



THE GUARDIANS OF LIFE

Cotton farmer Debora Masunga was facing ruin. Prolonged drought interspersed with heavy, unpredictable rain made farming a precarious business in the Igunga district of Tanzania - one of the driest parts of east Africa. So like women every day, all over the world, she decided to do something about it.

Debora had plenty of experience making clothes for her seven children, so she borrowed around US\$80 and set up her own sewing business. "Since then, I haven't looked back" says Debora. "I bought the fabric using a low-interest loan from the village savings and loans group. I had sales and I made money. I repaid the loan within a month, which is a record, and now I make around US\$120 a month, which is more than I would get from cotton farming."

Debora's story is a tribute to her resilience and ability to adapt to a changing world - as well as her business acumen. "With some of the profit, I bought rice and stockpiled it, and when the price of rice rose I sold it. My husband and I bought a house with the money we received, as well as two goats. At last, I can afford to provide for my family." Inspired by Debora's success, other women in her village have also taken out loans to start small businesses or improve their farms.

"Women don't just sit around waiting for the impacts of climate change. They become innovators - they use the solutions that nature gives them," Hindou Oumarou Ibrahim, President of the Association for Indigenous Women and Peoples of Chad, told the World Economic Forum. "Climate change is real for us it's not about the future, it's about the present. It's an issue of survival."





According to the EU's flagship climate change programme the Global Climate Change Alliance (GCCA+), women are amongst the most vulnerable to the impacts of climate change, especially in developing countries. At the same time, however, women are vital for building climate resilience. For the EU, women are primary agents of change and effective risk managers, and their role is fundamental to create a solid basis for climate-proof development.

Recognising women's potential to be agents of change in moving countries towards a green, sustainable economy, EU GCCA+ has already invested €72 million - that's 20 percent of its entire budget - into gender-related programmes and projects. These range from community-based solutions, increasing women's access to land, training, capacity building, access to microfinance, clean cooking and renewable energy. Nearly half of all EU GCCA+ actions contribute directly to gender equality - compared to just 0.01% of

all global climate finance actively supporting both climate change and women's rights.

From Greta Thunberg to Christiana Figueres, from Rachel Carson to Wangari Muta Maathai, women have long been among the most influential global voices in the fight against climate change. Ruth Bader Ginsberg famously said "women belong in all places where decisions are being made" - but progress is painfully slow, with women making up less than 40 percent of national delegations at the last UN climate summit and accounting for just one-fifth of delegation heads.

"The EU should lead by example and ensure women are well represented at senior levels in its delegation to COP26. There is a real lack of equal participation in the negotiations which means that the gender issue is just not on the table," says Jane Wilkinson, Strategic Mitigation Adviser at EU GCCA+ and a leading expert on inequality and climate change. "Making sure that micro-projects can

access carbon markets will be particularly important in making sure that women and women-headed households can actually access finance."

Women are more likely than men to be involved in community-based projects to tackle climate change, such as local food projects, says the <u>Women's Environment Network</u>, Recognising this, the EU funds projects in 33 countries aimed at integrating gender equality, women's empowerment and climate action.

Whether in the negotiating rooms of the climate COPs or in remote rural villages, women are increasingly taking the lead. "I think most women are more collaborative than most men," says Christiana Figueres, former Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC). "I think women tend to think more long-term. I also think that we come at the role of stewardship much easier than men."



FROM BUTTERFLIES TO BEES

Before the Covid-19 pandemic hit international travel, Tanzania's East Usambara mountains were a favourite destination for tourists seeking relief from the heat and humidity of the coast. Unlike much of the country, the mountains are cool and rainy for much of the year - but that hasn't protected them - or the people who live there - from climate change.

Deforestation, mainly driven by the need for cooking fuel and charcoal production, led to the region being ranked by Conservation International as one of the world's ten most endangered biodiversity hotspots.

