



GOVERNMENT OF KERALA  
KERALA STATE PLANNING BOARD

**THIRTEENTH FIVE-YEAR PLAN  
(2017-2022)**

**WORKING GROUP ON  
CIVIL SUPPLIES  
AND PUBLIC DISTRIBUTION SYSTEM  
REPORT**

PERSPECTIVE PLANNING DIVISION

KERALA STATE PLANNING BOARD  
THIRUVANANTHAPURAM

MARCH 2017

## *PREFACE*

In Kerala, the process of a Five-Year Plan is an exercise in people's participation. At the end of September 2016, the Kerala State Planning Board began an effort to conduct the widest possible consultations before formulating the Plan. The Planning Board formed 43 Working Groups, with a total of more than 700 members – scholars, administrators, social and political activists and other experts. Although the Reports do not represent the official position of the Government of Kerala, their content will help in the formulation of the Thirteenth Five-Year Plan document.

This document is the report of the Working Group on Civil Supplies and Public Distribution System. The Chairpersons of the Working Group were Dr K. Narayanan Nair and Smt. Mini Antony IAS. The Member of the Planning Board who coordinated the activities of the Working Group was Dr K. Ravi Raman. The concerned Chief of Division was Dr Santhosh V.

Member Secretary

## *ACKNOWLEDGEMENTS*

This report is brought out by the Working Group on Civil Supplies and Public Distribution System constituted by the State Planning Board of Kerala as part of formulating the Thirteenth Five Year Plan. This plan includes a general narration of the food and nutrition security profile of the state of Kerala and the implementation of the National Food Security Act'2013 along with the end to end computerisation framework of the Public Distribution System in the State. It also elaborates the different schemes proposed and being undertaken for execution by the Civil Supplies Department.

We would like to place on record the invaluable inputs made by the members of the Working Group in developing this report and the services rendered by the staff of the Perspective Planning Division, State Planning Board in compiling this report, which I am sure would serve as a blueprint for the effective management of PDS in the State through the next five years and beyond.

Special thanks to Mr. Ankit Sood, Head of Systems Reforms Unit, United Nations World Food Programme for his support in the formalization of the report.

Thiruvananthapuram  
20<sup>th</sup> January, 2017

Sd/-  
**Dr. K. Narayanan Nair**  
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## FOREWORD

To guide the state level planning, Kerala has in place a Perspective Plan for 2030<sup>1</sup> for improving the quality of life of the people of Kerala and to achieve high material, human, social and ecological development in all aspects of development. The Perspective Plan, 2030 puts together a framework that defines the current status, current challenges, plan for 2030 and a list of actions to achieve these intended outcomes.

The State Planning Board aids the government to formulate such development plans based on an assessment of the resources of the State and present growth priorities. Various committees under the State Planning Board are further tasked with the responsibility to formulate plans under specific functional areas which the state can adopt for five year planning.

The Civil Supplies and PDS Committee under the State Planning Board is headed by Dr. K. Raviraman, Senior Fellow, Nehru Memorial Museum & Library, Ministry of Culture, New Delhi. This Committee has the responsibility to draft a plan for Public Distribution System for the next five years which aligns with the overall vision for the State Government to make Kerala a 'Hunger Free State' by 2030, as proposed under the Perspective Plan 2030 and the United Nations Sustainable Development Goal #2 of "Zero Hunger".

Government of India adopted the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development along with other world leaders in September 2015.<sup>2</sup>The SDGs build on the success of the Millennium Development Goals (MDGs) and over the next fifteen years, will mobilize efforts to end all forms of poverty, food insecurity, fight inequalities and tackle climate change, while ensuring that no one is left behind. The SDG #2 under the agenda of Sustainable Development aims to end hunger and ensure access to nutritious and sufficient food by all people all year around. Thus, in order to achieve the vision laid out in SDG#2 and that of the State Government, collaboration in areas of food distribution, production systems, agriculture productivity, food quality etc. will be required. Kerala being one of the most progressive states in addressing poverty, education and health, is already a frontrunner to set an example for the rest of the country by ending hunger in all its forms by 2030<sup>3</sup>.

To achieve these objectives, Kerala official adopted the National Food Security Act (NFSA) in November 2016, which aims to provide food security as a legal right to 67% of the population of India. The state further published a draft list of 1.5 crore priority households in the state, who will be covered under the NFSA subsidies. Kerala also has a universal coverage through state subsidies in the public distribution system, which has been instrumental in providing some form of food security to the non-priority households. In addition, the state run Kerala State Civil Supplies Corporation "SupplyCo" is mandated to control the prices of 13 essential commodities by distributing it at subsidized prices through 1406 of its stores spread across the state.

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<sup>1</sup><http://spb.kerala.gov.in/index.php/major-initiatives-perspective-planning-division.html>

<sup>2</sup><http://niti.gov.in/india-s-commitment-to-the-sdgs>

<sup>3</sup><http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

With this infrastructure already in place the PDS Committee met from September, 2016 to January, 2017 with an objective to draft a plan to further strengthen the Public Distribution System, and enhance, and modernise the working of the Civil Supplies Department, SupplyCo and other stakeholders.

Among the activities already underway is the implementation of the National Food Security Act'2013 and the end-to-end computerisation of PDS to improve accessibility, build accountability and transparency of systems as well as introduction of reforms in associated policies aimed at addressing food safety, financial viability of stakeholders, agricultural productivity etc. Going further, the committee proposes approaches that aim to address issues of malnutrition through diversification of the PDS food basket, strengthening food fortification through, collaborations with other relevant ministries/departments involved in Integrated Child Development Services (ICDS) and Mid-Day Meals (MDM).

**Dr K. Ravi Raman**

## *LIST OF ABBREVIATIONS*

AAJ	-	Antyodaya Anna Yojana
AITUC	-	All India Trade Union Congress
ARD	-	Authorized Retail Dealer
CCS	-	Commissionerate of Civil Supplies
CDAC	-	Centre for Advanced Computing
CDRC	-	Consumer Disputes Redressal Commission
CFRD	-	Council for Food Research and Development
CFT-K	-	College for Indigenous Food Technology
DSO	-	District Supplies Officer
FPTC	-	Food Processing Training Centre
FQML	-	Food Quality and Monitoring Laboratory
ICDS	-	Integrated Child Development Services
ICT	-	Information Communication & Technology
IEC	-	Information Education and Communication
ISDG	-	Institute for Sustainable Development and Governance
KSITM	-	Kerala State IT Mission
MDM	-	Mid Day Meals
MIS	-	Management Information System
NFSA	-	National Food Security Act
NIC	-	National Informatics Centre
PDS	-	Public Distribution System
PHH	-	Priority Households
RCMS	-	Ration Card Management System
SCMS	-	Supply Chain Management System
SDG	-	Sustainable Development Goals
SECC	-	Socio Economic Caste Census
SupplyCo	-	Kerala State Civil Supplies Corporation
TPDS	-	Targeted Public Distribution System
TSO	-	Taluk Supply Officer
WFP	-	United Nations World Food Programme

## CONTENTS

Executive Summary .....	1
Chapter 1 Current Status of Food Based Safety Nets, Food and Nutrition Security in Kerala .....	5
Food Based Safety Nets and Food and Nutrition Security in Kerala.....	5
Progress of Schemes/ Programmes under Twelfth Five Year Plan.....	13
Summary of the Preliminary Analysis .....	24
Chapter 2 Proposed Five Year Plan for Public Distribution System in Kerala (2017-2022) .....	26
Improve access to food by upgrading the Public Distribution System (PDS).....	26
Modernisation of CCS, Block Offices.....	40
IEC Plan for Awareness of Beneficiaries .....	40
Assessment of TPDS in Kerala.....	40
Summary of Planned Activities .....	41
Chapter 3 Addressing Nutritional Imbalances .....	42
Overview of current State priorities / strategies for Nutritional Security .....	42
Overview of suggested strategies for the plan period 2017-2022 .....	44
Summary of Activities.....	46
Chapter 4 Consumer Welfare and Policy Reforms.....	47
Annapurna food security scheme for the aged destitute (80% CSS).....	47
Free Meals Programme-Pilot.....	47
Free ration to un-organised sector including MGNREGS – Rs.424 crores.....	47
Food Safety .....	48
ARD Viability and Commission Reforms .....	51
Summary of Planned Activities .....	56
Chapter 5 Proposed Budget for Implementation .....	58
Planned Costs for the next 5 years .....	58
Chapter 6 Summary of Recommendations and Road Map for Implementation .....	61
Chapter 7 Critical Success Factors .....	64
Chapter 8 Composition and ToRs of the Working Group .....	65
Terms of Reference of the Working Group.....	66
Annexure 1.....	68
Annexure 2.....	75

## *EXECUTIVE SUMMARY*

The 13<sup>th</sup> Five Year Plan for Public Distribution System (2017-2022) has been formulated with an objective to align itself with the vision of a **Hunger Free Kerala** by 2030. At the heart of this plan is a road map for PDS for the next five years, where individuals and institutions collaborate for strengthening Public Distribution System in Kerala to ensure food and nutritional security to the rightful beneficiaries.

### *Aims and Objectives*

The key objectives of the committee for formulating the five year plan are:

- To assess the present status of various activities in the Public Distribution System
- To prepare a list of base project activities against expected outputs and outcomes that can potentially help in achieving these targets
- To plan activities and corresponding budgets for the next five years
- To discuss and formulate an implementation plan for these activities

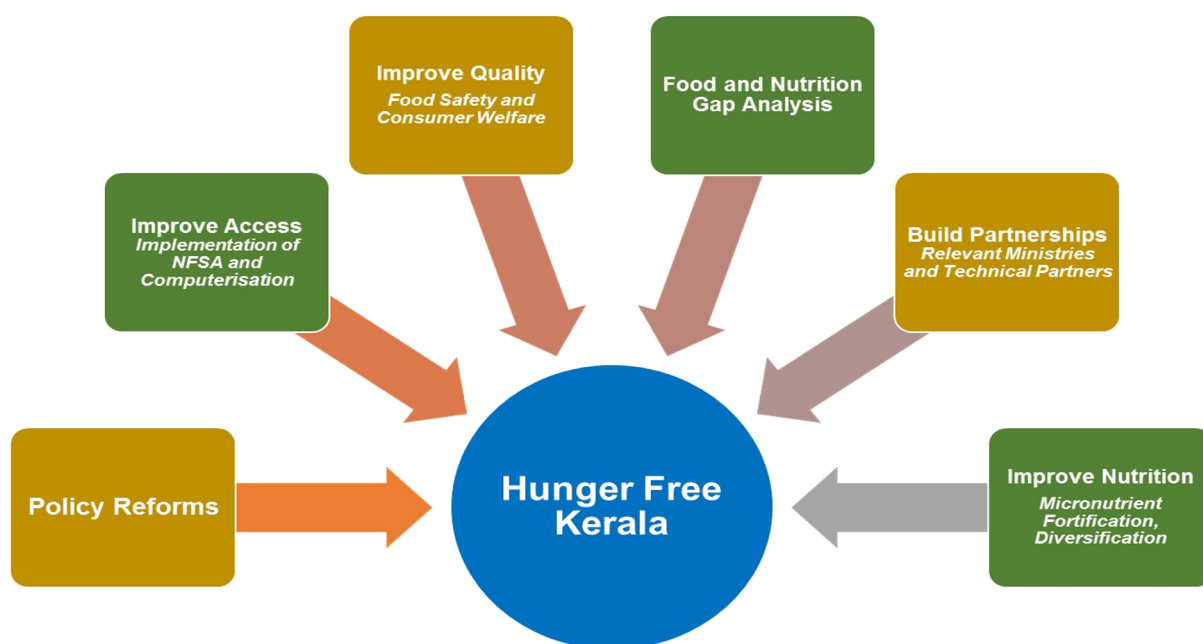
The overall aim is to strengthen the public distribution system and improve nutritional outcomes among beneficiaries by improving access and sufficiency in quantity and nutritional intake through systemic and policy reforms.

### *Strategies for Hunger Free Kerala*

The following strategies and activities are proposed for the five year plan (2017-2022) for Public Distribution System to address existing challenges and also plan activities that correspond to the overall vision for Hunger Free Kerala.



Figure 1 *Activities for Hunger Free Kerala*



### *Improving Access.*

Kerala adopted the National Food Security Act on November 1, 2016, and is already underway, implementing reforms including beneficiary list digitisation, Aadhaar seeding of beneficiaries as well as other components under the end-to-end computerisation, proposed by the Supreme Court ruling of 2011. In the next five years the focus of the Civil Supplies department would be to complete the implementation of NFSA and the EtE computerisation in an effective and time bound manner and further review its impact in terms of ensuring access, accountability and transparency for all stakeholders. The focus will also be to modernise internal operations and other market activities. The proposed budget outlay for these activities is Rs. 6055 crores with a few additional costs and maintenance to till 2022. These objectives will be met through effective collaborations with NIC, KSITM, SupplyCo, third party vendors, supported overall by WFP by March 2017.

### *Addressing Nutritional Imbalances*

Although Kerala is a highly progressive state in terms of education, healthcare facilities and awareness among beneficiaries; nutritional security especially of the most vulnerable is extremely critical to fulfil the vision of a hunger free Kerala. Various schemes run by the state for poverty alleviation along with the central government schemes which approach food security through a life cycle approach such as PDS, ICDS and MDM need more strengthening, integration, modernisation and monitoring. In addition, micronutrient fortification of food grains provided to all such beneficiaries needs to be scaled up state-wide. Effective inter-ministerial partnerships with Ministry of Women and Child, Ministry of Agriculture, Ministry of Human Resource Development as well as technical partners such as WFP are key to effectively address nutrition

security. The proposed budget outlay for these activities is Rs. 1,776 Crores with a timeline to complete the implementation by 2022.

### *Consumer Welfare and Policy Reforms*

The five year plan for PDS (2017-2022) is to go beyond ensuring access to food grains through a number of consumer welfare activities and policies. These include food security schemes for the aged and destitute, changes in policies to ensure ARD Viability, adding on food safety measures and policies etc. Various agencies and institutions will partner with the Civil Supplies Departments to implement these policy measures. Some of the partner's include CFRD, SupplyCo etc. The proposed budget outlay for these activities is Rs. 2784 crores with a timeline to complete the implementation in a phased manner by 2022.

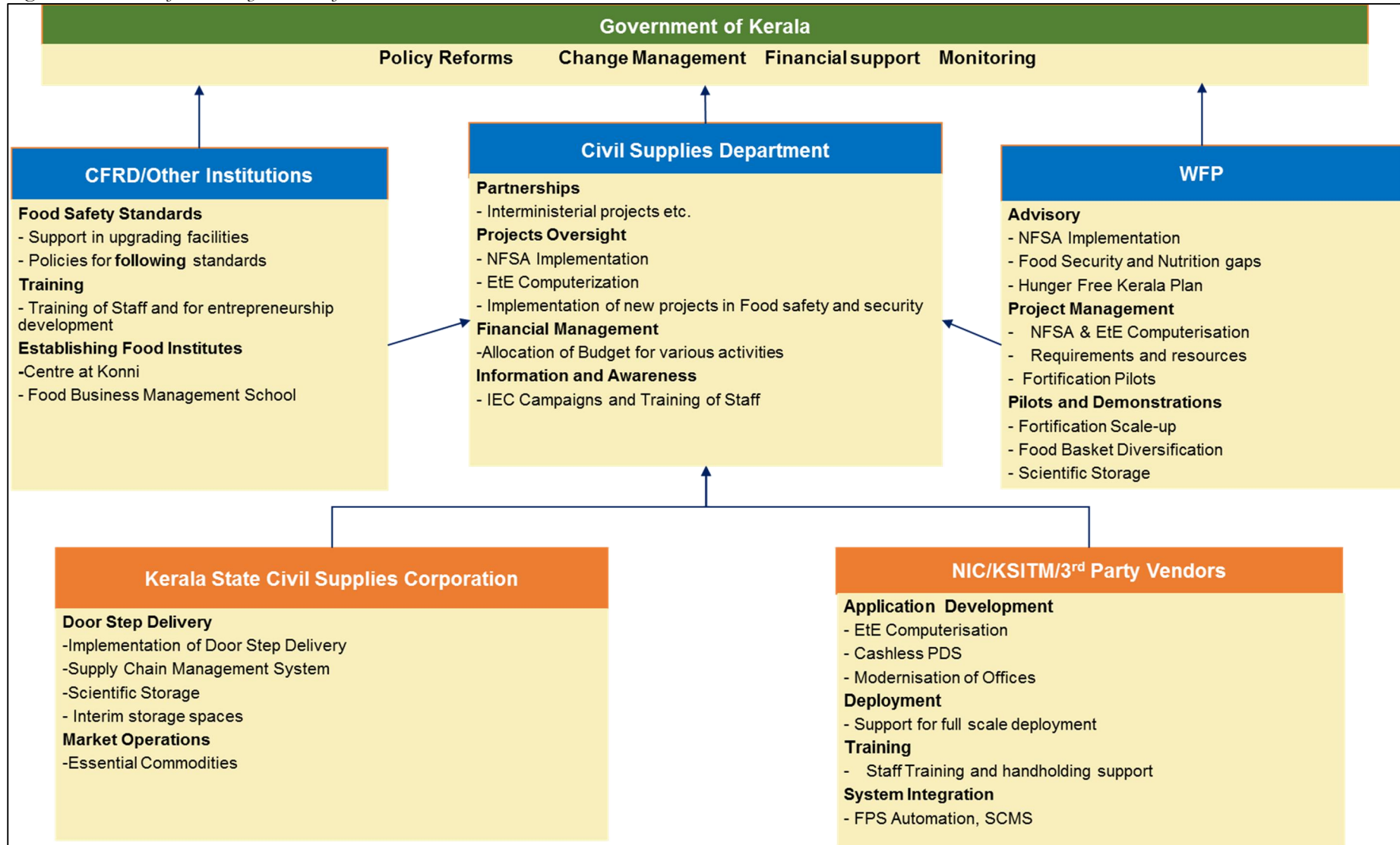
### *Way Ahead*

The five year plan proposed herein needs political commitment, dedicated human and financial resources and stable dynamic leadership for implementation and in order to make headway into achieving key objectives. Some of these key projects such as the implementation of NFSA activities, EtE computerisation and other computerisation reforms are already delayed and will need to be implemented in mission mode to ensure their completion within stipulated timelines. It is of utmost importance that the proposed activities are conceptualised, designed, implemented and monitored in their true sense.

Along with implementation of NFSA and EtE computerisation, a thorough analysis of food security and nutrition gaps and appropriate strategies in collaboration with relevant ministries is required. Staff training as well as beneficiary awareness and empowerment programmes are also required to ensure the rightful beneficiaries are aware of their right and entitlements.

To achieve the targets set out for the next five years, effective partners such as KSITM, SupplyCo, NIC, third Party Vendors, research Institutes, third party vendors, research institutes and technical partners are required along with a total expected outlay of Rs. 10,621.

