

Magazine on Low External Input Sustainable Agriculture



LEIS INDIA



Food Sovereignty



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A happy farmer couple in their biodiverse farm in a tribal area in Odisha.

(Photo: Agragamee, Odisha)

The AgriCultures Network

LEISA India is a member of the global Agricultures Network. Seven organisations that provide information on small-scale, sustainable agriculture worldwide, and that publish:

Farming Matters (*in English*)

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The editors encourage readers to photocopy and circulate magazine articles.

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Dear Readers

Food sovereignty is not just pride and rights issue, it is about respecting culture, cuisine, choice and climate... in fact, a very pragmatic approach. It is rooted in respecting diversity and in diversity lies sustainability. Discovering the wisdom underneath the prevalent choices is important to understand the rationale and preferences for crop choices. While it may pose challenges of macro management and planning, yet it should be seen without prejudice in terms of resilience it offers, the dignity it provides, the economic value it offers as well as the invaluable contribution it makes through 'intangible' eco systems services.

Access to nutritious food is possible if the context and the eco system are nurtured and cared. The experiences included in this issue reinforce the rich diversity of our heritage, the robust alternatives we have ... to dream for a healthy future for our rural and urban communities.

We are grateful to those who shared their perspectives with practical experiences on the theme. We are for ever thankful to the readers, the contributors and all those who have been instrumental in knowledge sharing and exchange on safe, inexpensive, simple and practical alternatives based on adaptation and innovation.

The Editors

LEISA is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors, to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.

ILEIA – the centre for learning on sustainable agriculture is a member of AgriCultures Network which shares knowledge and provides information on small-scale family farming and agroecology. (www.theagriculturesnetwork.org). The network, with members from all over the world - Brazil, China, India, the Netherlands, Peru and Senegal, produces six regional magazines and one global magazine. In addition, is involved in various processes to promote family farming and agroecology. The ILEIA office in The Netherlands functions as the secretariat of the network.

MISEREOR founded in 1958 is the German Catholic Bishops' Organisation for Development Cooperation. For over 50 years MISEREOR has been committed to fighting poverty in Africa, Asia and Latin America. MISEREOR's support is available to any human being in need – regardless of their religion, ethnicity or gender. MISEREOR believes in supporting initiatives driven and owned by the poor and the disadvantaged. It prefers to work in partnership with its local partners. Together with the beneficiaries, the partners involved help shape local development processes and implement the projects. This is how MISEREOR, together with its partners, responds to constantly changing challenges. (www.misereor.de; www.misereor.org)

AME Foundation promotes sustainable livelihoods through combining indigenous knowledge and innovative technologies for Low-External-Input natural resource management. Towards this objective, AME Foundation works with small and marginal farmers in the Deccan Plateau region by generating farming alternatives, enriching the knowledge base, training, linking development agencies and sharing experience.

AMEF is working closely with interested groups of farmers in clusters of villages, to enable them to generate and adopt alternative farming practices. These locations with enhanced visibility are utilised as learning situations for practitioners and promoters of eco-farming systems, which includes NGOs and NGO networks. www.amefound.org

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The Food Sovereignty Alliance-India

Food Sovereignty is about building a just world and is about a society free of oppression and inequality. This is the only way forward to secure our right to food in our homes and communities, through defining our own autonomous food and agriculture systems, and thereby resist and dismantle the corporate food and trade regimes. The Food Sovereignty Alliance, India is one amongst several such sites of resistance and assertion.



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Food Sovereignty

Food is a symbol of culture, not just which sustains life alone. Traditionally, food habits have been formed based on what is grown locally, based on the agro ecological conditions. People belonging to a region had a taste for certain foods, which were not only diverse and available locally, but also helped in providing the nutrition required for living in such climatic conditions. Infact, people could be identified to a region by the food they eat. With corporatization and free trade of food, agriculture systems have become more and more external, more expensive, more resource intensive, more dependent resulting in food systems that are dangerously more uniform and unhealthy. Presently, State policies direct the type of food to be produced and the way it should be produced. As a resistance to such farming and food systems which are growing rapidly that the framework of food sovereignty has gained importance.

Food sovereignty, the term coined by Via Campesina in 1996, is all about the right of communities and countries to define their own food and agricultural systems that are socially, culturally, economically and ecologically appropriate to their local regions. Today, it has grown into a global people's movement representing 200 million farmers. Largely promoted by the Civil Society Organisations and alliances at the national and global levels, communities have asserted their rights over food in many ways (Food Sovereignty Alliance, p.33). In this issue, we have included a few initiatives where communities have been able to define their own agricultural systems and produce the food of their choice.

The small tribal farmers of Rayagada and Kalahandi districts in Odisha, with the support of Agrabamee an NGO have shown the path of self reliance, by defining their own food system (Jena, p.10). By following an Alternative Food Production and Storage System, these farmers have promoted biodiversity on their farms and biodiversity on their plates, which is not only vital for nutrition but also for food sovereignty. The work being carried out primarily through women's collectives, emphasizes 'local' at every stage - production, storage and distribution.

Access to the right seeds at the right time is crucial in producing the right food. Farmers from the tribal belt in Maharashtra through a participatory process, revived, conserved and replicated traditional landraces and thus

regained their food sovereignty (Chavan, Magare and Wagle, p.14). Similarly, by reviving the community based seed banks and cultural seed festivals, the indigenous Kutia Kondh community of Odisha, presently maintains heirloom seeds of 55 indigenous crops, which include millets, maize, pulses, vegetables and edible tubers (Mohanty and Siripurapu, p.5).

Climate change impacts on farming are already clearly visible in many regions. For instance, farming livelihoods and food security of small, marginal and women farmers in flood-prone areas of Uttarakhand are under threat. To overcome this situation, women farmers of Mehdawal block in Sant Kabirnagar adopted the practice of producing flood resistant seeds, as a result of which they have ensured food security for the entire year. (Srivastava and Ahmed, p.21)

Rights over land is another crucial element for communities to cultivate the food of their choice. With the support of Nirman, an NGO, around 89 households of Kutia Kondh community in Orissa, received individual land rights over customarily used land where women were made joint owners. Around 15 *Kutia Kondh* villages in the study area have been issued community rights including rights over community forest resources. (Mohanty and Siripurapu, p.5)

Revival of traditional knowledge and practices do not necessarily mean that farmers are averse to modern technologies. Gujjars, a tribe in the northern parts of India, have shown that while holding on to the traditional cultures and systems, they have also embraced the new. They have learnt and adopted better techniques of milk production, animal management and animal breeding from the researchers and scientists, yet maintaining sustainable ecosystems and sustainable livelihoods. (Singh and Kumar, p.23).

Changing the agriculture and the food systems requires changing our perspectives towards people, their freedom to make choices — on the type of food to grow and the type of food they would like to consume. At the end, it is all about providing the democratic spaces to people in an effort towards building a just society. Still, a long way to go.



Reviving crop biodiversity, restoring food sovereignty

Prasant Mohanty and Kanna K Siripurapu

The indigenous Kutia Kondh community in Odisha has a rich knowledge and experience of millets-based, mixed farming systems. By reviving the community based seed banks and cultural seed festivals, these tribal communities have regained their lost food diversity and sovereignty.

Until a couple of decades ago, the indigenous Kutia Kondh community of Kandhamal district in the eastern Indian state of Odisha, cultivated at least 40-50 different types of crops on the same piece of land. Things however changed with the advent of green revolution. With massive government promotion of the green revolution technologies through subsidies, monocultures of high yielding varieties (HYVs) replaced the indigenous mixed farming systems - “millets-maize-legumes-tubers”. By 2011, the diversity of indigenous crops cultivated by the Kutia Kondh community had been reduced to 12-13 varieties. The Kutia Kondhs have also been compelled to adopt the alien

Kutia Kondh community has a rich knowledge of millets-based mixed farming systems



Photo: Author

Smt. Yashoda Majhi and her husband Sri. Ashok Majhi, are residents of Dupi village in Tummidibandha block of Kandhamal district. Smt. Majhi, is an elected ward member of the gram panchayat. The family owns three acres of land and major crops cultivated include indigenous varieties of millets, paddy, pulses, tubers, and oilseeds. The family used to practice shifting agriculture along the hill slopes. In addition, the family also collects uncultivated non-timber forest products (NTFPs) such as wild tubers, mushrooms, edible leaves and fruits. Owing to restrictions of the forest department and erratic rainfall patterns, the area under shifting cultivation has ceased and crop diversity has decreased resulting in decline in household agriculture productivity and loss of the indigenous seed varieties.

In 2012, with NIRMAN's intervention, Smt. Majhi's family resumed shifting cultivation. The crop and seed diversity increased gradually. The millet types cultivated by Smt. Majhi's family increased from 7 to 25; oil seeds from 2 to 7 species and legumes/pulses from 5 to 12 species.

Smt Majhi learnt how to adjust the crop sowing time thereby saving the crop from climate vagaries. Her pulses crop remained unaffected by escaping the unpredicted showers during flowering period, owing

to delayed sowing of the crop. She harvested 7 quintals of pulses compared to 3 quintals by the rest of the village. The shortage of pulse production resulted in increased market price from Rs 40/kg to Rs 65/kg favoring Smt. Majhi's family to earn better incomes. The family earned about Rs 42,250/- by selling the surplus pulses harvest. The family could clear the loan of Rs 10,000/- which they borrowed from the local money lender to pay for their kid's education and cover the family medical bills. The family saved the remaining amount of INR 32,250/- to spend for their kid's education and decided not to borrow money from the local money lenders. The family also received funds under the Indira Awas Yojana for building a house and the family has decided to spend a fraction of the savings from the sale of pigeon pea on house construction.

Household food security and living standard has improved and the household income has increased gradually. Smt. Majhi, says: "*Annu nu a jela aatae a, ina ga e na, reda aatae c, pone, main ijjo ho jela ti, manna mu, aaja silla tesse dukhoti rahi anamu ma*" (Smt. Majhi, expressed her happiness for overcoming drought which otherwise would have wrecked havoc on the family's economy, food and livelihood security).

HYV monocultures and alien farming practices. With declining crop diversity, the average per capita intake of vital nutrients also declined.

NIRMAN, an non-for-profit organization, started working with the indigenous communities in Kandhamal district, to help restore the crop biodiversity in the region and help women gain recognition in agriculture.

