REPORT OF CLUSTER SCOPING EXERCISE

for

MAT-MAKING SECTORAL CLUSTER

in

AVOOR, KEELPENNATHUR BLOCK (TIRUVANNAMALAI DISTRICT, TAMIL NADU)

submitted

to

आजीविका AAJEEVIKA

by

TAMIL NADU STATE RURAL LIVELIHOODS MISSION

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EXECUTIVE SUMMARY

This report from the Cluster Scoping Exercise for the mat making industry in Avoor panchayat, Keelpennathur block, Tiruvannamalai district of Tamil Nadu recommends that a sectoral cluster in reed mat making can be promoted in Avoor.

The panchayat has directly, from the rapid survey carried out, identified at least 88 units which have at least one mat making machine. Estimates that need physical verification indicate there would be 200 mat making units in Avoor panchayat. It may be noted that many units have more than one machine installed and operational.

In Avoor, mat making is a dependable source of wage employment for machine operators, women engaged in cleaning the reed from the *korai* or sedge grass, dyeing, tying the threads in the product comes out of the machine before it goes for finishing, stitching the nada, and servicing of machines.

The business owners are resilient and continue to see opportunity in mat making, in spite of facing pressure from rising input costs, limited access to affordable working capital, and a challenge in raising the prices of finished products which have become commodities.

With integrated support, the mat making cluster in Avoor can gain from the benefits of aggregation and value addition in both activities – upstream (materials flowing in for production) and downstream (finished products flowing away to customers). Furthermore, the organised cluster would make it possible to give the members/participants access to social security coverage.

The cluster promotion efforts will have to support the mat making businesses to emerge from the commoditised product trap they are in. Specifically, the cluster development efforts must support the unit owners to start making value-added products with better price realization and to reach more remunerative markets.

A producer organisation, with full members and associate members, is proposed in Avoor. The cluster scoping exercise was done in the month of March, 2024.

SECTION 1: INTRODUCTION TO THE SECTORAL CLUSTER

The following table presents the details of the mat making cluster:

TITLE	DETAILS
Sector of the cluster	Household utility product: mat commonly referred to as *Korai* mat or Reed mat, made from *korai* grass (sedge grass, in English)
Products made in the cluster	Product range includes: 1. Sleeping mat of two sizes (3 ½ feet by 5 ½ feet and 4 feet by 6 feet) in two styles – plain and coloured 2. Small single seater mats 3. Long narrow mats known as *Pandhi Paai* (to provide seating for dining in small and large functions)
Location of the cluster	Panchayat: Avoor (pronunciation: Aavoor) Block: Keezh Pennaathur (commonly written as: Keelpennathur) District: Tiruvannamalai (Tamil Nadu) Coordinates: 12.13703, 79.20774
Previous interventions	One-time loan with subsidy from District Industries Centre, Tiruvannamalai – six years ago
Name, designation and email ID of the nodal SMMU staff responsible for the proposed sectoral cluster	Mr. V. Palanisamy State Programme Manager (SPM) tnsrlmlive@gmail.com

SECTION 2: NATURE OF THE SECTORAL CLUSTER

This section summarises the key findings about the sectoral cluster, gained from the scoping exercise.

About Avoor Panchayat

Avoor in Keezh Pennaathur is a village panchayat near Keelpennathur town panchayat, with an estimated 1265 households and a population of 5282. Avoor is a panchayat with a majority Muslim population.

Livelihoods

Mat making is the leading livelihood enterprise in Avoor. The businesses are individual-owned units.

The mat making machines are purchased from equipment manufacturers based in Moolakadai in north Chennai. Typically, a machine costs Rs. 3 lakhs. A cutting machine (to cut the reeds to required size) costs Rs. 60,000/-.

The mat making units run six days a week, with off-season production dropping to 60-70% of the production in season.

The other major sources of livelihoods for the villagers are 1) wage labour, either in the numerous mat making units in the village or in the agricultural fields and 2) rearing milch animals and goats. It may be noted that quite a few from Avoor go to the Middle East to work. During the survey for the cluster scoping exercise, we met owners and machine operators who worked in the Middle East and had to return to Avoor.

Population

Avoor has three habitations divided into nine wards.

As per the baseline carried out at the time TNSRLM started its work in Avoor, the panchayat had 198 very poor households and 296 poor households.

TNSRLM in Avoor

The 11-member Village Poverty Reduction Committee functions from a newly constructed structure and has its accounts in the Indian Bank branch, Avoor.

