# REIMAGINE WASTE JACKFRUIT AS AN ALTERNATIVE FUEL

NXplorers students in Sri Ramakrishna High School, India, reimagined the use of waste jackfruit to develop an energy solution that would create an economic alternative for farmers, and lead to a cleaner, greener environment.

**Shell**
**NXplorers**

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Up to 40 per cent of the food produced in India is either lost or wasted[*]. Even though India is the largest jackfruit producer in the world, only a small amount is used. Most of the fruit is left to ripen and spoil. Not only does this cause a lot of food wastage, it means that farmers make less money, and it also has a negative effect on health as the rotting fruit increases the risk of diseases spread by mosquitos.

The NXplorers students came up with the idea to reimagine waste jackfruit as an alternative fuel and rethink waste in their communities. Their idea was firmly rooted in driving a sustainable change that would support farmers to switch to an eco-friendly fuel option. These are the steps they followed...

## REPURPOSE JACKFRUITS

The students observed that their locality had a lot of jackfruit trees. During the rainy season, they would see countless jackfruits being left to rot. They had neither the technology nor time on their hands to be able to harvest them effectively. They observed that the abandoned jackfruits eventually ended up in a rotten state, which also attracted mosquitos and other pathogens, making the area more prone to dangerous diseases. Due to abandoned jackfruits rotting away, pathogens found their way into the farmlands. To keep the pathogens away, the farmers started actively using a lot of harmful chemicals and strong pesticides. Our NXplorers students wanted to repurpose the waste jackfruit to stop this vicious cycle from repeating itself.
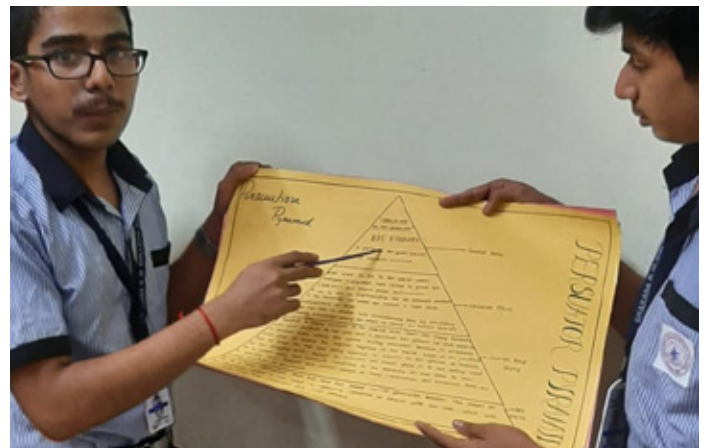
## REINVENT THE SOLUTION

Using the NXplorers toolkit and NXthinking methodologies, the students were able to finalise a solution – they decided to produce ethanol from jackfruit. The students factored in various aspects, like practicality, scalability, scope and functionality of their idea.

Taking part in the NXplorers programme enabled them to apply their problem solving and critical thinking skills in real life and find solutions to their day-to-day problems.

## RECREATE A BIOFUEL

Through the process of fermentation and distillation, bioethanol was created from the waste jackfruits. Bioethanol has a significant role to play as a biofuel, a fuel of the future, as it has immense potential to reduce the amount of carbon dioxide emissions.

## RETHINK WASTE IN COMMUNITIES

Some of the NXplorers students grew up in households that had always worked closely to maintain ecological balance. Due to many of their parents being involved in agriculture, they were extremely aware of the problems within the community environment and the need to develop solutions together. By developing a biofuel from waste jackfruits, the students helped their local community to rethink waste and see how it could be made useful again, fostering a culture of conservation at the same time.

> " **By developing a biofuel from waste jackfruits, the students helped their local community to rethink waste** "

## CONCLUSION

**This project helped the NXplorers students to see that finding solutions to local challenges can have wide ranging global impacts. By solving the local problems of pathogen spread and food waste, they saw that they could directly contribute to the global fight against climate change as well as the UN Sustainable Development Goals. Specifically, this project contributes to UN SDG 3, 7, 8, 9, 11, 12 and 13.**

*Source: The Times of India, September 2019

## HOW THIS PROJECT CONTRIBUTES TO THE UN SDGS

**3. Good health and well-being**
Ensure healthy lives and promote well-being for all at all ages

**7. Affordable and clean energy**
Ensuring access to affordable, reliable, sustainable and modern energy

**8. Decent work and economic growth**
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**9. Industry, innovation and infrastructure**
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

**11. Sustainable cities and communities**
Make cities and human settlements inclusive, safe, resilient and sustainable

**12. Responsible consumption and production**
Ensuring sustainable consumption and production patterns

**13. Climate action**
Take urgent action to combat climate change and its impacts