



AGRICULTURE DEVELOPMENT IN SANGAM AGE- A DETAIL STUDY

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Abstract

The period between the 1st century B.C. to the end of 2nd century A.D. in Southern India is known as Sangam Period. It has been named after the Sangam academies during that period. Agriculture played a vital role in Sangam age in ancient Tamil Nadu. Agriculture was the chief occupation where rice was the most common crop. This study refers to agricultural practices, Irrigation system, care of crops, marketing of agricultural products and classification of land during Sangam age. It gives detailed study about sangam literature evidences about best Agricultural practices by Movendars namely called Cheras, Cholas, and Pandiyas. The main source of information about these kingdoms is traced from the literary references of Sangam Period. It also includes a different equipments used, various methods of cultivation by different lands, Food habits of ancient Tamil peoples.

Keywords: Irrigation system, classification of land, Sangam Literature, food habits.

Introduction

According to the Tamil legends, there were three Sangams (Academy of Tamil poets) held in the ancient South India popularly called Muchchangam. These Sangams flourished under the royal patronage of the Pandya kings of Madurai. The First Sangam, is believed to be held at Madurai, attended by gods and legendary sages. No literary work of this Sangam is available. The Second Sangam was held at Kapadapuram, only Tolkappiyam survives from this. The Third Sangam at Madurai was founded by Mudathirumaran. A few of these Tamil literary works have survived and are a useful source to reconstruct the history of agricultural practices in Sangam period. The area lying to the south of river Krishna and Tungabhadra is called South India. During the Sangam Age, it was ruled by three dynasties-the Cheras, Cholas and Pandyas. Agriculture was the main occupation of the people and women also took part in it. Since 90 per cent of the country revenue came from agriculture, the rulers, the ruling elite and even private persons including women took some efforts to improve the agriculture by way of digging wells, canals and reclaiming waste lands for cultivation. Kings considered agricultural development as their primary duty. They felt that soil fertility and irrigation facilities should be the country's assets. Increased agricultural production was considered a yardstick of prosperity of the country.

Aims and Objectives

The study aims to bring to light the agricultural practices in Sangam age.

The study seeks to find out the evolution of Rice in the Tamil country during the period under study.

It is the aim of the study to irrigation process development by Cholas dynasty in sangam age.

The study seeks to bring out the Tamil literature evidences about classifications of lands and their agricultural produces in sangam age

Scope of Study

A study of the 'Agricultural development in the Tamil country during the Sangam age touching upon varied aspects of Agricultural produces, irrigation system, Soil, crop culture, etc., is desideratum. Hence the study of this nature would help us to know more about the position of agricultural development, their successes and failures and their contribution at various levels during the period under study.

Importance of Agriculture Sangam Literature

Importance of Agriculture was highlighted in one of the ancient sangam literature called Tiruukkural. The poem was composed by a gifted poet named Thiruvalluvar during 70 BC. It consists of 1330 couplets (133 topics each having 10 couplets). Thiruvalluvar, The Author of a Tiruukkural has devoted in his work a separate chapter containing ten couplets (ch. 104,1031-1040). Here are a few quotes from the Tiruukkural.

Who ploughing eat their food, they truly live; The rest to others bend subservient, eating what they give.(No. 1033)

They nothing ask from others, but to askers give Who raise with their own hands the food on which they live.(No. 1035)

To 'Tiruvalluvar the yoke and the plough' were the emblems of freedom, honour and virtue.



Another famous literature Purananuru, in a passage (Sastri, 1972, p.43 Pura. 35: 25-26). A poet (Naganar of Vellaikkudi) tells the young king Killivalavan, that all his victorious campaigns and fruits of victory have been made possible only by the industrious peasantry

Maduraikanchi gives graphic descriptions of foods cultivated and harvested as well as brought in through trade. **Ettuthogai:** Of these eight anthologies, five poems Akananuru, Narrinai, Kuruntokai, Ainkurunuru, and Kalittokai are akam poems and Purananuru and Patirrupattu are puram poems and Paripadal has bothakam and puram poems. There are no detailed agricultural products in these poems, but they provide abundant information of the culinary culture of the time. Descriptions of food and drink are mostly found in puram poems.