Figure 2 Overview of the Five year Plan for Public Distribution



## CHAPTER 1

### *CURRENT STATUS OF FOOD BASED SAFETY NETS, FOOD AND NUTRITION SECURITY IN KERALA*

1. The sections below describe the current situation of the Public Distribution System, other food safety schemes as well as the current status of the food and nutrition security in Kerala. The review is divided into two sections:
  1. Food Based Safety Nets and Food and Nutrition Security in Kerala
  2. Progress of Food Based Safety Nets during the 11<sup>th</sup> and 12<sup>th</sup> Plan period

#### *Food Based Safety Nets and Food and Nutrition Security in Kerala*

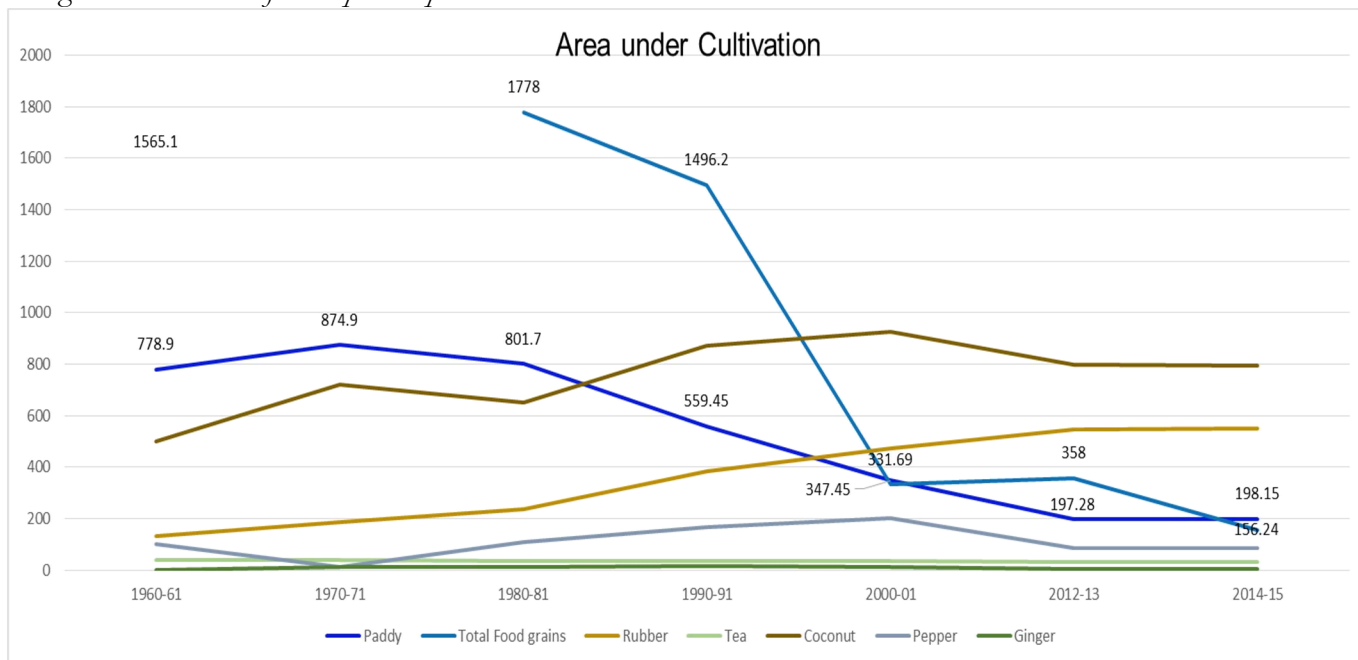
##### *Socio-Economic Situation*

2. As per 2011 census, Kerala has the highest literacy rate of 94 per cent and female literacy rate of 92 per cent among Indian states. Kerala is the only state in India to have a positive sex ratio (1084 as against 940 for India). The indicators of adolescent birth rates and proportion of adult females with secondary education are impressive in Kerala. Even the labour market participation (35.4%) and the wage rates of women in Kerala are higher than that in other states.
3. According to Census 2011, the total Scheduled Tribe and Scheduled Caste population is 4,84,839 (1.5% of the total population) and 30,39,573 (9.1% of the total population), respectively. Proportion of poor in Kerala in 2012 as per Rangarajan Committee method was much lower than national figures at 7.3% (30.9% for India) in rural and 15.3% (26.4% for India) in urban areas.
4. Urbanization, as measured by the share of urban population has shown a sharp increase from 25.96% in 2001 to 47.72% in 2011 in Kerala when compared to the corresponding levels for India, which were 25.52% in 2001 and 31.16% in 2011.
5. A large population in Kerala is dependent on agriculture, livestock and fisheries for livelihoods and certain other significant sectors which include industries, banking, finance and tourism. Implementation of various Rural Development Schemes such as MGNREGS, Kumbashree, Swachh Bharat Mission (Gramin) and the National Rural Livelihood Mission (NRLM) have also helped the poor to improve the quality of life in the State.

##### *Food Availability: Production, imports, storage facilities*

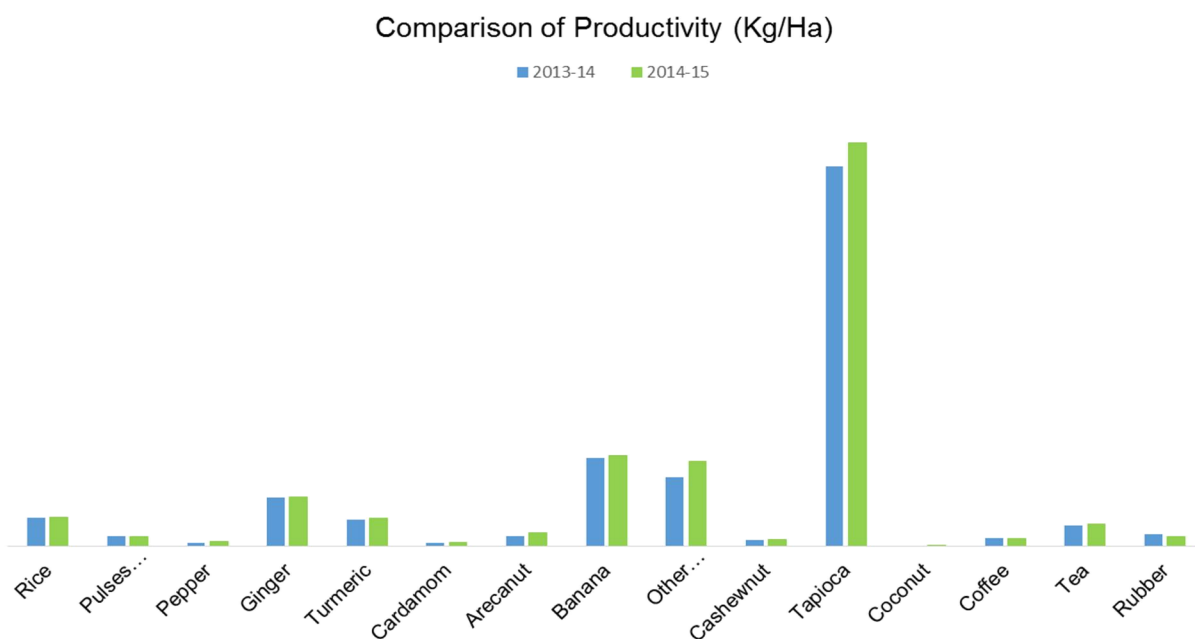
6. Kerala is a state facing acute food deficit and has long remained deficient in the product of food grains. Of the total requirements of food grain only about 15 percent is produced in the state. In the case of vegetables the state heavily relies on neighboring states.

Figure 3 Production of Principal Crops in Kerala



Source: Economic Review 2015, (Area in Ha)

Figure 4 Productivity Comparison



Source: Economic Review 2015

- As observed from the graphics above, the area under cultivation for paddy and food grains has seen a sharp decline over the past decade, the productivity over the past two years has remained almost constant, mainly due to the reduction in area sown more than once<sup>4</sup>. Agricultural land-use changes in Kerala are marked by an initial increase in gross cropped area followed by area decline in the last one decade. Though Kerala's GDP growth and

<sup>4</sup>[http://niti.gov.in/writereaddata/files/Kerala\\_Report\\_0.pdf](http://niti.gov.in/writereaddata/files/Kerala_Report_0.pdf)

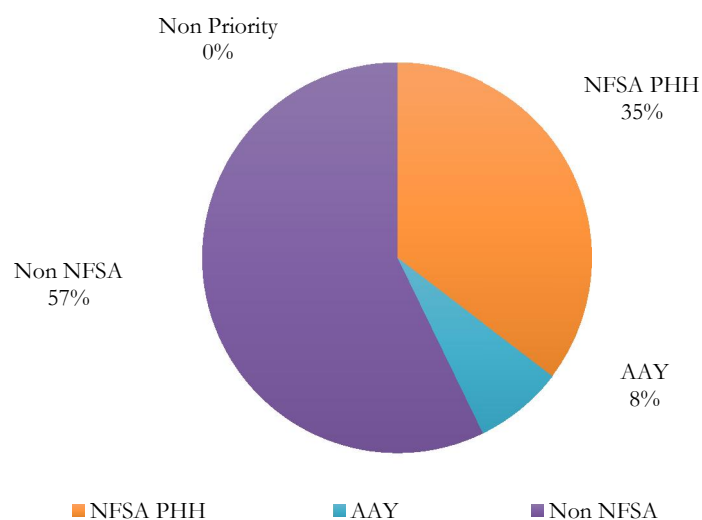
agricultural production have increased over the past two years, hunger and starvation still persist among the poorer sections of the population.

8. Kerala has been meeting a large part of this food deficit through universal PDS and through imports - mainly from neighboring states and at times from outside India. There is also limited storage capacity within the state – the available 5 Lakh MT of storage space is contributed mainly by 24 FCI run godowns.

#### *Food Accessibility*

9. *Market conditions.* Since 2014-15, there has been a secular decline in inflation. Consumer price inflation for 2014-15 declined to 5.91 from 9.51 in 2013-14. Inflation in terms of consumer food prices has also come down to 5.2% in October 2015 from 6.9% in February 2015.
10. *Public Distribution System.* The origin of public distribution of food grains in Kerala can be traced back to the 2<sup>nd</sup> World War. However, the state government introduced an informal system of distribution of rice at subsidized rates to lower income group in 1957 and the system continued till 1964. In pursuance of the Essential Commodities Act 1955 enacted by GoI, the Public Distribution System came into existence in 1st July 1965. Timely lifting of commodities allocated from the central pool, ensuring distribution of the same through 14,335 ration shops and ensuring that it occurs in time and effectively is a major responsibility of the PDS. Kerala made pioneering achievements in the implementation of a Universal Rationing System.
11. Food based safety nets have universal coverage in Kerala including AAY, BPL and APL households. With Kerala adopting the NFSA recently, there will be shift in the allocation to the state based on priority households being covered and thus entitlements for non-priority households have changed. Kerala being a food deficit state procures about 85% of its total food grain requirement for PDS of 13.7 Lakh MT from FCI and open market, with only rice being procured locally by the Kerala State Civil Supplies Corporation (SupplyCo).
12. The number of ration cardholders in the State reached 80.22 lakh in 2015-16. To implement the NFSA, the Government of Kerala published the draft priority list of 1.54 crore members from 33.34 lakh households in the state, who will be covered under NFSA subsidies. The remaining 1.87 crore members covered under non priority list includes 1.21 crore of the previous APL-SS beneficiaries. The details are given in the table below:

Figure 5 Category wise Card Holders in Kerala as on 31-10-2016 (Provisional)



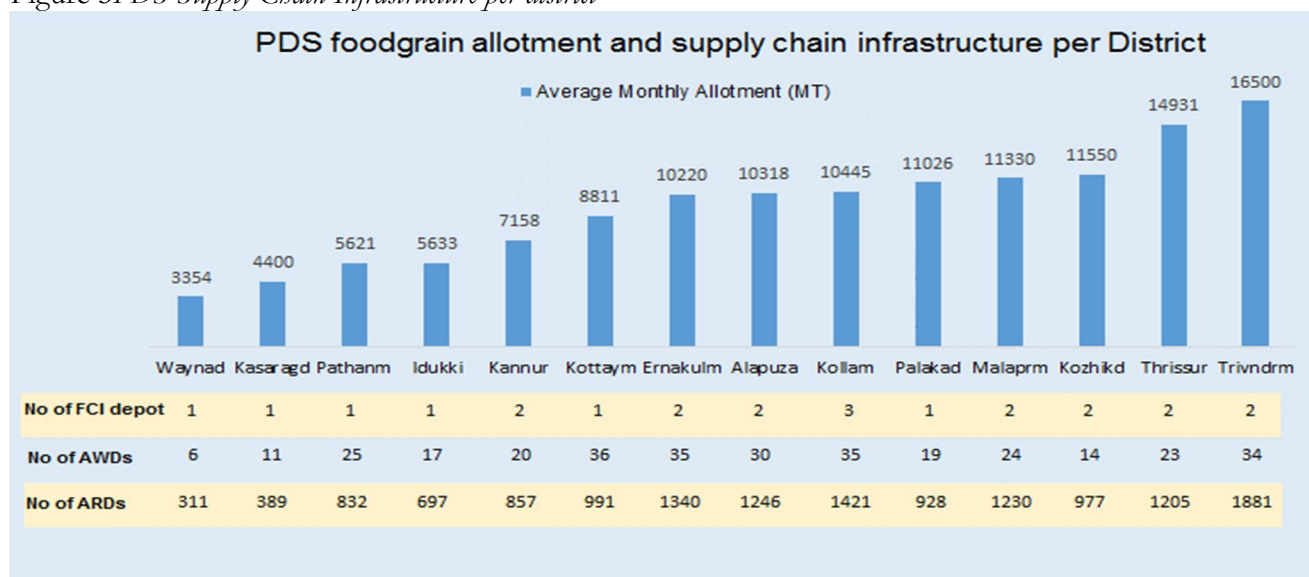
Source: Civil Supplies Department

Table 1 Details of Card Holders and Entitlements of Food Grains

Category	Ration Cards	Beneficiaries	Entitlement (per month)
<b>NFA Priority Household</b>	28,37,236	1,29,21,411	5 Kg per member
<b>AAY</b>	5,95,800	25,58,632	35 Kg per House hold
<b>Non NFA/Non Priority</b>	45,89,324	1,87,44,057	2 Kg per member
<b>TOTAL</b>	<b>80,22,360</b>	<b>3,42,24,100</b>	

Source: Civil Supplies Department

Figure 5 PDS Supply Chain Infrastructure per district



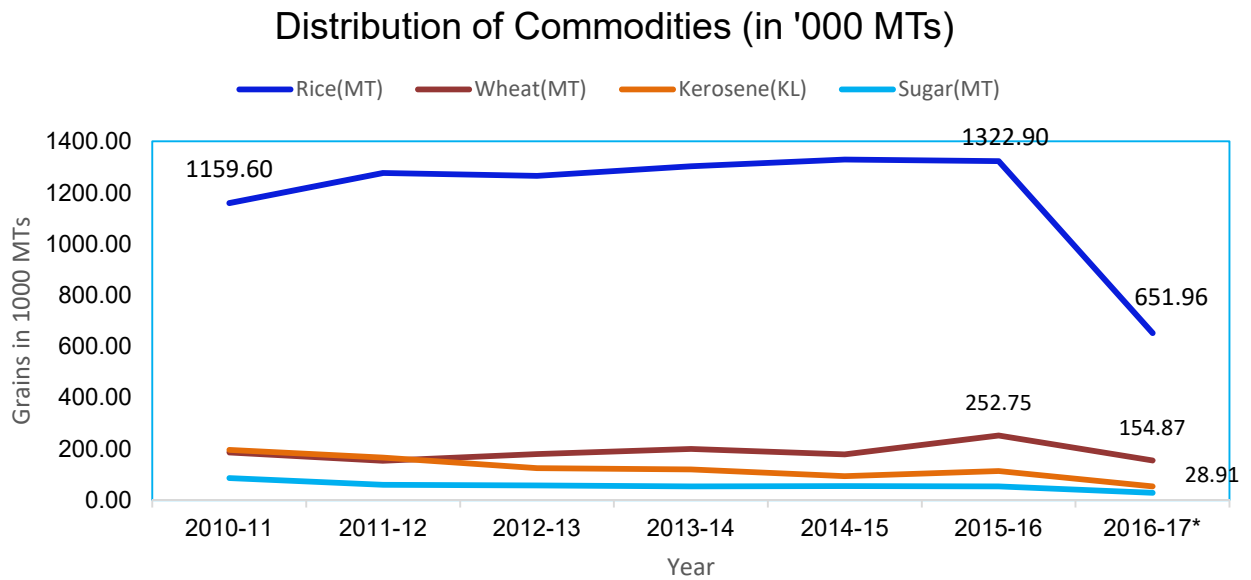
13. As per the Planning Commission Report on performance of TPDS<sup>5</sup>, Kerala is in the bracket of moderate leakages (10%-25%) at ARD Shops and Low leakages category (<25%) overall, but given the scale of operations, these leakages directly impact the most vulnerable populations in the state. Kerala also has high coverage of over 95% of enrolled children in the age group of 6-14 yrs. under the Mid-Day Meal Programme, but the coverage under ICDS for eligible children below 6 months is only 27% which is much below the national average of 67%.
14. *Antyodaya Anna Yojana (AAY)*. This scheme entitles 35 kg of rice per month to the poorest of the poor families under BPL list and is being implemented in the State since 2001. There are 5.82 lakhs Antyodaya Anna Yojana (AAY) card holders in 2015-16 which was 5.83 lakh in 2014-15. In 2015-16, also the allotment of rice under AAY continued at the level of 250260 MT. Govt. of India supplies food grains under AAY to the state @ Rs. 3/kg and the State Govt. in turn provides it to the beneficiaries at the subsidized rate of Rs.1/kg. The scheme will now be covered under the NFSA entitlement.
15. *Annapurna Scheme (ANP)*. Annapurna is one of the components of 'National Social Assistance Programme' (NSAP) implemented by Ministry of Rural Development. It aims at providing food security to the aged destitute who have attained 65 years of age and are eligible for National Old age Pension by providing them 10 kg of rice per month, free of cost. The number of beneficiaries identified in the state as on 31.3.2016 is 23,322 against the GoI approved number of 44,980. Allotment of Rice under Annapurna scheme is 450 MT, but there is huge stock of rice under Annapurna in all Taluks, due to shortfall in number of beneficiaries. The main problem for implementing the scheme is finding beneficiaries. In the state of Kerala, almost all people are covered under any one of the pension schemes. As per the direction of Govt. of India, no person receiving any kind of pension is eligible to receive rice under the Annapurna scheme. Therefore, the eligibility criteria for identifying Annapurna beneficiaries must be relaxed so as to include more deserving persons in the scheme, such as those not covered under priority households for TPDS.

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<sup>5</sup>[http://planningcommission.nic.in/reports/peoreport/peo/peo\\_tpds.pdf](http://planningcommission.nic.in/reports/peoreport/peo/peo_tpds.pdf)

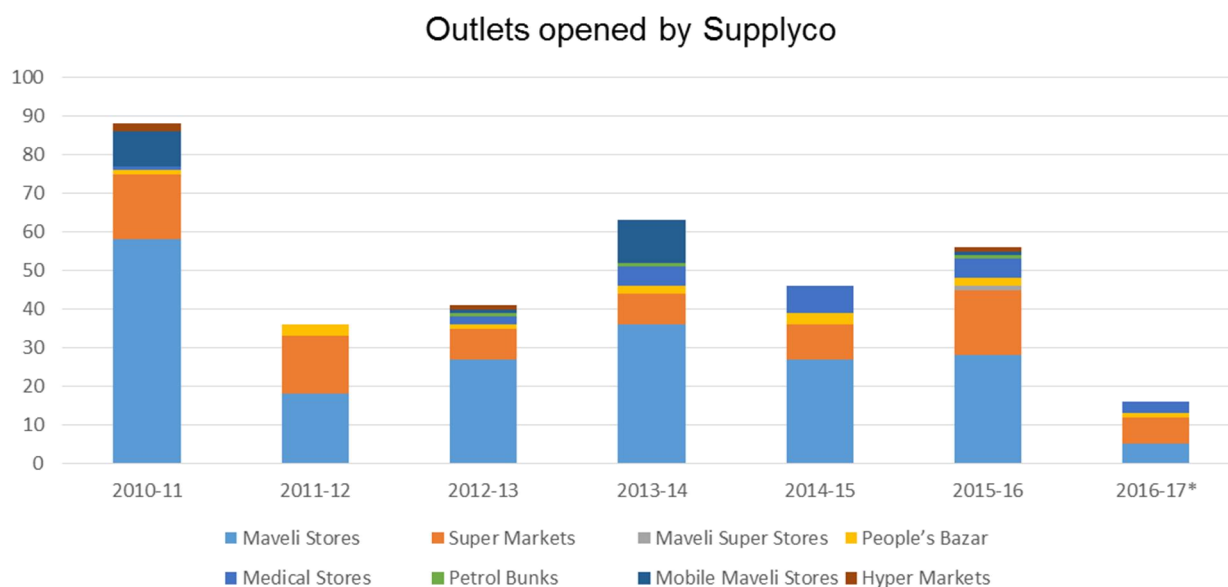


Figure 6 Distribution of Rice & Wheat, Kerosene and Sugar through the PDS in Kerala -All schemes (ANP, AAY, BPL, and APL etc.)



16. *Kerala State Civil Supplies Corporation Operations (SupplyCo).* Kerala State Civil Supplies Corporation (SupplyCo) was setup in 1974 to ensure food security to the State by stabilising the prices of essential commodities in the State. This is ensured through a network of distribution of essential items through Authorised Retail Shops and SupplyCo outlets so as to reach every person in the State. Kerala, being a consumer oriented State, controlling the undue rise in prices is not possible without a powerful public distribution system that intervenes the open market effectively throughout the year.
  
17. SupplyCo has its headquarters in Kochi and operates through 5 regional offices, 56 depots and 1100 plus retail outlets. SupplyCo is involved in retailing of Fast Moving Consumer Goods (FMCG) at lower prices, conducting special fairs for arresting the undue rise in prices during festival seasons, retailing of medicines by opening medical stores, procurement of paddy, processing and distribution of wheat and its products, acting as a dealer of petroleum products like kerosene, petrol, diesel and LPG and also acting as a nodal agency to implement the programmes of Government of India in the state to start Microbiology Lab and Food Processing Unit. The sales turnover of the corporation has increased from Rs.2223 crore in 2010-11 to Rs.3857 cores in 2015-16.

