

Reviving indigenous seeds: A silent revolution in India's rice growing states

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The Save our Rice Campaign, launched in India in 2004, has been able to revive 1,500 indigenous seeds in various regions in India.

In the first week of June, in the predominantly paddy growing village of Thiruthuraiipoondi in Thiruvavur district (erstwhile part of Thanjavur district, the rice bowl of Tamil Nadu), 10,000 farmers came together in the biggest ever seed sharing event – the Nel Thiruvizha or Paddy Festival. A festival that began in 2007, it has been organised every year ever since. The aching difference in its 13th edition was the absence of “Nel” Jayaraman, as he was popularly known, the pioneer seed saver and organiser of the event. Young at 52, he passed away in December 2018, after a two-year battle with cancer.

Indigenous seeds, or *naattu ragangal* (desi seeds) as they are known in Tamil Nadu, has been the key motivating factor behind the success of the Nel Thiruvizha. In the 2018 edition of the Thiruvizha, 8,200 farmers had come to look at the 174 varieties conserved by the Save our Rice Campaign and CREATE, the local organisers in Tamil Nadu. The farmers collect 2 kg of their preferred varieties which they return doubled the next year. Usually, 60% farmers return the seeds for further distribution, some bringing them in sacks out of their commitment to the campaign. This article looks at how it all started, why indigenous seeds are making a comeback, and what motivates farmers to move from the Green Revolution High Yielding Varieties (HYVs) and Hybrids to indigenous seeds.

The 2004 Kumbalangi workshop

The paddy seed conservation efforts in Tamil Nadu was an outcome of the Save our Rice Campaign (SoRC) launched in India in 2004, the same year the world celebrated the second International Year of Rice (IYR2004). This campaign aimed to empower communities to build a sustainable food security movement in the rice regions of India.

The campaign was launched by Thanal, a voluntary group based in Kerala, through an Indian Workshop on Rice (IWR2004) at a small village called Kumbalangi in Kerala. This village itself has the heritage of an indigenous agroecological paddy cultivation system of paddy-fish rotation – called Pokkali, which today has a Geographical Indication tag. More than 140 practitioners and experts from 10 states attended the three-day workshop. At the end, it came up with the Kumbalangi Declaration, and a five point agenda:

- conserving rice ecosystems
- sustaining rice culture and diversity
- protecting traditional wisdom
- preventing GMOs and toxics
- ensuring safe and nutritious food

[Green Revolution and negative effects](#)

The significance of the Kumbalangi workshop can be understood in the backdrop of the degrading rice ecosystems in India. In 2004, under the initiative of the United Nations and the Food and Agriculture Organisation (FAO), the world celebrated the second International Year of Rice (IYR2004).

At that time, Thanal, which was actively engaging with the Asian Rice Campaign (a pan-Asian initiative of the Pesticide Action Network - Asia and the Pacific (PANAP)), was concerned about the sustainability aspect of farming and about the safety and sovereignty issues in agriculture. Before IYR2004, the First International Year of Rice (IYR1966) was also the year when the Green Revolution (GR) was launched in India. GR brought in a productivity centric approach in farming, supplemented by the introduction of chemical fertilisers and chemical insecticides, which today is blamed for poisoning our food and ecosystems, a few even banned, and hundreds designated as Highly Hazardous Pesticides, and have to be banned.

GR surely increased productivity, as we now know, by about 50%, but has left behind poisoned food, water and depleted groundwater, brought down soil quality, reduced returns for farmers due to higher cost of cultivation and failing crops, and impacted the health of the ecosystem and its people. GR undoubtedly delivered on production, but at the cost of our natural resources and the quality of life of farmers, which formed the backbone of the agrarian systems in India. Today as much as the soil degradation is a documented disaster, so is the life and welfare of the farmers, whose crop losses and mounting debts has led to the agrarian crisis – a fatal one, with farmers taking their lives in large numbers every day in the nation.

