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Indian Agrarian Crisis

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Reviving the lost legacy



Rice is life for thousands of people. At a time when the country debates a second green revolution in the eastern states, here is a story of a farmer, [Ghani Khan](#), who is shrugging off modern hybrid rice seeds to return to more nutritious and health traditional rice seed.

The lane to Bada Bagh is muddy, accost by trees. The whole farm is hidden with shrubs, trees, sugarcane, so you don't realize that lies ahead. Bada Bagh orchard, managed by Syed Ghani Khan's family at Kirugavulu in Malavalli taluk of Mandya district is very popular among the city dwellers for its flavoured mangoes from the trees that have a legacy of 250 years, but now the bagh is popular for a different reason. Bada Bagh was a gift received by Syed Ghani Khan from Tipu Sultan himself. Four generations later, the farm is now with Ghani Khan, a young and energetic farmer, who has completely changed the outlook of the ancient farm by combining the mango crop with [traditional rice varieties](#), all of 567 rice strains of different combinations are

grown here. Bada Bagh is now an essential museum of traditional rice strains is drawing in farmers from far and near.

Old aid

Ghani the eldest among the four sons says that it is the quest for alternative seeds and farming practices that brought the family together. The once separated brothers are back and they owe much to the traditional rice strains. Ghani just like many young farmers operated the farm adopting all modern agricultural practices. Though initially all was well, very soon he witnessed deterioration of his fertile farm. With the help of a fellow farmer he began to discover alternate methods to rejuvenate the soil. His experimenting started in 2000 by trial and error method using only organic compost. The hybrid rice, the IR series of rice varieties did not respond well to organic compost, so he had to find a rice variety that would suit the traditional cultivation methods. With the Kaveri river flowing through the district, there was wide spread hybrid cultivation and the region had lost almost all the traditional rice diversity that existed.

The region had very distinct drought resistant rice varieties like raja bhog batha, coimbatu sanna, kadi batha, bangaru sanna, bangaru kaddi and doddibatha, as there was no water in these villages before the 'Kannambadi' dam was built. Ghani says while hybrids have outstanding qualities, the ability to reproduce themselves is clearly not one of them. You may expect a good yield from hybrids with a sufficient input, but the main drawback is the you cannot save seed, as they may not even germinate, since it may be sterile. If it does sprout, the young plants will probably not have many of the characteristics of the parent plant, nor will it look anything like the plant you got the seeds from. But the traditional seeds have developed resistance to certain pests and diseases and are hardier and healthier than hybrids. Their original genetic material is intact and they have unique reproductive and immunity is preserved. Each variety has distinct flavors, and come in many different and unique colors, sizes, and shapes.

As the region had lost much of its traditional rices, search for the traditional seeds proved difficult. He came across a fine rice variety, *Rathnachudi*, and his experimentation began with only one variety. The variety performed well under organic farming and he continued cultivating the variety for about 6 years, before he realized to test some more of the traditional varieties. He says his hunt for traditional seeds took initiation with a that he was able to collect handful of seeds of about six paddy varieties in 2006. All the varieties were successful as they did not use chemicals and required less water. Later varieties increased from six to twenty-six in the consecutive year and again to seventy-five in 2008 and now he has as many as 146 varieties. He says he vows a lot to Sahaja Samrudha, an organic farmers association, stationed at Bangalore, for continuously guiding him technically and helping him collect seeds from different regions. His collection is from five different states and also few from another country. He has a wide diversity of wetland, dryland, medicinal, aromatic, irrigated rices. The whole 20 acres is a rich verdant tapestry in all hues of red, gold, brown and black. All the 146 traditional rices are maintained in a single, largest experimental restoration plot, an individual farmer can maintain. Each variety is evenly spaced with straight rows that are distinctly visible on the plot. A portion of the experimental plot is covered with high-yielding dwarf varieties that are planted for comparative study with the predominant expanse distinctively taller traditional rice plants.