"There's a very clear line between deforestation and cooking, and that makes it a gender issue since the women do all the cooking and collecting firewood."

- Jane Wilkinson, Strategic Mitigation Adviser, EU GCCA+



In 2014, as part of it's <u>Tanzania Eco-Villages</u> programme, the EU GCCA+ began a €8 million programme - Integrated Approaches for Climate Change Adaptation in the East Usambara Mountains - to increase and diversify the incomes of 2,500 families in eight communities. Spanish NGO ONGAWA, in partnership with Muheza District Council, was chosen to implement the project, which - crucially - aimed to empower women to make their own independent financial decisions through village savings and loans groups.

"Before the project, women weren't interested in participating in sustainable development activities," says Halima Sheshe Idd, Chair of Mgambo Village. "But now women have been motivated and they participate like men. In our village savings and loans group, women and men make collective decisions. When a woman gets a loan she decides on her own how to use the money and no man influences her decision. I took out a loan and developed my farm to grow cloves, cinnamon, black pepper and bananas. I planted them

professionally based on the training I got from the project."

Other women have retrained as <u>butterfly</u> <u>farmers</u>, selling the insects to visitor attractions in the US and Europe whilst helping to regenerate native species. Some act as tour guides in the nearby Amani Forest Nature Reserve. "I had a business selling clothes, but the money I make from being a tour guide has enabled me to invest in the business and increase my income," says Amina Juma Omary. "I made the decision about how to use the extra money - then later I told my husband and he agreed!"

There are more women working in agriculture in Tanzania than in any other sub-Saharan country - 81 percent of the female population works in farming, compared to 55 percent in the rest of sub-Saharan Africa. This makes them especially vulnerable to the impacts of climate change - but time and again, given the right opportunities, access to finance and

training, women prove themselves to be astute business operators.

Anna Sabini, a livestock farmer from Mgambo, says the ability to access microfinance through the village savings and loans group has been a life-changer. "I got a loan to buy goats, pay for health insurance and send my kids to school. I've also managed to persuade other women to join - we started as a small group but they've seen the benefits."

Igunga Eco-Village is in one of the driest regions of Tanzania with an average rainfall of just 500-700 mm per year. Poverty is rife - many villagers earn around US\$1.5 a day. Like Debora, they rely mainly on farming and livestock and so are especially vulnerable to the impacts of climate change. But even in this harsh environment, thanks to the EU-funded programme many women have received leadership and entrepreneurship training and are now at the heart of financial decision-making.

For Esther Pole from Bukama Village, the benefits are not simply financial. "For example, women used to do the farm work but the men would sell the harvest and keep all the money. But now the project has enlightened us women, we collaborate, we harvest together and we discuss with our husbands what to do."





"THE GARBAGE WILL NOT DEFEAT ME - I WILL DEFEAT IT!"

With her trademark white, short-cropped hair, Mayor Pam Belcher-Taylor cuts an unmistakable figure as she strides through piles of rotting garbage in downtown Paynesville, Liberia. Mayor Belcher-Taylor is a woman on a mission, vowing to clean up Paynesville, a vast urban sprawl east of the capital Monrovia - and by doing so to make the country more resilient to climate change.

It's a tough job. Years of underinvestment in waste disposal infrastructure, combined with an ingrained 'anywhere, anytime' attitude towards dumping rubbish has left Paynesville with a mountain of garbage to climb - but Mayor Belcher-Taylor is undaunted.

"I'm not complaining, I have a job to do and I have to find innovative ways to do the job," says the Mayor, speaking to journalists during a clean-up operation in the city's notoriously filthy Red Light market. "Everybody has critics, not everyone is going to like you, that doesn't deter me at all."

When she took office in 2018, the Mayor inherited an estimated 40,000 tonnes of rubbish dumped on the city streets. Within three months she had shifted a quarter of it, but she's made enemies as well as attracting praise from the international environmental community. She and her team have endured threats from street traders worried about the impact of her clean-up campaign on their livelihoods.

