

Problem

Everyday, **400,000 PHONES** and **140,000 COMPUTERS** are thrown away. Up to **80%** of that waste is exported to developing countries such as India.

CAUSES

Economy

Regulations

Technology



Workers dismantling E-Waste

Toxins released by chemical stripping

Lead (Pb) and Mercury (Hg)

IMPACTS

ENVIRONMENT

Toxins emitted into **AIR** by burning of e-waste

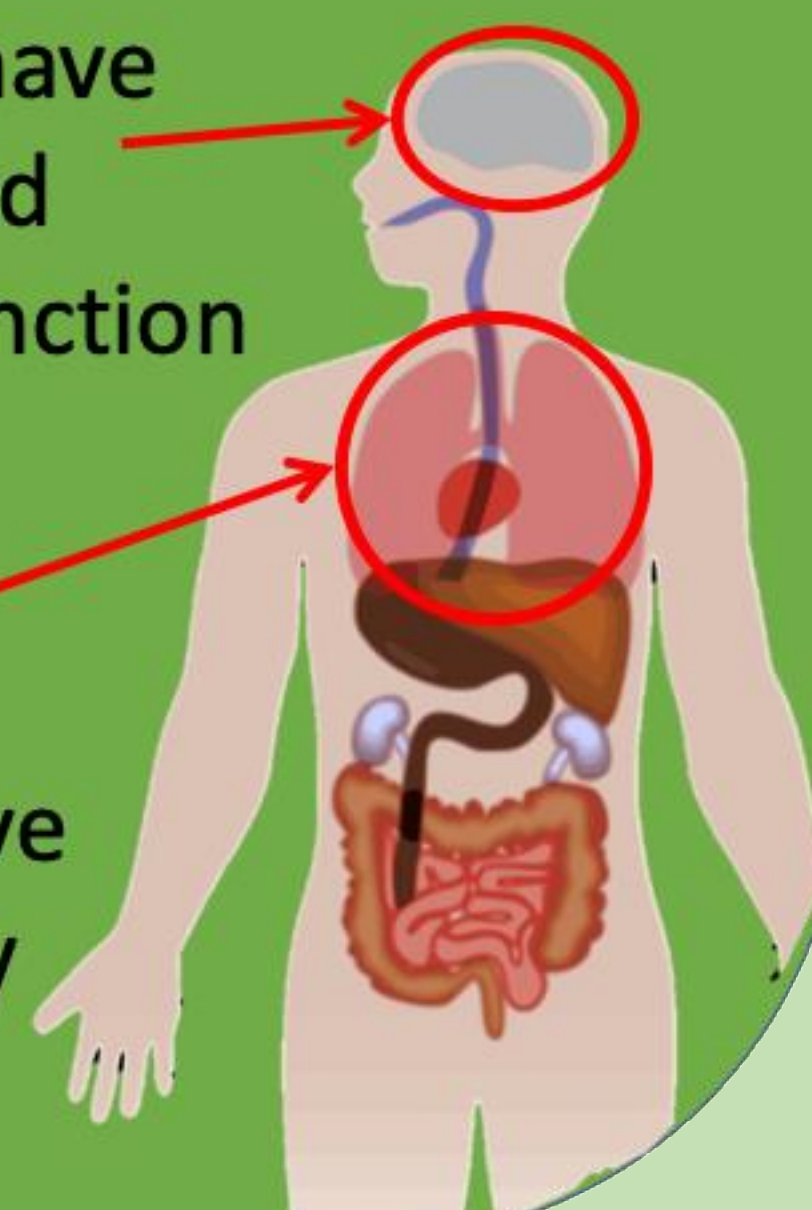
Chemicals discharged into **RIVERS** and **BANKS**

Toxins leached into the **SOIL**

HEALTH

Children have impaired cognitive function

80% of workers have respiratory diseases



Solution:

