

KURICHYA SEED SYSTEM: A NEGLECTED COMMUNITY MODEL IN THE POLICY SPACE OF CONSERVATION OF PLANT GENETIC RESOURCES

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Abstract

The increasing farmer dependency on corporate production system for food and seeds, demand the need for evolving self-sufficient local food systems. The climate change debate adds on to this, by highlighting the climate impact of large-scale farming and the adaptability of small and diverse food production systems. On-farm management of plant and animal genetic resources including the micro agroecosystems are focal to this concept. Contrary to the scientific and political understanding, small holder food producers all over the globe are facing crisis within the capitalistic economy, which pushes them to produce for the market and to pull them to consume from the market.

Kurichya, an agrarian tribal community from Wayanad district of Kerala is one among the food producers who could resist the boom of neoliberal cash crop economy and state-induced agricultural development policies for mass production. The community has developed a unique system for managing on-farm diversity of food crops such as rice, tubers, vegetables and other crops supported by socio-political structures and knowledge systems. This paper places the socio-political organisation of Kurichya seed system in the context of the global discourse of agrobiodiversity conservation for climate resilience and food sovereignty. It examines the ethnographic understanding of the 'Kurichya, community seed management system' in the context of the national and international efforts of agrobiodiversity conservation. The paper argues that the legislations and political structures designed to conserve agrobiodiversity and farmers rights are remaining ornamental without incorporating the traditional local systems.

Key words: Kurichya, Agrobiodiversity, socio-political organization, food sovereignty.

Introduction

*"This is our age-old treasure passed on to us from our ancestors"
"These seeds ... will remain here in my house until my death, because these are the blessings of our forefathers. If we lose it, it will be the demise of our Tharavadu (the traditional joint family) forever". '..... Our traditional seeds are full of nutrient, vigour and vitality while the government-supplied seeds are lifeless...'*

These are the words of Mr. Darappan, the joint family head of Kurichya tribe of Wayanad, clearly reflecting the deep feeling and veneration, that the community embrace with their traditional rice varieties, the belief they have on their ancestors who are considered as the rightful owners of the seeds, and the commitment they exhibit in conserving them.

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This man, who guards his traditional seeds, may appear strange in this era of genetically modified and high-quality hybrid seeds. But his words become highly relevant in the context of the still active discourses on seed politics arguing for community rights on seeds to resist the booming multinational players in agribusiness (Shiva, 2013). The self-sufficient local food systems are observed as a resistance towards increasing farmer dependency on corporate production system for food and seeds. His assertion assumes further significance, in the context of the growing body of scientific understanding on sustainability of agricultural systems in the context of climate change (Witman, 2011). The climate change debate highlights the climate impact of large-scale farming and the adaptability of small and diverse food production systems. It approves the need for managing the plant genetic resources at micro agroecosystems to ensure natural selection of adaptive traits supporting the survival of crops in the drastically changing climatic conditions (Sonja et al, 2012). The growing debate on food and nutritional security to food sovereignty is also focus on local food systems with crop diversity and farmer control over seeds (Witman, 2011). These debates clearly summarise into the growing demand for strengthening the on-farm management systems of plant and animal genetic resources for food and agriculture. There are enough evidences in the form of academic literatures showcasing traditional farming communities such as Kurichya in India and elsewhere, who have developed sound social systems to manage seed and crop diversity on-farm along with rich traditional knowledge systems to support it. But, on the contrary to the scientific and political understanding, small holder food producers all over the globe are facing crisis within the capitalistic economy, which pushes them to produce for the market and to pull them to consume from the market.

Wayanad, the abode of the Kurichya community, to which Darappan belongs, is a biodiversity-rich region, forming part of Western Ghats in Kerala. This unique landscape, known for its productive and fertile soil, has transformed over decades into an agricultural distress region due to both political and environmental reasons (Munster, 2015). After 2000 it has become one of the most climate-vulnerable districts in the state of Kerala (Vishnudas & Suma, 2019). Kurichya is one of the 12 adivasi communities of the district, live in joint families of 50-100 members (Aiyappan and Mahadevan, 1990, Suma, 2014). They are one among the food producers who could resist the boom of neoliberal cash crop economy and supporting state policies in the state which forced the farmers of the region to shift from food crops to cash crops (Suma, 2014). Cultivation of many rice varieties on the traditionally owned and collectively managed wetland is part of Kurichya tradition. Their farming system include diversity of rice, vegetables and tubers which they are cultivating, fish, leafy greens, mushrooms and medicinal plants that they collect and the associated diversity of numerous plant and animal species which they believe as important as their crops.