"I do what I feel is right, and I think other people can see when you are doing the right thing. I am not going to let this thing defeat me. We have to raise the awareness of our people, to let them know why they shouldn't litter. They have to take ownership of the problem - this city is their city, it's not just in the hands of the city corporation."

"We need to teach people to dispose of their garbage properly and then we need waste transfer stations within the city. There's a lot of work to be done."

- Mayor Pam Belcher-Taylor



"Our main challenge is the lack of logistics surrounding the collection and disposal of solid waste," says the Mayor. "There are devastating health implications, and this in turn has a negative impact on the economy as businesses do not prosper when they are surrounded by trash and there is a pending health crisis."

Converting mountains of waste into energy could also tackle Liberia's energy crisis. The civil war, which ended in 2003, destroyed much of the country's power sector and less than a fifth of the population has access to electricity, most of it generated from carbonintensive diesel or heavy fuel oil. Residents pay some of the highest power costs in the world.

In a €1 million programme, <u>Cities Alliance</u>, the EU GCCA+ implementing partner in Liberia, has installed home biogas units providing up to six hours of free, clean, cooking gas every day. But these pilot programmes need to be scaled up fast if they are to make a significant impact.





"I believe women can more easily identify with social issues as well as gender related issues. I'm very impatient because I want things done and I want them done right away. Women are often the ones who have to deal with the household trash and are most impacted if it is not disposed of properly. Before I became Mayor I was an entrepreneur, a mother and a wife. Never in my wildest dreams did I think I would get into politics and to be the Mayor of the largest city in Liberia.

"Women have less access to basic human rights, a decent quality of life and are less likely to become leaders in society, limiting our participation in the decision-making process. Gender equality and female empowerment will increase the number of women as leaders, stakeholders and educators leading to more resilience with regard to climate change."

Mayor Pam Belcher-Taylor,
Paynesville, Liberia



FIGHTING FOR THEIR FUTURE

Inspired by Greta Thunberg and the <u>Fridays</u> <u>for Future</u> movement, a new generation of women around the world is leading the way on climate action. From <u>Vanessa Nakate</u> and <u>Hilda Nakabuye</u> in Uganda to <u>Chheang</u> <u>Yengsreylen</u> in Cambodia, young women - fed up with a lack of action at international level - are taking matters into their own hands.

"In Khartoum we have been experiencing extreme climate conditions," says Sudanese student Lina Adil, one of the organisers of the EU-funded <u>Climathon</u> in 2018 and 2019, and Climate Action Programme Manager at Impact Hub Khartoum. "In the summer the temperatures reach very high levels, and that really affects our performance, our daily life and work. You can't really study well in such heat. But in 2020 during the rainy season the Nile flooded all over the streets - that hasn't happened since 1986. When we have extreme weather events the infrastructure in Sudan is not reliable enough to adapt, you cannot move around, there's no transportation, you can't go

to work or university, the water just stays in the streets."

"I was very privileged to get an education, and that helped me to realise that climate change is real and is happening, and that it effects people in Sudan and East Africa more than others," says Lina.

