

## COMMUNITY ENGAGEMENT AND EDUCATION

# The New Earth Project Pilot: Climate Change Mitigation Through Food Waste Reduction



Every year, one-third of food produced globally goes to waste. Most food waste ends up in a landfill instead of being reused. One way to close this waste loop is by returning food waste to the soil. The Johnson-Su bioreactor can process food waste to generate a fungal dominant compost that can be used as a microbial soil inoculant and a fertilizer and pesticide replacement. Applying the product to agricultural land reintroduces beneficial microorganisms to degraded soil. In 2021, recognizing the potential that Johnson-Su bioreactors hold, the Upper Gila Watershed Alliance (UGWA) founded the New Earth Project, a climate solutions program addressing a number of environmental issues including food waste and carbon sequestration.



Project Location

USDA Southwest Climate Hub  
U.S. DEPARTMENT OF AGRICULTURE



Youth Putting Feedstock Into Buckets to Fill the Bioreactors

## KEY ISSUES ADDRESSED

Land degradation through unsustainable agricultural practices can decrease the soil's ability to store carbon. Soil carbon and nitrous oxide can also be released into the atmosphere as a result of degradation, contributing to greenhouse gas emissions which fuel climate change. Food waste is created when uneaten food gets thrown out, and liability biomass is all the wood which results from forest thinning projects. When this waste breaks down in landfills it also releases harmful greenhouse gasses like methane, further warming the Earth's surface. By exacerbating climate change impacts, such as alterations in weather, waste directly impacts soils and agricultural yields through erosion and nutrient loss.

## PROJECT GOALS

- Mitigate climate change effects through carbon draw-down and agricultural soil regeneration
- Reduce food waste and liability biomass waste by combining cafeteria food and wood from forest thinning to create compost product
- Support climate adaptation by increasing food system resilience with Johnson-Su product

## NEW EARTH KIDS

To amplify young voices, the New Earth Kids monthly radio show features students discussing actions they take to combat contemporary environmental challenges, with topics ranging from youth activism to school gardens.



Students Visualizing the Water Holding Capacity of Compost

## PROJECT HIGHLIGHTS

**Diverting Cafeteria Food Waste:** After seven months at three schools, the project diverted 12 tons of food waste and mixed that with 24 tons of shredded wood. They filled 37 bioreactors, which will create enough finished product to inoculate 13,000 acres of agricultural land.

**Bringing Soil Back to Life:** Johnson-Su product applies beneficial microbiology to increase overall soil health and function. The product inoculates soil with high amounts of microorganisms which can benefit any agricultural system. Restoring biological activity to degraded soils can increase crop yield, soil water-retention capacity, and soil carbon sequestration.

**Increasing Access to Compost:** The project collaborates with the Frontier Food Hub, a nonprofit that will deliver Johnson-Su inoculant to producers with whom they already have established relationships.

**Teaching With Worms:** The project gives each classroom their own worms to care for - a fun and hands-on responsibility for students. After a series of monthly lessons, each classroom takes a trip to share their worms with a bioreactor named after them. The response from teachers and students has been overwhelmingly positive.

**Youth Combat the Climate Crisis:** The project employs local youth aged 15-20 years old, providing a job which is outdoors, meaningful, and social. Young employees benefit from a decent wage and flexible hours.

## Collaborators

- Upper Gila Watershed Alliance (UGWA)

CART Author: Erin Connolly, Drought Learning Network (DLN), June 2024.

Photos courtesy of UGWA

For more information on CART or DLN, contact Karlee Jewell ([karlee\\_jewell@fws.gov](mailto:karlee_jewell@fws.gov)) or Maude Dinan ([mdinan@nmsu.edu](mailto:mdinan@nmsu.edu)).

Visit CART:



## LESSONS LEARNED

The New Earth Project team discovered the importance of networking and connecting with influential community figures to build a market for their new Johnson-Su inoculant. In preparation for distributing the first batch, the team is working with key stakeholders to promote this novel product to all agricultural producers, from small farmers to large-scale businesses.

The project team quickly came to appreciate the value of administrative support in schools. The first step in recruiting school partners involved talking with teachers and principals to generate internal support for their education program. Then when the project team approached the district Superintendents for approval, they could point to multiple staff who were already interested in the curriculum.

Every school is different and requires tailored educational content for the take-home message to be effective and well-received. This education program has not only successfully educated local youth, but it has also left a big impression on adults in the community. Ultimately, educating local children about climate and waste loops also educates their parents.

## NEXT STEPS

- Transition out of the two-year pilot phase and become a permanent program based in Silver City, New Mexico
- Fund all operations from compost product sales, which will enable expansion of education programs
- Replicate the project model in other towns, starting with Las Cruces and Santa Fe

For more information on this project, contact Carol Ann Fugagli: [director@ugwa.org](mailto:director@ugwa.org)



Elementary Students Learn How to Construct a Worm Box