

PADDY

SAVE OUR RICE CAMPAIGN

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WHAT DOES THE SAVE OUR RICE CAMPAIGN HAVE TO DO WITH PULSES?

We in the Save Our Rice Campaign have been discussing about food security vis-a-vis ecosystem sustainability and farmers income for the last several years. A travel through some of the rice campaign states have shown us that wherever modern agriculture has taken root, sustainability of farming has become a big question, income of farmers has come down drastically, food diversity has come down dangerously and ultimately health of people is also getting compromised. But in pockets where farmers have held on to their traditional farming systems food security is still better in terms of diversity and nutrition.

Such an example is the alternating rice-bean cultivation in the rice ecosystems. If we look at the traditional paddy systems one can see that farmers were cultivating pulses along with paddy (turdal) along the bunds or rotating paddy with green gram, black gram, cowpea etc without incurring much cost. In the coastal regions paddy- fish –prawn used to be the cropping system, again producing protein without incurring much cost. But now the tragedy is that on one hand major paddy producing areas follow monoculture of paddy and on the other India imports pulses from countries like Afghanistan, Mozambique and the government is even thinking of leasing land in African countries like Malawi to cultivate pulses.

“Pulses are legumes. Legumes are plants that have fruit enclosed in a pod and are the third largest family of flowering plants. More than 13,000 species of legumes exist...”¹

These are a wonderful source of protein, have high fibre, and are rich in vitamins. A combination of rice and pulses has been an inextricable part of our traditional diet. The same combination has been a tried and tested formula for our paddy lands where once the paddy was harvested, the pulses were sown,

¹ Dr Amy R Beaudreault, *Little beans with big opportunities*, Huffington Post, September 2016, http://www.huffingtonpost.in/entry/pulses-little-beans-with-_1_b_8184348

giving farmers another crop and building the soil at the same time.

The year 2016 has been declared as the Year of Pulses by the United Nations. As 2016 comes to a close, so does the United Nations' International Year of Pulses. Although many organizations celebrated this event, the government did not put much effort into increasing pulse production inside the country. Increase in pulse production will not only help increase food security, but will also improve soil fertility by incorporating pulses along with paddy, the main staple food. It will also improve the income of paddy farmers if the government procures pulses from them.

In today's world with 1.9 billion overweight or obese adults, 800 million underweight persons, and 2 billion who may lack the necessary micronutrients, the importance of pulses in the human diet is increasing. The challenge is to incentivise farmers around the world to produce sufficient quantities of this nutrient-rich food at an affordable cost.

As stated in many reports which tried to review Green Revolution objectively, it really made our agriculture, farming systems, livelihood and income of farmers unsustainable. The proponents of this revolution did not understand the value of pulses and other grains in rice production systems. That has led to a situation where unsustainable rice-mono-cropping has been promoted at the cost of human nutrition and eco system health. At the same time pulses are being imported into the country spending scarce foreign exchange.

We in the Save Our Rice Campaign, which advocates ecologically bio-diverse paddy eco systems, are constantly encouraging our paddy farmers to grow pulses along with paddy (on the bunds) and also alternate paddy and pulses. Along with many other groups working on sustainable agriculture we would like to put the pulses-rice practice back into our production system and make our food security a real genuine one.

PADDY Team

RICE BEAN- A LEGUME FOR THE FUTURE

RICE BEAN (*Vigna Umbellata*), called *Naurangi* in Uttarakhand is commonly found in the Eastern and North Eastern belt of India. It is usually referred to as a tribal pulse as it is commonly grown only by the tribals. As per Nikolai Vavilov (1926) its primary centre of origin is India; there are wild and cultivated forms found throughout the Indian subcontinent as well as other countries in Asia. The National Bureau of Plant Genetic Resources (NBPGR) has a collection of 1700 accessions from across Asia.

More about rice bean: The bean is used as a green manure/cover crop in paddy fields (from where it derives its name of rice bean). It is also grown for fodder and is known to increase milk production. It is also sown on paddy bunds. This is a very hardy crop and thrives even in very marginal soils, fixing nitrogen and replenishing nutrients; it is drought tolerant and unlike most pulses it is tolerant to water logging. It is also tolerant to acidic soils. In Nepal it is grown upto an altitude of 7000 feet. It is a shade loving crop and thrives best between temperatures of 25 degrees to 34 degrees. It is sown in June and harvested by November-December. The crop is relatively free from pests and diseases unlike many other pulses and can be stored for many years without any damage by weevils etc. However, one of the problems with this bean is its susceptibility to shattering and hard seededness.

