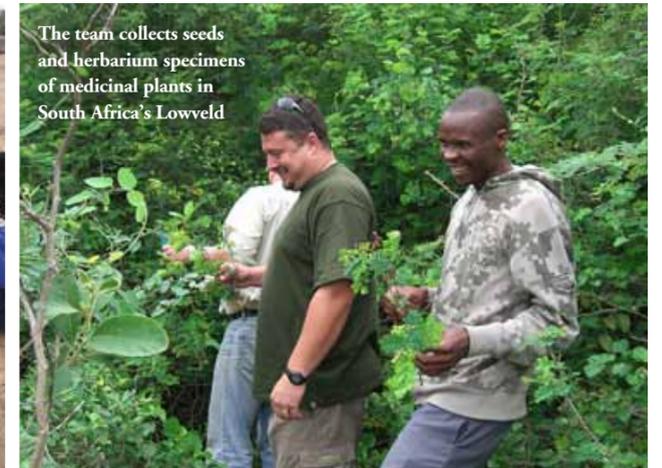




In Kenya, seedlings of native trees are being raised so that degraded land can be reforested



Farmers in Mali are learning to propagate native plants for the communal plot



The team collects seeds and herbarium specimens of medicinal plants in South Africa's Lowveld



Tsetseng villagers now grow their own food, including Kalahari cooking melons



Moctar Sacandé plants a mongongo tree, after scientists discovered the key to germinating them

Growing your own

Gail Vines looks at the wide-ranging benefits of Kew's international project to help communities raise useful plants from seed, rather than gathering them from the wild

In West Africa, cotton is big business, contributing to the livelihoods of some three million people. The trouble is, cotton is notoriously susceptible to pests, and chemical pesticides are exceedingly expensive. So, for very good reasons, farmers in Mali set out to grow their cotton organically – and their sesame and maize too – and what's more, they've succeeded. Now the villagers of Yanfolila are role models for the region, with some 70 communities keen to emulate their success.

How did the farmers of Yanfolila do it? Support from local government and NGOs made all the difference, but so too did the botanical expertise of Kew,

shared through the initiative known as Project MGU – the Useful Plants Project.

'In Mali, our intervention helped the community choose about a dozen species of native wild plants with pesticidal properties,' explains Moctar Sacandé, a regional co-ordinator based in the Millennium Seed Bank (MSB) at Wakehurst. 'Then we helped farmers germinate and establish the pesticide plants in a communal plot.'

For some wild species, the villagers were able to produce seedlings for the first time, ensuring a ready supply close at hand. This helps to take the pressure off wild populations. 'The crucial point is that the demand came from

the communities – we just helped them find solutions,' Moctar says.

The Yanfolila initiative is just one scheme in the Useful Plants Project, which began in June 2007. It grew out of a proposal made to Kew by a philanthropist based in Spain, and the name MGU reflects the generous support for the project provided by this private donor. Based at the Millennium Seed Bank, the project is managed by Tiziana Ulian (see p26), with the MSB's director Paul Smith at its helm, and with vital contributions from Moctar and his fellow regional co-ordinators, as well as a host of specialists from MSB Partnership organisations in Mali, Botswana, Kenya, South Africa and Mexico.

In Botswana, another success story captures something of the spirit and potential of the initiative as a whole. There, the mongongo tree (*Schinziophyton rautanenii*) is highly prized by the San communities of the Kalahari Desert, not least for its delicious and nutritious

nuts, hidden within hard shells, rather like almonds. The trees were becoming alarmingly scarce, but attempts to grow them from seed for habitat restoration schemes failed, as they wouldn't germinate.

Based on research carried out in both Africa and Australia, MSB Partnership

'The crucial point is that the demand came from the community – we just helped them find solutions'

scientists discovered that mongongo is one of a range of species that germinate only after being treated with smoke. 'It was a great day when we were able to pass on that technology and help the Botswanans plant out mongongo seedlings that had been propagated in community nursery gardens,' says Moctar. 'It shows that if you can remove the technical impediment, you can make a big difference.'

It's a striking example, he adds, of the way the MSB Partnership can work to provide seed solutions for the benefit

of communities facing threats to food security as a result of climate change. 'It's a wonderful opportunity – they already know what they want, and ask us if we can help. Often we can – we can help people to propagate useful wild plants, restore degraded habitats and reinstate

threatened plant species, to the benefit of everyone,' Moctar explains.

In the same region of the Kalahari, the villagers of Tsetseng have set up a community botanical garden to raise wild species of trees and herbaceous plants that provide food, dyes, forage and medicines. Now they no longer have to spend hours foraging in dangerous lion country in search of increasingly rare wild specimens of the plants they need.