Figure 7 Outlets opened by SupplyCo in Kerala from 2010-11 to 2016-17



Source: Kerala State Civil Supplies Corporation (SupplyCo)

#### *Food consumption/expenditure patterns*

18. The percentage share of food in the total household consumer expenditure in 2011-12 in Kerala was 43 % in rural and 37 % in urban areas, against all India average of 53 % rural and 43 % urban. Of this, cereals and cereal substitutes made up 5.4 % against 10.7 % national average. This indicates that the stress on the population in Kerala to provide food for the household is generally less severe than in the rest of the country.
19. In rural Kerala, percentage share of cereals in calorie intake is 45%. Among the food groups that contribute to calorie intake in the non-cereals components are pulses, nuts and oilseeds (17%) & meat, eggs and fish (10%) i.e. much above the national average. Oil and fats also contribute to the calorie content by 14% with almost similar values for urban area.
20. As per the National Nutrition Monitoring Bureau (NNMB) 2012<sup>6</sup> report, the proportion of children across age groups and gender consuming cereals & millets in amounts more than 70% of RDA, ranged from a low 19% in Kerala to a maximum 65% in the State of Karnataka. In addition, the proportion of those consuming pulses & legumes in amounts >50% of RDA recommendation in various States was low and ranged from about 50% in Karnataka to as low as 10% in Kerala.
21. In the analysis of consumption of micronutrients, it was also observed that the median intake of all the nutrients, except protein and thiamine in most states, were less than RDA. The median intake of energy was 733Kcal as against RDA of 1060Kcal, and ranged from a low of 524Kcal in Kerala to a maximum 903Kcal in Uttar Pradesh. The intake of protein

<sup>6</sup>[http://nnmbindia.org/1\\_NNMB\\_Third\\_Repeat\\_Rural\\_Survey\\_\\_\\_Technicl\\_Report\\_26.pdf](http://nnmbindia.org/1_NNMB_Third_Repeat_Rural_Survey___Technicl_Report_26.pdf)

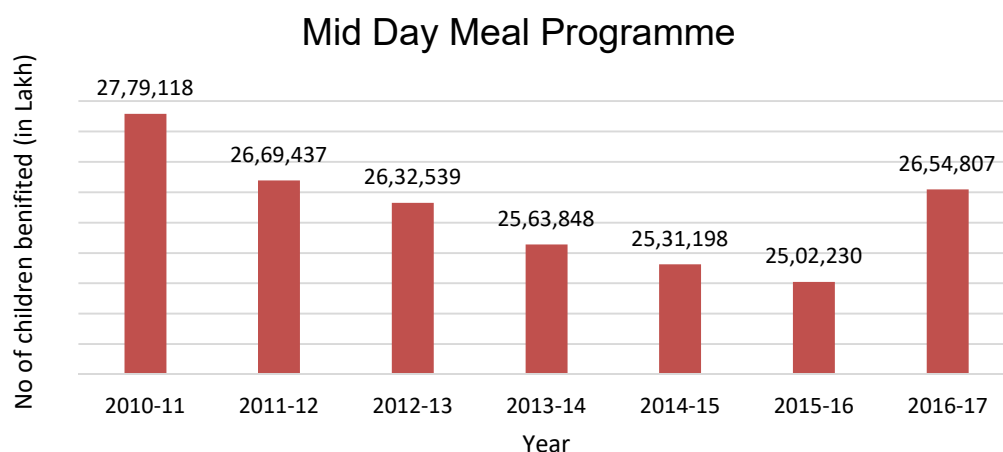
was 19.7g as against recommended RDA of 16.7g and ranged from a low 14.6g in Kerala to a maximum of 25.5g in Uttar Pradesh.

22. There are gaps in the intake of both macro and micronutrients compared to recommended dietary allowances (RDA) across age and physiological groups in Kerala. This gap across consumption of nutrients is much worse than in other states.

*Nutrition trends / situation*

23. The Rapid Survey on Children (RSOC) 2014<sup>7</sup>, reveals a status quo in the levels of wasting (15.5% - Severe – based on WHO thresholds) while the prevalence of underweight (18.5%) and stunting (19.4%) among children less than five years of age in Kerala has registered improvement in comparison to the National Family Health Survey (2005-'06) data. Further, 13% of all new-born in Kerala have a low birth weight (<2.5 kg) and as per the NFHS (2005-'06), approximately 4 out of every 10 children in the age group of 6-59 months of age and one-third of all women in the reproductive age-group are anemic.
24. *Mid-day Meal Programme.* Mid-day Meal Programme in schools is implemented in the State with the financial support of State govt. and central assistance. The programme was introduced in 1995 by the Ministry of Human Resources Development, Government of India to provide nutritional support to primary school going children and to boost universalization of primary education by increasing enrolment, retention and attendance. SupplyCo is entrusted with the responsibility of providing commodities to the mid-day meal programme in the State. The required quantity of rice is taken from Food Corporation of India. The cost of the food grains is met through the Education Department. Number of children benefitting from the mid-day meal programme is given in the figure below.

Figure 8 *Mid-Day Meal Programme progress*



<sup>7</sup><http://wcd.nic.in/acts/rapid-survey-children-rsoc-2013-14>

25. One of the main reasons for decline in the number of children benefited by this programme in the previous years was due to the non-participation of students in certain districts. However, more students are willing to enjoy the benefit of this programme in the 2016-17.

*Health and Hygiene conditions*

26. Kerala boasts of high utilization of health facilities, institutional deliveries and percentage of children who have completed full immunization. The state has an infant mortality rate (IMR) of 12 per 1000 live births compared to the all India figure of 40 per 1000 live births as per the Sample Registration Survey, 2013. The maternal mortality rate in Kerala is 66 per one lakh live births which also compares favorably against the all India figure of 167 per one lakh live births. Prevalence of morbidity amongst children between 0-5 months of age is also low compared to the national average<sup>8</sup>.
27. Water, sanitation and hygiene conditions are better than elsewhere in India and only 1.9 percent household's practice open defecation.
28. 58.6% children aged 0-5 months are exclusively breastfed in Kerala compared to the national average of 64.9% and the recommended 100%, while 72.6% children aged 6-8 months were fed complementary food, whereas all children of that age-group should consume complementary food already.

*Progress of Schemes/ Programmes under Twelfth Five Year Plan*

*Modernisation of PDS and Civil Supplies*

29. Modernisation, computerisation, e-governance and capacity building of Civil Supplies Department were the thrust areas in the 12th plan. Modernisation initiatives for service delivery were launched in civil supplies department by extensive use of ICT to improve faster delivery of services. The 12th plan outlay of the sector was estimated Rs. 44 crores, but the budgeted outlay during the 12th Plan period increased to Rs. 85.37crores. The figures for both the 11<sup>th</sup> and 12<sup>th</sup> plan are as below:

Table 2 State Plan outlay and expenditure during 11th & 12th plan in rupees crore

Sub-Sector	11 <sup>th</sup> Plan (2007-2012)				12 <sup>th</sup> Plan (2012-2017)			
	Estimated Outlay	Budgeted	Actual Expenditure	%	Estimated Outlay	Budgeted	Actual Expenditure	%
Civil Supplies	25.00	103.31	99.93	97	44	85.37	67.09	78.59

30. *End to End computerization of TPDS (2012-2016)*. PDS Control Order, 2001 required State Governments to ensure monitoring of the functioning of PDS at ARD level through NIC. Justice Wadhwa Commission appointed by the Apex Court in 2006 had further recommended that in order to check diversion of food grains, end- to- end computerization

<sup>8</sup><http://esocialsciences.org/Download/Download.aspx?fname=Article201011314546.pdf%20category=eSSJHS&AId=52>.

was necessary. Furthermore, computerization of TPDS was included as a Mission Mode Project (MMP) in August 2011 under the National E-governance Plan (NeGP). National Food Security Act (NFSA), 2013 was notified on 10th September, 2013 by GoI which introduced Priority and Non-Priority card holders, retaining the AAY category. The Act also stipulated that the Central and State Governments shall endeavor to progressively undertake necessary reforms in the TPDS. The reforms shall include:

1. Application of ICT (information and communication technology) tools including **end-to-end computerisation** in order to ensure transparent recording of transactions at all levels, and to prevent diversions.
2. Leveraging Aadhaar for unique identification, with biometric information of entitled beneficiaries, and
3. Full transparency of records.

31. Thus, modernization of Targeted Public Distribution System (TPDS) including the end-to-end computerisation Project, has been undertaken by the Department of Food & Civil Supplies. Department of Food & Public Distribution (DFPD), Ministry of Consumer Affairs, Food and Public Distribution, GoI had prepared the end-to-end computerization scheme under the 12th Five Year Plan (2012- 17) for its implementation in all States/UTs on a cost sharing (50:50) basis. NIC has been the technical partner for the scheme and the implementation agency for the Centre. Under the end to end computerisation all transactions in ARDs will be computerized along with the computerisation of the supply chain and beneficiary database. The scheme comprises implementation of 2 components, namely

32. *Component-I -*

1. Digitization of beneficiary /other databases
2. Computerisation of supply-chain management
3. Setting up of a Transparency Portal(which would host information in public domain, such as lists of beneficiaries, ARDs, Storage Godowns/depots, F&CS offices/officers, monthly allocation, actual off-take, etc.) and
4. Online Grievance redressal mechanism.

33. *Component-II -ARD automation.* Accordingly a Detailed Project Report was prepared by the Department. The total outlay of the project was estimated at Rs.498 crore, out of which SupplyCo share for supply-chain management was Rs.250 crore. As per the initial request of Rs. 24 crore for carrying out EtE computerisation activities, 60% of the central share (50% of total) amounting to Rs. 7.3 crore was released by GoI against which State share also was received. The relevant utilization certificates were also furnished. Request for release of balance fund from GoI has been requested for after due compliance with the requirements of GoI.

34. As per the Mission Mode Projects Guidelines, an institutional mechanism is to be established both at the Centre and States/UTs. Accordingly, the Department had prescribed a comprehensive management structure for the scheme comprising of (1) State Apex Committee headed by Chief Secretary (2) State Project e-Mission Team (SPeMT) headed by

Secretary, Food and (3) a Technical Team headed by the Commissioner of Civil Supplies who is the Nodal Officer for the Project.

35. The original timelines laid down for digitisation of beneficiary database and computerisation of supply-chain were March, 2013 and October, 2013 respectively. Implementation guidelines were issued by DFPD in the month of September 2013. Progress among all States was slow and uneven for want of approval of the scheme, release of funds to State, finalisation of action plan, practical problems faced during implementation etc.

*Activities undertaken under Component 1*

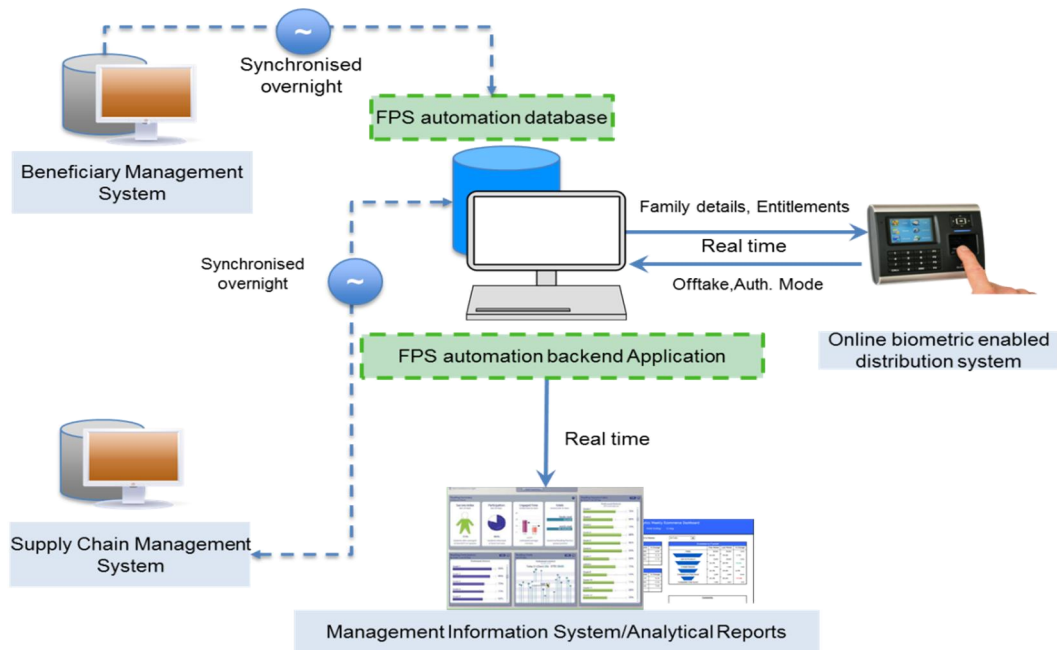
36. *Digitization of beneficiary / other databases.* Digitization of beneficiary database began in the 12<sup>th</sup> plan period with the development of a Ration Card Management System (RCMS), as a base database for the department. The Department renewed the existing ration cards by additionally collecting photographs of woman cardholder (as specified in NFSA, 2013), Aadhaar number, bank account number and other socio-economic details of the households. These details collected through the pre-populated forms were digitised and ranking of beneficiaries was done by assigning marks to them as per inclusion and exclusion criteria, through software developed by NIC. Priority households under NFSA have been identified through this ranking process. Claims and objections from the public have been verified through committees constituted at Local Self Government Department level and appeal committees have been constituted at the district level. On the basis of these decisions, the final Priority List will be generated by NIC and the lists will be published in ARDs/public premises by Feb 2017. New cards will be distributed before Apr 2017.
37. Supply Chain Management and Grievance redressal application. Due to inadequate cooperation from NIC, Delhi and failure in customization of the existing NIC application(CAS), Civil Supplies Department decided not to use CAS (Common Application Software) developed by NIC, Delhi, for Supply Chain Management, in a meeting chaired by the Hon'ble Minister for Food and Civil Supplies. Hence, the Departments' in-house technical team -Project Implementation Unit (PIU) with support from WFP had designed the following software applications to be used for end-to-end computerization Project:
1. DMS (Distribution Monitoring Software) for supply chain management and online allocation of grains
  2. Grievance Redressal system
  3. Allocation Module
38. These applications replicated the exact working of the Department and were easy to use and adapt. PIU tested these applications and fixed the identified bugs. The allocation module of DMS was also optimized by an external vendor through WFP.DMS was deployed at one AWD, Chala Sub Depot from 1st Oct 2015 on an experimental basis. A GPS software, I-TAC developed by KELTRON was also planned to be implemented the computerisation but Kerala along with door-to-door delivery for the online tracking of the vehicles, and was piloted in vehicles plying between FCI Valiyathura and Sub Depot Chalai.

39. Supply-chain management and door step delivery of food grains (from intermediary State-owned godowns up to the door step of ARDs) has now been entrusted to SupplyCo, who has been appointed by the Government as the authorized agency and system integrator for this purpose. Taluk level intermediary storage godowns will be established by SupplyCo and e-tender has been floated on 6<sup>th</sup> Jan 2017 for selection of transporting contractors for lifting and door step delivery of food grains. GPS tracking of the transportation vehicles is still lagging behind and was one of the last states in India to implement NFSA also envisaged. As the first phase, all these will be implemented in Kollam district, which will soon be followed by a rolled out throughout the State.
40. An online Grievance Redressal mechanism for registration and tracking of grievances has been developed by the Department. A call centre/toll free helpline numbers (1967 and 1800-425-1550) for TPDS have already been working with KSITM. Grievances can be registered via email-id: [dir.sch@kerala.gov.in](mailto:dir.sch@kerala.gov.in). NIC has been customizing a GR application newly prepared for LSGD, for the use of Department internally, as specified in NFSA, 2013. Further enhancements to the Grievance Redressal mechanisms will be carried out in the next plan period.
41. *Decision Support System and Transparency Portal.* A decision support system (DSS) was designed by Avineon, as per the instructions from KSITM. The Department had reviewed the initial version of DSS and shared the feedback. Based on feedback from Department, DSS was instructed to be customized further by Avineon. SRIIT, a Bangalore-based agency was selected for creation of a Transparency Portal through open RFP by the Department. Another tender was initiated for developing an advanced Data Analytics Platform for real-time monitoring of transaction/other data. Both these applications were later decided to be held for the time being in the context of immediate implementation of NFSA in the State. The existing website of the Department ([www.supplycokerala.gov.in](http://www.supplycokerala.gov.in)) has been developed into a Transparency Portal by NIC through which public can access information including allocation details. This will be further revised to meet necessary reporting requirements.
42. *Activities undertaken for Component 2.* Under the 12th Plan period, pilot studies were conducted to understand the scope of work and the applicability of the ARD automation system as part of Component 2 of EtE Computerisation Project.
43. Pre-Pilot (APL-SS), 2013. In an attempt to computerise the ARDs and mitigate the diversion in APL-SS (state subsidy) cards, the Department of Food and Civil Supplies, Government of Kerala conducted a pre-pilot assessment in 6 selected ARDs in Trivandrum (Refer GO (Rt) No.259/13/F&CSD dated 31.07.13). The objective of the pilot was to improve distribution and utilisation of the subsidy for APL-SS beneficiaries through:
1. Installation of e-PoS modules/devices at 6 ARDs
  2. Aadhaar-based authentication using e-PoS
  3. Connection to centralised database for retrieving entitlements
  4. Transfer of subsidies through linked Direct Benefit Cash Transfers to bank accounts of the beneficiaries

5. Incentivize the ARD owners through introduction of additional incentives and base payment revenue models.
44. The pilot was undertaken with support from NIC, Kerala state unit. Two e-PoS vendors participated in the pre-pilot and provided free proof of concept (POC). Total expense incurred for the APL-SS pre-pilot project was Rs. 24.77 Lakhs, for civil work for renovation of selected ARDs, undertaken during the pre-pilot. The pre-pilot experience came up with valuable lessons that guided the further steps for end-to-end computerization in Kerala. In the absence of a technically robust e-PoS solution, the successful deployment at ARDs during pre-pilot was found to be difficult and challenging.
45. *Model Piloting of e-PoS in 22 ARDs during Aug 2015-Apr 2016.* For ARD automation which comes under component II of end to end computerization project, e-PoS(electronic Point of Sale device) solution along with the prototype of the end-to-end solution was piloted in selected 22 ARDs before scaling-up the solution to the entire state(refer G.O (Rt)No.109/15/F&CSD dated 25.03.15).The objectives of the model pilot were
  1. To test and validate all the solution components necessary for operationalising the end-to-end computerization of the PDS value chain in Kerala
  2. Derive the unit cost for scale up of a successful pilot design throughout the state.
  3. Create a detailed rollout plan for successful implementation throughout the state.
46. The pilot was conducted with the support from WFP. As a first step the functional requirements and testing strategy for e-PoS module were created and shared with all participating vendors. These were created taking into account WFP's Best Practice Solution and their experience in a similar pilot in the Rayagada district of Odisha. This was followed by a series of detailed presentations to the solution providers in order to clarify their doubts and define the methodology for pilot.
47. After the lab based technical clearance, the solutions submitted by vendors were planned to be deployed at the selected ARDs. A draft RFP for state wide deployment of e-PoS module was also prepared by the Department.
48. The ARD Automation module followed a split architecture, whereby e-PoS vendors maintained their own backend server and synchronized data with the Department server when required.



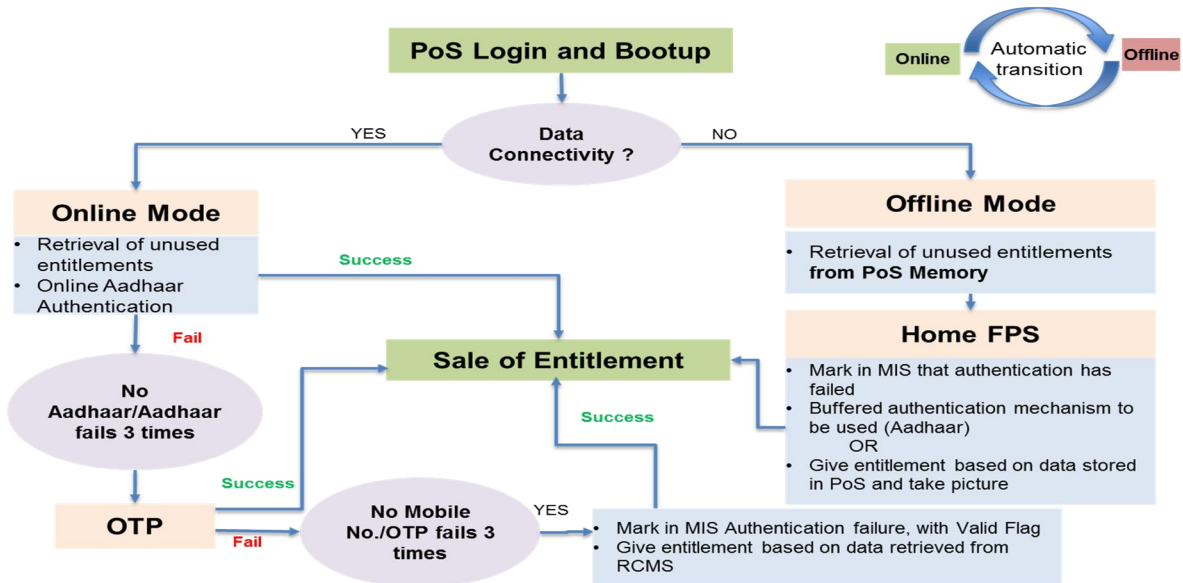
Figure 9 Detailed Architecture of ARD Automation (Pilot)



49. The solution also had a clearly defined protocol for beneficiary authentication. It allowed for offline transaction and had provisioned buffered authentication for such offline transactions. In case of failure of Aadhaar authentication (first level), the solution relied on alternative authentication mechanism like OTP (second level) and taking photographs (third level). It ensured no denial of service to the beneficiary under all circumstances. The solution also proposed to have a convenient user interface and also enabled users to nominate representatives for collection of ration. It also enabled portability, whereby beneficiaries would be able to take entitlement from any ARD in the state.