Understanding the communities

In 2011, a study was conducted by NIRMAN to evaluate the status of the indigenous millets-based mixed farming system and food and nutritional security of *Kutia Kondhs* of the region. A survey was conducted in 10 villages spread over 3 Gram Panchayats of Kandhamal district, covering 350 households belonging to *Kutia Kondh* community.

The *Kondh* community depended on agriculture (mostly rain fed), shifting cultivation (locally known as *podu chasa*) along the hill slopes, collection and sale of non-timber forest products (NTFPs), and wage labour, for their livelihoods. *Dongar* cultivation (*dongar* is a small hillock near the community settlement/habitat), over the hill slopes and valleys is central to tribal economy. Despite crop diversity, abundant natural resources and rich indigenous knowledge, poverty is acute in the tribal dominated areas. Around 80% of the *Kutia Kondh* households in the study area are marginal farmers and rest are small farmers. Most of the soils are red-loamy soils with low water retention capacity, subject to heavy runoff and soil erosion during the kharif season.

It was observed that millets grow successfully in uplands of the study area. It was perhaps for this reason millets have been nurtured for ages by some of the poorest and marginalized communities. In addition, cultivation of millets is also deeply rooted in the ethos of indigenous communities, being one with the nature. *Kutia Kondh* community considers eco-friendly millet cultivation as a way of living in harmony with nature. It was found that *Kutia Kondhs* still practice their indigenous millets-based mixed farming systems and maintain some amount of indigenous crop diversity on their farms. Presently, only 12 varieties of indigenous crops are being cultivated.

Consumption of millets among the community has decreased. Though they have three meals a day, the intake of millets has decreased significantly. Millets have been replaced by rice supplied through the PDS or purchased from the market. Consumption of edible tubers has been reduced considerably, either due to unavailability or sold as it is in the market, to purchase rice. Similar trends are observed with regard to consumption of pulses. Significant amount of pulses is sold for cash, to purchase rice, goods, liquor etc. Also, the average family expenditure for health care among the *Kutia Kondh* community has increased three and a half times in recent years.

The three major findings of NIRMAN's study revealed the following: Women in the community play a major role in the indigenous agriculture systems but lack recognition; community-based activities like the seed banks and seed

festivals have almost disappeared; and, women lack tenure security and rights over *dongar* lands and customary lands. Based on these study findings, NIRMAN developed strategies to bring recognition to the role of indigenous women farmers; to restore community-based activities like seed banks and seed festivals, and to facilitate legal recognition of local communities' rights (especially women) over *dongar* lands and customary lands, as a means to ensure food sovereignty of the *Kutia Kondh* community, belonging to the region.

Reviving indigenous farming practices

In the year 2012, NIRMAN started working with the communities promoting mixed, biodiverse and sustainable agriculture practices. As a first step, Participatory Rural Appraisal (PRA) exercise was conducted in all the villages to collect baseline information. Information on various aspects like household income, status of indigenous agriculture practices followed, extent of seed diversity etc. To motivate the communities to revive their indigenous agricultural practices, a village level meeting was organised to discuss issues related to erosion of the indigenous crop diversity, indigenous agriculture practices and sustainable agriculture. Training on millet-based mixed farming was conducted during the first year of project intervention and in the second year, training on sustainable agricultural

practices was conducted at the village level. Women were encouraged to practice mixed farming in an effort to revive the indigenous mixed and biodiverse farming system.

Restoring seed diversity

The major strategy of our intervention was to promote women led approaches, to assert their control over food production system and to conserve indigenous agrobiodiversity. Village meetings were conducted with women and Village Level Institutions (VLIs) were promoted. Around 21 VLIs were formed and the members were trained on millet-based community seed banks and their management. The community-based seed banks are expected to fulfill the seed requirement of the community. Currently around 27 community-based seed banks have been formed, supporting around 600 farmers in 27 villages.

Heirloom seed requirement for the community was assessed. Heirloom seeds of 12 indigenous crops of local choice were supplied to local communities as one-time seed-capital, for conservation. These 12 crop varieties were revived within one cropping season. Presently, the community-based seed banks have been maintaining heirloom seeds of 55 indigenous crops, which include millets, maize, pulses, vegetables and edible tubers. Communities now cultivate 7 varieties of indigenous paddy, 6 varieties of indigenous

A training session on Forest Rights Act



Photo: Author



Photo: Author

Women farmers play a major role in the management of the community-based seed banks

maize, 3 varieties of finger millet, 3 varieties of little millet, 2 varieties of barnyard millet, 2 varieties of pearl millet, 3 varieties of foxtail millet, 2 varieties of sorghum, 4 varieties of pigeon pea, 2 varieties of cow pea, 3 varieties of rice bean, 4 varieties of country bean, 2 varieties of black gram, horse gram and 17 types of edible tubers, under millets-based mixed farming system. Communities also cultivate 3 varieties of castor, 2 varieties of mustard, along with niger and sesame, 7 types of vegetables, 17 types of edible tubers, 2 varieties of turmeric, ginger, garlic, chilly peppers, onions and few other locally known coarse grains and pulses. Women farmers have been playing a major role in the revival of indigenous crops, management of the community-based seed banks and conservation of the indigenous agrobiodiversity.

Community seed festivals facilitate seed exchange

Kutia Kondh community celebrates Bio-diversity Festival locally known as *Burlang Yatra*, after the crop harvest. The festival is celebrated to offer gratitude to the mother earth and seeds which is the basis of their farming. The seed festivals not only serve as a platform to exchange indigenous heirloom seeds but also serve as a repository to conserve and increase the indigenous heirloom seed diversity.

NIRMAN had been facilitating celebration of the *Burlang Yatra* for the past four years. In the year 2016 alone, more than 700 farmers participated in the community-based seed festivals. More than 60 indigenous heirloom seeds were on display and were exchanged among the farmers. Once again, women farmers played a major role in the biodiversity festival.

Gaining rights over land

Another challenging issue plaguing the *Kutia Kondh* community is non-recognition of rights over part of customarily used cultivated land and entire community resources. Since women are key to farming, efforts have been made to facilitate legal recognition of local communities' rights over the customarily used individual lands. These lands are also suitable for millets-based farming systems. Village level meetings were conducted for the local communities on provisions of the Forest Right Act (FRA), and procedures for filing claims over the lands. The entire process was initiated with the support of the community volunteers. A total of 89 households received individual land rights over customarily used land. Women were given joint ownership of the individual land titles. Around 15 *Kutia Kondh* villages have been issued community rights over

Seeds of freedom echoed at Burlang Yatra in Kandhamal

The Kutia Kondh communities in Kandhamal district of Odisha, usually celebrate a week long annual indigenous traditional community seed festival at village level during February-March every year. This year the community seed festival was held on 5, March, 2017 at Tuakala village in Belgarh Grampanchayat, in Tumudibandha block in Kandhamal district of Odisha. Local communities from 5 grampanchayats participated. More than 600 adivasi farmers participated in the festival.

The festival started with Kutia Kondh women carrying seeds on their heads followed by exhibition of their rich seeds on the festival ground. More than 90 types seeds of millets, pulses and oil seeds were exhibited by the farmers.

It was a platform for adivasi farmers to come together to share their indigenous knowledge, exchange their ideas and culture. Adivasi women farmers talked about their self-reliance through their conservation initiatives of indigenous varieties of seeds of millets, pulses, oilseeds and vegetables. Kutia farmers spoke about the rich traditional knowledge and understanding of bio-diverse farming system evolved over millennia, passed on from generation to generation, along with a spirit of respect and gratitude.

NIRMAN, facilitated celebrations at cluster level to spread the conservation initiative by Kutia kondh by providing platform for sharing traditional knowledge. Shri Prasant Mohanty, Director of NIRMAN, Shri Hemant Das, Depty Project Director, ATMA, Shri Dillip Subudi, Freelance Journalist, Shri Basant Nayak, Pramod Dash social activist and Bijay Nayak of State Coordinator of Dhan Foundation participated and deliberated in the festival. To encourage farmers in conserving



agro-biodiversity, Ms. Rashmita Majhi of village Sanatuakela, Ms. Sushanti Majhi of village Pukur, Ms. Buduli Patmajhi of village Saradhapur and Monali Patajoshi of village Betabadi and 2 villages i.e, Deogada and Kalamguda, were honoured during the celebration.

The community seed festival concluded with traditional dance of Kutia kondh and sharing of indigenous seeds among Kutia kondha and kondh communities in Kandhamal.

community forest resources. Recognition of right in individual and community land/ resources is expected to strengthen their stake over resources, necessary for food production and food sovereignty.

Conclusion

The communities have experienced not only rise in the yield but also increase in duration of the yield for the same piece of land. It was noticed that availability of seeds of the lost indigenous crop varieties has increased the length of cropping calendar by 45-60 days. The *Kutia Kondh* community have become very close to food sufficiency, since the intervention. Empowering community with special focus on women through revival of millet based bio-diverse farming system offers solutions for the present day crises in farming.

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Photo: Author

Farmers are back to mixed farming in Kashipur

A self reliance path towards food sovereignty

Kulaswami Jagannath Jena

The tribal farmers of Rayagada and Kalahandi districts in Odisha have promoted biodiversity on their farms and on their plates by adopting agroecological models of food production. They are on the path of self reliance by defining their own food system.

The tribal farmers of Rayagada and Kalahandi districts in Odisha face a number of issues like hunger, starvation deaths, drought, bonded labour, distress migration and so on. Most of these farmers have never been able to cultivate their small patches of land that was given to them by the government, as part of land reforms programme. Since there is very little employment in the region, these farmers migrate elsewhere and work as labour on farms and perform other odd jobs. To help these communities to get back to farming and achieve food security, Agramee, a local NGO, has been promoting family and community based agro-ecological models of food production.

Alternative local food production initiative

Millets and pulses are core to dryland farming and consumption in Odisha. The public distribution system (PDS) in India, which is based on the wheat and rice model, has never benefited the tribal farmers. With Agramee's support, a group of tribal women farmers (115 women groups) in Rayagada and Kalahandi districts came together, to experiment with an Alternative Food Production and Storage System (AFPSS). They decided that any alternative would have to be significantly different, and based on different ideas about food security and sovereignty, than those adopted by the PDS.