The present paper is derived out of the doctoral research conducted during 2013 to 2018 among Kurichya community, from the systematic data collected on the on-farm management of agrobiodiversity by farming communities of Wayanad and the research conducted on the implementation of PPVFR act 2001 and BD act 2002 in Wayanad district of Kerala during the same time period. Methods used for the study are the ethnographic documentation of seed conservation measures of Kurichya community and rituals associated, systematic collection, documentation and analysis of minutes, policy decisions and interventions of panchayath BMCs, State Biodiversity Board, PPVFR authority and international treaties and related documents along with personal interviews of farmers and panchayath representatives and concerned officials. It places the socio-political organisation of agrobiodiversity management of the Adivasi community of Kurichya in the context of the global discourse of agrobiodiversity conservation for climate resilience and food sovereignty. It locates the ethnographic understanding of the 'Kurichya, community seed management

system' in the context of the national and international efforts of agrobiodiversity conservation. This paper explains the policy gaps in Indian legislations of Plant Variety Protection and Farmers Right Act 2021 and Indian Biological Diversity Act 2002 in supporting traditional systems like Kurichya. And how they failed to incorporate the learnings from these communities and to include them in the processes of implementation.

The first part of the paper analyses the national and international interventions on agrobiodiversity conservation and the evolving theoretical understanding on this. Then it illustrates the case of Kurichya social organisation and their system of agrobiodiversity management. The last part analyses the Kurichya Experience within the formal legal and political frameworks evolved to conserve agrobiodiversity and to protect farmers rights on it. The paper argues that the policies and political structures designed to support local sustainable systems are remaining ornamental without incorporating the traditional local systems. It further contends that while the free-market capitalism challenges the very existence of non-monetised collective means of production through export-gearred cash crop production with the increasing support from the state-driven mechanisms, the climate resilient traditional farming systems like that of Kurichya are still awaiting integration into the formal efforts of agrobiodiversity conservation.

Agrobiodiversity: The Globally Important Resource

Agrobiodiversity, as genetic materials for food and agriculture, source of human nutrition, and climate-resilient crop varieties, has been gaining global attention in the last few decades (FAO, 2004). According to the Food and Agricultural Organization, agrobiodiversity is a collective term that refers to *'the cultivated plant species, the domesticated animal and bird species including their genetic variants and the associated plant and animal diversity in a farming ecosystem'* (op.cit). Local knowledge and culture are considered as integral part of agrobiodiversity, as it is the human activity of agriculture which shapes and conserves agrobiodiversity. Looking at the significance of seed in the conservation of agrobiodiversity, Shiva (2016:19) observes:

Seed is the first link in the food system. Without seed there is no food. Without diversity of seeds there is no diversity of food and nutrition, which is vital to health. Without diversity of seed, there is no climate resilience in times of climate chaos and climate instability.

Agrobiodiversity has been at risk with the expansion of industrial agriculture all over the world. According to FAO, since 1900s, some 75 per cent of plant genetic diversity has been lost as farmers worldwide have left their multiple local varieties and land races for genetically uniform, high yielding varieties (FAO, 2009).

Agrobiodiversity in India and other Developing Countries

India is one of the mega biodiversity hotspots of the world. It was home to more than 100,000 rice varieties, encompassing a stunning diversity in taste, nutrition, pest-resistance and crucial adaptability to a range of adverse climatic conditions. However, it lost a sizable amount of this diversity in the course of agricultural development interventions, particularly during the post-green revolution era. Such development notwithstanding, the poor Indian farmers from isolated villages continued to conserve considerable number of globally important crop genetic resources. It is said that while only 30 per cent of the food that people eat comes from the large-scale industrial farms, which, in fact, contribute 75 per cent of the ecological damage, 70 per cent of food comes from the small-scale farmers working on small plots of land (Shiva, 2016:

12). Moreover, the native crop and seed diversity also remain with these small-scale family farmers, even in the absence of any policy support from the governments.

Majority of farmers in developing countries depend on farm served seeds as the primary seed source. The accumulated success of generations of such farmers who have selected and improved seeds for thousands of years and their wealth of knowledge have served as the basis of Genetic engineering by private companies who ironically claim exclusive patent rights on the seeds they have developed (Reddy, 2007). Similarly, while the public research institutes and trained farmers were the centres of agricultural research for decades (op cit), the monopoly of agricultural research and plant breeding by private seed companies are now consolidating their gains under the capitalistic regime (Shiva et, al, 2019). So, with the neoliberal agricultural policies, that support corporate agricultural development in countries like India, the erosion of genetic materials from the farmlands continues in an alarming rate.

