



THE RELEVANCE OF SPECIAL AGRICULTURAL ZONES IN KERALA WITH REFERENCE TO PADDY CULTIVATION

ABSTRACT

The term special agricultural zone has been propounded by the prominent agricultural scientist Dr. M S Swaminathan for countering the food deficit in India. A Special Agricultural Zone (SAZ) is where an agricultural land is exclusively reserved for agriculture with all the basic facilities like water, electricity for the farmers. In short, it's a region-centric development of agriculture taking into consideration of the ecological, economic and environmental sustainability aspects of the farmland. The SAZ was first set up at Uttarakhand in 2011. The government of Kerala has introduced this concept in the recent economic survey 2017 owing to the rising import of rice, dwindling area under cultivation and farmer distress. Many foreign countries like Srilanka are in the initial state of setting up of SAZ. The growing food deficit, exponentially increasing population, import of food grains and environmental issues have called for an important status for agriculture. Thus SAZ is the solution of "twin-balance challenge" that Kerala economy faces – the increased consumption of food crops by the growing population and reduction in its production. The self-sufficiency in the rice production is important for the food security and thus enabling the inclusive growth.

KEYWORDS

Population, SAZ, Region-Centric, Food-security, Inclusive growth.

RESEARCH PAPER

Introduction

The concept SAZ that has surfaced in the recent time was present in its rudimentary during the ancient time as well. The Tinai concept of the Sangam period divides the land area into four divisions where Kurinji – mountain region, Mullai- Forests, Maurtham-Cropland, Neithal- Seashore, Palai –a combination of Mullai and Kurinji. This division states the prominent position that agriculture occupied during the ancient civilizations. Kerala from the time of Muziris was a hub of agriculture. The land was well known for her spices especially Black Pepper. The Sangam texts also reveal that paddy was cultivated in the area during the time.

Dr. M S Swaminathan defines SAZ as one where agricultural land is preserved for posterity because of its importance to increasing agriculture production and promoting livelihood security for a large number of farm families. The father of Green Revolution strongly believed that in the wake of unexpected weather condition this can aid food security in India. It's a cluster-based approach in which, the agriculture lands are categorized under the criteria of crops, farm practices, infrastructures, natural resources, ecological zones etc. The SAZs also have focus interventions such as extension activities, subsidies, exemptions from local laws, tax concessions, relaxed land leasing norms, investment procedures and marketing and branding of products.

The concept of SAZ is also adopted in foreign countries like Japan, SriLanka, in India Uttarakhand was the first state to adopt this concept. In Srilanka, the aim was to promote safer agricultural practices along with promoting the safeguarding the quality of farming and that of the environment. In Uttarakhand, the strategy is to encourage cultivation of hill species and to emerge as a seed state. The basic analysis of this new strategy states that its basically a region-centric development of agriculture taking into account the basic necessities and the peculiarities of the state thus making it into a self -sufficient state. The wide acceptance and the adoption of the SAZ state the growing importance of self- sufficiency in the food crops production owing to many factors like population, climatic changes being the prominent ones.

There was a sharp decline in the area, production and productivity of rice due to various reasons. One of the serious drawbacks of agriculture is that it's seasonal. This causes the income from agriculture to be constrained to a particular season this drives the youth and risk-averse farmers from cultivation. Since these farmers are a risk-averse this problem

should be addressed by creating a year-long income as well as diversification and marketing of the commodities which will increase their income along with the more in business terms which will attract many young minds to agriculture. The climate is also a core villain in the case of paddy cultivation. During the year 2016-17 drought affected a total area of 50,917.62 ha of rice cultivation, In this particular scenario, the case of high yielding varieties along with the indigenous varieties of Kerala will cause an increase in the production.

Special Agricultural Zones in Kerala

In order to increase the rice production in Kerala, the 13th five- year plan (2017-2022) extended a focussed intervention to increase the production. For a focussed production, increasing yield the concept of 'SAZ' is introduced in Kerala. The concept of Special Agricultural Zone includes both the traditional varieties of rice as well as high yielding varieties of rice are included, thus it's for an ecological, economic and environmentally sustainable farming techniques. Thus SAZ will be an area exclusively for agriculture as Special Economic Zone. This new scheme is said to improve the income of the farmers as well as the production of Paddy.