In the AFPSS model, the first step is to work on the patches of degraded lands through efforts like bunding, trenching, top-soil addition etc. A seed loan from community seed cum grain bank, established by Agramee, is given to the farmers, which they would need to repay in the form of grain. The next step is to cultivate this land with traditional and bio-diverse agriculture using indigenous seeds. Once the crop is harvested, the loan is repaid as grain and stored in the community grain fund. This not only ensures food security of the tribal community during the times of food

Agramee's effort over the past three decades has shown that, bio-diverse, organic, natural farming produces more nutrition per acre food, meaning more health per unit of land. Our recent grassroots level assessment shows that small farmers who have their own seed, practice chemical free, ecological agriculture and share fair trade markets earn 5 times more than their counterparts who are dependent on costly corporate seeds, chemicals from the same companies and depend on exploitative commodity markets. These small farmers have promoted local food product circles for direct consumer – producer links through farmers' producers organisation, bypassing the exploitative 'middlemen'. These circles have promoted biodiversity on their farms and biodiversity on their plates, which is not only vital for nutrition but also food sovereignty.

scarcity but also promotes the traditional diverse agro-ecological practices to attain food sovereignty.

Indeed, every tenet of the AFPSS model is the pillar of food sovereignty: reclamation of fallow land, increased productivity of existing cultivated lands, biodiverse agriculture, market-focused and climate-driven planting, and emphasis on 'local' roles. The work is carried out through women's collectives, and emphasizes 'local' at every stage - production, storage and distribution.

A mix of millets are cultivated on small farms



Photo: Author



Photo: Author

An interactive session in progress

Reclaiming diverse food system

Over the years, the work of the Mahila Mandals (women groups) in 65 villages has resulted in reclamation of 2275 acres of fallow land and production of one million kilograms of extra food every season. Around 2000 employment days have been generated per village with 40 person days employment generated per acre. Alongside, the extra fodder generated is equivalent to 6,000 cattle feed. Every family has now 1000 extra meals. Overall this implies increased fodder, increased livelihoods and increased wage income. The Mahila Mandals continue their effort towards ascertaining food sovereignty in their villages and also convince neighbouring villages for the same.

Sani Majhi: an exemplary role model

Sani Majhi, a 34 year old farmer of Maligaon village of Kashipur block in Rayagada district, was determined to overcome nature's unending challenge and achieved a sustainable source of livelihood. She worked almost single-handedly for five years on her 1.2 acre farm to ensure the right mix of crops, poultry, goaterly and cattle.

In 2012, Sani Majhi opted for integrated farming system on her one acre family farm under Eco-Village Development – a sustainable model initiative of Agramamee. She was motivated to change the shape of the land, which could be developed into an integrated farming system by setting up a network of nutrient flow. She realized that to get a productive farm she needs to strengthen biodiversity on her farm, which would be self-supportive.

About 25% of her land was kept for growing cereals, millets, pulses and vegetables, 55% for fruit orchard development, 15% for rearing of cattle, goaterly and poultry and the remaining 5% for border plantation of trees like neem, subabul (*Leucaena leucocephala*), pongamea, bael, amla, lemon, pineapple, ber etc. These perennial trees have planted for enriching the soil and for supplying fodder and fuel. She started mixed cropping, crop rotation, crop combination and inter-cropping regularly in order to increase the farm diversity. Gradually, Sani Majhi shifted to ecological farming which helped her attain food sovereignty. She has also saved varieties of seeds (vegetables, lentils, millets, cereals) in the community seed cum grain bank. These seeds are being used by the villagers every year.

“Now I have become the earning member of my family,” she says. She is using part of her earnings for children's education and a small amount is being saved. She participates in family decision-making process. Sani majhi feels that now she has an identity of her own.

Food is a basic human right. This right can only be realized in a system where food sovereignty is guaranteed.



Photo: Author

A bountiful harvest of corn in Kalahandi

Conclusion

The tribal communities in south-western districts of Odisha have developed their livelihood systems which includes cultivation of a wide range of crops like cereals, millets, pulses, oil seeds, tubers and fruits. Their practice of diverse crops under integrated farming system on one acre of family farm has not only helped them to ensure food security but has also helped them to move a step ahead to attain food sovereignty. Moreover, it has provided a sustainable path of livelihood and food security even in the times of droughts. The practice of shifting cultivation, which was once a form of cultivation, has now harmonized with the ecosystems in its steady rhythm of mixed-cropping. The *Kondhs*, *Jhodias* and *Parajas* of these regions have become self reliant and independent.

The tribal farmers proved that food security cannot be achieved without taking full account of those who produce food. Any discussion that ignores their contribution will fail

to eradicate poverty and hunger. Food is a basic human right. This right can only be realized in a system where food sovereignty is guaranteed.

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Photo: Author

Biodiversity on display

Attaining food sovereignty by building access to local seeds

Lilesh N Chavan, Hareshwar B Magare and Sudhir M Wagle

The process of participatory revival, conservation and replication of traditional landraces is helping farmers from the tribal belt in Maharashtra regain their food sovereignty. Farmers now have the knowledge on local seeds and access to seeds of their choice.

The crop genetic diversity is a key element in sustainability of farmer's livelihoods particularly in fragile areas which are under huge ecological, climatic and economic stress. It has taken hundreds of years of dedicated efforts of farmers to develop and conserve crop land races suitable to local agro-climatic conditions. However, local cultivars including cereals, pulses, oil seeds, wild edible foods and tubers and local herbs, which used to be a good source of nutrition and food security for tribal and rural communities, are getting eroded. Farmers are increasingly cultivating improved varieties of seeds for

enhanced yield. This has led to growing dependency of farmers on outside agencies for supply of seeds. Also, high use of chemical fertilizers and insecticides has resulted in steep escalation in input cost, environmental degradation and rise in mono-cropping affecting the biodiversity.

Nandurbar is a tribal dominated district in Maharashtra. The area, especially Dhadgaon and Akkalkuwa blocks in Satpuda hill ranges, are predominantly tribal and hilly. The Bhill and Pawara are the major tribes in the block. Most of these tribal communities are poor agriculturists with small and marginal land holdings. However, due to low productivity agriculture, the tribal communities mostly continue to depend on forests for their subsistence. Nandurbar district was known for its exceptional traditional crop diversity which includes maize, sorghum, minor millets, pulses and wild edible species. However, there had been rapid erosion in the status of biodiversity over a period of time.

Realizing the importance of bio diversity in providing food security, livelihood security and reducing risks in farming for small farmers, BAIF, an NGO, initiated community led conservation management and revival of tribal food in 14 remote villages of Dhadgaon and Akkalkuwa blocks in Nandurbar district. The initiative was taken up with the objectives of documenting crop diversity and associated knowledge in the area and promoting participatory seed production and in situ conservation of traditional crop landraces with active involvement of local community.

Documenting landraces

The initial data was collected through village level meetings and talking to aged men and women who are also key persons in the village. A series of focus group discussions were organised to validate the information recorded and also gather additional information. The staff actively participated in traditional festivals of tribal community to understand and gather more information on seeds and their culture. Families interested in conserving traditional food crops were listed.

During these meetings, the staff also identified farm families who were still cultivating traditional landraces on small pieces of their land. BAIF arranged the village level seed fairs by involving these farmers. Around 19 village level seed exhibitions were organized where traditional landraces of different crops like millets, maize and sorghum diversity, along with wild edible plant species were displayed.

Five farmers who were already familiar with the conservation process were selected to form a seed savers group. This group was further involved in collection of all landraces. Initially 12 landraces of maize and 9 landraces

of sorghum were collected. Later, land races of other crops were also collected. In total, around 258 landraces were collected. Table 1 indicates the number of landraces collected and their traits.

In-situ conservation

The information collected for specific landraces during exhibition was validated during in situ conservation. After discussing with community for each landraces, 5 best landraces each of maize and sorghum were selected for further in situ conservation (Table 2). Farmers fields served as in-situ conservation plots. Ten in-situ conservation plots were identified for cultivating traditional landraces.

The community involved in the conservation process, also actively participated in varietal selection on the basis of their physical performance. The members of seed saver committee, knowledgeable farmers along with BAIF staff visited each and every in situ plot during growing stage and before harvesting. Members were trained on pure line selection using scientific methods. Also, farmers have their own ways of selecting a pure line. The members selected landraces based on certain characteristics – like grain size, grain color, plant height, lodging susceptibility, pest and disease resistance, drought tolerance, structure of panicle etc. For morphological characterization, the project staff collected scientific data as per DUS guidelines of ICAR, completed the morphological characterization of 21 landraces of maize and 18 landraces of sorghum.

Communities found that traditional landraces were hardy, resistant to drought condition with lesser attack by pests and diseases.

Table 1: Crop germplasm collected by seed saver committee

Crop name	No of land races	Importance of land races
Finger millet	01	Bold grain size, sweet taste, non lodging, more tillers, tolerant to drought condition.
Foxtail millet	03	Easily grown on barren/slopy land, resistant to sucking pests, better keeping quality, more nutritious.
Barnyard millet	06	Easily grown on barren/slopy land, resistant to sucking pests, better keeping quality, more nutritious.
Maize	23	Drought resistant, non lodging, sweet taste, resistant to rust, good fodder quality.
Sorghum	21	All traditional landraces are resistant to black smut, sweet taste, drought tolerant and easily threshed, more sweetness in fodder.
Cowpea	6	More sweetness, tolerant to drought condition, better keeping quality, less attack of sucking pests.
Hyacinth bean	12	Long pod, bold grain size, sweet taste, less incidence of sucking pests.
Wild edible plant species	63	High medicinal value, some are perennial, easily cultivable, disease resistant, drought tolerant.
Total	135	

Seed saver committee

The selected seed savers from different villages are the members of seed saver committee. They are actively involved and play an important role of executing the plan at the field level. The committee conducts its monthly meeting in the field. The plan is discussed along with field visit to in-situ plots. The committee is responsible for storing the seed and exchanging with other farmers. Each group nominates its representatives for the block level seed saver committee named as “*Yahamogi Mata seed saver committee*”. The block level committee has 10 members. There are about 70 women farmers as seed savers, who have conserved seeds of various vegetable crops.

Three village level seed banks are established which are managed by farmers. The seed saver committee provides seed material to interested farmers on exchange. The farmer has to return double the quantity of seed procured from the seed bank. Recently seed saver committee has submitted 10 applications (5 maize and 5 sorghum local landraces) to PPV FRA (protection of plant varieties and farmers right acts) authority in New Delhi.

Impact

The initiative on conserving crop diversity and traditional knowledge associated with it has shown many positive results.