Government-led Initiatives and Community-based Movements to Conserve Agrobiodiversity

The conservation of plant Genetic Resources has been started by collection of plant materials from the farmlands and cryogenic preservation in gene banks as part of agricultural research in colonial time. These activities are coordinated across the countries by the establishment of International Bureau of Plant Genetic Resources in 1970s. Wide range of collection, characterization and conservation has been done by different nations through the respective National Bureaus of Plant Genetic Resources (NBPGR). The objectives of NBPGR in India are to identify, conserve and improve plant genetic resources required for agriculture development in the country. As on today, NBPGR has established 10 centres in India and collected and conserved genetic resources of all cultivating crops.

There was huge criticism against the centralised preservation efforts of PGRs by nation states as it does not ensure farmer control over seeds globally, while the PGRs from farmlands are eroding fast. The focus of scientific discourse on agrobiodiversity conservation is shifted today to on-farm conservation with the understanding of climate resilience and co-evolution (Antonio et al, 2007). The new insights focus on the need for conserving diversity in its original agroecosystems to ensure evolution of adaptive traits for survival. Such an understanding questions the very idea of centralised cryogenic preservation and calls for continuing the cultivation of diverse and locally adapted crop varieties under farmer control.

On the other hand, the farmer dependency on seed companies induced by industrial agriculture has led to alternative movements to establish Community Seed Banks all over the globe. Vernooy et al (2015), in their significant work on Community Seed Bank, elaborate on its origin, evolution and prospects. The first Community Seed Bank Network according to them is said to have evolved after a severe drought and poverty in Ethiopia in 1986 as part of 'The Seeds of Survival' Movement. Later, this Movement had spread to many countries as farmer resistance towards industrial monopoly on seeds. Since then, over a period of three decades, tremendous efforts have been made by different agencies worldwide to conserve seed diversity on-farm with farmer participation. Vernooy et al. identify Bangladesh, Brazil, Ethiopia, India, Nepal, Nicaragua, Philippines and Zimbabwe as pioneers in these efforts through various networks and movements, with the potentiality to influence national and international policy frameworks on farmer rights on seeds, while Nepal and Zimbabwe governments are supporting Community Seed Banks through state policies and projects.

International and National Policy Interventions

From 1990s onwards, the development discourses started integrating the concept of sustainability globally. The Convention on Biological Diversity (CBD) came into force in the year 1992 signed by 168 countries and agreed upon the conservation of biological diversity considering it as a global asset. Conservation, sustainable use of the components of biological diversity, and the fair and equitable sharing of benefits from the use of genetic resources are the specific objectives of CBD. (UN: www.cbd.int/intro/default.shtml)

In 1996, the Commission on Genetic Resources for Food and Agriculture under FAO considered Plant Genetic Resource (PGR)-related issues and worked to reach international consensus on policies for the sustainable use and conservation of genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use. After seven years of negotiations, the FAO conference adopted the International Treaty on PGR for Food and Agriculture (ITPGRFA) in the year 2001. The member countries of UN agreed upon the Treaty on Plant Genetic Resources in their respective areas (FAO, 2009).

The need for agrobiodiversity conservation is evidently seen in the U. N. Sustainable Development Goals as its second goal is set to “End hunger, achieve food security, improve nutritional status and promote sustainable agriculture” by 2030. One of the targets under this goal is to “ensure maintenance of the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species through soundly managed diversified seed and plant banks at the national, regional, and international levels by 2020”. Another target is to promote climate resilient agricultural systems all over the globe. (www.sustainabledevelopment.un.org). These development targets again reinforce the value of local and diversified food systems.

India has passed national legislation called *Protection of Plant Genetic Resources and Farmers Rights Act* (PPVFRA) in the year 2001. This is the world’s first legislative intervention by any country with the objective to protect the plant genetic resources and farmer’s rights following the FAO treaty on PGR. It has provisions to recognize and reward the custodian farmers for their conservation efforts and it admit farmer as a breeder too. Following the CBD agreement, India has also enacted Indian Biological Diversity Act in the year 2002. The act defines a three-tiered democratic decentralized structure for biodiversity conservation and governance. It conceptually empowers people at the grassroots to take decisions on biodiversity around. At the level of implementation, however, people still are not aware of the powers that are transferred to them through these legislations while the agencies responsible to implement the act are struggling between the layers (Kumar and Suma, 2019). This paper further examines the experience of Kurichya community seed management system within the framework of the above two legislations.

