

Materials+Industry:

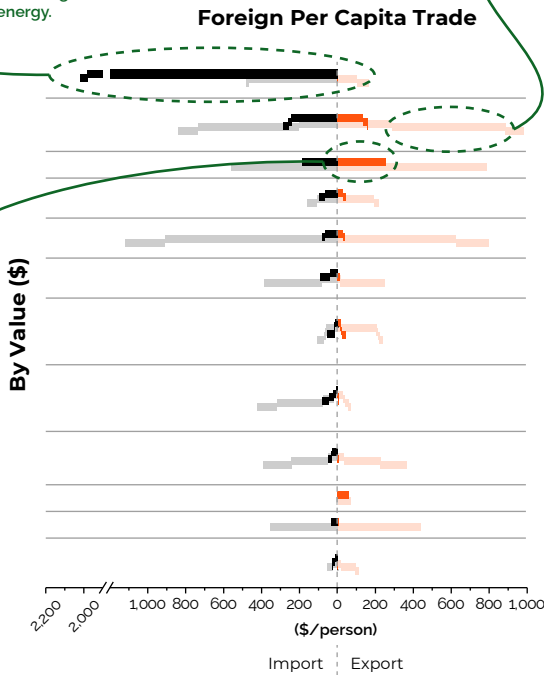
An Inventory of Stuff in Hawaii

To chart a path towards self-sufficiency for tomorrow, we must understand the movement of stuff today. **What do our islands currently import? What do we export? What are we setup to manufacture in surplus?** By taking such an inventory, we can perform a meta-analysis to understand where new industries might arise or be repurposed to meet our community's essential needs: food, energy, materials, and medicine. Pioneering a sustainable manufacturing economy to meet such needs, traditionally met by surplus agricultural products and a strong fine chemical synthesis industry in the mainland US, will look different in our island communities due to the stuff we current consume, make, and share with the world.

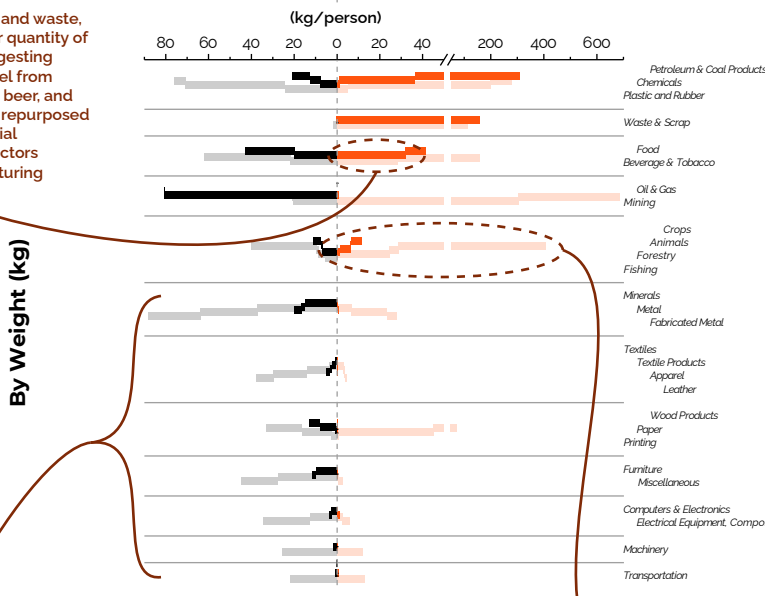
Unlike the mainland US, there isn't a significant use and manufacturing of high value commodity and fine chemicals. The infrastructure, equipment and human capital in chemical manufacturing is often easily remobilized for sustainable biomufacturing industries.

Hawaii imports massive amounts of oil and gas, largely for energy.

The most valuable export is aeronautical equipment, stemming from the dominant defense engineering industry presence.



