

PACS and SDGs: A Study in Tamil Nadu, India

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Abstract: Cooperatives have emerged as a vital segment of the Indian economy. Here the Primary Agricultural Cooperative Credit Societies (PACS) are the village level institutions on which the whole cooperative structure is built. PACS have the potentialities to contribute to the Sustainable Development Goals (SDGs) at the micro-level. This study was undertaken to analyze these societies' role in the achievement of SDGs in Tamil Nadu. The study found that these societies embody multiple economic and social objectives. They stabilize village economies by reducing inequality and equitable sharing of benefits of sustainable development. They promote economic democracy and the empowerment of marginalized groups through democratic management, crucial to sustainable development. These societies implement many schemes and programmes of the Government for agriculture and rural development, directly contributing to SDGs. However, some challenges constrain their contributions to SDGs. Though uniform strategy for linking PACS functions with SDGs might lead to success, differences between individual societies necessitated the development of an appropriate plan suited to the unique situation.

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Keywords: Primary Agricultural Cooperative Credit Societies, Sustainable Development Goals, agrarian distress, PACS-SHG linkage, Interest subvention, PDS

1. Introduction

The cooperative movement in India is one of the largest in the world. Cooperatives have now emerged as a vital segment of Indian economy by covering about 98 percent of rural India, having more than 8.50 lakh societies [a lakh is 100,000] with a membership of about 290 million (NCUI, 2018). Since establishing the first Primary Agricultural Cooperative Credit Societies¹ (PACS) in India, both the Government of India and State Governments use the cooperative institutional network to implement various schemes and programmes for agriculture and rural development. Hence, cooperative institutions' contributions to agriculture and rural development have been felt across the country. This trend is evident from cooperatives' contributions to the green revolution, white revolution, and Public Distribution System (PDS)². In this context, cooperatives in general and PACS, in particular, have significantly contributed to the Sustainable Development Goals (SDG) at the micro-level. This research paper attempts to analyze the role of sample PACS in Tamil Nadu in achieving SDGs at the village level.

2. India and Sustainable Development Goals

The SDGs, otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. SDGs are an intergovernmental set of 17 Goals with 169 targets. They follow and expand on the Millennium Development Goals (MDGs), which were agreed upon by 189 countries in 2001 to eradicate poverty, hunger, and inequality. These 17 Goals build on the Millennium Development Goals while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace, and justice, among other priorities. These goals are interconnected. They provide clear guidelines and targets for all countries to adopt according to their preferences and the environmental challenges. SDGs need a well-governed

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State, a stable and responsible private sector, an influential and inclusive civil society, a supportive global partnership, and a vibrant social economy, including cooperatives. Each of these should contribute its comparative advantage to work towards the SDGs collectively.

India, home to one-sixth of all humanity, holds the key to the 2030 Agenda's success. India's commitment to the SDGs is reflected in its convergence with the national development agenda. India's strategies for a 'New India' by 2022, and Vision for 2030, Aspirational Districts Programme, just to name a few, directly address SDGs' challenges. An SDG mapping document speaks about the role of different Ministries of the Government of India in SDGs. Based on the evidence from the SDG India Index & Dashboard 2019-20, which measures progress at the sub-national level, the country has developed a robust SDG localization model centered on adoption, implementation, and monitoring at the State and district levels. To coordinate all the SDG efforts at the national and sub-national levels, NITI Aayog acts as the nodal institution. At the same time, owing to the country's federal structure, the States/Union Territories play a significant role in ensuring the success of the SDG agenda (NITI Aayog, 2019-20, p. 13). As far as Tamil Nadu is concerned, the Government has constituted a High Power Committee chaired by the Chief Secretary to Government to oversee SDGs' implementation. Eight thematic Working Groups have been formed to review and monitor the achievement of goals and targets. The implementation of programmes is coordinated by the State Development Policy Council (Government of Tamil Nadu, 2020).

3. Cooperatives and Sustainable Development Goals

Theoretically speaking, cooperatives as a potent movement should be central to the international development agenda in achieving SDGs. Yet, despite its size and outreach, the cooperative sector has not been very influential in the debate towards achieving SDGs from micro to macro level. Cooperatives are already present in all the areas that the SDGs envisage the direction the world will take in its journey to make sustainable development a reality. Although cooperatives, with their focus on members and local needs, are central to the realization of sustainable development worldwide, they have not always been proactive in national and international debates. This trend explains the relatively limited visibility and attention that cooperatives enjoy in the post-2015 development agenda debate (ILO, 2014, p. 59). It may be probably due to:

- lack of understanding of cooperatives' actual and potential contribution to sustainable development due to the dearth of studies on this subject.
- cooperatives' preoccupation with issues strictly related to their members
- failure to develop strategies to link themselves with the national and international agenda.
- general perceptions that cooperatives could serve as an institutional vehicle for implementing Government schemes and programmes but may not serve as development institutions.

However, cooperatives as grass-root democracies and institutional platforms of user groups can contribute to SDGs. The SDGs' root is that development has three equally important components - economic, social, and environmental. Cooperative institutions explicitly have economic and social bottom-lines, as they are both associations and enterprises. The 7th Cooperative Principle, Concern for Community, states that "*Cooperatives work for the sustainable development of their communities*". Secondly, the SDGs cover all economic activities (agriculture, industry, housing, health, education, production, consumption, etc.), and address all vital global concerns (poverty, equality, employment, gender, climate change, peace, etc.). Cooperative institutions could contribute to all SDGs, both because they are actively involved in these economic sectors and because their impact contributes substantially to the global concerns mentioned by the SDGs. Cooperatives are particularly well placed to facilitate an articulation across these three levels (international, national, and local levels) of action, owing to the cooperative model's specific features, including the values of democracy and solidarity, and the principles of cooperation among cooperatives and concern for the community. It also proposes that strong partnerships between and within cooperative organizations can help improve the cooperative movement's emerging role as a pivotal actor in SDG implementation (Jeffrey Moxom, et.al. 2019, p. 127). The potential role of cooperatives in India could very well be used to achieve SDGs.

4. Statement of the Problem

Tamil Nadu is one of the cooperatively developed States in India. Cooperatives in Tamil Nadu play a vital role in uplifting the poor and oppressed (Government of Tamil Nadu, 2019-20, p. 2). More than 10,000 cooperatives are functioning at the primary level to meet the financial and non-financial requirements of farmers, milk producers, fishers, hill tribes, and others. Among these primary level cooperatives, PACS are the foundation stone on which the entire cooperative structure is built in Tamil Nadu. There are 4,450 PACS functioning in the State. They are village-level institutions, having direct contact with the members, and cover all the villages in this State. Such an extensive institutional network, infrastructure, and rural outreach enable these institutions to reach the financial and non-financial needs of the farm and non-farm sectors. The business performance of these societies is given in Table-1. It shows that there has been continuous growth in all the selected indicators. More importantly, more than thirty percent of the members were borrowing members, which means that the members continuously associate themselves with their PACS' affairs. Accordingly, it was found that the total loans disbursed by all PACS in Tamil Nadu increased from Rs.10,618.55 crores in 2010-11 to Rs.21,432.67 crores in 2019-20 [a crore is 10 million]. The achievements of these organizations have contributed to several SDGs. If these institutions' potentialities are harvested systematically, their contributions to SDGs will be very significant and measurable at the village level. By doing so, the Government machinery could declare the particular geographical area has achieved SDGs. If this is the macro-level trend, how do PACS in Tamil Nadu meet the micro-level's SDG requirements? How do the stakeholders perceive the relationship between the functions of their PACS and SDGs? What are the challenges they are facing in achieving SDGs at the micro-level? Finding answers for these and other relevant issues is necessary for the context of enhancing the role of PACS in the achievement of SDGs in Tamil Nadu. Hence, this study was undertaken.

