

Youth drive revival of traditional rice varieties in West Bengal

Author - Moushumi Basu, Published on - 26.7.2018

While most educated youth from villages are migrating to big cities in search of jobs, a bunch of young professionals have chosen to stay back in their villages in West Bengal to revive the heritage of folk rice varieties that were once cultivated by their ancestors. With vagaries of climate change taking over the farming sector, these seeds, being region and soil specific, can help in ensuring food security in these villages. West Bengal alone had 5,500 varieties of native paddy seeds, most of which cannot be revived. **The Forum for Indigenous Agricultural Movement (FIAM) supports the work of these farmers in conserving indigenous varieties of rice and promoting an organic way of life.**

Twenty-eight year old Madhu Das is a computer professional from Uttar Dinajpur district of West Bengal. After completing his studies, unlike other youth around him, he did not migrate to a big city in search of a job. Instead, he chose to return to his native village of Hatiapaluibari and continue with his ancestral occupation of paddy cultivation — but with a difference. "I was appalled by the frequent news of farmers' suicides, their escalating debts, growing cost of farming inputs, worsened by crop failures due to changing and unpredictable weather patterns and above all, irreparable losses to environment," said Das, who turned to his roots to revive some indigenously grown folk paddy seeds. Salim Sarkar, a graduate from Nakair village of Dakshin Dinajpur, who also decided to stay in his village after his studies says, "The aroma of my native soil was hard to resist and I decided to practice organic farming by integrating my modern learning with the traditional knowledge of my forefathers. After all, they did not use any chemicals in their fields then and yet managed to grow so many more diverse varieties of native paddy, besides other vegetables and crops." Like Das and Sarkar, at least 30 other young educated youth from villages in West Bengal are treading on the steps of their forefathers with passion and a mission: to bring back the glorious paddy heritage of Bengal, by cultivating heirloom (folk rice) varieties using environment friendly agricultural practices and eventually ushering food security into their villages. **Young, educated professionals from villages of Uttar Dinajpur in West Bengal are turning to their roots, reviving eco-friendly farming. Photo by Moushumi Basu.** *Emergence of the "modern traditional" farmer*

Motivating them further in this regard, is the Forum for Indigenous Agricultural Movement (FIAM), a grassroots organisation of "modern traditional" farmers active in Uttar and Dakshin Dinajpur districts of West Bengal. What started in 2011 with around six members who were against conventional cultivation of chemical intensive high yield crops, has, over the last few years, grown into a movement of about 75-80 farmers, from nearly 20 villages. "Our efforts kicked off with just 10 varieties in barely 5.5 bighas (0.73 hectares) of land," recalled Sudipta Mukhopadhyay, one of the founding members of FIAM. (Bigha is a traditional unit for land measurement in India). Today, the area of cultivation is nearly 100 bighas (13.3 hectares) with the revival of at least 100 landrace (indigenous) paddy varieties. "This agricultural season we have set a target of covering at least 150 bighas with a range of 120 kinds of native paddy," he said. The Forum for Indigenous Agriculture Movement (FIAM) is a grassroots organisation in West Bengal that works to conserve indigenous varieties of seeds. Photo by Moushumi Basu. Commending the work of FIAM, agricultural scientist Dr. Anupam Paul informed that West Bengal has a rich legacy of more than 5,500 varieties of traditional paddy seeds. "However, more than 90 percent of them are today extinct and cannot come back by any scientific means," he rued. A passionate seed conservator himself, Dr. Paul is the assistant director in the Nadia-based Agricultural Training Centre (ATC), under the government of West Bengal. He has the credit of conserving more than 400 varieties of indigenous paddy seeds in ATC's biodiversity conservation farm.