Seeding a Mini-Cluster

As part of TNSRLM's efforts, a mini-cluster consisting of 72 members has been formed recently. This group has members who are mat making machine owners and also members who take up different activities in the mat making process as labourers (cleaning, dyeing the reeds, tying the threads on the cut mats, stitching the *nada*, stripping the excess reeds, etc.). The main task of operating the machine is typically

done by male labourers. All other tasks are done by both men and women. Details of the mini cluster are provided in the Annexures section.

Avoor Mat Making Cluster – Estimating the Number of Units

In the survey carried out as part of the Cluster Scoping Exercise, owners of the units and local leaders estimated that Avoor would have anywhere between 200 to 400 mat making units, with units having anywhere from one to five machines or even more.

A rapid estimate made as part of the cluster scoping exercise helped identify 31 SHG members with mat making units and 55 non-members with mat making units. A door-to-door survey, as part of the DSR preparation, would help exhaustively list the number of mat making units in Avoor.

The number of mat making units keeps changing because new machines are being installed. For instance, the branch manager of Indian Bank, Avoor branch informed us that he expects to close the FY 2023-24 with a total of 15 loans for purchase and installation of new mat making units. He took charge of the branch operations in July 2023.

In the past (10-15 years ago), the mat making business owners had formed a sangam and business owners who participated in the scoping-related discussions said the sangam had around 180 members, one member for each unit (with one or more machines).

Number and Type of Units Proposed

For the cluster to be promoted, we can start with the members already in the mini cluster group and add the members who have been identified in the rapid survey to identify mat making unit owners (as mentioned earlier, in this survey, 31 SHG households and 55 non-SHG households with mat making businesses were identified. This gives us close to 100 units, to start with. The number will grow, as the cluster promotion activities progress.

Employment Potential

Each machine provides full-time employment for one worker. Further, it provides part-time employment for at least the following six tasks:

1. Cleaning the reeds to remove dust and other foreign particles
2. Cutting the reeds as per required production size
3. Dyeing the reeds as per the required colour combination for the order to be produced
4. Tying the threads, after the mats are cut from the machine
5. Stitching the nada (on two sides or all sides, depending on the quality of the mat to be made)

6. Servicing the mat making machines – periodic and need-based

Estimating Production Volume

In conversations during the scoping exercise, respondents shared their assessment that 1 lakh mats are made per day in the Avoor. Assuming 240 days of average business, that makes the volume 2.4 crore mats per year. At a conservative selling rate of Rs. 70/- per mat, that indicates a cluster turnover of Rs. 168 crores.

A more conservative estimate is presented below:

Number of mat making units in Avoor	150
Number of machines/unit	2
Number of mats/day	80
Number of days of production	245
Total number of mats produced	5880000
Rupee value of estimated production (Rs.)	41,16,00,000 (Rs. 41 crores)

Note: estimation of production volume is done by taking the standard size simple mat, which is the typical product made and sold in Avoor – i.e., the simple 3.5 ft x 5.5 ft mat, both with and without coloured reeds.

The two estimates – based on assumptions presented in the table and as gathered from the respondents – indicate a wide range: from Rs. 41 crores to Rs. 168 crores. Taking the average yields an approximate cluster value of Rs. 100 crores.

Seasonality

The mat making business in Avoor presently has a seasonal up and down. The orderbook is strong for a period of four-five months and then averages out over the rest of the year. Overall, it is estimated that five-six months are characterised by high demand, three months are characterised by average business, and the remaining three months are characterised by low volumes of business.

Advantages of the Cluster

The scoping exercise reveals that Avoor mat making cluster has the following advantages:

1. **Compactness:** The cluster is concentrated. As mentioned in the introduction, Avoor is one panchayat with at least 150 mat making units.
2. **Production Expertise:** The mat making businesses have considerable expertise, having carried out the business for even three decades. This is as expected of production-focused clusters.

3. **Sustained Interest:** Residents of Avoor continue to see mat making as a better choice among the options they have. This is reflected in the fact that the Indian Bank branch manager expects to close their books for 2023-24 with 15 loans for purchase and installation of new machines. Even as some existing owners seek to sell their units, given the challenges and the pressures, new units are being planned and installed. In one FGD held with the women as part of the scoping exercise, one participant wanted support to buy one more machine, to add to their existing one machine unit.

