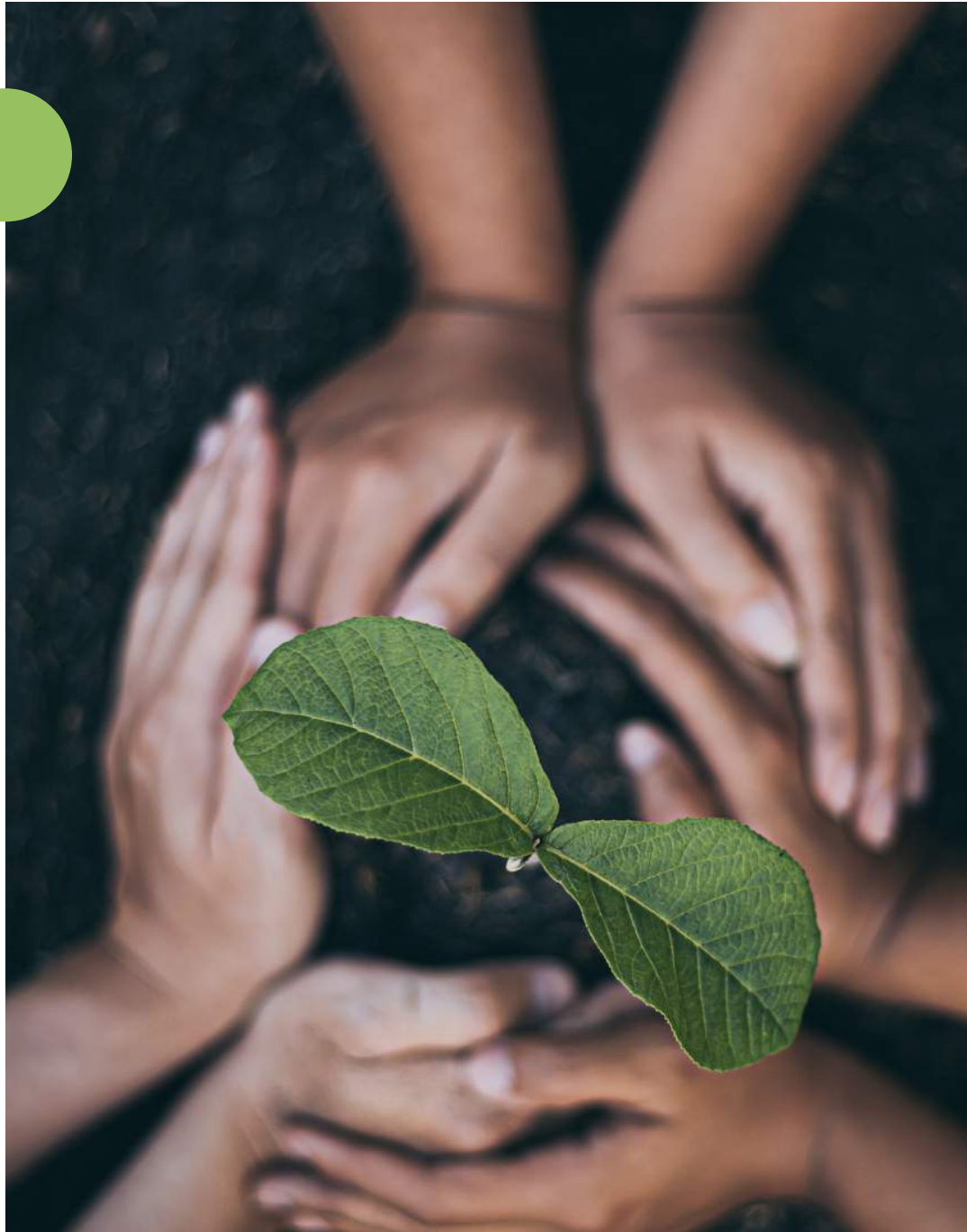


# data 4 good

mobilizing partnerships to end food  
waste





# problem

According to the UNEP, roughly one-third of the food produced in the world for human consumption every year – approximately 1.3 billion tonnes – gets lost or wasted. Nature does not have the concept of waste, everything is regenerative, it is a constant cycle of renewal. In a linear world built by humans waste doesn't regenerate.

When 'we' throw anything away, it goes somewhere. Where does food waste really go? It sure is not contributing to the regeneration of our lands, but rather ends in landfills. Food loss and waste also amount to a major squandering of resources, including water, land, energy, labor, and capital, and needlessly produce greenhouse gas emissions, contributing to global warming and climate change producing significant amounts of methane, compounding environmental societal and financial constraints.

If we are to avoid climate changes by limiting global warming to below 1.5°C and the resulting dangerous consequences we need to mobilize partnerships upon a shared vision and a shared goal – placing people and the planet at the center as the SDG 17 puts forward.

