



WORLD BANK GROUP

ENVIRONMENTAL (AND SOCIAL) IMPACTS OF SOLID WASTE MANAGEMENT

*POOR WASTE MANAGEMENT -
COST IS MUCH HIGHER THAN THE 'SAVINGS'*

*TDLC Technical Deep Dive
Solid Waste Management
Tokyo Japan*

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ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- UNCOLLECTED WASTE

Common collection rates in middle-income countries are 75-90% in urban areas, substantially lower in rural areas and lower income countries.

Uncollected waste is dumped on land or in waterways; burned or buried; causing → air pollution, diseases (rodents etc.), ground/water pollution → health impacts, environmental degradation → impacts on economic development (public health, land unavailable for development, impacts on tourism sector, cleanup costs for the future, plastics won't degrade)

ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- UNCOLLECTED WASTE

Economic costs of uncollected waste up to 2% of GDP/a

Costs for Southeast Asia (McKinsey) estimated at \$375/ton for uncollected waste, compared to \$50-100/ton costs for integrated waste management at international good practice service levels

Air pollution (and its impact on public health) is the biggest negative in terms of social and economic costs

The poor are most affected by negative impacts of poor waste management

ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- COLLECTION IS NOT ENOUGH

Informal (but also formal) recycling structures ---but also alternative technologies--- cannot push collection/waste reduction beyond 15% without excessive costs

Thus, sanitary landfilling (site management and full set of environmental control measures) is the standard, however, in low and middle income countries waste dumping is most common

Air pollution (and its impact on public health) also biggest negative impacts (total poor waste management approx. 1% GPD)

ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- AIR POLLUTION

Smoke from open burning (incl. disposal site fires) most negative impacts

Incinerators can be clean, but costs flue gas cleaning comparable to furnace section

