



RAPID ASSESSMENT OF THE MARKET POTENTIAL OF TRADITIONAL RICE VARIETIES OF TAMIL NADU

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Prepared for



By



reimagine livelihoods

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The principle consultant for this study was ALC India (represented by Mr. Swaminathan) and the additional consultant was Mr. Nitin Chordia, Retail Marketing Expert from Chennai.

Cover Picture : The cover picture shows the CIKS Technology Resource Centre farm with a nursery of various traditional paddy varieties.

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EXECUTIVE SUMMARY

In the Tamilnadu focussed rapid study of the market for traditional rice varieties that we had taken up between December 2018 and January 2019, we found the following:

- **The business case:** From a triple bottom line perspective, it is evident that traditional rice varieties are suitable for people (farmers and consumers) and the environment. **It is also evident from this study that there is a compelling business case for traditional rice varieties.**
- **The supply constraint:** Food businesses (in Chennai), Retailers (Uyir, Erode), traders (Mr. Veerappan, Theni), and millers (Mr. M. Murugan in Vellore, Mr. Jawahar Vasanthavel in Madurai, Mr. Sivarama-krishnan in Trichy/Tiruchirapalli) have responded that the supply constraint is the critical challenge; **they are confident they can market and sell increased production volumes of the top traditional rice varieties.**
- **Volumes:** Significant monthly volumes of varieties such as Seeraga Samba, Mappillai Samba, and Kitchili Samba are consistently registered by retailers, traders, millers, and farmer-aggregators in different locations of Tamilnadu state; **these range from 1.5 tons retailed per month (Uyir, Erode) to 10 tons traded per month (Mr. Veerappan, Theni) to 130 tons milled per month (Mr. M. Murugan, Vellore).**
- **Consumer awareness:** Awareness levels of consumers are already increasing due to a combination of factors; with the increase in disposable income, this is resulting in a willingness to sample traditional rice varieties and value-added products; **working on awareness and adoption can result in more households becoming regular consumers of traditional rice varieties for different consumption occasions.**

Why traditional rice varieties?

Traditional rice varieties (also known as indigenous rice varieties) are important for a number of reasons:

For Consumer

1. More nutritious in comparison with modern varieties
2. Safer, as they need lower inputs of chemicals
3. Suited for specific groups (such as pregnant women and lactating mothers)
4. Suited for specific food preparations
5. Specific medicinal properties
6. Have lower Glycemic Index

For Producer

1. Have lower water requirement
2. Need less inputs (seed, fertiliser) in comparison
3. Varieties suitable for specific local soils (eg. saline, clayey, etc.)
4. More pest and disease-resistant, in comparison
5. Drought and flood-resilient
6. Yield more fodder
7. Greater resilience to climate change

Natural, socioeconomic, and cultural

1. Not harmful to the environment, water and soil.
2. Important part of rich biodiversity

- **Quantities available and possible** : We have estimated that currently from the network of farmers linked to CIKS (shareholders as well as non-shareholders) about 9,000 tonnes of grains can be available every year. This quantity can be scaled up significantly through a series of interventions including – supply of quality seeds and inputs, training and handholding, assurance of a good price with reasonable market. The scaling up can take place through – increased productivity of the land under cultivation, increased acreage under traditional varieties including land with higher fertility as well as increasing the network of farmers from whom procurement can take place.
- **Other drivers:** Interest is also evinced by stakeholders, such as Siddha and Ayurveda vaidyas and naturopaths,) who have a role in the promotion of Indian systems of nutrition and treatment.

A. Consumers

1. At present, a selected number of varieties (a total of 30 varieties in Chennai city) account for the major share of the traditional rice varieties consumed.
2. They are drawn by the appeal and novelty of – ‘traditional’ and the health gains that they promise.
3. They look for specific varieties to meet the bulk of their requirements (for making tiffin items such as idlis or dosas and for consumption as part of the traditional meal).
4. They seek more widespread availability through the year to purchase more easily and regularly; presently, traditional rice varieties are available in a limited number of stores during some parts of the year.
5. Top drivers of consumer interest are:
 - a. A lifestyle with growing health consciousness and concerns
 - b. Enhanced taste experience, and
 - c. Affinity for the traditional
6. In the larger market, consumers prefer polished rice, which limits their nutrition and health gains. However, there is a niche market where there is a great awareness about the benefits of these rices which are sought out and preferred. Increased acceptance of red rice varieties may be achieved by introducing dishes where the food in final form is naturally coloured (for example, sambar rice).
7. Semi-polished rice may be the appropriate form to promote, in order to optimise both consumption and benefits.

8. Most consumers do not differentiate between specific varieties of red rice; the marketer must weigh the costs and benefits of getting consumers to make the differentiation consistently.
9. While some consumers accept the trade-off between benefits and inconvenience, most consumers give convenience a great deal of preference. For such consumers it is essential to provide help by offering ready to use mixes, powders etc. along with detailed instructions for cooking and handling.

B. Markets

1. Effective marketing will need the application of - the 4P's (Product, Price, Place, and Promotion) framework, and also the 4A's (Acceptability, Affordability, Accessibility, and Awareness) framework.
2. Of the 4A's, all respondents have highlighted the need, at the consumer end, to build the right awareness and increase acceptability; increased supply will take care of availability. For this, the marketer must work closely with the consumer in co-creating value (variety consumed, application, form (such as rice, flattened rice, or batter or snacks), unit size, and engagement).
3. High-level value addition is also a possibility; specifically, one respondent referred to the possibility of developing, in appropriate form such as capsule or tea bag, a food supplement derived from traditional rice.
4. Consumer segments have to be clearly defined, using geographic, demographic, behavioural, and psychographic parameters.
5. The marketer who will play a key role in defining the market, the growth of the market, and in creating a well-established market for traditional rice varieties. The market has very few organised players; this represents an opportunity to gain the first mover advantage.
6. Marketing must transform Curious Consumers into Committed Consumers.
7. Some trends pull in opposite directions: one expert respondent noted that while the number of cooking shows continues to increase, the amount of time families with higher disposable incomes spend on cooking is coming down; having said so, it is also observed that the innovators/early adopters are willing to invest more money and time in tasting the traditional and experiencing the health gains. The experience could be aided by offering recipes, additional information, and videos hosted on popular portals like YouTube.
8. The market creators will need to work a lot on ensuring convenience so that traditional rice varieties become **the staple** in the consumer's food basket; for instance, while a specific variety may be suitable for idli/dosa, a consumer may not have the time or inclination to go through the process; the marketer may consider tying up with organised players who are selling the batter. Reach and penetration will require collaboration with new channels/categories (new format restaurants,

health clinics, naturopathy centres, producer companies, federations of women's groups, and other such routes).

9. Some confusion is seen in the common parlance, in which millets are also referred to as *arisi* (rice).

C. Traders

1. Traders can play a key role in aggregating and shaping the category, if a business win is designed for them.
2. Traders see demand growing and identify supply side constraints as a key challenge.
3. Trader practices vary; the tendency and ability to pass off one variety as another variety show the supply side constraints and a lack of consumer awareness respectively.
4. Traders do not differentiate with respect to varieties of red rice as most consumers do not make the distinction.

D. Processors

1. Some millers process specific varieties exclusively.
2. The steady batch processing of traditional paddy through the year benefits the miller, helping them stay active during the conventional off-season for milling.

E. Producers

1. Many farmers are committed to cultivating traditional rice varieties and have played a key role in conserving the varieties.
2. If farmers get a good price and predictable demand, they will strengthen their commitment by increasing acreage and production.
3. The market seems to be constrained by a combination of low prices to farmers, low productivity, and low acreage. Supply side and demand side interventions can minimize or eliminate these constraints – irrigation and inputs to ensure better yields, cultivation of traditional varieties in new areas where modern varieties are cultivated, and marketing initiatives that will generate better margins and returns to the farmers.
4. Among the helpful interventions would be timely supply of good quality inputs.
5. Marketing can also be helped by door step procurement.
6. Efforts must be made to increase farmers income by helping them to move up the value chain. This could be achieved by locating some part of value addition activities at the farm or close to it such as – production of hand pounded rice, preparation of ready to use mixes and flours etc.

7. CIKS may consider creating a business design that ensures a role for such farmer aggregators. This will create one category of aggregator, in addition to the category of producer companies.
8. CIKS should consider working with a selected number of traders to drive the chain, with the right belief system.
9. Keeping in mind the time it will take to catalyse an increase in production, it seems prudent to focus on - Widening consumer awareness and sampling (getting more consumers curious about traditional rice varieties) on the one hand and deepening adoption (nudging the occasional consumer to become a regular convinced consumer).

F. Addressing some key issues

We conclude by addressing a few key issues that are important for the proposed project.

1. Will farmers cultivate traditional varieties – the why and how ?

This question needs to be asked and answered since it forms the key to the proposed project intervention. This has been dealt with in detail in Sec. V of the report where we have compared in detail the cultivation of Mappillai samba with ADT 45. The key takeaways are reproduced here.

- The cost of cultivation is lower for the traditional variety. There are significant savings in the fertilizer and plant protection expenses which more than compensate for the increased seed costs.
- For traditional varieties, the yield of grain is lower but it fetches a higher price.
- The income through straw is slightly more from traditional varieties.
- Overall it is seen that the net income through the cultivation of traditional varieties is more in comparison to modern varieties. In this particular case there is a gain of Rs. 7950/- per acre for the crop season.
- While initially traditional seeds may be purchased from the market, during the following crop seasons the farmer can use the seeds saved by him leading to reduced costs.
- The cost towards plant protection expenses and fertilizer expenses can be further reduced through training support which can enable the farmer to use inputs from in and around his own farm.

2. Can this activity produce significant volumes of grains and can it be scaled up?

- We estimate that the total annual production from our current network will be of the order of 9,000 tonnes.
- It is possible to expand the total production of these varieties in many ways and some of these possibilities are listed below –
 - a. Supply of good quality traditional seeds – with proper characteristics of the variety, good germination rate and vigour.
 - b. Inputs for the improvement of soil fertility such as – compost, vermicompost, neem seed cake etc.
 - c. Training support and continuous hand holding for sustainable agriculture practices.
 - d. Ensuring that better quality land (with greater soil fertility) is allocated for cultivation of these varieties.
 - e. Timely provision of inputs and services.

3. Advantages of the CIKS work and initiatives

- CIKS has major advantages because of its access to a large pool of traditional rice varieties conserved in its own farms and available through farmers networks.
- CIKS has developed, tested and refined various technologies relating to rice cultivation including organic cultivation, seed production and SRI methods.
- CIKS has also carried out preliminary work on nutritional and therapeutic properties of selected varieties and further research efforts are planned.
- A beginning has been made with improved shelf life and value addition which has been very well received in the niche markets and is gaining a presence in the larger market.

RAPID ASSESSMENT OF THE MARKET POTENTIAL OF TRADITIONAL RICE VARIETIES OF TAMIL NADU

I. BACKGROUND AND CONTEXT TO THIS STUDY

Since 1995 CIKS has been involved in the conservation of indigenous rice varieties as well as research and documentation of their agronomic properties and some nutritional and therapeutic properties. During the last few years an initiative has been launched to conserve these varieties through a crowd funding programme called Namma Nellu and the cultivation of some of these varieties has been scaled up to larger areas and farmers through Farmer Producer Companies (FPCs) and linkages with Sempulam Sustainable Solutions have been helped to market these varieties.

It is proposed to launch an effort during the next three years to help a large number of these farmers to scale up cultivation and to help them to market the varieties. Some key features of this intervention are the following : -

1. Supply of quality seeds as inputs.
2. Support and handholding during cultivation through training on suitable technologies for sustainable cultivation, help to access quality inputs.
3. Post harvest to help in the aggregation of produce and collective marketing.
4. Work out an optimum strategy for marketing that can combine – local marketing, whole sale marketing, retail marketing, linkages with special channels and niche markets.

A. Rapid assessment of market potential

In order to assist in the planning and execution of the above proposal it is being planned to carry out a rapid assessment of the market potential of traditional rice varieties. The specific questions to be answered include the following -

1. In terms of the Traditional Rice Varieties (TRV) what is the current situation as well as possible potential in terms of -
 - a. Varieties cultivated.
 - b. Area under cultivation.
 - c. The expected yield.
 - d. The overall calendar in terms of the crop season / time of the year when various operations can commence, produce can be harvested and the market readiness.
 - e. The geographic spread of the above.
2. What are the possible sources through which the produce can be sold including – local sales, wholesale through traders, marketing through special channels / niche markets etc.

