

# Indian tribe revives heirloom seeds for health and climate security

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[The Dongria Kondhs, devotees of their mountain gods in the remote hills of eastern India, are custodians of dozens of vanishing seed varieties.](#)

• [With the region in an agrarian crisis due to recurrent droughts and erratic rainfall, the tribe is on a mission to return to its farming roots and resuscitate long-lost heirloom crops.](#)

The tribe hopes the effort will help it overcome malnutrition and climate distress.

**Journalist Sonali Prasad and photographer Indrajeet Rajkhowa captured a glimpse of this effort for Mongabay.**

RAYAGADA, India — The sun rose above the jagged spires of the Niyamgiri hills, the sky a wisp of apricot on rolling mounds of green. Trees bent with mangoes and jackfruits dropped manna for the occasional passerby. Around a dirt bend, a warm symphony drifted from a hill slope: the strike of a sickle, the pitter-patter of seeds, shuffling bangles of women unraveling weeds. It was sowing season for the Dongria Kondhs. The Dongrias, one of the most vulnerable and traditional tribes of India, live in remote hamlets scattered throughout the Niyamgiri hill range in southern Orissa, a state in the country's eastern limb. **Thirty-year-old Gatri Kadraka sits outside her house in Rodango village in traditional Dongria attire. Image by Indrajeet Rajkhowa.** In the village of Rodango, not far from the hillside planters, 30-year-old Gatri Kadraka laid out a colorful array of seeds in her courtyard: three indigenous varieties of finger millet, two varieties of foxtail millet, pearl millet, barnyard millet, little millet, an upland variety of paddy or rice, two local varieties of sorghum, maize, black gram, cowpeas, pigeon peas, castor beans, cucumber, pumpkin, gourd and spinach, and tubers of tapioca and forest turmeric. "These are presents from Niyam Raja, the king of all mountain gods in Niyamgiri," she said. The Dongrias call themselves royal descendants of Niyam Raja, and their deep reverence for the natural resources that have been conferred on them perfuses their everyday lives. "As long as we respect our hills, rivers and soil, he will keep us nourished," she added. Forgotten varieties of paddy, millets, beans, oilseeds and pulses stored in a Dongria household. Image by Indrajeet Rajkhowa. As abundant as Kadraka's collection is, the Dongria Kondhs once possessed many more varieties of heirloom seeds. But they started losing their self-sufficient food systems when the forest became degraded due to unrestrained logging and the government introduced subsidized high-yielding paddy in the late 1990s. From a diverse indigenous farming system, the Dongrias gravitated toward rice monoculture, losing numerous landrace strains in the process. "Their mindset shifted from good old co-dependence on nature to productivity," said Debjeet Sarangi, founder of Living Farms, an Orissa-based nonprofit that works on food and resource management with indigenous communities. "They traditionally farmed for subsistence, but with rice came more mercenary concepts of 'profit' and 'yield.' They became reliant on commercial seed suppliers."

A Dongria girl holds a chicken in Hundijali village. Chickens are often used as barter during seed exchanges between different Dongria communities. Image by Indrajeet Rajkhowa.

The villagers' consumption also shifted as rice cultivation gained hold and disrupted the nutrient-dense medley of traditional grains and legumes that once filled their food plates. Many communities began a slow descent into food insecurity. However, with Orissa undergoing an agrarian crisis due to recurrent droughts and erratic rainfall that affect water-intensive crops such as rice, the Dongria Kondhs are on a mission to return to their farming roots. With a renewed sense of their rights to the forest after ousting a U.K.-based mining company in a much-publicized resistance in 2013, and a little help from grassroots organizations such as Living Farms, the tribe began resuscitating lost seed varieties soon after. The Dongria women, through their elaborate cultural rituals, are leading this initiative.

**Old agricultural ways and indigenous eating habits could help close the nutritional gap in remote Dongria Kondh communities. Image by Indrajeet Rajkhowa.** A bejuni's prayer High up in the village of Hundijali, every household has a different way of safeguarding seeds. Some women grind neem leaves and mix them with seeds as an insecticide; others line their baskets with cow dung as a disinfectant. They save the seeds from the previous harvest, some to be grown next season, some for consumption and what remains for barter within the community. If a household falls short of seeds, the rest of the families pitch in. If there is a marriage or celebration, the entire village contributes. The seeds belong to no one and everyone. The community doesn't generally sell their seeds in the market unless there is a monetary or medical need. Instead, they sell indigenous crops that grow wild, such as jackfruit, bamboo shoots, oranges, honey, wildflowers and mangoes — gifts from Niyam Raja.