Challenges in the Cluster

The Avoor mat making cluster faces the following challenges:

1. **Commodity pricing trap:** the product is seen as a low-end mass-produced commodity and the market demonstrates a resistance to any upward revision in prices. On the supply side, the mat making businesses in Avoor complain that prices of all inputs – material, labour, and utilities – keeps going up.
2. **Input cost pressures:** On the one hand, the units operate in the commodity pricing trap; on the other hand, the units have to manage business with labour and material costs rising regularly. As a result, during the scoping exercise, the mat making business owners repeated one longstanding appeal they have presented to the Tamil Nadu government – to provide electricity free, as has been done for two other locations where mat making is a traditional industry. It is a sign of the cost pressure that they feel power at zero cost will improve their viability. Also, it indicates that they do not have control over the other cost heads, such as cost of *korai* grass.
3. **Operating in low-end market:** While the market for mats is spread across the spectrum – from entry-level to the premium mats – Avoor is operating in the low end where margins are very thin. Other places such as Vandavasi (77 kms from Avoor) and Pattamadai are some of the mat making clusters known for higher-priced mats. It is possible to do a Google search for Pattamadai mat or Vandavasi mat and shop online. The Avoor mats are a commodity and do not have any such identification. In fact, in retail outlets in Avoor, the shop owners buy higher priced products from Vandavasi and sell them.
4. **Lack of infrastructure:** Across Avoor, it is possible to see workers drying raw reed and dyed reed in the open, by the road. Common infrastructure for drying, dyeing, stitching can make the cluster more organised.
5. **Lack of affordable working capital:** Business owners also pointed out that they are unable to get access to reasonably priced working capital.

Institution

The suitable collective model for the sectoral cluster would be:

Non-farm Producer Organisation (PO) interlocked with wage workers who handle the different operations (pre, during, and post). The mat making unit owners can be full members and the labour group members can be associate members (eligible for wages and bonus).

Benefits from Institution

The benefits for the cluster are:

1. Accessing affordable working capital, with savings in interest cost
2. Aggregated buying of raw materials, with cost savings in material cost and transportation cost
3. Organised workflow processes in modern infrastructure
4. Adoption of Decentralised Renewable Energy (DRE) solutions in common infrastructure and individual units
5. Design, new product development, and innovation
6. Unity in price setting
7. Branding
8. Identifying and developing new markets offline and online
9. Integration of social security coverage for owners and workers

Proposed Salary of the Entrepreneurs

Presently, unit owners estimate that they make Rs. 5/- to 10/- per mat of the basic quality (plain mat, uncoloured). This depends on the size of the trader who buys. Assuming 80% is sold to bigger buyers and 20% is sold to smaller buyers, we have a daily production of 100 mats split into 20 to small buyers and 80 to bigger buyers, adding up to an operating margin of Rs. 600 per day.

Machine operators are paid on a piece rate. If they complete 100 mats in a day, they take home Rs. 500/- for the day's labour.

Women engaged in tying are paid 80 paise to 1 rupee per mat. They work at high speed, finish a lot in one unit and move on to the next unit, if the opportunity is available in the day. Wages in the cleaning activity and other micro activities are also low.

Units involved in stitching the *nada* are paid Rs. 2.5/- per mat, with the terms being that the mat maker provides the *nada* (also referred to as tape) with the mat. The tailoring machine owner foots the bill for the power and thread cost. Before stitching the *nada*, they are also involved in cutting the excess portion on both sides, as can be seen in the photo in the Annexure. The excess reed so generated is collected by other production units in the same areas, for use as fuel. In some cases, they make

a small payment and take the reed (which ends up as a small additional income for the tailoring units).

Small traders visit regularly, buy the mats, load them on their two-wheelers, and go around in the neighbouring villages to sell the mats. One trader shared information that he makes a margin of Rs. 20-30 on a plain mat and about Rs. 40 on a coloured mat.

Government Notifications

On November 7, 2018, the Government of Tamil Nadu issued draft notifications titled 'Draft Notification regarding the Revision of Minimum Rates of Wages for the Employment in Mat Weaving and Basket Making under the Act'. The draft notification is available at 45-II-2.indd (tn.gov.in).

Estimating Increase in Income

As the present product mix is a very low margin profile, the estimation of increase in income for entrepreneurs and workers must be done with caution.

With savings in raw material costs, transportation costs, and cost of capital, it may be estimated that 5% to 10% may be added to the margins, raising income by approximately 5%. In the longer term, branding, new products, and new markets can improve margins realised and add 10% to 15% to incomes of workers and owners. The DSR will help estimate the likely increased income more accurately.

Other Mat Making Clusters

Reed mat making clusters are present in other parts of Tamil Nadu – including Dharmapuri, Vandavasi, Thaikkal, and Kollidam. Mat making clusters are also present in other parts of India.

SECTION 3: MARKET

The markets for the cluster's products are divided into:

1. Local – in Keelpennathur block and Tiruvannamalai district
2. Intra State – markets in different districts of Tamil Nadu
3. Regional and National – including distant markets like Kolkata

The festival occasions of Diwali/Deepavali and Pongal generate significant demand for the mats made in the units in Avoor.