5. Objectives of the Study

This study's primary objective is to analyze sample PACS' role in achieving SDGs at the micro level. More specifically, this study was undertaken to:

- 1) analyze the business performance of sample PACS,
- 2) explore the role of sample PACS in SDGs,
- 3) examine the perceptions of members on the role of PACS in SDGs, and
- 4) identify the challenges faced by sample PACS in the achievement of SDGs.

Table -1
Business Performance of PACS in Tamil Nadu

(Rupees in Crores)

(Members and borrowing membership in Lakhs)

Year	Number of PACS	No. of Members	No. of Borrowing members	Deposits	Loan Disbursed
(1)	(2)	(3)	(4)	(5)	(6)
2010-11	4,488	95.11	54.72 (57.5)	3,833.35	10,618.55
2011-12	4,530	114.26	38.93 (34.7)	4,308.19	17,881.99
2012-13	4,530	104.20	49.81 (47.8)	5,633.79	20,582.03
2013-14	4,530	151.76	59.61 (39.3)	5,995.49	20,989.51
2014-15	4,530	116.95	63.93 (54.7)	5,987.72	20,326.63
2015-16	4,480	109.84	69.46 (63.2)	6,874.66	19,409.52
2016-17	4,450	132.01	55.68 (42.2)	7,352.64	15,403.51
2017-18	4,450	122.88	56.36 (45.9)	6,606.17	17,784.88
2018-19	4,450	136.18	60.57 (44.5)	6,371.79	19,723.89
2019-20	4,450	153.89	72.75 (47.3)	6,738.94	21,432.67
Compound Annual Growth Rate (CAGR)		4.93%	2.89%	5.80%	7.28%

Source: Compiled from *Policy Note on Cooperation*, Government of Tamil Nadu and publications of National Federation of State Cooperative Banks Ltd (NAFSCOB) for various years.

Note: Figures in brackets in column (4) are percentage of borrowing members

6. Methodology and sampling

This study is both descriptive and analytical. Survey method was followed for this study. By following a multi-stage random sampling technique, sample units for this study were selected. At the first stage, PACS were grouped as per seven agro-climatic zones in Tamil Nadu (*North Eastern Zone, North Western Zone, Western Zone, Cauvery Delta Zone, Southern Zone High Rainfall Zone, and Hilly Zone*). In the second stage, seven viable PACS were selected, representing each agro-climatic zone based on specific performance indicators (Table-2).

Table-2
Performance Indicators

Indicator number	Performance indicators
1	PACS which have diversified their business
2	PACS which have higher level of members' patronage in capital formation
3	PACS which are placed in the financially viable category
4	PACS which respond properly to the needs of agricultural system
5	PACS which have professionally trained and competent staff
6	PACS which enjoy continuous profit from their business
7	PACS which have implemented Government / NABARD / NCDC schemes and programmes for the development of agriculture and allied sector

In the third stage, Yamane formula was used to determine the sample size. The determined sample size has been distributed based on probability proportionate to size sampling (PPS) of the population of each society. The number of member respondents from each PACS is determined by their number relative to the entire population. Being the primary users of PACS' services, the individual members alone were selected as sample respondents for this study. At the same time adequate care has been taken to see that the sample PACS and the members selected will represent the population (Table - 3). The Committees and Commissions reports, research studies, documents, and other secondary sources of data and information were collected and used. Data relating to the membership, deposits, working capital, loans outstanding, profit, and business diversification were collected from the sample PACS' Annual and Audit Reports. The period of study was between 2010-11 and 2019-20.

7. Scope and Limitations of the Study

This study was primarily focused on PACS' role in Tamil Nadu to achieve SDGs at the micro-level. The study's limitations are that the status of cooperative democracy in cooperatives in general and PACS, in particular, has been restored during this study period after a gap of three decades due to various reasons. The present generation also considered that the PACS are institutional networks for implementing various schemes and programmes by the Government. Hence, the responses received from the sample respondents were based on the economic advantages realized by them from their PACS' services. Further, this study is based on the perceptions of the sample respondents. Perception here refers to how sample respondents understood or interpreted the functions of sample PACS. Perception is the subjective process of perceiving, acquiring, and interpreting sensory information. Hence, this study is not far away from the limitations of perception bias. However, these limitations have not affected the purpose of the study.

8. Analysis and Discussion

There are 4,450 PACS functioning in Tamil Nadu as of 2019-20. They encourage thrift and savings among members and customers. They provide short term crop loans and medium-term investment loans for agricultural and allied activities like micro-irrigation, land development, purchase of milch animals, etc. These societies also provide loans for non-agricultural purposes like house construction, income-generating activities of Self Help Groups (SHGs), Joint Liability Groups (JLGs), and other non-farm sector activities. PACS play a significant role in implementing Government Programmes. PACS undertake the sale of agricultural inputs like fertilizers, seeds, and small agricultural equipment. Some of the PACS also run agro service centres, common service centres, agri clinics and Fair Price Shops (FPS) under

PDS. With this background, the performance of sample PACS is analyzed hereunder with select performance indicators.

8.1 Position of membership in sample PACS

As per the provisions of the by-laws of the sample PACS, the persons who are eligible to become members are: (1) any farmer (including sharecroppers, oral lessees, and tenant farmers), (2) SHGs and JLGs that are functioning in the area of operation of PACS, (3) the other groups which are working in the area of operation of the society and recognized by the Government, (4) State Government, and (5) the Financing bank. It was found that the average number of members per sample PACS has grown from 3,539 members to 4,933 members during the study period (Table-4). The position of membership was high in Mullukuruchi PACS and low in Bembatty Belethala PACS. The prime reason for the variation in the membership was the size of the sample PACS' area of operation and coverage of farmers.

Table -3
Basic Profile of sample PACS

Agro climatic Zone	Agro climatic Regions	Districts	Name of sample PACS	Date of Registration	Date of Starting	Audit classification	Number of sample respondents selected for the study
Southern Plateau & Hills (Zone X)	Region-1	Salem	S.1382, Mullukuruchi PACS	20.06.1960	20.07.1960	A	83
	Region-2	Dindigul	D.D514, Vedasanthur PACS	21.09.1967	14.12.1967	A	34
East Coast Plain & Hills (Zone XI)	Region-3	Cuddalore	E.2596 B.Mutlur PACS	28.11.1968	12.02.1969	A	42
	Region-4	Thiruvarur	ZA.112, Koradacheery PACS	26.09.1967	19.11.1967	A	130
	Region-5	Sivagangai	N.N.605 Idaikattur PACS	12.02.1968	28.03.1968	A	60
West Coast & Hills (Zone XII)	Region-6	Kanyakumari	Y 48, Myladi PACS	30.11.1958	06.12.1958	A	20
	Region-7	Nilgiris	J.293, Bembatty Belethala PACS	14.03.1989	15.04.1989	A	24
Total sample respondents							393