50. The figure below describes the authentication flow which ensures “No Denial of Service” and a robust exception management system:

### One solution that supports both online and offline mode



51. With reference to the architecture mentioned above and the requirements of the end to end computerisation of the Kerala PDS, the Department has developed certain components which were deployed in SDC after necessary security audits, bug fixes and training. A budget of Rs. 4, 58, 39,336/- was sanctioned for the implementation of Model Pilot Project. A total no. of 5 vendors participated in the pilot on paid Proof of Concept (PoC) @ Rs 4, 50,000/- for each vendor. CSC had agreed to provide AUA services, free of cost for the model pilot. The Department had also signed an SLA with CDAC (MSDG- Mobile Services Delivery Gateway of GoI) for use of 4 crore SMS without any charges (approved by TRAI). KSITM was the default AUA for the statewide roll-out of the solution and ensured delivery of performance levels as defined by the department.
52. Solutions submitted by the 5 vendors were deployed in 22 ARDs in 2 Districts- Thiruvananthapuram and Ernakulam. The e-PoS machines were installed first on 19th August 2015 in ARD 32 at Kanjirampara in Thiruvananthapuram and withdrawn from all ARDs by the end of Apr 2016, on successful completion of the model pilot experiment. An analysis document had been prepared by WFP on the ARD automation model pilot and shared with the department. The tendering process could not be undertaken due to the lack of administrative sanction by the government of Kerala.

#### Current Status

53. Currently, it is planned that e-PoS devices along with the solutions will be purchased through open RFP by SupplyCo, for being deployed in all the 14335 ARDs throughout the State. Software solutions required (Online allocation of food grains, Supply-chain management, Transparency Portal) will be developed /customized and integrated by NIC.

*Council for Food Research and Development (CFRD)*

54. The Government has constituted a Council for Food Research and Development (CFRD) as a registered charitable society with the objective of promoting indigenous food items of Kerala and maintaining competition in the international market. Setting up a School of Food Business Management (self-finance Mode), establishing drug testing laboratories under FQML, establishment of chilled storages and vegetable & fruit dehydration unit at Ernakulum, food park, training programmes for staff etc. are the major activities under taken by CFRD.
55. Consumer Welfare Fund. This scheme intended to conduct awareness campaigns through electronic and print media on consumer rights and to provide financial support to non-governmental organizations, voluntary consumer organisations etc. for promoting consumer movement, and strengthening awareness activities at various levels.
56. Training Programmes. Training of the staff from the Civil Supplies Department through IMG, CFRD and National Productivity Council was conducted at CFRD. The programme included training on inspection of quality of food grains, Food Safety Standard Act, Food Security Act, sampling procedures, vigilance proceedings, CrPC, IPC, kerosene, LPG, Sugar Control Orders, consumer protection, prevention of corruption, Public Services Acts, disciplinary procedures etc.

*Kerala State Civil Supplies Corporation (KSCSC)*

57. SupplyCo started its operations in 1974, and Market Intervention Operations (MIO) was the flagship scheme undertaken by SupplyCo. Under this scheme 13 essential commodities (table below) are sold at subsidized price fixed by the Government provided budgetary support to SupplyCo. However the financial assistance from the Government covers only a portion of the actual loss and the balance is met by SupplyCo through cross subsidy from its commercial operations like relation of FMCG, petroleum products, medicines, sabari branded products etc.

Table 3 *Essential Commodities supplied by SupplyCo*

No	Item	Current Subsidy Selling Price (Rs/Kg)	Date which last revised
1	Gram	74.00	01-12-2014
2	Black Gram Washed	66.00	01-12-2014
3	Bengal Gram Bold	43.00	01-12-2014
4	Lobia	45.00	01-12-2014
5	Red Gram Washed	65.00	01-12-2014
6	Chillies	75.00	24-08-2014
7	Coriander	92.00	01-04-2016
8.	Sugar	22.00	1-08-2015
9	Jaya Rice (Sortex)	25.00	24-08-2014
10	Kuruva. Rice(Sortex)	25.00	24-08-2014
11	Matta Rice(Sortex)	24.00	01-08-2015
12	Raw Rice(Sortex)	23.00	24-08-2014
13	Coconut Oil(1 Ltr pouch)	90.00	11-08-2016

58. For distributing these essentials to the general public at subsidized rates, SupplyCo incurs an average loss of Rs 30-35 crores per month. The details of loss incurred by SupplyCo over the last six financial years and the amount reimbursed by the Government of Kerala is shown below. Loss as per the financial accounts of the organization up to 2013-14 is also shown.

Table 4 *MIO Loss and loss as per audited statements*

Financial year	MIO -LOSS			Loss as per Accounts		
	MIO Loss (Claim)	Subsidy received from Government	Balance MIO loss	Total Loss as per Audited/ Provisional Accounts	Cumulative Remarks Loss at the end of the FY	Remarks
2010 -11	118.81	76.31	42.50	5.41	5.41	Audited
2011 - 12	164.96	118.35	46.61	39.23	44.64	Audited
2012 -13	288.55	135.00	153.55	80.90	125.54	Audited
2013 - 14	320.79	116.02	204.7	89.11	214.65	Audited
2014-15	257.78	70.00	187.78			Audited
2015-16	249.21	99.0	150.22			Audited
TOTAL	1400.11	614.68	785.43			

59. The MIO loss and loss as per audited accounts has steeply increased from the financial year 2012 - 2013 after the introduction of more varieties of rice and coconut oil in the subsidy items. The Market Intervention Operation has resulted in the erosion of net worth of SupplyCo to the tune of Rs 914.65 Crores up to 31-3-2014.

60. The following are the major contributors of the MIO loss:-

1. As per the existing Government orders (Issued in August-2014) subsidy price to be fixed at 20% below the open market price and if possible less than 30% of the open market price if it will not cause any additional loss to the Corporation. However, the Government has not permitted to increase the subsidy selling price even though during the last couple of years, the price of these commodities has showing an increasing trend. (Blackgram Washed, Toor Dal, Chillies, lobia, Bengalgram, etc).
  2. The present Government's a policy is that the subsidy price will not be increased in the next five years. This could result in increase of MIO loss as a result of stagnant subsidy selling price and increasing purchase price.
  3. As, the Government is not reimbursing the entire loss incurred on subsidy sales, SupplyCo will need to reduce the purchase of commodities which are major contributors to the loss due to the high difference between the purchase price and subsidy selling price to limit the overall loss to SupplyCo.
  4. The monthly purchase cost of essential items itself works out to be about Rs.120 Crores. Due to the non - reimbursement of MIO loss, SupplyCo has not made payments to the suppliers and is forced to limit the purchase.
  5. There is a huge variation between the subsidy selling price and open market price of items whose demand is more, however, SupplyCo has not be able to satisfy the demand for want of funds.
61. It is thus essential that strategies to cope with MIO loss are introduced to ensure that SupplyCo is able to fulfil its role of ensuing food security at affordable prices to the beneficiaries. In the current plan some reforms have been started and they are proposed to be strengthened in the next plan period. As highlighted in the table below, an amount of Rs.25 crore (revolving fund) was earmarked by the department in the year 2013-14 as advance for procurement of sugar to SupplyCo.

*Year Wise Outlay of all Expenditure in the 12th Plan*

*Table 5 Year wise Outlay and Expenditure (2012-13 to 2016-17) for all schemes in rupees crore*

Name of Scheme	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17		Total Outlay	Total Exp.	%
	Outlay	Exp.	Outlay	Exp.	Outlay	Exp.	Outlay	Exp.	Outlay	Exp.	Total Outlay	Total Exp.	
Annapurna scheme	3.34	1.75	3.54	1.7614	3.54	0	0	0	0.51	0.51	10.93	4.0214	36.79
Strengthening and Modernisation of Public Distribution system	1	1	20	0.65	20	0.86	0.7	1.07	10	10	51	13.58	26.63
Training Programme	0.1	0.102	0.1	0.1	0.1	0.04	0.05	0	0.15	0.15	0.45	0.392	87.11
Consumer Welfare Fund	0.2	0	0	0	0.1	0	0	0	0	0	0.3	0	0.00
Council for Food Research and Development (CFRD)	1.5	1.5	4	4	5	2.05	3	5.05	6	6	16.5	18.6	112.73
Advance to the KSCSC for procurement of sugar (Revolving Fund)	0	0	0	25	0	0	0	0	0	0	0	25	
End to End Computerisation of TPDS	0	0	0	0	0	1.12	6.19	4.38	0	0	6.19	5.5	88.85
<b>TOTAL</b>	<b>6.14</b>	<b>4.352</b>	<b>27.64</b>	<b>31.5114</b>	<b>28.74</b>	<b>4.07</b>	<b>9.94</b>	<b>10.5</b>	<b>16.66</b>	<b>16.66</b>	<b>85.37</b>	<b>67.0934</b>	<b>78.59</b>

### *Summary of the Preliminary Analysis*

62. In spite of being a food deficit state, successive governments in Kerala have ensured that food remains accessible to the bulk of the population through universal PDS coverage, along with state run supply of 13 essential commodities at subsidised prices. The PDS, ICDS and MDM schemes which cover priority (AAY, PHH) households, children in the ages of 0-14 years as well as pregnant and lactating women, offer comprehensive coverage to the most vulnerable groups among other state subsidies and food security programmes. In spite of the prevalence of such large scale schemes both nationwide and in Kerala, the state of nutritional security is still far from acceptable. Activities addressing the present challenges in the implementation of schemes as well as direct approaches catering to nutritional diversification are required. The points below highlight in detail the present challenges in Food Security and Public Distribution for the state.

#### *Present Challenges and Status*

63. Even though Kerala adopted the NFSA in November 2016 and there are many actions that the government has already initiated, but to be fully compliant with NFSA and also align to the overall vision of a Hunger Free State the government needs to consider the following action:
1. Implementation of National Food Security Act, 2013
    1. Identification of beneficiaries to be covered under priority households and allocation based on the new coverage norms.
    2. Implementation of door step delivery to the ARD's.
    3. Implementation of automated online allocation using a Supply Chain Management System.
    4. Establishment of a State Food Commission and a District Grievance Redressal Committee which the state has already formed.
    5. Establishment of an online Grievance Redressal System.
    6. Drafting of the Food Security Rules.
  2. Implementation of EtE Computerisation of the TPDS as per the Supreme Court Ruling of 2011, which includes:
    1. Beneficiary list digitisation and implementation of a Ration Card Management System RCMS to keep the database updated and accurate.
    2. Aadhaar seeding of all beneficiaries and deduplication using Aadhaar
    3. Implementation of a Supply Chain Management System and Optimised Logistics Operations
    4. Introduction of PoS at ARD's for Biometric Authentication
    5. Introduction of Portability at ARD's
    6. Implementation of Data Analytics based MIS/Decision Support System
    7. Provisions of cashless transactions at ARD

3. Absence of a dynamic, dedicated resources and frequent changes in the leadership has hampered the progress.
4. Enhancement of beneficiary awareness about the various new schemes through training of stakeholders to adapt to new technology and rules/regulations.
5. The state government has already scrapped the use of Authorised Wholesale Dealers and has instead mandated SupplyCo to establish/rent scientific storage spaces to serve as intermediary storage spaces for the PDS rations. This activity needs to be completed in the next 5 years to ensure storage facilities meet scientific norms and facilitate efficient movement of grain.
6. Government had established CFRD with an objective of promoting indigenous food items of Kerala and maintaining competitive quality of food grains. The same competitive standards for food grain storage needs to be replicated in all godowns owned by the state.
7. It is imperative to implement strategies that target both food accessibility and nutritional security in the short and long term. Some of the indicators on nutrition as cited in the section above indicate that in spite of the large coverage of schemes, there remain systemic flaws in targeting of beneficiaries as well as micronutrient deficiencies in the food grains made available to the vulnerable groups. Thus appropriate action in food basket diversification and fortification of food grains need to be implemented.
8. As new projects and activities are introduced, M&E mechanisms also need to be implemented such as baseline and end line for all new projects to effectively understand the impact on beneficiaries and the household consumption. In addition, regular monitoring mechanism needs to be implemented to understand longer term impact on nutritional security.



## CHAPTER 2

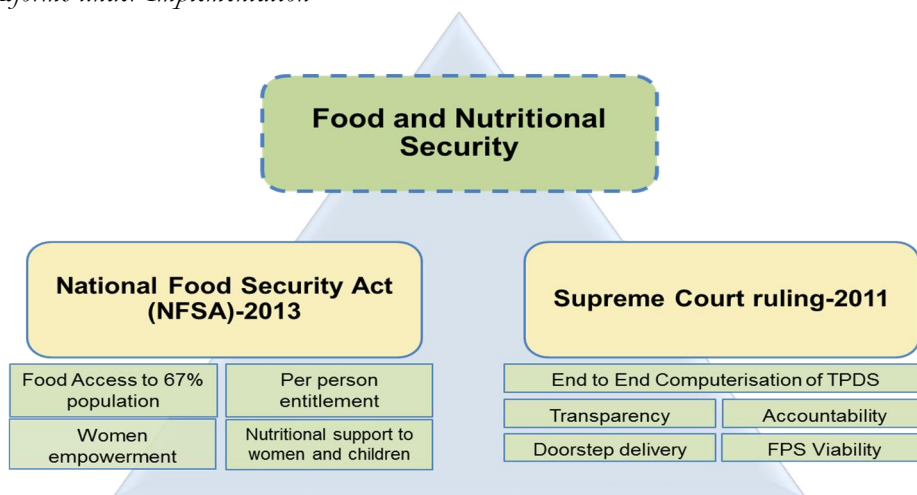
### PROPOSED FIVE YEAR PLAN FOR PUBLIC DISTRIBUTION SYSTEM IN KERALA (2017-2022)

64. In light of the overall objectives of achieving Hunger Free Kerala by the year 2030, it is planned to strengthen the existing Public Distribution System , through implementation of NFSA' 2013, EtE computerisation activities, modernisation of operations, capacity building of stakeholders and regular monitoring of activities etc. It is also planned to collaborate with other departments (like Social Justice for ICDS and MDM) for a concentrated and holistic approach towards providing food and nutritional security to the citizens of Kerala.

#### *Improve access to food by upgrading the Public Distribution System (PDS)*

65. The National Food Security Act, 2013 is an Act of the Parliament of India which aims to provide food security through subsidised food grains to approximately two thirds of India's 1.2 billion people. It was signed into law on 12<sup>th</sup> September 2013 and Government of Kerala decided to implement NFSA in the State with effect from November 1, 2016. As a governing policy in the area of food security, it is imperative for the state to ensure that the objectives of the NFSA are met during this plan period. The objectives of the act are: ensure access to adequate quantity of quality food at affordable prices; nutritional support to women and children; and women empowerment among others.
66. EtE computerization of the Public Distribution System, mandated under the Supreme Court Ruling of 2011 on Public Distribution is also a centrally assisted mission mode project under the GoI's 12<sup>th</sup> Five year plan. The objectives of these reform are to reduce leakages, improve targeting by reducing the inclusion/exclusion errors, removal of ghost/duplicate/fake cards and improving the accountability in the whole system without compromising the stakeholder convenience.
67. *Even though many states have already completed the implementation of various computerization components such as beneficiary digitisation, online allocation, supply chain management and ARD automation, it is time for Kerala to learn from the other states and implement the scheme in mission mode as per its needs and priorities. The department in collaboration with WFP, NIC, SupplyCo, KSITM, private solution providers and other technical partners, plans to complete the implementation of EtE computerization of PDS components by **March 2017**.*

Figure 10 Reforms under Implementation



*EtE Computerisation of TPDS Operations in Kerala*

68. The entire TPDS Operation from the Civil Supplies Department & Civil Supplies offices and ARD operations including beneficiary level transactions have to be automated. It is proposed to have an end to end system with the following best practices:

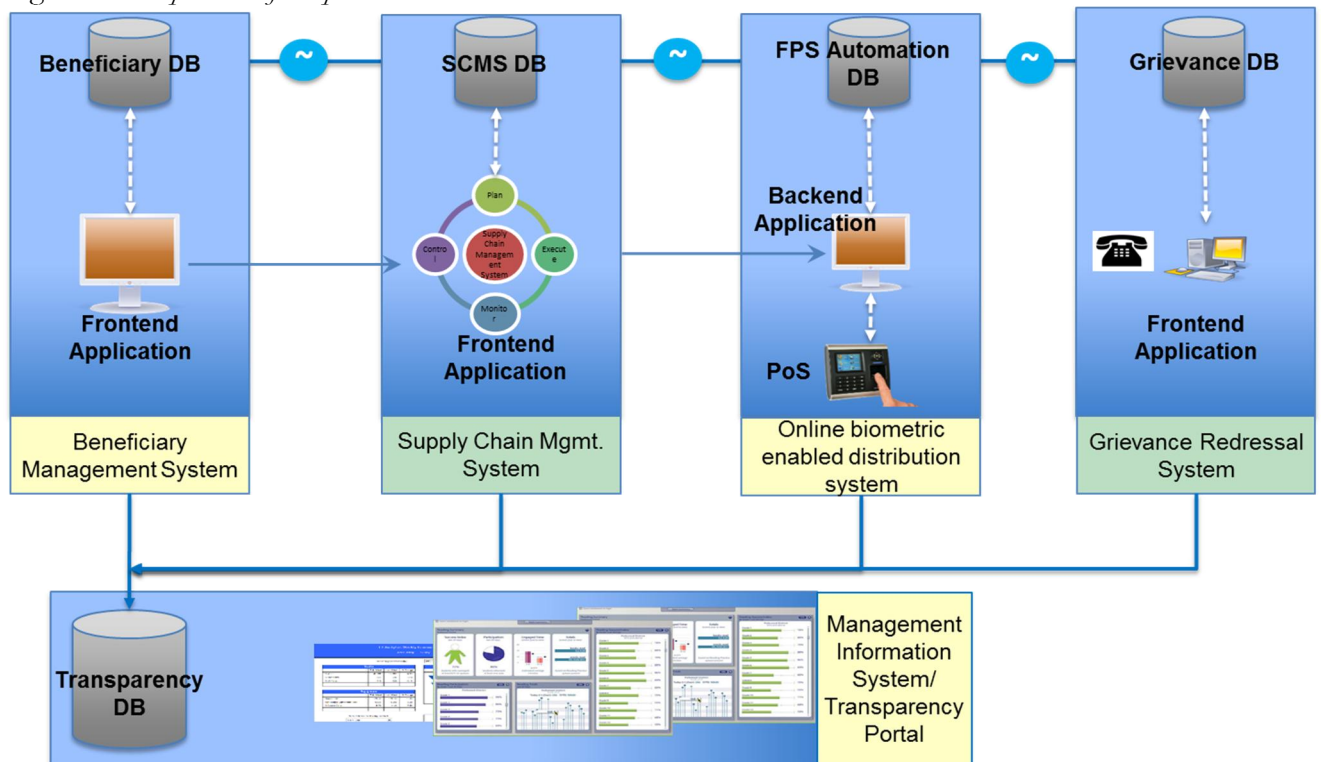
Beneficiary identification and enrolment	Supply chain operations	FPS transactions	Grievance redressal
<p><b>1. Deduplicated beneficiary list created by leveraging uniqueness of beneficiary Aadhaar numbers</b></p> <p><b>2. Provisions to keep ration card database updated and accurate</b></p>	<p><b>3. Automated allocation of foodgrain based on previous off-take by tracking foodgrain stock levels</b></p> <p><b>4. Door-step delivery of food grains to FPS with automated SMS notifications at dispatch</b></p>	<p><b>5. PoS enabled online transaction at FPS after biometric authentication of beneficiary using Aadhaar</b></p> <p><b>6. Ability for beneficiary to purchase ration from any FPS (Portability)</b></p> <p><b>7. Improved FPS viability to incentivize better FPS performance</b></p>	<p><b>8. Easily accessible &amp; effective grievance redressal</b></p>
<p><b>9. MIS for operations management, system implementation &amp; transparency</b></p>			

69. In addition, the planned computerisation of other related activities include:

1. Direct benefit transfer of subsidy/Commission etc.
2. Setting up of Self Service Kiosks
3. Portability – The concept of portability. A Beneficiary could purchase the commodities from any shop which provides better service.
4. Setting up of Self Service Kiosks
5. Civil Supplies to become Aadhaar User Agent for providing Aadhaar based biometric identification
6. All information through SMS/Mobile Apps

7. GPS based tracking of Vehicles
  8. Availability of stock through SMS, Mobile App, Web Site
  9. Inspection and monitoring through Mobile devices
  10. Cashless transaction
70. All the above components are integrated and thus the system has to be designed, developed and implemented in such a way that there is little/no chance of manipulation/updation of data at any intermediate level. The system needs to also ensure that all the transactions are available in the Transparency Portal. For the implementation of various EtE computerization components, the CCS department will hire third party vendors/NIC for application development and deployment activities. WFP will support the department through technical advise on implementation of best practices for the EtE Computerisation.
71. *EtE Computerisation Components.* In order to make the PDS efficient, the computerisation of the entire value chain of the PDS needs to be done. The figure below depicts the 5 components that need to be implemented and integrated for achieving the end to end computerization of the PDS:

Figure 11 Components of computerised PDS



72. *Ration Card Digitization (RCMS).* All the ration cards in the state were digitised way back in 2001 and renewal of the ration card after a fresh enumeration is in progress. It is also essential to ensure that the data is clean, reliable and that no bogus cards exist in the state. The duplicate cards/bogus can be eliminated with the use of Aadhaar and the department has to ensure 100% Aadhaar seeding at the beneficiary level. De-duplication techniques and data correction techniques need to be developed and deployed in RCMS to maintain

integrity of data. The RCMS should be capable of editing, adding/deleting records and keeping the system up-to-date using deduplication techniques.