The new concept of SAZ was introduced for convergence based result oriented schemes. The new concept deals with the focused project based intervention in the identified potential zones in the form of Production, marketing, processing, value addition, Storage, irrigation etc will be covered for each zone. The facilities in each SAZ are Agro Service Centres including soil testing labs and call centre, plant health clinics, weather stations and advisories, bio-pharmacy including on-farm production units, planting materials production units, markets, processing and value addition units, irrigation support, credit interventions if required, extension including ICT based initiatives, community Radio, farmers markets supported by Local self-government institutions(LSGI), procurement system for surplus production, promotion of farmer technology development and training to farmers on convergence mode. A separate monitoring system for projects in SAZ is also included in its purview.

The SAZs of Kerala are as follows: Rice – Kuttanad, Kole, Onattukara, Pokkali, Palakkad, Kaipad and Wayanad, Vegetables– Devikulam, Kanjikuzhy, Pazhayannur and Chittoor-Kollengode. Banana – Thrissur Flowers – Wayanad, Coconut – Kozhikkode. The report of the expert committee on paddy cultivation 1999 in Kerala along with the one-man commission of M.Janardhanan Nair retired director of Agriculture 1981 are the predecessor of the new concept of SAZ. The expert committee on paddy has divided the Kuttanad area

into Six agro-ecological zones-upper Kuttanad, lower Kuttanad, Kayal lands, Purakad Kari, Vaikom Kari and rice lands. The Kuttanad, Kole and Onatukara are the wetland ecosystems of Kerala, while Pokkali and Kaipad are the fish-prawn integrating organic farming area, Waynad is a high range farming area and Palakkad is the rice bowl of Kerala.

The Pokkali, Kaipad rice varieties are on the huge decline due to lack of profit from the cultivation as well as the seasonal hazards are having a negative impact. The recent trends reveal that the paddy cultivation is being substituted with fish rearing. The wetland cultivation areas like Kole, Kuttanad and Onnatukara is also facing ecological stress. The fragile ecosystems of these areas are been disrupted due to the conversion of land for non-agricultural purposes posing a serious threat to the flora and fauna of the area. Massive reclamation of the agricultural land areas has already been started by the district administration.

Significance of SAZs

During the era of green revolution in India, the state of Kerala was also brought under its purview as a national agenda. The Alapuzha and Palakkad both the rice bowls of Kerala were selected for the programme. During 1974-1975 there was an increasing trend in the area under cultivation by 11 percent, production increased by 34 percent and yield per hectare jumped to a 12 percent. During 1975-1990 though there was a negative growth in production (14.15 percent) which was due to a decline in area under paddy cultivation (33 percent) but the productivity recorded an increase of 29 percent. This was mainly due to high amounts of chemical fertilizers that were introduced for cultivation. The huge amount of chemical fertilizers that were introduced into farming at Kuttanad had put the fragile ecosystems at stake. Thus, a macro-profile programme such as Green revolution when initiated into a micro-profile it might not reap the expected outcome.

When green revolution and its by-products of High Yielding Varieties seeds and fertilizers swept across the farmlands neglecting the indigenous varieties of rice as well as traditional organic farming practices. There were many campaigns like Save our Rice Campaign (SoRC), the Rice Diversity Block (RDB) which saved more than 1,000 varieties were preserved. The Tanal Agro-Ecological Centre (TAEC) in Panavally in Wayanad district of Kerala has 219 endogenous rice varieties and 164 are native to Kerala. The British Gazette documents 3,000 varieties of paddy were grown in Kerala itself of which as of now only 200 is known. There are centuries old organic farming techniques that were practiced in Kerala which has found in

some coastal areas of Kerala. There are even the techniques of integrated farming in which paddy and fish were cultivated.