Phytoremediation

\$5

cost to buy 100 seeds

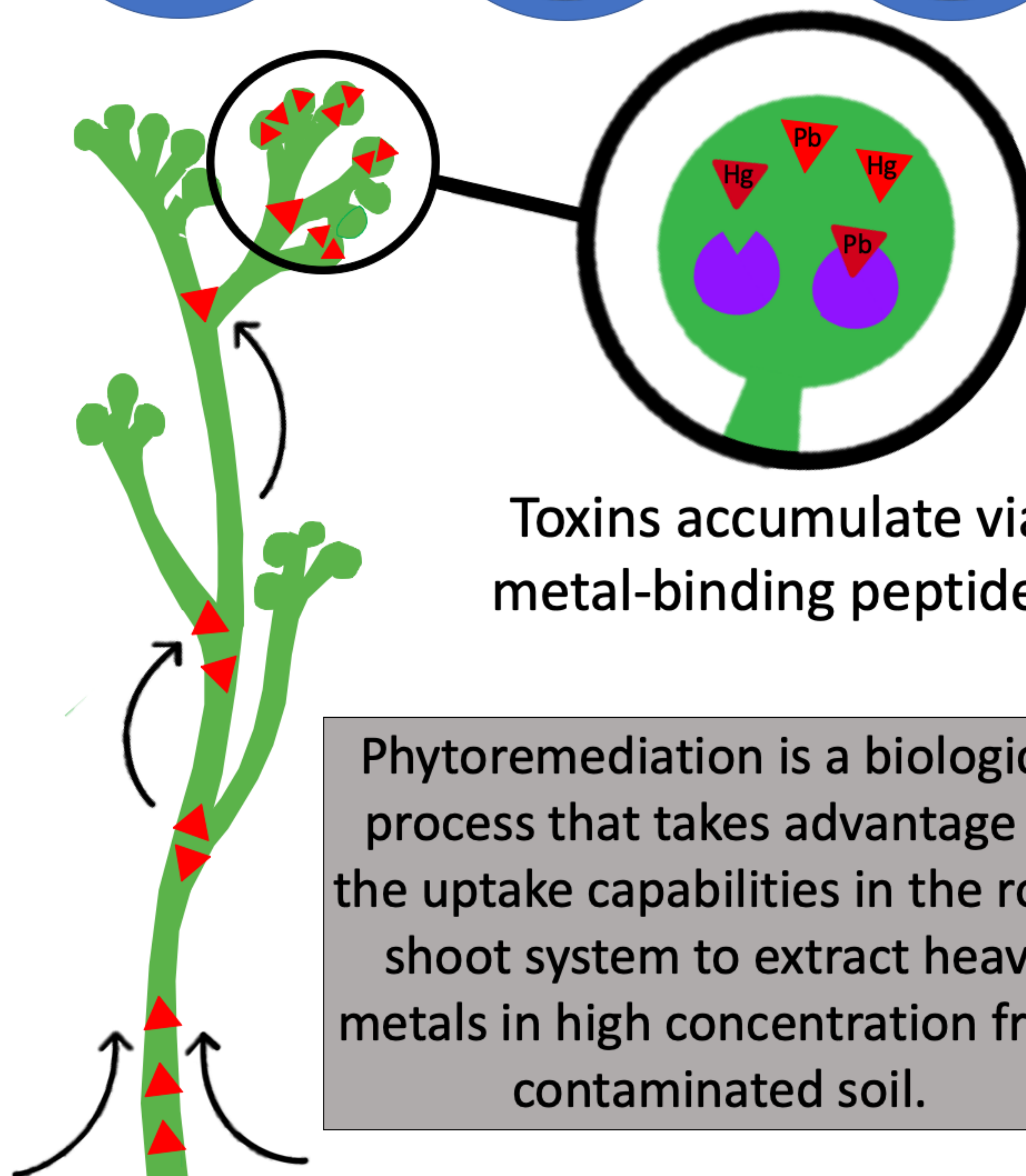
3

months

To fully harvest

61%

metal accumulated from soil



Plant Species: *Brassica juncea* (Indian Mustard)

☘ : Metal-binding peptides
▲ : Heavy Metal particles (Pb, Hg)

Implementation and Assessment

1

Contact UMass Amherst to help genetically modify the plant



2

Communicate with Toxics Link Organization (E-Waste NGO) to organize logistics



3

Toxics Link will help educate the public and retrain workers



4

Workers will plant the seeds and harvest the mature crops



5

Assess solutions through surveying the public and conducting soil tests



Key References

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