



# TOSHIBA CARBON ZERO SCHEME

## UN Sustainable Development Goals

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- > The UN has 17 measurable Sustainable Development Goals (SDGs), several of which are supported by the Toshiba CarbonZero scheme. This report focuses on **SDG 12: Responsible Consumption and Production**, explaining the impact of the Toshiba Carbon Zero Scheme and its link to this goal.
- > SDG 12 is aiming to reduce the impact of human activities on the environment by “changing the way we produce and consume goods and resources”. Efficient management of shared natural resources, entailing sustainable usage of the resources we all need to survive, is central to the achievement of this SDG.
- > The Toshiba CarbonZero Scheme supports the Kenya Cook Stove Project. The efficient nature of the stove halves the amount of firewood needed, saving time and money on collecting firewood. In some areas people have to purchase permits to access local forests. The time saved means that that can focus on agriculture activities, thereby improving household food security.

### FACTS

- > It is estimated that, should the global population reach 9.6 billion by 2050 as is projected, 3 planets would be needed to provide the resources to sustain current lifestyles.
- > Households are responsible for 29% of global energy use and contribute to 21% of resultant CO2 emissions.
- > Only 0.5% of the planet's water is fresh (drinkable), meaning that all humanity must rely on a tiny proportion of the planet's water for its needs. Humanity is currently polluting water at a far faster rate than nature can recycle and purify water through rivers and lakes.

### Kenyan Cook Stove Case Study

Osiepe village in Kisumu County is home to many households that have obtained fuel-efficient cookstoves through the Toshiba CarbonZero scheme. These include the household of Caroline Odhiambo, who lives in the village with her husband and 5 children. The family's principle income source is subsistence farming, growing maize, vegetables and bananas for home consumption and with any surplus sold locally to earn a small amount of income. Caroline recounts how the family's situation has changed since getting the CZK stove:

*"Like everyone here, I grew up using the traditional three stone fire to cook. They have a lot of disadvantages. A lot of wood*



*fuel is consumed because fire cannot be regulated, and sometimes we would need so much fuel that we would resort to wet firewood meaning the amount of smoke was unbearable. I was often sick coughing, the kitchen walls had turned black from soot and visitors even refused*

*to even taste my food. These traditional stoves don't send enough heat into your pot, they just heat the air around, so we're forced to use so much fuel.*

*This is before we speak about the environment around Osiepe village. We used to destroy the forest so that we could just have enough firewood to cook. Sometimes in the dry season*

*we would even cut down whole trees so that we could save that wood to use in the rainy season. You can imagine the effects on our forests with all the households in the village engaging in this wanton use of trees. With the forests disappearing, our land was drying up and agriculture was getting so difficult."*

The destruction of forests for firewood is particularly damaging in communities dependent on subsistence agriculture to survive, because the removal of trees causes a steady decline in soil fertility and water retention, making agriculture increasingly challenging.

However, since her family got the CZK stove, Caroline reports that their firewood use has fallen by 50%. The impact of this reduction in most households in the village is having major impacts on the forest around. Not only do households use less firewood, but they can also get by using small branches and leaves and do not need to cut down whole trunks to have large pieces of wood, as they did when using 3-stone fires.

Overall, the CZK stove has allowed the community at Osiepe to engage in responsible consumption of firewood, taking only the small amount of wood that they now need for cooking from the forest rather than harvesting large scale quantities due to the inefficiency of their stoves. This in turn leads to regeneration of the natural resource base, with the forest gradually re-establishing itself and benefitting the soil, thereby allowing agriculture in the area to flourish.

### Toshiba's contribution to the UN Sustainable Development Goals

This case study shows how the project activities in Kenya contribute to SDG 12 in the following ways:

- The greatly reduced volume of firewood required encourages responsible consumption of the small volume needed; this allows forest cover to re-establish.
- Improved forest cover improves soil quality, which facilitates agricultural production.
- Not only is less CO<sub>2</sub> emitted by the households with CZK stoves, but the improved forest cover around is better able to sequester emissions that do occur.

For more information about the Toshiba Carbon Zero Scheme please visit our website:  
[www.toshibatec.eu/about/sustainability/carbon-zero/](http://www.toshibatec.eu/about/sustainability/carbon-zero/)

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