WORLD NEIGHBORS
Inspiring People · Strengthening Communities

# NEIGHBORS

SUMMER 2022



*Growing tree seedlings in Tanzania*

Dear Neighbors,

This summer, all around the world, communities are experiencing some of the hottest weather on record. Even in the United States, we are coping with record temperatures and unusually severe wildfires. This issue of *Neighbors* is devoted to how our communities are managing the changing weather patterns, the extreme rains or droughts, shrinking arable land and the many other climate fluctuations facing farmers.

With help from our knowledgeable and committed staff, communities are not only thriving, they are experimenting with new ideas and new technologies to cope with these changes. In this issue you will learn about:

- Innovative uses of bamboo in Nepal.
- What is agroforestry and how is it changing lives in East Africa?
- An exciting Rainfall Prediction App that World Neighbors has introduced in Indonesia.

These are just a few of the groundbreaking approaches that are being developed and used to manage an ever-changing environment. We hope you enjoy these articles.

We are thrilled to announce that we have been awarded a 1:1 matching grant for $117,000! The Paul Milburn Charitable Gift Fund at the Oklahoma City Community Foundation is providing this opportunity to **double** your donation to World Neighbors!

I want to once again thank all of you for your generosity, commitment to our mission and your interest in our work!

With deep gratitude,

Kate Schecter, Ph.D.
*President and Chief Executive Officer*
*May Ayers Milburn Chair*

*Kate with staff member, Jolie Kaban (right), and partners from Indonesia*

*Tree nursery in Tanzania*

# BESIDES MITIGATING CLIMATE CHANGE, AGROFORESTRY RAISES INCOMES & ENHANCES NUTRITION

*By Chris Macoloo, Regional Director, World Neighbors East Africa*
*This article originally appeared in Farmers Review Africa on February 22, 2022.*

Planting trees is one of the more effective ways to counter the effects of climate change. Numerous initiatives, some that entail spending hundreds of millions or even billions of dollars, seek to plant new trees and replace those eliminated through clear cutting and other techniques. Late last year, India, Malaysia, Indonesia and the Philippines committed to planting trees to restore 64 million acres of degraded land by 2030. Countries in the Sahelian region of Africa have also committed to planting trees at the edge of the Sahara Desert to stop its expansion southwards and combat desertification. This is a project led by the African Union and involves creating a 'Great Green Wall' from Senegal in the west to Djibouti in the east.

Planting trees can be especially effective in developing countries where climate change increasingly affects agriculture, water supplies and migration. While it will take much more than retaining and increasing the number of trees to prevent large-scale harm to communities seeking to escape poverty, trees can play an important role in helping catalyze sustainable economic and social development.

## Agroforestry Takes Root in East Africa

That is exactly what is happening in communities in Tanzania and Kenya.

Trees are an important part of both countries' economies. They are used for fuel and building. Gathering branches for fuel can take up much of a person's day, taking up time that could otherwise be spent on agricultural work, a home-based business or education. In addition, a lack of wood for fuel can drive villagers into public forests. While taking wood for fuel is understandable, it is one of the factors leading to deforestation, and one of the very reasons foundations, governments and others are investing in tree planting.

World Neighbors, working with local partners, has helped communities in Tanzania and Kenya plant and manage tens of thousands of trees. These include fast-growing varieties whose branches can be harvested more quickly, providing a steady source of fuel for cooking and other needs. Surplus is sold to neighbors, increasing family incomes. Since the woodlots are near villages, there is no longer the need to travel far and spend a great deal of time gathering fuel. That time can be used in farming and other activities, raising agricultural output and income. This is especially important for women, who gather wood and have lower labor participation rates. In addition, fast-growing trees reduce or eliminate pressure to cut down trees in public forests.

Villagers also plant fruit and non-fruit trees near and among fast-growing varieties. This is an effort to create 'food forests', a practice that addresses community food needs and ecosystem regeneration. Food forests protect the soil, recycle nutrients and conserve water, very crucial mitigation and adaptation measures for responding to climate change effects. The fruit trees cultivated are mainly oranges, mangoes, lemon, pawpaw and avocado. These fruit trees are primarily used to provide fruits as a strategy for increasing food and nutrition security and improving soil health. Surplus produce is sold in local markets, increasing incomes.