Rice is a major Agricultural produce in sangam age

Rice, (Arisi in Tamil) also known as Paddy, a raw crop (Nel in Tamil) is a pre-dominant food for half of the population in the world. It constitutes the staple diet of many of the Asian and African countries. Indian scholars claimed that the word for rice in western languages had a Dravidian root and that ris, riz, arroz, rice, oruza, and arrazz all came from arisi (Pankar and Gowda 1976). In insular south-east Asia, the Austronesian terms padi and paray for rice and bras or beras for milled rice predominate (Chinese Academy of Agricultural Sciences 1986; Revel 1988). Arisi also known as Rice is one of the oldest foods of mankind from the evolutionary stage. Arisi is the oldest and stable food of Tamils. There is no wonder that they had thorough knowledge in trans-continental maritime trade with other western countries (Latin/Greek).

The vast quantities of gold and silver coins struck by Roman emperors up to Nero (54–68CE) found all over Tamil Nadu testify the extent of the trade, the presence of Roman settlers in the Tamil country. Archaeological evidences such as the recent discovery in ancient Tamil paddy cultivation area (Sangam literature described as Maruda Nilam) Adichanallur, where the world's largest three-tier pre-historic cemetery is found is situated in oldest Tamirabarani river. The Tamil people practiced a systematic method of cultivation during the Sangam age. It was known that ploughing, manuring, weeding, irrigation and crop protection which are to be followed in a proper way for the rich yield. Tiruvalluvar, in his Tirukkural, (400 BC) dedicates 10 noorpa (two line poem) exclusively for agriculture, which deals about watering and manuring techniques. It is more or less like current days standard agricultural practices in order to get good yield.

It's a simple understanding that definitely a civilized cultivation would have a root at least for 1000 years to streamline the process of paddy cultivation by correlating the *Porunthal* excavation (790-490 BC) and Adithayanallur has abundant paddy husk (already a pottery making unit consumed this quantities), to attain this standard agricultural practice advise need 2000 years cultivation touch (60 generation approximately).

In a society of hunters and gatherers, man secured his food by hunting meat of the beasts and birds; he had skill-fully used his hands and sense organs to gather the fruits, nuts, seeds, leaves, honey, nectar, milk etc that were available in the bosom of the forests. Among those foods gathered by man, the rice of the bamboo crop gets the first place in searching the earliest mentioning of rice in the Tamil Sangam literature (300 BC-200 AD). This 'moongil arisi' is as good as the arisi available in the cultivable lands but definitely differs in its colour, shape and fragrance. There are plenty of references in the Tamil literature to show that 'mala nel'/ivanam had been one of the predominant crops that were available in the hilly regions which did not depend on any one for its propagation, survival and protection.

For instance, Poem no. 346 of Agananuru has an interesting reference called " **vittha valci**" [the rice that grown without being sown]. The word 'valci' is transliterated in Sanskrit as 'vrhi'. This reference strongly concludes that, even before domestication, wild rice, that is capable of 'self-propagation' has been identified and was within the knowledge of the early Tamils. (Is it an ancestral variety of *Oryza sativa*/ *Oryza nirava*?)

The origin of black rice (karu nel; kalikalu nel; kar nel; kayam pu nel; irul samaththanna erungaru nel; maiirul nel; karunavarkaniyanna nel; mattrundu arikila manjur eyahtu nel; kallahuvulamkandanna nel;) white rice (thuvel arisi; thuppaianna velnagai nel; velli vilangu nel; manthur nagai mani nel; ullurai ueranna velmulai arisi; paruthipoothanna pasum nel); Red rice (keliru kannan kudumsennel; kuruthivoonna nel; ratha mani nel; rathinam pothithanna nel; murukkam poo nel; sivel nel) have been abundantly mentioned in the Tamil Sangam literature.

To explain the advanced scientific and thought process of Tamil people in terms of environment during those olden days, we take Tholkapiyar's plant, genetics, paddy knowledge from his outstanding Tholkappiyam. Tholkappiyar's genetic knowledge is equivalent to contemporary science and it is guiding for future science as the base knowledge of evolution. It is very crucial to understand the ancient Tamil's native knowledge in rice and their systemic technicality of paddy

cultivation. They classified paddy on the basis of origin, quality, texture, colour, fragrance, size, duration, and specific location(Chamba, Senel ,Vennel). Earliest documentations on paddy variety are available in Sangam literature Manimekkalai, (200 BC- 100CE), which mentions a glittering variety Kandasalli. Ivanam – a popular variety suitable for highlands, Vennel -white rice were mentioned in Madurai Kanchi 272-110.