The community realised that they had immense knowledge within the communities and they were competent enough



Photo: Author

An awareness program in progress

to conserve traditional landraces which had better qualities -like taste, flavour, better keeping quality, high in nutrition etc. They also found that traditional landraces were hardy, resistant to drought condition with lesser attack by pests and diseases. While the seed germination was high, the cost of cultivation was low. Having seen the merits of traditional land races, farmers started cultivating more of these landraces. There has been an increase in area under traditional varieties. During the kharif 2016-17, 120 seed saver farmers cultivated 120 acres of traditional landraces of Maize and Jowar. Earlier they were cultivating only 1/8 acre area each. More number of farmers are showing interest in cultivating traditional races.

Participatory revival, conservation and replication of traditional landraces



Photo: Author

Table 2: Details of selected landraces of Maize and Sorghum for multiplication

Crop	Local name	Important characteristics
Maize	Kukkud mukai	Early maturity-90-95 days, tolerant to drought, resistant to rust disease. Specially used for making laddu owing to its sweetness.
Maize	Kehari mukai (red colour maize)	Midlate maturity 95-100 days, resistance to sucking pests, non lodging, drought resistant.
Maize	Pivala lal makai, and pivada lahan makki	Lengthy cobs, shiny yellow colour seed, plant height up to 215 cm, resistant to drought condition.
Maize	Pivala maka	Lengthy cobs without husk, resistant to rust. Specially used for making bhakari and lahya.
Sorghum	Chikani lal juwar (sail kanis) and chikani juwar (Ghatt kanis)	Resistant to black smut and tolerant to drought condition. Specially used for papad making.
Sorghum	Lahan Mani Juwar and mothi mani juwar	Late maturity 105-110 days, resistant to black smut, drought tolerant, non lodging, can be easily threshed, good fodder quality.
Sorghum	Mothi safed juwar	Tall plants up to 220-240 cm, plant becomes green at the time of harvesting so it is good for grain as well as fodder, more poppiness, sweet taste, bold grain size. Specially used for Bhakari and lahya.

With a hold on seed production, farmers have now greater access to seed and lesser dependence on external sources. About 550 kg maize and 500 kg sorghum seed is available for cultivation during next Kharif season. Besides the cost incurred on seed has also lowered drastically.

The whole process of participatory revival, conservation and replication of traditional landraces is helping farmers from this tribal belt regain their food sovereignty. Now they have

the knowledge on local seeds and access to seeds of their choice.

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Call for Articles

Climate-resilient food systems

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Climate change is real and the impacts are already upon us. Family farmers and peasants, through virtue of their intimate relationship with the natural environment, are amongst the first ones to feel the impacts. They are also on the frontline when it comes to taking actions, to safeguard their way of life and mitigate climate change. Family farmers are not alone in these activities. There are also a growing number of citizens engaging in climate change activism and researchers working with farmers to manage the risks from climate change. For example, researchers and citizens lobby governments to invest in renewable energy and create policy that supports farmers who store carbon in the soil.

What does agroecology – as a science, movement and practice – have to offer here? Certainly agroecology offers ways to cope with and prepare for threats such as increasingly uncertain and extreme weather events. In contrast to ‘climate smart agriculture’ and other top-down approaches, agroecology builds resilience as it is grounded in local and relevant knowledge, low external inputs and both biological and cultural diversity. For example, for peasants, climate variability is an inherent feature of the environment in which they live. This is reflected in their choices and adaptive practices related

to combinations of crops, varieties, animals and, to planting, storage and postharvest techniques.

Moreover, agroecology can contribute to mitigating other threats posed by climate change. On the one hand, it can reduce the impact of agriculture on the climate through sustainable methods like increasing biodiversity on the farm, better soil management, low fossil energy input etc. On the other hand, it can help rural societies cope with drastic changes, as farmers adapt and respond to new opportunities, and build more resilient farming systems.

The June 2017 issue of LEISA India will explore the strategies that family farmers and civil society are developing to adapt to and mitigate the effects of climate change, thereby building resilience. How do these strategies feed into the science of agroecology? How do farmers perceive and deal with changes in their environment? We are particularly interested in hearing about grassroots experiences where family farmers have innovated or revived old farming practices to cope with extreme climatic events and uncertain weather. And what is the greater socio-political relevance of these experiences?

Articles for the June 2017 issue of LEISA India should be sent to the editors before 30th April 2017.

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“Food sovereignty is about peasant rights”

Interview: Tomáš Uhnák

Ramona Duminicioiu is a member of Eco Ruralis, a peasant association in Romania. In this interview, Ramona explains why the food sovereignty movement is not only about food, and why defending the peasant way of life is in the interest of society as a whole.

What is the Nyéléni movement?

Nyéléni is the name of a Malian woman. She was a legendary peasant who farmed, fed and cared for her people. Her actions embodied food sovereignty and inspired the world. And so we celebrate her heritage in the food sovereignty movement through her namesake.

The movement’s first gathering was organised in 2007 in Sélingué, Mali, Africa. Besides strengthening the movements’ political power, the forum’s participants sought to further develop the concept of food sovereignty as an alternative policy framework for food and agriculture. Their vision was articulated in the final declaration of the Nyéléni forum on food sovereignty (see box). This declaration serves as inspiration for other regions and continents to organise around food sovereignty. Nyéléni forums are important events that unite the food sovereignty movement. At these gatherings we create plans and strategies for actions to counteract problems that we find and define together. Moreover, we strengthen networks to support each other in what works.

The forums are not just one-off events, they are part of a process that builds on previous forums. In 2011 for example, the first European food sovereignty forum was held in Krems, Austria. It gathered all the constituencies that had been working on food sovereignty in the region. There were food producers, peasants, pastoralists, fisher folk, indigenous



Photo: Diana Quiroz

Ramona Duminicioiu at closing of Nyeleni Forum

people, urban gardeners, researchers, organised consumers, and generally people that have knowledge and interest in building a better future for food and agriculture. A European declaration of food sovereignty was created, and based on that declaration we started planning actions together. Five years later, civil society and peasants from La Via Campesina decided to organise another forum. This latest Nyéléni forum took place in 2016 in Romania. More than 40 organisations, including Eco Ruralis, were involved in preparations for the gathering.

What is the importance of the food sovereignty movement for peasants?

Food sovereignty is a concept that refers to peasant and human rights to food, to choose their food, to produce food, and to shape policies that govern food and agriculture in their regions.

At the moment we feel that decision makers are very far from the reality, problems and difficulties that peasants are

confronted with. Peasants are on the frontline of climate change issues and are the first ones to come up with solutions. They are the biggest investors in agriculture, yet nobody recognises this. They are producing and maintaining common goods by administrating land and natural resources in sustainable ways. They are the backbone of society and they deserve to be put in the centre of decision-making.

This is why peasants all around the world needed to create a common strategy and common political framework. They defined it as food sovereignty. It's not a concept that refers to borders and stipulates that we should produce food only for our own region or country. It's not a nationalistic concept, it's something broader and more profound. It truly refers to human and particularly peasant rights.

What are some of the campaigns for peasant's rights that you have been involved in at Eco Ruralis?

Eco Ruralis was founded in 2009 by a group of peasants from around the country who felt the need to have political representation. We couldn't find any allies in the unions, or in other organisations. Our first campaign was on protecting our seeds. This is the most practical and inspirational activity that we have. It is the campaign that really brought us together. We still have a lot of genetic resources in the field, and we wanted to act before it's too late. So we focused on keeping our seeds alive by using, multiplying and redistributing them. We are best known for the seeds which we produce and distribute across the entire country.

Over time we crystalised our vision. We started cooperating with La Via Campesina, and this exposed us to other models of action and organisation with other countries. And so we created two more campaigns. One addresses land issues and the rights to land, and the other is on the rights to markets. Through the land campaign we mostly expose the phenomenon of land grabbing, promote ideas of sustainable rural livelihoods and the rights of people to keep their land in their communities for future generations. Our campaign on markets is just emerging now.

In what way are your campaigns linked to the issue of migration and migrant labour rights?

Many, if not most, of the workers in agriculture in the Western Europe come from Eastern Europe. Cheap labour provided by refugees and migrants is one of the reasons our food can be so cheap. EU agricultural and food processing practice is to large extent based on migrant and refugee labour as well. For example, many Romanian peasants end up in Germany, France, Czech republic, etc. These people very often have their rights violated and they work in absolutely terrible and unfair working conditions.

The Nyéléni Declaration on food sovereignty (2007)

The Nyéléni declaration has proven to be a critical statement in shaping food sovereignty as a policy framework. After La Via Campesina coined the term 'food sovereignty' in 1996, there have been numerous gatherings to come up with a shared vision. For this, the first Nyéléni forum has been particularly significant. This was in no small part due to the broad participation of *about 600 activists from over 80 countries*. The collective understanding of food sovereignty that they achieved is still drawn upon widely today. Key points include:

- The right of all individuals to healthy, nutritious and culturally appropriate food is at the centre of all food and agriculture policies
- Peasants, farmers, fisherfolk, indigenous people, forest dwellers and agricultural workers are valued, recognised and respected for their contribution to food provision
- Local and national economies and markets are prioritised
- Food production, distribution and consumption is based on environmental, social and economic sustainability
- The rights to use and manage lands, territories, water, seeds, livestock and biodiversity are in the hands of those who produce food
- Food providers and consumers are brought closer together to determine food, farming, fishery and pastoral systems.

See: <https://nyeleni.org/spip.php?article290>

Land grabbing and the lack of vision from our governments to support peasant farming pose serious threats to the peasant way of life. This, in turn, has many far reaching implications for society. In contrast to Western Europe, much of the land is still in the hands of family farmers in Eastern Europe. But, Eastern European governments, Romania's included, have an agenda to attract foreign investors and consolidate land. They spend a lot of public money on this and are blatantly pushing peasants to sell or lease their land. In Romania, subsidies taken from the second pillar of the CAP for rural development are used to entice peasants to part with their land. The land value is still relatively low so it's attracting a lot of investors such as multinational companies, investment funds and banks that only use the land in a destructive and speculative way.

As a result, peasants lose connection with their land. When they are looking for ways to feed their children, with few employment opportunities at home and little hope, they feel they have to go abroad to Western Europe. And because we are country of peasants, most of the people that go abroad work in agriculture. When doing so, peasants lose even more connection with their home and land. This continues to perpetuate the process of farmers giving their land away to companies.



Photo: Diana Quiroz

Nyeléni Europe forum for food sovereignty 2016, Romania

What is the role of women in the food sovereignty movement?