Source: Compiled from the Annual and Audit Report of the sample PACS for various years

Table -4
Position of Members in sample PACS

(Figures in numbers)

Year	Sample PACS							Average number of members per PACS
	Mullukurichi	Vedasanthur	B.Mutlur	Koradacheery	Idaikattur	Myladi	Bembatty Belethala	
2010-11	4,221	3,964	2,808	5,484	3,439	3,518	1,336	3,539
2011-12	4,205	4,333	2,907	5,484	3,450	3,521	1,348	3,607
2012-13	4,705	2,427	5,462	5,484	3,463	3,521	1,361	3,775
2013-14	4,750	4,499	5,647	7,641	3,524	4,376	1,373	4,544
2014-15	4,796	4,661	5,649	7,684	3,580	4,486	1,391	4,607
2015-16	4,813	4,804	5,721	7,718	3,620	4,447	1,403	4,647
2016-17	4,869	4,975	5,865	7,740	3,633	4,464	1,429	4,711
2017-18	4,968	5,086	5,946	7,889	3,633	4,897	1,452	4,839
2018-19	5,010	5,285	6,284	7,789	3,633	4,987	1,476	4,923
2019-20	5,018	5,295	6,308	7,789	3,639	4,998	1,481	4,933
CAGR	0.1774	0.0553	0.0003	0.0299	0.5682	0.0299	0.3569	

Source: As in Table -3

8.2 Position of Working Capital

Working capital indicates the amount of funds available for undertaking business. An increase in the working capital over the years reflects the PACS' financial strength, which could indicate better performance. Owned funds and borrowed funds together constituted the working capital of the PACS. If the contribution of owned funds and deposits is high in working capital, that will reduce the cost of funds for PACS. In the case of the sample PACS, it was found that the position of working capital of sample PACS has grown over the years. The position of working capital in Mullukurichi PACS has increased from Rs.2221.51 lakhs to Rs.4033 lakhs during the study period. The position of the average working capital per PACS has increased from Rs.865 lakhs to Rs.1531 lakhs during the study period (Table -5). At the same time, it was found that in Mullukuruchi PACS, Vedasanthur PACS, Idaikattur PACS, and Myladi PACS, the position of deposits constituted more than 50 percent of their working capital. In most cases the cost of working capital for these PACS would be comparatively lower than for their counterparts. This trend also directly contributed to the financial viability of these sample PACS. Further, the growth in the position of share capital and deposits reflects the credibility of these PACS functions to members.

8.3 Position of Loan outstanding

In the case of the sample PACS, they provide short-term and medium-term loans to members for production and consumption purposes. Sample PACS adopted individual and group lending approaches for loans to members. Generally, group lending approaches are adopted in the case of short-term loans through SHGs and JLGs. Originally

PACS' lending portfolios were dominated by crop loans. However, due to the problem of loan waiving policies of the Government, over the years, the share of crop loans in the total loans came down substantially. These trends were also found during the study period. Generally, an increase in loan outstanding would attract more interest income for sample PACS. Also, the increased trend in loan operations would cover more beneficiaries. The average loan outstanding at the sample PACS level increased from Rs.803.65 lakhs in 2010-11 to Rs.1095.51 lakhs in 2019-20 (Table -6). The position of the loan outstanding was comparatively higher in Mullukurichi PACS than other sample PACS. However, the maximum CAGR (Compound Annual Growth Rate) was observed in Idaikattur PACS, followed by Mullukurichi PACS.

8.4 Financial Results of PACS

Cooperative organizations consider the income earned over the expenditure as 'surplus'. However, for accounting purposes, PACS use the term 'profit' in the place of 'surplus'. Though the main aim of PACS is not to maximize profits, they should earn profit to render efficient service to members. Also, a PACS without profit cannot have a strong financial base and withstand severe competition. Profit is one of the indicators of financial viability. It depends on various factors, which are a higher proportion of owned funds in the working capital, high ratio of deposits in borrowed funds, effective recycling of funds, and lower level of establishment cost. It was found that though there has been overall growth in the position of profit earned by sample PACS, there were fluctuations during the study period (Table -7). This was due to the variations in the position of the loan outstanding of the sample PACS because a major portion of the profit for PACS has been earned from their credit business, especially the jewel loan business only (Ravichandran, K:2013, p.449). All the sample PACS issued general jewel loans to members and customers and agri jewel loans to members. Further, all the sample PACS are viable PACS and placed in category 'A' in Audit (refer to Table-3).

Table -5
Position of total Working Capital in sample PACS

(Rs. in lakhs)

Year	Sample PACS							Average amount of working capital per PACS
	Mullukurichi	Vedasanthur	B.Mutlur	Koradacheery	Idaikattur	Myladi	Bembatty Belethala	
2010-11	2,221.51 (72.2)	366.69 (86.1)	473.94 (8.1)	615.32 (32.1)	963.42 (52.9)	748.67 (56.6)	665.42 (24.8)	865.00
2011-12	2,252.88 (77.4)	390.93 (81.1)	528.25 (13.2)	652.32 (35.3)	1,051.55 (57.3)	804.86 (55.1)	854.55 (19.9)	933.62
2012-13	2,620.00 (76.6)	454.49 (76.1)	747.03 (11.3)	679.66 (36.5)	1,051.15 (58.1)	854.43 (61.1)	951.15 (19.9)	1,051.13
2013-14	3,163.09 (63.5)	475.42 (86.1)	879.42 (17.3)	780.11 (42.5)	1,057.65 (58.7)	928.66 (62.2)	997.64 (22.2)	1,183.14
2014-15	2,138.09 (98.8)	541.48 (88.6)	904.06 (12.6)	814.58 (34.5)	1,056.46 (59.1)	984.02 (63.5)	1,006.47 (22.8)	1,063.59
2015-16	3,433.52 (64.9)	600.37 (87.8)	781.42 (15.6)	893.04 (33.5)	1,057.03 (59.8)	1,000.01 (64.9)	1,037.06 (23.1)	1,257.49
2016-17	3,930.13 (59.8)	755.42 (86.2)	730.03 (20.9)	880.87 (29.6)	1,166.80 (62.9)	1,079.13 (65.5)	1,166.81 (20.5)	1,387.03
2017-18	3,704.6 (63.1)	874.85 (73.2)	992.08 (16.6)	951.44 (25.2)	1,201.58 (64.8)	1,143.33 (64.8)	1,191.56 (13.6)	1,437.06
2018-19	3,937.23 (60.1)	880.99 (78.7)	928.52 (18.1)	1,069.36 (26.5)	1,197.87 (65.3)	1,157.14 (63.9)	1,247.83 (21.1)	1,488.42
2019-20	4,033.00 (58.6)	916.49 (78.9)	952.18 (18.6)	1,130.06 (26.7)	1,248.73 (69.3)	1,167.72 (65.3)	1,268.83 (21.4)	1,531.00
CAGR	0.0614	0.0959	0.0723	0.0627	0.0263	0.0455	0.0667	

Source: As in Table -3.

