

Impacts of climate change on farming in Leribe inspire Mamello to pursue solar irrigation as a solution for her family, and for farmers across the Mountain Kingdom.

Mamello Mei grew up in Kolonyama Ha 'Nena in Leribe, a district in the north of Lesotho. Her grandmother owned land and the family used to farm maize, sorghum, beans and pumpkin, primarily for consumption but also occasionally selling the surplus to other people. The 25-year-old remembers that, in her early childhood, the yield was consistently good, but that things soon changed, with a "terrible drought" which resulted in their land becoming too hard to farm. More time was needed to prepare the soil and to maintain the crops, with a new reliance on fertilizers putting increased financial pressure on the family. She remembers that rain also became scarcer and more unpredictable, stating, "we relied on rain water, as dams and rivers and not too close to the fields, so less rain meant our crops dried out and our harvest fell, sometimes from 10 bags to 3 bags".

Eventually it became so bad that Mamello's family stopped farming the land altogether and instead relied on the chickens that her grandmother also reared, selling eggs and livestock in the market. Mamello says, "This impacted us a lot. We never used to have need to buy grains because we harvested them ourselves, but now with even less money we had to buy them too. It was, and still is, a stressful change from what we are used to but we don't have any other choice."

After completing high school, Mamello went on to study Biochemistry at Lesotho's National University in Roma, graduating with a Bachelor of Science Degree, and she has since landed a number of jobs in the agricultural and renewable energy sectors. But farming the land directly remains her passion, and despite all the challenges that she saw her grandmother endure, Mamallo believes that farming can be a sustainable and profitable business, stating, "My family inspired me as a child; farming for business and for consumption at home". As a result, and alongside some other family members who shared Mamallo's hope, she started farming again, ploughing maize and beans. These efforts were, however, met with the same challenges of dry earth and an absence of rainfall. She says, "We only harvested three 50kg bags of maize from a four-acre field. So, we yet again suffered significant losses from the impacts of climate change."

Feeling defeated Mamallo temporarily put farming aside, but an opportunity to witness the potential of solar irrigation in one of her jobs has given her new hope, and she now has a vision of not only returning to farming once again but of creating systems and products which can be sold to other farmers, solving the challenges that many face as a result of changes in the climate.

Solar irrigation uses the sun's energy to supply water to crops to assist growth. It can include using solar power to pump water from overground sources, like rivers and dams, as well as using solar powered machinery to dig boreholes.

Mamello and three friends are now working jointly towards establishing a farming company, called 'Green Grow Agri Solutions' which will focus on both crop and livestock farming, as

well as creating environmentally-friendly solar irrigation systems and products which can be sold to other farmers. She says, “Water is always available even if we have to move it from an area slightly away from the farm, or from below the ground. With the water scarcity we are experiencing, solar Irrigation will therefore provide a solution, ensuring there will always be an available supply of water, instead of relying on rain to fall at the right time. Our systems will also be ‘smart’ ensuring they only use the water and energy needed to yield quality harvests.”

As a member of Kick4Life’s Climate Enterprise Incubator, which supports young female entrepreneurs in launching socially and environmentally responsible businesses, Mamello and her business partners will be able to access a range of support including mentoring, business planning advice and a micro-grant to assist with covering some of their start-up costs including registering their business, procuring materials and testing their ideas. She is also hoping to learn from the other young female entrepreneurs in the network, as well as developing new skills related to financial management, marketing and sales, so that their new solar irrigation systems will have the best chance of success, helping her own family in Leribe, and farmers across Lesotho, to adapt to the impacts of climate change.