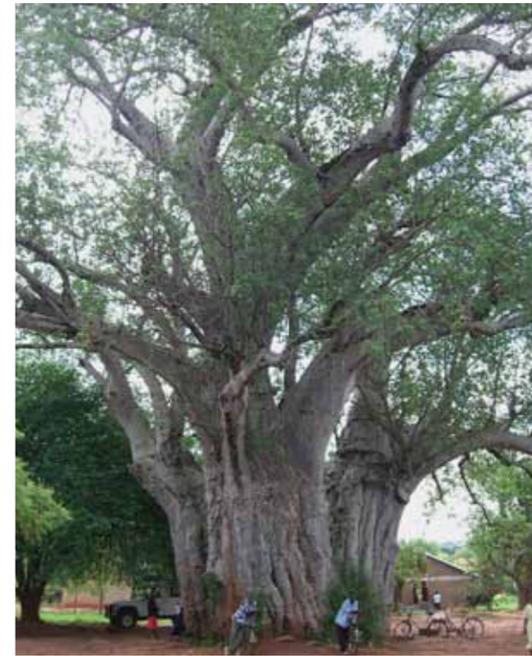
One particularly useful species now thriving in this botanic garden is the wild



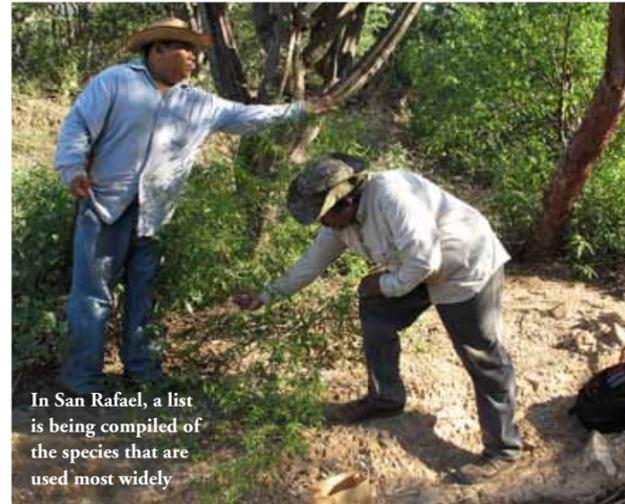
The columnar cactus *Pachycereus weberi*, native to San Rafael, produces edible fruits



A traditional healer shows useful plants to Tsetseng children and Tiziana Ulian



The African baobab tree is a valuable source of water, food and medicines



In San Rafael, a list is being compiled of the species that are used most widely



The project demonstrates that 'our knowledge is highly relevant to people's livelihoods and to development in general'

On a field trip, Botswanan children are taught how to collect seeds

watermelon, *Citrullus lanatus*, the ancestor of the world's watermelons. An important source of water in the Kalahari over the dry season, it also provides food and medicines.

In South Africa, the project's greatest strength to date has been working with primary schoolchildren, who have become keen wild gardeners. Ten schools now give pride of place to gardens growing almost 100 medicinal species, helping to ensure that local knowledge of plants is passed on to the next generation. Traditional healers are actively involved and 'children are very keen to grow a garden of medicinal plants and to learn about their uses, as part of their educational activities,' says Tiziana.

In Kenya, in partnership with the forestry department, farmers in Tharaka

to the north east of Nairobi are growing seedlings of wild tree species. 'These young trees will help to reforest degraded land with useful native species, such as the charismatic baobab tree (*Adansonia digitata*), which is widely valued by local communities as a source of water, food and medicine,' Tiziana explains. The leaves are eaten as a vegetable, while the nutritious fruit is loaded with seeds that can be eaten roasted or used to thicken soups, or as a source of vegetable oil.

And in the Mexican state of Puebla, the villagers of San Rafael have built a rural greenhouse to propagate important medicinal plants and investigate their ideal growing conditions. These include Mexican oregano (*Lippia graveolens*), from which

essential oils are extracted that have antimicrobial properties, effective against the protozoan parasite *Giardia lamblia*, which is a common cause of diarrhoeal illness.

After its impressive debut, the Useful Plants Project is now embarking on its second phase. 'In the initial stage, we've made sure that the seeds of useful plants are collected and safely stored in national seed banks and the MSB, so they can be used by local communities to propagate many of the wild species they need in their everyday lives,' says Tiziana. 'In the next phase, the project will also focus on helping people generate an income from their gardens and communal plots, to ensure that the initiatives will be sustainable in the long run.'

In addition, the school programmes look set to expand, reaching many more young people, while the propagation of native species for habitat restoration and the enrichment of village forests is gathering momentum.

All in all, the Useful Plants Project clearly demonstrates that 'our knowledge is highly relevant to people's livelihoods and to development in general,' says Paul Smith. Now, the challenge is to deliver the knowledge more effectively and on a much larger scale. 'In order to do this, we need to develop new partnerships – with rural development and educational organisations, for example – so that we can substantially increase our impact,' he concludes.

PHOTOGRAPHS: TIZIANA ULIAN

'We need advocates,' says Moctar, 'who can spread the news and support us to get the resources to continue,' so that more and more communities can make best use of their invaluable wild plant resources. 'Conventional crops consist of very, very few species – less than one per cent of all plant species,' he points out. 'The rest – the 99 per cent – are in the wild, and are providing medicines, food, timber, fodder, tools and all manner of daily essentials.'

Gail Vines is a freelance journalist and one of the authors of *The Last Great Plant Hunt* – the story of Kew's Millennium Seed Bank, which is available in Kew shops at the special price of just £25 (RRP £28)

You can find out more about the Useful Plants Project and its partners at www.kew.org. If you'd like to help support Kew's many conservation initiatives, go to www.kew.org/support-kew

