

### **Ngoni Dapira**

IN the wake of the current unreliable weather patterns sweeping across the country due to the climate change cataclysm, the issue of food security becomes a matter of concern.

The concern is more far-reaching for the poor rural communities in the country's dry land areas, especially in Matebeleland South, Matebeleland North, Bulawayo, Midlands, Masvingo and some parts of Manicaland that have been the worst hit by poor rains in the past farming seasons.

Most people in the rural areas survive on subsistence farming, but of late have been receiving poor harvests barely enough for their consumption as family units.

The country requires about 2, 2 million metric tonnes of grain annually, but projections currently predicted that only 900 000 tonnes of maize might be harvested this year.

The senior laboratory technician at Africa University, Mrs Margret Tagwira, who has been doing research on food security crops for Africa, however, said although maize was the staple crop in Zimbabwe, time had come for the country to invest in other previously ignored grain crops, especially the drought weary rural subsistence farmers.

In December through Mrs Tagwira's research on food security crops, Africa University will start training programmes in the rural communities, educating farmers about drought tolerant food security grain crops as alternatives to counter the poor rains situation in the country.

Mrs Tagwira said since 70 percent of Africa's population live in the rural areas, it is critical that more resources be channeled towards improving small-scale and subsistence farming activities.

One of the key crops she will be training farmers in is Grain Amaranth, a drought resistant, pseudo cereal crop that she said had value additional potential as an instant porridge, maize-meal, flour, Amaranth pop and can even be used in the brewery industry as a fermented drink rich in important nutrients.

Research on small grain crops has also proven that previously ignored food crops such as sorghum, rapoko and millet are currently the best options to mitigate the effects of recurrent droughts, affecting Zimbabwe and Africa at large.

Mrs Tagwira's research shows that Grain Amaranth can be added to these small grains and has an added advantage of its high nutritional content.

"Grain Amaranth, which is similar to wild Amaranth or pig weed (mbowa,mowa), is not known by most farmers, but this drought tolerant crop has the potential to overturn Africa's woes of increased hunger and malnutrition-related illnesses," she said.

Africa University exhibited the Grain Amaranth project and simplified Oyster mushroom production project at the Science, Engineering and Technology week held early this month. These projects are part of Mrs Tagwira's food security research, targeting the rural communities. In her simplified Oyster mushroom production project she showed a low cost clean room which will substitute the expensive Laminar flow cabinet which is usually used for the mushroom spawn production.

This fabricated wooden clean room simplifies and revolutionises the mushroom spawn production to not only be affordable, but administrable in the rural areas where there is no electricity.

As an alternative of the expensive petri-dishes used to develop the mushroom culture, she said people can use the used-up half Chateau (wine) bottles.

The Deputy Prime Minister, Professor Arthur Mutambara, while touring the Africa University stand applauded the idea of making sciences accessible to the rural population and encouraging the farming of drought tolerant value additional crops in the rural areas. He said Government should take up such projects seriously, especially in the wake of the climate change catastrophe.

At the official opening of the SET week, the Minister of Science and Technology Development, Mr Henry Dzinotiwei, said our current world now depends on sciences, which is why Government is now supporting local scientists and giving them such platforms to showcase their research.

The Prime Minister, Mr Morgan Tsvangirai, also toured the exhibitions at the SET week and was very impressed by the Grain Amaranth project especially its value additional component. Mrs Tagwira said apart from the value additional element, the nutritional value of Grain Amaranth is its strength, especially to tackle Africa's malnutrition woes in displaced populations, war torn and drought weary countries.

"Grain Amaranth contains 16 to 18 percent protein, compared to less than 10 percent in wheat and maize. Its proteins comprise an excellent balance of essential amino acids that the human body cannot manufacture such as lysine and methionine, which are deficient in maize and other cereals.

"Grain amaranth also has early maturing varieties with some varieties maturing from as early as 45 - 70 days.

"The harvested grain is not attacked by weevils and can be kept for more than five years without any special chemical protection unlike most cereal crops.

"It also has no gluten making it suitable for those who are gluten intolerant," she said.

Africa University is also conducting research on cassava as another crop that can be adopted in Sub-Saharan Africa considering its drought resistant potency and its' resistance to pests and diseases.

The cassava project researcher, a laboratory technician, Mr JeftaTabarira, said cassava is a root crop that grows well in high temperatures. He said if drought hits cassava does not die but 'shuts down' until the rains come again.

"Cassava is popular in Nigeria and in the Democratic Republic of Congo. This can be used as a fallback crop for most of the Sub-Saharan countries in the wake of the continuing climate change problems," said Mr Tabarira.

Mrs Tagwira said food security was very important for national security.

"It is said, a hungry nation is an impoverished nation. As academia we must research on how to prevent our continent from starving and ensure food security as climate change continues to affect weather patterns."

The vice-chancellor of Africa University, Prof Fanuel Tagwira, said as an institution of higher learning, the university's service culture was premised on its three-fold mandate which is teaching and learning, research and community development.

"As academics we should seen on the forefront of research to develop our continent and improve the lives of our populace.

"Millennium Development Goal 8 seeks to address the issue malnutrition and hunger in Africa and I am glad that as Africa University we are playing our role to come up with solutions to meet the 2015 MDG's target," said Prof Tagwira.