It’s essential, and we can never do enough work making the role of women for food sovereignty visible. Unfortunately, in the 21st century we still have the essential problem that women’s roles and work are always undervalued. Yet, in this movement women are not left behind, on the contrary, the food sovereignty movement honours women. For example, women have a central role in the Nyéléni forums and we impose equal quotas of participation by women and men. This is a fundamental part of our struggle, as we believe that we can only achieve our goals when men and women first, side by side, solve women’s rights issues.

Rural feminism is, I would say, an emerging struggle that is gaining shape. I feel that women increasingly come together to share their awareness and insight. With every international meeting women organise special gatherings with impressive participation. Women are putting peasant women in the centre, and others, such as women researchers, are supporting these actions.

Lastly, can you talk about the public comeback of the word ‘peasant’ in Romania?

Let me tell you a story. In Romania, the word peasant was used in a derogatory way for a long time. A few years ago, the national radio asked a representative from Eco Ruralis to give an interview on a farming issue. When they asked

how to present her, we mentioned her name and said, “peasant spokesperson.” The radio apologised and told us that pronouncing the word peasant in public spaces is forbidden. ‘Peasant’ was associated with negativity, with somebody that is poor, uneducated, rude, etc. These negative connotations came from misunderstanding, from a lack of connection with people that work on the land.

Nonetheless, we have continued to use the word because we know that there are peasants in our fields. Romania is a country where peasant farming is still alive, we have 4.7 million active peasants representing almost half of the peasants in the European Union. It’s an undeniable reality, they produce our food, even though they are not recognised on the market, nor are they recognised and protected by the social laws.

But recently this word has made a public comeback. It’s now on the TV, radio and in newspapers – it’s almost fashionable now. People have remembered what it means to be a peasant. A recent national opinion poll concluded that people associate the word peasant with honesty, hard work and beautiful people. In Eastern Europe we are in the region of peasants. We are in the region of people that know how to produce food. This is very unique and important. Peasants not only know how to make food, peasants know how to fix things, how to build things, how to take care of animals. They are creators of life and this is essential for the future of society at large.

In Romania, the word peasant was used in a derogatory way for a long time

Access to seeds builds self-reliance

Archana Srivastava and Subia Ahmad

Farming and livelihoods of small, marginal and women farmers in flood-prone areas of Uttarakhand are under threat. Lack of flood resistant varieties often pushed them to the brink of food insecurity. To combat this problem, the women farmers of Mehdawal block in Sant Kabirnagar adopted the practice of producing flood resistant seeds, ensuring food security all through the year.

Farmers in Chikaniyadeeh own small pieces of land, which are uneven and are prone to frequent floods. Chikaniyadeeh is located in Mehdawal block of Sant Kabir nagar district. Doodhiya Taal attached to Bakhira lake gets flooded often and submerges most of the farms destroying the kharif crops. This also affects the timely farming of rabi crops. Almost 25 per cent of the low lands in Siwan remains flooded till April-May, adversely impacting farmer livelihoods.

Farmers generally grow hybrid varieties of wheat and paddy which are not flood resistant and as a result, incur heavy crop losses during the floods. Though these seeds are expensive and are prone to pest attacks, yet farmers have no choice but to sow these seeds which are easily available in the local market and the government agro centers. Owing to crop losses, households have food available only for 6-7 months in an year. Farmers have to take loans to feed their families. Most often, men migrate in search of work leaving behind the women to take care of families as well as farms.

Initiation

In 2012, Gorakhpur Environmental Action Group, a voluntary organization, initiated a programme in 19 villages including Chikaniyadeeh, to promote stability in farm livelihoods by empowering farmers to produce flood resistant seeds. Women farmers, belonging to marginalized communities were the center of focus.



Photo: Author

Shakuntala Devi produced flood resistant seeds using organic methods

Around 35 women farmers were organized into two groups – Mrityunjay Women Farmer Group and Durga Women Farmer Group. Also, 100 farmers (80 women and 20 men) were organized into Small Marginal Farmer Front to address the problems faced by small, marginal and women farmers. This unit met monthly to find solutions for their farming and livelihood related problems.

By using flood resistant varieties, the production increased and households had food available for the entire year.



Access to seeds improved due to sharing with each other

One of the main problems which the group identified was the unavailability of proper seeds on time. The closest market to the village is in Pipiganj which is 15 kilometres away and the government seed store is almost 30 kilometres away. Women farmers were finding it difficult to procure the right seeds. They also had no information regarding the seeds suitable for the local circumstances.

Keeping in mind the problems faced in the Kharif season, the group members decided to organize a one-day event in farmer schools to demonstrate the benefits of Swarna Sub-1 variety of paddy seeds, which is flood resistant. Swarna Sub-1 is a variety of seed, which gives a good produce even after being submerged in water for 15-18 days. The event was organized in collaboration with scientists from Krishi Vigyan Kendra and Centre for Integrated Pest Management. The seeds were provided to 54 farmers associated with different groups like women farmer groups and small marginal farmer front.

Seed Production

Ms. Shakuntala Devi, president of Mrityunjay Women Farmer Group, cultivated this variety on her one acre field, for the purpose of seed production. She prepared a nursery using 15 kilograms of foundation seed and transplanted these seeds in the farm located next to the pond. The technical knowledge needed for the seed production was provided by GEAG. Training was also provided by Dr. J. P. Singh, a scientist from KRIBHCO. The entire process of seed production was carried out under the guidance of KRIBHCO. Shakuntala Devi used dung manure, vermi-

compost and bio insecticides. Around 22 quintals of paddy was harvested from one acre.

Looking at the good quality and the flood resistant nature of this variety of seed, in May 2014 there was a demand for this seed from other farmers of the village. Shakuntala Devi sold the seeds to 135 farmers at the rate of Rs. 18 per kilogram. She took up seed production once again. Ten more women joined her in seed production. Now, the popularity of Swarna Sub-1 variety is not just limited to Chikniyadeeh. It has also spread to nearby villages like Ghurapali, Badhya Thathar and Pidari Kalan from where there is a demand for these seeds.

Conclusion

Owing to the availability of the right seeds on time, the women farmers of the village, unlike before, are able to produce crops during the Kharif season and have been successful in reducing their losses during natural disasters. Since they have started using the flood resistant variety of seeds, the production has increased and there is food availability round the year. The financial resilience of Shakuntala Devi has encouraged other women farmers to follow her footsteps.



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Balancing the old and the new

Amandeep Singh and Pranav Kumar

Living in harmony with nature is the surest way for living sustainably. Gujjars, a tribe in the northern parts of India, while holding on to the traditional cultures and systems, have also embraced the new, resulting in sustainable ecosystems and sustainable livelihoods.

Standing tall, rigid, composed with *Pagh* and *Tehmad* as their costumes, the long flowing beard dyed red, churning words of *Gojri* as their dialect, the mesmerizing fragrance arising from the baking of *Makki* and *Bajra* dipped in *Makhan* and *Sarson* as their diet, the picturesque architecture of their *Kullas* made from mud and

special grasses as their homes, their love and compassion for their animals which are their sole source of income, the captivated earth under the feet and traced skies over the head, marks the perfect blend of Gujjars with the Mother Nature.

Gujjars are the nomadic tribe which is rich in terms of cultural heritage. They have their own costumes, traditions, living habits, art and craft and also a very distinct food habits which varies from area to area. Gujjars along with Bakarwals is the third largest community in the state of Jammu and

Gujjar kids dressed in school uniform



Photo: Author

Kashmir. Gujjars constitute 7.5% of the total population in the state according to the census of India, 2001. Occupationally, 69.2% Gujjars are practicing agriculture and animal husbandry, 2.8% are household workers and 28% are involved in other sectors. Dairying is the major area of economic activity by them. The class of nomads is mainly known for the rearing of livestock and is established with the fact that only 0.85% of the population is urbanized and remaining resides in rural areas and thrives on sustainable livestock production.

Food habits

Since Gujjars live in secluded conditions, their livelihood pattern, food and dietary practices and their attitude to various aspects of life, may often differ from those of the non-tribal population. This is reflected in their dietary habits. Due to changing agricultural system, cropping patterns and food habits, many of the communities have undergone some changes and it was noticed in the Gujjar community too.

Mostly they depend on milk products as their staple food besides cereals, wheat and maize. The favorite dishes of Gujjars are *Makki ki Roti*, *Ganhar / Sarson ka Sag*, *Lassi*, *Kalari*, *Karan*, etc. It is surprising that Gujjars are mostly vegetarians.

Although the markets have been flooded with the new products and multinationals, removing small businesses from the competition, the local tribes of Jammu & Kashmir are least worried with this trend. They are still thriving on the conditions they had some decades ago. For example, 98% of the Gujjars have a strong affinity for *Noon Cha* or salted tea over regular sweetened tea in their diet and do not start or complete their day without it. *Noon Cha* is a blend of the local herbs available in J&K. Their nomadic life and disinterest to launch themselves on market pads have made them contented and self sufficient in whatever they produce and have. Their secluded lifestyle on mountainous terrains has made them live and dwell in close proximity to nature.

Protecting ecology

The community has undertaken various efforts for preserving ecology. They thrive in dense forests and highlands for their food and fodder for their animals. These people remain in equilibrium with the forests, use forests as per their needs

Food habits of Gujjars are quite different and so is their lifestyle, which makes them a special and unique tribe to be classified as food sovereign tribe.



Dr. Pranav Kumar explaining the farmers on the use of mineral mixtures for enhancing animal health

Photo: Author



Youth are keen to learn better animal husbandry practices

Photo: Author

and in return fertilize the forest soil. Gujjars have helped Forest Department of the State in ascertaining and marking the vital forest area and removal of illegal encroachments. They have signaled the excessive felling of forest trees and helped in conservation efforts. Further, they act as navigators in guiding to habitable spots and valuable forest products as they trek these paths.

Livelihoods linked to ecology

Maize is grown in the hilly and mountainous areas and it is a tropical crop in this region. Cultivation of maize is done on the mountainous areas where majority of the community

is settled. Maize is the staple food as it also provides warmth and strength which the body needs, especially during winters. Other crops like rice, wheat etc., which need irrigation are not cultivated. So they are left with only option - to cultivate maize.

