

Home-grown solution for the hungry nation: Food security for rural South Africa



The Institute for Food, Nutrition and Well-being (IFNuW), at the University of Pretoria (UP) has created a world-first solution to improve food security for the poorest communities in the country.

It is estimated that 54% of South Africans live below the poverty line, surviving on R779 or less a month. Many can barely afford enough maize to feed their family three meals a day. "A diet consisting largely of maize and bread cannot meet a person's nutritional needs," comment's research lead, Prof Sheryl Hendriks.

"Many communities turn to subsistence agriculture to bridge this nutritional gap, but in the marginal farming areas which make up large parts of rural South Africa, they struggle to grow sufficient food to meet their daily food requirements.

"Malnutrition has a dramatic knock-on effect, not only on individuals in terms of stunted growth, limited cognitive development and a compromised immune system, but it also impacts on our economy."

Over the past four years, researchers have been surveying what communities in four of the country's poorest rural areas grow and eat. Enumerators used tablets to digitally record survey data on diet, health indicators and farming in the community, for immediate use by researchers. "We wanted a fuller picture of how communities feed themselves, and how reliant they are on rain-fed and irrigated agriculture to do so, as well as their income and access to diverse food groups," says Prof Hendriks.

The solution

IFNuW has digitally collected data relating to foods which are grown at the four sites where the research was conducted, and combined it with data from food composition tables to determine the nutritional value of different crops. From this insight, the team has developed recommendations for communities in specific regions on what type and how to grow food that addresses their nutritional needs.

"The findings of the study and the recommendations can empower communities in taking responsibility for their nutrition, by

providing them with locally relevant information while assisting government and NGOs to design more appropriate agriculture-based interventions," she says.

With community input, these recommendations have been converted into a series of visually informative brochures and posters. Researchers have made these guides available to community members and agricultural extension officers in a bid to help residents improve their nutritional status through better farming choices.

Corné van der Merwe, an MSc student, has developed Smart Grow, a smartphone application to make the data available electronically. "The app was an afterthought," admits Prof Hendriks. "When working in the field collecting data, we were surprised by how tech savvy the young people employed as survey enumerators in these communities were. We recognised the opportunity to make the recommendations available through this technology, putting them into the hands of farmers and youth."

Impacting policy

The findings of this project have also provided valuable input for the national Food Security Information System (FSIS), currently being developed by the Department of Agriculture, Forestry and Fisheries (DAFF). "Researchers and policy-makers need access to relevant and up-to-date information to make informed decisions," she adds.

According to the *Constitution of the Republic of South Africa, 1996* (Act 108 of 1996), citizens have a right to food, proper nutrition and water. According to a national survey conducted in 2012, 17% of households in the country struggled to access food and in that year and 11% of households experienced hunger. Among those, 6% of households experienced severely inadequate access to food. "People need more access to food, proper nutrition and water. Our research can positively impact policy creation in moving forward," concludes Prof Hendriks.

Discover more background to this research at www.researchmatters.up.ac.za

Homegrown solutions for South Africa's hungry

- Millions of South Africans face hunger.
- 1 in 6 households struggle to get enough food every day.
- 1 in 4 are hungry most months of the year.
- More than half live below the poverty line.
- Millions of South Africans are malnourished.
- Over 20% of children under 5 are stunted.
- 14% of children younger than 9 are OBESE.
- Hunger and malnourishment lead to poor health and compromised learning.
- Unhealthy citizens are economically unproductive.
- The causes include:
 - Lack of food
 - poor nutrition
 - poor water quality
 - poor water availability
 - poor soil quality
- Households that grow their own food eat more essential nutrients.
- Researchers worked with communities to assess the scale of the problem, their needs, and potential solutions. They made recommendations for which crops to grow based on:
 - location
 - water available
 - what can be grown
 - seasonality
 - dietary needs
- With the support of the Department of Agriculture, Forestry and Fisheries (DAFF), researchers have developed an app that tells users:
 - what to grow in their area
 - when to plant food in summer and winter
 - when they need extra irrigation

Small text at the bottom: "The University of Pretoria is a member of the Council of Scientific and Professional Organizations (CSPO) and is a member of the Department of Agriculture, Forestry and Fisheries (DAFF)."