Classification of Lands

The ecosystem as delineated in the Sangam literature is known as ‘Thinai’. The word ‘Thinai’ means the different geographical regions and the behavior of the inhabitants in those regions. In the Tolkappiyam we find a direct reference to the four-fold physiographic divisions of the land and climate (Tolkappiyam, Tol. Porul. 5); and these are known as the Ka urai ulagam (the forests), the Maivarai ulagam (the hills), the Tiruppunal ulagam (the plains or fields) and the Peruma al ulagam (the littoral or sandy areas). Here the word ‘ulagam’ (world) implies that each region was a separate unit by itself and distinctly different from one another.

On the basis of interpretation and context, the Sangam literature can be described into two types viz. *Agam* (inner) and *Puram* (outer). The topics of *Agam* are related to personal and human aspects such as love and sexual things. The topics of *Puram* are related to human experiences and emotions such as Heroism, Valor, Ethics and Philanthropy. The poems have also been classified on nature themes which are known as **Thinai**. As per Tholkappiam, the inner universe associated with love is divided into seven modes, or thinai, five of which are geographical and associated with specific landscapes, and two of which are non- geographical and not associated with any specific landscape. Four of the geographical; landscapes are described as being landscapes that occur naturally in the Tamil lands.

These five land use classes are detailed as below.

1. Kurunji- Mountainous Region- associated with union
2. Mullai- Land of the forest- associated with waiting
3. Marutham- Cropland-associated with quarreling
4. Neidhal- Seashore-associated with pinning
5. Palai - Wastelands-associated with separation – is described in the Tolkappiyam as not being a Naturally existing landscape

Poetic Attributes of the Landscapes

	Kurinchi	Mullai	Marutham	Neithal	Paalai
Flower	Kurinchi	Mullai (Jasmine)	Marutam	Water lily	Paalai
Landscape	Mountains	Forest, pasture	Agricultural plain or valley areas	Seashore	Parched, wasteland, desert
Season/Climate	Winter/Cool and moist	Late summer/cloudy	No specific season	No specific season	Summer
Animal	Monkey, elephant, horse, bull	Deer	Water Buffalo, freshwater fish	Crocodile, shark	Fatigued elephant, tiger, or wolf
Crop/Plant	Jackfruit, bamboo, venkai	Konrai	Mango	Punnai	Cactus
Water	Waterfall	Rivers	Pond	Well, sea	stagnant water
Soil	Red and black soils with stones and pebbles	Red soil	Alluvial	Sandy, saline soil	salt affected soil
Occupation	Hill tribes, gathering honey	Farmer	Pastoral and agricultural occupations	Selling fish, salt, fisherfolk	Travellers, bandits



Geographical thinais

1) Kurinji – Mountaious region

The mountain is the scene of lovers' union at midnight. It is the cold, dewy season. The forest is rich with lakes. Waterfalls, teak., bamboo and sandalwood. In this region millet grows and wild bees are a source of honey. Love in this setting is exemplified by Murugan, and one of his wives, Valli, the daughter of a mountain dweller. He wears the sparkling red kantal flower and rides peacock, the bird of the mountains.

2) Mullai – Forests

Mullai is the land of the forest. The forest is rich with lakes, waterfalls, teak, bamboo and sandalwood. In this region millet grows and wild bees are a source of honey. Mullai or Jasmine (*Jasmiinum auriculatum*) is the flower of the forests.

3) Marutham – Cropland

The plains were the scene of triangular love plots in the hero's visits to the courtesan oblige the heroine to counter with a mixed show of coquetry and moodiness, tactics whose limits are describe in the Thirukkural ("Sulking is like flavouring with salt; a little suffices, but it is easy to go too far.").