The worst impact, owing to its irreversibility, the Campaign felt, was on agro-biodiversity. India, which had some 1.5 lakh varieties of paddy, that had evolved over 10,000 years of its farming history, ended up with a few thousands after GR, eliminated aggressively through government programmes for pushing High Yielding Varieties (HYVs). And lost with it were varieties that could have addressed some of the most critical concerns of today's agriculture – productivity, climate resilience, special nutritional needs, pest and disease resistance, etc. For instance, in the 1980s India's top rice scientist, Dr Richharia, found that in his collection of 19,000 indigenous varieties of paddy, 8% had High Yielding potential. This essentially means that even in such a relatively small collection, the total number of HYVs far outnumber all the lab-created HYVs ever developed under GR in India.

Highlights of the Kumbalangi workshop

The discussions at IWR2004 went deep into the problem caused by GR as well as the global paradigms propounded by the IYR2004 as well. This covered aspects from rice ecosystems, seed, knowledge, culture, threats to rice, and safety aspects for farmers and consumers. Food policy experts like Devinder Sharma, and organic farming experts like Dr Nammalvar and Vanaja Ramprasad led sessions that charted the course of the campaign.

Two major developments on the rice genome globally was seen to be a threat. One was an attempt by agri majors to patent the rice genome. The other was the attempt to introduce the first genetically modified rice – Golden Rice. Both were mired in controversy, the first on issues related to the Intellectual Property Rights of a staple crop that is predominantly an Asian crop and in the public commons. The other related to the biosafety aspect of Golden Rice, both at the environment and health levels and of its IPR issues.

Warning about the attempts by major agribusiness corporations to appropriate the rights over the rice genome, Devinder Sharma said in the workshop, “The daylight robbery of genetic wealth – appropriately termed as biopiracy – continues unabated in connivance with top scientists, international organisations and policymakers.” He added, “The International Year of Rice 2004 is in reality a celebration of the private control of one of the mankind’s most precious heritage – the rice plant.”

The IYR2004 did carry a larger agenda – not much on the critical aspects of ecology and sustainability of the farming systems or the welfare and returns to the farmers, but more about the appropriation of rice as a property and innovations that could benefit rice scientists, breeders and major agri-business houses.

In 14 years, SoRC has expanded diversely in conception and practice in various regions in India – mainly Kerala, Tamil Nadu, Karnataka, West Bengal, Orissa, Chhattisgarh, and parts of Jharkhand and Madhya Pradesh.

Together from all these regions it has been able to revive and drive 1,500 indigenous seeds back into the farmers’ fields. This was made possible through various efforts by many NGOs, farmers, seed savers and other passionate social entrepreneurs. The seeds thus revived are maintained in 26 community level seed banks run by farmers and 26 Rice Diversity Blocks (RDBs) that cultivate and propagate the seeds among fellow villagers. Seeds and rice are also traded locally through 21 organic rice trading networks, some formal, others informal.

Jayaraman with students

“Seeds are a common heritage of the community, they have to be saved, used and controlled by the farmers, especially the women in the community. With diverse people, we had diverse methods, many that they developed, and that is the beauty of this campaign,” says S Usha, a horticulturist who walked out of a stable government job and later found and led SoRC.

Some of these groups even formed formal companies like the Thaiman Traditional Agri Producer Company, started by Jayaraman and colleagues, to market their indigenous organic rice. Many resourceful farmers and seed savers have by experience become resource persons and have established formal and informal Rice Resource Centres in their villages. In many states, governments and institutions have also responded to the groundswell and changed policies. For instance, in Tamil Nadu the state government now procures indigenous varieties of paddy from farmers for distribution in their official seed supply programme, which once used to be only HYVs.

This silent revolution happening in villages in these states stems from a holistic understanding of the agrarian life in India. India’s production challenge and food security is not as much about improved seeds as it is about the local climate, culture, social relations, natural resources, and its unique legacy of farming evolved over thousands of years. Correcting the mistakes of the myopic GR policy and moving forward through reviving time-tested indigenous seeds, practices and farmer-level knowledge was the key. This could ensure continuum of the process of experience and adaptation, and enable evolving local, adoptable sustainable farming practices specific to each agro-ecological region.

How Nel Thiruvizha is reforming farming in Tamil Nadu

In 2004, both Nammalvar and R Ponnambalam of CREATE (then FEDCOT, a pan-TN consumer federation) attended the Kumbalangi workshop. Nammalvar saw in it a potential to revive indigenous seeds in the landscape of Tamil Nadu’s toxic agriculture. He encouraged Jayaraman, at that time a young farmer and trainer at FEDCOT, to set up a centre and start conserving indigenous varieties of paddy.