During collections carried out since the 1970s samples were collected from tribal dominated mountain regions of Eastern India from Bihar, Assam, Meghalaya, Manipur and Mizoram. Most of them were the vine kind with hairy body parts and were grown along with millets and maize or in kitchen gardens. There were uniform coloured and speckled grains in the collection with considerable variation in pod length, grain size and colour.¹

Where does rice bean grow in India?

According to Soumik Banerjee of the Save Our Rice Campaign, "This pulse is grown in the Rajmahal hill slopes in Santhal Pargana Division of Jharkhand by the Paharia community in the swidden² plots along with cowpea, pigeon pea, velvet bean, maize, sorghum, pearl millet, foxtail millet, proso millet, job's tear, kenaf and some vegetables. Being a creeper it uses the stalks of

maize, sorghum etc as support and spreads all over the fields." Further he adds, "It is sown on hill slopes in Jharkhand, and it tolerates water logging to some extent. The rainfall in the region (Jharkhand) is 900 to 1000 mm between June- October."



Pratap a consultant working on climate resilient agriculture says, "Rice bean is an integral crop in mixed cropping done by most Kondh communities who inhabit Odisha. Mostly, Kutia Kondh (Kandhamal dist.) and Jharia Kondh (Kalahandi dist.) communities have been cultivating this. In Odisha, the tribes grow this crop in regions with temperatures ranging from 21-28 degrees in the hill slopes of the Eastern Ghats ranges. This area usually receives heavy rainfall. The practice of sowing the seeds under tree canopy is also followed."

Prasant Mohanty of Nirman said that it was while doing a study in Dupi village, Kandhmal District, Odisha, in 2011, about cropping systems they learnt more about rice bean. Nirman believes that cropping systems should be the focus and not individual crops. They began encouraging the tribals to continue with the traditional bio-diverse cropping system as they found that diversity was coming down in tribal agriculture. This has also led to decline in diversity in food consumption and has had a negative impact on the health of the tribal population. Rice bean, along with cow pea and pigeon pea, millets, maize were part of this agricultural system.

Rice bean is also grown by many tribals in Odisha as part of maize cultivation, the rice bean grows as a creeper and it is planted with maize. First the maize is harvested and then after 15 to 20 days, the rice bean is harvested. The rice beans are harvested by cutting the plant above the soil, the plants are dried and pounded to release the pods. Prasant says, "Generally it is easy to grow, and free of pests. However, if the weather is cloudy during flowering we find that yields are very low. The plant flourishes in slightly higher altitude and requires fairly moderate temperatures."

Jacob Nellithanam of Riccharia Campaign shares, "There is lot of variation of this crop in all tribal areas and hilly regions. It is called gaja moong in Bastar (because its colour is largely pale green and big sized, longer compared to regular moog). A smaller size variety is grown in Balaghat, MP on rice bunds and harvested in November. This is highly priced by locals for consumption. This bean is very similar to the moth bean grown in the western and northern region."

According to Achyut Das, "This is one of the main crops in the shifting cultivation patches of undivided district of Koraput. Locally it is called kutting or Dangar rani (meaning queen of the hills). At times, if the weather is good and the region gets ample rains in July-August, there is a bumper crop. The tribals consume it; however, a large quantity is sold to Andhra Pradesh to be used in the bakeries."

Rice bean as food: On the food side, rice bean is exceedingly rich in nutrients having one of the highest amounts of calcium and iron among pulses. Both the pods and seeds are consumed. It contains 21 g of protein, 302 mg of calcium, 8 mg of iron, 1.6 mg of zinc per 100 gms. The digestibility of rice bean is considered far better to other pulses and therefore it is given to sick people. The popular usages of rice bean are: eating the green pods for cooking as vegetable; eating the unripe or about to ripen seeds as boiled beans; dry grain as pulse; plant matter is used as fodder and sometimes green leaves are used as a herb. The tribals of north eastern and eastern India use rice bean in various ways. This is very popular in Nagaland. It is called Naga dal there.