Also, natural calamities such as floods and cyclones lead to a spike in demand for the mats, as different stakeholders in society hurry to buy the mats in bulk, to be supplied as part of the relief kits.

In recent times, the mat making business owners have started doing retail business, by setting up small retail outlets in Avoor. However, the bulk of the business is the B2B channel.

Government Support in Cluster Promotion

The formal organisation promoted in the cluster needs to consider Government procurement as a channel for sales. As such, a detailed Diagnostic Study Report needs to be prepared, to identify what support from the government – to establish facilities in government-owned space or government procuring from the producer organisation – can be leveraged in service of the cluster's livelihood promotion goals.

The cluster has existing linkages with suppliers of raw materials including *kora* or sedge grass, thread, colours for dyeing, and *nada*. *Kora* grass is purchased from Karur, the main cultivation centre. While there are several suppliers in Karur, each unit owner typically is in touch with three or four suppliers. Thread is purchased from Vandavasi. Colours are purchased from Erode, Karur, and Gudiyattam. Machines, as mentioned earlier, are purchased from Moolakadai in north Chennai.

Depending on the strategies to design new products and create new markets, the cluster will need to create new linkages for raw materials.

SECTION 4: TECHNICAL SUPPORT

Presently, the cluster does not have any technical institutes, training centres, or common facility centres.

As the mat making cluster has worked in cottage industry mode thus far, the cluster has not seen any investment thus far in developing such an ecosystem of service providers.

Mat making is an important industry across Tamil Nadu and a common Design and Training Centre would be in a position to provide demand-based services to different clusters. This may be enabled by partnering with stakeholders who have designed and launched interventions in other clusters such as the Pattamadai *paai* cluster.

Skilling Initiatives in Other Clusters

In January 2021, the Government of Tamilnadu and the Crafts Council of India joined forces to impart training to the Women Mat Weavers of Pattamadai at Tirunelveli. The programme is being designed by the Tamilnadu Skill Development Centre (TNSDC) under SANKALP (Skills Acquisition and Knowledge Awareness for Livelihood Programme) funded by the Ministry of Skill Development and Entrepreneurship and World Bank.

The 100 hours skilling programme implemented by The Crafts Council of India involved training in financial literacy, digital literacy, design interventions and tailoring. The training was given to a group of 40 women from the Lebbai community already familiar with pattamadai mat weaving.

More details are available at the following links: Weaving a new story with grass | Chennai News - Times of India (indiatimes.com) and Make mats matter: Pattamadai's sustainable korai mats (newindianexpress.com)

SECTION 5: SOCIAL AND ENVIRONMENTAL CHALLENGES

The key challenges that the cluster faces are:

1. Raw materials: Raw material availability at right price and in the required quantity, as the cultivation fluctuates, impacting the price at which the *kora* grass has to be purchased; the cluster, when promoted, will have to identify different sources and develop linkages to minimise supply chain shocks
2. Working capital: Respondents have cited access to affordable working capital as a challenge; in the absence of this, the unit owners are managing with borrowings from informal sources of credit
3. Health risks:As such, there is no specific health risk that can be associated with mat making as an activity. However, common issues of ergonomics can be observed as the work involves long hours operating a machine or at a tailoring machine. Operation of the mat making machines, dyeing and splicing the reeds, each of these activities will need to be looked into in terms of health risks. Another major health risk is direct contact with dyes which will needs simple intervention for protective gears or the introduction of dyes (e.g. Azo free dyes) that are not hazardous to skin.
4. Risks for sectoral cluster: Price fluctuations in *korai* grass remain a constant challenge; with climate change, this may increase. Hence, it is important to derisk by identifying and developing linkages with other sources for the *korai* grass. The challenge related to affordable working capital has already been listed above. The product, per se, is a low-priced product and has a stable demand.

When promoted as a cluster, the formally registered producer organisation would be able to adhere to legal and statutory compliances. At the same time, the savings from a collective enterprise or cluster model will be offset to some extent by the costs of compliance. As the cluster is involved in making a very low-priced product with very low margins, this trade-off will have to be estimated as accurately as feasible in the DSR.

Strategy to Improve Margins

A two-fold strategy of making the basic product more profitable and also entering into higher margin products and markets is essential for the viability and long-term profitability of the cluster enterprise.

SECTION 6: COMPLEMENTARITIES

Thus far, the government has provided support in the form of subsidised loans through District Industries Centre (DIC).