73. The beneficiary database also has to be linked to various external databases to keep the data base up-to-date. E.g. Birth and death database, RTO Database, e-health database, KSEB, LPG database, Government Employee database, telecom operators, Income Tax database etc. The beneficiary is linked with a ration card using his/her Aadhaar number and the verification of the ration card is possible on-line and any transaction is possible by providing ration card number/Aadhaar. Thus, the e-verification services can be enhanced to provide service to various other Public/Pvt. sector organizations so that they share their database with the department. All the services related to the ration cards need to be made on-line and the citizen should be able to avail services sitting at home or through Common Service Centres.
74. As per a requirement of the NFSA, under the new RCMS the eldest woman who is not less than eighteen years of age, shall be made head of the household for the purpose of issue of ration cards. In cases where a household at any time does not have a woman or a woman of eighteen years of age or above, but has a female member below the age of eighteen years, then the eldest male member of the household shall be the head of the household for the purpose of issue of ration card and the female member on attaining the age of eighteen years shall become the head of the household for such ration cards in place of such male member. This functionality has to be provisioned in the RCMS to ensure an automatic update.
75. *Supply Chain Management (SCMS) and Door Step Delivery managed by SupplyCo.* As per G.O.No.11/2016/F&CSD dated 29.08.2016, Government accorded sanction to implement door step delivery of PDS articles through SupplyCo. As per G.O.No.15/2016/F&CSD dated 03.10.2016, Government nominated SupplyCo as System Integrator and authorised agency of the Government of Kerala as per NFSA 2013.
76. *Online Allocation of food grains.* NFSA, 2013 envisages transparency and accountability in PDS transactions by displaying each and every information in public domain. This includes automatic allocation of food grains right from Government of India level up to ARD level and its display in public domain. This Online allocation of food grains up to ARDs is envisaged to happen automatically based on the card strength and entitlement and taking in to account the closing stock with each ARD, through the integration of RCMS (Ration card Management System), Supply Chain Management System and ePoS solution installed in every ARD. NIC Kerala has been entrusted with development of software solution for Online Allocation.
77. *Intermediate Godowns.* In order to set up intermediate godown facilities as part of 'National Food Security Act 2013', adequate godown space has to be constructed in all Taluks in the state as per the requirement and subject to the availability of land. The approximate storage space required in the state with 3 months storage capacity is 26 lakh sq. ft.

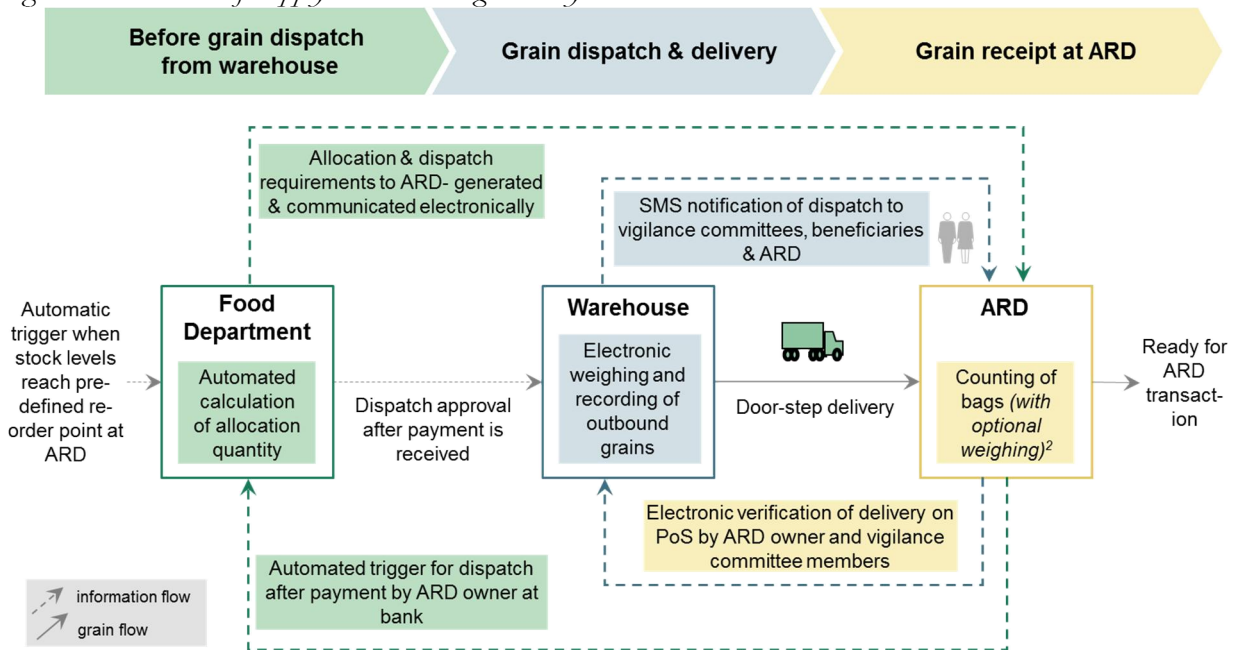
78. The Government has directed SupplyCo to establish depots in all the 75 Taluks for distribution of food grains under the PDS. Monthly 1, 18,750 MT of food grains have to be stored, for which 7, 12, 500 sq. ft. space is required. Currently, as SupplyCo does not own so much storage space at those blocks, these spaces have to be acquired on rental basis. SupplyCo manages altogether 58 depots located at various districts. The 58 depots can be designated as block depots and the remaining 94 block depots need only be identified for initial roll out. In the meantime, the storage requirements shall be met by leasing godowns from private parties, co-operative societies after due government approval. SupplyCo will also consider the technological improvements in storage structures like silos wherever feasible.
79. For constructing godowns, SupplyCo has its own land at Valiyathura (Thiruvananthapuram), Kollam and Thiruvalla and requested for Administrative Sanction for construction of godowns in these three places to the Government. The Government has accorded administrative sanction for Valiyathura (Thiruvananthapuram).It is expected that the sanction from Government will be received shortly for Kollam and Thiruvalla also.
80. Also, for constructing godowns at Nadukani (Kannur, 4 acres of land owned by Kinfra), Valiyavelicham (Kannur 5 acres of land owned by KSIDC) and Kinalur (Kozhikode, 5 acres of land owned by KSIDC) SupplyCo has forwarded a request to the Government to either to assign the land or to permit SupplyCo to take the land on lease from Kinfra and KSIDC so that suitable godowns can be constructed at that places.
81. SupplyCo is planning to construct six godowns during the financial years 2016-17 and 2017-2018 subject to the Administrative Sanction and approval from the Government (One godown in 2016-17 and 5 godowns in 2017-18).
82. The estimated cost of one godown to be constructed under 'scientific storage' principles of FCI is approx. Rs.5 crores.For the above plan a sanction of Rs.5 crores and Rs.25 Crores as Budget Fund allocation (Plan Scheme) to SupplyCo for intermediate storage for the financial year 2016-17 and 2017-18 respectively would be required.
83. During the remaining years of the 13<sup>th</sup> five year plan, SupplyCo is planning to construct 5 godown per year subject to allotment of necessary funds and assignment of land by the Government. The total estimated cost of 5 godowns each for the years 2018-19, 2019-2020, 2020-2021 and 2021-2022 at the rate of Rs.5 crores per godown is Rs.100 crores. Total fund required for the 13<sup>th</sup> Five Year Plan is 150 crores.
84. *Supply Chain Management System.* Effective monitoring and control over the vast TPDS supply chain is a tough task to carry out manually. This leads to opportunities for pilferage, late delivery of food grains to ARD and would lead to inconvenience to beneficiaries and an overall lack of transparency into the system's operations for all stakeholders. To address these issues and as per the requirements of NFSA/Supreme Court Order'2011, it is recommended to have end-to-end computerization which allows for real-time stock tracking

of food grain at all points, thus checking leakage, aiding in better control over operations while providing information to the relevant stakeholders about status of grain delivery.

85. For reducing leakage during the delivery, it is recommended to install electronic weighbridges linked to the supply chain management system at the state warehouses. This allows for accurate weighing of food grains for delivery, with the attached computer ensuring all information gets logged onto the system without human intervention. However, it is advisable to keep the inbound weighing at ARD optional, with the ARD owner taking full responsibility for any future mismatch once he/she accepts the delivery. The rationale for this is that the process of weighing can be cumbersome and tough to manage with a small weighing machine at the ARD, thus the ARD owner should have freedom to accept the delivery if he/she has confidence that the quantity delivered is as stated. A mechanism of random 10% weighing may also be implemented at the ARD level.
86. It is also recommended that vigilance committees be involved in verification of grain delivery to ARD to ensure checks. Any mismatch in grain quantity dispatched from warehouse and final sales would automatically reflect in the sales report. A PoS device at the ARD will allow tracking of sales at the ARD while also allowing for biometric based verification of grain delivery by the state government authorities, ARD owner, PRIs (Panchayati Raj Institutions), vigilance committees etc.
87. For ensuring better control over delivery schedules of grains and to provide significant time & cost saving to ARD owner, it is recommended that the state do door-step delivery of food grains to the ARD, i.e. managing all grain transportation operations internally via the Civil Supplies Corporation. This will address the current problems of erratic delivery scheduling faced when transportation from state warehouses to ARD is under the control of ARD owners. This will give the government more control and accountability over the transportation of food grains to the ARD thereby ensuring grain availability at the ARD at all times. Additionally, doorstep delivery also gives the ARD owner a financial incentive in terms of cost saved for not having to arrange transportation. The state government should ensure that proper contracts are negotiated and that the transporters are operating properly. Taking the learnings from other states, which have successfully implemented door step delivery, the contracts and the rates should be negotiated on per quintal of grains rather than on per quintal per km basis. Such a rate contract will ensure that the transporter delivers grains without deviating from routes and the assistance from GoI (which is also at per quintal rate) can be obtained.
88. For ensuring proper operations on the part of the ARD owner and transporter, it is recommended that SMS notifications be automatically issued and communicated to all stakeholders including beneficiaries and vigilance committee members at the point of truck dispatch from warehouse with details of grain quantities, departure date & time and vehicle numbers. Beneficiaries should be able to opt-in for notifications, thus being able to not only check grain delivery, but also to have better visibility of stock availability at the ARD. For improving convenience of the ARD owner, it is recommended that automatic SMS notifications be issued to them when stock levels reach re-order point, which is

automatically tracked via the PoS device based on transaction data. After ARD owner deposits money to the bank, an automatic trigger goes to the warehouse to dispatch the requisite quantity of grain to the ARD. An overall schematic of the SCMS is as shown below:

Figure 12 Schematic of Supply Chain Management System



89. GPS Tracking of vehicles engaged with transportation of food grains. With a view to eliminate the possibilities of diversion of food grains from the supply chain, all Vehicles used for transporting food grains from FCI to intermediary godowns and those used for door step delivery of food grains(from intermediary godowns till the door step of ration shops)are planned to be tracked using GPS technology. The movement of vehicles will also be monitored centrally to detect cases of frequent diversion of food grains. The system consists of GPS/GPRS device (hardware) and a tracking software for real-time location tracking, monitoring, route tracing, real-time SMS alerts on events, generation of MIS reports etc.
90. *Optimisation of Supply Chain and Integration.* From production of food grain, to procurement and movement through several intermediate stages until grains reach the end beneficiaries of different schemes, the supply chains should be viewed as a set of organically linked processes. Any planning at any of these intermediary stages has to take into account the other stages in the supply chain.
91. Once individual supply chain for commodities/schemes are optimised, it is proposed that a solution should also be developed for an integrative innovation strategy based on the end to end logistics and supply chain. This would lead to high service quality solutions to millions of people by combining innovations in several of the ecosystem elements and also their convergences. The relevance of integrated solution for end-to-end supply chain will increase with states adopting/increasing their share of decentralized procurement, whereby states

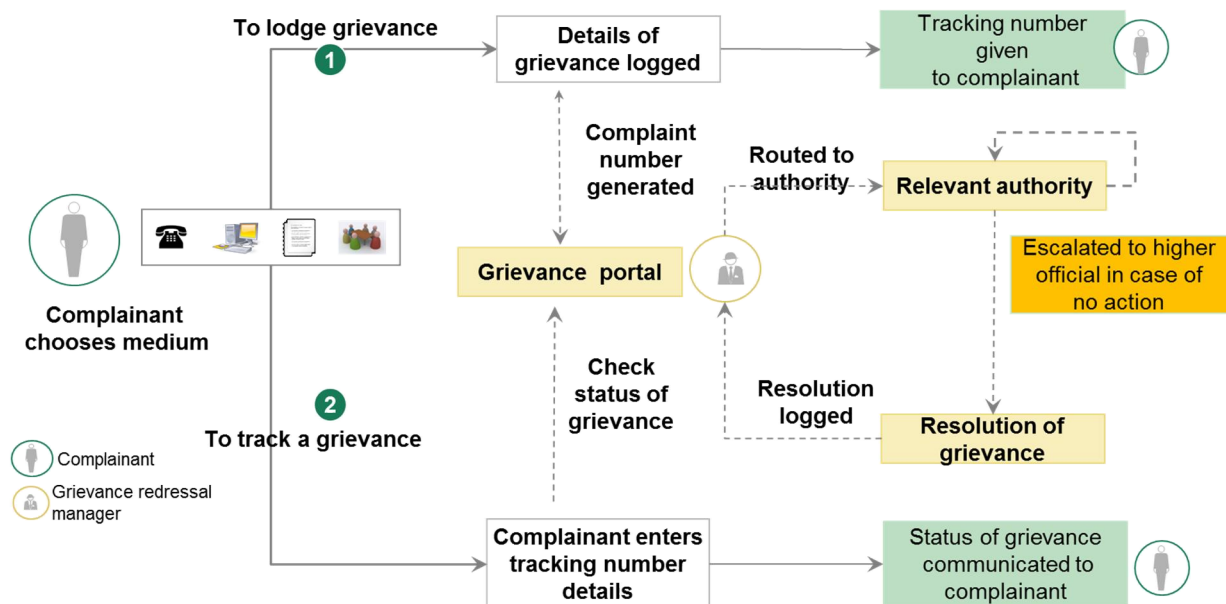
have more localized and independent supply chain taking care of procurement, storage and distribution. Many states have additional food grains, millets and other food items such as pulses, salt, cooking oil etc. along with the standard TPDS food grains, and manage separate procurement and distribution supply chains for these. The integrated supply chain could also consider convergence of these commodity wise segregated supply chains for better efficacy.

92. *ARD Automation.* As a part of implementation of NFSA and the End to End Computerisation of PDS in e-POS machines (Point of Sale Device) need to be installed in all retail ration shops. It is proposed that PoS machines with Micro ATM standards, having a large screen size for ease of operation and with an operating system capable of handling future enhancements should be installed in all 14,335 ARD's. It is estimated that an amount of Rs.35, 000/- is the expected cost of a Biometric enabled e-POS machine; it includes data connectivity charges and one year AMC charges. An amount of Rs.52.50 crores is required for 15,000 such machines in 2017-18 and Rs.12.5 crore required for next four years for maintenance and upkeep. A total of Rs.65 crore may be provided for the next five years. The GoI shall provide an assistance of Rs 17 per quintal (on 50:50 cost sharing) for the transactions at the ARD.
93. Since, food is an essential commodity, the solution shall be designed on the principles of Zero Denial of Service. Hence, contingency measures must be built in for ARD operations which account for these situations while ensuring that all data is ultimately logged on to the MIS/Dashboard. The reports on the amount of grains distributed shall form the basis for the subsequent month's allocation to the ARD. The contingency measures could include using buffered Aadhaar authentication, OTP, Proxy Nominee as well as unauthenticated transaction. All occurrences of contingency scenarios should be logged and flagged onto the MIS/Dashboard, which can be tracked and analyzed to prevent misuse of the contingency scenarios and take corrective action.
94. *Grievance Redressal System.* The National Food Security Act provides for a two tier grievance redressal mechanism. The first tier is the establishment of a multimodal online grievance redressal system and the second is the establishment of redressal mechanisms; comprising of District Grievance Redressal Officers and State Food Commission. The Government of Kerala has already made appointments for these positions.
95. It is planned that 10 district DGROs and 1 state commission offices is setup. An amount of Rs.20 lakh each required for setting up 10 DGROs and Rs.50 lakhs required for state Food Commission Office. Total requirement for this component is Rs.2.50 cores for 2017-18 and Rs.50 lakh required for subsequent years. Total requirement for the next five Years (2017-2022) Rs.4.50 crore.
96. In addition, the plan is to implement an effective grievance redressal application which has the below components:
  1. Multimodal logging of grievances
  2. Single database of all grievances



3. SLA based tracking and resolution of complaints
  4. Auto escalation of complaints to higher officials if unresolved
  5. Real time dashboard with all details
97. To log transaction, it is envisaged to have multiple channels available for logging and tracking of complaints for the convenience of stakeholders including:
1. Physical letters
  2. Website
  3. Toll-free helpline
  4. Public meetings etc.
98. The system would give each complainant a unique identification number that is communicated to the stakeholder (via SMS, e-mail or toll-free helpline). While logging the complaint, all necessary details would be captured. Confidentiality and anonymity of the complainant should be ensured wherever appropriate and possible.
99. To ensure that the system runs smoothly, participation of vigilance committees is also planned. Additionally to make the system effective, rigorous awareness campaigns would be conducted including prominent display of helpline no's at each ARD. These would be formed at all levels (state, district, block and ARD) and would regularly review the functioning of the TPDS. Social audits would also be carried out periodically to have institutional checks on system operations, as well as to sensitise and mobilise beneficiaries.

Figure 13 Schematic of the Solution – Easily Accessible and Effective Grievance Redressal



100. *MIS and Transparency Portal.* The main feature of an MIS and transparency portal is to ensure that relevant reports are accessible to all stakeholders – food officials, TPDS agencies, ARD owners and beneficiaries. Access to information should be based on what information is relevant for which stakeholder.

101. The MIS would be used to enable and monitor inspections by providing officials with the reports that they need for physical verification and also by tracking the completion and results of different inspections as per defined protocols.

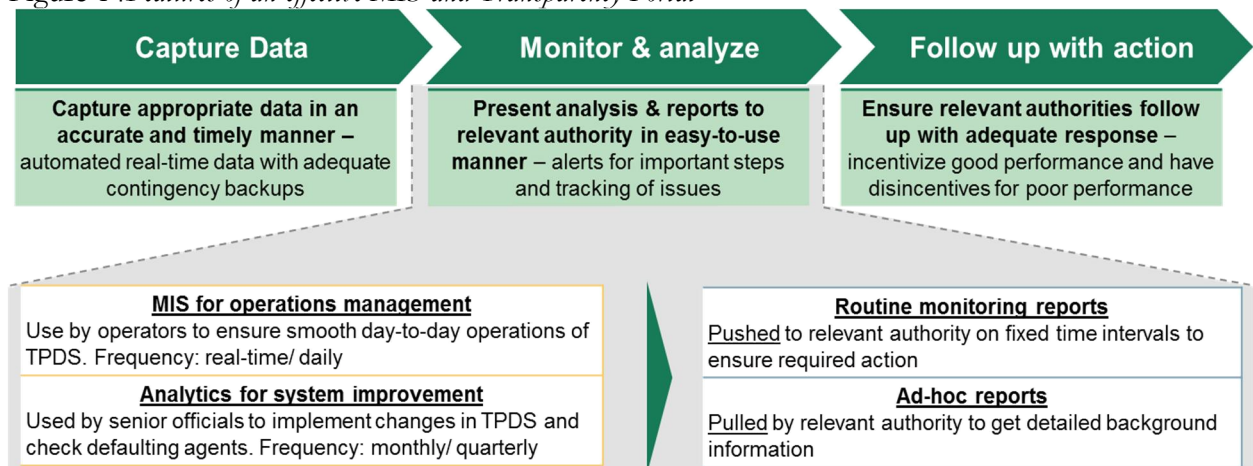
102. The design of the MIS would include the following categories of reports/ analysis:

1. Reports for operations management (to ensure smooth day to day functioning of operations) along with relevant statistics and numbers
2. Analytics for system improvement (to improve system over time)

103. These categories would each have two types of reports:

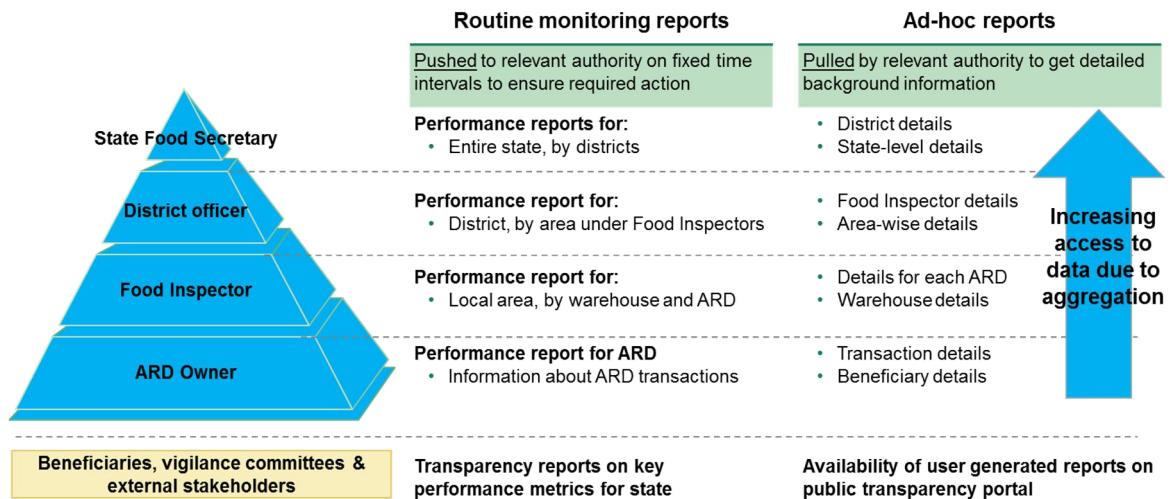
1. Routine monitoring reports (pushed to the relevant authority with all necessary information to ensure action)
2. Ad hoc reports (reports that can be generated by the authorities if required to get additional background information).