3. What are the requirements and preparations in terms of aggregation, grading, storage, transport, value addition for each of the above channels.
4. What are the specific factors that may offer a market advantage such as – the nature / identity of the traditional variety, certification status in terms of – NPM, certified organic, self-certified etc.
5. What are the possible risks associated with various of the above operations and how can they be avoided or mitigated.

B. Time frame and Scope of the study

1. The scope of this exercise would be restricted to the network of farmers with whom CIKS is engaging who are cultivating / can potentially cultivate traditional rice varieties.
2. It is expected that the study would be completed in a period of about one month.

II. INTRODUCTION TO CIKS ACTIVITIES IN THIS AREA

A. Biodiversity of Rice in India

The Indian subcontinent is a region of extremely high biodiversity of plants and in fact, two of the twelve global – “biodiversity hotspots” are currently situated in India. India cultivates a large amount of rice and vegetables both in terms of the volume and diversity. Currently India is the world’s second largest producer of rice as well as the second largest producer of vegetables. It has been estimated by the National Bureau of Plant Genetic Resources (NBPGR) of the Government of India, that currently there are about 75,000 to 100,000 land races of paddy available in India. In addition there are a significant number of varieties of paddy still available with farmers which are not noted or captured by the formal systems (The source material and references including websites and online sources have been listed in Annexures – I and II).

NBPGR has estimated that India has about 75,000 to 100,000 land races of rice that are available. Besides being conserved in the cold storage facilities of NBPGR they are also widely cultivated in many parts of India and in recent years several voluntary agencies have also encouraged farmers to cultivate some of the traditional varieties and also maintain field gene banks. Detailed information regarding the diversity of races in India and indications about their possible therapeutic and nutritional properties are available in a large number of publications. Some of the publications that are well known are those of one of India’s leading rice scientists, Dr. Richaria and the compilation of Scented Rices of India produced more recently by Dr. R. K. Singh. A document on the biology of rice produced by the NBPGR in 2006 provides examples of Rice germplasm with medicinal value. There have also been studies on nutritional and medicinal value of indigenous rice varieties in specific areas of India. Many such varieties have been identified from the states of Assam, Bihar, Chattisgarh and Jharkhand. Rice is also considered to be in the nature of a nutraceutical and a recent publication by Dr. Uma Ahuja and her colleagues gives a list of some rice varieties with nutraceutical properties. There are also specific category of rices that have medicinal properties. For example, there is a group of rice varieties which are clustered together as – “Red Rice” and these have a Red bran layer and the bran is known to be rich in polyphenols

and Anthocyanin and possesses antioxidant properties. Their zinc and iron content is two to three times higher than white rices. A previous publication by Uma Ahuja and her colleagues has listed over two hundred varieties of red rice known in various parts of India. South India is particularly rich in these varieties with as many as fifty one varieties being reported from the state of Tamilnadu and thirty three varieties from Kerala. There are also many detailed studies on specific rice varieties such as the recent study launched at the G. B. Pant University of Agriculture regarding the scented rice variety called *Kala namak*. While no direct medicinal property has been attributed to this variety it is interesting to note that this rice is traditionally produced by double transplantation and the traditional Ayurvedic literature of India attributes specific medicinal properties to transplanted rice.

It is interesting to note that there is also a growing body of literature about traditional rice varieties and their importance from various other parts of the World particularly from Asia including Sri Lanka.

B. Overview of CIKS activities in this area

CIKS activities relating to traditional rice varieties had been initiated right since the formation of the Trust in January 1995. They have included conservation, studies on agronomic properties, development of technologies for organic cultivation, seed production, pilot studies on nutritional and therapeutic properties, production of resource materials and publications as well as creating marketing opportunities. They are outlined below.

1. **Conservation:** CIKS is currently conserving over 180 varieties of traditional rice. These are cultivated organically and there has been detailed documentation of the qualities and performance of these varieties for several years.
2. **Agronomic properties:** These varieties have a range of agronomic properties that are suited to various locations, ecosystems, rainfall patterns, availability of water etc. Varieties suited to specific types of soil, varieties having resistance to pests and diseases, varieties that can be cultivated with varied amounts of water availability and varieties that are important in disaster management are conserved.
3. **Pilot Study on Nutritional and Therapeutic Properties:** CIKS took up a pilot study consisting of - documentation and analysis of modern technical literature, farmers knowledge as well as popular literature and folklore in Tamil, survey of information in texts of Ayurveda and Siddha medicine and laboratory studies on physico chemical properties and nutrient analysis and assessment of taste and Glycemic Index.
4. **Seed Production:** CIKS has promoted the production of certified organic seeds of 20 paddy varieties in four districts of Tamil Nadu.
5. **Publications:** About 40 publications and audio-visuals have been produced on properties of varieties, organic cultivation, SRI method and seed technology in English and Tamil.
6. **Namma Nellu : An effort to conserve traditional varieties of rice through public support :** “*Namma Nellu*” (literally meaning – “Our rice” in Tamil) was envisioned as a – “Crowd Funding” effort through which CIKS invited individuals and organisations to

contribute to the conservation of various indigenous rice varieties in public interest. Since the year 2016 about 140 rice varieties have been conserved in two locations every year. Over 2000 farmers cultivate 10 varieties across 10 districts in 2000 acres. 4000 kgs of seeds of 140 varieties which can be cultivated in 1000 acres of land have been produced.

- 7. Marketing Opportunities :** CIKS is actively involved in nurturing 23 farmer producer companies (FPCs) across nine districts in Tamil Nadu, which have about 24,000 farmers as shareholders involved in growing a wide range of crops. This network includes a group of organic farmers supported by CIKS who grow indigenous rice varieties that are being currently marketed with support from FPCs and linkages identified by CIKS.

C. CIKS and Traditional Rice Varieties (TRV) : Time Line

We have given below a time line of various key initiatives of CIKS relating to Traditional Rice Varieties (TRV).

Year	Initiative
1995	<ul style="list-style-type: none"> • CIKS established for objectives including conservation of traditional rice varieties • Land taken on lease in Siruthavoor in Kanchipuram district and later, in Anjur village near Chennai for conserving traditional rice varieties
1999	<ul style="list-style-type: none"> • <i>Arogyam</i>, a marketing initiative, started • Focus: Chennai market; different traditional varieties door delivered to around 40 buyers (including well-wishers) in the city • Varieties included: Thooyamallee, Kitchili Samba, Kappakar, and Kullakar • Sixty varieties of traditional rice sourced for conservation
2002	<ul style="list-style-type: none"> • Conservation work moves to Sukkankollai, near Chengalpattu and Agani, near Sirkazhi • Seeds provided to farmers • Seed bank created
2004-06	<ul style="list-style-type: none"> • Seed conservation grows to a significant number of farmers (720) • Extensive documentation of characteristics of traditional rice varieties starts in 2004
2005	<ul style="list-style-type: none"> • Formed three societies of farmers in Ramanathapuram, Kanchipuram, and Nagapattinam), including: SOFA (Sirkazhi Organic Farmers Association) in Sirkazhi • Training farmers in cultivating traditional rice varieties

Year	Initiative
	<ul style="list-style-type: none"> • Provides services to farmers to get organic certification • Marketing through SOFA to market the organic rice product
2006-08	Paddy processing started
2006-07	After considering different options to work on marketing, promoted AOPL (Arogyam Organics Private Limited), a private limited company, to market organic foods, including traditional rice varieties
2008	Procurement of rice, including traditional varieties by SOFA, started at 9 tons and went up to 20 tons
2008	Training to women's SHGs, with support from UNDP, to add value to rice and offer products including <i>aval</i> (flattened rice or beaten rice) and rice-based snacks for consumption as crispies
2008-10	Established marketing linkages with new players such as <i>Dhanyam</i> and <i>24 Mantra Organic</i> in the organic-natural-traditional foods market
2012-15	<ul style="list-style-type: none"> • CIKS, with Vrutti as partner, implements a DFID-supported project to reduce poverty through sustainable agriculture • Two large producer companies promoted - Marutham Sustainable Agriculture Producer Company Ltd. (MSAPCL), serving farmers in Tiruvannamalai and Kanchipuram districts and Valanadu Sustainable Agriculture Producer Company Ltd. (VSAPCL), serving farmers in Nagapattinam district
2012-17	<ul style="list-style-type: none"> • A total of 105 traditional varieties are grown in the two locations mentioned earlier – Sukkankollai and Agani
2013	<ul style="list-style-type: none"> • CIKS commissions a study of Physicochemical Properties, Nutrient Analysis, Standardization, Acceptability, and Glycemic Index of organically grown Indigenous Rice Varieties (IRVs) – (Details are given in a later part of this report).
2005-2015	<p>A decade of experience in:</p> <ul style="list-style-type: none"> • Conservation and documentation of traditional rice varieties • Supplying seed of traditional rice varieties to farmers • Learning from farmers and building capacities of farmers to cultivate traditional varieties • Skilling women in making value-added products • Creating and maintaining marketing linkages

Year	Initiative
	<ul style="list-style-type: none"> • Consumer study • Direct reach to consumer, at small scale
2016-2019	<ul style="list-style-type: none"> • <i>Namma Nellu</i>, a crowdfunding initiative, launched to strengthen conservation. • CIKS designs and implements four projects to increase farm incomes through production, value addition, and marketing of four traditional rice varieties – Mappillai Samba, Seeraga Samba, Kitchili Samba, Kuzhiyadichan; projects supported through Farm Sector Promotion Fund of NABARD. • FPCs promoted and nurtured by CIKS, serving farmers in Dindigul, Kanchipuram, Nagapattinam, Ramanathapuram, and Tiruvannamalai districts explore the production and marketing of different varieties as grain (<i>nellu</i>), rice, and rice-based value-added food products.
2018	<ul style="list-style-type: none"> • Diwali gift packs of traditional rice varieties launched on September 19, 2018, with high production and packaging values. • Gift packs introduced in two versions – A Gift box with six traditional rice varieties, vacuum packed and a small box with one traditional rice variety, vacuum packed. • The gift pack idea draws an enthusiastic response from different groups, including households and businesses. • Buyers of gift pack show interest in a way to become a regular consumer of specific traditional rice varieties. • Efforts at cobranding and linking up with retail players who have a large presence in the market.

III. METHODOLOGY OF THE CURRENT STUDY

The current study included the following key steps.

A. Consultations with CIKS team members

A series of consultations were held with various members of the CIKS team including those involved in research, documentation and field work. Various records available with CIKS relating to marketing and sales were reviewed including recent efforts after the launch of the *Namma Nellu* programme.



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B. Consultations with various sister organisations and collaborating agencies

A series of consultations were held with various members of the sister agencies and collaborating institutions including – CEOs of FPCs (Farmer Producer Companies), Farmer Leaders from various districts as well as team members from Sempulam Sustainable Solutions.

C. Meetings with farmers in field areas

Meetings with farmers were held in different locations in order to collect, discuss and analyse information relating to traditional rice varieties. These meetings were held so as to collect information from five different districts where the cultivation of traditional rice varieties is known to be continuing at various levels namely – Kanchipuram, Tiruvannamalai, Dindigul, Ramanathapuram and Nagapattinam districts. The farmers involved in the consultations were not only those who are already part of the CIKS network but also other farmers from the locality who are known to cultivate traditional varieties.

D. Field visits

Based on the preliminary consultations field visits were taken up to meet and obtain information and suggestions from various persons involved in this area. These included - Retailers, Traders, Millers, Farmer-Aggregators and Farmers. In addition to meetings, this included telephonic interviews/conversations with specific stakeholders.

E. Secondary Research

Secondary research consisted of desk research of writings by and about -

1. Drivers of wellness market and foods market
2. The narratives/news articles on traditional rice varieties
3. Other market reports and studies available

F. Tools

For the market study, the following tools were used:

1. Internet search
2. Snowball sampling method
3. One-to-one interviews and conversations, using a set of questions

G. Checklist of Questions for Respondents

Respondents in different categories – retailer/miller/trader/farmer-aggregator/expert were requested to provide information and the following points.

1. Varieties procured

2. Volume procured
3. Procurement price
4. Sale price
5. Monthly sales
6. Challenges faced
7. Experience over the time period during which respondent has been involved as a value chain player in the traditional rice varieties markets
8. Observations about markets for traditional rice varieties
9. Key constraining factors

A database of various respondents is given in Annexure – III.