Jacob Nellithanam of the Riccharia Campaign says, "In the past, rice bean (ari payaru) used to be grown extensively in Kerala. It used to be the main dal for Onam feast and was harvested in August just before the Onam festival. Rice Kanji (gruel) with parboiled red rice and dry dal preparation with rice bean used to be one of the main breakfast dishes of Kerala. It was also used as a side dish in packed lunches (taken to school and work) and sometimes cooked for dinner as well"

According to Ashis of OFAI, "This has incidentally become one of the highest selling dals in Delhi at least in our experience. It is also being sold as Himalayan Adzuki beans." ³

Pratap adds, "The Kondh also eat the leaves of rice bean; this shade loving and temperature sensitive crop is being cultivated over the hill terrains along with millets and pigeon pea. The Kondh share that rice bean is easy to store in comparison to pigeon pea. It is not eaten as a standalone food, rather is added to ragi soup, little millet or corn rice while cooking."

Future: This little bean which has not been researched much as a crop or food may be one of the hardy crops that can be grown and used. On one hand pulses are being imported from Australia or Africa on the other there are many such pulses that are neglected in our agriculture system. Therefore, using local pulses and growing them would be a great step towards food security. In this year of pulses let us examine some of these forgotten beans!

Article compiled for PADDY from information shared by Soumik Banerjee, Jacob Nellithanam, Prasanth Mohanty, Achyut Das, Pratap and Ashis Gupta.

(Footnotes)

- ¹ Rice bean: tribal pulse of Eastern India, R K Araora, K P S Chandel, B S Joshi, K P Pant
- ² A temporary agricultural plot created by slashing and burning vegetation.
- ³ Adzuki beans are *Vigna angularis*, it is of the same sub-genus as *Vigna Umbellata*

OFAI invites farmers to present at the Organic World Congress to be held in new Delhi in November 2017.

The World Organic Congress is held once every three years and this time it is being held in New Delhi, India. It is a wonderful opportunity for the organic farmers from around India to present their work and findings at the Congress to a global audience of farmers, practitioners and others. We request all farmers who are part of the Save Our Rice campaign to make an effort to present their work at the Congress.

Last date for organic farmers to submit their PPT presentations is November 30th, 2016. All presentations should be directed to myofai@gmail.com. For more details about the congress please visit www.owc.ifoam.bio/2017

THE GENOME SAVIOURS OF THE SAVE OUR RICE CAMPAIGN

The Award and the Authority

The genome saviour award has been instituted by the Plant Varieties and Farmers' Rights Authority (PPV&FRA), established by the Central Government under the Protection of Plant Varieties and Farmers' Rights Act, 2001. The Authority invites applications every year for the "Plant Genome Savior "Farmer Reward" & "Farmer Recognition" from "farmers engaged in conservation of genetic resources of landraces and wild relatives of economic plants and their improvement through selection and preservation."

The Campaign

The Save Our Rice Campaign began in 2006 in the three Southern States of Kerala, Karnataka and Tamilnadu. The Campaign with the objective to preserve and promote traditional rice varieties has taken off in a big way and one of the particular areas of achievement has been the seed conservation work. We found, as part of the Campaign work, that we could inspire many farmers to get into seed saving. Earlier while working on organic farming the experience was that farmers listened to the practices of organic farming and were ambiguous whether it will work and some followed it, many started it but discontinued.

When we began talking about seed as part of the Campaign, farmers listened intently, many felt the emotional tug of familiar seeds their families cultivated in erstwhile times, and asked for these seeds and moved to organic farming with traditional seeds. Seeds did what all the training sessions couldn't achieve, turned the farmers organic. So it is not surprising that the Campaign resulted in encouraging and creating some wonderful seed savers. We are humbled by their success and proud of their achievements.

The award winners

Three farmers, who are part of the Campaign have joined the ranks of the genome saviour award winners. Syed Ghani Khan (Mysore)of the SOR Campaign was one of the recipients of the award in 2012¹, Anjaneya (Mandya) was the recipient in 2013. Jayaraman from Thiruvavoor in Tamilnadu won the award in 2013.

Ghani is an inspired farmer who has taken upon himself the responsibility of conserving

almost 800 varieties of traditional paddy varieties in his ancestral lands where he also preserves the mango trees from the times of Tipu Sultan.² During our visit to his farm we were amazed by the way he was painstakingly growing seeds. Some varieties he had less than a handful and had put those in cement well rings so that he could distinguish the varieties and separate them from getting mixed up.