Note: Figures in brackets are percentage of deposits in the total working capital

Table -6
Position of Total Loan Outstanding in sample PACS

(Rs. in lakhs)

Year	Sample PACS							Average Loan Outstanding per PACS
	Mullukurichi	Vedasanthur	B.Mutlur	Koradacheery	Idaikattur	Myladi	Bembatty Belethala	
2010-11	1,486.88	388.26	511.66	879.76	1,252.09	684.95	421.96	803.65
2011-12	1,826.79	439.15	590.00	979.19	1,252.89	836.76	520.00	920.68
2012-13	2,203.54	525.93	808.47	1,220.71	1,256.93	917.66	608.47	1,077.39
2013-14	2,647.36	538.77	931.19	1,166.80	1,268.03	996.89	631.19	1,168.60
2014-15	2,853.86	538.77	875.51	1,331.90	1,278.03	1043.55	775.51	1,242.45
2015-16	2,254.76	506.46	859.40	1,321.17	1,289.79	1302.94	859.40	1,199.13
2016-17	2,146.61	391.14	653.59	1,341.42	1,036.90	1033.94	653.59	1,036.74
2017-18	2,216.81	454.10	988.76	1,294.88	1,111.31	932.95	688.76	1,098.22
2018-19	2,367.91	584.71	980.72	1,284.71	1,178.77	945.94	680.72	1,146.21
2019-20	1,958.78	598.71	992.02	1,341.17	1,239.94	945.95	592.02	1,095.51
CAGR	0.7827	0.6805	0.5551	0.6874	1.0087	0.7505	0.7401	

Source: As in Table -3

Table -7
Position of Profit in sample PACS

(Rs. in lakhs)

Year	Sample PACS							Average Profit per PACS
	Mullukurichi	Vedasanthur	B.Mutlur	Koradacheery	Idaikattur	Myladi	Bembatty Belethala	
2010-11	63.24	79.02	68.99	193.36	21.98	39.02	10.85	68.07
2011-12	114.33	69.39	71.68	215.80	22.45	59.32	12.95	80.85
2012-13	94.65	74.38	89.38	222.64	23.28	84.33	13.48	86.02
2013-14	82.62	78.98	99.39	253.12	24.67	68.96	14.68	88.92
2014-15	96.21	88.6	91.24	257.99	38.19	88.90	16.79	96.85
2015-16	100.67	89.12	118.38	269.59	49.03	79.12	17.07	103.28
2016-17	101.24	102.15	88.00	229.07	70.03	91.17	14.93	99.51

Year	Sample PACS							Average Profit per PACS
	Mullukurichi	Vedasanthur	B.Mutlur	Koradacheery	Idaikattur	Myladi	Bembatty Belethala	
2017-18	138.51	85.30	99.53	236.21	76.58	75.30	14.57	103.71
2018-19	128.01	83.37	93.94	233.18	80.15	83.38	15.25	102.47
2019-20	139.45	84.83	85.08	270.46	83.19	88.89	16.73	109.80
CAGR	0.4951	0.9389	0.8300	0.7421	0.3063	0.4810	0.6805	

Source: As in Table -3

8.5 Business Diversification

Through diversified business, it was found that sample PACS met the needs of members and customers related to agriculture and rural development. Apart from the distribution of inputs (seed, fertilizer, pesticides, etc.) to the farmers, both as a component of crop loan and direct sales, sample PACS run agricultural extension centres and FPS. They also organized SHGs and JLGs by dovetailing support from Government schemes and programmes. The areas of business diversification adopted by sample PACS are given in Table -8.

Table -8
Areas of Business Diversification identified by sample PACS

Name of sample PACS	SHG	JLG	FPS/ PDS	Agri Clinics	Agro Service Centre	Common Service Centre
Mullukurichi PACS	126 Groups	7 Groups	13 (FT=4 + PT=9)	x	√	√
Vedasanthur PACS	18 Groups	4 Groups	9 (FT=4 + PT=5)	√	√	√
B.Mutlur PACS	6 Groups	12 Groups	9 (FT=9)	x	√	√
Koradacheery PACS	117 Groups	9 Groups	13 7 (FT=7 + PT=4)	√	√	√
Idaikattur PACS	137 Groups	x	√	√	√	√
Myladi PACS	82 Groups	x	√	√	√	√
Bembatty Belethala PACS	2 Groups	6 Groups	x	x	x	√

Source: As in Table-3

Note: FT- indicates Full time Fair Price Shops. PT - indicates Part -time Fair Price Shops.

√ - indicates this business is undertaken by sample PACS.

X - indicates this business is not undertaken by sample PACS.

From the above analysis of the general performance of sample PACS it was found that all the sample PACS have become financially viable societies due to: (1) the coverage of all farm families as members, promotion of SHGs and JLGs, and (2) need-based business diversification. With this background, sample PACS' role in achieving SDGs at the micro-level is analyzed hereunder.

8.6 Role of sample PACS in SDGs

Historically, PACS are considered the appropriate agencies in Tamil Nadu to implement various schemes and programmes of the Government for agriculture and rural development. Hence, PACS' role in SDGs can be measured in terms of their role in implementing various government schemes and programmes. PACS in Tamil Nadu are directly implementing the programmes of the Government of India like Financial Inclusion, Deendayal Antyodaya Yojana-National Rural Livelihood Mission, Interest Subvention Scheme, Pradhan Mantri Fasal Bima Yojana, Public Distribution System, and others. Accordingly, a mapping exercise was done to identify sample PACS' role in implementing Central Sector Schemes to achieve SDGs. This has been done based on the mapping done by NITI Aayog, Government of India on central sector schemes and Ministries of Government of India with SDGs (Annexure-1). It was found that the credit and other business functions of the sample PACS directly contribute to the SDGs, especially for the Goals No. 1, 2, 8, 10 & 15. Among these functions, in the context of Financial Inclusion, providing institutional access to credit and other financial products to farmers and others in rural areas assumed greater importance.

8.6.1 Pradhan Manthri Jan – Dhan Yojana - Financial Inclusion

The concept of Financial Inclusion can be traced back to the year 1904 when the Cooperative Credit Societies Act was enacted in India. Financial Inclusion's essence is to ensure that a range of appropriate financial services is available to every individual and helps them understand and access those services. The Pradhan Manthri Jan – Dhan Yojana (PMJDY) initiated by the Indian Government in 2014 aimed to include all people under the formal financial institutions so as to rescue people from the clutches of non-formal financial institutions. According to NABARD (2018-19, p. 18) access to a well-functioning financial system can empower individuals economically and socially by allowing them to protect themselves from economic uncertainties. Efficient, cost-effective, safe, and inclusive finance approaches for savings, credit, insurance, and remittance services for the poor and vulnerable sections can increase their incomes, build productive assets, manage risks, and break the vicious cycle of poverty. Financial Inclusion is not explicitly mentioned as an independent goal under the SDGs. Its importance as an enabler is reflected in the SDGs such as 'No Poverty', 'Zero Hunger', 'Good Health and Well-Being', 'Gender Equality', 'Decent Work and Economic Growth', 'Industry, Innovation and Infrastructure', 'Reduced Inequality', and 'Partnership for the Goals'. However, the SDGs' sub-goals amply stress the need for equal access to basic financial services for both men and women. Though PACS are not directly involved under this scheme of PMJDY, it was found that most of the PACS in Tamil Nadu have increased access to credit and other financial services to their members, to promote Financial Inclusion (Government of Tamil Nadu: 2019-20, pp. 18 & 21). All the sample PACS have ensured that the scheme's benefits have reached all the farmers in their area of operation.