Waste disposal sites generate methane, a potent greenhouse gas

Air pollution abatement very complex

ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- PLASTICS

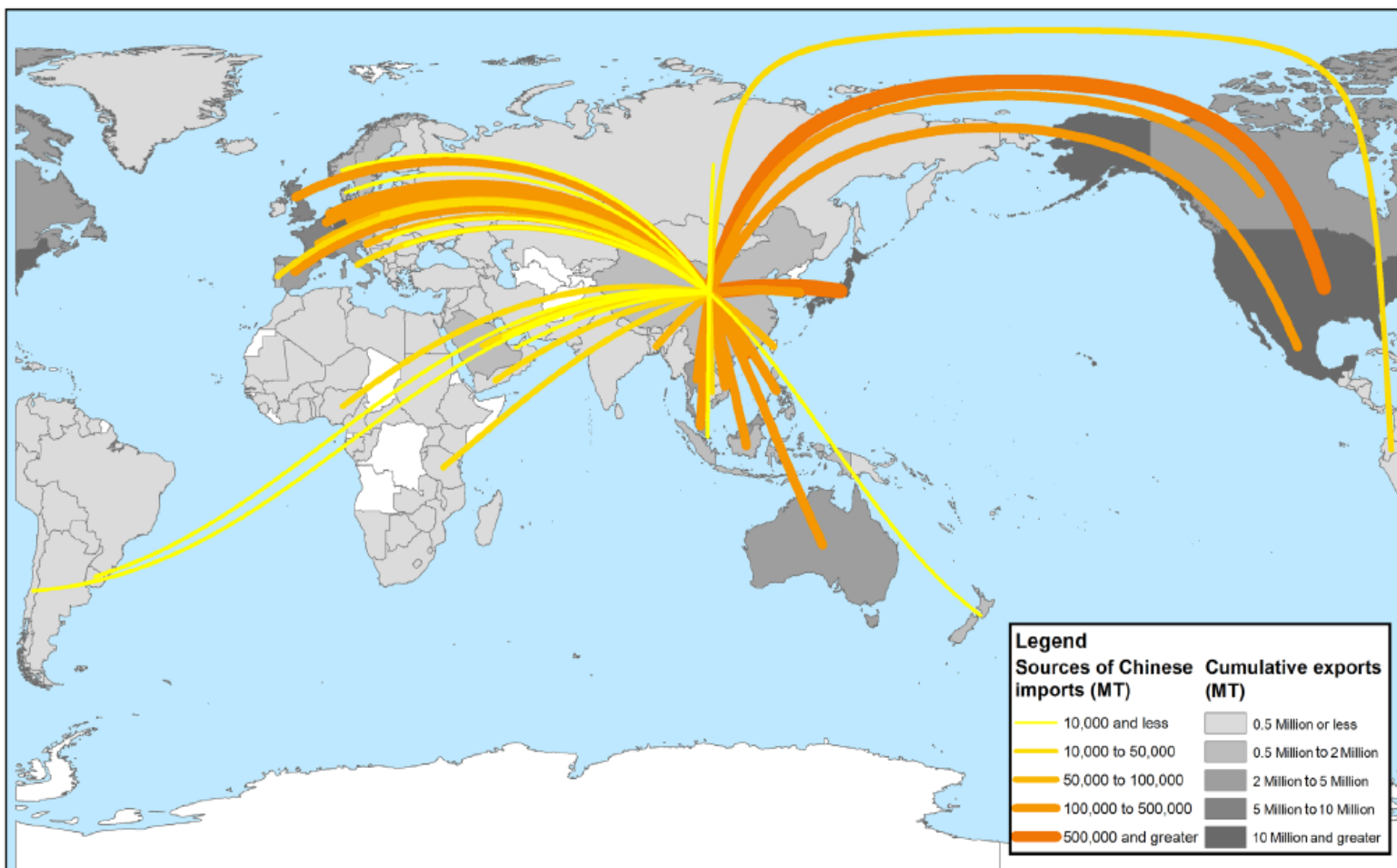


Fig. 2. Sources of plastic waste imports into China in 2016 and cumulative plastic waste export tonnage (in million MT) in 1988–2016. Countries with no reported exported plastic waste values are white. Cumulative exports represent by country exports of PE, PS, PVC, and other plastic [UN Comtrade data; (9–12)]. Quantities for sources of Chinese imports include PE, PS, PVC, PP, and PET (13).

ENVIRONMENTAL AND SOCIAL IMPACTS OF POOR WASTE MANAGEMENT --- PLASTICS

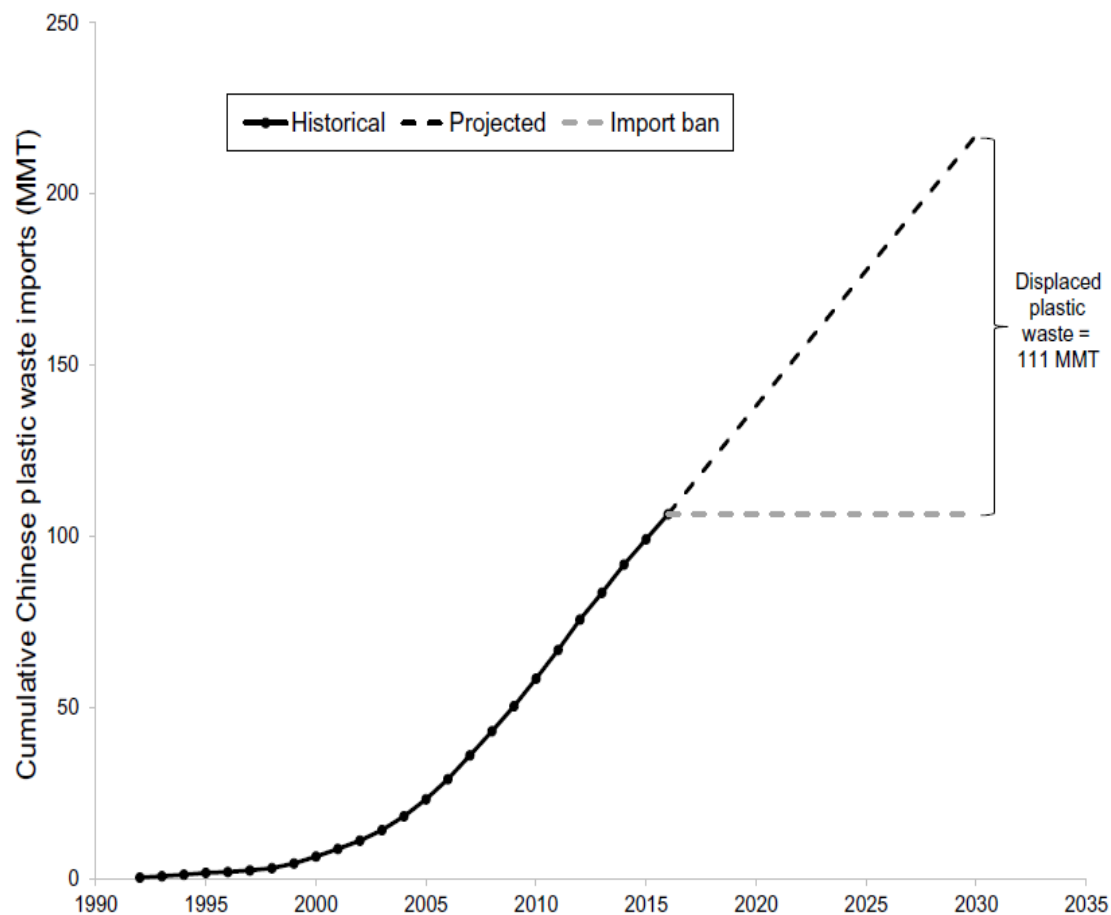


Fig. 3. Estimated mass of global displaced plastic waste due to the new Chinese import ban based on cumulative imports of PE, PS, PVC, and other plastics into China [UN Comtrade data; (9–12)]. The BAU (business as usual) projection of Chinese imports was created by using a linear regression of the last 10 years of imports. The Chinese ban on importation of plastic waste is based on a 100% implementation of the regulation (see the Supplementary Materials for details).