A Dongria woman collects wild jackfruit to sell in the market. Image by Indrajeet Rajkhowa.

Seed collection, cultivation and farming festivals revolve around three key players in every village community: the farmer, the senior village priestess or bejuni, and the messenger or barik. To bring back long-lost seeds, the bejuni sets out on elaborate expeditions into remote hilltops. Dressed traditionally with the signature three rings adorning her nose, she visits nearby villages where an heirloom crop has been found and preserved. Making an offering to a village's bejuni of a pigeon, a hen or a goat, she brings back a fraction of the seeds to the farmers in her own community. After a successful harvest, the priestess returns double the amount of seeds she received to the neighboring village. The barik, belonging to the Dom community — a low caste that lives harmoniously with the Dongria tribe — then travels door to door and village to village to spread the news of the rare seeds being saved. [Farmer Drambu Jakesika, left, head priestess or bejuni Kumtadi Sikoka, center, and messenger or barik Sanyasi Takri from Hundijali village. Image by Indrajeet Rajkhowa.](#) There are signs this seed-collection system is working. Remote hamlets of the Dongria Kondhs have reportedly rescued the hardy

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millet, a variety high in fiber and energy content, after an absence of nearly 40 years. The Bijun Parab seed festival takes place in various villages before the planting season begins. The women of the village clean the seeds, weave baskets for them, and then place them before the bejuni. The bejuni offers the seeds to Mother Earth, sacrificing a chicken, a pigeon or a goat. The blood trickles onto the seeds as she chants names of deities: the mountains, rivers and trees. "We pray that they stay happy with us," said Kumtadi Sikoka, the oldest bejuni in Hundijali. "Only then can we sprinkle the soil with our seeds."

Kurli village nestled in the lush hills of Niyamgiri. Image by Indrajeet Rajkhowa.

Climate-resilient farming, the old-fashioned way

The Dongrias plant mostly on hill slopes, an entire community working together in lines on one piece of land. They sow close to 50 varieties of seeds intermixed on a single farm: millets, grains, pulses, beans, oilseeds, tubers and vegetables. They plant from late April until the end of August, depending on the weather. Apart from certain vegetables like spinach, which they get throughout the season, they harvest crop by crop, from October until the end of February.

The tribe's practice of planting a wide variety of crops holds the key to a strengthened and climate-resilient food system. Although crops failed in large parts of Orissa in 2017 due to drought, pests, disease and untimely rainfall, Dongria Kondh farmers still brought home a decent harvest. While suicides were reported in other farming communities as a result of despair over crop losses, the Dongrias recorded no such deaths.

"We have never had a situation where all our crops have failed," said 42-year-old Kalia Nonraka from Barmaguda village in the foothills of Niyamgiri. "Something or other will grow in less rainfall."

Kalia Nonraka from Barmaguda village in the foothills of Niyamgiri. Image by Indrajeet Rajkhowa.

Most of the seeds the Dongrias plant, such as finger millet, pearl millet and sorghum, tolerate drought and heat well.

"The farmers may not know of big words such as 'climate change,' but their symbiotic relationship with nature teaches them the science behind sustainable farming," said Sarangi of Living Farms.

Growing various crops together allows the soil to retain most of its nutritive properties. What nutrients some crops absorb from the soil, others put back. Furthermore, the difference in height of the crops lets the rain and sun sieve through vegetation before reaching the surface, protecting the soil from harsh contact. Down the hill slopes, shrubby crops like peanut slow the speed of rainwater, protecting more vulnerable crops.

[Dongria farmers from Hutesi village work together on a single hillside plot. Image by Indrajeet Rajkhowa.](#)

Farming mostly happens without any chemical additions to the soil. "They don't want to hurt it," Sarangi said.

The farmers are not too concerned about pests and insects. "If we eat, so will the birds, insects, flies and ants," said 30-year-old farmer Drambu Jakesika. "The Earth does not belong just to us."