The most common non-fruit trees include casuarina, croton, moringa, grevillea, acacia (meransii and tortilis) and eucalyptus. Casuarina provides firewood and fencing material. Eucalyptus leaves have medicinal properties that can relieve pain and cold symptoms. Acacia also provides fodder for livestock.

Agroforestry is also pivotal to increasing tree cover. Since agroforestry is practiced on individual farms, farmers are more willing and motivated to plant and manage the trees compared to those cultivated in communal areas. Smallholder farmers constitute over 80% of farmers in Kenya. If even a third of these farms engage in agroforestry, it would make a significant contribution to increasing tree cover in the country. This would help absorb carbon dioxide and help mitigate the effects of climate change.

## Challenges

While very promising, there are challenges to wide-scale agroforestry in Tanzania, Kenya and other countries. An important hindrance can be the time frame involved in planting, cultivating and making use

*Seedling in Tanzania*

of certain tree species. Benefits are medium to long term. Improvements in soil health and tree products such as timber, firewood and fruit are often realized after a couple of years. This can understandably prove a disincentive to farmers with immediate income needs.

In addition, many farmers have small pieces of land, 2 to 3 acres on average. Many farmers view agroforestry practices as competing with other profitable land uses such as cropping and livestock rearing. Trees are seen as competing with crops for the available and limited essential resources such as labor, water and nutrients.

Farmers also initially lack the necessary skills and technical knowledge needed for establishing and managing agroforestry systems. Such skills include establishing tree nurseries and tree management practices such as pruning, thinning, pollarding and coppicing. To address this, World Neighbors partners with other organizations and government departments to invest in the necessary skills training.

Perhaps most important, agroforestry requires modest investment by farmers. This includes tree seedlings and other inputs as well as labor to tend trees. Investment capital in rural villages can be scarce or only accessed at relatively high rates of interest. It can be particularly difficult to obtain loans for a novel investment like agroforestry.

## Savings and Credit - Key to Success

It is for this reason World Neighbors introduces savings and credit programs alongside agroforestry and other projects. In a savings and credit program, farmers contribute small amounts each month. When enough capital is amassed, participants take out loans at very low or no interest. Loans are invested in tree seedlings and other agroforestry inputs. A portion of profits from increased output is reinvested in the program, increasing the capital pool available for loans and investment to community members. Because a savings and credit program involves neighbors loaning money to neighbors, repayment terms can be adjusted if necessary, and there are no onerous fees. This helps encourage the kind of patient capital necessary for agroforestry and similar investments that provide returns over a longer time horizon. This capital is controlled by communities and used for community needs.

The challenges to agroforestry are being overcome. Planting trees in Tanzania and Kenya is mitigating the effects of climate change. Food producing trees are addressing nutrition challenges. The initiatives are increasing household incomes. And through the capital accumulation necessary to engage in it, agroforestry is serving as the basis for business development at a scale capable of lifting communities out of poverty.

Agroforestry is one of many innovations that demonstrate that sustainability and economic development can go hand in hand.

*A savings and credit group participant in Kenya*

*Baskets woven from bamboo in Nepal*

# BAMBOO IS A SALVE FOR IMPOVERISHED NEPAL

*By Peter Coy*
*This article originally appeared in The New York Times on June 6, 2022.*

Bamboo makes a fascinating case study of how to do developmental assistance right.

Take Nepal, where the fast-growing plant (technically a grass, not a tree) has hundreds of traditional uses — as food, spears, flutes and construction materials for houses, goat pens, wedding stages and funeral biers.

But the Nepalese haven't always extracted the maximum economic value from the bamboo that grows all around them. International charities are helping to change that, offering hope for other low-income communities.