JLG comprised of small and marginal farmers, tenant cultivators, sharecroppers are formed to provide credit to their members who hitherto could not access credit from institutional sources. This scheme has facilitated the joint purchase of seeds and fertilizers, the adoption of technology and mechanization through joint agricultural operations. It was found that except Idaikathur PACS and Myladi PACS, all the other sample PACS have promoted JLGs in their operational area and contributed significantly to Financial Inclusion (refer to Table-8).

8.6.2 Deendayal Antyodaya Yojana-National Rural Livelihood Mission

The Ministry of Rural Development, Government of India, launched the National Rural Livelihood Mission (NRLM) by restructuring Swarnajayanti Gram Swarojgar Yojana (SGSY) with effect from 1st April 2013 (RBI,2013), to create efficient and effective institutional platforms for the rural poor through SHGs. The Government of Tamil Nadu considers lending to SHGs by credit institutions is essential to achieve the objectives of Financial Inclusion. PACS in Tamil Nadu have been facilitated to form and give credit linkage to SHGs. The Registrar of Cooperative Societies, Government of Tamil Nadu, issued separate guidelines for facilitating the PACS and SHG linkage³. In the case of PACS – SHG linkage, two models exist across the State of Tamil Nadu. They are: (1) SHG Members' Livelihood Model, and (2) PACS Business Centered Model (Ravichandran K., 2012, p. 42). In the second model again, two approaches are coming to the surface. They are: (1) Target Approach, and (2) Umbrella Approach. It was found that more than 70 percent of PACS in Tamil Nadu have given credit linkage to SHGs and contributed to Financial Inclusion and SDGs. All the sample PACS have promoted SHGs in their area of operation (refer to Table -8). In this study, it was found that

members of SHGs were induced to come to sample PACS not merely for loans but also for easy access to an institution and availability of its services in their neighborhood (Ravichandran, K., 2016, p. 55).

8.6.3 Interest Subvention Scheme

Crop loan is the most critical component of agricultural finance extended by PACS in Tamil Nadu. Considering the importance of crop loan, the Government of India implemented the policy of 2 percent interest subvention from the year 2007-08. The PACS were allowed to issue crop loans from their owned funds with interest rate 7 percent up to Rs.3 lakh per borrower. In Tamil Nadu, PACS have been allowed to issue interest-free crop loans to farmers who repaid the loan within the due date since 2009. Accordingly, all PACS in Tamil Nadu are permitted to provide crop loans with full interest subvention (Government of Tamil Nadu, 2009). The Government of Tamil Nadu met the interest subsidy and interest subvention for crop loan, which was directly paid to the PACS. While fulfilling this objective, the scheme fostered Ground Level Credit Flow's growth from the PACS at a steady level. The stakeholders of the Short-term Cooperative Credit Structure (STCCS) overwhelmingly believed that the scheme has had a positive impact on ground level credit flow. There was also a positive impact of the scheme on the recovery of loans, as seen in the steady decline in overdue loans at ground level. On this score, too, there was a strong endorsement of the scheme by the stakeholders of the STCCS (NAFSCOB, 2016, p. 7). All the sample PACS disburse the crop loan to the members and enable them to benefit under this scheme. It was also found that the interest subvention scheme also helped the sample PACS to recover the loan dues in time.

8.6.4 Pradhan Mantri Fasal Bima Yojana (PMFBY)

New Crop Insurance Scheme, namely "Pradhan Mantri Fasal Bima Yojana" (PMFBY), was introduced in 2016, to reduce agricultural distress and promote farmers' welfare. In the event of crop failure, the borrower farmer has ensured indemnity for the damage caused for the insured crops. All the sample PACS issue crop loans to farmers with an insurance component under this scheme. The outcome of the loan operations under these schemes is that the sample PACS could achieve their annual target in lending crop loans to farmers. At the same time, the availability of interest-free loans and crop insurance insulates the farmer against the onslaught of risks and uncertainties during agrarian distress. The percentage of area brought under crop insurance cover to the net cropped area is also one of the indicators under the SDG-1 'Zero Hunger' in Tamil Nadu (Government of Tamil Nadu, 2020).

8.6.5 Public Distribution System

Tamil Nadu is the forerunner in implementing the Universal Public Distribution System in India. PDS plays a significant role in ensuring Food Security among the poor, oppressed, and vulnerable. In Tamil Nadu, food security is ensured by distributing essential commodities and special PDS commodities to all family cardholders through 32,924 fair price shops. Moreover, in Tamil Nadu, rice has been distributed free of cost with effect from 17.05.2011, and wheat has been distributed free of cost with effect from 02.02.2017 uninterruptedly to all the people to enable the poor people in Tamil Nadu to live without hunger. PDS in Tamil Nadu has been functioning as a "Universal Public Distribution System" and ensures Food Security throughout the year. Thus, the Sustainable Development Goal "End Hunger" has already been achieved (Government of Tamil Nadu, 2019-20, p. 93). All the sample PACS are serving as Link Societies⁴ under PDS in Tamil Nadu to distribute essential commodities through FPS and ensure food security in their area of operation. It was found that among the sample PACS, Koradacherry PACS and Mulukuruchi PACS have more FPS than their counterparts. This was due to the coverage of more family cardholders in their areas of operation.

8.7 Perceptions of sample respondents on the role of sample PACS in SDGs

For understanding the perceptions of sample respondents on the role of the sample PACS in achieving SDGs, the socio-economic and organizational profiles of sample respondents are analyzed.

8.7.1 Socio-economic profile of the sample Respondents

At the micro-level, one of the accepted criteria of development is sex. There is a clear distinction that has been made in development literature between sex and gender. Gender relates to the roles assigned to males and females in society. Thus, sex is a socio-economic variable involving roles, responsibilities, constraints, opportunities, and needs of males and females in an economy (Shanna K.C., 1988, p. 126). In this study, the majority of the sample

respondents were male (67.4 percent). However, the female population was also found to a significant level as individual members and as members of SHGs (Table-9).

Age is another important independent variable that influences the perceptions of an individual. Further, when an individual's age is related to a cooperative organization, the person's competency arises. When a person joins as a PACS member, he/she establishes a contractual relationship with the PACS. It was found that the majority of the sample respondents were in the age category of 36 to 55. Also, there is a need to accommodate the younger generation within the cooperative fold. It is recommended that appropriate strategies may be devised to accommodate the younger generation within the organizational ambit of sample PACS. The respondents' education level influences awareness about the financial institutions, whereas the uneducated have less awareness and banking knowledge (Jugale, V.B., 1992, p. 86). It was found that the majority of sample respondents belong to the category of higher secondary education and above.

Family type-wise classification is generally done, among others, based on the organization of the family (nuclear and joint) (Maninder Karur et al., 1997, p. 31). In this study, it was found that more than 64.4 percent of the sample respondents belonged to the nuclear family. This trend indicated that the joint family, which had been one of the rural social institutions, has been fading away in recent years, even in the rural area.

While analyzing the sample respondents' occupation, it was found that as high as 87.3 percent of the respondents' primary occupation was agriculture. Further income generated from secondary occupations also supplemented the growing financial need of the family. Generally, animal husbandry was found to be a secondary occupation in rural areas. But the mechanization of agriculture and continuance of drought severely hit this occupation too. As the available water sources could be sufficient for cultivating fodder for dairy animals, the dairy industry would become a natural subsidiary occupation (Maninder Kaur et. al., 1997, p. 32). In this study, it was also found that livestock and dairy were the secondary occupations for most of the sample respondents.