Figure 14 *Features of an effective MIS and Transparency Portal*



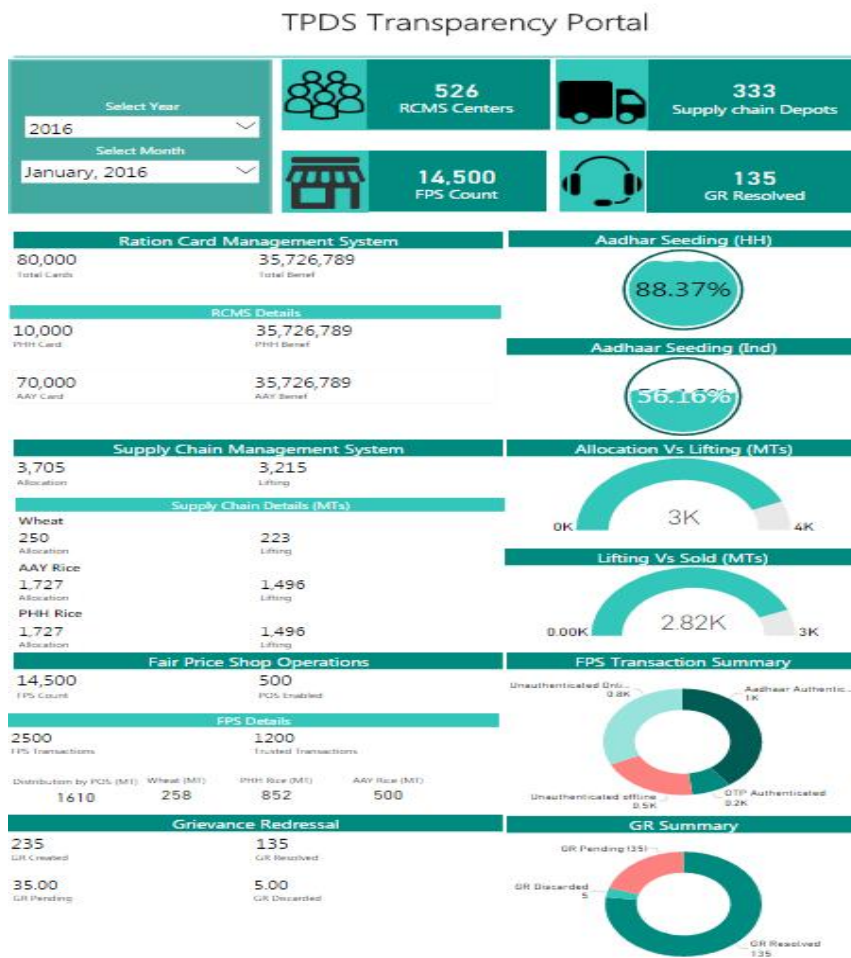
**Use MIS to enable and monitor inspections by providing reports for physical verification and by tracking completion as per defined protocols**

Figure 15 Reports from the MIS



Ultimate aim of MIS is to improve TPDS performance over time by facilitating data-driven decisions

Figure 16 Sample Page for the Transparency Portal



104. *Data Analytics Platform.* End to End computerization Project in Kerala envisages design of an advanced Data Analytics Platform through competent agencies. Data from all the modules are envisaged to be pooled on data analytics and reports will be developed and published for enabling department officials for informed decision making.

*Other Computerisation Components*

105. *Value-added services like Micro ATMs, Business Correspondence etc. at ARDs.* E-PoS (electronic point of Sale devices) will be deployed in all ARDs, with a view to increase the financial viability of ARDs and for the implementation of cashless PDS, certain value-added services like Micro ATMs, Business Correspondence etc. are also planned to be provided through ARDs. These facilities will be incorporated in ePoS machine specifications.

106. *Decision Support System (DSS).* A Decision Support System (DSS) will be developed as a part of the Spatial Data Infrastructure, covering ARD's, wholesale Depots etc. Spatial Data Infrastructure map, populated with information on ARD's and Depot will also have a feature with pop-up menus which open with screen scroll, allowing real-time display from PDS application Server of the stock price, total percentage of stock distributed to beneficiaries from ARDs, Interim Depots to ARDs etc. This DSS portal is entrusted with Kerala Spatial Data Infrastructure (KSDI) for design and development through some competent agency in the 13<sup>th</sup> plan period.

107. *PDS information to beneficiaries through SMS service.* SMS will be provided to beneficiaries on arrival of stock at Depots and on completion of transaction through ePoS devices, with information regarding quantity, price, entitlement, pending balance pending etc. Besides this, SMS/e-mail alerts will be sent to concerned authorities and state agencies after generation of gate pass at FCI depot / Interim storage Godowns. In online Grievance Redressal mechanism planned to be set up, provision will be made for the beneficiaries to get acknowledgement of their complaints and its status through SMS. Department has plans to avail SMS service provided by MSDG (Mobile Service Delivery Gateway).

108. *Mobile Apps for providing PDS related services.* For providing all PDS related services to citizens including ration card related services, cashless PDS etc., Mobile App will be developed by Department.

109. *Inspection and Monitoring-Mobile System.* The regulation process keep a strict vigil on the defaulters and seeks to control malpractices in overall process and ensure that the benefits of the PDS scheme reach to the right beneficiary in a timely and regular manner. Regulation process is both reactive as well as pro-active i.e. the Department acts both on receiving complaints (reactive) as well as conducts regular checks to ensure smooth functioning. The reactive component is taken care by the grievance redressal mechanism, whereas proactive / scheduled component is taken care by the regulation process. Regulation process gives the Civil Supplies Department the power to suspend any of its dealers (even without providing the show-cause notice). Extent of action taken by the department against guilty varies as per

severity of irregularity. The ICT infrastructure thus will be built in such a way that inspection and monitoring can be done at any time and the action can be taken in an effective manner.

110. Proposed features of the Inspection and Monitoring System

1. The details like photographs and GPS location etc. be updated in the inspection data base.
2. The officials will receive information from system about conducting scheduled inspection at the FPS. However, inspection can also be done without any fixed schedule.
3. The Department officials at various levels can be assigned a fixed number of ARD's for inspection during a given time period.
4. On receiving schedule, the officials will carry out inspection of the mentioned ARD for any irregularities. In case no irregularities are found then the official updates the details of the inspection from the location itself with photographs of the location, geocode will be recorded to ensure that the inspection is done in the actual location.
5. Many a times, associated departments such as the Legal Department, Weights and Measures Department and the Public Health Department also conduct inspection of the ARD. In this case, depending upon the irregularity they can either take the action themselves or inform the Food & Civil Supplies Department to take action. Provision needs to be provided to update the inspection done by other agencies also.
6. On finding irregularities, the officials can take preliminary action against the ARD dealer and the same will be updated in the system. After taking action, the ARD dealer is issued a show cause notice to which the ARD dealer needs to reply, the same will also be updated to the system. The action taken by the officials depends upon the severity of irregularity, which varies from just warning the dealer to license cancellation to imposition of financial penalty etc.

111. *Cashless PDS*. In extension to the cabinet decision to make all government transactions cashless, Government of India has constituted a Committee on Digital Payments under the chairmanship of NitiAyog to implement and monitor expeditious transition of India to a digital payments ecosystem. In a bid to go cashless in all the services, government has also decided to introduce 5 modes of digital payments at all ARD's. The various digital options include: Unstructured Supplementary Service Data (USSD), Unified Payment Interface (UPI), Cards/PoS, AadhaarEnabled Payment System, e-Wallets. Local authorities along with Lead Bank District Manager (LDMs) have thus been directed to facilitate such payments at the ARD's. Specific action points for the same have been recommended which include.

1. Introduce the cashless technology during the implementation of EtE computerisation at ARDs in collaboration with lead banks in the State.
2. Spreading awareness and organize demonstrations/training sessions for the use of the 5 modes of digital payments (ARD's).
3. Leverage e-Disha centres in all district headquarters (wherever available) for demonstrations via video, audio and to leverage technology in amplification of the digital payments campaign;

4. Create awareness and usage of digital payments practices so as to penetrate their usage at the grass roots levels - districts, talukas and panchayats.

#### *ICT Support Infrastructure*

112. It is also essential to create required IT infrastructure in various offices including FCI godowns, intermediate godowns, Taluk Supply offices and also in the ARDs

113. Following is the broad classification of the ICT infrastructure required for the same.

1. ICT infrastructure required in the data centre and DR centre with a business continuity plan
2. Reliable and redundant connectivity between all the godowns, FCI and State Godowns, offices including the ARD
3. ICT infrastructure in the Commissionerate and field offices and also in the ARD
4. Establishment of training infrastructure

#### *ICT infrastructure required in the Data Centre and DR Centre with a Business Continuity plan*

114. IT infrastructure required for the hosting of the applications is as below.

1. Servers and other IT infrastructure required in the State data centre
2. Servers and other IT infrastructure required in the near DR location
3. Servers and other IT infrastructure required in the DR location

115. These three locations need to be synchronized in such a way that there is no data loss on any eventuality and business continuity needs to be ensured. It is also required to be keeping the hardware and the site maintenance for five years. The Servers and the database need to be administrated by qualified. Skilled and certified system administrators and database administrators.

116. *Networking of Commissionerate with DSO's, TSO's redundant connectivity.* All the Offices need to be connected with network with adequate bandwidth. It is required to provide bandwidth of 4 MBPS redundant connectivity for every 20-25 users for a reliable use of complete automation system. The core infrastructure can be built-up with this requirement and the bandwidth can be upgraded as and when required.

117. It is essential to provide 3G/4G connectivity to all the ARD's. Wherever mobile connectivity is not available, one may try the cable network or broad band connectivity. In locations where either broadband or mobile connectivity is not available, VSAT technologies may be used. A survey needs to be conducted to identify such ARD's. The feasibility of providing the POS/connectivity by the Government needs to be assessed.

118. *ICT infrastructure in the Commissionerate and field offices and also in the ARDs.* The present infrastructure needs to be assessed and a gap analysis needs to be conducted before estimating the cost for the infrastructure on this.

119. *Training of Stakeholders.* Training plan for DSO's, TSO, Block Officers, ARD owners and other stakeholders is envisaged under the implementation of the EtE Computerisation. The stakeholders will be trained by teams of the selected vendors for the various components including Supply Chain System, ARD Automation Application, GR and Transparency Portals, MIS etc. Apart from the training plan, application manuals will be available for all applications along with call centre support for the next 3-5 years. The present training facilities and the Training need analysis needs to be conducted before finalizing the infrastructure. However, the cost of training infrastructure for training around 40 people at a time along with Video Conferencing facilities has been included in the budget.

*Modernisation of CCS, Block Offices*

120. There are 75 Taluk Supply Offices and 6 City Rationing Offices functioning in Kerala of which 10 are newly formed. Sufficient number of computers need to be provided for newly formed Taluk Supply Offices and existing Taluk and District Supply Offices including Commissionerate of Civil Supplies. A high capacity server needs to be purchased for storage of data. Expected expenditure for modernization and computerization comes to Rs.10.00 crore for 2017-18 and thereafter Rs.1 crore each year for the next 4 years amounting to a total of Rs.14 crore.

*IEC Plan for Awareness of Beneficiaries*

121. Awareness drives through radio, newspapers, pamphlets, and information through Taluk and Block offices will be made available for beneficiaries. Government of Kerala has already implemented numerous awareness drives for Aadhaar seeding and beneficiary list digitization and thus with every successive rollout and policy change IEC campaigns will be launched through various modes. Budgetary allocation for the same has been already done as part of the EtE computerization budget.

*Assessment of TPDS in Kerala*

122. As part of the scale up strategy, a detail monitoring and evaluation (M&E) framework will be developed to document and demonstrate the results both at the output and outcome levels. The key results will be monitored for:

1. Targeted outcomes of the NFSA;
2. Improvement in the systems of food delivery; and
3. Improvement in household food and nutrition security.

123. The outcome indicators against each of these categories will be defined in the specific project plans for each strategy. The outcomes related to systems improvement and household food/nutrition security will be measured through sample based evaluations and comparison of results at three points of time: baseline assessment at the beginning of the five year plan, mid-term review after completion of two years and end line assessment at the end of the plan period. Apart from the indicators linked to scaling up of the TPDS, micro-nutrient levels as also suitable outcome indicators related to the zero hunger will be



measured within the defined Sustainable Development Goals (SDG-2) framework both at the system and household level.

124. For measurement of the system level outputs, the regular targets will be captured on a monthly basis through the internal supervision and monitoring reports. Quarterly reviews will also be undertaken to recommend/suggest actions for meeting the targets under each of the activities.

#### *Summary of Planned Activities*

125. In the short term i.e. 2017-2018, the priority for the Government of Kerala is to implement NFSA, 2013. The EtE Computerisation of PDS operations to **minimize leakages, increase accountability and transparency of operations by March 2017.**

126. With the push for digital India, cashless PDS System has also been proposed and the implementation of the same is expected in next few years along with modernization of internal Civil Supplies Department operations. To **streamline the implementation EtE Computerisation**, it is also proposed to provide comprehensive training to all stakeholders including TSO, DSO, and ARD Owners regarding the technical operations of PDS Computerisation components. In the next five years IEC activities aimed at **beneficiary's empowerment and awareness of rights and entitlements** are also proposed in addition to stringent monitoring of current reforms and setting up of regular monitoring mechanisms.

127. Overview of Planned Activities

1. Implementation of EtE Computerisation
2. Implementation of NFSA Activities
3. M&E of various projects and establishment of regular monitoring mechanism
4. Modernisation of internal operation
5. IEC and training activities for beneficiaries
6. Implementation of cashless PDS systems



CHAPTER 3  
ADDRESSING NUTRITIONAL IMBALANCES

128. India carries one fourth of the global burden of food insecurity and hunger with about 195 million undernourished people consuming less than the recommended minimum dietary energy requirements. The global agenda of ending food insecurity and hunger by 2030 will not be achieved unless India makes significant progress. India has a long way to go - in 2015, India's Human Development Index (HDI) rank was 130 out of 188 countries, and 2016 Global Hunger Index (GHI) rank-97 out of 118 countries. Although, poverty has declined from 45.3% in 1993-94 to 29.5% in 2011-12 and undernourishment from 23.7% during 1990-92 to 15.2% in 2014-16, the figures in absolute numbers are very high, which calls for an urgent action. The Zero Hunger Framework through its 2030 agenda aims to end hunger and malnutrition in all forms and everywhere by 2030. Kerala is a state which has advanced towards ending hunger, therefore achieving the "Hunger Free" status should be possible and therewith setting an example for other states in India. In continuation to the NFSA implementation, EtE computerisation and consumer welfare activities, the current state strategies for food and nutritional security will need to be further strengthened to address nutritional imbalances in the short and long term in order to align with the goal of hunger free status by 2030

*Overview of current State priorities / strategies for Nutritional Security*

*General poverty related*

129. Various strategies adopted by Kerala for alleviating poverty are: Meeting basic amenities and building capabilities, involvement of Panchayati Raj Institutions with renewed vigour; access to credit through the Kudumbashree Programme which acts as an informal "bank of the poor"; social security: assistance to various categories of workers in the informal sector both in agriculture and non-agricultural occupations, cutting across rural-urban and gender differences has been offered through the Welfare Fund Model; pension programme for different categories of population groups; social support to the physically challenged. The participatory decentralized governance programmes are the key instruments for broad based poverty elimination, and need to be strengthened.

*Agriculture*

130. Agricultural best practices in Kerala include the following, which can be strengthened<sup>9</sup> –
1. A data base of 18.77 lakh farmers created through the online software by NIC. Assistance worth ₹. 912.33 crore has been transferred to farmers during 2012-13 to 2014-15, through DBT.
  2. SupplyCo, the implementing agency for paddy procurement, has developed a web based platform to document all activities in the supply chain of paddy procurement scheme, through online farmer registration.

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<sup>9</sup> <http://www.spb.kerala.gov.in/images/er/er15/Chapter2/chapter02.html>

3. The extension of support to farmers through Agriculture Technology Management Agency
4. Farmer markets of vegetable and fruit promotion council saves the farmers from the exploitation of middlemen in agriculture marketing.
5. Kerala State Planning Board has initiated a project on soil based plant nutrient management plan for agro ecosystem of Kerala.

#### *Public Distribution System (PDS)*

131. Under the PDS, presently fortified wheat flour, wheat grains, rice and sugar and kerosene are being distributed to various categories of beneficiaries. Though the wheat and rice distributed in the PDS are able to fulfil some of the macro-nutritional requirements of the households, the micronutrient content of these cereals is low and provides only a small proportion of the daily requirements of vitamins and minerals while the distribution of fortified wheat flour is limited to families above the poverty line. The PDS rations also do not provide the much needed high quality proteins and do not fulfil the nutritional requirements of key physiological phases of life such as the first 1000 days of life, adolescence etc. It is thus important that the state priorities in the next 5 years focus on micro and macronutrient aspects of food grains distributed under PDS.

#### *Mid-Day Meals (MDM)*

132. Rice based hot cooked meals are provided to school children as part of the mid-day meal in the schools. Milk and egg are provided twice a week to school children partaking in the mid-day meals. Though the mid-day-meal is an important policy instrument to foster learning and improve child nutrition, various studies carried out in Kerala also opines that mid-day-meal-scheme has no great impact on the nutrition level, enrolment and dropout of students. The scheme can however, make a positive impact on nutritional level of students, if the food-items provided have better nutritional content in terms of both macro and micronutrients.

#### *Integrated Child Development Services (ICDS)*

133. The ICDS scheme is India's response to the vicious cycle of malnutrition and morbidity. An integrated set of health, nutrition and education services are delivered through the Mother and Child Health Nutrition (MCHN) centers. The nutrition services include provision of supplementary nutrition as take home rations to children under 3 years of age and cooked meals to children between 3-6 years of age along with nutrition health education. Children between 6-36 months of age in Kerala receive a blended food, locally known as nutri-mix or amrutham as take home ration. Though 100% of the Anganwadi centres in Kerala provide supplementary nutrition and 89.8% provide nutrition and health education less than half of pregnant women and lactating women respectively avail of the supplementary nutrition provided, some better off households prefer not to avail of these services. Sometimes the THR is not properly used by the mothers to feed themselves or the children<sup>10</sup>.

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<sup>10</sup> [http://mospi.nic.in/sites/default/files/publication\\_reports/Report\\_no558\\_rou68\\_30june14.pdf](http://mospi.nic.in/sites/default/files/publication_reports/Report_no558_rou68_30june14.pdf)

## *Health*

134. The Govt. of Kerala in Perspective Plan 2030 recognizes nutritional deprivation as a serious problem. Some of the Government targets include increasing the health expenditure from 0.6 per cent in 2012 to 4–5 per cent of State GDP by 2027–31. This will be achieved by 1 percentage point increase spread over the next 5 years. Some of the targets include - Reducing MMR from 66 to 12 per 1 lakh live births; reducing IMR from 13 to 6 per 1,000 live births; achieve a compound growth rate of 7.5% during the next 20 years to reach the level of USD 19,000 equivalent by 2030 and poverty rates to 1% (\$2 per day PPP).