More effective cultivation and use of bamboo won't by itself turn around the fortunes of Nepal, a nation of about 30 million situated on the roof of the world between India and China. Nongovernmental organizations have spent decades and millions of dollars on efforts to lift up Nepal, whose growth has

*Illustration by The New York Times; Images by CSA-Images/Getty Images*

been hampered by geographical isolation, earthquakes, political violence and corruption. Many Nepalese have given up trying to make a living in the country and instead work abroad, sending money home to their families.

Still, every little bit helps. For some families, at least, the cultivation and sale of bamboo provide a source of income that makes life a little better and, in the best case, puts them on a virtuous circle path toward better health, education and prosperity. So I spent some time speaking with people in Nepal about how such a simple and ubiquitous crop can change fortunes there.

Srijana Karki, the South Asia regional director for the U.S.-based charity World Neighbors, who is based in the Nepali capital of Kathmandu, told me in a video call that resistance to cultivating bamboo remains, and pointed to one village's superstitions. "They would hire someone from outside the community — the bamboo grandfather — to plant bamboo because they were afraid if they did it themselves there would be a bad omen in the house or someone would die," she said.

"Field staff explained it hasn't happened in any other communities. One or two brave people mustered up the courage and they did the bamboo planting. Nothing happened to them. In fact, it gave an added income stream," said Karki. Since then, she said, many others have planted bamboo, despite their initial reservations.

One key advantage of bamboo is that it costs virtually nothing to grow, so even a small revenue stream is pure profit.

Bamboo also prevents erosion when it's planted on patches of what was bare soil. It filters pollutants out of water. Bamboo shoots are a mainstay of Nepali cuisine, as they are in other Asian nations. Bamboo stems, known as culms, make sturdy beams, trusses, scaffolding and fences. Bamboo is also used to make furniture and decorative baskets, trays and other products sold to tourists, whose spending is crucial to Nepal's economy.

With Karki interpreting, I spoke by video with Kamal Shrestha, a former ward chief of one of the communities in the Udayapur District of Nepal's Province No. 1. There was, he said, a lot of wasted land in Udayapur. More of those empty areas are now being used productively, he said.

I also spoke with Shankar Thapa, the chair of the Human Rights and Environment Development Center in Udayapur, which is World Neighbors' partner

*Using bamboo to weave baskets in Nepal*

organization in the district. (By law, all international nongovernmental organizations must work through Nepali ones.) He said he likes World Neighbors' emphasis on teaching skills rather than simply giving money. "Beneficiaries become very active because they are doing the main work," he said. "If they want to progress they have to do it."

Though bamboo covers much of Nepal, the Nepalese don't know everything about it. As in the United States, where agriculture extension arms of universities help farmers, so it is that villagers can learn some useful tricks from experts within and sometimes outside Nepal.

The Bamboo's Secret, a U.S.-based charity, has a school in the Chapakot municipality of central Nepal that teaches widowed and divorced women salable crafts that use bamboo. It has its own bamboo nursery on the premises.

Habitat for Humanity is teaching Nepalese women to build bamboo houses, a job that was once reserved for men, and make bamboo handicrafts. "Before, we didn't weave these trays. We didn't even have the knowledge to weave bamboo," a woman named Maya Sunuwar says in a Habitat for Humanity Great Britain video.