Gujjars cultivate highly nutritious maize on high terrains and dwell on the local vegetation for their food which did not alter the flora of the area. Further, the leftovers of the maize plant are fed to the animals as feed. The migratory lifestyle has enabled them to take their animals to high terrains during summers for grazing and bring them back to plains during winters in search of food. They develop temporary houses called as *kullas* from mud and grasses during winters on plains and rear their animals on the fodder. They return excellent manure produced by the animals which increase the fertility of the soil with the minimal use of fertilizers. In plain areas, the settlements of the Gujjars are the primary places sought by public for obtaining manure. On their return to higher terrains, they let their animals loose for grazing on the natural pastures and there the animals deposit their manure stabilizing the nature's balance of nutrients. They live in perfect harmony with meadows and pastures in a symbiotic relationship.

The Gujjars are the primary groups responsible for livestock growth as they mostly dwell on livestock rearing and production. Livestock for Gujjar community is a status symbol as more the number of animals a family owns, more dignified they are considered to be. Further, the major trade activity elicited by Gujjars is in sale and purchase of buffaloes and their milk. Gujjars have a certain tendency and favoritism for buffaloes as compared to cattle as these animals are hardy in nature, have the capability to withstand stressful conditions and secrete more fat in their milk. Buffalo milk is used by the Gujjars for value addition and they process it to make Ghee, Butter, Curd, Lassi, Paneer, Kaladi and sell the surplus for profit after being self sufficient.

The main source of income for the Gujjars is sale of livestock products, especially milk and milk products. The cycle of production and economy is stable as they have at least 30-40 animals. The milk is used for self consumption and value addition along with sale. The value added products are then directly sold to the households and most of the times people approach Gujjar settlements for obtaining milk products like ghee, curd, butter, paneer, kaladi, etc. Although the major players of dairy industry like Amul, Mother Dairy, Verka,



Photo: Author

Students interact with Gujjars on better animal health and production

etc., had launched many of their value added products in the market, still the people of the region rely on Gujjars for purity of the milk and products.

Gujjars while protecting their traditional knowledge are also open to new scientific knowledge. They are trained on clean milk production, animal health, personal and animal hygiene, animal nutrition, etc by the Department of Animal Husbandry, Jammu/Kashmir, Line Departments, Krishi Vigyan Kendras (KVKs) or Farm Science Centers, Sher-E-Kashmir University of Agriculture Sciences and Technology of Jammu/Kashmir, etc. They have been also rendered with the use of better reproductive and breeding techniques for their animals.

This business of Gujjars is not affected by the major stakeholders - sales not affected with inflow of profit. A family produces 100 litres of milk daily and these 100 litres is always sold with the same profit margins inspite of so many brands in the local market. The ghee made by Gujjars is the most sought after commodity in Jammu & Kashmir. People pay higher prices than the market price. The taste and aroma of the ghee is very unique and is devoid of preservatives. The slow churning of milk fat on firewood gives a homogenous texture and taste to the ghee. Here one more thing needs to be understood that the value addition of milk is done without any chemicals and preservatives. They use eco-friendly methods serving as a boon for human as well as nature's health.

The community not only masters the art of animal rearing but also has brilliance in art of healing. They are the doyens of indigenous technical knowledge. They have mastered the use of naturally occurring herbs and shrubs for treating ailments of both humans and animals. This knowledge is imparted to the successive generations by their forefathers. The use of certain naturally growing plants had certainly economized their living and treatment expenses of animals. The animal products are not contaminated with harmful drug residues. Further, the load of antibiotics and chemicals in the environment too, is reduced.

Conclusion

The Gujjar community has strategically evolved by the use of certain practices which are drawn from their forefathers. They have promulgated a great bonding with the common public. They are offered land by the people for establishing their temporary settlement. They are least affected by the happenings around the globe and live their life in the lap of nature, in greener environments and in close proximity with their livestock. Though many of the Gujjars have settled in permanent settlements, still some of them enjoy their nomadic life. Though Gujjars are exposed to modern education and health facilities, still they are true to their roots and follow their ideals maintaining a proper balance of the old and the new. They have created a niche for themselves and their products in the market. They have their own and unique way of doing things. Their food habits are

quite different and so is their lifestyle which makes them a special and unique tribe to be classified as food sovereign tribe.

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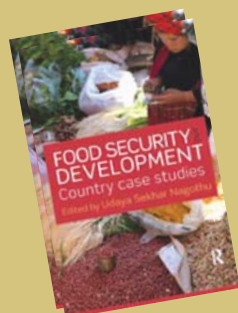


The future of food and agriculture: Trends and challenges

FAO, 2017

How can we achieve FAO's original vision of a world free from hunger and malnutrition? The report sheds some light on the nature of the challenges that agriculture and food systems are facing now and throughout the 21st century, and provides some insights as to what is at stake and what needs to be done. What emerges is that "business as usual" is no longer an option but calls for major transformations in agricultural systems, in rural economies and in how we manage our natural resources. The shift to more sustainable food systems will necessitate more investment in agriculture and agrifood systems, as well as greater spending on research and development, the report says, to promote innovation, support sustainable production increases, and find better ways to cope with issues like water scarcity and climate change.

The report was undertaken for the quadrennial review of the FAO Strategic Framework and in preparation for the Organization's Medium-Term Plan 2018-2021.



Food Security and Development Country Case Studies

Udaya Sekhar Nagothu (Ed.), 2015, *Routledge*, 274 p., £34.99, ISBN: 9781138706538

The global food system is characterized by large number of people experiencing food insecurity and hunger on the one hand, and vast amounts of food waste and overconsumption on the other. This book brings together experiences from different countries addressing the challenges associated with food security. Seen through various disciplinary lenses the different cases included are countries at various stages of food security, with diverse stories of success as well as failures in their efforts. China, Brazil and India, as well as less developed countries in Africa and Asia, such as Malawi, Ethiopia, Tanzania, Myanmar, Bangladesh and the Philippines. Each of the case studies identifies and analyzes which factors or drivers (environmental, economic, policy, technology, markets) have been the most powerful shapers of the food system and their future impact.

The case studies identify interventions at regional, national and local level that contribute positively to food security, highlighting solutions that are effective and easy to implement for all levels of decision makers, from farmers to policy makers. Overall, the book provides insights in order to foster a greater understanding of the issues surrounding food security and support progress towards the goal of a sustainable food system for all.

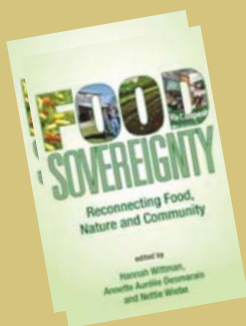


Ecosystem Services Key Issues

Mark Everard, 2017, *Routledge*, 188 p., £25.99, ISBN: 9781138692725

The concept of ecosystem services has emerged in recent years as one of the most powerful guiding principles for ecology, biodiversity conservation and the management of natural resources. It provides the basis of assessing the multiple values and services that ecosystems can provide to humankind, including such diverse issues as carbon sequestration, flood control, crop pollination and aesthetic and cultural services. This introductory textbook sets out the key aspects of ecosystem services.

The book details the historical roots of ecosystem services in the second half of the twentieth century and through initiatives such as the Millennium Ecosystem Assessment. It shows how ecosystem goods and services can be categorised and valued in economic as well as non-monetary terms, while also highlighting some of the difficulties and limitations of valuation techniques. It is illustrated by a wide range of international case studies and includes learning objectives and guidance for further reading.



Towards food sovereignty: reclaiming autonomous food systems

Michel Pimbert, 2009, *IIED, London*

Throughout the world, food providers (such as farmers, pastoralists, forest dwellers, and food workers) and new social movements, rather than academia and think tanks, are the prime movers behind a newly emerging food sovereignty policy framework. At its heart, this alternative policy framework for food and agriculture aims to guarantee and protect people's space, ability, and right to define their own models of production, food distribution, and consumption patterns.

The notion of "food sovereignty" is perhaps best understood as a transformative process that seeks to recreate the democratic realm and regenerate a diversity of autonomous food systems based on equity, social justice, and ecological sustainability. Such a transformation with, by, and for people implies radical changes in five closely interrelated domains: ecological, political, social, technological, and economic. This multimedia e-book explores these processes of change and their implications for policy and practice through a combination of text, photos, films, and sound.

Food Sovereignty: Reconnecting Food, Nature and Community

Annette Desmarais, Hannah Wittman and Nettie Wiebe (Eds.), 2010, \$24.99

Advocating a practical, radical change to the way much of our food system currently operates, this book argues that food sovereignty is the means to achieving a system that will provide for the food needs of all people while respecting the principles of environmental sustainability, local empowerment and agrarian citizenship. The current high input, industrialized, market-driven food system fails on all these counts. The UN-endorsed goal of food security is becoming increasingly distant as indicated by the growing levels of hunger in the world, especially among marginalized populations in both the North and South. The authors of this book describe the recent emergence and the parameters of an alternative system, food sovereignty, that puts the levers of food control in the hands of those who are both hungry and produce the world's food – peasants and family farmers, not corporate executives. As the authors show in both conceptual and case study terms, food sovereignty promises not only increased production of food, but also food that is safe, food that reaches those who are in the most need, and agricultural practices that respect the earth.

Forgotten Agricultural Heritage Reconnecting food systems and sustainable development

Parviz Koohafkan, Miguel A. Altieri; 2017, *Routledge*, 272 p., £32.99, ISBN: 9781138204157

Contemporary agriculture is often criticized for its industrial scale, adverse effects on nutrition, rural employment and the environment, and its disconnectedness from nature and culture. Yet there are many examples of traditional smaller scale systems that have survived the test of time and provide more sustainable solutions while still maintaining food security in an era of climate change. This book provides a unique compilation of this forgotten agricultural heritage and is based on objective scientific evaluation and evidence of the value of these systems for present and future generations.

The authors refer to many of these systems as Globally Important Agricultural Heritage Systems (GIAHS) and show how they are related to the concepts of heritage and the World Heritage Convention. They demonstrate how GIAHS based on family farms, traditional indigenous knowledge and agroecological principles can contribute to food and nutrition security and the maintenance of agro-biodiversity and environmental resilience, as well as sustain local cultures, economies and societies.

Policy changes on millets: a relook

Ranjit K Sahu, Ravi Shankar Behera and Srinibash Das

Millets are a rich source of nutrition and ideally suited for addressing the issues of hunger and malnutrition. However, government policies directed at providing nutrition in the region may indirectly promote monocultures, resulting in the decline of biodiversity, leading to a different kind of malnutrition. It is therefore important to design strategies that encourage the cultivation of millets using traditional methods that are best suited to the local agroecology.