The traditional farming techniques which were eco-friendly was swept out by the chemical fertilizers causing ecological imbalances. In an era of ever-increasing health expenses, the medicinal properties of these varieties cannot be discarded. The Karinjan and Karimalakaran are good for diabetics due to rich dietary fibers, the Mundakan rice varieties increase the stamina, the Vella chennellu and Chuvanna chennellu are good for treating the hormonal imbalances among women. The Vellanavara and Rakthashali are used in the medicinal Karkidaka Kanji (a rice prodigal). There are traditional, organic methods of cultivation like Pokkali cultivation. The pokkali cultivation is an integrated farming technique where paddy is cultivated and after its harvest fish is cultivated. Though the government has brought many schemes to increase the area under its cultivation, this geographical indication (GI) rice variety is on a verge of near extinction.

The population of Kerala is also increasing at an alarming rate. In a span of 10 years the population density has increased from 819(2001) to 860(2011). This shows the huge pressure on the land due to increasing population. This increase in population has actually elevated the position of land from that of a resource to an asset. Since its, an asset people look for a permanent income from it rather than an uncertain income. In the state of Kerala, there is both inward as well as outward migration. With increasing population, food deficit will be an unavoidable situation that Kerala will have to counter. The state will not be able to provide 'food security' to the growing population. The state which was known for welfare program will have to deter from her path of inclusive growth. There is a significant change in the land-use-pattern in Kerala. The land-use-pattern in Kerala is divided into Forest, Land put to non-agricultural uses, Barren and uncultivated land, Permanent Pastures and Grazingland, Land under miscellaneous tree crops, Cultivable waste, Fallow other than current Fallow, Current Fallow, the Net area sown, Area sown more than once, Total cropped Area. While cross-referring the data's of the Economic surveys the data reveals that it's moving against the agriculture.

Table 1. Change in Land use pattern in Kerala(Area in Ha)

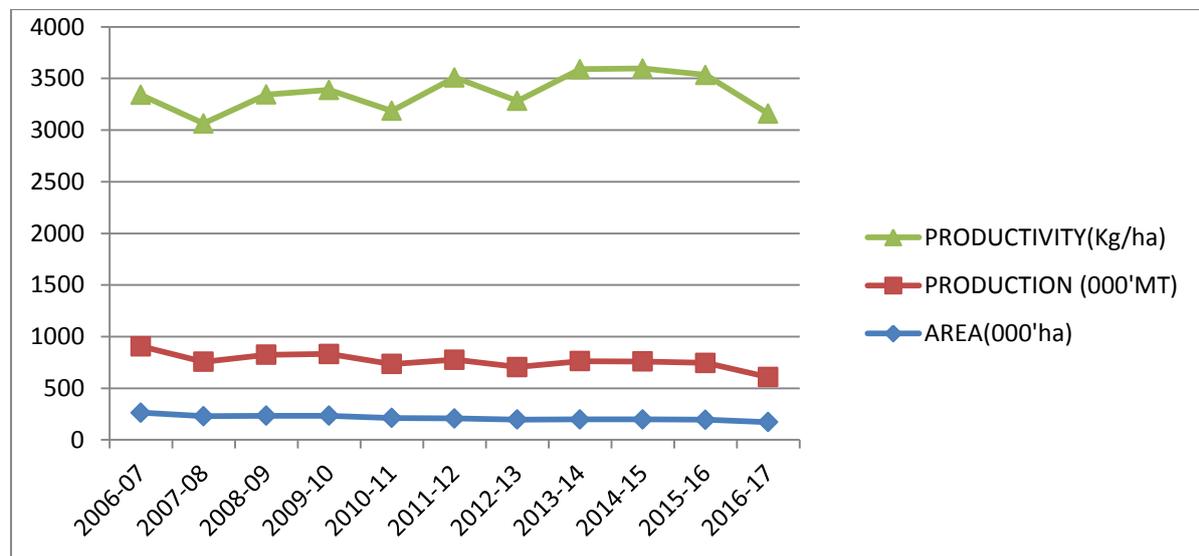
Sl No	Classification of Land	Area (in ha)		Percentage of Geographical areas	Change in the area between 2015-16 and 2016-17	
		2015-16	2016-17		Actual	Percentage
1	Forests	1081509	1081509	28	0	0
2	Land put to non – agricultural use	434646	441934	11	7288	2
3	Barren and uncultivated land	13100	11780	0.3	-1320	-10
4	Permanent Pastures and Grazing lands	0	0	0	0	0
5	Land under miscellaneous tree	2663	2450	0.06	-213	-8
6	Cultivable waste	99499	101379	3	1880	2
7	Fallow other than current fallow	55258	55530	1	272	0.49
8	Current fallow	70003	72008	2	2005	3
9	Net sown area	2023073	2015482	52	-7591	-0.38
10	Area sown more than once	604504	568518	15	-35986	-6
11	Total cropped area	2627577	2584000	66	-43577	-2
12	Cropping intensity (%)	130	128	0		