Complementarities may be explored with:

1. Mat Design Centres
2. District Industries Centre (DIC)
3. Small Industries Development Corporation (SIDCO)
4. National Minorities Development and Finance Corporation (NMDFC) – NMDFC offers a term loans scheme with concession, micro-finance schemes, and a Virasat scheme (which is part of the term-loan schemes); the capital and working capital requirement of the mat making units is within the limits. The highest interest rate in the NMDFC is 8%. Further, the NMDFC loans also come with a moratorium period of 3-6 months. Further details are available at https://nmdfc.org/nmdfcschemes.
5. Tamil Nadu Minorities Economic Development Corporation (TAMCO), Chennai is the Tamil Nadu state channelising agency of NMDFC, New Delhi and TAMCO provides the term loans, Virasat loans, micro-credit loans, and education loans. Details are available at https://bcmbcmw.tn.gov.in/tamco.htm.

SECTION 7: CALCULATING FINANCIAL FEASIBILITY OF THE SECTORAL CLUSTER

This section presents the calculation of the financial feasibility of promoting a sectoral cluster for mat making in Avoor.

Sl. No	Details	Remarks
I	**Name of the Sector**	Mat Making cluster in Avoor, Tiruvannamalai district
II	**Name of the State**	Tamil Nadu
III	**Existing Situation**	
1	Date (when the analysis was done)	March 2024
2	Total number of possible enterprises	70, to start; growing to a maximum of 170
3	Is there an existing successful enterprise / benchmark enterprise, of the sector in the state	Yes
4	If yes, has the P&L and Balance sheet for the successful enterprise been made for a minimum period of 3 months?	Not available
5	Have the financial statements for a benchmark / successful enterprise attached?	Not available
6	Can the benchmark P&L be replicated in the state?	Yes
7	If no, has a model P&L been prepared which can be implemented in the state?	Yes
8	Is the model P&L which is replicable attached?	Yes
IV	**Business KPI's of the enterprises**	
1	No. of members involved per enterprise - as owners (Ideally all members should be owners)	Five (one owner, one machine operator, and four part-time: cleaning, tying, dyeing, edge stitching)
2	Average sale per month	Rs. 2 to 2.5 lakhs

3	Gross margin	30%
4	Net profit as % of total sales	10%
5	Credit sales as % of total sales	95%
6	Finance cost as % of total sales	15%-20%

7	Break - even sales (Rs)	15 lakhs
8	Net profit of the enterprise	Rs. 2.5 lakhs
9	Net profit per owner member	Rs. 2.5 lakhs
10	Wages earned per owner member per year	Rs. 2.5 lakhs
11	Number of days the owner member worked in the month	25
12	Average per diem per owner member	Rs. 800/-
13	Total investment needed for the enterprise	Rs. 5 lakhs
14	Capital investment	Rs. 3.5 lakhs
15	Working capital investment	Rs. 1. 5 lakhs
16	Closing stock (in no. of days sale)	One to two weeks
17	Creditors (in no. of days sale)	Two weeks
18	Debtors (in no. of days sale)	Two weeks
V	**Expected Improvements due to Intervention in the Cluster**	
1	Thematic Interventions - planned (Yes / No)	Yes
2	Training and compliances (Yes / No)	Yes
3	Providing access to subsidised rental property (Yes / No)	No
4	Providing access to sales orders (Yes / No)	Yes
5	Common branding (Yes / No)	Yes
6	Improving productivity (Yes / No)	No
7	Improving raw material procurement costs (Yes / No)	Yes

8	Others - please specify	1. Working capital 2. Improving product mix for higher margins
9	Expected turnover of the entire cluster enterprises	Rs. 50-60 crores (of the units in the POE)
10	Expected cost of the TSA for the project period	Rs. 2 crores
11	Expected total cost of the project (Total Investment in all enterprises (fixed + working capital) + TSA cost)	Rs. 3 crores
12	Expected total wages earned by the owner members (for the project period)	Rs. 16.6 crores
13	Expected net profits (after wages) of all the enterprises in the cluster during the project period	Rs. 7 crores, over the three-year period
14	Expected benefit cost ratio	1.4
15	Sales per Rupee invested in the project	Rs. 7.8
16	Unit cost (project cost/total owner members)	Rs. 3,33,333

1. Expected output from the interventions

Parameters	Base year at the time of scoping study	Project end period (projected)	Percentage change
No. of community members involved per enterprise	110	150	36%
Wages earned per community members per year (owners)	900	1200	33%
Annual turnover of the entire enterprise cluster	20-25 crores	35-40 crores	60%
Expected net profits (after wages) of all the enterprises in the cluster	2.1 crores	4.64 crores	100%

2. What is the estimated benefit-cost ratio of the cluster in the realistic case scenario at the end of the project period?
    i. Total wages earned by women SHG members in the cluster: Rs. 13.77 crores
    ii. Profit earned in the cluster: Rs. 4.64 crores
    iii. Project cost: Rs. 5 crores
    iv. Cost benefit ratio: 1.4
3. Other financial benefits due to the implementation of the cluster.