Income decides the financial background of a family. It is the yardstick to understand the standard of living. The poverty line and standard of living of a person are measured by using income as one of the indicators. It is difficult to get accurate information about the family income in Indian villages because they generally do not reveal the real worth of the goods that they produce for self-consumption and investment patterns. For them, income means the products sold in the market or the money received as salary or wages.

Table - 9
Socio-economic variables of sample respondents

(Figures in numbers)

Indicator number	Variables	Response	Total	% to total
1	Gender	Male	265	67.4
		Female	128	32.6
		Total	393	100.0
2	Age	Up to 35 years	41	10.4
		36 -55 years	187	47.6
		Above 56 Years	165	42.0
		Total	393	100.0
3	Educational Status	Literate with No formal education	14	3.6
		Up to Primary	34	8.6
		Secondary (6th to 10th)	111	28.2
		Higher Secondary (12th)	118	30.0
		Diploma / Graduate / Post-Graduate etc.,	116	29.6
		Total	393	100.0
4	Type of family	Joint	140	35.6
		Nuclear	253	64.4
		Total	393	100.0

Indicator number	Variables	Response	Total	% to total
5	Type of Primary Occupation	Agriculture	343	87.3
		Livestock	33	8.4
		Other Agricultural Activity	4	1.0
		Non-Agricultural Enterprises	5	1.3
		Other wage / salaried employment	8	2.0
		Total	393	100.0
6	Type of Secondary Occupation	Agriculture	11	2.8
		Livestock/dairy	189	48.1
		Other Agricultural Activity	92	23.4
		Non-Agricultural Enterprises	15	3.8
		Other wage / salaried employment	68	17.3
		No secondary occupation	18	4.6
		Total	393	100.0
7	Annual Family Income	Up to 25,000	214	54.5
		25,001 to 50,000	8	2.0
		50,001 to 75,000	38	9.7
		Above 75,000	133	33.8
		Total	393	100.0

Source: Compiled from sample respondents' interview schedule

Still, family income does mean the economic return from the main occupation and the family's income from all the sources. Here, annual family income refers to all the sources through which the respondents have had some returns of their livelihood activities in a year. As far as annual family income is concerned, the results show that a majority (54.5 percent) of the respondent's annual income was below Rs.25,000. This was because most of the sample respondents under study belonged to low-income categories as they were small and marginal farmers.

8.7.2 Organizational Profile of sample respondents

While identifying the organizational variables to analyze the respondents' perception of SDGs, the four Principles of Cooperation that directly speak about the participation of the cooperatives' affairs are taken into consideration. They are: (1) Voluntary and Open Membership, (2) Democratic Member Control, (3) Member Economic Participation, and (4) Education, Training, and Information. Accordingly, variables were constructed based on the pilot study, results and responses were sought from the sample participants (Table-10).

The rights of members and conditions for the membership are protected by the Tamil Nadu Cooperative Societies Act 1983 and Tamil Nadu Cooperative Societies Rules 1988. Hence, upon meeting basic requirements to become a member, all eligible individuals and groups are admitted as PACS members. Hence, it was found that all the farmers in the area of operation were admitted members of the respective sample PACS. While analyzing the sample respondents' responses, it was found that the number of members who had been in association with sample societies for about 10 to 15 years was more (44.3 percent) than for the other categories. It was also found that a significant percentage of sample respondents' family members (32.6 percent) had a membership with the sample PACS. The duration of membership is an essential variable in determining the relationship between members and their PACS. It is assumed that if membership duration is longer, there would be a sound relationship between the members and PACS. Longer duration of membership/customer will also represent the customers' loyalty (Taimani K.K., 1993, p. 240).

Members' participation in the management of the society is generally expected from their active participation in the General Body meeting, which is the supreme authority of cooperative management. It was found that all the sample respondents had participated in past General Body Meetings. It was also found that about 79.1 percent of the sample respondents participated in the General Body meeting regularly. This trend was attributed to the fact that: (1) the General Body meeting serves as a forum for the members to express their opinions / demands / suggestions

on the society's functioning. Hence, the majority of the members used this opportunity; (2) Strong leadership at the society level, which motivated the members to participate in the General Body meeting. At the same time, it is to be noted that the status of democracy in these societies was restored only after the recommendations of the Task Force on the Revival of STCCS. Hence, only about 2.4 percent of the sample respondents had had the opportunity to gain experience with the Board of Management of the society.

It is expected that all the members should contribute to a society's capital by subscribing to the share capital and depositing the surplus money available to them as savings. In most cases, members visit the PACS to use loan facilities only and, as such, their contribution to the capital of the society is restricted to 10 percent of the total loan borrowed. However, during the field study, it was found that the majority of the sample respondents (70.6 percent) contributed to the capital of the society by: (1) subscribing to share capital, and (2) depositing their surplus money. This trend reduces the cost of these societies' working capital, which significantly contributed to their financial viability.

Table - 10
Organizational variables of sample respondents

(Figures in Numbers)

Indicator number	Variables	Response	Total	% to total
1	Duration of membership with PACS	Less than 5 years	62	15.8
		5 to 10 years	96	24.4
		10 to 15 years	174	44.3
		Above 15 years	61	15.5
		Total	393	100.0
2	More than one membership in a family	Yes	128	32.6
		No	265	67.4
		Total	393	100.0
3	Participation in the General Body meeting	Occasionally	82	20.9
		Participated regularly	311	79.1
		Total	393	100.0
4	Experienced as a Member of Board of Director	Yes	59	2.3
		No	384	97.7
		Total	393	100.0
5	Contribution to the capital of the society	Subscribed minimum share capital to become a member	18	4.5
		Subscribed share capital up to the limit prescribed for getting loan	98	24.9
		Contributed to share capital as well as kept deposit accounts	278	70.6
		Total	393	100.0
6	Utilization of services of the society	Rarely	43	10.9
		During crop seasons	78	19.8
		Frequently	272	69.3
		Total	393	100.0
7	Participation in the educational programmes	Low	11	2.8
		Medium	56	14.3
		High	326	82.9
		Total	393	100.0
8	Sharing information about the affairs of the society among fellow members or general public	Low	34	8.7
		Medium	12	3.1
		High	347	88.2
		Total	393	100.0

Source: As in Table -9

Cooperative education is sine qua non for cooperative development. Hence, right from the Rochdale Pioneers, importance has been given to cooperative education. It was found that the sample societies provided several opportunities to members to learn about their society and the roles and responsibilities of membership, as most of the members participated in cooperative member education and other awareness generation programmes organized by the sample PACS (82.9 per cent). Also, most of the members (88.2 percent) opined that they shared information among fellow members and the general public about their societies' affairs. Further, most of the sample respondents (69.3 percent) frequently used the sample societies' services. This trend exhibits a higher level of participation of the members in the business of the sample societies. This trend might be one reason why the level of Non-Performing Assets was kept minimal in all the sample societies and that they have been continuously financially viable societies.