IV. FINDINGS OF THE STUDY

The key findings from the studies are summarised below. Details regarding each category of findings are available in the form of records of meetings and interviews, lists of addresses and contact details etc.

The Indian wellness consumer can be classified into four broad categories— ‘passives’, ‘beginners’, ‘actives’ and ‘believers’-depending on factors such as intent and extent of spend on wellness services and products, exposure to wellness concepts and importance given to wellness in their daily lifestyle. The ‘passives’ represent the largest volume opportunity, the ‘beginners’ are the fastest growing category, while the ‘actives’ and ‘believers’ together comprise only a small fraction of the population. These categories offer varying levels of opportunity for health and wellness players.

The health and wellness category has emerged from being a platform consisting of a small number to a mainstream concept today. Price considerations still continue to determine the choice of products and services for most consumers.

The specific category referred to as Naturally Healthy (NH) foods and products is growing, found a 2012 pwc (Pricewaterhouse Coopers) study for FICCI. A 2015 article about the Indian food sector holds that the next decade will be about health and wellness, with more consumers taking a keener interest in the links between diet and health. With Ayurvedic health practices growing in popularity, Indian consumers are increasingly looking to gain health benefits based on the traditions with respect to food products. This trend is borne out by market data. Based on in-depth analysis of the buying behaviour of more than 500,000 customers of BigBasket over the last year, Seshu Kumar Tirumala, the company's national head for buying and merchandising, tells just-food India's emerging food sector demand is in Health, Organic, Ayurvedic and RTE (ready-to-eat) categories.

The number of households buying natural/ayurvedic food products has grown ten times over the last two years, Tirumala adds. Appropriate technology and innovation will make

traditional foods more acceptable to the consumer, who is open to different models including subscription-based need fulfilment or shopping online.

A. Farmers : It is essential to understand the view point of farmers with respect to traditional rice varieties.

1. Farmers often cultivate traditional paddy varieties on land in which no modern variety can be cultivated
2. Normally the literature provides data on the yields of modern varieties based on experiments carried out under – “Ideal conditions” where the soil fertility is high, irrigation is assured and there are no vagaries of weather. These conditions cannot be reproduced in reality.
3. Farmers are interested in cultivating traditional rice varieties because the traditional varieties are more suited to climatic conditions, climatic change, and more resistant to pests and diseases.
4. Farmers who have options of cultivating traditional as well as modern varieties take into consideration the relatively lower yield of grain from traditional varieties. This means that, unless they can market the TRVs efficiently they cannot realise the advantage of cultivating traditional varieties.
5. Ensuring procurement of traditional rice varieties at the doorsteps of farmers for better prices can incentivise farmers to increase the cultivation.
6. It might be a good strategy to make farmers stakeholders in sharing the benefits of value addition, thus maximising their realisation from the cultivation of traditional rice varieties and ensuring greater incomes. For example, there is currently a great demand for – “Hand Pounded Rice” and the availability in the market is low and unsteady due to a number of reasons including problems of shelf life. However, if this can be overcome it is possible that the operation of hand pounding can be carried out by farmers groups and this can provide better returns for them. Similar opportunities exist with respect to the production of value added commodities such as – Porridge (*kanji* mix), Upma mix, etc.
7. It is difficult for farmers to store unpolished paddy/semi polished rice as the produce easily attracts insects and pests. Currently, it is possible to provide some help through the supply of pest resistant packaging through suitable packing material (such as grain pro bags).
8. What’s more, traditional paddy varieties are not notified by the government. As a result, farmers cannot hold their stock in the Regulated Market Committee or the State Market Committee or PACS. Such varieties are also not eligible for warehouse receipt finance. Producer companies of farmers cultivating such varieties might have to work out innovative financial services that fill this gap and thus encourage the farmer to cultivate the traditional varieties.

9. In a later section we have discussed in detail about the reasons why farmers still cultivate traditional varieties (Sec. V).

B. Farmer-Aggregators : Not every single farmer is involved in directly trading with a marketing entity which may be a local trader or a rice mill or company. Quite often there is a category of – “Farmer-aggregators”. With their knowhow, local presence, and local reach – they are playing a crucial role. They can play a crucial linking role between the primary producer and the trading entity.

C. Millers : Millers are crucial as a link between the farmers and the markets. They have an important role in terms of the way in which the grains are processed and presented to the final consumer. Their view points as well as the technological possibilities / limitations of their equipment are important in the larger scheme of things.

1. Millers in Madurai, Trichy, and Vellore responded that they can process higher volumes of specific traditional rice varieties and market them without difficulty
2. Large millers play a volume game; collaboration with them will require that millers process traditional rice appropriately and an organisation like CIKS be able to facilitate a growth in volumes produced
3. Progressive millers can play an effective role in processing to just the right extent the grain into rice
4. Such millers stand to gain in terms of their business operations (as the batch processing model suitable for traditional rice varieties enables them to be busy during their usual off-season)
5. Millers also earn a part of the premium that accrues to traditional rice varieties

D. Market : When the market discusses rice, it usually refers to one of two categories:

- One category groups the rice into (i) slim (*sanna ragam*) varieties and (ii) fat (*mota ragam*) varieties, based on the size of the rice.
- The other category groups the rice into (i) white and ii) red, based on the colour of the rice. The red rice is also referred to as *karupparisi*.

A more technical classification based on length and size lists rice varieties as:

1. Long grain slender (e.g. Basmati)
2. Medium grain slender (e.g. Thooyamallee)
3. Medium grain bold (e.g. Mappillai Samba)
4. Short grain bold (e.g. Kullakar)
5. Short grain slender (e.g. Seeraga Samba)

Though there are a number of stakeholders active in this space, it is our assessment that the market for traditional rice varieties is currently small in comparison to the very large mainstream market. However, it is growing rapidly.

A few varieties dominate the market, based on the responses of the individuals surveyed. Given the highly scattered and unorganised nature of the market, it is difficult to estimate numbers conclusively and rank the top varieties. Having said that, the top traditional rice varieties, cited by the respondents, are:

1. *Seeraga Samba*: Given its status as the rice for biryani, the *seeraga samba* enjoys a high status. At the same time, given the demand, the value chain players manage this by shipping in what is claimed to be *seeraga samba* rice (could be *seeraga samba* or some other variety which is also scented); in this context, it is noteworthy that one estimate in The Hindu pegs the annual Tamilnadu market for biryani at Rs. 5,500 crores (Rs. 1,500 crores in the organised sector and Rs. 4,000 in the unorganised sector)
2. *Mappillai Samba*: This variety gets its name from folklore. The rice was given to the bridegroom (Mappillai) to increase his strength to help him lift the stone (*Ilavattakal*) and hence the name. Only if the bridegroom lifted the stone, could he win the bride. The variety was supposed to provide the stamina for the same. Consumption of water with which this rice is washed is helpful to cure mouth and stomach ulcers, increases digestive power and also helps diabetic patients. Research has shown that the energy content and crude fibre is extremely high in this variety. It can withstand flooding.
3. *Kitchili Samba*: Consumption of this rice is believed to give a sheen to the body. It is digested very fast. If properly cooked kitchili samba rice is consumed, it enables weight gain. This variety is highly suitable for the south Indian meal and also used for making biryani. It is highly resistant to pests and diseases.
4. *Kullakar*: Since this is a short duration variety, it can be grown in all the three seasons. It can be grown with minimum water, without waterlogging. It is highly resistant to drought, pest, and disease. It has antioxidant properties and has a high zinc and iron content. It strengthens, regenerates and energizes the body, regulates blood pressure, prevents skin diseases, and premature aging. The variety is ideal for preparing idli, dosa and also porridge.
5. *Poongar*: It gives stamina and health to the body. It provides strength to pregnant women and enables them to have a smooth delivery. Pregnant women are advised to have porridge of this variety every day. It has high zinc content and also provides strength to the cartilage. It can grow in saline soils, both during droughts and floods.
6. *Karunguruvai*: This variety provides great stamina. Parboiled Karunguruvai rice wards off skin diseases, urinary tract diseases, poisonous stings, and promotes health. The porridge of this rice is also indicated in fevers. It has a very high iron content.

7. *Kaattuyanam*: This variety has a number of medicinal properties. It is used in the control of diabetes and also for cancer treatment. Apart from providing health benefits, it also provides environmental benefits like increasing fertility and water retention capacity of the soil. It can withstand flooding to a great extent. The hay of this variety is used for making thatched roof. Flattened rice made from this rice variety is suitable for making rice payasam (a South Indian sweet dish). It is also suitable for the preparation of idli, dosa, idiyappam, and porridge.
8. *Kuzhiyadichan*: This variety is suitable for saline soil and land which has good drainage facility. It is highly drought, pest, and disease resistant. Kuzhiyadichan is suitable for making dishes like idli and dosa. It is good for lactating mothers.
9. *Karuppu kowni* : This is a black rice with powerful anti-oxidants. It is a sticky rice with fiber, anti-inflammatory properties and low Glycemic Index. It is offered to special guests by the Chettiar Community of Tamil Nadu and used for special preparations like *halwa* and *pittu*.
10. *Thooyamallee* : It is a good table rice which is slender and easily digestible. It is a multi-purpose variety that is extremely tasty and pure white in colour.

E. Traders : In consultations with traders, their general view was that they are not able to procure enough to meet the demand. Traders can contribute to large offtake. Given that they deal in higher volumes than farmer-aggregators or PCs, traders play a key role in living the right values of the traditional food category.

F. Retail Stores : Retail stores have indicated confidence that they can sell specific varieties of traditional rice varieties in large quantities, consistently. Here CIKS could draw upon a study that was carried out earlier.

During the early part of 2018 we carried out a survey of 12 existing well known and popular outlets for traditional rice varieties in and around Chennai. The outlets chosen were – Pachaa, Rice day, House of spices, India mart, Aswath Eco Organics, Gramiya Mana Angadi, Aim for Seva, Vaer Organics, Pasumai, India Organic, Dhanhyam and Organic depot. As part of branding, price fixing and market positioning of our traditional rice varieties, it was important to understand the existing varieties currently on the shelves and online markets and the prices and quantity at which they are sold. The key observations and findings of this study are listed below.

- i. The survey was conducted with twelve stores, both online and through physical visits.
- ii. This exercise revealed that more than 32 varieties of traditional rice are currently available in the market.
- iii. More than ten varieties were available in at least three stores, namely Bamboo rice, Kavuni, Karunkuruvai, Kitchili Samba, Kullakar, Kattuyanam, Mappillai Samba, Navara, Poongar, Thooyamalli and Seeraga samba (while Bamboo rice is not truly a – “variety of rice” it is included in this listing since in various stores, articles, cook books etc. it finds a mention today).

Display at Sri Krishna Sweets outlet



Exhibits at the National Siddha Institute



- iv. Aswath Eco Organics had the maximum number of traditional rice when compared to other stores with around 20 varieties among their list of products. B&B organics stood second with 14 rice varieties. Paacha had 10 varieties, Dhanyam had 9 varieties and Aim for Sewa had 7 varieties including varieties named Rose Matta, Kerala Matta, Red rice, Brown rice.
- v. Among all the stores B&B organics priced their produce highest.

A list of the 32 rice varieties along with the price range in the 12 stores is given in Table-1. The information is summarised below.

- i. The prices of the varieties range from a lower limit of Rs. 90/- per kg (the price of Arupatham Kuruvai in one store) to an upper limit of Rs. 530/- per kg (the price of Khasi Red Rice in one store).
- ii. The average price of a traditional rice variety is Rs. 197/- per kg.
- iii. In terms of the distribution of prices in various ranges the following is a summary of the price per kilo gram in Rupees.

• Less than Rs. 100/-	-	3 varieties
• Between Rs. 100/- and Rs. 200/-	-	17 varieties
• Between Rs. 200/- and Rs. 300/-	-	4 varieties
• Between Rs. 300/- and Rs. 400/-	-	5 varieties
• Between Rs. 400/- and Rs. 500/-	-	1 variety
• Above Rs. 500/-	-	2 varieties

The above rices include both conventional (chemically cultivated) varieties as well as organically cultivated varieties.