Anjaneya is another dynamic young farmer, who is trying to bravely forge ahead with traditional seeds and organic farming methods in the Davengere District (the two Karnataka farmers are covered in detail in the PADDY issue of October 2014 and January 2015 in the article - Travels through Karnataka in search of seeds). I remember the excitement when Anjaneya took us to his fields during our visit , he vigorously dug into the paddy field and came up with a handful of soil with earthworms and pointed to the special gifts from nature. His perseverance to work in a 100% irrigated district where chemical paddy cultivation reigns supreme was and is really laudable. His hard work is paying off, now the traditional paddy farmers have formed a groups and they are not only growing seeds and selling those, they are also seling their paddy to organic outlets.

Jayaraman who is now popularly known and " Nel Jayaraman", is the State Coordinator in Tamilnadu for the SOR Campaign. Nel Jayaraman, who began as a follower of Nammalwar Ayya, travels indefatigably around the state while not on the farm, untiringly promoting traditional paddy. He has his own column in the Tamil Hindu paper, is consulted by the University and many other groups and the government. The annual Nel Thiruvizha, organised by SOR Tamilnadu, in May, every year is a must attend event in the calendar of rice farmers of Tamilnadu. The SOR fields in Thiruvavoor are a repository of over 150 seeds. The Nel thiruvizha is also being replicated successfully in many districts around Tamilnadu.

The issues and controversies surrounding the Award

The award sponsored by the PPVFRA 'Gene savior award' is mainly available to individuals and conservation groups recommended by KVKs and Agri Universities. The farmers who win the award have to mandatorily deposit their



Anjaneya

Syed Ghani Khan

Jayaraman

seed material/germplasm with the Authority. PPVFR is not considering individuals and organisations who work independently and refuse to deposit the seed material. PPVFR has not made any effort to safeguard the collected seed samples from people who could potentially misuse these seeds. PPVFR neither informs the donors nor signs a material transfer agreement (MTA) with them and virtually takes over their germplasm.

There have also been egregious omissions, the most tragic case being that of farmer Dadaji Khobragade who bred two very potent varieties- HMT & DRK, which are very popular and being grown by lakhs of farmers. His HMT variety was surreptitiously registered without his knowledge by the PKV. Meeting the old, venerable gentle farmer, one feels so guilty and helpless about what has happened to him and how the establishment that was supposed to protect and honour him cheated him so blatantly. There are very strong reservations among individuals and groups working on seed conservation about the genome saviour awards and the conditions attached therewith.

According to Shalini Bhutani, lawyer and IPR expert, "One of the stated objective of the PPV&FR Act is to *recognize and protect the rights of the farmers in respect of their contribution made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties*. But the recognition and rewards to farmers should not necessarily lead them into the intellectual property system. Nowhere does the law say that it is mandatory to get your existing or new variety registered for intellectual property rights (IPRs)." She adds, "In fact, there is a specific provision in the Act

that allows the Authority to exclude certain varieties from IPR-registration.³ And in exchange for the reward, if the varieties developed by farmers are being taken and deposited in the national collections, such as those maintained by the NBPGR, their legal status has to very clearly stay as held in *public trust*. This is provided the farmer has also chosen not to seek IPR in the form of plant variety protection over her/his variety."

According to Soumik of SOR, "We need to challenge the ongoing privatization of common resources, which is going unhindered and unchallenged at a massive scale, the community knowledge of this nation cannot and should never be privatized." He adds, "The seed savers do not own the seeds and have been entrusted with the great responsibility of being honest trustees, custodians and stewards of entities that were developed over generations by many".

Despite the controversy over the genome saviour award the undisputed fact is that seed savours (awarded or unknown) are the heroes of our generation (like of every generation). What they are doing for the future generations is invaluable.

Sreedevi Lakshmi Kutty is a consultant with the Save Our Rice Campaign.

(Footnotes)

¹ <http://plantauthority.gov.in/PGSFR.htm>

² <http://indianricecampaign.org/downloads/view/paddy-october-2014-64381923>

³ 29. (1) *Notwithstanding anything contained in this Act, no registration of a variety shall be made under this Act in cases where prevention of commercial exploitation of such variety is necessary to protect public order or public morality or human, animal and plant life and health or to avoid serious prejudice to the environment.*

FROM MAMADPUR TO DURBHACOTI TO...

