How can the U.S learn from the German and Japanese experiences in waste management?

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After the defeat of Germany and Japan in World War II, many of their industrial plants and infrastructure were demolished. This gave the two nations a serious devotion to rebuilding their capacities. The outstanding transformation of Germany and Japan into modernism is considered by many to be the ideal standard of nations' prosperity. Nowadays, both

countries are among the five biggest economies in the world, and they are leading countries in applying sustainable solutions, especially when it comes to waste management.

In Germany, the GreenDot system has been in practice since 1991, and now, it is the most successful recycling initiative worldwide. In this system, manufacturers pay fees on their produced goods, where products with thicker paper, glass or plastic have a higher fee collected by the government.

In Japan, the waste management experience is a bit different than in Germany, as they are running out of land, which puts Japan in a real challenge to find alternatives for landfill disposal, knowing that the high waste production ranks the country among the first ten countries in producing waste per individual.

When it comes to waste collection, Germany and Japan use color-coded systems. Germany has one system on a national level, while in Japan, the system is more complex and varies from one city to another. For example, Kakimatsu in Japan has more than 40 different categories for waste.

While Germany has the highest rate of recycling in the world, Japan's rate is around 20%. Most of Japan's waste is thermally treated, which basically means it is burned. Thermal treatment is one of the cheapest solutions to manage waste in Japan, and it helps in generating energy from the heat generated in the process. Also, the Japanese government is using solid waste in concrete mixes to build new islands and help in solving the lack of space problem in the country.

The U.S. is the world's leading country in overconsumption. The U.S. population is less than 5% of the world's population, but it % ofaccounts for 33 its consumption. More than 250 million tons of solid waste is

generated in the U.S annually, with a waste landfill rate of 65%. The U.S. is struggling to find a fast solution in order to deal with its two thousand landfills which are running out of space in less than 20 years.

The problem is even worse in the northeastern states, like New Jersey; a combination of high-density of people and lack of space puts these states in a real battle with time. Moreover, when it comes to recycling, the U.S. is not even recycling its own solid waste; more than half of U.S solid waste is sold to China to be cycled there.

The real problem

The waste dilemma is a threatening health hazard for humankind; it is among the fast-spreading problems around the globe, as a direct result of decreasing the products' service-life. Studies show that 60% of the produced waste can be avoided in countries like the UK, and those numbers look much worse for the U.S.

Waste management is concerned with the proper processing of different types of waste based on environmental regulations. Waste management practices lay under the umbrella of four main categories, or as we call them, the 4Rs, which stands for Reduce, Reuse, Recycle, and Recover. The core of this framework is applying the 4Rs in the right order to avoid the risk of increasing waste. First, reduce the consumption rate to lower waste production. Second, reuse the material and find ways to repurpose it. Third, recycle waste and turn it into raw materials for new production processes. And finally, repurpose the unrecyclable waste in generating energy or establishing artificial lands.

Many environmental and social activists are spreading awareness about the waste dilemma in the U.S., knowing that the problem is more cultural and political than technological. While the U.S. is the main waste producer in the world, its waste management practices are not

reflecting a real intention to overcome the challenge, and not like developing countries, where embracing advanced technologies in waste management is still a barrier.

The real challenge in the U.S. is the effective implementation of preexisting technologies and policies; the country as a whole needs to view waste differently to create a sense of urgency in solving this problem. Such a change can be challenging but not impossible, especially if the U.S. government were to get involved on a federal level.

What can be done

The U.S needs to adopt an ideology of a closed-cycle economy, which aims to turn waste into resources. This ideology has been in practice in countries like Germany for more than three decades now, and today, 14% of the raw materials used by Germany are recycled waste, making closed-cycle economies a real support in the world's battle for the environment.

Moreover, consumption behaviors have multiple dimensions; economic, legal, social, and environmental, which makes consumption habits highly dependent on factors like income and age. That's why specialists advise teaching young adults in the U.S about the relationship between sustainability and consumption while their financial resources are still limited, in order to minimize their motivation for overconsumption in the long run.

Finally, the GreenDot system is an effective way to achieve a U.S. product-pricing system that reflects the goods' impact on the environment. The GreenDot system gives businesses in the U.S. a real opportunity to increase their bottom-line by lowering energy costs, material costs, disposal costs, and storage costs. However, such a change can only be achieved by a supporting political environment, and the

involvement of the government on the federal level. For example, the city of San Francisco started an infinitive called "Zero-Waste by 2020" ten years ago, and nowadays, the city is very close to meeting that target, making it an American living proof for the possibility of change.

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