**Seeds preserved in a Dongria Kondh household. Image by Indrajeet Rajkhowa.**

#### [Food security and sustainability lessons](#)

[The revival of indigenous food systems also secures the nutritional well-being of the Dongria Kondh. Even though the farmers swear by the benefits of traditional crops, certain communities in the foothills and lower ranges of Niyamgiri have taken to government-subsidized rice for portions of their meals. However, the remote hamlets nestled deeper into the mountains still maintain more millets in their diets. "Ragi \[finger millet\] gives us strength, rice just fills our stomachs," said 18-year-old Laxmi Kadraka from Rodango village. \*Eighteen-year-old Laxmi Kadraka, seated, poses with her friends in Rodango village in Niyamgiri. Image by Indrajeet Rajkhowa.\* Lakshminarayan Pushty, a public health officer in the district of Rayagada, advocates old agricultural ways and eating habits for the remote tribe. "When they eat a mix of a variety of millets, vegetables and lentils, they get more fiber, protein, antioxidants and minerals such as magnesium and potassium, in comparison to only rice," he said. "Just like their farms, good nutrition is all about how diverse their plate is." The Dongrias hope that renewing the culture of multiple crops will generate enough produce for every household. That would go a long way in alleviating health issues like malnutrition, anemia and maternal mortality that are prevalent among the tribe. Research shows that 60 percent of school-age children are malnourished, while 55 percent of adults show chronic energy deficiencies.](#)

*Murudi Jakesika, age 12, from Hundijali village. Research shows that 60 percent of school-age children are malnourished within Dongria communities. Image by Indrajeet Rajkhowa.*

["Ten to 15 years back, our people used to eat food from the mountains — our millet, ragi," said 31-year-old Dinja Jakesika, the sarpanch head of the Kurli Gram Panchayat. \(Gram Panchayats are self-governance blocks formed by a cluster of villages.\) "Ever since they started eating rice made available by the government's Public Distribution System, they have become very weak. Our men grow old faster." Over the past 50 years, the area under millet cultivation across India shrank from nearly 370,000 square kilometers \(143,000 square miles\) to less than 150,000 square kilometers \(58,000 square miles\), a decline of 60 percent that the government \*\*attributes\*\* to changes in consumption patterns and conversion to rice and wheat cultivation, among other factors. In Niyamgiri, the variety of nutritious heirloom seeds withered apace, not only with the introduction of rice but also when the government started a scheme to promote cash crops like pineapple, turmeric and ginger amongst the tribe in 1988, according to Susanta Kumar Dalai, a social worker in the Dongria Kondh communities. "If you talk to the different farmers, you will realize that a minimum of 50 percent of millet land is being used for cash-crop cultivation," he said. "This is very dangerous as the Dongrias principally depend on their traditional crops for food security."](#)

*Dongria Kondh women stand under a tree in Hundijali village in the Niyamgiri hill range. Image by Indrajeet Rajkhowa.*

[Village head Jakesika wants to change the worrying land-use pattern in her sacred mountains. "I want to bring more land from the hills under traditional crops," she said. Waking up to the nutritional benefits and climate resiliency of the long-neglected millets, as well as to the needs of the indigenous small-scale farmers who cultivate these hardy crops, the Indian government has started promoting them under the National Food Security Act. Beneficiaries of the Public Distribution System, roughly 813 million citizens, would be able to get millets to eat at deeply subsidized prices of 1 to 3 rupees \(1 to 4 U.S. cents\) per kilogram. The Orissa state government has also taken up an ambitious five-year "millet mission" since 2016. The program aims to increase millet consumption in 60,000 households across several districts by boosting production and setting up processing machinery. By producing millets to meet a larger demand, the project also aims at improving the economic security of the Dongria Kondhs.](#)

Dinja Jakesika, the village head or sarpanch of the Kurli Gram Panchayat. Image by Indrajeet Rajkhowa.

[Village head Jakesika is keen to adopt the government's initiative to boost cultivation of traditional millets, but is wary of disrupting old, indigenous practices. She emphasized that the soil's health is paramount to the Dongria Kondhs. "We cannot keep producing more and more at the cost of our soil, even if it is for a few varieties of millets," she said. "The soil is us. We live in these hills as one entity, and that is most important." For her, sustainability solutions are not "one size fits all." "We will take all the help that we get, but only if it keeps our customs alive," she said. "We will not blindly follow ways of modern agriculture for some misplaced notion of wealth and well-being."](#)

*A Dongria woman from Barmaguda village removes weeds from her plot before sowing begins in the foothills of Niyamgiri. Image by Indrajeet Rajkhowa. Banner image: Dongria women from Hutesi village farm the slopes of the Niyamgiri hill range. Image by Indrajeet Rajkhowa. First published by [Mongabay](#) on 30 Nov. 2018*