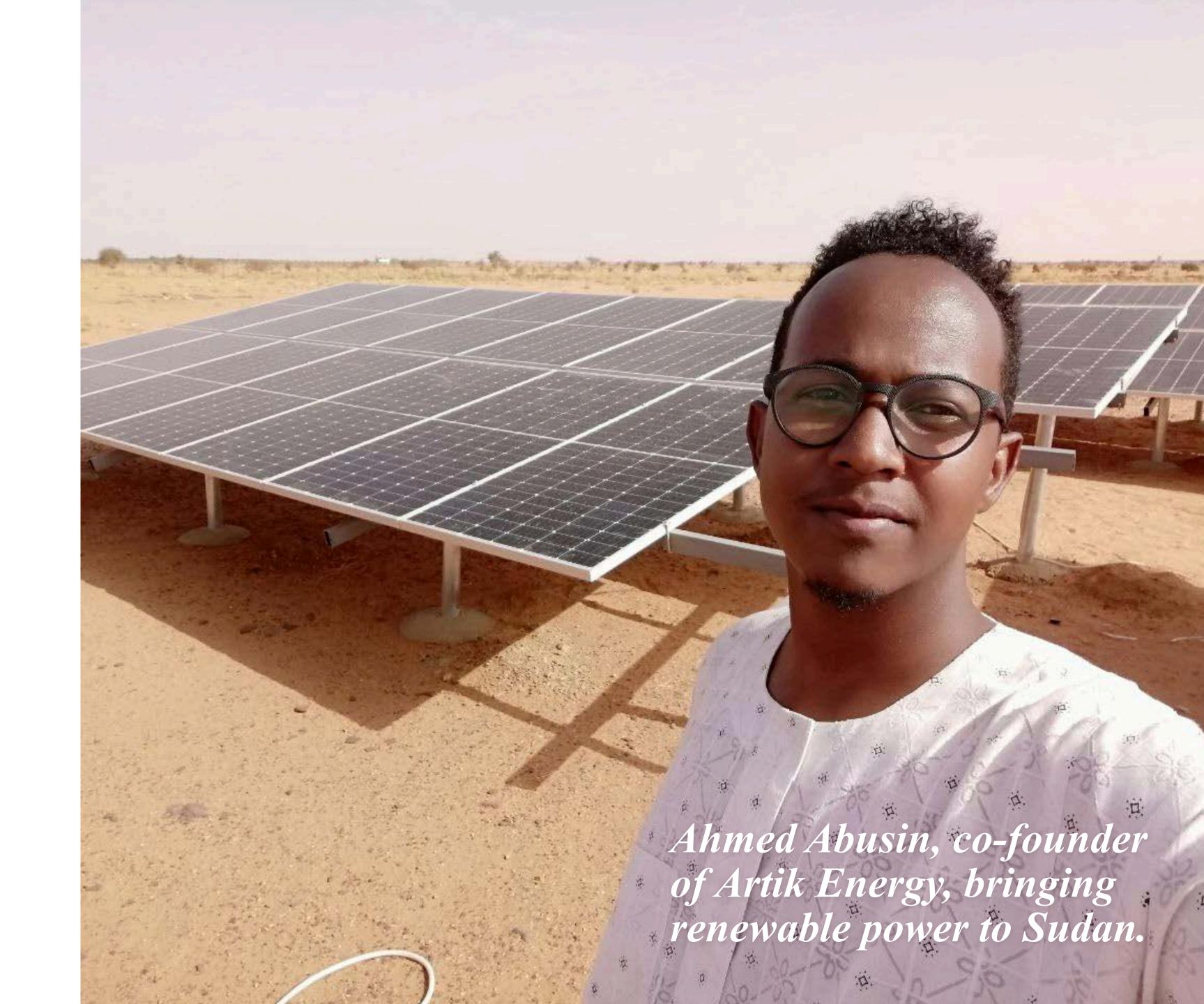
"We didn't do this damage - others did it but we are paying the price and one way or another we will have to adapt to it. It really requires all of the people to come together to think how we can adapt to this."

Climathon Khartoum, supported EU GCCA+ in collaboration with the Sudan National Council for Environment and UN Environment, aimed to connect different people to work together on practical solutions to the climate crisis facing the country. Young entrepreneurs were invited to pitch and develop practical ideas for tackling climate change in Sudan.



Success stories include Artik Energy, born out of a brain-storming workshop at Climathon 2018, which has installed solar water pumps for farms and small-scale domestic systems in villages where residents previously had no access to electricity.