Organically grown, local varieties for food security

Dr. Paul explained that these traditional paddy cultivars are soil and region specific, grown with organic manure and pesticides. This makes them inherently hardy and more pest resistant. "The impacts of climate change, resulting in erratic increase/decrease in temperatures, humidity etc. are breeding new pests and diseases, making chemically grown paddy particularly vulnerable to fungi attacks or reduced efficacy of pesticides," he said. However, according to him, the folk varieties are not only faring better in this regard, but also require much less water in comparison. Further, they are largely climate resilient, able to withstand weather aberrations, while maintaining the yield per hectare, as against their chemically grown counterparts. The practical aspect of his contention with chemically grown paddy was testified by Pravin Burman, from Bhattadighi village of Uttar Dinajpur, "Our native rice varieties are the best solutions to the problems of erratic rainfall, whether excess or scanty. Last year there was flood in the region and chemically grown high yield varieties were all lost," he said. "However, many of our indigenous seeds managed to survive." The bold, short grained **Jaldhapa, Kalam, Shole, Langalmuthi, Kerala Sundari, Hetomari, continued to sustain under about three-four feet of water for over a week. Others like Sabita, Narayankamini, Patnai held on in flooded lowlands, beneath 1.5 feet-2 feet of water. "This was an eye opener for many of our conventional village farmers, who were unable to cope with their crop losses, put together with their increasing cost of chemical inputs, lowering of soil fertility and yields," added Burman. **Recently turned organic farmer, Pravin Burman, displays his high yielding folk rice variety, Bahurupi. Photo by Dr. Anupam Paul.** While Burman's examples highlight the flood tolerance of seeds, there are certain drought tolerant landrace varieties that have also been revived. The small grained bold rice Bhutmuri, Kelas and Kakri, Pari, Zinni, for instance do not require much water and are ideally planted on highlands, says Ramen Burman, Pravin's neighbour from the same village. They mentioned of a yet another unique folk rice variety called **Gamrah** (a native of Kosi river bank of Bihar) that is both flood and drought tolerant. Before the transplantation of paddy, while the soil is being prepared, the farmers have a natural way of replenishing the soil with nutrients. "Cultivation of root legumes or green manure crop as *Sesbania* (locally called Dhoncha) is very common in these villages," said Abhijit Kundu, an officer with the government of India's Agricultural Technology Management Agency (ATMA), deputed in Gangarampur block of Dakshin Dinajpur. These plants, either grown in the field or outside, are ploughed down with tractors or power tillers after about 30- 45 days and crushed with the soil. They are then left to putrefy for about a week. Both the roots and stems of *Sesbania* bear nodules hosting the friendly *Rhizobium* bacteria, which trap atmospheric nitrogen, particularly from the soil. "Decay of these plants thus releases large quantities of this nitrogen back to the soil, besides organic matter, thus enriching it," explained Kundu. According to him, they are ideal substitutes for chemical urea, which require almost double the amount of**

Sesbania

for similar output of nitrogen. Needless to say, paddy grown with such natural fertilizers retains its exquisite flavor, taste and characteristics, said sixty five year old Sukur Mohammad Sarkar, a traditional farmer from Nakair village of Dakshin Dinajpur. "The fragrance of rice varieties as

Radhatilak, Tulsimukul, Kalonunia, Goindobhog, Chiniatope, Badshahbhog

produced in our fields is irresistible," he stated with pride. According to him, FIAM has been able to revive nearly 25- 30 of such scented varieties of traditional paddy. Due to the taste, fine and slender appearance, such varieties are hot favorites for "**Payes**" (rice based dessert) often prepared during religious occasions and other rice-based delicacies as **Biryani** and **Pulao**. Various native seeds of rice, pulses and other crops available for sale. Photo by Moushumi Basu. However, nothing beats the slim, medium sized aromatic grains of **Tulaipanji**, which is considered the "rice of the soil" for the twin districts of Dinajpur. The local farmers claim that this home grown rice had even made its way to the food festival of the 2012 London Olympics. The state government has also applied for GI (geographical identification) tag for this variety, to assign it an assurance of quality and uniqueness of the region. Traditional rice higher in nutrition than

chemically grown varieties But folk rice is not just about the taste and flavour alone. According to Dr. Sudeb Saha, a medical practitioner from Raiganj in Uttar Dinajpur and FIAM's vice-president, "Traditional rice cultivars are inherently endowed with at least 30 percent to 70 percent higher nutritional value than their chemically grown counterparts." The pigmented (brown/red and black) folk rice varieties as *Bhadoi*, *Kabiraj Sal*, *Shatia*, *Agniban*, are rich in iron and anti-oxidants. *Bhadoi* is particularly prescribed to expecting mothers and anaemic patients. *Kabiraj Sal* on the other hand gives strength and is advised for recuperating patients. Further paddy varieties as **Shatia** and **Kartiksal** that are among the fastest to mature (within 60 – 70 days) are also rich in fibre and low on carbohydrates, thus ideal for diabetic patients. Likewise, landraces as **Bhutmuri** and **Kelash** are very filling even with low intake for similar reasons, informs Dr. Saha. **Kalabhat**, a black paddy variety originally from Maharashtra is yet another prized folk seed for FIAM. The rare rice with its purplish black bran is particularly rich in anthocyanin, a powerful cancer fighting substance, besides being replete with fiber, vitamin B complex, minerals, protein and more. Further, its lower Glycemic Index makes it a highly suitable diet for diabetic patients, said Dr. Saha.