From Food Security to Food Sovereignty

As evident from the SDG 2030, achieving food security and improving nutritional status is directly related to sustainable agriculture and thereby to agrobiodiversity. World food summit in 1969 defined food security as “Accesses to sufficient, safe, nutritious food to maintain a healthy and active life”. The food security debate itself is today undergoing a paradigm shift, giving thrust to people’s right to have access to and control over their food sources rather than the state alone taking the responsibility of ensuring the supply of quality food to all, thus taking the form of food sovereignty. Wittman (2011) observes:

“Food sovereignty, as a critical alternative to the concept of food security, is broadly defined as the right of local people to control their own food systems, including markets, ecological resources, food cultures, and production modes”.

The food sovereignty debate highlights the importance of farmer-controlled food production systems with diversity of crop varieties as they ensure food rights and climate resilience.

In a world that is facing food crisis, countries are looking forward to India which is the second largest country producing wheat and rice globally. India, a country with nearly three fifths of its population involved in farming, achieved food security in 1960-70s itself through green revolution. It could even reach the stage of exporting food grains. Yet, it is reported that there are today 200 million farmers in India who are not getting enough food. The number is also on the rise (Basu, 2011; Kesavan and Swaminathan, 2008; Kumar, 2008;). As per the 2012 estimates, India is said to be in the 66th position in Hunger index, among the 88 countries which are facing acute food crisis all over the world (Roy and Saigal, 2012). This situation demands for protection of local traditional food production systems which ensure nutritional security and seasonal availability of diverse food sources (Swaminathan, 2012). It is in this context that the discussion on the tradition of Kurichya *Adivasi* farmers of Wayanad, which protects and preserves the traditional seeds, agro-ecosystems and the related knowledge on agriculture, assumes high relevance and increasing significance.

Wayanad and Its Agrobiodiversity

Wayanad, a hilly agrarian district of south India, located in Kerala state, is known for its unique climate and rich bio-diversity. As per the 2011 census, the total population of the district is 817420. The social fabric of Wayanad is a mixture of 12 tribal communities, constituting a little less than one fifth (18.5 per cent to be exact) of the total population of the district, and about 70 per cent migrant farm families from different parts of the state, with the rest (about 12 per cent) comprising government officials, plantation labourers and merchants (Government of India 2011). About 47 per cent of the total work force of the district is involved directly in agriculture. Dairy farming is the main income source for 30 per cent of farmers (District plan document 2017). The total land area of the district is 2131 Sq. Km., including 788 Sq. Kms of forest (about 37 per cent of the total land area). The total area used for agriculture is 1142 Sq. Km (constituting about 54 per cent of the total land area of the district). Wayanad is having the highest *Adivasi* population in the state of Kerala. *Kurichya* and *Mullukuruma* are the traditional *Adivasi* cultivators of the region.

Farming started in Wayanad with shifting cultivation of different cereals in the hillocks by the early inhabitants and then to the settled production of rice in the wetlands. Farmers of Wayanad marketed the spices they collected from the hills before centuries (Suma, 2014). It was during the British rule that Wayanad started cultivation of cash crops. In the middle of 20th century, farmers migrated from the plains of Kerala to Wayanad as part of the ‘grow more food’ campaign. They cultivated all kinds of food crops, adding to the diversity of this land.

By the 1980s, the cash crop economy thrived in the district with policy and market support. The cropping pattern of the district changed into market-oriented cash crop plantations. The paddy wetland networks of the region have largely been converted to cash crops that led to critical environmental impact. When the cash crop economy collapsed by 2000, due to the impact of price depressions in the open market, and productivity loss due to intensive farming, farmer indebtedness and suicides became a social and political issue of

Wayanad (Daniel, 2015). The food production in Wayanad is reduced to an extent that majority of farm families depend on market or public distribution system for food grains and vegetables. It is ironical that a completely agrarian region like Wayanad could not rely on their production system for food.

As the basic means of food security, the protection of seeds and conservation of different varieties became the main concern of the society. The traditional agriculturalists including Kurichya derived the diversity of seeds over the years through observations, experiments, and selection process. They have selected each seed for particular traits which confirm food availability and quality in all the conditions and seasons. They had exchanged seeds between families and to create new social relationships. The travelers and migrants who had arrived in search of virgin land have also brought new seeds and knowledge. Culture and agriculture were enriched with diversity of communities and their knowledge.