Eventful journey

To visit Sundarbans in August, I was told post facto, was not a great idea at all, however my travel to West Bengal happened in August and along with it I planned my trip to the villages in Sundarbans where the SOR campaign works with rice farmers conserving paddy varieties and propagating sustainable multi-crop farming systems.

Having decided to travel by whatever modes (turned out more adventurous than expected) we (Arup Chatterjee) who is also associated with the SOR and I had an eventful two days travelling to villages in Sundarbans on two days which had unexpected heavy rains. We ended up travelling by bus, boats, cycle rickshaws on slippery brick roads (abuttled by the water) and very briefly experienced the tough situation many Sundarbans villagers experience all through rains year after year. Lush, with thick vegetation growth with ponds, fields, pets, and full of people (I have never seen so many people in any village or town before) but managing with so many local innovations particularly for cheap modes of transport.

Meeting, learning, sharing !

Mamadpur : The first day's visit was to Mamadpur village in Hindolganj block , Tushar Das is the SOR field coordinator and just a few days before our visit the back wall of his mud house had fallen in the rain and the family had temporarily mended the house with bamboo and polythene sheet walls. Tushar and team took us around the field area; the group collectively cultivates 150 bighas of land and has about 90 farmers. We met SOR farmers doing Naba diganto agriculture, with good vegetable plots full of fresh vegetables, fish ponds along with paddy fields. The farmers told us how most farmers go organic when they get a fish pond as the fish would be adversely impacted by chemicals and the farmers who had

adopted Naba diganto vegetable farming were also earning additional income as well through selling vegetables.

Tushar informed us that in the recent past there has been more interest in the village to



cultivate Dudheshwar traditional paddy variety and the SOR farmers have sold seeds to many villagers. It is a tasty rice and high in iron. The yield of Dudheshwar in their fields has been around 400 kilos per bigha that is 1000-1300 kilos per acre. They sold the seed at Rs 1200 per 60 kilo bags. Dudheshwar is popular as the farmers are now getting Rs 20 per kilo paddy whereas HYVs attract only Rs 10-11, however HYVs give a yield of 600 kilos per bigha as against 400 kilos for Dudheshwar. But Dudheshwar gains due to higher paddy price and lower cost of cultivation.

Other popular traditional varieties are: Rupshal, Dasha, Kerala sundari, Bahurupi. They are able to sell their traditional paddy rice in the local market. However, they do not get a premium price for being organic. They were also working on creating a Bisha Mukta haat in the nearest town market. Unless they get a premium over chemical farmers, other farmers will not be inspired to go organic. Many people in the villages and surrounding areas (non farmers) do approach the SOR farmers to buy their rice as these consumers are aware that

this rice of free of chemicals, but the price margin is very modest or non-existent.

An even more eventful journey and learning!

Durbachoti: The travel to Durbachoti village in Patharpratima Block was an adventure in itself, it rained through the night and Kolkata was drenched, the rain kept increasing as we got closer. By the time we reached the point where buses stop and had to get into a modified cart to travel the last mile, hurtling over a slippery rain drenched brick laid path, it was pouring. Before we reached the village we passed by the diversity blocks of the SOR farmers which were almost in knee deep water. We had a wonderful albeit rain drenched visit and farmers came in one after the other. We visited the seed bank, meticulously maintained, with systematic documentation along with seeds maintained in dry pots arranged on wooden planks, protected from dampness and rodents. We also had a wonderful meeting of about 50 women and men farmers from the village and nearby village who are all associated with the SOR campaign.

By evening 3 pm everyone started getting worried as there were reports of typhoon and the weather was getting worse. They sent us

off and we began our journey back to Kolkata which took 7 hours through thunderstorm and rain. By the time we arrived in Kolkata all the transportation had stopped due to adverse weather.

The teams in both the places showed us the work on the rice diversity blocks, which was being battered by rain in Durbachoti village , Pather Pratima during our visit. Many members in Sudanshu and Tushar's team said, "The campaign can grow and more area can come under traditional varieties and organic cultivation when the farmers who are doing it now will get a better price, and consumers appreciate and seek traditional rice varieties". Currently transportation to and fro from Sundarbans is the biggest bottleneck for accessing markets in urban areas. However, the farmers are confident that they can overcome this bottle neck.

It was a wonderful but very short visit where we saw firsthand the realities of Sundarbans villages during the rains, met the farmers and learnt what they want to do and got a glimpse of the determination of seed saver farmers and were reminded that every one of us have to salute these farmers every time we eat.