4) Neithal – Seashore

The seashore affords many examples of the compelling charm of Sangam poetry and the extraordinary freshness of its realism. From behind the conventional symbolization of waiting there emerges a picture of the life of the fisherfolk; the nets and boats drawn up on the beach, scuttling crabs and cart wheels bogged down in the sand, the odour of drying fish, cut into thick slices, which attracts the birds, beautiful village girls peering through the Pandanus hedges, and the wind blowing through the cracks in the roughly constructed straw huts at night.

5) Paalai – Wastelands

As per Tamil ancient literature the Paalai or wasteland is not seen as being a naturally occurring ecology, Ilampuranar, in his commentary on the Tolkappiyam, explains that instead, the landscape of the wasteland with which the paalai is associated merges when other landscapes whither under the heat of the burring sun. Thus this landscape is associated with the theme of separation, which occurs when love is subject to external pressures that drive the lovers apart. Paalai could thus be seen as a mixture of Mullai and Kurinji tracts, rather than as a mere sand area.

Irrigation system

The importance of irrigation was well recognized by the rulers of Tamil country. Very extensive irrigation works were carried out by them with large amount of treasures and forced labour at their disposal. However, due to constant wars with their adversaries they could not carry out their duties in an effective manner. The following anthology from the Purananuru (18: 18-is addressed to the Pa iyan ruler Ne unchelian by the poet Kudapulaviyanar. It is, in fact, a sage advice from the poet who exhorts the ruler the necessity of irrigation works for the distribution of water to the fields of his subjects

No bodies woven of their can subsist without water. Those who give these bodies food give them life. The body massed together of food has food as its source. Kings dug tanks at locations where water flow from rains was plentiful. Semicircular bunds were raised adjacent to small hillocks and water reservoirs akin to present day dams were raised and constructed. Thus indicates awareness of water harvesting. The king Karikal Cholan brought 1000 slaves from a conquered country and raised the bunds of river Cauvery. The stone dam constructed across the river Cauvery centuries ago is considered a master piece of engineering even today. River water was diverted to tanks through channels. It is mentioned that irrigation should be given either in early morning or late evening or not during hot mid-day.

New developments in agriculture made many of the achievements of the Cholas possible. The river Kaveri (which was a part of the regions controlled by the Cholas) branches off into several small channels before entering the Bay of Bengal. The overflowing of the channels deposits fertile soil on their banks and also the water from them provides moisture needed for agriculture, particularly for rice crop. Only in the fifth and sixth century large scale agriculture was started in Tamil Nadu. For this purpose forests were cleared in some regions and land was levelled in some areas. Flooding in the delta region was prevented by building embankments and canals were constructed for carrying water to the fields. Two crops were grown annually in many areas. A variety of methods of irrigation were used in areas where crops had to be watered artificially. These included digging of wells and construction of huge tanks to collect rainwater. Most of the new rulers and village people took active interest in the irrigation activity which included careful planning-organising of labour and resources, maintenance of the works as well as deciding on water-sharing.



Canal Irrigation

There are three types of canals. viz., perennial, canals, inundation canal and storage work canals. Perennial canal those which take of water directly from a river and provide water for irrigation throughout the year. Inundation canals take of from the river but have water only during rainy reason. Storage work canals take on from a dam be or storage works. This may be constructed across a river or valley. Thanjavur one of the most fertile lands in chola period its main coarse flow the Cauvery river in their land. During the period area irrigable by the Cauvery canals is in round figures 920,000 acres and that irrigable by the kollidam channels 18,000. Only one crop is grown on most of this land.

One of the best example of canal irrigation is uyyamkondan canal it is one of the thousand years old chola Architect presently this canal was renovbated. This canal was built by Rajarajacholan in Trichirapalli the canal which originate from Cauvery near Pattavaithalai and traverses about 70th km up to Uazhavanthankottai tank and irrigate about 32000 acres. But presently this canal is totally followed in dumping of soiled water.

Well Irrigation.

Well Irrigation has been practised in TamilNadu from time immemorial. It is one of the cheapest means of irrigation in ancient Tamil country. Cholas gave more importance to well irrigation in and around Thanjavur district. The scarcity of surface water supplies can be solved by the method of ground water irrigation or well irrigation. The Chola period had dominant role of well irrigation in especially in Thanjavur district.