Scientists have documented nearly seventy cultivated rice varieties from Wayanad, including 30 native varieties (Kumar et.al, 2010). Of these, the traditional farmers of Wayanad cultivate 21 traditional rice varieties right now, the diversity of which contributes to the food baskets of the socially vulnerable sections of the society. Each seed is said to be a result of human-nature and human-human interaction. Generations had handed over the treasure of genetic resources to ensure food security in the form of seeds to new generations. The culture and cultural expressions including many rituals emerged around this need.

Kurichya Joint Family System, Collective Farming and Seed Conservation Practices

Kurichya are organized as joint families under a head man, each possessing more than 100 acres of land. They have been indulged in collective subsistence farming for long time. They are as many as 286 joint families, each consisting of about 35 single family units on an average (Suma, 2014). The joint family household called *Muttamis* the center of all community activities. Even though there is pressure on younger generation from modern society, majority of the total 286 families of Kurichya in Wayanad are following the joint family system and continuing collective food production. Each *Muttam* has its own *Kuladaivam*. It is *Malakkari* for Athikkolly *Muttam* and *Daranpuli* for Edathana *Muttam*.

All members in Kurichya families partake in agricultural activities under the leadership of an elder male member called *Odekkaran*. Kurichya consider land, seeds and cattle as the principal wealth of the family. The status of a *Kurichya Muttam* is determined by the size of the joint family, number of cattle they own, area of rice fields under possession, and the cultivated seed varieties.

Before the Colonial rule, the Kurichya joint families were under the landlord system (Feudalism). The stories of food grain scarcity in olden days due to heavy *paattam* is still live among Kurichya as part of the oral tradition. They had to give a huge portion of all their produce including Ragi and rice to *Janmi* as *paattam*. However, the elders in the community remember stories of bumper crops, their ancestors reaped, from slash and burn cultivation in the fertile soil. From the time when the British started collecting food grains from the local inhabitants as part of the newly introduced Levi³ system, the situation became worse. Still,

³Levi introduced by the British: In 1805 after the defeat of Pazhassi raja, The British government started collecting extra tax from the inhabitants of Wayanad and they forcefully collected Rice, Raggi and Black pepper from them. See Adivasi Karshakalappam (O.K. Johny, 2012, WayanaduRekhakal). To relive from extra tax many of the Kurichya families compelled to divide the land.

different grains were harvested at different seasons, while plenty of forest produce including game meat were of great relief to them during those days.

“During my childhood, we used to purchase only salt, jaggery and soap from the market, as everything to eat was available here around”.

Says 80-year-old Chandu Pittan⁴ of the *Kakkottaramuttam* in Pulinchal.

Generally, a Kurichya *Muttam* cultivates 8 to 12 rice varieties of differential duration of maturity. It helps them to manage the labour distribution across the seasons as the sowing and harvesting timings of these varieties differ according to maturity. They opt for particular varieties of seeds based on the soil type, taste, duration, and ritual significance. During the time of shifting cultivation, they cultivated millets such as ragi, thina, different types of maize, horse gram, and vegetables in the hillocks they cleared. After that they continued farming in their home steads and grew vegetables, banana, tubers, taros, and roots, along with coffee and pepper and conserved medicinal plants and other useful native plants.

Millets were of cultural importance to Kurichya during the days of shifting cultivation. *Vadakkathiyamma* was worshiped as the God of millets in the *pallipandal* erected for guarding the millets. However, after the abolition of shifting cultivation, the millet and *Vadakkathiyamma* had vanished from Kurichya cultural life. *Cheepothiyamma* is the God of rice, and *Athiralan* is the guide to be in front of all activities, while *Kuliyani* is the guarding God. There are rituals to bring *Kuliyani* from *Kuliyanthara* (the ground where *Kuliyani* resides) to the paddy-field before cultivation starts and take the *Kuliyani* back to *Kuliyanthara* after harvest. These rituals are called, ‘*KuliyaneKandathil-irakkalumKandathilnnuKettalum*’. The belief is that *Kuliyani* will remain in the field and take care of the crop from sowing till harvest.

Rice Cultivation and Power Relations in the Kurichya Joint family

The power relation within a Kurichya Joint family is closely related to rice cultivation, that is, the process of food production. Men organized under *Odekkaran*, work in the field to cultivate rice and other crops. Women under the leadership of *Odekkarathi*, the wife of the chieftain, perform both agricultural and food preparation works in groups. *Odekkaran* is the custodian of the produced food grains (paddy) in the family. He is the only person who has the right to distribute the grains for cooking to the women group assigned for it. The grain is being distributed through *Odekkarathi* on a daily basis and reaches to all family members as cooked food. While rice is the responsibility of *Odekkaran*, cultivation, seed management and distribution of vegetables and tubers are the responsibility of the women-folk under the leadership of *Odekkarathi*. Thus, Kurichya system of production and distribution ensures food for all family members throughout the year under the leadership of *Odekkaran* and *Odekkarathi* (Aiyappan and Mahadevan, 1998; Suma, 2014).