"We are trying to leverage entrepreneurship to create solutions in three main areas: desertification and drought; heavy rains and floods; and sandstorms and heatwaves," says Lina. "So looked for young people who could start small businesses to address these three areas. But climate change isn't really a topic of conversation for most people in Sudan - it's seen as an elitist issue. So we started doing public symposiums on topics which people could relate to - for example climate change and peace, or climate change and the economy. We really cut the issue up into bitesized chunks which were easily understood by every person regardless of their background, their age or their education. Conveying knowledge is essential, then people can decide to act or not."





It's unlikely that Lina will ever meet Cambodian student Chheang Yengsreylen, but if they do, they'll have a lot in common. The 12th grade student at Angkor Chey secondary school in Kampot province is a member of the climate-smart eco-school club, where students learn about waste management, building and renovating latrines, bio-diversified gardening and planting trees.

"I was eager to learn more about environmental and climate change-related topics," says Yengsreylen. "I now understand better how climate change happens and the role of greenhouse gas emissions as part of the human-induced greenhouse effect that warms up the world. I'm keen to pass this knowledge on to my family and friends."

The climate-smart eco-school club is part of the Mainstreaming Climate Change in Education project, organised by the <u>Cambodia Climate Change Alliance</u>, one of the EU's earliest programmes in the region which is now into its third, €10 million phase.

"I really enjoy learning how to plant and manage trees in our school woodland," says Yengsreylen. "I showed my family how to grow vegetables and make natural fertiliser. I have taken posters home to show them to my family and my communities."

School Principal Top Thyda says the whole community is now more climate smart. "We installed a system to bring water from the pond to the school where it is used for toilets and hand-washing. And there is another very visible change - before the project, lots of plastic was lying around the school premises, but now students have changed their behaviour. They don't throw plastic bottles on the ground anymore, but instead take them home or put them in bins. I'm proud that students share their experiences and their awareness with their community."

Thyda has also learned a lot. "Before, I had no idea how to grow vegetables. Now, I love it!" she laughs.



WOMEN FARMERS GO BACK TO SCHOOL

"Many people see farmers as failures," says Mercy Ssekide. "They think farmers are uneducated and that's all they can do. But farming is a business, a business that provides for your home and educates your children."

Mercy, a farmer and entrepreneur from the Mubende district of Uganda, is one of a growing band of women changing agriculture across the globe - and becoming more resilient to the worst impacts of climate change. But they face an uphill struggle. According to Fairtrade International, around 60-80 percent of the world's food is grown by women. In developing countries they account for around half the agricultural workforce. Yet they often don't own the land and see little of the profit made from it.

From the start, EU GCCA+ has funded programmes around the world aimed at helping women farmers to become climate change leaders in their communities. Mercy Ssekide is one of thousands to have benefitted - in her case, she was trained at a <u>farmer field</u>

school funded by the EU and run by the UN Food and Agriculture Organisation (FAO). As part of the €11 million programme, more than 300 field schools - sometimes known as schools without walls - have trained more than 4000 farmers throughout Uganda's central 'cattle corridor' which runs roughly south-west to north-east across the country. The corridor is highly vulnerable to climate change, suffering frequent floods, prolonged droughts and unpredictable rainfall.

"Many farmers don't benefit from farming because they don't think of it as a business. They should have a passion for farming," says Mercy, who is a successful pig breeder in addition to her other farming activities. "I started off as a tenant but now I own my own land. Who am I, a mere farmer, to own land with a title?" she laughs.

Mercy even managed to convince her husband to join the farmer field school. "During the training I realised we had to work together. If you don't cooperate you will not be successful." Now Mercy and her husband have separate bank accounts. "When my wife gets money she puts it into her own own bank account, and I also have a bank account," he notes. "We have two children at university, and we each contribute half the school fees."

"A sustainable, inclusive and equal world cannot be built without quality education for all," says Jutta Urpilainen, EU Commissioner for International Partnerships. "Education can help us cope with some of today's and tomorrow's challenges and make our trends. Think about the power of education to change behaviours on the environment or climate change...It is my conviction that educating and empowering women and girls is the precondition for creating truly inclusive societies."