Note: Details of the Benchmark enterprises (those enterprises which the SRLM desires to replicate) and Model enterprise (‘model’ of the enterprise that the SRLM will be able to implement in the state) also to be captured during the scoping study.

SECTION 8: WAY FORWARD

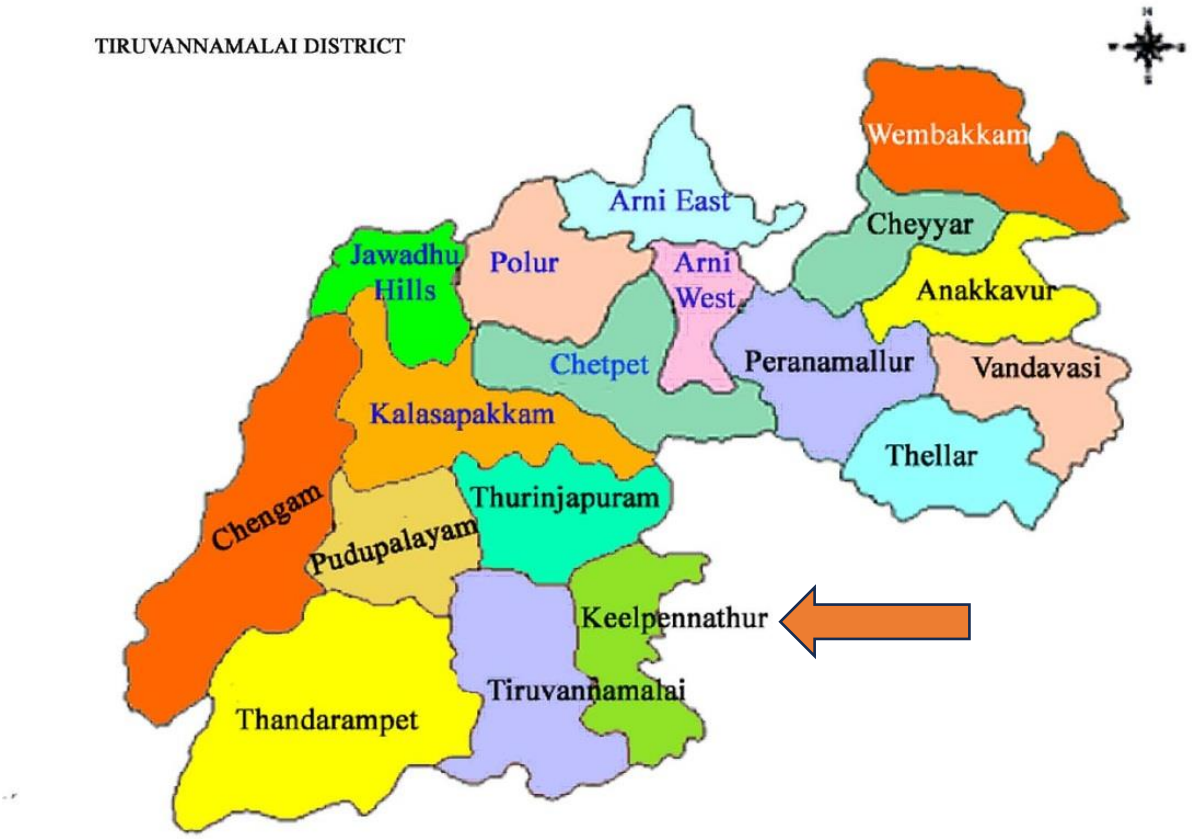
From the cluster scoping exercise, the way forward may be summarised in terms of the following interventions:

1. Overarching intervention: The overarching intervention will be the mobilisation of interested mat making business owners and interested workers into a Producer-owned Enterprise (POE) with full membership and associate membership, respectively; the associate membership will give the workers wages and bonus, when the surplus generated is significant.
2. Capability building for producer organisation leadership: Significant investments have to be made in the enterprise and business capabilities of the Producer-owned Enterprise (POE).
3. Common infrastructure creation: Establishment of infrastructure for storage of *korai* reed, cleaning, drying, cutting, and dyeing
4. Energy solutions for units: The cluster seems suitable for the promotion of DRE or Decentralised Renewable Energy technologies for 1) the common infrastructure and also 2) each of the units, to reduce energy costs and improve margins.
5. Brand development: Just as the Pattamadai *paai* (mat)and Vandavasi *paai* (mat) are well-known, the Avoor mat must be promoted to make it a place-based brand.
6. Credit linkage: Access to adequate and affordable working capital will be an important intervention.
7. Market linkage: The cluster intervention must also support the POE to ensure a meaningful share of business is generated by disintermediating (going to the wholesale buyers or bulk retailers, as the case may be) to get a better share of the consumer's rupee.
8. Development of product design capability: The cluster thus far has limited itself to making the low-priced models of mats, leaving other clusters to specialise in mats with higher design value selling for higher prices. The cluster promotion must make investments in developing a design capability in Avoor for the mat making businesses who will be the members.
9. Product diversification: The cluster must be handheld to assess and pursue opportunities in creating new product lines – such as yoga mats, window blinds, mats with more design value, mats with eco-friendly and natural colours, table mats, wearables, decorative items, ornamental items etc.
10. Developing B2C market: The POE must also start reaching consumers directly, selling directly higher end products to realise a higher share of the consumer's rupee.