### *Overview of suggested strategies for the plan period 2017-2022*

#### *End all forms of malnutrition*

135. Evidence based nutrition-specific interventions and delivery strategies have to be implemented to reach poor segments of the population at greatest risk. Implementing nutrition-specific interventions solely is not enough, achieving a sustainable decrease in malnutrition rates requires an integrated response, therefore:

1. Nutrition specific approaches need to be linked to nutrition-sensitive approaches— i.e., women’s empowerment, agriculture, food systems, education, employment, social protection and safety nets.
2. The **ICDS –Take Home Rations** should be more effective: increase in vulnerable mothers and children availing of the THR, and better use of the THR at household level. The THR should be made more nutritious with sufficient macro-nutrients and by including all necessary micronutrients for the intended consumer. The branding of the product should improve. Households should be made aware of the importance of nutritious complementary food for children older than 6 months and usefulness of the ICDS provided supplements.
3. Rates of global acute malnutrition can be brought down by management of both moderate and severe acute malnutrition. Anganwadi centres play a key role in following up and detecting all children with acute malnutrition and to provide the caregivers with appropriate, quality, supplements and counselling. Severe cases are referred to proper medical care.
4. The **MDM** should be made more nutritious by fortifying the meals with micronutrients which are currently lacking in the diet.
5. **Food diversification:** The ration obtained through the PDS by the most vulnerable population should include pulses and the staple (flour or rice) should be fortified with micronutrients which are currently lacking.

#### *Diversify the food baskets – addition of pulses, oils and fortified rice*

136. Given that on an average almost half of the nutritional requirements of the households remain unfulfilled as per the NNMB report, diversified food basket seeks to fill this gap at

the household level through the PDS platform. The recommendations for the food basket include:

1. Expand the PDS food basket in order to meet 50% of the recommended dietary intake of pulses. Assuming a five member household, considering the NNMB data sets and taking existing pulse consumption into account, this effectively translates into providing 5 kg of pulses and 2 ltr. of edible oil per household per month. Considering the scale of the activity, it is proposed to provide atleast 2 Kg of pulse and 2 litres of oil to the most vulnerable 20% of the population.
2. Fortify the key staple consumed in the State as per the fortification standards issued by the Food Safety Standards Authority of India. In Kerala, a significant portion of the monthly grain allocation in the PDS is rice. Further the diversified food basket does not foresee any change in the existing allocation of cereals distributed to either the Antyodaya Anna Yojana or the priority households.

137. Guiding principles to be followed in the roll out of the nutritionally enhanced food basket:
- (i) Address nutritional gaps in the diet of the population
  - (ii) include locally produced and preferred food items in the food basket
  - (iii) use existing supply chain and administrative structures for providing the enhanced food basket and
  - (iv) price control mechanism: Prices for high value commodities such as pulses are likely to be volatile. The pilot therefore foresees provision of pulses and oil through the PDS outlets at prices lower than the market but with limited subsidy to provide the necessary cushion against inflation and price volatility. Rice is currently sold free to the beneficiary through the PDS though it is procured at a much higher rate. Fortification of rice will further increase the cost of rice by another Re 0.83/kg. A portion of the incremental cost on account of fortification of rice may be absorbed by the State while a portion may also be passed on to the PDS beneficiaries.

*ARDs as a platform for IEC on nutrition awareness*

138. Communication strategies need to be developed and implemented to ensure that beneficiaries utilize the diversified food basket options to buy nutritionally balanced foods, which meet the specific requirements of their household members. These communication strategies need to be implemented across all Authorised Retail Shops in Kerala.

139. Following are the strategies for roll-out of the diversified food baskets and IEC activities at Authorised Retail Shops through the targeted public distribution system in Kerala:

1. Forming a multi-stakeholder working group for brainstorming on nature of pulses, oils and fortified cereals to be distributed through TPDS and IEC activities at ARD shops
2. Developing TORs for pulses and oils, issuing tender documents
3. Empanelling suppliers of pulses, oils with the department
4. Roll-out of the project

*Double agricultural productivity and incomes*

1. Increase investment in rural infrastructure, agricultural research and extension services, technology development,

2. availability of agricultural inputs, agricultural credit, access to appropriate farm mechanisation, in order to enhance agricultural productive capacity
3. Access to preventive and curative veterinary services for livestock
4. Ensure sustainable food production systems through
5. Maintain genetic diversity of seeds, plant and livestock gene banks.

*Summary of Activities*

140. In the long term, the state needs to invest in developing and implementing a strategy for “Hunger Free Kerala”. An in-depth analysis of Food Security and Nutrition gaps would suggest gaps and specific determinant of hunger in vulnerable groups. Based on this analysis strategies to combat nutritional deficiencies in specific groups will need to be developed. The state will also need to collaborate with various ministries, private organisations in the plan strategies to converge nutritional outcomes of various food based safety schemes. All this would depend on a secure political commitment for piloting and further scaling up approaches such as food basket diversification, fortification etc. A few of the suggested approaches include:

1. Food Basket Diversification with inclusion of fortification of staple foodgrains
2. Using ARD for IEC activities related to nutritional awareness
3. Enhancing fortification efforts in ICDS and MDM Supply Chains

CHAPTER 4  
CONSUMER WELFARE AND POLICY REFORMS

141. Apart from implementation of ETE Computerization, consumer welfare policies and reforms should be initiated. The aim of these reforms is to further streamline the implementation of NFSA, food security reforms as well as provide impetus to the end goal of achieve zero hunger.

*Annapurna food security scheme for the aged destitute (80% CSS)*

142. Under the Annapurna Scheme which caters to destitute who have attained 65 years of age with 10 Kg of rice per month free of cost. The targeted number of beneficiaries in the state approved by Government of India is 44,980. But the number of beneficiaries identified at present is only 23,689. A quantity of 450 MT of rice is allotted per month for distributing to the beneficiaries of this scheme. Hence, a provision of Rs.11.26 Lakh is proposed for the 13th Five Year Plan to be given as subsidy to FCI and Commission to dealers. The amount proposed is for meeting price of rice to be paid to Food Corporation of India at BPL rate and for paying dealers commission to AWDs/ARDs to cover transportation charges and handling charges incurred by them. In this plan, it is also proposed to review the eligibility criteria for the Annapurna scheme such that rightful beneficiaries are not denied rations.

*Free Meals Programme-Pilot*

143. It is the policy of the Government to provide onetime free meal a day for the needy. In the first year of 13th Five Year Plan (2017-18) the scheme will be implemented in two selected districts as pilot project. This scheme will be implemented with the help of Kudumbasree units and other voluntary organization/non-government organization, who have field experience. Price support of Rs.10/- per meal will be given for 1000 people per day in each district by the government. Anticipated expenditure for 2016-17 is Rs.73 lakh. This project will be extended to the whole of Kerala in subsequent years. Infrastructure facilities will be provided to the organizations who are associating with this project and an amount of Rs.21.17 crore is required for the next five years.

*Free ration to un-organised sector including MGNREGS – Rs.424 crores*

144. In budget speech it was announced that free ration will be provided to worker in unorganized sector including MGNREGS. It was estimated that 15 lakh people included in this category. Out of this nearly 10 lakh people comes under priority sector or any other free ration schemes. Thus for the balance 5 lakh people, the total costs is calculated @Rs 28 per Kg for 5 kg each as:

Rs.28/-(market price) x 5kg x 12 months x 5, 00, 000 x 5 = 424 crores

### *Food Safety*

145. During the financial year 2017-18, an amount of Rs.8.9 crore is required for CFRD under the head of account '2408-01-004-99 (Plan)' for the following key infrastructure facilities. These facilities are aimed at enhancing food processing capacity and implementation of reforms in storage of food grains.

#### *Food safety training programmes for entrepreneurship development*

146. The Food Processing Training Centre under CFRD has all facilities for conducting training programmes in value addition and food safety, hygiene, sanitation, quality assurance etc. for the general public as well as for the food industry personnel. For many small and tiny units the entrepreneurs may not be in a position to attend paid training programmes. For them as well as for interested general public, CFRD proposes to conduct ten training programmes on value addition and marketing as well as food safety and quality assurance. In each programme 30 to 50 candidates will be admitted for 5 day training. The cost of one programme is expected to be 10 lakhs and ten programmes is estimated to cost Rs 100 lakhs.

#### *Value Addition Center at Konni*

147. Under the proposed value addition center, CFRD proposes to add some production units of value added food items. Fencing of the land is over and the land development is scheduled in the current financial year. Soon, internal roads, power and water sources are to be developed with storage and distribution arrangements. These facilities will need a budget support of around 400 lakhs. Therefore CFRD expects a budgetary provision of Rs 400 lakhs in the annual budget for the year 2017-18.

#### *Establishing Food Safety Standards for Storage Facilities*

148. Procurement, storage and distribution of food grains, sugar, atta etc. is a major activity of the Food & Civil Supplies Dept., Govt. of Kerala. All over Kerala the food grain storage, transportation systems, retail storages and distribution outlets are areas of total neglect in terms of hygiene & sanitation particularly pest control. As a result the stocks of food grains and other edible materials undergo various types of contamination from insects, rodents and atmospheric conditions like dust and humidity. Due to such contamination the stocks get infected with microbes and insects. Such infections in the early stages may affect the health of the consumers and in the long run can lead to significant deterioration of the edible quality of the stock, sometimes necessitating destruction of the whole stock. In short the public distribution system of food grains in Kerala is prone to food safety and food security threats. Introduction of certain provisions in the public distribution system can significantly protect the system from such food safety and food security problems.

149. A brief idea about the minimum provisions to be installed in the existing system is indicated below. Introduction of pest control, hygiene & sanitation facilities in all bulk storages, packing and dispatch units, retail outlets and transport facilities.

150. The minimum steps required for pest control in all the above building facilities are:

1. The building shall be completely damp proof. The ceiling, floor and walls shall be moisture resistant and washable/cleanable. In case of semi-permanent buildings there shall be tight, smooth and cleanable ceiling.
2. All external opening ventilators, windows etc. shall be protected with fly proof nets to prevent entry of all types of insects.
3. The external opening doors shall be fitted with self-closing shutters along with air curtain or plastic strip curtain to prevent entry of insects and rodents.
4. The food grain packs shall be stacked only on pallets and never on the floor. The packs shall be stacked in such a way so as to permit first in first out.
5. The food grain stacks shall be at least 45 centimetres away from walls. (The stacks shall not touch the walls).
6. A procedure to catch stray rodents by placing glue traps or rodent trap with edible baits at strategic locations in the store should be in place.
7. Never use poison baits or toxic fumigants with food grains in position.
8. Once in three months or at least six months empty the store and clean and dry the store with potable water and chlorinated water. Alternatively vacuum cleaning can be done for dry stores.

151. All storages, packing and dispatch units and retail outlets shall have certain essential sanitation and hygiene facilities as follows.

1. Sanitary toilets with hand scrubbing facility. Hand scrubbing facility is very essential for all packing units to prevent contamination of the products packed with pathogens and E. Coli from the hands of the workers.
2. In case of packing units the employees shall be subjected to annual medical check up to prove that the employees are safe and healthy to handle food materials.
3. All employees in packing units shall follow the hand scrubbing procedure before they enter the food handling area and whenever they go and return from toilet.
4. These requirements by the workers shall be displayed legibly and the supervisor concerned shall see the workers follow these procedures.
5. All food handling employees shall be trained in basic food hygiene.

152. Transport vehicles used for moving food grains shall have the following provisions.

1. The vehicle shall be covered to prevent access to pest.
2. The vehicle shall be subject to a cleaning procedure and cleaning schedule.
3. In case any infestation is noticed, it shall be subjected to fumigation with formaldehyde, followed by de fumigation with ammonia and aeration.

153. Records

1. All the food grain handling units shall keep the following records of Hygiene and Sanitation



2. Medical fitness certificates of all food handlers (essential in case of packing units).
3. Inspection record of pest control and hygiene provisions as per approved schedule.
4. Shut down cleaning record as per approved schedule.
5. Training record of all food handlers.

154. If the above facilities are implemented in the storages, packing and retail units and transport facilities of the Public Distribution System the threats to food safety and food security can be minimized significantly.

*Food Safety Survey of vegetables and non-vegetarian food items*

155. The FQML had conducted a sample survey of food items sold in 14 districts of Kerala. The results shows significant contamination in vegetables, drinking water and raw non vegetarian food items. This is an indication for a detailed study of drinking water sources and raw non vegetarian food items in the interest of public health. In this connection, CFRD proposes to undertake a detailed food safety survey of water sources and non-vegetarian food items in all districts of Kerala. The survey will involve purchasing samples from all over Kerala, transporting to Konni Lab and analyzing for quality and food safety parameters. The survey is expected to yield a detailed picture of the loop holes in food safety in Kerala, which will be useful for implementing remedial measures to achieve better public health, especially in rural Kerala. The survey is estimated to cost Rs. 100 lakh.

*Three Food Quality Monitoring Labs one each at Kollam District, Thrissur District and Kannur District*

156. The recent food safety survey all over Kerala has shown that the safety of the food items sold in the market as well as the food business operations in hotels, restaurants and food production units have several deficiencies. An average 30% of the samples are poor with respect to microbial quality. Pesticide contamination is also a significant threat particularly in leafy vegetables. The drinking water sources, including river water, ground water, open well water etc. are also contaminated. Therefore to safe guard the public health there is a need for constant monitoring food materials and drinking water sources. At present the facilities for this monitoring is limited. The Food Quality Monitoring Lab at Konni, Pathanamthitta may not be able to take up the work load in the wake of the planned wide spread adoption of Food Safety Standards Act 2006, its Rules and Regulations 2011.

157. Setting up of one lab is expected to cost 10 crores for building, equipment and support facilities, excluding land. Therefore, the setting up of three regional labs will need rupees thirty crores, provided there is at least 50% of government land in each location. Once set up the lab is expected to be self-sustaining. Budget requirement for three regional labs in the 13th five year plan is Rs.30 crore.

*Two Food Technology and Management Colleges one each at Thrissur and Wayanad*

158. To boost up agricultural production there is need for trained manpower to effectively utilize the agricultural produce. Then only prevention of post-harvest losses and proper

preservation, value addition and extension of shelf life will be possible. There shall also be an expert team to manage finance, production and marketing of processed and value added food products. These need colleges to teach food technology and food business management. Currently the College of Indigenous Food Technology is able to produce 15 post graduates and 30 graduates in food technology & quality assurance. There is also a plan for producing 60 MBAs in food business management. In the coming five years the need for these experts will increase fivefold due to a significant increase in food processing and value addition. To meet this requirement CFRD proposes to set two food technology and management colleges one each at Thrissur and Wayanad. The anticipated budgetary requirement for a food technology and management college will be about rupees 12 crore towards buildings, equipment and other infrastructure, provided there is five acres of well-developed Govt. assigned land in these two districts. Budget requirement for two food technology & management colleges in Thrissur&Wayanad districts in the 13th five year plan is Rs 25 crore.

#### *Establishment of School of Food Business Management*

159. In the current year, Govt. of Kerala has allotted Rs 200 Lakh for establishing initial facilities for the school of Food Business Management. In 2017-18, CFRD proposes to complete the establishment of the food business school. The additional budget requirement in this regard will be 290 lakh towards the second stage of construction of academic block and hostel and other minor infrastructure essentially required for the School of Food Business Management.

#### *Miscellaneous budgetary requirements*

160. The existing facilities at Konni like CFT-K, FQML, FPTC and the proposed value addition center will also need time bound renovations and modernization like staff quarters facility, acquiring new equipment, specific needs like food safety survey, training programmes for entrepreneurship, quality assurance, food safety etc. Some of these activities are recurring and periodic in nature. Arranging these developmental programmes will need specific budget support to the tune of rupees 5 crore per year and so there shall be a budgetary provision of Rs. 25 crore under miscellaneous requirements in the 13th five year Plan.

#### *ARD Viability and Commission Reforms*

161. Authorised Retail Dealers (ARDs) in Kerala, form an important step in the overall supply chain of TPDS. However, Planning Commission (2005) has estimated that only 38.9 percent shops across India earn profit through commission. Several other studies have highlighted the issue of financial viability of ARD in conjunction with the diversion and leakages. There is, however a gap in deep understanding of actual drivers of the revenues and costs, intensity of the problems and potential solutions. The ARD Viability Analysis in Kerala conducted by WFP proposed reforms to the existing structure of commission. The study analysed information for all ARDs in the state and used primary data collected through a survey to fill the information gaps and validate the assumptions.

162. Door-step delivery is mandated by NFSA and will be implemented. This will improve the profit of the ARD as transport and related costs will be paid by the government. However, this improvement or the profit will not be sufficient to ensure financial viability of the ARDs. Therefore, the following revenue models were analysed in order to determine how to achieve the financial viability:
1. Increase the Commission rates (Double or triple of existing rates and assess the viability vs. cost to the state).
  2. Maintain the existing commission structure and add base payment.
  3. Maintain the existing commission structure and add incentives per transaction at various rates.
  4. Combinations of above scenarios
163. A best suited viability threshold (monthly minimum profit earned by ARD to meet monthly financial needs) is equivalent to the semi-skilled non agricultural daily wage rate that the ARD owner should have earned as opportunity cost, i.e. 600 for urban areas and `500 for rural areas. This translates into a monthly income of 12,500 and 15,000 for ARDs in rural and urban areas respectively. Despite several options and models for revenue, even at the best viability vs. cost scenario, ARDs operating with less than monthly 75 quintals of food grains (including sugar and fortified wheat flour) are not viable. This necessitated a separate analysis for the “ARDs handling >75 quintal” category alongside the analysis of all ARDs. It also therefore implies that the revenue models should be applied to ARDs handling monthly commodities more than 75 quintal and a separate strategy should be applied to the unviable ARDs.
164. The scenarios can be many, such as increased commission, providing base-payment, incentives linked to transactions to a combination of these options. The most economic scenario would be the gap filling approach of base payment of `11,000 and `15,000 for rural and urban ARDs respectively combined with the existing commission structure. However, this may serve as a disincentive to those who operate with large number of cards and larger volumes of commodities.
165. Other scenarios that offer promise are the ones with double commission rate, base payment of 50 percent of viability and incentive of Rs 1 per transaction; and with existing commission rate, base payment of 70 percent of viability threshold and Rs 3 per transaction (incentive can be linked to desired behaviour to facilitate computerization).
166. While selecting the best option of viability for shops handling commodity less than 75 quintals, an in-depth assessment of the shops which are still unviable needs to be undertaken. Small shops which are in urban location can be combined with bigger shops without impacting beneficiary convenience. Small unviable shops that are remotely located or are in a difficult to reach area may be categorized as Special Dispensation Shops to ensure a special consideration or manage these locations through mobile shops.

167. Although small shops are not profitable, it is a dilemma to close them because the small shops are often in the vicinity of the beneficiaries and add to their convenience. This trade-off between the size of shop and convenience of beneficiaries needs to be resolved effectively to arrive at an optimum sustainable solution. In order to make TPDS a client oriented efficient food delivery system, following is the **way forward** towards long term sustainable goals of reforms:

1. *Consider the re-distribution of beneficiaries to the shops:* There are about 1000 ARDs handling commodities less than 50 quintals remaining perpetually unviable and other 65 ARDs handling commodities more than 250 quintals earning most of the profits. While equal distribution of cards to all ARDs may not be possible, a practical decision on permissible range (for example 75-200 quintal per month) with provisions for case-by-case deviation should offer better solution.
2. **Alternative means of earnings/employment:** If small shops are essential for beneficiary convenience, they clearly do not have a workload to justify wages for a month. In such cases, it is important to encourage other actions such as sale of non-TPDS food items, linking with other employment generation schemes and giving more flexibility by fixing days and hours of operations. ARD owners will have a positive attitude towards this as indicated through a few interactions. This option can be further explored and developed as a strategy for unviable shops as well.
3. **Alternate strategy for unviable shops:** Rather than running unviable small shop in a difficult to reach area for all days in a month, it is much more economical to have mobile shops visiting with certain frequency. This possibility can further be explored as part of improved efficiency of supply chain.
4. **Contextualising the ARD viability to NFSA:** ARD remuneration structure can be realigned within the framework of NFSA. Since the number of cards in various categories, and the entitlements hereof and the number of cards to be attached to ARDs has changed with the implementation of NFSA in the state, the final decision on the revamping of the commission/ revenue structure should be linked to the monthly allocation of ration to the ARDs. This is important especially in the context that the number of beneficiaries covered by cards currently in circulation is higher than the total population of the state (Census-2011).
5. **Reclassification of ARDs:** As per the latest data from Census 2011, coverage areas of some ARDs would have been reclassified from rural to urban. Given the findings of the study that the operational costs of urban ARDs is higher as compared to rural ARDs. The reclassification will thus have additional cost implications on the proposed viability scenarios and revenue models.
6. There are 14,335 ARDs in Kerala as on 01.08.2016 of which 2927 are women licensees; more than 20% of the total licensees. All these ARDs will play key role in NFSA implementation. In the 13<sup>th</sup> plan, women ownership of ARD's will be give higher preference during applications. There will be other additional measure to promote women ownership of ARD's.