Besides the field schools, Ugandan farmers have benefitted from new water tanks for cattle, bioenergy plantations to improve sustainable energy production, energy saving cook stoves and small scale irrigation schemes. Women are also encouraged to become more resilient by diversifying into different crops.

Betty Ndugga is an entrepreneur who grows coffee trees which she then sells to other women to set up their own coffee farms. After her husband died, she returned to her village in Luwero district and joined a local farmer field school where she was trained in coffee production.

"After I learned how to raise the coffee seedlings I started to operate my nursery as a business enterprise. I wanted to be able to look after my family because I am a widow."

- Betty Ndugga



An EU-funded farmer field school programme in Madagascar was behind the <u>unlikely success story</u> of farmer Rabebinirina Minompamonjy David. Known to everyone as Madame Mino, she holds a handful of pink, wriggling worms in the palm of her hand. "We started with just 250 grams of worms, now we have 20 kilos!" she smiles. "We have had great results with our worm composting - we can only use a quarter of what we produce so we sell the rest to farmers all over Madagascar."

18,000 Malagasy farmers - half of them women - have benefitted from a new climate smart agriculture project known as Manitatra 2. "We don't have any cattle, so we had to buy huge amounts of manure to fertilise our fields," explains Mme Mino. "That hurt a lot because our income barely covered the cost of fertiliser. But with the worm compost, we only need about a tenth of what we used before. We also do less weeding, yields are up and the crops are more resistant to disease and drought."



ONE WOMAN'S SWEET SMELL OF SUCCESS

Carlotta De Jesus isn't shy when it comes to dispensing advice. "I tell my daughters, equip yourself with everything you need for life - don't let the men feel you can't survive without them. Always make sure you take care of yourself. No matter what job you do, keep in mind that you have to maintain high self esteem - and look good doing it too!"

It's a mantra which Carlotta has followed all her life. Starting out as a farmer, she also built up a successful business making and selling clothes. But it's a beekeeper, honey producer and environmental activist that she's best known in her home town of Victoria in the Demerara region of Guyana. Together with her husband Colin, she runs the Victoria Honey House, which produces and sells high-quality honey to locals and tourists, as well as exporting it all over the world.



"I say to people, especially girls, you can do whatever you want to do and be the best at it, once you put your heart and mind to it."

- Carlotta De Jesus

Carlotta's sweet success story really took off a decade ago when the <u>EU-funded Guyana</u> <u>Mangrove Restoration Project</u> was launched, aiming to protect this low-lying Caribbean nation from the Atlantic ocean by restoring the coastal mangrove forests. Sensing an opportunity to build her business and help restore the mangroves at the same time, Carlotta - who was already a successful beekeeper - relocated many of her hives into the mangrove forests. There, the bees help pollinate the trees and produce a honey with a unique taste.

"I was keeping bees along the highway, but I heard that the mangroves produce good honey," she says. "So we placed hives in between the existing mangroves. The mangrove honey isn't as sweet as other kinds, the salt from the sea makes our honey different. It has a light, golden colour and a completely different flavour - people really like it."

As well as reintroducing the bees, Carlotta also got involved with replanting mangrove trees - she personally grew around 6,000 saplings and helped lead community replanting schemes. She's also an active member of the Victoria Mangrove Reserve where she runs horse-drawn cart tours for tourists.

The €4.14 million mangrove restoration project ran for three years before being handed over to the local community to manage for themselves. In that time, an astonishing 420,000 black mangrove seedlings were grown and planted, with five kilometres mangrove forest restored along the east coast of Demerara, west coast of Berbice and the Corentyne Coast. A mangrove visitor centre was established, hosting 3,000 students a year and around 200 tourists every month before the Covid-19 pandemic.