Lake Irrigation”

Lake irrigation was one of the artificial irrigation systems in Chola Period. Veranam Eari [Lake] had famous lake in Chola Period. During The time of king Parantaka-1 [907-953 A.D] of the chola Dynasty. A big Tank was constructed and it was named as „veranam Eri.This Eri was named after the little of king Parantaka-1 this was the first major irrigational woks. This region This veranam Lake lies near Kattumannarkovil Where The king Parantaka-1 constructed The Temple of land Vishnu. The Performance of well irrigation varied from this region depends upon the availability of ground water.Veeranam lake was built in the 10th century during the time of greater cholas, from 407-955 AD. It was created by Aaditya chola. The named it after a little of his parantaka I chola. This veeranam lake gets water from kollidam via vadavaru river. The lake remains dry for major part of the year. „ponniyan selvan literature also explain this lake.

Cultivated crops

The poem Tholkapiyam was written by the poet Tholkappier during 200 BC. It give descriptions of various agricultural produces and different seasons. There are references to rice, millets, sugarcane, banana, cardamom, pepper, cotton, sesame, coconut, and nut. Farmers were aware that rice could be grown as rainfed crops. Banana and sugarcane were ratooned. Plants were considered as living beings and endowed with sensitivity. Tholkappier mentions about monocots and dicots 2700 years ago. Early spring, late spring, cloudy, rainy, early winter, and late winter are different seasons also mentioned.

Agricultural implantation and marketing

Further the poem Tholkapiyam mentioned about Agricultural implantation and marketing in sangan age. Buffaloes were used for ploughing with a wooden plough. Deep ploughing was considered superior to shallow ploughing. A labour saving tool called parambu was used for levelling paddy fields. Tools such as amiry, keilar, and yettam were used to lift water from wells, tanks, and rivers. Tools called thattai and kavan were used for scaring birds in millet fields. Traps were used to catch wild boars in millet fields.

Seeds

Seed was selected from those earheads that first matured. The selected seed was stored for sowing only and never used as food grain. It was believed that such a diversion would destroy the family.

Crop rotation

Crop rotation was practised by raising black gram (urd) after rice. This indicates that farmers were aware of the benefits to the following rice crop which we now know is due to the nitrogen fixation in the root nodules of urd. They also practised mixed cropping; e.g., foxtail millet with lablab or cotton. Today we know that a balanced diet should have starch (supplied by rice and millets) and protein (supplied by lablab). In coconut and jack fruit plantations, ginger and turmeric were grown as intercrops.

Threshing

A tool called senyam was used for havesting rice. Threshing of rice was done by hand with the help of a buffalo (and in large holdings by elephants). Hand winnowing was done to remove chaff. One sixth of the produce was paid as tax to the king. Farm labourers were paid in kind.

The land was immediately ploughed after harvest or water was allowed to the field to facilitate rooting of stubbles. These agronomic practices are recommended even today based on scientific principles. Operations requiring hard work such as ploughing were done by men while women attended to light work such as transplanting, weeding, bird scaring, harvesting, and winnowing.

Marketing

Products were exchanged by weight. In Madurai (the headquarters of Sangam poets), there was a food grain bazaar where 18 kinds of cereals, millets, and pulses were sold. Each shop had a banner hoisted high so that it could be seen from a distance indicating that the grains are sold here. What a novel method instead of neon signals and name boards! Customs duty was collected on imports and exports.

Conclusion

In sangam age agriculture was the main occupation and peasants played a vital role in the development of society. Agricultural produces is the yardstick to measure the wealth of the regimes'. Tamil literature of sangam age Tholkappiyam, Thirukurak, Maduraikanchi, Ettuthogai, Purananuru etc has given graphic descriptions of foods cultivated and harvested. Rice is a staple food and other crops ensures a civilized food habits of ancient tamilians. Five Thinai (classification of Lands) mentioned in sangam famous literature Tholkappiyam manifestation of vivid agricultural knowledge regardless of soil, climatic and crops and marketing. Irrigation system was mainstream of agricultural development in sangam age. In movendars (cheras, cholas, Pandiyas), Cholas played a prominent role in irrigation system. Over all ancient tamil peoples followed a highly civilized Agricultural practices during sangam age.

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