8.7.3 Results of Multiple Linear Regression

To find out how the socio-economic and organizational variables affect sample respondents' perception about the various schemes and programmes that are implemented through sample PACS, Multiple Linear Regression was used. For this purpose, the hypothesis was: There was no relationship between socio-economic and organizational variables of sample respondents and their level of perception about Central Sector Schemes and Programmes that are implemented through PACS for achieving SDGs. From the result of Multiple Linear Regression analysis (Table-11), it was found that both the socio-economic variables and the organizational variables do not influence the level of perception about the Central Sector Schemes and Programmes that are implemented through PACS. Hence, the stated null hypothesis is accepted.

On the other side, the result indicates that the independent variables 'education', 'utilization of services of the society' and 'participation in the educational programmes' influence (5 percent level) the level of perception about the schemes and programmes of the Government that are implemented through PACS and their contribution to SDGs. Hence, the stated null hypothesis is rejected. It means that when the level of education and the sample respondents' participation in the educational programmes organized by the sample PACS increases, the sample respondents' participation in the affairs of the society also increased.

This cumulatively increases the sample respondents' perceptions about schemes and programmes of the Government and their contribution to SDGs in their villages. From the above analysis, the following inferences are made:

- Sample PACS have implemented various government schemes and programmes and directly contributed to SDGs Number 1, 2, 8, 10 & 15 and indirectly contributed to almost all goals.
- When the educational level and the participation of the sample respondents on PACS' business increase, their perceptions about PACS' role in achieving SDGs also increases. This result attracts further studies.
- Based on the number of active members, volume of business, business diversification, and area of operation, sample PACS' potentialities could further be scaled up for achieving SDGs at village level.

Table -11
Relationship between social, economic and organizational variables of sample respondents and their perceptions about Central Sector Schemes and Programmes - Multiple Linear Regression

Independent variables	Central Sector Schemes and Programmes (Dependent variables)				
	Interest Subvention Scheme	PMFBY	PDS	SHG JLG/ Linkage	Others
Socio-economic variables					
Sex	0.843	0.781	2.204	0.942	1.674
Age	-0.250	1.287	1.008	1.067	0.945
Education	3.039**	3.052**	2.885**	3.079**	2.754**
Type of Family	1.349	0.078	0.099	1.905	0.038
Primary Occupation	2.001	1.901	2.004	1.042	1.809
Secondary Occupation	0.989	1.137	-0.025	1.903	1.812
Annual Income	0.733	1.802	1.034	0.971	0.925
Organizational variables					
Duration of membership with PACCS	-0.274	1.309	-0.023	1.914	1.833
More than one membership in a family	0.031	0.056	0.092	1.840	0.179
Participation in the General Body meeting	2.005	1.047	1.920	1.004	1.082
Experienced as a Member of Board of Director	0.057	1.047	0.078	1.220	1.056
Contribution to the capital of the society	1.247	0.283	1.980	2.044	1.920
Utilization of services of the society	2.987**	2.806**	3.081**	3.021**	2.691**
Participation in the educational programmes	2.946**	2.765**	3.002**	2.805**	2.861**
Sharing information about the affairs of the society among fellow members or general public	-0.254	0.292	1.966	1.804	1.542
N	393	393	393	393	393
Constant	33.525	39.643	41.705	52.561	45.121
R square value	0.525	0.514	0.583	0.503	0.493

Source: As in Table-9

** Significant at 5 percent level.

9. Challenges Before PACS in achieving SDGs

A question was raised with the sample respondents on what were the challenges faced by sample PACS in achieving SDGs. Based on the responses elicited from the sample respondents, this study found that the ability of sample PACS' organizational capacities (core capacities, change capacities, and organizational culture) to contribute to the SDGs' achievement effectively is limited by the following five challenges, which are interrelated and interdependent. If all these challenges are addressed through location-specific strategies, PACS' contributions to SDGs could very well be strengthened.

9.1 The challenge of the external environment

The existing external environment is not conducive to the proper functioning of genuine, democratically controlled and economically viable PACS. For example, the board of management of all PACS in Tamil Nadu were superseded on 9.6.1976. However, only since the recommendations of the Task Force on the Revival of STCCS and the Constitutional Amendment Act 2011, the status of democracy has been restored, and elected representatives manage the PACS. However, the interference of vested interest groups raises doubts about the maturity of

cooperative democracy at PACS in handling several developmental issues before them. In this context, the sample PACS should focus their energy on those goals and targets that are best suited, by dovetailing support from the members. In doing so, they should bring their most significant competitive advantage to reality, i.e., their duality as associations and enterprises.

9.2 The challenge of size

It is expected that PACS should reach the break-even point in their business by allowing every individual member to participate meaningfully. The optimal size of a PACS is therefore dictated by economic factors as well as societal factors. However, the size is determined by the area of operation of the society right from their incorporation. The post Revival Task Force era has facilitated PACS to diversify their business to enhance the volume of transactions based on their members' and customers' needs and aspirations. However, the sample PACS have not fully tapped the opportunities before them. This is the right time for sample PACS to further diversify their business and contribute to SDGs. In this direction, the National Bank for Agriculture and Rural Development's recent decision to develop at least half of India's PACS into Multi-Service Societies over the next five years as part of a new generation business strategy is a new development (Chintala G.R., 2020, p. 8). The sample PACS may explore avenues to utilize these opportunities.

9.3 The challenge of Professional Management

The general body, the Board of Directors, and the employees' team are the three wings of PACS management. It is essential for effective management of the PACS that the roles played by each of the three wings are kept distinct without intruding on the powers and functions of other wings. The professionalization of management implies divorcing the ownership from the operational management of the PACS' affairs. While the ownership rests with the shareholders, the executive management of the PACS' day-to-day affairs must rest with the professional managers. Decisions are to be taken based on PACS goals and objectives by applying expertise and scientific knowledge. However, this has been a long dream for the majority of PACS in the State. For the sample PACS, there is an urgent need to strengthen the existing system because all these sample PACS devote their energy to meeting the requirements of short-run objectives or business targets by forgetting their commitment to long-term goals. If this challenge is addressed, it will directly contribute to SDGs.

9.4 The challenge of innovation

PACS still have a significant role in traditional sectors of the State economy: agriculture, dairy, retail distribution, and rural finance. The modern economy, which is mostly technology-based, requires new approaches from PACS. New approaches to the existing problems will alone ensure the continued participation of primary stakeholders.

9.5 The challenge of entrepreneurial competencies

It has been found that those PACS which exhibited entrepreneurial competencies were able to sustain their business through location specific strategies in Tamil Nadu (Ravichandran K., 2016, p. 55). PACS exhibited their entrepreneurial competencies through: (1) facilitating members individually to start entrepreneurial activities, (2) facilitating members to continue or/and expand the existing entrepreneurial activities successfully, (3) facilitating a group of members to join together and start entrepreneurial activities, and (4) PACS themselves start entrepreneurial businesses with the support of all or a majority of the stakeholders. When the PACS helps develop entrepreneurial talents among its stakeholders, the relationship between these two parties has been successful and sustainable. In the case of sample PACS too, there are opportunities to exhibit their entrepreneurial competencies by expanding their business beyond the artificial restrictions.