Table - 1 : Traditional Rice Varieties marketed in the Chennai area – listing of the price range from 12 stores

S. No.	Name of the traditional Rice variety	Lowest Price/Kg	Highest Price/kg
1	Arupatham Kuruvai	90	90
2	Bamboo Rice	234	480
3	Basmati	120	120
4	Black Sticky rice	480	520
5	Chitrakar	90	100
6	Diabetic Rice	260	260
7	Garudan Samba	300	300
8	Ilupaipoo Samba	108	120
9	Kalanamak	108	120
10	Kaljeera	120	120
11	Kallunda	90	100
12	Karunguruvai	95	350
13	Karuppu Kowni	162	180
14	Kattuyanam	95	350
15	Kavuni	200	220
16	Kullakar	64	90
17	Kitchili Samba	72	152
18	Kottarn Samba	144	144
19	Kerala Brown Rice	150	150
20	Khasi Red Rice	380	530
21	Kuruvikkar	108	120
22	Kuzhiyadichan	300	350

S. No.	Name of the traditional Rice variety	Lowest Price/Kg	Highest Price/kg
23	Mappillai Samba	108	175
24	Navara	108	250
25	Matta rice	114	114
26	Panamkattu kudaivazhai	220	350
27	Pongar	90	100
28	Rajamudi	170	170
29	Rakthasali	330	330
30	Seeraga Samba	300	350
31	Sivappu Kowni	80	90
32	Thooyamalli	80	100

Some of the important takeaways from this survey are the following : -

1. The consumers place a greater value on – “Traditional varieties” than on the “Organic” label.
2. A regular supply of the varieties with an assured quality will ensure a good market.
3. Consumers are very open to paying a premium price for good quality traditional varieties as seen from the fact that the average price commanded by these varieties is as high as Rs. 200/- per kg.
4. CIKS advantage : Currently, there are only a small number of varieties which constitute the market. There are only a total of 30 varieties seen in the market and about 10 varieties out of these constitute a bulk of the market. However, CIKS has access to 168 rice varieties through their farmers network in various parts of Tamil Nadu. In Annexure – IV we have provided a list of traditional rice varieties being conserved currently by CIKS in two of its experimental farms which are located in Kancheepuram district and Nagapattinam district. Together there are 168 varieties being conserved directly. In addition CIKS has ready access to at least 70 – 80 additional varieties through the network of farmers which can be easily accessed. **This means that through a properly designed marketing effort CIKS can offer several rice varieties individually or in groups which are currently not available or marketed by any other source. This can prove to be a good advantage if such varieties can be introduced and promoted suitably.**

G. Drivers : Top drivers of consumer awareness and interest are:

1. A lifestyle with growing health consciousness and concerns
2. Enhanced taste experience, and
3. Affinity for the traditional

Consumer purchase is driven by:

1. Willingness to make traditional rice varieties a part of the daily diet; this is a necessary condition
2. Ability to make traditional rice varieties a part of the daily diet; this is the sufficient condition that is driven by availability and affordability. Here, the marketer with integrated operations has a key role to play
3. The opportunity for different traditional value-added products made from traditional rice varieties is encouraging; this includes ready to cook foods such as *pongal*, *kanji* (porridge/gruel), *aval* (flattened rice), and *vadagams* (fried crispies)

H. Food Businesses / Niche Restaurants : To ascertain the demand for traditional varieties of rice, we contacted leading and popular chefs of seven premium restaurants in the Chennai area. Most chefs in premium restaurant business are open minded and are actively looking at conserving traditions and are also very open to adding a differentiation to their offering. Traditional variety of rice allows the chefs to do just that! Based on the responses, we draw the following conclusions –

1. More than 70% of the chefs use three or more rice varieties of rice at their restaurant
2. Basmati is the most popular variety with 85% of the chefs using Basmati rice.
3. Jasmine and Risotto rices are the next most popular with 30% of the chefs using them
4. A few chefs already use Red rice and Black rice in their menus.
5. Fried rice, Jeera rice, Biryani and Risotto are the most popular dishes made by chefs where the above rices are used.

Based on the responses we can draw the following conclusions -

1. The "sticky" character and long grain (not aroma) of rice is the reason for the popular usage of the variety.
2. More than 70% chefs mentioned that Biryani is their most selling dish but Red rice and found flavour with a few chefs for making dosa.

3. What is encouraging is the already existing awareness and usage of varieties of Red and Black rice to provide a differentiated experience. It seems like supply and awareness would quite easily drive demand.

V. WHY SHOULD FARMERS CULTIVATE TRADITIONAL RICE VARIETIES ? DISPELLING SOME MYTHS AND MISCONCEPTIONS

The question is sometimes asked about whether the choice of cultivation of traditional varieties makes sense from the point of view of the farmer. One view seems to be that – “since traditional varieties give a low yield the farmer will actually loose out by choosing to going for traditional varieties”. Moreover, it is felt that this amounts to going back to the past and a premodern technology that is no longer relevant.

In this connection, we would like to present and analyse the following information.

A. How does the cultivation of traditional varieties compare with modern varieties in terms of benefits for the farmer?

Normally, this question is posed as – “Let us compare the yields”. However, we would like to suggest that for a proper and holistic comparison we have to look at the following : -

1. Cost of cultivation including all material costs and labour
2. Income from all sources including grain and straw and
3. Based on the above we should compare the net income obtained by the farmer

In Table-2 we have compared the cost of cultivation of one acre of land wherein the farmer can cultivate a traditional variety such as Mappillai samba or a modern variety such as ADT 45. Costs are estimated for all the inputs including labour and materials. Similarly, estimates are made of the total income as well as the net income. The comparison leads to the following conclusion –

1. The cost of cultivation is lower for the traditional variety. There are significant savings in the fertilizer and plant protection expenses which more than compensate for the increased seed costs.
2. For traditional varieties, the yield of grain is lower but it fetches a higher price.
3. The income through straw is slightly more from traditional varieties.
4. Overall it is seen that the net income through the cultivation of traditional varieties is more in comparison to modern varieties. In this particular case there is a gain of Rs. 7950/- per acre for the crop season.
5. While initially traditional seeds may be purchased from the market, during the following crop seasons the farmer can use the seeds saved by him leading to reduce costs.

6. The cost towards plant protection expenses and fertilizer expenses can be further reduced through training support which can enable the farmer to use inputs from in and around his own farm.

B. Comparison of income and profit through the sale of a traditional and modern Paddy variety; the experience of Marutham FPC

While the data given above pertains to cultivation by an individual farmer, we would also like to describe the experiences farmers group relating to the sale of traditional paddy varieties in comparison to modern paddy varieties. In Table-3 we have compared experience of the Marutham Farmer Producer Company with the procurement and sale of two paddy varieties – one traditional (Seeraga samba) and one modern (improved white ponni). The figures are comparable since they are for the same period of procurement and sales. The company has made an analysis of the gross profit as well as the net profit (both total net profit as well as per kilogram net profit) taking into consideration the procurement price, sales price and various expenses. Their conclusion is shared below –

1. If Marutham had focussed only on Seeraga Samba variety it could have avoided losses and definitely made a profit.
2. Currently, Marutham has decided to focus only on the procurement of traditional varieties such as – Seeraga samba, Mappillai samba, Kullakar etc.

**Table – 2 : Cultivation of Traditional and Modern Varieties :
A Comparison of Inputs, Outputs and Income**

S. No	Particulars	Mappillai Samba	ADT 45
1	Nursery preparation	1,100	1,100
2	Seed cost	1,950	1,150
3	Main field preparation – ploughing, bund trimming, plastering and levelling	5,300	5,300
4	Seedling plucking	700	700
5	Seedling transplanting	1,650	1,650
6	Weeding expenses	1,500	1,500
7	Fertilizer expenses	2,500	5,000
8	Plant protection expenses	500	2,000
9	Harvesting expenses	2,200	2,200

S. No	Particulars	Mappillai Samba	ADT 45
10	Winnowing and other processing expenses	2,250	2,250
11	Total expenses	19,650	22,850
	Reduction in cost of cultivation	3,200	
12	Expected yield (Kgs)	1,250	2,250
13	Income through grains sales	37,500 (Rs. 30 /Kg)	33,750 (Rs. 15/ Kg)
14	Income through straw sales	3,500	2,500
15	Total income	41,000	36,250
16	Net Income (S. No: 15-11)	21,350	13,400

Conclusions

1. The cost of cultivation is lower for the traditional variety. There are significant savings in the fertilizer and plant protection expenses which more than compensate for the increased seed costs.
2. For traditional varieties, the yield of grain is lower but it fetches a higher price.
3. The income through straw slightly more from traditional varieties
4. Overall it is seen that the net income through the cultivation of traditional varieties is more in comparison to modern varieties. In this particular case there is a gain of Rs. 7950/- per acre for the crop season.
5. While initially traditional seeds may be purchased from the market, during the following crop seasons the farmer can use the seeds saved by him leading to reduce costs.
6. The cost towards plant protection expenses and fertilizer expenses can be further reduced through training support which can enable the farmer to use inputs from in and around his own farm.

**Table – 3 : Profit Assurance in Traditional Paddy Procurement for FPCs Marutham
Experiences in Seeraga Samba Procurement**

S. No	Particulars	Seeraga Samba	Improved White Ponni
1	Procurement Year	2016-17 (December 2016 – March 2017)	2016-17 (December 2016 – March 2017)
2	Sales	2017 -18 (January – March 2018)	2017 -18 (January – March 2018)
3	Quantity procured (MT)	22.8	276.3
4	Procurement price / Kg (Rs.)	30.66	26.5
5	Total Procurement price (Lakh)	6.99	73.22
6	Sales Price / Kg (Rs.)	39.61	26.03
7	Sales Price (Lakh)	9.02	70.5
8	Gross Profit / Loss Kg (Kg)	8.95	(0.47)
9	Total gross profit (Lakh)	2.04	(1.29)
10	Other expenses – loading, unloading, processing, rent, electricity, insurance and maintenance / Kg (Rs.)	6.45	6.45
11	Total other expenses (Rs.)	1.47	17.82
12	Net profit / Kg (Rs.)	2.5	(6.92)
13	Total Net Profit (Lakh)	0.57	(19.11)

Observations and follow up

1. If Marutham had focussed only on Seeraga Samba variety it could have avoided losses and definitely made a profit.
2. Currently, Marutham has decided to focus only on the procurement of traditional varieties such as – Seeraga samba, Mappillai samba, Kullakar etc.

Display at the Mylapore Festival



School Students selling traditional rice varieties

Sprouts
Montessori House of Children

RICE FOR SALE!!!

The EARLY ADOLESCENCE Students are proud to share and sell the cultivated Organic Rice – KICHILI SAMBA

The students have been going on a regular basis to the Farm at Sempulam Solutions as a part of their Curriculum from June 2018 to January 2019.

The students have grown and cultivated this rice from Preparing the soil to Harvest to Marketing!

It is with immense pride and satisfaction, the EA students are selling limited quantity of this quality traditional rice at **Rs 50 for Half Kilogram packet.**

ONLY 100 PACKETS AVAILABLE...COME AND GET YOUR SHARE ASAP @ EA & MAIN CAMPUS

Kichili Samba is a traditional variety of rice, native to Tamil Nadu. This rice helps develop a healthy skin and strengthen the body.

This variety of rice grows upto 3ft in height and takes about 140 days to crop and very yummy!!



Display at the Chennai Book Fair

VI. INFORMATION FROM THE FIELD ABOUT THE CULTIVATION OF TRADITIONAL RICE VARIETIES

The information summarised here is from two sources, namely –

1. Records available with CIKS about the current network of farmers with us and
2. Information collected during the course of this study about farmers who are not already part of the CIKS Network – this was mainly through meetings and consultations with farmers.

During the meetings and consultations information about farmers what already part of the CIKS Network were also cross checked and confirmed.

A. Organisation of information

There are certain farmers who are already shareholders of some of the CIKS promoted producer companies who are defined as – “Member farmers”. In addition we have also given information about other farmers who are a selection of farmers in touch with us and part of our network who are described as – “Other farmers”.

With respect to traditional rice varieties, CIKS is active in five districts of Tamilnadu – Dindigul, Kanchipuram, Nagapattinam, Ramanathapuram, and Tiruvannamalai. The production details in various clusters in each of these districts is summarised in the following section.

B. Information collected and summarised

From each of these districts the following information has been collected and summarised.

1. The major traditional varieties cultivated.
2. For each of these varieties, the number of farmers involved in cultivation, the acreage and the estimated production in tonnes.
3. The above details were obtained separately from farmers who are already part of the CIKS Network (described as member farmers) as well as other farmers.

