



## Fuelwood Energy Saving Stoves for Climate Change Adaptation: A story from Muheza District, Tanzania.



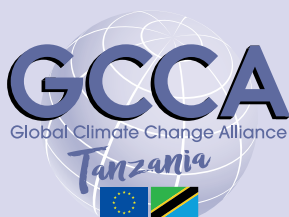
“I’m very happy with this new fuelwood energy saving stove,” said Jestina Dismas, from Kwemsoso village. “It’s so efficient and effective. Previously I used the traditional 3 stones cook stove, which used a lot of firewood. I had to travel to the forest every two days to gather fuelwood for my family of six. This fuelwood energy saving stove consumes a lot less and now I visit the forest every seven days. So I have more time to do my farming activities and the forests are better conserved. My old stove had a lot of smoke but this one doesn’t. The smoke used to enter my nose and mouth, causing severe pain in my lungs and irritation to my eyes. This new technology generates little or no smoke at all”.



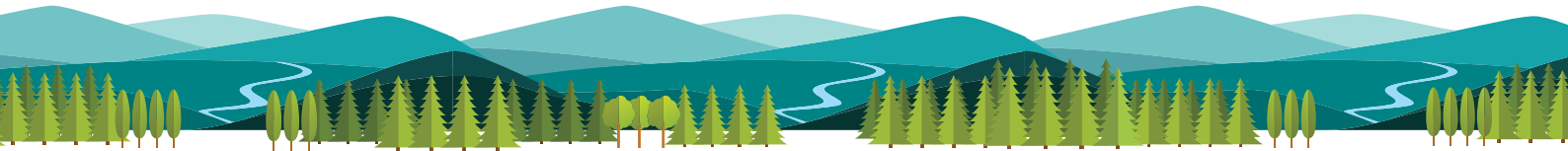
### The GCCA Tanzania eco-village model addresses the impact of climate change

The Integrated Approaches for Climate Change Adaptation in the East Usambara Mountains project is located in Muheza District in the North Eastern part of Tanzania, and is funded by the European Union, under the Global Climate Change Alliance. The project runs through a partnership between ONGAWA, Tanzania Forest Conservation Group and Muheza District Council. Its main objective is to demonstrate effective and efficient strategies that

can support poor, rural households to adapt to the negative impact of climate change and to alleviate poverty. The project works with eight communities adjoining the high biodiversity forests of the East Usambara Mountains, with the specific objectives of increasing and diversifying their incomes, strengthening resilience and reducing vulnerability to climate change-related impacts. It is expected that eventually this eco-village model will be properly integrated and successfully adopted by all eight communities.



Funded by  
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## Energy saving stoves can reduce pressure on the environment and improve health

Climate models predict an increase in annual average temperatures and less reliable rainfall patterns with longer and hotter dry seasons in the East Usambara Mountains. These trends are due to increased upstream and downstream demand for water and forest resources and higher pollution due to unsustainable agricultural and forest management practices. This results in increasing flow peaks and decreasing minimum flows of rivers. Further exacerbated by a lack of income generating alternatives, of climate smart agricultural practices and related water and soil nutrients management practices and of efficient fuelwood energy utilization options thus posing a threat to the future management of the landscape.



The fuelwood energy saving stove was designed and purposely introduced in the East Usambaras to replace the traditional cook stoves as a strategy to improve efficiency in fuelwood consumption, reduce smoke from the kitchen room and reduce pressure on our forests. Usually used inside inadequately ventilated homes and dwellings, the traditional stoves pose major challenges to the environment, social health and sustainability of forest resources. The problem is not only inefficiency in fuel consumption but also respiratory and vision problems mostly for women and children because they spend significant time indoors tending to cooking fires. The risk is particularly high for young children when they breathe in the smoke from cooking fires in their early developing years. The fuel inefficiency of these stoves means they contribute to rampant deforestation, which reduces carbon sinks, contributes to erosion and results in the overall degeneration of natural systems on which the rural communities depend.

## Innovative technology

The technology the project is promoting is a fixed fuelwood energy saving cook stove normally constructed in the rural community homes and dwellings; with double pot systems to maximize heat use and allow two pots to be heated simultaneously. There is also a chimney to remove smoke from the kitchen. Use of gravel is one of its unique features. The gravel normally heats up fast but takes a long time to cool down. Therefore it maximizes heat and energy, and at the same time keeps the kitchen warmer for a longer period of time as the gravel reduces the rate of heat loss.

## Communities are benefitting

Out of the 2,811 households in the project villages 1,680 (i.e. 60%) have already taken up this technology. The project target was to reach out to not less than 600 households in the entire project life, so the project has already considerably surpassed this target. The stove was introduced during October 2016 and more and more households are taking up this technology, indicating an increased realisation of its outstanding merits environmentally, socially, economically and health wise. Feedback from the communities has confirmed that this kind of stove has greater efficiency and effectiveness in the utilization of fuelwood energy than traditional stoves. The consumption rates have now dropped from 3 head loads to 1 per household per week, thus reducing the pressure in the forests. No more smoke in the villagers' homes and dwellings means women and children are free from respiratory and vision diseases.

This achievement would have not been possible without the remarkable commitment shown by the village government leaders and committees in fulfilling their roles and responsibilities. Some villages have now gone further into developing bylaws to require all households to adopt and sustain this technology.



Tanzania Forest Conservation Group  
P.O. Box 23410  
Dar es Salaam, Tanzania.  
Tel. +255 (0)22 2669007.  
E-mail: [tfcg@tfcg.or.tz](mailto:tfcg@tfcg.or.tz).  
Fax: +255 (0) 22 2669007



### For more information please contact:

**Name:** Mr. E. Joseph Wella, ONGAWA Representative  
**Address:** N°1260/C, Mikocheni "B" Plot, Dar es Salaam, Tanzania  
**Email:** [joseph.wella@ongawa.org](mailto:joseph.wella@ongawa.org)  
**Tel:** (+255) 222 781 522  
**Website:** [www.ongawa.org](http://www.ongawa.org)



Email: [delegation-tanzania@eeas.europa.eu](mailto:delegation-tanzania@eeas.europa.eu)  
Website: <http://eeas.europa.eu/delegations/tanzania>

 <https://facebook.com/EuropeanUnionTanzania>  
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