10. Conclusion

India has given its strong commitment to the achievement of Global SDGs. NITI Aayog sets the high-level framework and monitors progress at national levels. It is expected that all the institutions in Public, Private and Cooperative sectors should contribute their support to achieve the set goals. The field-level experiences in Tamil Nadu revealed that PACS are embodied with multiple economic and social objectives. In the case of sample PACS, they stabilize village economies by reducing inequality and equitable sharing of benefits of sustainable development through their democratic management and diversified functions. They promote economic democracy and the empowerment of

marginalized groups, which is essential for sustainable development. The involvement of members is visible due to a higher level of awareness about their cooperative societies. With the active participation of the members, the sample PACS could maintain financial viability and contribute to the achievement of SDGs at the village level. It was found that the functions of the sample PACS directly contributed to SDG Numbers 1, 2, 8, 10 & 15 and indirectly contributed to almost all goals. Deep and intensive studies are needed to exactly quantify the level of contribution of these societies toward SDGs as per the indicators developed by Tamil Nadu State Development Policy Council. To conclude, in the pursuit of the motto, 'No one to be left behind', it is essential to remember that those who would be left behind would be the marginalized, oppressed, women, etc. Ultimately, the PACS, the organization of the people for the people and by the people, embodies adequate capacity to serve as an institutional vehicle for achieving SDGs at the village level. Apart from the present level of contributions, the sample PACS' organizational capacities could further be scaled up to achieve SDGs at village level. Though a uniform strategy for strengthening sample PACS contributions to SDGs might lead to success, differences between individual PACS necessitated the development of an appropriate plan suited to the unique situation.

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Notes

¹ PACS are the village level savings and credit cooperatives in India and the primary unit in the Short term Cooperative Credit Structure (STCCS). These societies were called as Primary Agricultural Cooperative Banks (PACB) with effect from Government Notification – G.O. Ms. No.507, COOPERATION (CCI) DEPARTMENT Dated: 1.9.1987 and Letter No.32651 / CG.2/87-1, dated: 13.5.1989. Later as per the part of Revival Process as recommended by Task Force for the Revival of STCCS 2004, the nomenclature of PACBs are again changed to Primary Agricultural Cooperative Credit Societies as per the Tamil Nadu Ordinance No.8 of 2008 – An Ordinance further to amend the Tamil Nadu Cooperative Societies Act, 1983, published in Tamil Nadu Government Gazette, Extraordinary dt.21st October 2008 and RCS, Chennai letter No.RC.130240/08/D.M.F.C / dt.10.11.2008 and RCS, (Circular No.2/2008) RC. 130489 / 08 / SF.4, dt.23.1.2009. The STCCS functions as a three tier structure in 16 States; while in 13 smaller States and Union Territories, PACS are directly affiliated to the SCBs as a two-tier structure. In 3 States, a mixed structure operates, i.e., two-tier in some districts, and three-tier in the other districts. STCCS in Tamil Nadu is three-tier structure consisted of 4450 PACS at village level, 23 Central Cooperative Banks functioning at District level and Tamil Nadu State Apex Cooperative Bank at State level.

² PDS is India's food subsidy programme and the largest in the world. PDS was introduced during the late sixties and it was modified as Revamped PDS during June, 1992. In June 1997, the Government of India launched the Targeted PDS. PDS is operated under the joint responsibility of the Central and the State Governments. Tamil Nadu Government introduced Universal PDS to ensure food security to all citizens, particularly poor people, by making available essential commodities of good quality at affordable prices every month through FPS.

³ PACS-SHG linkage – important circulars:

- ✓ Cooperation Food and Consumer protection Department, G.O.No.280 dt 20.12.1999
- ✓ Cooperation Food and Consumer protection Department, G.O.No.119, dt 9.6.2000
- ✓ RCS Circular No: 128999/99 CPP1, dt 21.3.2000

⁴ The concept of Lead Society and Link Society are part of PDS in Tamil Nadu. Sample PACS serve as Link Societies. Lead Societies procure essential commodities from Tamil Nadu Civil Supplies Corporation and other sources and supply to Link Societies. In turn the Link Societies supply the essential commodities to Family Card Holders through FPS as per the norms fixed by the Government of Tamil Nadu.

Annexure-1

SDGs and Mapping of Central Sector Schemes, Ministries of Government of India and Role of sample PACS

SDG No.	SDG Description	Linkage with other SDGs	SDG Targets	Government of India sponsored Central Sector Schemes	Concerned Ministries/ Departments	Role of sample PACCS
1	End poverty in all its forms everywhere	SDGs 2,3,4,5,6,7,8, 10, 11,13	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Market Intervention Scheme and Price Support Scheme (MIS-PSS)	Agriculture & Cooperation,	Providing Produce Pledge Loan
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	SDGs 1,3,4,5,6, 8,12	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.	Food subsidy (procurement, transport, distribution, etc.)	Consumer Affairs Food & Public Distribution	Running Fair Price Shops
			By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	1) Green Revolution umbrella scheme 2) Pradhan Mantri Fasal Bima Yojana (PMFBY) 3) Interest subsidy for short term credit of farmers 4) Agricultural Education	Agriculture & Cooperation	Providing Crop Loan Crop Insurance Interest Subvention Scheme for Crop Loan
			By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality			
			Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries			

SDG No.	SDG Description	Linkage with other SDGs	SDG Targets	Government of India sponsored Central Sector Schemes	Concerned Ministries/ Departments	Role of sample PACCS
			Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	Green Revolution Market Intervention Scheme and Price Support Scheme (MIS-PSS)	Agriculture & Cooperation,	
				Price Stabilization Fund	Consumer Affairs Food & Public Distribution	
8	Promote sustained, inclusive and sustainable Economic growth, full and productive employment and decent work for all	SDGs 1, 4, 5, 9, 10, 12	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value-added and labour-intensive sectors	Green Revolution White Revolution	Agriculture & Cooperation,	Providing crop loan and Non-farm Sector Loan
			Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Deendayal Antyodaya Yojana-National Rural Livelihood Mission	RD	PACCS-SHG linkage
10	Reduce inequality within and among countries		By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	Deendayal Antyodaya Yojana National Ruraql Livelihood Mission	RD	PACCS-SHG linkage
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	SDGs 2, 6, 9, 12, 14, 16	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and dry lands, in line with obligations under international agreements	National Mission on Sustainable Agriculture and other relevant components of the umbrella scheme on Green Revolution	Agriculture & Cooperation	Providing Crop Loan
			Promote fair and equitable sharing of the benefits arising from the utilization of	Green Revolution	Agriculture & Cooperation	Providing crop loan

SDG No.	SDG Description	Linkage with other SDGs	SDG Targets	Government of India sponsored Central Sector Schemes	Concerned Ministries/ Departments	Role of sample PACCS
			genetic resources and promote appropriate access to such resources, as internationally agreed	White Revolution		and Non-farm Sector Loan

Source: Modified based on the information available in the *SDGs and Mapping of Central Sector Schemes, Ministries of Government of India*, NITI Aayog, Retrieved July 6, 2020 from https://niti.gov.in/sites/default/files/2019-01/SDGMapping-Document-NITI_0.pdf

Note: Green Revolution, the umbrella scheme, includes: Rashtriya Krishi Vikas Yojana (RKVY); and Krishi Unnati Schemes (Mission for Integrated Development of Horticulture (MIDH), Integrated Scheme on Agriculture Census & Statistics, Integrated Scheme on Agriculture Cooperation, Integrated Scheme on Agricultural Marketing, National Food Security Mission, National Mission on Oilseeds & Oil Palm (NMOOP), National Mission for Sustainable Agriculture (NMSA), and National Mission on Agriculture Extension & Technology (NMAET))