In addition to unique taste and flavour, folk rice is also reported to have a high nutritional value compared to chemically grown rice varieties. Photo from Dr. Anupam Paul.

"We too have the famous *Chamamani* variety, fine grained rice which would be taken by none other than the Nobel Laureate poet Rabindranath Tagore for its taste and medicinal values," he added. When it comes to making choices against chemical intensive modern varieties of high yield paddy, production per hectare happens to be an important consideration among farmers. "But not to worry! We have *deshi* high yielding folk rice varieties too," informed Mushtaq Ali from Hazratpur village of Dakshin Dinajpur. According to him, *Bahurupi*, *Kerala Sundari*, *Megha dambur*, *Rabansal* are farmers' favourites, with their production ranging from an average of four tons to seven tons per hectare. "In comparison, the chemically grown modern varieties may just about provide marginally more yield than their indigenously grown counterpart, but increased requirements of inputs and their soaring costs are drastically affecting our community. Hence, the organically grown folk paddy is certainly more cost effective and ecologically sustainable," he asserted. While the farmers are elated to share their experiences with folk seeds, scouting for them is not easy for FIAM members. "We identified old time farmers who continued their traditional organic ways of farming in different parts of the country and approached them for seeds," informed Chinmoy Das, General Secretary, FIAM. For instance the rare Gobindobhog variety was obtained from a farmer in Burdwan district whose family was cultivating it for the past few decades. Seeds were also exchanged with native farmers from various Indian tribal states of Chhattisgarh and Jharkhand. However, more than 70 types of folk seeds were obtained from Nadia-based ATC's biodiversity conservation farm alone. *Unlike most youth from villages in Uttar Dinajpur and Dakshin Dinajpur, this bunch decided not to migrate to a big city in search of a job and instead tread on the path of their ancestors. Photo by Moushumi Basu.* The seeds being thus acquired are first put out on trial by FIAM members for the three-four months, before being introduced to fellow farmers. The organisation has developed an experimental plot of about 2 bighas (0.26 hectares) of land for the purpose. "It is a natural laboratory for us, where we analyze various morphological features of the developing rice plants, including their size, leaf length and breadth, size and shape of panicles, special traits, comparative yields etc.," said Tipu Mandal, FIAM member. Such tests and experiments are regularly supervised by agricultural scientist Dr. Anupam Paul and his team. *Making organic a way of life* While using traditional practices in cultivation, the farmers are quite adept with the use of modern technology for marketing their products. "We upload them daily through Whatsapp and social media to reach out to our consumers, who requisition them as per their requirements," said the computer professional-turned-farmer Madhu Das. Rice varieties as Tulaipani, Hetomari and Kalabhat have even attracted overseas buyers in the United States, aside from those in Indian metros like Kolkata and Mumbai. **Local farmers are growing different kinds of vegetables using natural manure and reducing their dependence on chemical fertilisers. Photo by Moushumi Basu.** Organic fairs are organised regularly to bring consumers face to face with the farmers from the fields. The farmers get the opportunity to directly showcase and speak about their "fresh from the farm" products. The photographs of the respective farmers and their contact numbers are also displayed to enable consumers to directly contact them as per their needs. So far, the demand for their products far outweighs supply. "Chaasiqhar" (Farmers' home) developed by FIAM as a cooperative system at Raiganj, headquarters of Uttar Dinajpur, also serves a similar purpose. Apart from growing interest in eating healthy, some of the consumers are also buying seeds and saplings for doing a bit of kitchen gardening themselves, using natural fertilizers. "In short, our work is not just about cultivation and business alone, but to promote organic culture and make it a way of life in society," said FIAM-member Chinmoy Das. First published by **Mongabay**