

Asia Pacific

Production, Transport & Recycling Activity

| Activity | Observations |
|----------------------------|---|
| Plastic Production | <ul style="list-style-type: none"> • Across the region primary plastic export trade worth over 56 billion USD in 2021 • 52% of world plastic production in 2021 was from Asia Pacific region • Asia Pacific accounted for 31% of world trade exports of plastics in primary forms in 2021 • South Korea and Singapore are the world's third and fifth largest exports of plastics in primary forms, respectively |
| Plastic Manufacturing | <ul style="list-style-type: none"> • Asia Pacific accounted for 37% of world trade imports of plastic in primary forms in 2021 • The region dealt with 23% of world trade in plastic manufacturing waste in 2021 • China is the world's largest importer of plastics in primary forms in 2021 and responsible for 32% of world plastic manufacturing |
| Maritime Freight Transport | <ul style="list-style-type: none"> • Asia Pacific region has 40 large ports as defined by World Ports Index • 31 of world's top 50 container ports by cargo volume • East Asia Pacific has over 475 million 20 foot equivalent (TEU) of shipping container traffic in 2021 • China had over 262 million TEU of shipping container traffic in 2019 • Given the high density of islands within the Asia Pacific region, marine transport is the dominant method of freight transport |
| Rail Freight Transport | <ul style="list-style-type: none"> • India recorded around 2.7 trillion ton-km of freight was moved via road transport in 2019. Road freight is the dominant method of freight logistics in India • Asia Pacific road freight transport market is expected to exhibit a compound annual growth rate of 5.8% showing its increased use in the region |
| Road Freight Transport | <ul style="list-style-type: none"> • African cross-border freight transport market is expected to exhibit a compound annual growth rate of 4.5% showing its increased use in the region |
| Plastic Recycling | <ul style="list-style-type: none"> • More than 660 plastic recycling plants (25% of global share based on industry database) |

Environmental Incidents

It is estimated between 15,308 – 151,764 tonnes of plastic pellets are lost annually in the Asia Pacific Region. In addition to widespread pellet pollution identified via citizen science this report has identified four acute and two chronic pellet loss incidents in the region. All acute losses are thought to be related to releases from shipping containers with an estimated 1,980+ tonnes of plastic pellets entering the environment.

The X-Press Pearl incident off the coast of Sri Lanka in May 2021 is estimated to have resulted in 1,680 tonnes of plastic pellets being released following a fire onboard the ship. Pellets were quickly identified in large quantities on Sri Lankan beaches. The presence of a fire onboard the ship led to a quantity of pellets being melted, releasing toxic chemicals into the environment. Coastal fishing in the area of the incident was stopped and dead marine life including sea turtles were reported to have been washed up on shorelines.

An estimated 150 tonnes of plastic pellets were released into the environment in July 2012 off the coast of Hong Kong due to poor weather conditions leading to the loss of shipping containers overboard. Knee deep layers of pellets were identified on shorelines of the surrounding islands. Concerns were raised about the safety of seafood caught in the area and the impacts this may have on human health. It is estimated that 105 tonnes of pellets were recovered.

A container ship, the MV Rena, ran aground in poor weather off the North coast of New Zealand in 2011 resulting the loss of an estimated 150 tonnes of plastic pellets to the environment which were washed up on the shoreline. Plastic pellets began to emerge again on affected coastline in 2021 and it is suspected these have been remobilised from the original incident a decade earlier¹.

A chronic loss was identified in Christchurch, New Zealand associated with the plastic industry and also chronic pollution from Chinese recycling plants where microplastics were released in wastewater into the environment or drainage networks.

Given the scale of the plastics industry in this region the incidents identified above are a gross underestimation of the scale of plastic pellet loss to the environment.

Environmental Sensitivity

The Asia Pacific region has several key environmentally sensitive areas, including the Coral Triangle across parts of Indonesia, Malaysia Philippines and Solomon Islands. It is estimated that 120 million people live in the Triangle and rely on the reef for food, income and protection from storms². The region also contains the Great Barrier Reef which covers an area of over 340,000 km² and is designated as a World Heritage Site.

The region also contains over 68,000 km² of mangroves³ and plastic pellets entering this type of environment would prove challenging to clean up and likely result in further damage to the mangroves.

Socio-Economic Sensitivity

For many of the island nations across the Asia Pacific Region tourism is a significant share of their GDP. For example, the Maldives and Sri Lanka have GDPs of 25.2% and 10.3% respectively. These two nations both have <0.1% of global import and export value of primary plastics. However, their tourism income could be heavily impacted as a result of a major loss of nurdles on their shoreline from maritime freight transport.

As shown by the acute losses in Sri Lanka and Hong Kong, releases of pellets to the environment can have an impact on fishing, both for subsistence and commercially. Plastic pellets, and the associated toxic chemicals, are ingested by marine life, including fish and marine mammals, and can potentially enter the human food chain. Spills also dent consumer confidence in aquaculture products if there is the perception that they may be contaminated. OECD data shows the region contains the world's top four aquaculture producer by tonnage, these are China, Indonesia, India and Vietnam⁴. This highlights their reliance on the sea and the importance of it being free from plastic pellet pollution.

¹ Stewart, E. (2021). Rena shipwreck debris suspected to be behind plastic bead mystery at Tairua Beach. RNZ. Published on 16/06/21. Available at: <https://www.rnz.co.nz/news/national/444815/rena-shipwreck-debris-suspected-to-be-behind-plastic-bead-mystery-at-tairua-beach> [Accessed on 28/07/23]

² WWF. Coral Triangle. Available at: <https://www.worldwildlife.org/places/coral-triangle> [Accessed on 28/07/23]

³ Sharma, S., Ray, R., Martius, C., & Murdiyarso, D. (2023). Carbon stocks and fluxes in Asia Pacific mangroves: current knowledge and gaps. *Environmental Research Letters*, 18(4), 044002. <https://doi.org/10.1088/1748-9326/acbf6c>

⁴ OECD. (2023). Aquaculture production (indicator). doi: 10.1787/d00923d8-en [Accessed on 28/07/23]