But the project also faced considerable challenges, such as climate-induced extreme weather patterns which impact honey production: "If we get too much sun we don't get blossoms, so the bees have nothing to feed on," says Carlotta. "When we get too much rain, the rain knocks the blossom off, so the bees find it hard to pollinate. Unpredictable weather is bad for business."

There were also problems with the mangrove restoration itself. Not everyone understood why it was important to protect the mangroves. "People used to cut and burn the trees, or use them for construction," she says. "But then they realised that if the water comes up really high, the mangroves are there for our protection." There were some early failures. "The first time the we tried to plant new mangrove trees, the young plants died because of the constant erosion of the seashore," she says.

"We learned the importance of preparing properly and putting in infrastructure to deal with waves."

Despite these setbacks, Carlotta never doubted she was doing the right thing. She went on to become leader of the local council and president of the mangrove producers' cooperative. And she's a firm believer in getting young people involved. "Education is the biggest thing you can depend on. When you have education, you can pick, choose and refuse. I am still learning every day. I say to people, especially girls, you can do whatever you want to do and be the best at it, once you put your heart and mind to it."

TRANSFORMING LIVES AND LIVELIHOODS

Zione Mngwila doesn't list 'climate activist' as one of her achievements - but that's exactly what she is. She smiles as she ticks of an impressive list of achievements - entrepreneur, farmer, beekeeper, house builder, electrician. "I've realised that being a women doesn't make me a failure," she says. "No, it's not like that - as a woman, I never look down on myself."

You get the impression there isn't much Zione can't turn her hand to. Her home was bought with profits from her business and - and unusually for a remote village in central Malawi - is lit with solar-powered electricity she installed herself. "We have a saying: noone tells you if you are on fire. It means, if something goes wrong, you experience it personally. That's why I don't only rely on one source of income. I have livestock, I grow crops, I make honey. If one thing fails, I can rely on something else. I decided in my heart that whatever a man can do, I can also do."

You won't find Zione's name on lists of the most influential women environmental campaigners. Yet, along with countless millions of women around the world, she is building a sustainable, resilient future for herself, her family and her community. Frequently unseen and unheard, and faced with the stark realities of food and water insecurity, it's often women in developing countries who are innovating and diversifying in order to stay one step ahead of climate disaster.





It's tempting to see women - especially those in low-income and vulnerable countries - as victims of climate change. And it's true that, as former UK Foreign Secretary David Miliband says, "Women and girls are disproportionately affected by food insecurity and climate chaos due to gender inequality - too often unable to access humanitarian assistance, legal and safe work, and education."

But women are not inherently more vulnerable to climate change than men. All things being equal, women tend to be more resourceful and resilient and better than men at withstanding crisis conditions like severe famines, epidemics and slavery. But as Adelle Thomas, Director of the Climate Change Adaptation and Resilience Research Centre at the University of the Bahamas pointed out in a recent blog, they have to deal with "complex power relations and socio-economic characteristics that result in climate impacts being experienced differently."

From the very beginning, EU GCCA+ has recognised women as critical drivers of climate action, as leaders, decision makers, educators and role models. But they are also innovators, risk takers, entrepreneurs and wealth creators. Around the world, women are transforming lives and livelihoods blighted by climate change. But all too often, women remain excluded from the education, finance, land rights and power structures which would enable them to fulfil their potential.

"Evidence shows that women's empowerment and advancing gender equality can deliver results across a variety of sectors, including food and economic security and health," says the <u>International Union for the Conservation of Nature</u> (IUCN). "It can also lead to more environmentally friendly decision making at household and national levels."

You don't have to look far for inspiring examples - <u>Time Magazine's list of the 15</u> most influential women leading the fight against climate change is a good place to start.

But as the women featured in this article show, there are countless other unsung heroes all over the world leading their families and communities towards a more climate resilient future.

As <u>Vandana Shiva</u> says:

"We are either going to have a future where women lead the way to make peace with the Earth or we are not going to have a human future at all."