In 2006, Jayaraman got a patch of land, leased out to CREATE by a philanthropist in his village Adhirengam in Thiruvarur district, and started with the 15 varieties they collected. In the collection were two versatile varieties called Kattuyanam and Mappilai Chamba. Farmers who adopted Kattuyanam found that it was both drought resistant and flood tolerant, a property unheard of in any HYVs known till then. Mappilai Chamba was traditionally known to have medicinal value and was good for improving muscle strength; it was also a variety with comparably good yield.

Jayaraman conducting training on indigenous storing of paddy

Jayaraman’s collection of seeds was highlighted in a farm magazine, and soon he got calls from all over Tamil Nadu. At least 600 farmers wanted the varieties. This is what led to the Nel Thiruvizha. That year, 2007, they had 600 farmers come, collect 2 kg of an indigenous variety of their choice and promise to return 4 kg the next year for further distribution. This became an annual event. Each year it grew in numbers of seed varieties and farmers.

Slowly the Nel Thiruvizha became a flagship programme of the SoRC in Tamil Nadu. Through the years, SoRC also conducted farmer field schools, train the trainer workshops for organic farming and indigenous seed conservation, outreach programmes for schools, colleges, etc. It even maintained an insitu field of varieties every year, cultivating them in a RDB. A local seed bank was also maintained.

Many farmers voluntarily started maintaining RDBs and seed banks. One of them is Sriram Ramamoorthy, an IT professional turned farmer.

“When I first went to the Nel Thiruvizha some 6 years ago, my farm was a conventional one. Listening to Nammalvar Ayya and others, my father and I shifted to organic farming and started using indigenous varieties. Now it’s become the SVR Organic Way Farm and is even a regional council for organic certification,” says Sriram, whose life changed through the Thiruvizha. He now conserves about 65 varieties of paddy and experiments on various methods of cultivation including System of Rice Intensification (SRI).

Today many of the varieties that have been revived, conserved, multiplied and adopted by farmers across Tamil Nadu are picking up in the consumer market as well. Mappilai Samba, Kattuyanam, Kichadi Samba, Thooyamalli and Mysore Mallige have become preferred in various regions in Tamil Nadu. Ever since the Green Revolution, we have not had rice being demanded by names of varieties. It is happening now.

One of the concerns addressed by SoRC is the downgrading of rice from a nutritious staple to a mere starch, filling people with only carbohydrates. This was clearly post-GR and is squarely blamed on the reforms in the milling process, where modern mills removed all the bran and started selling polished rice. The bran that was removed went to the food supplement and pharma industry, and the oil from the bran became rice bran oil. Ironically all these were termed “value addition” of rice, where rice brought in more economic value, but at the cost of nutrition to the consumers.

The downgrading of rice has even become a health issue, as polished rice is now blamed for the rise in diabetes in the rice regions of India. SoRC ran various programmes to highlight the dangers of polished rice and the need to consume semi-polished and unpolished rice as an important source of nutrition. Red rice melas and Desi rice melas were conducted to highlight the importance of red rice and indigenous rice. Now black rice, the most nutritious variety, is picking up in the market, especially ones like Karuppu Kavuni in Tamil Nadu.

SoRC at the national scale has a story to tell from each region, where parallel adoption of indigenous seeds was seen. The silent seed revolution has only begun, and Nel Jayaraman’s efforts in Tamil Nadu has triggered many more seed festivals across Tamil Nadu. On a count last year, it was at least 100. But for Jayaraman himself, the health and self-reliance of the farmer household was priority. He once said, “Our biggest success perhaps is that farmer families have started eating the rice that they grow. Earlier in the Thanjavur delta region, farmers produced paddy only for the Public Distribution System or the markets, while they bought cheap rice from the market to consume. With indigenous rice, we are now consuming what we produce and only selling the surplus.”

That makes farming a matter of culture, one that has a belonging, an emotional connect, not a mechanical job to produce for the nation. It’s through this culture of agriculture that even a nation can benefit along with the farmers.

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