Though he has irrigation facility, he feels that it is important to limit water usage so he is cultivating his farm by following System of rice intensification (SRI) method. SRI unlike conventional methods of raising productivity through genetic improvement and increasing inputs relies on providing an enabling environment for the rice plant to express itself fully. The plot has been designed and about 146 varieties are sown following the system that involves a combination of several principles, including the use of organic inputs, alternate wetting and drying, increased spacing between plants, and transplanting the plants while they are young.

Ghani says it is essential to conserve the different traits of rice varieties that have evolved through the combined process of natural selection and farmer selection that are so adapted to different eco-climatic conditions with their fragrance, taste, medicinal and high yielding properties as frequent floods and prolonged droughts are the order of the day and the modern high yielding rice varieties and hybrids have drastically reduced performance and suffer a partial or total loss of crops. Switching over to traditional crop varieties is the need, as it not only maintains [biodiversity](#) but will definitely offset the hurdles posed with climate change. “*For thousands of years farmers have been breeders and developed and nurtured crop genetic diversity. With their careful insight of selecting plants and developing varieties with suitable traits and improve on the existing one. This system of selection and improving on the plants is what has led to an astounding diversity of landraces, which still exists with some farmers. Though most of the rice diversity has been eroded there are some farmers, who are working towards reviving and maintaining the rice diversity that Karnataka has been a host and Ghani is one among them*”, says Shanta Kumar, Coordinator of ‘Save our Rice’ campaign.

Prized Collections

Ghani is maintaining different paddy strains to keep alive the evolutionary processes and also to sustain a continual supply of germplasm. He has developed skills in the art of seed production and has the ability to select the best seeds. The whole plot of 567 rice varieties has been dedicated for seed production. Some of the diversity maintained on his field are Rajabhog, which is a weed suppresser, Anandi a variety from Dharwad has a high yielding capacity, Jeeriga samba is a very popular variety among the farmers and is aromatic, non lodging and good grain yielding variety and Parimalasanna is a fine variety appropriate for making festoons. Two varieties of Burma black rice, both grains are black in colour and one variety has less fibre and the other has high fibre content. Chinnaponni, Kempudoddi, Halublu, Rajakayame, Rasakadam, Gamgadale, Burmablack, Kagisali, Ambimohar, Gamsale, Kottayane, Bilinellu, Gandhasale, NMS2, Rajmudi, Ratnachudi, Gowrisanna, Jeerigesanna, Bilidoddi, , Gambatha, Jeerigesale. Some of the varieties from Orissa that are performing well are kalakali, baingan mangi, govindbhog is a sacred variety used as an offering to God Krishna, of Orissa. Some from Maharashtra like sagvad an upland variety used for pooha, maladi a medicinal rice used in bone fracture treatment, HMT a farmer developed variety and Katte HMT a variety that has awns, Kasubai a scented variety, Raj gudiyapa a dry land medicinal rice variety used for weakness and Dharisal, Tulasiya, Sheerabathi, Thamadisala, rathbath.

Mr. Krishna Prasad, sahaja samrudha says “ On-farm conservation of rice diversity is carried out only by farmers who are interested and willing to do so. It cannot be imposed on them. A farmer who conserves inter and intra specific diversity has to have an understanding as to how, what and

why he does it. Organizations can only technically support and provide opportunities for the farmers in continuing their efforts at conserving crop diversity”. He further adds that on-farm conservation of crop diversity is important. This form of managing diversity of crops is easy to implement and links farmers’ economic concerns with conservation. Management for crop diversity can promote on-farm conservation of rice, and potentially other crops too, in a feasible and sustainable way.

Ghani’s concern for conservation of biodiversity has in fact got many farmers interested in traditional varieties. His farm in the outskirts of his village has grown into one of the largest experimental restoration plots, drawing visitors from villages near and far. His experiment has enthralled Scientists and Officials, who have applauded his venture.

India is presently facing a rice crisis due to erosion of its biodiversity and increase of monocropping in agriculture. Reliance on a narrow spectrum of cultivars grown in monoculture have increased pest problems and India being a mega diversity country has a plethora of traditional varieties which are nutritious and developed over centuries. The traditional strains are more resistant to drought and could be an answer to the climate change. So saving them is important lest we lose it.

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