The potential of millets as a source of nutrition and a tool for hunger eradication is well established. Millets constitute one of the oldest forms of source of food, particularly in the tribal regions of India and the less developed regions of the world. Millets often termed as the poor man's food, however, is now being subjected to systematic neglect leading to decreased production.

Not too long ago, even until about 20-25 years millets were widely cultivated in many parts of India including the eastern ghats and villages of Koraput district, dominated by the tribal communities. These include Jowar (*Sorghum vulgare*), Pearl millet (*Pennisetum typhoides*), Proso millet (*Panicum miliare*), Barnyard millet (*Echinochloa sp.*), Foxtail millet (*Setaria italica*), Kodo millet (*Paspalum scrobiculatum*), and Ragi (*Eleusine coracana*). Among these, ragi, a millet, is more predominant in terms of acreage. Millets are grown on poor soils with little water holding capacity and are

dependent on the monsoons for production. Tribals practice shifting cultivation on medium and uplands along the hill slopes, where the crop is cultivated during June to September. Millets have been the main source of nutrition to these tribal communities. A report by National Institute of Nutrition, Hyderabad states that compared to rice, these crops have better mineral, protein and fat content as compared to rice. Additionally, iron content in millets is crucial for fighting malnutrition and anemia, largely prevalent in the region.

The issue of climate change and the predicted effects on the agro-forestry systems across the globe has now brought millets into focus. In this background, a survey was done to understand how the scenario has changed with regards to agriculture in the southern region of Odisha, that has traditionally nurtured minor millets.

Declining area under millets – some factors

With the introduction of commercial agriculture and plantation crops like eucalyptus, oil palm and cotton among

Availability of subsidized rice has not only led to decreased consumption of millets but has also affected the nutrition levels.

Table 1: Effect of transition of land from millets to eucalyptus

Sl. No	Present	Future
Environmental	Survives drought partially or fully and production can be obtained	May succumb to drought induced due to climate change
Financial	Not very lucrative for the farmer at present	Leads to increased income from farm
Nutrition	Helps manage nutrition levels of farming community	Production mostly for market and may not contribute significantly to nutrition of locals
Social	Culturally compatible with food habits and traditions	Will lead to change in food habits and adaptation to new food
Economic	Not a ready market	Market exists for the products



Many varieties of millets previously grown in the region are now not cultivated.

others, land originally allotted to small millets is being increasingly diverted towards non-food crops. This is jeopardizing a reliable source of food and nutrition for the low income communities in the tribal region. Ironically in an era where crop diversification and promoting the traditional varieties has been proven to be the most effective tool against fighting poverty and malnutrition, in these

Millets are the main source of nutrition to the tribal communities



Box 1

Balram Bidya of Siriguda Village in Kashipur block, had the responsibility of getting his four daughters married for which he needed money. The income from ragi cultivation was too meagre. Hence, he diverted 20 acres of land out of the 30 acres he owned from millets (ragi) to eucalyptus. This would fetch him about Rs.70000 per acre in three years which would help him immensely. Cultivation of ragi on the other hand fetched him a low returns at about 21 rupees a kilo and he hardly had a crop output of 100 kilos. Thus, he feels the transition is both logical and lucrative. In previous years he cultivated many varieties of ragi but keeping in tune with the times he has now restricted his cultivation to Madai muskili only. This is enough for his domestic consumption with a little surplus for market at times.

regions, the system of modernization and mono-cropping is being promoted. This inadvertently has pushed the farmers towards plantation crops and changing food habits. How this will impact the health status in the region in the long run remains to be seen.

By labeling these lands as unsuitable for crop production and therefore diverting such lands for cultivation of trees like eucalyptus, the possibility of eradicating malnutrition in these regions is further decreased. Many varieties of millets previously grown in the region are now not cultivated. Table 1 indicates how the transition from millets to plantation may possibly affect the community in future due to climate change.

While the importance of millets and Ragi in providing health benefits is well established - like decreasing cholesterol, helping with lactation, providing minerals like calcium, fibres etc., availability of subsidized rice through the public distribution system has led to the lowered consumption of millets. Availability of subsidized rice has not only led to decreased consumption of millets but has also affected the nutrition levels. This has further resulted in declining areas under cultivation, decreased interest in cultivation of the crop and loss of traditional varieties.

Also due to life style changes, the consumption of millets by upper and middle class sections of the society has reduced, leading to dip in demand for millets. This has further discouraged the small and marginal farmers to take up cultivation of millets. Today many landraces and varieties of the millets that can add to the diversity of these crops for future sustainable agriculture are on the verge of extinction. Places that grew a dozen varieties of these crops now cultivate one or two varieties. Some of the varieties of Ragi that are cultivated and no more cultivated have been listed

Table 2: Varieties of ragi that have been going extinct in the region of Koraput

Variety	Status	Reason
China kani Mandia	Not cultivated	Diversion of land for orchard
Janaa mandia	Not cultivated	Diversion of land for Eucalyptus and orchard
Telenga mandia	Not cultivated	Black in color so minimum market price
Muguda maandia	Not cultivated	Diversion of land for Eucalyptus and orchard
Katarasingh	Cultivated	Has good agronomic and food qualities
Madai muskili	Cultivated	Has good agronomic and food qualities

in Table 2 to show the loss of these crops in traditional regions.

Social responsibilities are also a cause for the conversion of agricultural/pasture land into eucalyptus stands, as per Balram Bidya of Siriguda Village in Kashipur block,. He explains how the pressure of getting his four daughters married has made him divert two thirds of his land holdings from millets (ragi) to eucalyptus (See Box 1). The case highlights how individual's approaches indeed create a decrease in production that would deprive other poor people who visit local weekly markets and depend on farmers like Balram for ragi as a source of nutrition.

According to Ms. Suman Jhodia, such diversion is now rampant in this ecosensitive zone. She mentions how more than 50 cultivators have now started eucalyptus in a majority of their land holdings. Since the government provides rice at one rupee a kilo and growing ragi is not anymore essential to fight hunger, people are further disinterested in growing this crop. This argument was well supported by other women like Kamalini Jhodia, Kunjapati Jhodia and Sobni Jhodia, indicating how the traditional millet growing areas are gradually transforming into the feeders for commercial firms.

Millet promotion – what ails on the ground?

The propaganda about millets is on the rise with events being organized in many places and venues being echoed with their significance. However, at the ground level, little is being done to protect these precious resources by Government, private sector and civil society. The Government has pledged support for cultivation of millets last year along with providing inputs in terms of irrigation facilities and seed supply. Normally, millets require less chemical inputs and are also resistant to pests and diseases.

Thus avoiding pesticides or minimizing their use in the scenario of increased acreage under millets would be one of the best strategies to adopt rather than treating it as a fully commercial product, thereby making its cultivation expensive with high external inputs. However, the low requirement of agricultural inputs like fertilizers and pesticides for these crops also means that the companies traditionally associated with selling these commodities show little interest in cultivation of millets. On the other hand, at times, they tend to discourage farmers from taking up these crops. Thus, the non-involvement of commercial enterprises also has weakened the advocacy of cultivation of these crops in the public fora.

Traditionally, millets like ragi have been cultivated and the lines maintained by farmers using organic approach. Today, there is a drive to make this crop popular due to its relevance as a health promoting food in the urban areas. This in turn is gradually elevating its status as a staple food in the society compared to earlier times when its consumption was linked to poverty and backwardness. By taking a complete commercial approach for the cultivation of millets, the crop may slowly become a monoculture of a few varieties like the other cereal crops like wheat, rice and maize. This can lead to loss of crop diversity and *in situ* evolution with climate change. It would also put the crop at risk of being lost during any natural calamity, disease or pest incidence. Thus, strategies to maintain land races are required in parallel.

Need for shifting emphasis

Government policies directed at providing nutrition in the region may indirectly be promoting the decline of minor millets and leading to a different kind of malnutrition while alleviating hunger in the region. It is therefore important to design strategies to encourage the cultivation, maintenance and propagation of local varieties of millets in the region with good marketing strategies, so that their cultivation is comparable to the cash crops. Inclusion of tree crops in the system has benefitted the farmers and is well appreciated for helping them come out of the poverty trap. However, emphasis should now be laid on educating them about the importance of continuing cultivation of minor millets in the ensuing climate change situation. Tribal farmers, traditionally have been practicing mixed farming and crop rotation, which are best suited to the local agroecology. These cropping patterns have stood the test of time and climate variabilities. Such traditional cropping systems need to be supported and promoted. Sustenance of such agricultural systems will be the key to address the climate change issues locally.

Table 3 : Policy changes and possible outcomes

Government action	Possible effect on environment/agriculture	Possible effect on health status	Possible effect on financial status
Compulsory maintenance of landraces by Government and seed producing companies.	Helps maintain diversity.	Creates possibility for selection for better nutrition and taste qualities.	Lowers burden on farmers for landrace maintenance.
Limiting acreage under orchard crops/ commercial crops as a percentage of land holding for farmers with larger holdings.	Promotes a healthy balance in the environment and ensures diversity.	Ensures nutrition.	Helps farmers with more income.
Involving private sector companies in promoting millets. Eg., Horlicks to produce millet based food products.	May promote monoculture. Preservation of landraces by the company.	Improved health of women/ children. With rural areas changing into urban food habits, this ensures millet consumption	Better market for product.
Include millets in MDM scheme and procure from local sources.	Maintains local production.	Helps to provide better nutrition to kids and helps retain their habit of consumption of millets.	Has a readymade market for the produce. Farmers need not have to struggle for selling his produce.

While tree crops ensure a good financial support system for the farmers, they may be more vulnerable to climatic extremities and pest attacks. Thus, proper management practices and planning needs to be undertaken, so that both trees as well as millet crops are grown. Otherwise, short term financial gains may be largely offset by the effects of climate change in future. Also, the failure of tree crops and loss of varieties of millets may only aggravate the problems of the farmers while dealing with negative impacts of climate change.

Women play a major role in both the fight against climate change and in eradicating chronic hunger and malnutrition. The bondage between millets and women in these tribal tracts is indispensable in this regard and cannot be broken. The fine line between substituting wealth for health needs to be precisely defined so that this region that suffers from endemic malnutrition does not further slip into health related problems.

Way forward

Odisha has about 30 districts with mountainous and hilly terrain that is suitable for the cultivation of Ragi and other millets. These regions are also home to tribes, in need of nutrition. Thus, propagating and encouraging these crops would benefit the local communities immensely.

