

VIDEO

Climate Action Through Innovation

Resilience – Episode 4

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★ 7 | Eye Opening | Visionary | Applicable

What You Will Learn

- How big data empowers local advocates in climate and land policy decisions.
- Why real-time, AI-driven monitoring advances air pollution equity.
- How community-led sensor networks promote health and climate justice.
- How sustainable tech reduces e-waste and environmental harm globally.

Supported Skills

AI Transformation

About the Speaker

Microsoft Corporation is an American multinational technology corporation that produces computer software, consumer electronics, personal computers, and related services.

Recommendation

Part of Microsoft's "Societal Resilience" series, "Climate Action Through Innovation" examines how data collection at the global and local levels builds community resilience to climate change. Air pollution may have declined in recent decades, but still disproportionally affects people living in relative poverty. Microsoft's Project Eclipse coordinates with communities to monitor air quality and address how it contributes to inequity. To prevent worsening quality of life in poor countries, Microsoft's Project Zerix aims to reduce electronic waste, which poisons people's water and soil.

Take-Aways

- Microsoft's Planetary Computer gives local conservation advocates access to big data about climate change.
- Project Eclipse works with communities to assess and address air pollution.
- Project Zerix aims to reduce electronic waste in poor countries using sustainable practices.

Summary

Microsoft's Planetary Computer gives local conservation advocates access to big data about climate change.

To address a complex problem like climate change, innovators must create technology that is "multipurpose, and adaptable to different scenarios." To solve a problem, one must identify it, and observe how it impacts people over time at the local and the global level. In addition to satellite data, low cost, local sensors can collect data on air quality on the ground.

> *"Having access to big data really helps us make data-driven decisions about those really complicated land protection and zoning decisions that are at the heart of land policy and conservation policy." (Dan Morris, principal scientist, Microsoft)*

The challenge to meaningful change is to build speed, capacity and computing power to assess transformation in real time. Microsoft's Planetary Computer is a large database of geospatial data, which uses AI to track air pollution sourced from satellites. By combining local data from community advocates who examine land use and tree canopy with big data, conservation partners can make decisions about land use and conservation policy in communities.

Project Eclipse works with communities to assess and address air pollution.

Air pollution sickens and kills millions of people a year. While air pollution in the United States has declined significantly since 1970, industrialized urban areas like Chicago are still among the areas that suffer from it the most. This indicates an "equity problem." Microsoft's Project Eclipse coordinated with community advocates to deploy air pollution sensors to "make pollution tangible" and address the equity gap.

> *"We can create a network that complements existing regulatory networks with information that can specifically be used to promote health equity and a just climate transition." (Madeleine Daepp, PhD, senior researcher, Microsoft Research)*

Project Eclipse set aside 20 sensors and gave grants to community organizations to participate in decision-making about what to prioritize. With this first ever monitoring system, Microsoft provides the tools and data to empower communities.

Project Zerix aims to reduce electronic waste in poor countries using sustainable practices.

Only about 20% of electronics gets recycled. The rest ends up in landfill or incinerated. Local people extract their precious metals. What remains contaminates the local environment, putting people's health at risk. The key to reducing impacts is to create products and infrastructures that result in a smaller ecological footprint.

“If we’re addressing equity, and we start to move towards a sustainable future and nobody’s left behind. Then, and only then, can we be resilient.” (Tiffany Werner, community science organizer, Environmental Law & Policy Center)

Microsoft’s Project Zerix addresses ways to make electronics more sustainable. For instance, a printed circuit board can be made biodegradable and more easily disassembled. Each new iteration has to be better than the last, setting a new standard. Producers don’t need to use the same materials in the same way as 100 years ago.

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