Sreedevi Lakshmi Kutty is a consultant with the Save Our Rice Campaign

THE GLORIFICATION OF WHEAT

Let me begin this critique by stating a couple of historical facts about wheat. First, a majority of Indians were not consumers of wheat in the decades prior to and following independence. Instead, India was a nation of rice eaters with the so-called coarse cereals (maize, millets) and gram coming a close second. In 1951, we grew 20.6 million tonnes of rice, 19 million tonnes of coarse cereals and gram, and 6.5 million tonnes of wheat. In 1965, we grew 39.3 million tonnes of rice, 31.1 million tonnes of coarse cereals and gram and 12.3 million tonnes of wheat.

Second, much of the wheat grown in the country was exported to Britain and Europe under colonial rule as raw material for cheap bread. The canal colonies of Punjab had been settled and converted into wheat-growing tracts by the British, along with areas in the Central Provinces and Berar. In fact, there was an excess production of wheat in the late 1920s and with the crash of purchasing power due to the worldwide Great Depression in 1929, wheat exporting nations, including India, participated in a series of urgent meetings to figure out how to dispose of the surplus and work towards reducing production!

Given this background, it is obvious that there wasn't enough 'wheat' to feed 500 million people – it was never supposed to be the only thing that Indians ate. In fact, most statistics of the time did not even capture large portions of the diets of coastal Indians who ate fish and rural Indians, especially tribal groups, who relied on forest produce, not to mention oilseeds, pulses, meat, milk and the like, apart from cereals.

*An excerpt from Richa Kumar's brilliant article in The Wire titled: **Putting Wheat in Its Place, Or Why the Green Revolution Wasn't Quite What It's Made Out to Be** . Read the full article at : <http://thewire.in/76956/green-revolution-borlaug-food-security/>*

WHY DIVERSITY IS WORTH IT FOR ITS OWN SAKE!

With the current GM Mustard struggle when we argue to protect bio diversity we are always shown the yield argument. We are told that farmers want only high yielding varieties and diversity doesn't matter. Those of us preserving diversity are treated as luddites who are hankering after bullock carts and low yielding traditional seeds.

The Save Our Rice Campaign, which has one of its primary objectives to conserve rice varieties promotes conservation of as many varieties as possible and we face this question constantly, "why do you conserve varieties which have low yields, which are not popular? Shouldn't you be practical?"

In this context the story of how American Wheat was saved from Rust epidemic is illustrative of why we need diversity for its own sake:

Jack Harlan (1917-98) - the famous US botanist, agronomist and plant collector and contemporary of Vavilov had collected a seemingly "poor" specimen of native Wheat in eastern Turkey in 1948 (which was later discovered to have come from Iraq through emigrants) along with Osman Tosun. In his own words- "they were tall thin and lodged badly, lacking winter hardiness and had poor baking qualities". The sample was added to the USDA's seed bank as PL 178383.

In 1963 when there was a severe epidemic of stripe rust, and hundreds of seed collections were tested for resistance to the rust. The "insignificant" looking PL 178383 turned out to be resistant to 4 races of stripe rust, 35 races of common bunt, 10 races of dwarf bunt and had good tolerance to flag smut and snow mould. Subsequently it was added to breeding programs to produce new, resistant varieties, which were widely grown in America's north-western states.

Soumik who works on seed conservation and is part of the SOR Campaign states, "The importance of diversity can never be fully realized by humans. Not all species may be important for us, but they cohabit with us and their intricate relationships with each other help us also to survive. We are too ignorant to understand these intricate relationships and simply valuing seeds or species based on yield is foolishness and those who propagate such beliefs are putting entire humanity at risk."

Usha, The National Coordinator of the Save Our Rice Campaign adds, "Nature has always tried to add to diversity. Traditional societies have understood the benefits of this diversity. But modern agriculture science has failed completely in its understanding of the importance of diversity, leading to drastic genetic erosion."

This story above demonstrates how no seed is useless, no seed is not worth being conserved and no seed can we afford to ignore. Seed conservation is the most valuable act we can do for the future generations and their food sovereignty!

Thanks to Soumik Banerjee for sharing the wheat rust story which resulted in this small write up. Thanks to him for being a fount of information and digging out such precious nuggets.

The articles in PADDY may be used (as is or translated) for educational, awareness creation and non-commercial purposes with due acknowledgement.

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