C. Overview of the districts

The following tables (Table – 4 to 8) provide details about the above factors for each of the districts. The key figures are summarised below.

1. **Ramanathapuram district** : This is the major source of traditional varieties in our network accounting for 4425 tonnes of grain. Nearly 3000 farmers are involved in cultivation with above 4200 acres under cultivation. Kuzhiyadichan and Varappu Kudainchan are the leading varieties.
2. **Nagapattinam district** : This is also a major source of traditional varieties in our network accounting for about 1000 tonnes of grain. Over 1400 farmers are involved

in cultivation with over 1300 acres under cultivation. Kuzhiyadichan and Sooran kuruvai are the leading varieties.

3. **Tiruvannamalai district** : This is a smaller source of traditional varieties in our network accounting for about 400 tonnes of grain. Over 200 farmers are involved in cultivation with above 400 acres under cultivation. Seeraga samba and Mappillai samba are the leading varieties.
4. **Kanchipuram district** : This is only a small source of traditional varieties in our network accounting for about 220 tonnes of grain. About 125 farmers are involved in cultivation with above 190 acres under cultivation. Kitchili samba is the leading variety.
5. **Dindigul district** : This is only a small source of traditional varieties in our network accounting for about 22 tonnes of grain. About 22 farmers are involved in cultivation with above 22 acres under cultivation. Kuzhiyadichan is the leading variety.

D. Summary of the overall data

1. Overall it is seen that over 4700 farmers are involved in cultivating these varieties
2. The total acreage under these varieties is over 5000 acres
3. The total production is about 6050 tonnes

E. Potential and possibilities

- The above estimate only pertains to varieties that are cultivated during one single crop season which is the season when the most of the traditional varieties are cultivated. However, traditional varieties also get cultivated during the other crop seasons particularly those that are varieties of shorter duration. Even if these constitutes only about 50% of the yield during the larger crop season we can estimate that the total annual production from this network may be of the order of 9,000 tonnes.
- It is possible to expand the total production of these varieties in many ways and some of these possibilities are listed below –
 - a. Supply of good quality traditional seeds – with proper characteristics of the variety, good germination rate and vigour.
 - b. Inputs for the improvement of soil fertility such as – compost, vermicompost, neem seed cake etc.
 - c. Training support and continuous hand holding for sustainable agriculture practices.
 - d. Ensuring that better quality land (with greater soil fertility) is allocated for cultivation of these varieties.

- e. Timely provision of inputs and services
- It is also possible to increase the land under cultivation of these varieties by various ways such as –
 - a. Assuring of a good price in the market
 - b. Enlarging the network of farmers from whom produce is procured

Table – 4 : Summary of information from Ramanathapuram district

Name of the Variety	Member Farmers			Other Farmers in the district			
	No. of Farmers	Acreage	Production (In Tons)	No. of Farmers	Acreage	Production (In Tons)	Total Production (In Tons)
Kuzhiadichan	120	250	275	1000	1500	1650	1925
Varappu Kudainchan	100	200	225	290	400	500	725
Sandikar				315	500	375	375
Kalloondaikar				145	225	250	250
Chithiraikar				252	275	300	300
Vellai Chithiraikar				260	300	275	275
Sivappu Chithiraikar				246	250	275	275
Mattai 110				254	300	300	300
Total	220	450	500	2762	3750	3925	4425

Table – 5 : Summary of information from Nagapattinam district

Name of the Variety	Member Farmers			Other Farmers in the district			
	No. of Farmers	Acreage	Production (In Tons)	No. of Farmers	Acreage	Production (In Tons)	Total Production (In Tons)
Soorankuravai	230	90	80	390	360	270	350
Kuzhiyadichan	165	70	60	375	330	240	300
Mappillai Samba	47	40	40	23	80	50	90
Kudaivazhai	37	42	37	98	203	143	180
Karuppu Kowni	17	24	25	10	28	10	35
Kitchili Samba	15	23	23	0	0	0	23
Seeraga Samba	6	19	20	0	0	0	20
Total	517	308	285	896	1001	713	998

Table – 6 : Summary of information from Tiruvannamalai district

Name of the Variety	Member Farmers			Other Farmers in the district			
	No. of Farmers	Acreage	Production (In Tons)	No. of Farmers	Acreage	Production (In Tons)	Total Production (In Tons)
Seeraga Samba	30	50	50	100	250	250	300
Mappillai Samba	14	15	15	10	10	10	25
Kullakkar	5	7.5	7.5	10	10	10	17.5
Mathimuni	25	15	15	25	25	30	45
Total	74	87.5	87.5	145	295	300	387.5

Table – 7 : Summary of information from Kancheepuram district

Name of the Variety	Member Farmers			Other Farmers in the district			
	No. of Farmers	Acreage	Production (In Tons)	No. of Farmers	Acreage	Production (In Tons)	Total Production (In Tons)
Kitchali Samba	11	15	15	50	100	125	140
Thooyamallee	3	5	4	25	37.5	37.5	41.5
Kuthiraival Samba				2	2	3	3
Seeraga Samba	2	3	3	6	6	10	13
Pisini				10	10	7.5	7.5
Kappakar				10	10	12.5	12.5
Total	16	23	22	103	165.5	195.5	217.5

Table – 8 : Summary of information from Dindigul district

Name of the Variety	Member Farmers			Other Farmers in the district			
	No. of Farmers	Acreage	Production (In Tons)	No. of Farmers	Acreage	Production (In Tons)	Total Production (In Tons)
Anaikomban	1	1	1	2	2	2	3
Kattu Yanam	1	1	1	2	2	2	3
Kuzhiadichan	6	6	6	10	10	10	16
Total	8	8	8	14	14	14	22

VII. STUDY OF PROPERTIES OF TRADITIONAL RICE VARIETIES

In 2013, CIKS commissioned a study of Physicochemical Properties, Nutrient Analysis, Standardization, Acceptability and Glycemic Index of organically grown Indigenous Rice Varieties. The fact that such a study was taken up systematically has proved to be quite important since currently there is an atmosphere of a large number of claims that are being made with very little or poor substantiation. The consumer today is increasingly knowledgeable and wanting to know whether there is any substantiation for various claims. We present below the summary of the study as well as the key findings and conclusion.

A. Background

During the period 2013-14 Centre for Indian Knowledge Systems undertook a project – “Nutritional and Therapeutic Properties of Indigenous Paddy Varieties (IPVs): Documentation of knowledge from the field and indigenous knowledge sources and preliminary study and assessment by Modern Nutritional and Biochemical Methods”. This study was supported by the HIVOS and Oxfam – Novib joint knowledge programme on Agro Biodiversity. As part of this project CIKS short listed eight indigenous paddy varieties and took up a preliminary analysis of their biochemical properties and tested their Glycemic Index (GI). A preliminary sensory evaluation was also carried out. This work was taken up in collaboration with the Nutrition Department of the Ethiraj College for Women, Chennai under the supervision of Ms. Menaka Stanley of the Department.

B. Objective of the Study

The study was to analyse the physico chemical properties, nutrient analysis, standardize and evaluate the acceptability and to test the glycemic index of the organically grown traditional / indigenous rice varieties namely Karungkuruvai, Mapillai samba, Kudaivazhai, Kalanamak, Perungkar, Kovuni, Kullakar and Neelam samba. The modern variety White ponni was used as a reference standard for comparison of the values. The tests were carried out using the double blind method using the samples that were coded. The specific objectives of the study were the following :-

1. To check the physicochemical properties of organically grown indigenous rice varieties. These included the moisture and ash content. The time taken for cooking was also observed.
2. To analyze the nutritive value of organically grown indigenous rice varieties. The parameters tested were Energy, Carbohydrate, Protein, Fat, Crude Fibre, Calcium, Iron, Potassium, Sodium and Phosphorus.
3. To formulate and standardize a recipe based on organically grown indigenous rice varieties.
4. To test the acceptability of organically grown indigenous rice varieties.
5. To check and compare the glycemic index of organically grown indigenous rice varieties with white ponni, white bread and glucose as control.

C. SUMMARY OF KEY FINDINGS

Table – 9 provides a summary of the nutrient content of the nine varieties that were studied and a modern variety white ponni serves as a reference for comparison.

Table – 9 : Nutrient content of organically grown indigenous rice varieties

S. No	Nutrients	Units	Method	White Ponni	Karung kuruvai	Mappilai Samba	Kudai-vazhai	Kalanamak	Perungkar	Kudai vazhai	Kovuni	Kullakar	Neelam Samba
1.	Energy	Kcal/100g	FAO method	351.32	358.56	358.52	358.94	356.68	357.54	357.36	354.48	355.92	355.14
2.	Carbohydrate	g/100g	AOAC 18 th Edition 2005-986.25	77.85	77.85	80.28	79.7	78.53	76.88	77.67	78.33	78.04	78.54
3.	Protein	g/100g	AOAC 18 th Edition 2005-986.25	9.06	9.45	7.18	7.92	8.93	9.58	8.97	8.49	9.32	8.58
4.	Fat	g/100g	AOAC 18 th Edition 2005-984.02	0.92	1.04	1.0	0.94	0.76	1.3	1.2	0.8	0.72	0.74
5.	Crude fibre	g/100g	AOAC 18 th Edition 2005-962.09	1.48	1.49	7.07	1.16	1.42	1.4	1.19	1.48	1.37	1.08
6.	Calcium	mg/100g	IS 5949-1990	80.63	77.09	50.82	54	63.55	57.14	52.7	78.8	52.54	80.48
7.	Iron	mg/100g	AOAC 18 th Edition 2005-999.11	4.25	19.63	5.47	6.13	3.84	7.64	4.23	4.51	5.62	5.75
8.	Potassium	mg/100g	AOAC 18 th Edition 2005-969.23	94.23	83.85	90.39	80.17	98.82	93.98	81.6	88.78	88.77	93.23
9.	Sodium	mg/100g	AOAC 18 th Edition 2005-969.23	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)	BDL (DL:10)
10.	Phosphorus	mg/100g	AOAC 18 th Edition 2005-995.11	264.04	350.59	310.92	274.73	318.10	264.77	256.3	253.49	303.03	235.05
11.	Moisture	g/100g	IS 1155 - 1968	10.9	10.16	10.58	10.2	10.26	11.08	10.96	10.98	10.5	10.96
12.	Ash	g/100g	IS 1155 - 1968	1.27	1.5	0.96	1.24	1.52	1.16	1.2	1.4	1.42	1.18

The key findings are also summarised below.

1. **Physicochemical properties of organically grown indigenous rice varieties** - Most of rice varieties analysed needs longer cooking time (>40 minutes) after soaking for 30 minutes when compared to normal cooking time of rice (app.20 minutes) , this may also be due to hand pounding processing.
2. **Nutrients analysis** - Selected rice varieties are nutritious in terms of being good sources of carbohydrate(Mailai samba), protein (Perungkar, Karungkuruvai, Kullakar), fiber (Mappilai samba), iron (Karungkuruvai)and calcium (Neelam samba).
3. **Acceptability** - The selected rice varieties are much acceptable in terms of colour and flavour when compared to white ponni. (Reference variety).
4. **Glycemic index** - The mean glycemic index of Karungkuruvai, Kullakar, Kovuni, Mapillai samba, Neelam samba and Kudhgaivazhai are less than 80 when consumed in the form of upma with sambar.
5. **Some of these findings are consistent with the traditional claims about these varieties with the farming community.** For example,
 - Neelam samba which is recommended for lactating mothers has the highest level of calcium among the indigenous varieties.
 - Mappillai samba which is recommended for strength and stamina has the high level of carbohydrate and crude fiber.
 - Karunguruvai which is highly valued by the Siddha physicians has, high levels of – energy, protein, iron and phosphorous.

D. CONCLUSION

The selected organically grown indigenous varieties hold a lot of promise in terms of their nutritional value as well as taste and acceptability. These are quite promising in terms of added value that they can provide to the consumer and it can also translate as a higher market price for the farmer if there can be a programme for promoting these varieties highlighting these values.

VIII. SEMPULAM SUSTAINABLE SOLUTIONS EFFORTS

One of the key developments with respect to the marketing efforts was the formation of the company – “Sempulam Sustainable Solutions” with the encouragement of CIKS. While the company was formed in the year 2014 it is only from the year 2017 onwards that it has taken up efforts relating to marketing rather actively.

The following is a summary of efforts that have been made by Sempulam with respect to traditional rice marketing.