9. ANNEXURES

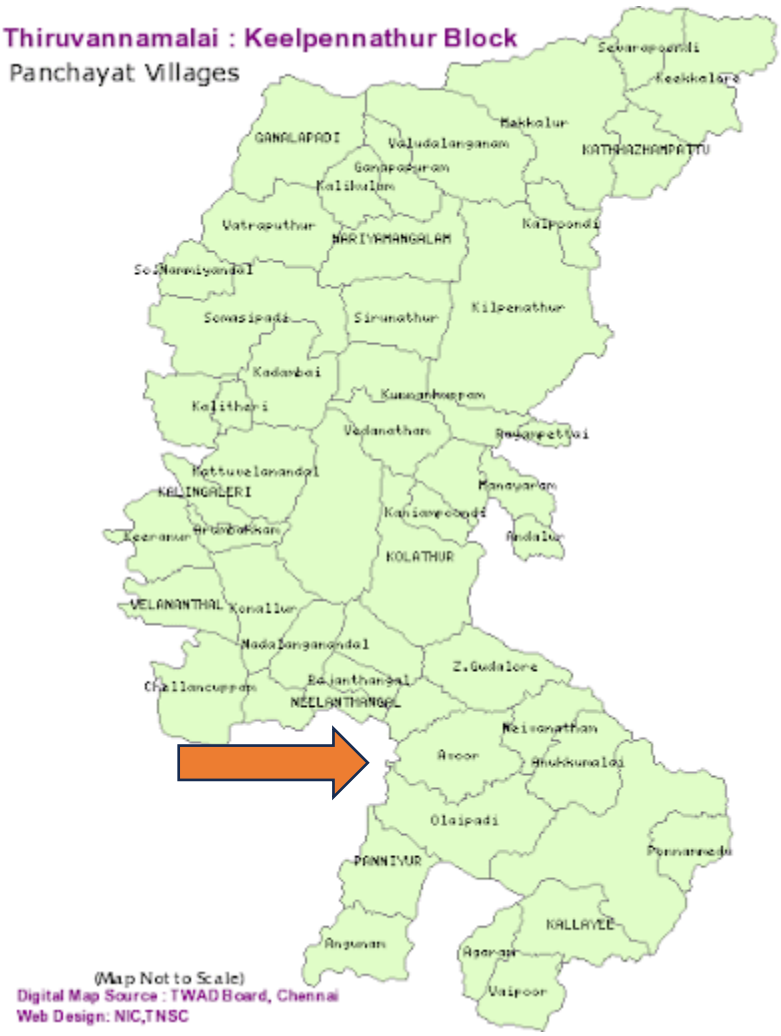
ANNEXURE 1 – MAPS

TIRUVANNAMALAI DISTRICT



(**KEELPENNATHUR BLOCK INDICATED WITH ORANGE ARROW**)

KEELPENNATHUR BLOCK (AVOOR INDICATED WITH ORANGE ARROW)



ANNEXURE 2 – DESCRIPTION AND PHOTOS

The following section – sourced from Kora Grass Products – The Eco-friendly Pride Of Tamil Nadu – TYDesiHandicrafts.com – provides an overview of the product attributes and the mat weaving or mat making process.

Korai mats are eco-friendly and biodegradable, and they keep the body cool. The kora grass is mainly used to weave mats, which are traditionally used as sitting mats for pooja, prayer, dining, sleeping mats, and home decor. These mats are time-tested and people use them for generations as they count on the quality of the mats and the accompanying health benefits.

The traditional production of mats involves several labour-intensive activities. The whole process consists of three distinct phases: (1) Colouring, (2) Loom Weaving, and (3) Post-Loom Weaving.