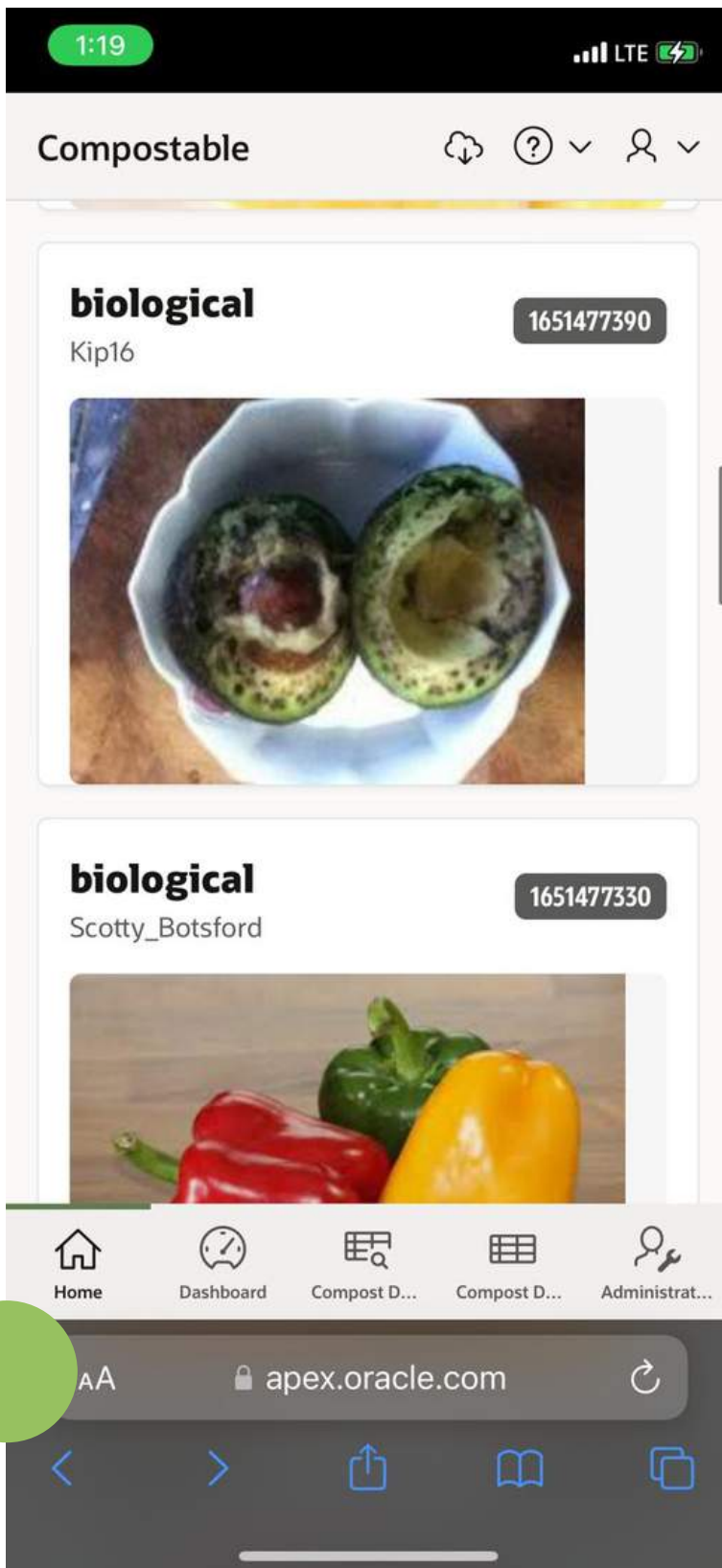


## **solution**

Data 4 Good, hopes to do just that. It's a digital platform that aims to tackle food waste by increasing awareness of what is compostable, so that waste becomes regenerative and is fed back into our ecosystem, along with bringing multiple stakeholders and partners towards a common goal of ending food waste and finidning beneficial use of what is being thrown away.

