

	External costs	External benefits
Production	Plastic bottles getting dumped out at sea, burning coal adds to global warming and increased production of chairs leads to more deforestation and habitat destruction.	A paper and glass recycling plant reduces the waste that goes to landfill, using wind turbines reduces the emissions from fossil fuels and construction of a new university attracts more students.
Consumption	Excess alcohol intake can lead to more crime and violence, if Heathrow airport expands then there will be more traffic on the roads surrounding it and smoking tobacco near children can harm their development.	Education and training programmes increase output/productivity, improving the appearance of your garden increases the value of neighbouring properties and the consumption of vaccines leads to herd immunity.

Public goods

- **Pure public goods** = goods that have non-rivalry and non-excludability in their consumption.
- This means that...
 - You cannot stop others from benefiting from them (non-excludability).
 - As more people consume a good, it does not reduce the amount available for others (non-rivalry).
- Street lights, defence and refuse collection are all examples of pure public goods.
- There are also **quasi public goods** which have some of the traits of pure public goods, but not all - e.g. they might have non-excludability but have rivalry, like police protection or healthcare.
- Education and healthcare are not public goods - they are better described as **merit goods** (which have external benefits to society).

The free-rider problem

- In a free-market economy, public goods are underprovided because once a public good has been provided for 1 individual, you cannot exclude others from reaping the benefits of it.
- This leads to market failure because it is impossible to withhold the good from consumers who refuse to pay for it.