The kora grass collected from the nearby water locations is segregated into mats to be woven plain or coloured. Kora grass is coloured by soaking and boiling them with dyes in water. Once dried, they are segregated based on the colours and then cut to required lengths in a machine. Kora grass is finely split and woven with a cotton warp. The complicated and time-consuming process of loom weaving starts with removing the white pith using a sharp knife. Loom weaving is done in a manually operated apparatus set by the sticks and threads. The final phase of post loom weaving includes cutting the stick edges or covering them with coloured cloth.

Kora grass stacked for use in mat making

Kora grass being cleaned

Kora grass being cut for use in mat making

Dyeing of *Kora* grass in process

Mats coming out from the mat making machine

Mats being prepared for finishing

Nada stitching for mats cut to required size

Note: In the photo above, tying the thread knots that can be seen in the foreground is a separate task

Finished products going out to the buyer

ANNEXURE 3 – MAT MAKING IN TAMIL NADU

The activity of starting with simple straw (dried form of grass cultivated along the river banks) and transforming into a comfortable mat has a long history in Tamil Nadu. Known as *korai paai* in Tamil, such mats are a household object in households across the state. During summer, the straw mats are cool to sleep on, and in the cold weather, they are comfortably warm to sleep on.

Elaborately made high priced mats are given as wedding gifts in the state, as tradition. It is a common practice to gift the bride and groom a mat with their names as well with the wedding date woven into the design.

The mats are made in various dimensions. For instance, the long, narrow ones are called *pandhi paais* in Tamil, referring to the mats that are rolled out on the floor in dining spaces where feasts are served for guests.

The products are largely eco-friendly and biodegradable, barring the synthetic colours used in the dyeing and the colours that go into the *nada*. Before the advent of synthetic colours, natural colours were used by default.

The famed Pattamadai *pattu paai* or silk mat (for the silk smooth feeling) made in Tirunelveli has been recognised with the GI tag.

Coarser mats are woven across Tamil Nadu and are made into runners, place mats, shopping bags, file cases etc., indicating that design and new product development can create whole new markets for the production clusters. Furthermore, with the introduction of modern designs and the reintroduction of natural dyes, mat making clusters can aspire to come out of the commodity-oriented nature and take the products into the realm of aspirational products.

ANNEXURE 4 – PARTIAL LIST OF MAT MAKING HOUSEHOLDS (MEMBERS & NON-MEMBERS)

MEMBERS OF SHGs OWNING MAT MAKING MACHINES

Source: Rapid Survey for Direct Identification

1	J.Shahin
2	Bashiraa
3	Haaripunnisha
4	Shabiyulla
5	Guljar
6	Najmun
7	Thajun bee
8	Thaslimbagam
9	Baisoon
10	Ayishabagam
11	Ansaribegam
12	Aminabee
13	Subetha
14	Gowsalbee
15	Rajiya

16	Salima
17	Salima
18	Thahira
19	Parithabegam
20	Munshiyabegam
21	Nargees
22	Athiyabegam
23	Munni
24	Barkath
25	Jabeen
26	Pariyhabegam
27	Shagila
28	Ilagijhon
29	Thagira
30	Jida
31	Gulabja

NON-MEMBERS OWNING MAT MAKING MACHINES

Source: Rapid Survey for Direct Identification

1	Rajiyammal
2	Sathaji
3	Munni
4	Thajira
5	Shalimabee
6	Johnbee
7	Shaiyena
8	Ayesha
9	Hajirabagam
10	Ayshabanu
11	Mallipoonisha
12	Katharbee
13	Nethagi
14	Shakira
15	Ansari
16	Telshathbagam
17	Pathurunnisha
18	Rashiyabanu
19	Sharin
20	Ellaginjohn
21	Nasinjohn
22	Balkis
23	Sharjiya
24	Asinkulabee
25	Parvin
26	Bashira
27	Gulapjohn
28	Jakirabegam
29	Nasirin
30	Rishvana
31	Parvin S
32	Balkis
33	Shamshath
34	Rishbana
35	Nabisha
36	Yalmeen
37	Sakila
38	Shameem
39	Salima
40	Shameem
41	Shamshath
42	Bebejohn
43	Amsira
44	Shamrin
45	Shrshji
46	Shabana
47	Thaginbee
48	Absana
49	Maganthiya
50	Shagila
51	Munsee
52	Shamu
53	Shamshath
54	Shamshira
55	Mukiyarbegam

ANNEXURE 5 – READINGS

1. Here's How Famous Handwoven Pattamadai Mats Are Made In This Tamil Nadu Town - News18
2. Cutting korai in Karur, Tamil Nadu - https://youtu.be/jMl_SEFMv8U?si=xWYARNtDHGCZ32Nf
3. Grass not greener at Pattamadai mat weavers' end

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