Negal, the Owner of Seeds

Kurichya has strong belief in ancestral spirits and they worship the spirits in the name of *Negal*. The spirits of the chieftains who established a particular *Muttam*, and those who contributed to the wealth of the family will attain the status of *Negal* after death (Aiyappan and Mahadevan 1998). Kurichya consider *Negal(s)* as the original owners of all their wealth including seeds. The present generation is only custodians who are responsible to protect it for

⁴ Interview dated 31-1-2012. Pittan is the name used to call the chieftain of the Kurichya joint family by other family members.

the coming generation. All-important decision-making in a Kurichya Joint family is done through a ritualistic ceremony seeking permission from the *Negal*. The *Negal* and Gods will appear to the members through oracles on all these occasions and talk to the elders of the family. The *Negal*, taken possession of the Oracle, affirmatively enquires with concern about the family, seeds, land and cattle (*Kunjukuttiyum, Makkalum, Viththum, Kandavum, kaaliyum*) to the present *Odekkaran*. *Odekkaran* as the representative custodian of the family is liable to answer any question from the owner, that is, the *Negal*. Similarly, *Negal* also affirmatively enquires to the Gods, whom he has entrusted to look after his family, about the welfare of the family, seeds, land and cattle.

Kurichya believe that the resources like land and seed are not acquired by the present generation, but entrusted to them by the preceding generation for the future generations. So, the *Odekkaran* says:

“My responsibility is to protect it for the benefit of the community and then hand it over to the future generations”.

To achieve this goal, the *Odekkaran* has to ensure unity among the joint family members, continuation of farming, and thus food security. In that sense, each Kurichya family is a self-sufficient unit in terms of seeds, food, labour and other resources.

Each and every activity related to agriculture is started with a ritual, with the following recitation:

*‘We bring our gods to the front as a guide and to remove all obstacles....
(Daivathe-mumbaakki) ...and Negal who installed the Gods to act as the
intermediary between the family members and the Gods’.*

Right from the sowing to harvesting, each activity is being conducted with the permission of *Negal(s)*. All these are small functions under the auspicious leadership of the *Odekkaran* and elders of the family. All decisions regarding the family are taken by a council of all male members called *Koottam*. The presence of one or two elder members from a neighboring *Muttam* called *Changathy* (friends) is customary as a witness in the *Koottam*. Each *Muttam* has one or two fixed *ChangathiMuttam*. But the final decision would be based on the symbolic permission from the *Negal*.

When it comes to rice seeds, it becomes some more divine and ritualistic. Seed collection, processing, and preserving are done under direct supervision of the *Odekkaran*. He will monitor every stage, right from the harvest in the field till it is packed in special containers. There are special days to collect seeds as well as drying. Before harvest begins, *Odekkaran* and other elder members meet together and seek permission from *Negal* for seed collection. They find good day for drying and storage. This process of getting consent is called *Oppikkal*. Seeds are kept in sunlight and in the mist, for seven continuous days to dry. After this, seeds are transferred to special containers made out of bamboo and paddy straw. There are skilled specialists in each family to make such containers called *Kooda*. Seeds preserved through this process will remain with its vigor for many years. These are normally kept in special rooms called *Ara*. After the harvest and thrashing (*Okkal*⁵ - Special way of thrashing rice using cattle), the family members join together for a ritual to inform the *Negal* on the season's produce and to pay gratitude to their deities which they call *Kolukodukkal*. Seeds thus blessed by their Gods and

Negal are protected in a divine manner away from all impurities and it is the reserve for future food security.

Nowadays, it has become common to see many Chieftains' complaining before *Negal*, about the present situation in which they encounter a lot of hurdles in cultivating multiple varieties and managing the seeds. They confess:

*“Time and situations have changed
Please help us to withstand the pressures and
Protect our family and the seeds”.*

Even today the Kurichya community believes that possession of traditional rice varieties such as *Chennellu* and *Veliyanis* of good fortune. The taste of *Gandhakasala* and *Kaima*, the traditional scented rice varieties, are integral part of Kurichya culture. Kurichya cannot think of a ritualistic feast without having cooked *Veliyan* and *Gandhakasala*. Similarly, *Chenellu* rice is a must for offerings to their Gods. Apart from all these, they believe that traditional seeds carry the blessings of their forefathers and the essence of their tradition from generations to generations. Loss of one cultivated variety from a family is considered as a sign of penury.