1. CIKS has been giving gift hampers to adopters of rice varieties under its Namma Nellu program. It was noticed that a number of customers were interested in purchasing these gift hampers for a price to give it for special occasions. Sempulam undertook the task of giving a professional look to these gift hampers. Sempulam worked with retail marketing consultants and designers and developed a corporate gift with six traditional varieties and introduced it in the market during the

Deepavali season of the year 2018. It was very well received by a number of consumers. It was gifted to more than one thousand five hundred people by various corporates and individuals during Deepavali. It also helped in reaching out information and samples about traditional rice varieties to an audience that is outside the circle of – “Normal” audiences who have been reached by farmers group till now. The interest in the gift boxes has continued even after the Deepavali festival period and there have been bulk orders from some Corporates who are gifting these boxes as part of – “New Year Gift” as well as “Pongal Gift”.

2. The idea of developing this gift hampers was to encourage people to take to these varieties which they may not otherwise encounter in the regular markets. Once they get a taste of these varieties they would be curious to find out where they can get it from for their regular consumption. People who have received these gift boxes are now approaching Sempulam for a regular supply of these rice varieties.
3. Similarly Sempulam also developed a Pongal gift hampers consisting of newly harvested traditional Kichali samba rice variety and jaggery that was prepared from sugarcane which was grown and processed without chemicals. This was sold to customers and also displayed in exhibitions during the month of January. This also attracted a large number of customers.
4. Sempulam participated in two major exhibitions during the month of January It hired a stall in the Chennai Book fair which is an annual event in Chennai. It was a 17 day event held from 4th – 20th January 2019. The following were some of the observations and experiences of the team.
 - a) During this event Sempulam met with more than 5000 consumers directly
 - b) At least 500 consumers had heard about one variety of rice like the Kitchili samba, Seeraga samba, Mapillai samba, Thooyamalli, Karuppu kavuni, etc.
 - c) A large number of diabetic patients were interested in Mapillai samba-say at least a 300 persons.
 - d) Pricing at Rs. 120/- a kilo was not a deterrent.
 - e) Consumers were interested in a number of value added products like Kanji mix and Idiyappam mix
 - f) Ready to eat food was also high on the consumer preference
 - g) Any rice variety adding health benefits to children were on the list of preferences
 - h) The consumers were introduced to a range of 25 varieties
 - i) There were several persons who picked up a whole set of rice varieties in the range of 10 – 25 varieties.
 - j) Some of them were medical practitioners (Allopaths, Cancer specialists, Ayurveda and Siddha practitioners) who felt that these rice varieties may be an important value addition to their treatment. They were open to testing and trying out. What was most attractive to these practitioners was the fact that what they were trying out was not a drug or medicine but rather an item of food which is consumed regularly.

பாரம்பரியம் காக்கும் 'நம்ம நெல்லு'!

அரிசியில் இரண்டு லட்சத்துக்கும் மேற்பட்ட வெரைட்டிகள் இருக்கின்றன என்பது நம்முள் எத்தனை பேருக்குத் தெரியும்? ஒருகாலத்தில் நம் முன்னோர்கள் எல்லா ரக அரிசிகளையும் பயன்படுத்தி வந்திருக்கிறார்கள். காலப்போக்கில் அவற்றையெல்லாம் மறந்து, தற்போது நாம் வெள்ளை அரிசியை (பச்சரிசி அல்லது புழுங்கல் அரிசி) மட்டுமே உபயோகித்து வருகிறோம். இதனால் இயற்கையாக நமக்குக் கிடைக்க வேண்டிய பல சத்துக்களை இழந்துவிட்டோம்.

கிச்சிலி சம்பா, சீரக சம்பா, மாப்பிள்ளை சம்பா, துயமல்லி, ரசகடம், பிசினி, குள்ளக்கார், கருங்குறுவை, சம்பா, பூவன் சம்பா, கௌளி, இறவைபாண்டி, ஒட்டடை, கலியன் சம்பா, வாடன் சம்பா, தங்க சம்பா, பூம்பாளை, கச்சுக்கவாழை, வசரமுண்டான், நீலஞ்சம்பா, குழியடிச் சான், சன்ன சம்பா, கொட்டார சம்பா - இவையெல்லாம் நம் பாரம்பரிய அரிசி வகைகளில் ஒரு சில. நாட்டின் பல்வேறு மாநிலங்களில் நிலவும் தட்பவெப்ப நிலைக்கேற்ப பல்வேறு ரக அரிசிகள் விளைவிக்கப்படுகின்றன. எந்தநிலத்துக்கு, எந்தத் தட்பவெப்பத்துக்கு எந்த ரக அரிசியை விளைவித்தால், நல்ல விளைச்சல் கிடைக்கும். என்பதை நம் விவசாயிகள்

உணர்ந்திருந்தனர். நாம் மறந்து போன அரிசி ரகங்களில் ஏகப்பட்ட சத்துகள் கொட்டிக் கிடக்கின்றன. உதாரணமாக, குள்ளக்கார் அரிசியில் இரும்புச் சத்து, துத்தநாகச் சத்துக்கள் நிறைந்துள்ளன. லோ கிளைசீமிக் இன்டக்ஸ் நிறைந்துள்ள இந்த அரிசியில் ஆன்டிஆக்ஸிடென்ட் அதிகம். நீலஞ்சம்பா அரிசியில் கால்சியம் அதிகம். நோய் எதிர்ப்புச் சக்தியை அதிகரிக்க இந்த அரிசி உதவுகிறது. கருங்குறுவை அரிசியில் ஆன்டிஆக்ஸிடென்ட் அதிகம். தயாமின், நார்ச்சத்தும் நிறைய. இதுபோல் சொல்லிக் கொண்டு போகலாம்.

நாம் மறந்து போன பாரம்பரிய அரிசி வகைகளை மீண்டும் பயன்பாட்டுக்குக் கொண்டு வரும் வகையில் சென்னையைச் சேர்ந்த செம்புலம் சல்வையின் சொல்லுஷன்ஸ் நிறுவனம் ஒரு சில அரிசி ரகங்களைப் பொது மக்களுக்கு அறிமுகப்படுத்தியிருக்கிறது. நேரடியாக விவசாயிகளிடமிருந்தே இந்த அரிசி ரகங்களை வாங்குவதால், குறைந்த விலையில் மிகுந்த தரத்துடன் விற்பனை செய்கிறது. இதுகுறித்து அந்த நிறுவனத்தின் மேலாண்மை இயக்குநர் டாக்டர் விஜயலட்சுமி விரிவாக விளக்கினார்.

“தமிழகத்தில் பயிர் செய்வதற்கு ஏற்ற 100-க்கும் மேற்பட்ட அரிசி ரகங்களைச் சேகரித்து வைத்திருக்கிறது இந்தியப் பாரம்பரிய அறிவியல் மையம். இந்த அரிசி ரகங்களை ஒவ்வொரு ஆண்டும் விளைவித்தும் வருகிறது. அப்படி விளைவிக்கும்போது ஒரே ஒரு பிரதேசத்தில் மட்டும் பயிர் செய்யாமல், பல இடங்களிலும் பயிர் செய்கிறது. இதனால், மாறிவரும் தட்பவெப்பம் போன்ற ஏதேனும் ஒரு காரணத்தால் ஒரு இடத்தில் சரியான விளைச்சல் கிடைக்காமல் போனாலும், மற்றொரு இடத்தில் நல்ல விளைச்சல் கிடைக்க வாய்ப்பிருக்கிறது. ஏதேனும் ஒரு புது ரக நெல் கிடைத்தால், அதைத் தொடர்ந்து சில பருவங்களுக்குப் பயிரிட்டு நல்ல பலன் கிடைக்கிறதா



▷ டாக்டர் விஜயலட்சுமி

முழுப் பயறுகள்
வாயுத் தொல்லையை ஏற்படுத்தும். ஊரவைத்த நீரை மாற்றி வேறு நீர் ஊற்றி, மேல் தோல் வெடிக்கும் வரை நன்கு வேகவைத்தால் வாயுப் பிரச்சனை குறையும். வேகவைக்கும்போதே ஒரு சிறு துண்டு இஞ்சியைச் சேர்த்து வேகவைக்க, வாயுத் தொல்லையே இருக்காது.
- பி. கவிதா,
கோவிலாம்பூண்டி.

சந்திப்பு: மீனா

என்ன செய்யலாம்? எப்படிச் சமைக்கலாம்?

குள்ளக்கார் அரிசி: சிவப்பு அரிசி வகையைச் சேர்ந்த இந்த அரிசி, புழுங்கலரிசியைப் போன்றது. ஒரு தம்ளர் அரிசிக்கு இரண்டரை தம்ளர் நீர் விட்டு பிரஷர் குக்கரில் வைத்து மூன்று விசில் வரும் வரை வேகவிடலாம். இடலி, குழிப்பணியாரம் செய்ய உகந்தது.

கிச்சிலி சம்பா: பச்சரிசி, புழுங்கலரிசியைப் போன்றது. ஒரு தம்ளர் அரிசிக்கு இரண்டு தம்ளர் நீர் விட்டு பிரஷர் குக்கரில் வைத்து நாளுக்கு விசில் வரும்வரை வேகவிடலாம். சாம்பார் சாதம், தயிர் சாதம் செய்ய ஏற்றது.

குழியடிச்சான்: புழுங்கலரிசிப் பிரியர்களுக்கு ஏற்றது. ஒரு தம்ளர் அரிசிக்கு இரண்டரை தம்ளர் தண்ணீர் விட்டு, பிரஷர் குக்கரில் வைத்து நாளுக்கு விசில் வரும்வரை வேகவிடவும். மணம் ஊரைத் தூக்கும். சர்க்கரைப் பொங்கல், பூண்டு கஞ்சி செய்ய ஏற்றது.

சீரக சம்பா: பிரியாணி செய்ய உகந்தது. பச்சரிசியைப் போல இருக்கும். ஒரு தம்ளர் அரிசிக்கு இரண்டரை தம்ளர் தண்ணீர் விட்டு, மூன்று நாளுக்கு விசில் வரும்வரை வேகவிடவும்.

நீலஞ்சம்பா: கஞ்சி செய்ய ஏற்றது. புழுங்கலரிசியைப் போன்றது. ஒரு தம்ளர் அரிசிக்கு இரண்டு தம்ளர் தண்ணீர் விட்டு நாளுக்கு விசில் வரை வேகவிடவும்.

மாப்பிள்ளை சம்பா: புழுங்கலரிசியைப் போன்றது. ஒரு தம்ளர் அரிசிக்கு மூன்று தம்ளர் தண்ணீர் விட்டு, நாளுக்கு விசில் வரும்வரை வேகவிடவும். அவல் ஆப்பம் செய்யலாம். சத்தும், தெம்பும் தரக்கூடியது.

என்று பரிசோதித்த பிறகே, விவசாயிகளுக்கு வழங்குகிறது. இந்த அரிசி ரகங்களை மக்கள் மத்தியில் அறிமுகப்படுத்த ஏகப்பட்ட வழிகள் உள்ளன.



அதில் முக்கியமானது, காப்பிரேட் கிப்பிடி. அதாவது தீபாவளி, பொங்கல் போன்ற பண்டிகை தினங்களில் தங்கள் நிறுவனத்தில் பணிபுரியும் தொழிலாளர்களுக்கு இந்த அரிசி ரகங்கள் அடங்கிய பாக் கெட்டுகளைப் பரிசாகக் கொடுக்க நிறுவனங்கள் முன்வரலாம். திருமணம், பிறந்த நாள் போன்ற விசேஷங்களில் ரிடன் கிப்ட்டாக சிறிய சிறிய பாக் கெட்டுகளில் அடைத்து இந்த அரிசி வகைகளைக் கொடுக்கலாம். உறவினர்களை, நண்பர்களைச் சந்திக்கப் போகும்போது இவற்றை வாங்கிக்கொண்டு போய்க் கொடுக்கலாம். ஒன்று, மூன்று, நாளுக்கு, ஐந்து மற்றும் ஆறு வகையான வெரைட்டி அரிசி பாக் கெட்டுகள் அடங்கிய 'நம்ம நெல்லு' கிப்ட்டாக் கெட்டுகள் எங்களிடம் கிடைக்கின்றன. இந்த அரிசி ரகங்கள் பெரும்பாலும் ஆர்கானிக் முறையில் விளைவிக்கப்படுவதால், வாக்குவம் பாக் கெட்டுகளில் அடைக்கப்பட்டு விற்கப்படுகின்றன. இதனால் ஓராண்டானாலும், பூச்சிகள் தாக்கமல் இருக்கும். உபயோகிக்கும்போது புத்தம் புதிதாக இருக்கும். இந்த அரிசி வகைகளை எப்படிச் சமைப்பது குறித்த தகவல்கள் அடங்கிய குறிப்புக்களும் இந்தப் பாக் கெட்டுகளில் உள்ளன என்பது கூடுதல் சிறப்பு" என்கிற டாக்டர் விஜயலட்சுமி, செம்புலம் சல்வையின் சொல்லுஷன்ஸ் நிறுவனத்தின் மற்ற பணிகளையும் விளக்கினார்.

