2018, we started mapping and identifying our site-specific water risk for all our factory operations. We commenced this exercise using the World Resources Institute (WRI) Aqueduct Water Risk Atlas tool. The overall water risk of each site was determined by considering the physical risk quantity & quality and the regulatory & reputational risk. Factories close to water basins such as the Mekong (China), Batang Hari (Indonesia) and Sungai Kapuas (Indonesia) were identified through the exercise.

Most of our factory operations are situated in areas of low-medium water risk. Our factories in China being located close to the Mekong water basin pose medium-high water risk. Some of our Indonesian factories in Medan and South Kalimantan pose medium-high water risk together with our Thailand factory in Narathiwat. Moving forward in 2019, we will extend our water risk mapping exercise to cover our plantation operations too. We will also focus on derisking factories with medium-high water risk by working with NGO partners. We intend to identify and engage key stakeholders that surround water bodies and basins where we source water for factory use. We will also benchmark water use with other relevant industries, map out available water resources and develop mitigation plans for episodes of water shortage due to droughts.

Rubber Processing Water Risk Map

Factory	Country	Overall Water Risk	Physical Risk Quality	Physical Risk Quantity	Regulatory & Reputational Risk
HeveCam	Cameroon	Low to medium risk (1-2)	Low risk (0-1)	Low risk (0-1)	High risk (3-4)
ITCA/TRCI	Ivory Coast	Low to medium risk (1-2)	Low risk (0-1)	Low risk (0-1)	High risk (3-4)
AX/CX	China	Medium to high risk (2-3)	Medium to high risk (2-3)	Medium to high risk (2-3)	Medium to high risk (2-3)
BX/MT/MM/ML/MR	China	Medium to high risk (2-3)	Low to medium risk (1-2)	Low to medium risk (1-2)	Medium to high risk (2-3)
SGB/SCL/SDR/ SEA/SCX/SGO/ SDQ/SCY/KBP	Indonesia	Low to medium risk (1-2)	Low risk (0-1)	Low risk (0-1)	High risk (3-4)
SCM/SAR/KAZ/KBM/ KBD/KBE/KAB	Indonesia	Low to medium risk (1-2)	Low to medium risk (1-2)	Low risk (0-1)	High risk (3-4)
SDH	Indonesia	Medium to high risk (2-3)	Medium to high risk (2-3)	Low to medium risk (1-2)	High risk (3-4)
KBQ	Indonesia	Medium to high risk (2-3)	Low risk (0-1)	Low to medium risk (1-2)	High risk (3-4)
JJ/HL	Malaysia	Low to medium risk (1-2)	Low risk (0-1)	Low to medium risk (1-2)	Low risk (0-1)
H6	Thailand	Medium to high risk (2-3)	Low to medium risk (1-2)	Medium to high risk (2-3)	Low to medium risk (1-2)
H7/H1/H2/H8	Thailand	Low to medium risk (1-2)	Low risk (0-1)	Low to medium risk (1-2)	Low to medium risk (1-2)

Energy Consumption and Management

Natural rubber processing is highly energy intensive. For our long-term business continuity, we need to secure reliable energy sources. Consequently, we are concerned about our energy emissions as well as the potential climate change risks to our operations and our communities. Our factory operations currently use energy from the grid. As for our dryers, energy comes from a variety of sources such as coal, diesel and natural gas. We are taking active steps to manage our energy use better and minimise greenhouse gas emissions.

Total Energy Consumption
(2017 vs 2018)

	Electricity (MWh)	Biomass (T)	Gas (MMBTU)	Diesel (m3)	Coal (T)
2017	173,395	4,911	575,613	6,026	1,380
2018	158,990	13,480	534,201	6,357	901

For example, we adopted statistical process control (SPC) to closely monitor the temperatures inside our dryers to ensure optimal heat use. We conduct dryer energy use benchmarking across all factories as one of our four key processing metrics for each work shift. The other key processing metrics are factory electricity use and manning efficiency. Some of the factories use crushed palm kernels as an energy source for the dryers.

In 2018, we initiated a group-wide carbon emission reporting exercise for all factory operations in line with Greenhouse Gas Protocol and Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report. We monitored our Scope 1 & 2 emissions for our latex and natural rubber production operations only. Scope 1 emissions (direct emissions) accounted for 26% of total emissions while Scope 2 (purchased electricity) accounted for 74% of total emissions. Our Scope 1 and 2 emissions intensity were 0.06 tCO2e and 0.17 tCO2e per tonne of natural rubber respectively.

Natural gas (61%) and diesel (34%) were the two main types of fuels that contributed to most of our Scope 1 emissions. Within the next 2-3 years, we hope to phase out the use of coal (4%) in our production processes. We also intend to increase the use of palm kernel in our fuel mix to at least 5% within the next 2-3 years to decarbonise our energy portfolio. We are also actively exploring options to utilise renewable energy (solar) in our operations. 2018 is our base year for any direct initiatives undertaken to reduce our Scope 1 and 2 emissions in the future.

CASE STUDY

LifeStraw Community Water Filters in HeveCam

In 2018, we collaborated with Vestergaard to install 10 LifeStraw Community water filters for the communities in our HeveCam plantation. With a high microfiltration capacity that removes odour, turbidity, bacteria, viruses and protozoa, the filters were placed in selected hospitals, schools and villages. Members of the community were sensitised on the use of the water filters. We monitored the incidences of vector-borne water diseases such as dengue and malaria as well as incidences of diarrhoea.

We have found that the incidents of diarrhoea had reduced by 44% with the installation of the filters. To tackle the onset of dengue and malaria which increased by 8%. In 2018, we increased the frequency of our education programmes on better Water Sanitation & Hygiene (WASH) practices. We also scaled up immunisation, distributed more mosquito nets and eradicated sources of high mosquito breeding potential. Our goal is to reduce the incidences of dengue and malaria in HeveCam by 30% within the next two years.

HeveCam Disease Incident Rates 2018