They say:

*“We inherited all these seeds from our ancestors; it will bring prosperity
for us and our children”.*

The concept behind this is that, seed will ensure production of food in future, and thus the basic need of human existence. It is something that challenges the modern thought of linking money and food security and conceives seed as a common property resource. It reverses the idea of state responsibility from distributing food for all to conserving the means of food production at local level.

The above discussions bring out the process of the evolution of Kurichya socio-political organization and rituals to support the system, in a way to protect the jointly owned land and to conserve the cultivated seed varieties. These rituals explain how Kurichya system works towards community conservation of agrobiodiversity as it is the base for food security. It guarantees the community ownership on seed system and the right of the community members to food. Here, seeds are not a private property but an asset of the community. Food production is not a single-handed enterprise but a collective community activity. The power relations that decide inter and intra community relationship are important to maintain seeds, crop, food and agricultural land as common property resources. Thus, the social relationship, structures, and the systems have evolved over the years to fit into their requirement. Rituals have also evolved as unwritten rules to protect the socio-political organizations in relation to seed conservation, food production and collective action. Beyond individual interests and benefits the protection of seeds and land is the primary spirit of Kurichya joint families.

The Kurichya land parcels act as small-scale mosaics of habitats allow species and varieties to survive and adapt to environmental change, and function as a win-win process for biodiversity conservation and food production. In the context of severe challenges in front of the humanity to produce and feed the expected nine billion people in the near future, without further accelerating the loss of biodiversity and ecosystem services, these small holder practices of Kurichya that evolved over hundreds of years shows a resilient model for meeting the double goal of food production and biodiversity conservation.

Kurichya System of Seed Management and the Formal Systems

The decade after 1990s witnessed the emergence of sustainable development thoughts in international forums. The scientific understanding on climate change, food and nutrition, and the evolution of adaptive plant species are given more insights on PGR management during this decade. The academic engagements in the aspects of food and nutrition and farming systems have given more theoretical understanding on sustainable production systems. The sociopolitical interpretations of these understandings question the mass production systems based on monocropping, intensive input-oriented farming and ex-situ seed production. Rather this discourse highlight farmlands with diversity of crops and varieties which ensure climate resilience to farmlands and farmer control over seeds. These small systems offer diversity of food at local level and thus nutritional security to farm families. Continuous on-farm production of seeds got importance in scientific understanding of agricultural sustainability as they ensure evolution of adaptive traits suitable to their micro ecosystems. The growing knowledge base and adaptive management practices of farming communities are valued as they contribute to agricultural management in the time of climate change. Kurichya system, with its cultural traits of conserving multiple crops and varieties and the body of knowledge associated can be observed as a model for sustainable farming system in this context.

A vast body of policies based on the international agreements evolved to manage and use plant genetic resources in particular and biodiversity in general in the decade after 1990s. These understandings at international level translated into national legislations, policy frameworks and socio-political structures for implementing the new insights. The National law adopted by Government of India to protect plant varieties and farmers rights in the year 2001 is implementing through the Plant Varieties and Farmers Rights Authority under ministry of agriculture. The authority has its offices at three regions in the country and facilitating registration of farmers varieties, recognition of custodian farmers and giving away awards for individual farmers, communities and groups who are involved in conservation of seed varieties. And there is also provision in the act for availing access and benefit sharing for the registered varieties by the farmers. But it is evident from the history of implementation of the act for almost two decades that PPVFRA does not have a proper system to reach out rural farmers of the country. There is no mechanism to support the custodian farmers efforts in on-farm conservation, apart from the onetime monetary benefit of awards. Kurichya farmers bagged the PPVFRA Award for the community conservation efforts in the year of 2012 through the support of the NGO M. S. Swaminathan Research Foundation (Suma et al. 2018). But practically the implementation of PPVFRA did not translate in to any formal mechanism to ensure continues support to the community efforts of PGR conservation.

Government of India has recognized the community with the ‘Genome Savior Community Award’ in the year 2012 for their conservation efforts under ‘Protection of Plant Varieties and Farmers Rights Act 2001 (PPVFRA)’.