Source: Directorate of Economics and Statistics

The interpretation of the above-mentioned table shows that the land-use-pattern is moving against the agriculture and more agricultural land is kept either vacant or they are converted into the residential area to accommodate the growing population of the state as well as the infrastructure for the industrial development. There is a consistent decline in the total cropped area of the state from 26.27 lakh hectare in 2015-16 to 25.84 lakh hectare in 2016-2017. The categories like fallow other than current fallow and cultivatable wastelands have recorded an increase of 63.38 percent and 71 percent respectively. Thus there was an increasing tendency

to keep the cultivatable land as fallow land which is contributing a 2 percent decline in the gross cropped area.

Fig 1. Area, Production and Productivity of Rice in Kerala



Source: Directorate of Economics and Statistics

The fig.1 reveals that the area under rice is at the lowest in 2016-17. The increased rise in population and change in land-use-pattern, the change in cropping pattern is adversely affecting the rice production in Kerala. The production of rice cultivation is at times substituted for other crops, the trend also shows the decline in the productivity and production which will adversely affect the public distribution system as well as the mid-day-meal schemes of the state.

Since there is a deficit in the rice production the import of food grains has been on the high pitch. During the 2011-2012, the import of food grains through Cochin port alone was 17,058 MT, increased to 1,74,344 MT in the year 2016-2017. Thus, when we are importing food crops like rice on which half the population depends will cause the population depends will cause outside flow of money. Also, it might cause high prices which might not be affordable for the marginalized section of the state, thus inclusive growth strategy will not be applicable. This might even disrupt the public distribution system and the nutrition value of the rice that is supplied through them.

Table 2. Area, Production, Productivity of Principal Crops in Kerala

SL.NO	Crops	Area (Ha)		Production(T)		Productivity(Kg/Ha)	
		2015-16	2016-17	2015-16	2016-17	2015-16	2016-17
1	Rice	196870	171398	549275	437112	2790	2550
2	Pulses including Tur	3764	1738	4265	1711	1133	984
3	Tapioca	69405	68664	2662610	2529729	38363	36842
	Cash Crops						
4	**Coconut	790223	781495	5873	5379	7432	6883
5	Rubber	550840	551050	438630	540400	796	981
6	Pepper	85948	85207	42132	34005	490	400
7	Coffee	84987	84976	69230	63476	815	747

** production in million nuts, productivity nuts/hectare

Source: Directorate of Economics and Statistics

The cropping pattern of Kerala reveals that it's moving against the food crops like rice, tapioca and pulses. The cash crop with an area of 62.46 percent of the total cropped area is dominating the food crops with an area of 9.35 percent. The table reveals that both the area under food crops and cash crops are reducing due to many factors like climatic to diseases to the crops, but the food crops are showing a drastic decline. The deficit in rice production which is the staple food of the population will have serious consequences on the welfare programmes of the government. The cash crops especially rubber, pepper are export-oriented crops thus they are important in a national perspective. The area under coconut cultivation has shown a decline mainly due to root wilt disease, poor management and existence of small and unproductive palms. The price fluctuations in pepper are the main reason for the area under its cultivation to fall. Thus the data shows that during the years the area under both food crops and cash crops has reduced but the cash crops are comparatively in an advantageous position.

Conclusion

SAZ is a region-centric agricultural development strategy that combines both the high yielding, organic varieties and technological aspects.. This strategy has a lot of significance in Kerala, so it's imperative that a model that perfectly fits in the system should be devised. In order to have self-sufficiency in the state, we need to cultivate the food crops on which half of the population depends. The strategy that combines the agro-climatic zones of Kerala from wetland cultivation to organic Pokkali to high land cultivation. The awareness among farmers, marketing techniques will play a pivotal role in the determination of its success.

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