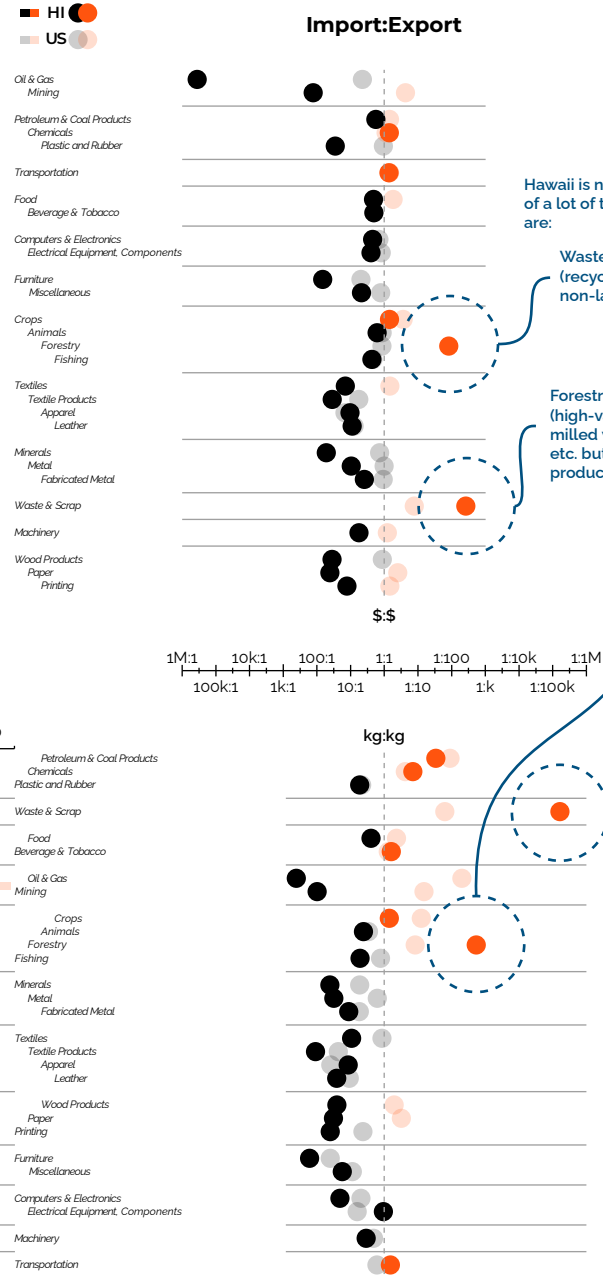
Beyond petrochemicals and waste, Hawaii does export a fair quantity of beverage products, suggesting equipment and personnel from the production of juices, beer, and dairy products could be repurposed for not dissimilar industrial fermentation and bioreactors essential to biomufacturing processes.



There isn't a lot of trade in either direction, characteristic of an economy dominated by service industries, rather than manufacturing. Rather than redirecting a flourishing manufacturing infrastructure, Hawaii may have to build a new biomufacturing economy from the ground up.

The scale of Hawaii, and limitation of existing infrastructure seems to call for a distributed, decentralized, low-capital approach to manufacturing.

Import:Export



Hawaii is not a net exporter of a lot of things. Top net exports are:

Waste & Scrap (recyclables, non-incinerables, non-landfillable)

Forestry products (high-value hardwoods, milled wood, wood chips, etc. but also tree nursery products for reforestation)

With a limited surplus, Hawaii will have to determine how to utilize its waste and forestry products to as materials and feedstocks for sustainable biomufacturing.

Contrasting with the mainland US, the lack of agricultural products makes the traditional model of sustainable biomufacturing difficult. Low value agricultural residues, waste streams generated in the processing of food and organic materials form the basis of feedstocks for the production of a wide range of bioproducts.

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Notes and References:

All data was calculated based on the US Census Bureau dataset "US Exports of Goods by State, Based on Origin of Movement, by NAICS-Based Product" and "US Imports of Goods by State of Destination, by NAICS-Based Product".
<https://www.census.gov/foreign-trade/statistics/state/index.html>

Data represents 10-year averages (2010-2019), normalized per capita based on US Census population estimates.