“விவசாயிகளுக்குத் தேவையான அனைத்து உதவிகளையும் எங்கள் நிறுவனம் செய்து வருகிறது. சிறு விவசாயிகள் தங்கள் தோட்டத்தின் ஒரு பகுதியில் இயற்கை விவசாயம் செய்ய விரும்பினால் அதற்கான ஆலோசனைகளைத் தருகிறோம். குறைந்த அளவே தண்ணீர் கிடைக்கும் வயலுக்கு ஏற்ற நீர்ப்பாசனம் எது என்று நேரடியாகச் சென்று ஆய்வு செய்து அமைத்துத் தருகிறோம். விவசாயிகளுக்குத் தேவையான பயிற்சிகளையும் அளிக்கிறோம்” என்கிறார் விஜயலட்சுமி.

நம்ம நெல்லு அரிசி கிப்ட்டாக் கெட்டு வேண்டுவோர் sempulams@gmail.com என்ற ஈ-மேயில் மூலமாகவோ 9790126979 என்ற தொலைபேசி எண்ணிலோ தொடர்பு கொள்ளலாம்.

விடியற்காலை

நான்கு மணி முதல் ஐந்து மணி வரை செய்யும் ஸ்நானம் ரிஷி ஸ்நானம். இது உத்தமம். ஐந்து மணிக்கு மேல் ஏழு மணிக்குள் செய்வது மனித ஸ்நானம். இது மத்திமம். அதற்குப் பிறகு செய்வது ராட்சஸ ஸ்நானம். அது அதமம்.

சூரியன் உதித்த பிறகு நீராடுவது சிறப்பன்று.

- ஞானமுனி, திருச்சி.

- k) Several of the consumers expressed that they need to have detailed information about the use of these varieties. These included information about cooking – ratio of grain to water, whether pre-soaking is required, time taken for cooking in the pressure cooker etc. They also need suggestions about the dishes that can be prepared using these varieties such as – Idli, dosa, upma, pongal, etc. If there were differences between the use of the same variety as raw rice or parboiled rice they wanted the information to be mentioned clearly.
5. The Sempulam team also participated in the Mylapore festival for four days and interacted with 2000 consumers. Consumers expressed preferences that were very similar to what was encountered during the Book fair.
 6. Sri Krishna Sweets is a very popular and widely accepted brand with a chain of stores and outlets in various parts of Chennai city and also in selected locations in Tamil Nadu. They have expressed keen interest in traditional varieties and the following are some of the steps that have been initiated –
 - a. They have ordered packages of traditional rice varieties which are offered regularly by them as – “*Anna daanam*” (gifting of foods) to identified temples in Tamil Nadu. Special packaging was carried out as per their requests for Siva temples and Devi temples. The first batches have been delivered and it is possible that they would want regular supplies.
 - b. The restaurants attached to Sri Krishna Sweets regularly offer special meals which are served in the traditional style on banana leaves (*Thalaivazhai Sappadu*). They are interested in offering one traditional variety with their special meal on each day of the week.
 - c. They are interested in creating a special gift pack with seven chosen traditional rice varieties and offering the product on sale.
 - d. During the Pongal season for a period of five days Sempulam was invited to set up a stall where the Sempulam products including the Pongal rice kit and traditional rice variety packages were displayed and sold.

While various of these are still in the discussion stage it is also observed that certain transactions have already started and the initial response has been very positive.

7. Sempulam has also been involved in conducting farm school programmes for students of certain interested schools in Chennai which has created an awareness and interest among the students, teachers and parents associated with the schools. For example students of a particular Montessori school who were involved in the farm school programme and were given the responsibility of cultivating a piece of land from – “Seed to Harvest” were given a share of the produce from the land! This produce is being – “Marketed” by the students to the community of school teachers and parents and this has created a lot of awareness and generated enthusiasm among the students and families of students and teachers.
8. Interaction with Siddha medical practitioners. Vaidya Dharmalingam is a well known practitioner of the Siddha system of medicine who is well known and has a large clientele. He not only runs a clinic and hospital but also has his own facility for the manufacture of drugs. In addition he runs an Ayurveda and a Siddha medical college. He has requested for a regular supply of traditional rice varieties which can be recommended for the use of his patients as well as sold through the outlets in his clinics.

9. During the Tamil month of *Margazhi* every year (mid December to mid January period) the day of the star *Ayilyam* is celebrated as National Siddha day by Ministry of Ayush. This year the National Institute of Siddha at Chennai celebrated this day and also conducted an exhibition on 26th December 2018 at their premises. On that occasion a display of traditional rice varieties was put up along with illustrations and posters about the nutritional and therapeutic properties of these varieties. The fact that these varieties can be obtained as a regular supply as created an interest among the consumer.
10. Practitioners in other parts of India have also shown interest. Vaidya Narendra Pendse is a well known Ayurvedic practitioner who practices in Pune and Mumbai. He is also associated with the IAIM (Institute of Ayurveda and Integrative Medicine) hospital at Bengaluru. He was interested in the traditional rice varieties and ordered a set of boxes to offer as gifts during the Deepavali season at Pune. He has now conveyed that he would like to obtain a regular supply of rice varieties since various persons who received the gift samples were interested in specific varieties. He also conveyed that there is a growing interest among patients (particularly diabetics) to consume rice varieties that may be considered as healthy and suitable for their condition. However, he mentioned that till now he had no basis to recommend specific varieties for them. However, currently based on his experience with traditional rice varieties marketed by Sempulam and backed by the nutritional studies carried out on these varieties he is willing to recommend the use of these varieties to his patients.
11. Similarly some other institutions including Krishnamachariya Yoga Mandiram (KYM), Prakruthi Ayurvedic Clinic have shown interest in purchasing these rices and recommending it to their patients and students.
12. Discussions have also been initiated with some nutritionists, dieticians and public health professionals who are interested in a wider dissemination of information as well as rice for consumption.
13. A popular Tamil magazine – “*Mangaiyar Malar*” which has a circulation running into several lakhs featured in Article about the Namma Nellu programme and the marketing efforts of Sempulam in the recent Pongal issue of the magazine. This has also resulted in several enquiries and a spurt of interest in these varieties.
14. Sempulam is now in the process of enrolling 500 regular customers and target a sale of 5 tonnes per month by retail home delivery.
15. The rice gift box as well as the individual rice bricks of Sempulam have now been listed by Amazon and can be ordered through the Amazon India marketing portal. This has given a visibility to these varieties which has a much wider geographic spread.

Annexure – I : References

1. Document on Biology of Rice (*Oryza sativa* L.) in India by Gurinder Jit Randhawa, Desh Deepak Verma, Shashi Bhalla, Manoranjan Hota, V. Celia Chalam, Vandana Tyagi (National Bureau Plant Genetic Resources, New Delhi). 2006.
2. Ethnobiology in India: A Status Report. All India Co-ordinated Programme on Ethnobiology. (Ministry of Environment and Forests (MoEF). Government of India, New Delhi). 1994.
3. Nutritive value of Indian Foods. Gopalan, C., B.V. Ramasastri and S.C. Balasubramanian. Revised and updated by B.S. Narasinga Rao, Y.G. Deosthale and K.C. Pant. (National Institute of Nutrition, Hyderabad). Revised Edition 1989, Reprinted 2016.
4. Rices of India. Richaria, R.H. and S. Govindaswami. (Academy of Development Sciences, Maharashtra). 1990.
5. A Treatise on the Scented Rices of India. Singh, R.K. and U.S. Singh (Eds.). (Kalyani Publishers, Ludhiana). 2003.
6. Nutritional and Medicinal Values of Some Indigenous Rice Varieties. Rahman, S., M.P. Sharma and Suman Sahai. *Indian Journal of Traditional knowledge*, Vol. 5 (4), pp. 454-458. 2006.
7. Rice - A Nutraceutical. Ahuja, U. S.C. Ahuja, Rashmi Thakrar and R.K.Singh. *Asian Agri-History*. Vol. 12. No.2. pp. 93-108. 2008.
8. Rice Breeding and genetics. Ramaiah, K. and M. V. B. N. Rao. ICAR Science Monograph 19. (Indian Council of Agricultural Research, New Delhi, India). 1953.
9. Red Rices - Past, present and Future. Ahuja, U., S.C. Ahuja, Narendar Chaudhary and Rashmi Thakrar. *Asian Agri-History*, Vol. 11, No. 4, pp. 291-304. 2007.
10. Rediscovering Scented Rice Cultivar *Kala namak*. Singh, U.S., Neelam Singh, H.N.Singh, O.P. Singh and R.K. Singh. *Asian Agri-History*, Vol. 9, No.3, pp. 211-219. 2005.
11. Project Report on Physicochemical properties, Nutrient Analysis, Standardisation, Acceptability and Glycemic Index of Organically grown Indigenous Rice Varieties : Report of Study undertaken in collaboration with Centre for Indian Knowledge Systems, Chennai (Department of Nutrition, Ethiraj College for Women), August 2013 (Unpublished document).
12. Nature Farming by JMRS, Bhandara COMPAS Sri Lanka / ECO (2007).
13. Nutritional Properties of Indigenous Rice Cultivars of Sri Lanka by J.M.R.S Bhandara and N. Gunasekara. N.,. University of Peradeniya, Sri Lanka (2008)
14. Traditional Rice Farming in Sri Lanka by P.B. Dharmasena (2010).
15. Antioxidant activity and nutritional quality of traditional red-grained rice varieties containing proanthocyanidins by A. Gunaratne, K. Wu, D. Li. A. Bentota, H. Corke and Y.Z. Cai, *Food chemistry*, 138 (2), (2013), 1153-1161.
16. Production and Marketing of Traditional Rice Varieties in Selected Districts in Sri Lanka: Present Status and Future Prospects by Roshini Rambukwella, E.A.C. Priyankara, Research Report No: 195 (May 2016), Hector Kobbekaduwa Agrarian Research and Training Institute, 114, Wijerama Mawatha, Colombo 7, Sri Lanka.