Current policies and implementation are at best a lip service to the declining cultivation of millets. Without any proactive steps undertaken for increasing the area under these crops or any efforts to resuscitate the varieties going extinct, we would lose precious resources for fighting against climate change induced food shortage. Based on the current scenario, we propose a few policy changes that may help to continue the tradition of millet growing in this region (See Table 3).

These policy options may help to maintain enough landraces for in situ evolution in view of imminent climate change. This may also mitigate the prevalent malnutrition to some extent by making nutritious sources like millets available to the poor in this region. It is time to start understanding that eradication of hunger may not be the final goal post in ensuring healthy communities. In this region, malnutrition needs to be given equal emphasis. In this view it is time the government initiate policy changes with regards to cultivation of millets.

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Seeds of resistance for food sovereignty

The Food Sovereignty Alliance-India

Food Sovereignty is about building a just world and is about a society free of oppression and inequality. This is the only way forward to secure our right to food in our homes and communities, through defining our own autonomous food and agriculture systems, and thereby resist and dismantle the corporate food and trade regimes. The Food Sovereignty Alliance, India is one amongst several such sites of resistance and assertion.

Food means different things to different people. Today we are rapidly losing control over our food, food systems and food cultures. Our decisions around food - what we eat, how it is grown, distributed, packaged, marketed and served, are increasingly being controlled by a handful of corporations, facilitated by governments. Whilst the Green and White Revolutions were the first step in the industrialisation of our food systems, economic liberalisation in the early 1990s, consolidated the expansion of this industrial capitalist system of food. Agribusiness and food empires are rapidly taking control of our systems of food production, consumption and distribution, thereby impacting our worldviews and lives. Communities of once

Community maps their seasonal food cycle



Photo: FSA



Photo: FSA

Deccani sheep breed is critical for livelihoods in Telangana.

self-reliant and independent small farmers are becoming consumers of their products - fertilizers, pesticides, seeds including genetically modified (GMO) and mechanised technologies. Slaves of companies, their cheap labour is extracted to produce industrial food, and trap them into cycles of debt. Thus, once diverse agro-ecologically farmed food crop lands now stand converted into monoculture commodity crops: paddy, industrial maize as animal/poultry feed, coffee, cashewnut and rubber plantations, endless fields of onions, tomatoes, chillis, sugarcane and other monocropped vegetables and fruits. These are sold, only to buy food from the same corporations which control the market chains of food. This industrial food system has deepened pre-existing structural inequalities in society and created havoc in the natural systems and processes of the planet. Our cultural and spiritual connections to nature are being severed. We are losing seeds, breeds, land, water, air, knowledge, health and our sovereignty to make decisions about our way of life.

In the midst of this devastation, there continue to be seeds of resistance, and assertion by adivasis, dalits, peasants, pastoralists, fisherfolk and co-producers, who are organising

to defend their sovereign control over their resources, food and way of life. The Food Sovereignty Alliance, India (FSA), is one amongst several such sites of resistance and assertion. The Alliance was formed in 2013 to build solidarity towards a common vision of food sovereignty in defence of sovereign rights to food, the rights of Mother Earth and those of future generations. Food Sovereignty is about building a just world and is about a society free of oppression and inequality. This is the only way forward to secure our right to food in our homes and communities, through defining our own autonomous food and agriculture systems, and thereby resist and dismantle the corporate food and trade regimes.

Our practice of food sovereignty

Community action-reflection-action processes to identify and analyse the forces that obstruct food sovereignty, and evolve collective transformative actions for food sovereignty is a core practice of our movement. Community food sovereignty plans have emerged as a critical expression of political action. Life cycles amongst adivasi communities, and agriculture cycles in small farmer peasant and pastoralist communities, along with communities' indigenous knowledge, provide a framework for the plans. The plans include: democratic governance of resources-land, water, forests, territories, biodiversity, seeds, breeds and knowledge; nurturing life in our soils and growing, consuming and sharing healthy diverse and culturally appropriate food agro-ecologically, asserting seed and animal breed sovereignty through saving and exchange of local seeds and breeds between food farmers; reciprocal systems of sharing labour, knowledge and produce; strengthening local food markets that connect producers and consumers, leading to the diversification and revival of food crops. The alliance enables members to share and exchange seeds across regions, particularly accessing seeds that have disappeared from their region, which they wish to revive. Social justice is central to the idea of food sovereignty, and hence breaking the unjust structures of caste, class and patriarchy are core elements of the movement.

Intergenerational learning and sharing of knowledge between community elders and youth is an essential strategy. Youth learn from community elders, particularly women, accompanying them as they collect diverse tubers, herbs, fruits and seeds, learning about how to process and store produce, save seeds, establish community seed banks and learn to craft and use local agriculture implements. Celebrating the diversity of food, through local festivals, song, dance, theatre, community cooking and other cultural actions, linked to the life cycles and seasonal agricultural calendars, enhance our practice. Campaigns, jattras and food



Photo: FSA

Livestock play a major role in farming in these households

sovereignty summits, community action research on specific questions, sharing our experiences and concerns through mainstream media, popular and academic journals, are other critical strategies to nurture solidarity and collective actions for food sovereignty.

Members of the Alliance have evolved various collective strategies to assert their visions for Food Sovereignty.

In the adivasi areas of Andhra Pradesh and Telangana, adivasi communities, organising through indigenous village councils under their collective voice - *Adivasi Aikya Vedika* - are asserting their rights to their homelands and territories evoking customary laws, and community and habitat rights as delineated in PESA, 1996 and the Forest Rights Act, 2006. Industrial food production has also occurred in adivasi areas, with devastating impacts. In Mahboobnagar, for instance, Chenchu adivasi communities lured by government subsidies, switched to cultivating GMO Bt cotton. Food crops declined, soil fertility diminished, and honey bees, which are considered sacred, reduced drastically due to pesticides. Through critical reflection and discussion, the community mapped their seasonal food cycles, flora, fauna, biodiversity and festivals related to food. The cycle was a useful visual method to assert their relationship with their forests, as also a way to track the impacts of climate change, and discuss response strategies. These processes inspired

those who were cultivating cotton, to return to cultivating food crops agro-ecologically. This in turn has re-established natural cycles of pollination resulting in visible increases in the honeybee populations.

The *Dalit Mahila Sangham* in Chittoor district, Andhra Pradesh, has been leading their communities struggle for land. Their struggle includes ensuring that once land is in their hands, they will nurture the land agro-ecologically, drawing on the strong community knowledge, wisdom and practice to build soil health, and re-establish food diversity. The process has strengthened the women's collective to fight patriarchy, violence and discrimination. Today, the women have established their own local market to sell their produce.

The *Deccani Gorrela Mekala Pempakadarula Sangham* have been organizing to protect the unique black-wool Deccani sheep breed, critical for shepherding livelihoods in Telangana. The sheep is a source of meat, manure and wool, where the wool has been used to weave the gongadi, a traditional blanket. In the mid-nineties government policies introduced the heavier and faster growing hairy non-wool Nellore breed (from coastal Andhra Pradesh) into the Deccani flocks, resulting in mixed flocks with no wool. The sangham has focused on reviving the breed through organising deccani sheep breeders, and encouraging other mixed-flock owners to replace their Nellore breeding rams



Photo: FSA

Women display the seed diversity

with Deccani breeding rams. Defending their grazing rights in forests, halting the felling of acacia trees and sustaining common property grazing resources, along with putting pressure on the government to stop privatizing animal health care, are core to their assertion of food sovereignty. The return of pure deccani sheep has also provided an impetus to the revival of the gongadi which is sold in local markets as also through exhibitions, where the sales at higher prices, cross-subsidise their cost of production.

In 2011, the *Sri Gopi Rythu Sangham* in Andhra Pradesh, decided to resist the hegemony of corporate dairy processors, by organizing their own milk market. From 6 litres, today they market 600 litres of milk/day, collected from 80 farmers across 5 villages, to a local school and about 150 customers in the nearby town of Madanapalle. Sangham members and the customers, collectively decide the milk price. The farmers also grow diverse food crops: millets, pulses, oilseeds and vegetables. After home-consumption, they process their millets, and sell the surplus in a shop set up in a nearby rural hospital. Recently they have begun to sell their millets to a local food vendor, who after a years dialogue with the sangham, was convinced about including various millet-based breakfast recipes in his menu. This has opened up a new space for local people of the surrounding villages, to eat healthy and support local production.

FSA rejects the idea of monopoly commodity markets, as defined by the capitalist economic system. Local markets are the way forward, as people are in control of the production, pricing of products and is a concrete way to challenge and resist exploitative global trade regimes and defend people's livelihoods. The guiding principle is to eat what we grow and sell the excess produce, as also revive storage systems to stock for periods of drought. Importantly we see local markets as a space to dialogue with and involve consumers in the struggles to defend livelihoods.

Decolonizing community action research is another critical component of our practice, and is carried out through formation of working groups from across the Alliance to understand and frame the issue(s) and explore it through community critical dialogues. Creative actions at local, State and National Levels emerge and focus on engaging a larger audience in dialogue towards concrete collective campaigns for justice. Some of our ongoing campaigns are on the crisis in the dairy sector, the beef ban, genetically modified crops and the appropriation of adivasi lands.

Building the movement

Reaching out to children and youth in schools and universities, in rural and urban contexts to dialogue on food sovereignty, is critical for the future of this movement. Interactions are located within the schools/universities, as also at the movement's Learning Centre, Kudali, located in Telangana (www.kudali.org). Various ways of engagement to provoke questioning and critical thinking about our collective future include: meeting agro-ecological farmers, visiting their fields and flocks, eating the food grown on their fields, mapping the biodiversity of the locations, understanding the links between people, the ecology, culture, food, recognising and questioning the forces and structures that block food sovereignty, learning to work with soil, dung, seeds, and expressing their views in diverse creative ways including art, song and theatre. Translation of this experience to their school and community environments (e.g., growing vegetables agro-ecologically in their schools and homes) can be a very powerful transformative process for both children and their parents: an important action towards taking control of their own food system and consumption patterns.

Decolonising and emancipatory intergenerational and intercultural popular education processes are building blocks of organising for food sovereignty. It is through this rainbow of assertions that we by-pass and free ourselves from the clutches of the Food and Agriculture Empires, assert our autonomy and defend our rights to diverse food cultures, towards a just future lived in harmony with each other and mother earth.

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