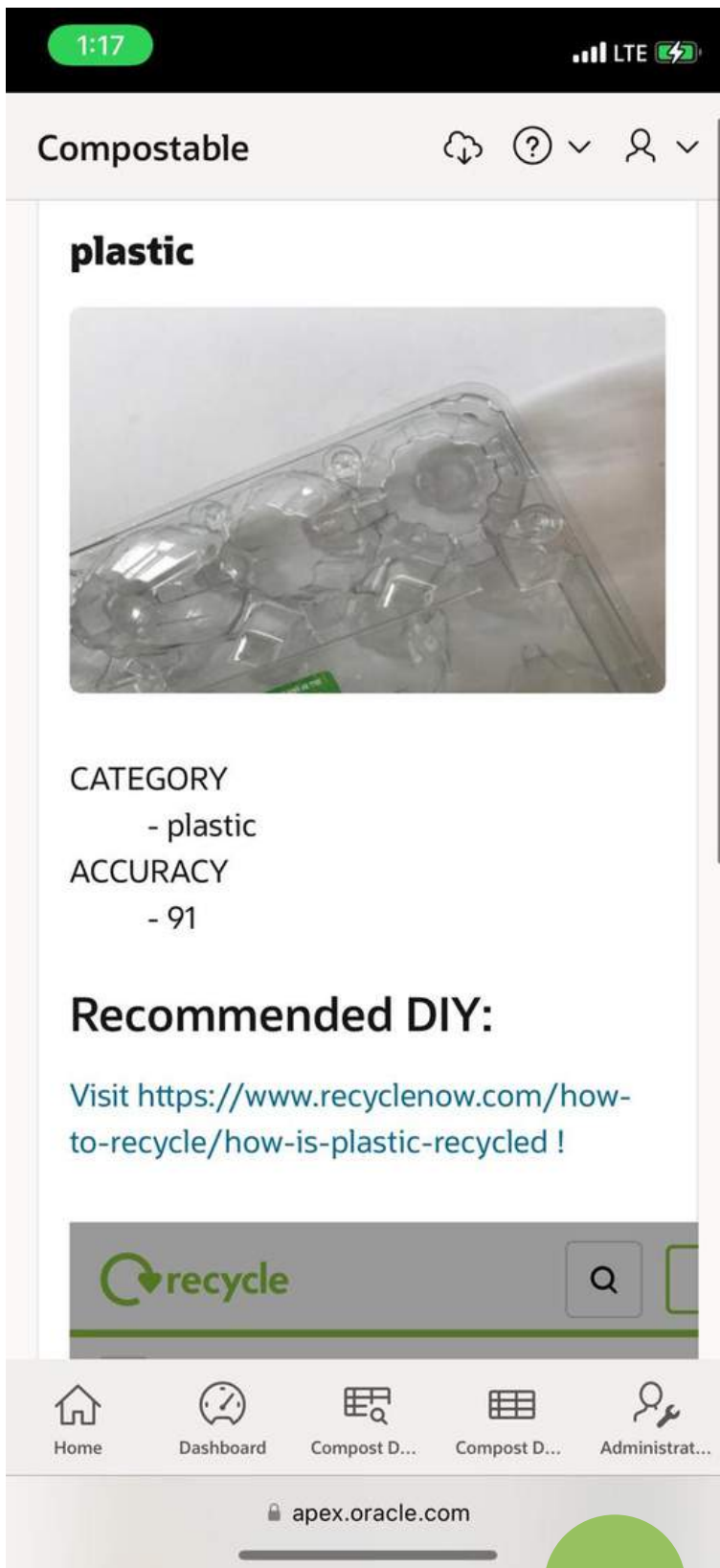






By using Oracle Apex and Kaggle, we have built an application to detect if a certain item is compostable. Users can capture photos and upload images. The images will then be sent to AI image classification through API. Once classification is done, the result of the detected image is provided, allowing users the ease of deciding if a particular item can be thrown into a compost bin including giving directions on how to recycle it if it's not compostable.

Furthermore we hope to collect all data points so that in future they can be collated to make better and informed decisions on finding useful methods to utilize food waste, along with



## technological aspects

We used the following set of technological aspects to build this platform:

- API MOCKUP- generate the data
- Oracle APEX - building the application
- Kaggle -for image classification
- AWS S3 bucket - for hosting the images
- Netlify - for depolying website



# data sets

We used Kaggle for finding data sets on garbage classification to educate the users of our platform on what type of waste they are trying to compost. We found an existing data set with 12 different kinds of garbage classifications along with image segregation of the same. If an image falls into any of the categories, it informs users about where to dispose off waste in which particular bin and whether it is compostable, biodegradable or nonbiodegradable. The data set on Kaggle proved fruitful as a considerable amount of work was done with around 15000 images. For training and testing we used an Alex Net, a pre-trained Data model. On the pretrained data we used PyTorch to aid and complete our work and learn new parameters. This is how the training data looks – if the image is identified as a cardboard the app states it's a cardboard and provides information and a prediction on its segregation similarly it functions for any other detected image. The code has been taken from the Kaggle notebook to further build the apex platform.

After the image classification that's been done in Kaggle, we display that data through Oracle Apex, and each item selected will show the recommended link for recycling. The images are hosted through AWS S3 Bucket.

# business model

To further enhance the platform we have devised a sustainable business model with revenue streams and cost structures, outline our key activities as well as resources. We hope to generate revenue through app subscriptions and providing the data repository to governmental and environmental bodies.

# partners

In line with SDG 17, it's important that we harness the togetherness of multiple stakeholders and partners to end waste and redirect it to useful methods. We hope to partner with governmental bodies, environmental protection agencies, and researchers. It is also important that various businesses, farms and households come together as well towards this goal of ending waste and building awareness.





# **alone we can do so little; together we can do so much**

Data 4 Good brings technology and various partners together 4 the better so we can envision a future that reduces waste.