Annexure – II : Websites and Online sources

1. Namma Nellu
<https://www.nammanellu.com/>
2. Save Our Rice Campaign
<http://indianricecampaign.org/>
3. Uyir Organic Farmers Market
<https://uyironline.in/product-category/rice/>
4. Dhanyam
<http://dhanyam.in/>
5. restore
<http://www.restore.org.in/Organic-Food-Products/65/24>
6. January 2019 - Tamil Nadu's biryani binge keeps cash registers ringing

(<https://www.thehindu.com/life-and-style/food/tamil-nadus-biryani-binge-keeps-cash-registers-ringing/article25987062.ece>)
7. October 2018 - Traditional rice varieties of India by Devi Lakshmi Kutty
(<https://www.esamskriti.com/e/Culture/Indian-Culture/Traditional-Rice-Varieties-of-India-1.aspx>)
8. June 2018 - Who's afraid of red rice? by Sreedevi Lakshmi Kutty (<https://www.thehindu.com/todays-paper/tp-features/tp-metroplus/who-is-afraid-of-red-rice/article24206404.ece>)
9. February 2018 - What could drive evolution of India's food sector? (https://www.just-food.com/analysis/what-could-drive-evolution-of-indias-food-sector_id138664.aspx)
10. September 2017 - Why India's farmers want to conserve indigenous heirloom rice
(<https://www.theguardian.com/environment/2017/sep/24/why-indias-farmers-want-to-conserve-indigenous-heirloom-rice>)
11. August 2015 - Saving rice (<https://www.downtoearth.org.in/coverage/saving-rice-2405>)
12. Knowhow - Why You Need Both the 4A's and the 4P's for Effective Marketing
(<https://www.business2community.com/marketing/need-4as-4ps-effective-marketing-01151844>)
13. Reports - Winds of change, The wellness consumer - A report by Pricewaterhouse Coopers for FICCI
(<https://www.pwc.in/assets/pdfs/industries/retail-and-consumer/rc-wellness-report-20120829.pdf>)



**Mr. Olivilakku, Miller
Tiruvannamalai**

**Mr. Balaji, Miller,
Tiruvannamalai**





**Mr. Shanmugam, Trader
Tiruvannamalai**

**Producer Company - Kanchi
Sustainable Agriculture
Producer Company Limited**



Annexure – III : Database of Respondents

CATEGORY	NAME	LOCATION	PHONE NUMBER
FARMER	Mr. R. Mayilvaaganan	Veeramangalam Thiruvarur district	99521-00021
	Mr. P. Nagarajan	Periyakuthagai Vedaranyam Nagapattinam district	99420-68926
FARMER AGGREGATOR	Dr. G. Sither (farmer, aggregator, and naturopath)	Thanjavur town Thanjavur district	97876-01552
	Mr. Sivaji	Ira Karuppampulam Vedaranyam	63794-03798 94434-14808
	Gunavathi Organic Farm Mr. Nagarajan	Irumbuthalai Ammappettai Thanjavur	99443-44608 99949-01135 82207-15922
MILLER	Venkateswara Rice Mill Proprietor: Mr. G Venkatraman (known as Olivilakku)	Kanchi Village Chengam Taluk Tiruvannamalai District	94448-94963
	Balasubramaniam Modern Rice Mill Proprietor: Mr. Balaji	Kadaladi Village Kalasapakkam Taluk Tiruvannamalai District	98848-47684
	M. Mani Navaneethammal Modern Rice Mill Proprietor: Mr. M. Murugan	Kalavai Arcot Vellore	99942-91157
	Logambal Rice Mill Proprietor: Mr. D. Shanmugam	Pudhupalayam	94452-69624

CATEGORY	NAME	LOCATION	PHONE NUMBER
	Sri Venkatachalapathy Modern Rice Mill Proprietor: Mr. Sivaramakrishnan	Trichy (Tiruchirapalli)	98430-83040
TRADER	Mr. S. Shanmugam	Pooppatti Vedaranyam Nagapattinam district	73734-44695
	Mr. Veerappan	Theni town Theni district	96883-42403
RETAILER	Rajam Organic World Mr. Ravikumar Ms. Keerthana	Thiruthuraippoondi	99432-89053 76396-40727
	<u>Uyir Organic Farmers Market</u> Mr. Thirugnanasambandam	Erode town Erode district	98943-66050 86673-51147
EXPERT	Ms. Devi Lakshmi Kutty Founder: BioBasics Member: Save Our Rice Campaign		96299-99081 devi@biobasics.org

Annexure – IV : Listing of Traditional Rice Varieties being conserved by CIKS

General Notes

1. There are no standard English renderings of several Tamil names and alternate spellings are prevalent / possible.
2. In some cases names that closely resemble each of the are the same variety and in other cases they may be different varieties.

Sl. No.	Name of the Variety	Tamil names
1.	Aathur kichali	ஆத்தூர் கிச்சலி
2.	Adukku nel	அடுக்கு நெல்
3.	Ambemohar	அம்பேமோஹர்
4.	Anaikomban	ஆனைகொம்பன்
5.	Anandanoor sanna	அனந்தனூர்சன்னா
6.	Ananthanur	அனந்தனூர்
7.	Arcot kitchili	ஆற்காடு கிச்சிலி
8.	Arikiravi	அரிக்கிரவி
9.	Arupatham kuruvai	அறுபதாம் குறுவை
10.	Arupatham samba	அறுபதாம் சம்பா
11.	Athur kitchili	ஆத்தூர் கிச்சிலி
12.	Basmathi	பாஸ்மதி
13.	Bayakundathan	பயகுண்டதான்
14.	Chinna ponni	சின்னபொன்னி
15.	Cochin samba	கொச்சின் சம்பா
16.	Cuddalore seeraga samba	கடலூர் சீரக சம்பா
17.	Delhi pogalu	டெல்லி போகலு
18.	Eravai pandi	இறவை பாண்டி
19.	GEB24	ஜிஎபி24
20.	Gajajawar	கஜாஜவார்

Sl. No.	Name of the Variety	Tamil names
21.	Garudan samba	கருடன் சம்பா
22.	Ghamgaadale	காங்காடலே
23.	Ghan sal	கன் சால்
24.	Gunaparuva	குணபருவா
25.	Ilupaipoo samba	இலுப்பைப்பூ சம்பா
26.	Iravai Pandi	இறவை பாண்டி
27.	Jawadhu malai nel	ஜவ்வாது மலைநெல்
28.	Jeeraka sala	ஜீரக சாலா
29.	Jil jil vaigunda	ஜில் ஜில் வைகுண்டா
30.	Jiljeera	ஜில் ஜீரா
31.	Kalanamak	காலாநமக்
32.	Kacha koomvazhai	கச்ச கூம்வாழை
33.	Kadaikazhuthan	காடைகழுத்தான்
34.	Kaivara samba	கைவர சம்பா
35.	Kala jeera	காலா ஜீரா
36.	Kalarpalai	களர்பாளை
37.	Kaliyan samba	கலியன் சம்பா
38.	Kallundai	கல்லுண்டை
39.	Kallurundai	கல்லுருண்டை
40.	Kallurundaiyan	கல்லுருண்டையான்
41.	Kamban samba	கம்பன் சம்பா
42.	Kanali	கனலி
43.	Kandasali	கண்டசாலி
44.	Kanthasalae	கந்தசாலி
45.	Kappakaar	கப்பகார்

Sl. No.	Name of the Variety	Tamil names
46.	Karikalava	கரிகலவா
47.	Karun seeraga samba	கருஞ்சீரக சம்பா
48.	Karung kuruvai	கருங்குறுவை
49.	Karunseeraga samba	கருஞ்சீரக சம்பா
50.	Karuppu kowni	கருப்பு கவுனி
51.	Karuppu seeraga samba	கருப்பு சீரக சம்பா
52.	Karuthakaar	கருத்தகார்
53.	Kashmir dhal	காஷ்மீர் டால்
54.	Katcha koomvazhai	கச்ச கூம்வாழை
55.	Katta samba	கட்ட சம்பா
56.	Kattu kuthalam	காட்டு குத்தாலம்
57.	Kattu ponni	காட்டு பொன்னி
58.	Kattu samba	காட்டு சம்பா
59.	Kattu vanibam	காட்டு வாணிபம்
60.	Kattuyanam	காட்டுயாணம்
61.	Kitchili samba	கிச்சலி சம்பா
62.	Kochin samba	கொச்சின் சம்பா
63.	Kollikaar	கொல்லிக்கார்
64.	Kona kuruvai	கோண குறுவை
65.	Koomvazhai	கூம்வாழை
66.	Koona Kuruvai	கூனகுறுவை
67.	Kothamali samba	கொத்தமல்லி சம்பா
68.	Kottara samba	கொட்டார சம்பா
69.	Kottarai samba	கொட்டரை சம்பா
70.	Kowni	கௌனி

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71.	Kowni nel	கௌனி நெல்
72.	Kudaivazhai	குடைவாழை
73.	Kullakaar	குள்ளக்கார்
74.	Kumsala	கும்சாலா
75.	Kunthali	குந்தாலி
76.	Kuruvai	குறுவை
77.	Kuruvai kalangium	குறுவை களஞ்சியம்
78.	Kuruvikar	குருவிக்கார்
79.	Kuzhiyadichan	குழியடிச்சான்
80.	Londhan	லொந்தன்
81.	Madumuzhugi	மடுமுழுகி
82.	Mapillai samba	மாப்பிள்ளை சம்பா
83.	Mathimuni	மதிமுனி
84.	Mottakuur	மொட்டக்கூர்
85.	Mozhi karuppu samba	மொழி கருப்பு சம்பா
86.	Mundan kayama	முண்டன் கயாமா
87.	Murkankaar	மூர்க்கன்கார்
88.	Murugakar	முருககார்
89.	Muttakaar	முட்டகார்
90.	Namazhvar kuruvai	நம்மாழ்வார் குறுவை
91.	Navara	நவரா
92.	Neelam samba	நீலம் சம்பா
93.	Norungan	நொறுங்கன்
94.	Ona mattan	ஒன மட்டன்
95.	Orissa vasanai seeraga samba	ஒரிசா வாசனை சீரக சம்பா

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96.	Ottadai	ஒட்டடை
97.	Ottu kitchili	ஒட்டு கிச்சிலி
98.	Paal thondi	பால் தொண்டி
99.	Paal veliyan	பால் வேளியன்
100.	Pal kudaivazhi	பால் குடைவாழை
101.	Panankaattu kudaivazhai	பனங்காட்டு குடைவாழை
102.	Pasumathi	பாசுமதி
103.	Patchai perumal	பச்சை பெருமாள்
104.	Pattaraikaar	பட்டரைக்கார்
105.	Payagundathan	பயகுண்டதான்
106.	Perum koomvazhai	பெரும் கூம்வாழை
107.	Perungkaar	பெருங்கார்
108.	Pisini	பிசினி
109.	Podaperunel	போடபெருநெல்
110.	Polinel	போலிநெல்
111.	Poolinell	பூலிநெல்
112.	Poompalai	பூம்பாலை
113.	Poongkaar	பூங்கார்
114.	Poovan samba	பூவன் சம்பா
115.	Puzhuthi samba	புழுதி சம்பா
116.	Puzhuthikal	புழுதிகால்
117.	Raja poga	ராஜபோகா
118.	Rajamanar	ராஜமனார்
119.	Rajamudi	ராஜமுடி
120.	Ramakalli	ராமகல்லி

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121.	Rasakadam	ரசகடம்
122.	Sadakaar	சடகார்
123.	Salem samba	சேலம் சம்பா
124.	Salem sanna	சேலம் சன்னா
125.	Samba	சம்பா
126.	Samba mosanam	சம்பா மோசனம்
127.	Sanaki nel	சாணக்கி நெல்
128.	Sandikaar	சண்டிகார்
129.	Sanna samba	சன்ன சம்பா
130.	Seengeni	சீன்ஜெனி
131.	Seeraga samba	சீரக சம்பா
132.	Seeraga sanna	சீரக சன்னா
133.	Selam samba	சேலம் சம்பா
134.	Selam sanna	சேலம் சன்னா
135.	Sempalai	செம்பாளை
136.	Sempalai TKM	செம்பாளை டிகேஎம்
137.	Sempeli panni	செம்பிலி பன்னி
138.	Sengini	செங்கிணி
139.	Sigappu germani	சிகப்பு ஜெர்மனி
140.	Sigappu kowni	சிகப்பு கௌனி
141.	Sigappu kuruvikar	சிகப்பு குருவிகார்
142.	Soolai kuruvai	சூலை குறுவை
143.	Sooran kuruvai	சூரன் குறுவை
144.	Sornamasoori	சொர்ணமசூரி
145.	Sornavari	சொர்ணவாரி

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146.	Sulaikuruvai	சூலைகுறுவை
147.	Suran kuruvai	சூரன் குறுவை
148.	Thanga samba	தங்க சம்பா
149.	Thavalaikanna matta	தவளைகன்னமட்டா
150.	Thengai poo samba	தேங்காய் பூ சம்பா
151.	Thirupathi saram	திருப்பதி சரம்
152.	Thooyamalli	தூயமல்லி
153.	Thulasi vasanai seeraga samba	துளசி வாசனை சீரக சம்பா
154.	Vaadan samba	வாடன் சம்பா
155.	Vaikunda	வைகுண்டா
156.	Valan nel	வாலன் நெல்
157.	Valla arakan	வல்ல அரக்கன்
158.	Vallarakkan	வல்லரக்கன்
159.	Varappu kudainchan	வரப்பு குடைஞ்சான்
160.	Vasanai seeraga samba	வாசனை சீரக சம்பா
161.	Vasara mundan	வாசர முண்டான்
162.	Veethivadangan	வீதிவடங்கள்
163.	Veliyan	வெளியன்
164.	Vellai kudaivazhai	வெள்ளை குடைவாழை
165.	Vellai kuruvikar	வெள்ளை குருவிக்கார்
166.	Vellai milagu samba	வெள்ளை மிளகு சம்பா
167.	Vellai poongkaar	வெள்ளை பூங்கார்
168.	Vellaikkaar	வெள்ளைக்கார்