Indian Biological Diversity act 2002 established its implementation structure to the grassroots in three tiers at national state and local level. The Biodiversity Management Committees (BMC) at Panchayath level with statutory powers empowered the people to engage in biodiversity management. The state of Kerala pioneering the implementation of the act by establishing BMCs in all its Panchayaths. BMCs has already recorded the biodiversity of each Panchayath in their People’s Biodiversity Registers (PBRs) (Govt of Kerala, 2021). PBRs are the base document to be used for managing the biodiversity in their jurisdictions. This research observes that, the rich plant genetic resources conserved by Kurichyas are not completely

documented in any of the corresponding PBRs. The knowledge associated with the practice of management and use of these resources are also remain untapped. Two members from Kurichya community are there as members of BMCs out of 26 Local Self Governments in Wayanad. The interactions with those members and the BMC minutes say that both of these BMCs could not incorporate any of their ideas in to the biodiversity management plan of the panchayats. Even Kudumbasree women group farming schemes supported by state government, fail to incorporate Kurichya knowledge in to the farming schemes implemented among them (Suma and Grossman 2016). The singled-out efforts by panchayats in conservation of agrobiodiversity in the district of Wayanad is also failed to incorporate the knowledge of communities like Kurichya and even to include them as individual beneficiaries of the projects. The analysis of PBRs and activities of the Panchayatah BMCs and the strategic documents of Kerala State Biodiversity Board says that conservation of agrobiodiversity is still not recognized as an agenda under Indian Biological diversity Act 2002.

While Both of these acts focus on sustainable management, use, access and benefit sharing of biological resources and community rights on biodiversity, on-farm management of agrobiodiversity as such is not addressed by Indian policy yet. NBPGR has adopted in-situ conservation (NBPGR, 2021) strategies in managing the PGRs under their custodianship but does not develop a clear programme for ensuring on-farm conservation at farmer level. Apart from NBPGR, agricultural development planning and the agricultural research has not addressed the issue of agrobiodiversity conservation seriously in the state of Kerala. The on-farm diversity and community seed management systems has not yet gained adequate attention within the formal agricultural development discourse in Kerala. The state intervention to support farmers in cultivation of scented rice varieties were focused on the specialty of the rice and its market value, then as a PGR. The recent programmes to conserve agrobiodiversity by cultivating selected varieties at agricultural research stations are also failed due to lack of continued fund supply and consequent project discontinuity. This is evident that both the acts failed to develop a system to support on farm conservation of plant genetic resources and community seed production systems individually. While PPVFRA 2001 has its inherent limitation in proposing a proper structure to implement it in local level and conceptual ambiguity to address community seed management systems, FRA 2002 has proposed a clear structure with powers at local level. But ironically both the acts failed to strengthen the community seed management system like Kurichya or to link them to the formal systems in the processes of implementation.

Conclusion

Kurichya experience at the local level illustrates the total denial of their system by the formal structures. Their seeds and knowledge appeared strange to the formal system. The pressure of market economy penetrates to their wetlands as cash crops. Kurichya face threats to their key values including seeds in the decades after 2000. The number of seeds, cattle and area cultivated by each *Muttam* is declining due to lack of pro-subsistence policies from the states. With their production system facing challenges from all sides including resource depletion, the younger generation of Kurichya farmers are forced to move out from the subsistence mode of production and gradually move over to the market driven crops while a few seek new ways for livelihood other than agriculture, all these threatening the very existence of their non-monetized sustainable subsistence production system.

In the era of capitalistic market-oriented agriculture, traditional ecosystem-based subsistence farmers are facing tremendous pressure to maintain the diversity and attached community systems. In this context, the traditional community-based systems of food

production that could survive over the era of neoliberal capitalism gives hope for survival. These communities put forward localized models of socio-political organization and systems required for managing PGR, the resources for food production. India is a country that has many such indigenous communities, that follow similar socio-political structures and systems which are rooted in sustainable use of natural resources. The learnings from the community Seed Bank initiatives and parallel movements of seed savers across the world could also throw light on similar systems that conserve agrobiodiversity.

In India, there are positive legislations under the broader sustainable development framework and numerous parallel decentralized structures to implement them, they still remain as shells without flesh and failed in their assigned roles without proper integration of community systems. In the case of on-farm management of diversified crop varieties and community level seed management Indian laws need to be revisited in its concept and implementation structures in such a way to facilitate strengthening of existing traditional systems like Kurichya. In the era of decentralized governance, the democratic institutions can integrate learnings of such micro level systems and their socio-political organizations in order to achieve the sovereignty over seeds, food and production systems.

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