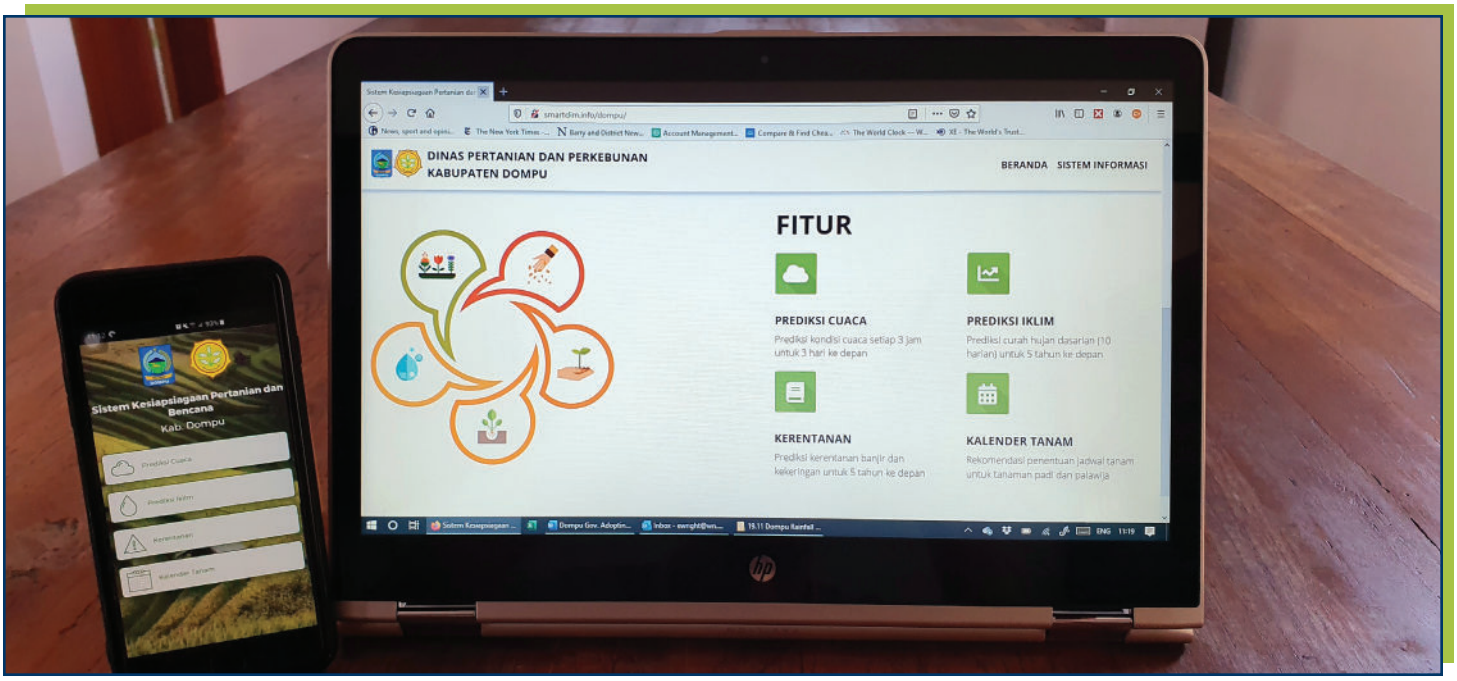
There are as many as 1,600 species of bamboo, some more commercially useful than others. For example, Arundinaria bamboo is rare, grows in soil above 2,900 meters, is browsed by yak and other wild animals and is made into arrows, brushes and straws, according to a detailed table made by Keshab Shrestha, a former professor at Tribhuvan University in Kathmandu.

And as any agriculture extension agent would tell you, there is a right and a wrong way to do everything on a farm. "The bamboo needs to be harvested in the dry season, preferably at new moon (first quarter), and the leaves left on for a few days (until they turn yellow) to allow them to extract the moisture from the stems," says a set of instructions made by Sjoerd Nienhuys, an architectural engineer based in the Netherlands.

There's a lot more to Nepal than bamboo, of course, and many national and international nongovernmental organizations are working on other pressing matters, from other kinds of agriculture to reproductive health and education. But for many Nepalese, turning bamboo into money can be a step toward financial independence.

*Nepali woman farmer*

*Planting lychee trees in Bihar, India*




*Rainfall prediction apps for Android and Windows*

# RAINFALL PREDICTION APP BUILDS RESILIENCE & INCREASES INCOMES

*By Edd Wright, Regional Director, World Neighbors Southeast Asia*
*This article originally appeared in The Environmental Magazine on December 17, 2021.*

Indonesia's Sumbawa Island lies in the middle of the Lesser Sunda Islands. In the center of Sumbawa is Dompu Regency. Dompu is dotted with small family farms, most of which grow corn. These farms are usually small, on sloping land and worked using dryland farming techniques. This means the incomes of thousands of farmers revolve around how they best exploit the annual rains.

