#### GOVERNING SUSTAINABLE INFORMAL E-WASTE MANAGEMENT: THE INDIAN REALITY

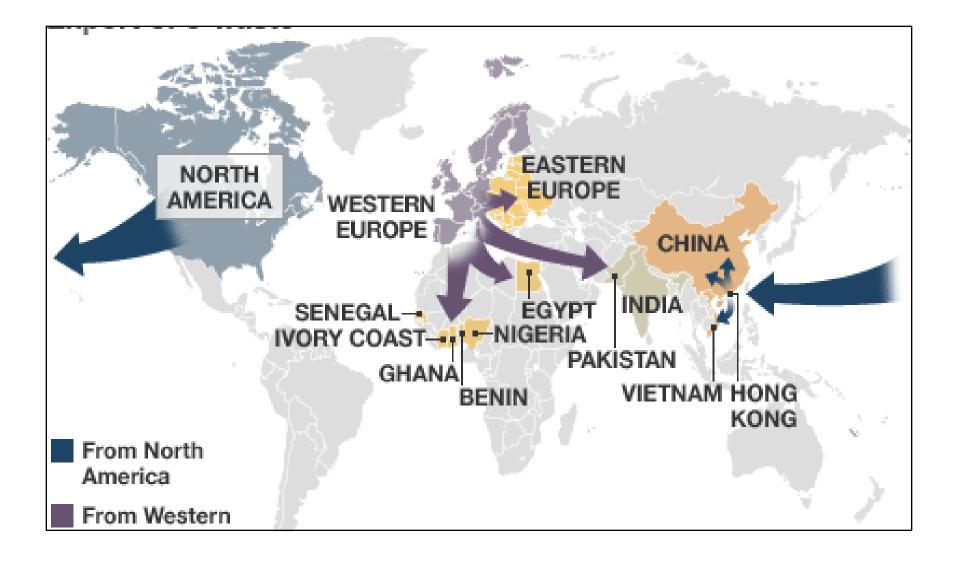
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#### E-waste Movement & Management

- Massive scale of e-waste generation
- E-waste has toxic (Pb, Hg, Cd, As) & valuable materials (Au, Ag, Cu, Fe, Al & Steel)
- E-scrap is shipped illegally from the OECD economies to mainly Asia & Africa
- Informal sector is major centre of waste disposal & recycling operations

Secondary Research & Qualitative Fieldwork in Netherlands, Belgium and India in 2011-12

### International Export of E-waste



# E-waste in India

- Indian Informality processes 90% of e-waste.
- Collection overseas imports, auctions & tenders (commercial) & door-to-door collection (household).
- Dominated by Informal traders sorts, repairs, dismantles & recycles
- Used electronics and extracted metals sold in second hand market
- PCBs exported to Umicore by both formal & informal recyclers
- Nexus between Formality and Informality

# Sorting & dismantling

# Recycling-Mandoli

# Recycling-Moradabad





#### **Global Production Network of E-waste**

- Map the spatial linkages in and governance of ewaste movement & management
- Origin of physical material can be traced to the formal sector of electronic production
- E-waste travels globally from formal in advanced to informal processing in developing countries
- Recovered resources & secondary products from e-waste return to formal production & consumption
- Single system of material transfer, economic transactions & financial arrangements

# Revisiting E-waste in India

- Not isolated but integrated in a global network
- Recycling Industry is not just a waste disposal and management system.
- E-waste is not WASTE
- Existence of second-hand market
- Historical tradition of Repair and Reuse
- Role of Informality & Linkages with Formality

# Governing E-waste in India

- Fifth largest generator: 1,850,000 tonnes annually
- E-Waste Management and Handling Rules, 2012
- Superseded by E-Waste Management Rules, 2016
- Law upholds Extended Producer Responsibility: collection of 30% of e-waste
- Business users can sell to state approved e-waste processors
- Policy design targets formalization of informal waste treatment

### Mismatch in E-waste Governance

- State views E-waste as an environmental concern & places the onus on producers
- Re-processors perceive e-waste as a valuable resource
- Indian Law turns INFORMAL into ILLEGAL
- Informality goes underground but does not disappear
- State failure to understand the dynamics of waste management