For generations, Dompu's farmers have used signs in nature and astronomical calculations to predict rains and droughts. December has been the traditional planting time. But with the increasing impact of climate change, the first rains have begun to arrive any time from October to January, making these traditional signs far less accurate.

That's where adaptation and technology come in.

In 2015, World Neighbors, in collaboration with the Bandung Institute of Technology and with support from USAID's Bureau for Humanitarian Assistance, introduced a technology-based rainfall prediction program. It uses complex algorithm software to create detailed rainfall pattern projections; recommendations on the types of crops suitable for the amount of rainfall; and warnings for potential hydro meteorological disasters.

The rollout has been slow and steady. In the first phase, we trained our local NGO partner, LESPEL, to bring this new information to farmers in five villages. Around 60% of farmers who attended these initial workshops took the risk of applying this new knowledge to their planting schedules. As the majority of their fellow farmers prepared their fields in November and then planted in December as they had always done, these pioneer farmers waited until late December/early January to work their fields.

The rains arrived late, just as the program had predicted. The farmers using the scientifically determined data had higher yields and incomes. This understandably made an impression on neighboring farmers, who asked how they too might join the program.

As important, this initial success convinced the Dompu district government to come on board. The Agriculture Office's field extension officers were trained to use the program. In its second phase, the program enlisted more than 3,700 farmers from 36 villages to receive

training and use the rainfall prediction tool.

This wider participation enabled the program to demonstrate decisively its impact on incomes. In Dompu, it costs around $430 per one hectare of land to plant corn. If the harvest fails, that investment is lost. Of course, so is the profit from lost potential sales – $1,430 per hectare. For most farmers in Dompu, this profit is their entire annual income. The farmers involved in the program achieved this income and profit. Many farmers, not yet trained in the program, did not.

The local government—and farmers themselves—were convinced the rainfall prediction information needed to be available to all of Dompu's farmers. The challenge was how to reach over 200,000 people in 81 villages. Workshops and printed material were simply too labor and time intensive. While face-to-face training is always ideal, in this case it was simply not feasible given resource constraints.

The solution was to fully digitize the information and make it available online and via a smart phone application.

*Farmer training in rainfall prediction technology*

Our local partner and regional government officials brought this proposal to the regional parliament. Field visits and additional briefings made clear the program and its impact on incomes brought real benefits to constituents. In 2019, the program received funding to develop online and Android versions of the rainfall prediction tools. By the end of 2019, these were ready to download and use.

*Planting furrows in Indonesia*

Farmers can view weather (rain, wind speed, humidity and air pressure) prediction intervals every three hours for the next three days. This data is tailored to every village in Dompu. Farmers can also see monthly rainfall predictions for the next five years and recommendations on optimal planting times for primary (corn and rice) and secondary crops. The apps also provide real-time disaster data on floods, droughts, landslides and crop pests.

World Neighbors and our local partner continue to work with the government to hold training sessions with farmers to make certain they are putting the data to proper use. Tens of thousands of farmers no longer need to wait for reliable information to guide planting decisions—or rely on traditional methods no longer suited to current climate conditions. As long as they have access to an Android phone and can receive data, they are able to get the latest and most accurate rainfall information.

Dompu's farmers have a powerful technological tool to adapt to climate change. The lesson goes beyond adaptation and resilience. The successful effort to adapt has actually produced a system that enables even better planting decisions. This means even higher agricultural output and, with it, higher incomes. The success in Dompu proves yet again that spending on climate resilience is not only a cost. If done right, it can also be a very profitable investment.

# Commemorative Gifts Received

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# MATCHING GIFT CHALLENGE: TWICE THE IMPACT

The Paul Millburn Charitable Gift Fund through the Oklahoma City Community Foundation is providing the opportunity to **DOUBLE** your donation to World Neighbors!

Help transform **TWICE** as many communities so that they can become self-sufficient.

Join us in taking advantage of this generous $117,000 matching grant and help us continue to reach marginalized communities throughout the world!

*Coffee Farmer in Guatemala*

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## OUR MISSION

World Neighbors inspires people and strengthens communities to find lasting solutions to hunger, poverty and disease, and to promote a healthy environment.

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