#### *Other Consumer Welfare Activities*

168. The following consumer welfare activities proposed for the Annual Plan 2017-18

1. Consumer Awareness and Welfare Activities
2. Strengthening and Modernisation of Consumer Disputes Redressal Commission and Fora

169. There are 14 Consumer Disputes Redressal Forum in the state and these forums are oversighted by the Consumer Disputes Redressal Commission at the state level headed by a retired High Court Judge. It is proposed to purchase computers for the CDRF & CDRC and renovation of Court Hall. A sum of Rs.3.75 crore is proposed for Annual Plan and an amount of Rs.1 crore is proposed for Consumer Awareness and Welfare Activities. In the Five Year Plan period, it is proposed to complete the ongoing construction of 3 district fora. Total Budget demand for Consumer Welfare Activities for the Five Year Plan (2017-22) is Rs.23.75 crore.

#### *Open Market Operations*

170. SupplyCo has not undertaken any major exercise in branding, revamping or modernization since its inception. This is detrimental to the acceptance and performance of a retailing organization, albeit in the Government sector. Although SupplyCo is supported in its market intervention operations by Government, much of the routine renovation activities of the Corporation are funded by its other non - loss making operations. This limits the market reach and the potential for carrying out its public service mandate effectively. SupplyCo has about 1100 outlets under various categories of retail activity, which have to be revamped, besides the centralized design and re-branding work. Hence it is proposed to allocate 30 crores for this purpose to SupplyCo during the plan period 2017-2022. **For modernization and revamping of outlets, it is requested to allot Rs.25 lakhs initially for preliminary works and balance to be allotted Rs.6 Crores per year (Total estimated cost is 30 Crores) in the 13<sup>th</sup> Five Year Plan.**

#### *Strategies Proposed for profitability*

171. The MIO loss for SupplyCo is likely to increase during the next 5 years in view of inflationary trends in the prices of commodities covered under MIO. This calls for a 2 pronged strategy on the part of SupplyCo.

1. Increase the turnover of profitable commercial ventures.
2. Sourcing MIO commodities at cheaper price.

#### *Increase the turnover of profitable commercial ventures*

172. The main lines of activities from which SupplyCo earns profit are the retailing of FMCG, petroleum products, medicines, Sabari branded products etc. Steps have been taken by SupplyCo to increase the turnover of these products so as to cross subsidize MIO losses. These steps need to be strengthened and are proposed to be continued during the 13<sup>th</sup> plan period.

1. **Retailing of FMCG:** - The 1100 plus retail outlets operated by SupplyCo in every nook and corner of the state gives it a unique advantage. SupplyCo thus has an

advantage and can leverage this strategic advantage for getting the most favourable terms and conditions from leading FMCG companies. Realising the importance of FMCG products an FMCG Manager has been appointed, who is responsible for increasing the number of companies under direct purchase, negotiable better terms with FMCG companies etc. As a result of these efforts the annual turnover of FMCG has increased to Rs.794.09 crore in 2015-16 from Rs.629.04 crore in 2010-11.

2. **Retailing of petroleum products:** -At present SupplyCo operates 10 petrol pumps and 3 LPG dealerships, which are an important line of activity in increasing overall turnover and profitability. A major constraint in further expanding the number of outlets is the difficulty in getting suitable land adjacent to important highways and in urban areas. However, the turnover of existing outlets increased from 168.87 crores in 2010-11.to Rs.289.77 crores in 2015-16. Steps undertaken in retailing of petroleum products will be strengthened.
3. **Retailing of medicines:** - SupplyCo operates 5 regional wholesale distribution depots and 105 retail medical shops. These shops sell medicine to customers at discounts ranging from 12% to 50% (extra 25% discount for BPL families per one month for an amount Rs.1000/-)Efforts are being made to increase the number of medical stores and shift existing shops to locations having better potential .To reduce overheads, priority is given to opening medical stores attached to super markets retailing of FMCG, petroleum products, medicines, Sabari branded products etc.
4. **Retailing of Sabari branded products:** SupplyCo sells tea, coffee, masala/curry powders, rice powder, washing soap, asafoetida, spices etc. under Sabari brand. The profit from these products priced lower than similar products available in the market is utilized in reducing MIO loss. SupplyCo is planning to mechanize its tea blending operations so as to improve product quality, reduce expenses and address production bottlenecks.

*Sourcing MIO commodities at cheaper price, Requirement of Corpus for Purchasing Buffer stock*

173. SupplyCo sources pulses, spices, rice and sugar required for MIO operations through e-tender conducted mostly at monthly interval. The majority of participants are traders who purchase stock from wholesalers, who in turn purchase commodities from millers. These millers purchase commodities from farmers or from APMC members and process, grade and pack it. As the commodities change hand from one person to another person, each person adds his margin and there is a substantial gap between what the ultimate customer pays and what the farmer gets. Besides quite often there occurs non-availability of adequate stock due to hoarding etc. To avoid these difficulties SupplyCo is planning to purchase commodities during harvesting season (when the prices will be cheaper) directly from producers, store it and release the stock in subsequent months when the prices go up and availability comes down. This requires adequate scientific storage facilities and a corpus fund for financing bulk purchase, which may block funds for several months till the stocks are liquidated.

174. It has proposed to purchase essential commodities from producing states and procurement centers by deputing liaison and quality assurance officers to various centers at intervals, as

well as to create a buffer stock by purchasing the commodities during harvesting seasons at the lowest available prices and to utilize the stock for MIO and festival sales.

175. Every month corporation procures subsidized and non-subsidized commodities valuing Rs.110 to Rs.130 crore through e-tender. Through sales of its subsidized commodities, corporation is incurring Rs.35 crore losses on an average every month towards subsidy which is not normally being reimbursed by the Government entirely.
176. For procuring commodities from producing States and procurement centers, in addition to funds (as commodities can be purchased only against advance payment) corporation needs to deploy sufficient liaison and quality assurance officers for deputing to the concerned areas and it would be ideal to open offices in those areas. Moreover, ample scientific godown facilities to store the commodities procured are required. Until creation of own godown facilities. Funds are required for hiring scientific godowns in the state as well as in the procuring areas. The estimated cost of one godown to be constructed under 'scientific storage' principles of FCI is Rs.5 crores.
177. In the circumstance, it is hereby requested to sanction Rs.5 crores and Rs.25 crores as budget fund allocation (Plan Scheme) to SupplyCo for intermediate storage for the financial year 2016-17 and 2017-18 respectively. During the remaining years of 13th five year plan, SupplyCo is planning to construct 5 godown per year subject to allotment of necessary funds and assignment of land by the Government (an estimated Rs 100 Crores at current rates).
178. For creating buffer stock, initially we may start with purchase of subsidized commodities, for which alone corporation has to spend atleast Rs.90 crores every month, as the volume of purchase of non-subsidized items is very less. As the seasons of the commodities arrives only once a year, purchasing 4-5 months requirement of subsidized commodities during seasons would be worthwhile, for which approximately Rs.450 crore is required annually. Hence as provisions of Rs.450 crore is proposed for the Annual Plan to be given to SupplyCo for the Market Intervention Operations. Total budget demand for Open Market Operations for 13th Five Year Plan is Rs.2250 crore.

#### *Summary of Planned Activities*

179. Consumer welfare and policy reforms are a means to the end goal of zero hunger. The aim of these reforms is to further strengthen and help streamline the EtE Computerisation Systems. In this five year plan, the department in collaboration with CFRD will implement food safety processes and regulations in all storage and handling locations/depots. Food safety regulations will not only help **reduce wastage of food grains** but also ensure greater supply of food grains and economic benefits in the end to end supply chain. In addition, the department will also explore various recommendations for increasing the viability of ARDs through choosing a combination of proposed recommendations to ensure that the last link in **providing access to food grains is made more secure**. Consumer Welfare activities

and implementation of grievance redressal courts will further strengthen accountability mechanisms and give voice to the beneficiaries.

*Planned Activities*

1. Implementation of Food Safety guidelines at all godowns and storage centres
2. Planned introduction of Food Safety training programmes and colleges
3. Policy Reforms in ARD Viability, Consumer Dispute Redressal
4. Planned activities for Enhancing Market operation of SupplyCo.



CHAPTER 5  
PROPOSED BUDGET FOR IMPLEMENTATION

180. The table below presents the proposed outlay for the next five years followed by a breakup of individual costs wherever applicable.

*Planned Costs for the next 5 years*

Table 6 Proposed Outlay for the 13th five year plan 2017-22 in rupees crore

Sl.No	Scheme	2017-18	2018-19	2019-20	2020-21	2021-22	Total 2017-22
I	Improve access to food by upgrading the Public Distribution System (PDS)						
	Ration Cards						
1	Management System- Customisation	0.5	0	0	0	0	0.5
	Supply Chain Management-						
2	Assistance to Supply Co.(door step delivery)	422.13	365.52	365.52	365.52	365.52	1884.21
	Bio-metric devices and E-POS Machines						
3	for ARD Automation Other components for EtE	52.5	2.5	2.5	2.5	5	65
4	computerisation- GR System, Transparency Portal etc.	1.5	-	-	-	-	1.5
5	ICT Infrastructure Modernisation of	14.01	2.99	3.12	3.26	3.42	26.8
6	Taluk& District Supply Offices including Directorate.	10	1	1	1	1	14
<b>Sub Total – Cost for Implementation of PDS</b>		<b>500.64</b>	<b>372.01</b>	<b>372.14</b>	<b>372.28</b>	<b>374.94</b>	<b>1992.01</b>
7	Cost of food grains - Subsidy for priority population. 154.80 x 5 kg x 12.10 lakh MT @ Rs. 3000/MT	471.48	471.48	471.48	471.48	471.48	2357.4

8	Cost for Commissions State Share	330	330	330	330	330	1650
<b>Sub Total – Cost for Food Grains</b>		<b>801.48</b>	<b>801.48</b>	<b>801.48</b>	<b>801.48</b>	<b>801.48</b>	<b>4007.4</b>
9	Capacity Building / Workshop / Training on NFSA	0.25	0.25	0.25	0.25	0.25	1.25
10	State Food Commission & DGROs - infrastructure and setting up	2.5	0.5	0.5	0.5	0.5	4.5
11	Monitoring and Evaluation Activities	10	10	10	10	10	50
<b>Sub Total for Other Activities</b>		<b>2.75</b>	<b>0.75</b>	<b>0.75</b>	<b>0.75</b>	<b>0.75</b>	<b>5.75</b>
Total for I		1314.87	1184.24	1184.37	1184.51	1187.17	6055.16
II		Addressing Nutritional Imbalances					
1	Diversification of Food Basket	355.074	355.074	355.074	355.074	355.074	1775.37
2	IEC Activities for Nutrition	0.28	0.28	0.28	0.28	0.28	1.43
<b>Total forII</b>		<b>355.354</b>	<b>355.354</b>	<b>355.354</b>	<b>355.354</b>	<b>355.354</b>	<b>1776.8</b>
III		Consumer Welfare and Policy Reforms					
1	Annapurna Scheme for 30000 beneficiaries- central share 2.03 crore and state share 0.51 crore	0.0254	0.0218	0.0218	0.0218	0.0218	0.1126
2	Free ration to unorganised sector including MGNREGS. Rs. 8.90 x 15 lakh families	84	85	85	85	85	424
3	Free Meals Programme	0.73	5.11	5.11	5.11	5.11	21.17
4	Food Safety Programmes-CFRD	8.9	20	20	20	20	88.9
5	Consumer Welfare Activities	0.0475	0.0475	0.0475	0.0475	0.0475	0.2375
6	Open Market Operations- SupplyCo	450	450	450	450	450	2250

<b>Total for III</b>	<b>543.70</b>	<b>560.17</b>	<b>560.17</b>	<b>560.17</b>	<b>560.17</b>	<b>2784.42</b>
<b>Grand Total (I+II+III)</b>	<b>2213.92</b>	<b>2099.77</b>	<b>2099.90</b>	<b>2100.04</b>	<b>2102.70</b>	<b>10,621.38</b>
<b>Cost Share of the Central Government for Commissions*</b>	77.92	77.92	77.92	77.92	77.92	389.6

Note: \*this amount shall be used to pay Atti Coolie per truckload for the door step delivery of grains.

*CHAPTER 6*  
*SUMMARY OF RECOMMENDATIONS AND ROAD MAP FOR IMPLEMENTATION*

Module	List of Activities	Timeframe	Responsibility
Beneficiary Identification and Digitisation	<p>Beneficiary identification to be completed with minimum exclusion errors.</p> <p>Ineligible beneficiaries should be identified and removed from the list though a continuous exercise.</p> <p>A digitised Database should be prepared for integration with other components of EtEComputerisation.</p> <p>Mechanisms of de-duplication and mapping of self-reported data with data from different govt. departments should be implemented in the RCMS.</p> <p>100% Aadhaar seeding at the beneficiary level should be achieved</p>	March 2017	GoK/Dept
Door Step Delivery	<p>Door step delivery should be implemented without delay.</p> <p>SCMS software should be implemented for real time watching of lifting and real time accounting of stocks at intermediate go down.</p> <p>Online allocation should be done and allocation upto ARDs should be available on the portal in real time.</p> <p>Route optimisation , fleet management functionalities should be incorporated in the SCMS.</p> <p>Direct feeding of ARDs from the FCI warehouses should be implemented wherever possible.</p>	April 2017	SupplyCo/Dept/GoK
EtEComputerisations- Other Components	<p>End to end computerization should be implemented with a proper project plan with clearly defined responsibilities and it should be monitored by the department and Govt.:</p> <ol style="list-style-type: none"> <li>1. ARD Automation</li> <li>2. Grievance Redressal System</li> <li>3. MIS and Transparency portal</li> </ol> <p>Transparency portal should be</p>	March 2017	SupplyCo/NIC/Dept/GoK/WFP

	<p>based on data analytics and should be a decisions support system for the govt. of Kerala.</p> <p>It is preferred to have a PoS device with a large screen and a future compatible operating system</p> <p>The PoS devices should be able to perform cashless transactions and should be of MicroATM standards</p> <p>Use of GPS tracking should be evaluated further as it is not a best practice.</p>		
Operations	<p>Department to modernise internal operations and invest in ICT support infrastructure</p> <p>Department / Government should ensure ARD viability through a revised commission and leveraging other services through ARDs</p>	2017-2019	Dept
Grievance Redressal	<p>A mechanism for addressing grievance as well as a committee to review the progress in this area should be implemented.</p>	March 2017	Dept/NIC/WFP
Transparency	<p>Transparency portal and an MIS system should be developed and department should publish all the required reports mandated by GoI and Department for ensuring transparency as envisaged in the NFSA Acts such as: Beneficiary details, Allocation report, lifting report, Off take report, Grievances statistics etc.</p> <p>This should be based on data analytics and should act as a decision support mechanism</p>	March 2017	Dept/NIC/WFP
IEC	<p>IEC and Awareness mechanisms to be put in place with ongoing NFSA implementation and EtE computerisation</p> <p>This should include special focus on awareness on rights and grievance redressal mechanisms</p>	2017-18	Dept.
M&E	<p>Implementation of a Monitoring and Evaluation plan for all activities</p>	2018-2022	Dept/WFP
SupplyCo	<p>SupplyCo to be strengthened by redeployed required manpower from the department.</p>	2017-2022	SupplyCo/Dept

	Market intervention activities of SupplyCo should be monitored by the Government and beneficiaries should get the advantage of price controlling in the market.	2017-2022	SupplyCo/Dept
Consumer Welfare	Modernisation of Activities at the Consumer Dispute Redressal Forums should be addressed Eligibility criteria for the Annapurna Scheme to be updated to ensure that rightful beneficiaries are included in the target list. ARD Viability Reforms as proposed to be introduced	2018-2022	Dept
Food Safety	Food safety standard should be included for storing food grains at interim storage and ARDs.	2017-2022	CFRD/Dept
Capacity Building	Capacity developed plan for the department should be planned by way of training and developing infrastructure at the office	2018-2019	Dept/Vendor
Nutritional Security	Piloting Nutrition specific Strategies including: 1) Food Fortification 2) Food Diversification 3) ARD for IEC Activities These should be scaled up to cover the entire state	2018-2022	Dept/WFP
Partnerships for Zero Hunger	Establishing partnerships for implementation of nutrition specific strategies and for bringing in efficiency in the food based safety nets should be implemented	2019-2022	GoK/Dept.

*CHAPTER 7*  
*CRITICAL SUCCESS FACTORS*

181. For the above proposal to be successful and implemented in a time bound and effective manner certain critical factors of success as listed below would be required:

1. Securing political and administrative commitment to implement the plan and define this as a Mission Mode Project with sufficient resources.
2. Creation of plan (targets, activities, budget, resources, timelines) and vision document for a Hunger Free Kerala..
3. Discussion for draft plan with line ministries to ensure buy-in (one on one discussions, workshop)
4. The activities to be spearheaded by a team of dedicated and progressive officers with an assured tenure of at least 3-4 years.
5. Time bound and effective implementation of activities under NFSA and EtE computerisation activities
6. Effective coordination with various departments and development of partnerships with multilateral and private organizations for implementation and review of activities
7. Regular monitoring mechanisms to be put in place along with M&E of activities to understand output and outcome level impact.
8. Implementation of food safety processes and their standardization with support from SupplyCo and other agencies involved in maintenance of storage units.
9. Analysis of food security and nutrition gaps.

CHAPTER 8  
COMPOSITION AND TORs OF THE WORKING GROUP

182. As part of the formulation of Twelfth Five Year Plan, the State Planning Board vide order No. 129/2016/PPD/SPB dated 20/9/2016 has constituted Working Groups for various key sectors of development. Accordingly, a Working Group on Civil Supplies and PDS has been constituted with the following composition.

1	Dr. K. Narayanan Nair Former Director, CDS 9447050759 0471-2328836 knntvm@gmail.com	Co-Chair	2	Smt. Mini Antony IAS Secretary to Government Department of Food and Civil Supplies 9496007020 secy.food@kerala.gov.in	Co-Chair
3	Sri. V.K. Balakrishnan IAS Director, Civil Supplies, <b>Public Office Building,</b> <b>Trivandrum,</b> Mob9446327878 ccsitcell@gmail.com	Member	4	Dr. M Madhusodhanan Institute of Sustainable Development and Governance, Thiruvananthapuram	Member
5	<b>Sri. Sunil Devassy</b> <b>Programme Policy</b> <b>Officer (TPDS)</b> <b>Commissionerate of Civil</b> <b>Supplies, Public Office</b> <b>Building</b> <b>Trivandrum</b> 9947363949 <b>sunil.devassy@wfp.org</b>	Member	6	Sri. Ankit Sood Head- Systems Reform UN World Food Programme 2, Poorvi Marg, Vasant Vihar New Delhi – 110057 <b>09871535111</b> ankit.sood@wfp.org	Member
7	The Managing Director SupplyCo P.B No: 2030, Maveli Bhavan, Maveli Road, Gandhi Nagar, Kochi-682 020. 0484- 2206775 cmd@supplycomail.com	Member	8	Sri. Dinesh Kumar Tripathi Deputy General Manger FCI, Pattom Palace Kesavadasapuram Trivandrum 9746473608 srmke.fci@gov.in dinesh.fci@gmail.com	Member
9	Dr. Jaya Senior Faculty, IMG Thiruvananthapuram facultyimgjaya@gmail.com	Member	10	Sri. J. Udayabhanu Working President AITUC, PS Smarakam Nandavanam Gardens	Member



				Patton, Trivandrum	
11	Sri. Mohandas C.T State Informatics Officer, NIC, Vellayambalam sio-ker@nic.in 9447066886	Member	12	Sri. Ajith Brahmanandan Technical Director, NIC, Vellayambalam ajithb@nic.in 9446513525	Member
13	Dr. V. Santhosh Chief Perspective Planning Division State Planning Board chiefppdspb@gmail.com	Convener	14	Sri. P. Shaji Joint Director Perspective Planning Division State Planning Board	Co-Convener

*Terms of Reference of the Working Group*

1. To review the development of the sector with emphasis as to progress, achievements, present status and problems under its jurisdiction during 11<sup>th</sup> and 12<sup>th</sup> Five Year Plan periods.
2. To evaluate achievements with regard to the plan projects launched in the sector, both by the State Government and by the Central Government in the State during these plan periods.
3. To list the different sources of data in each sector and provide a critical evaluation of these data sources, including measures for improvement.
4. To identify and formulate a set of output and outcome indicators (preferably measurable) for each sector and base the analysis of the previous plans on these indicators.
5. To outline special problems/issues pertaining to Civil Supplies and PDS sectors.
6. To suggest, in particular, a set of projects which can be undertaken during the 13<sup>th</sup> Plan period in the sector.
7. To examine and suggest measures to ensure maximum utilisation of central government projects and programmes of assistance in the field of Civil Supplies and PDS in the State during the 13<sup>th</sup> plan period.
8. The Chairperson is authorised to modify Terms of Reference with the approval of State Planning Board. The Chairperson is authorised to invite, on behalf of the Working Group, experts to advice the Group on its subject matter. These invitees are eligible for TA and DA as appropriate.

183. The first meeting of the working group that held on 4<sup>th</sup> October, 2016 under the Co chairmanship of Dr. K. Narayanan Nair, Former Director, CDS and Smt. Mini Antony IAS, Secretary, Department of Food and Civil Supplies decided that spirit of the next plan would be a mission on transparent and efficient PDS system in the State.

184. The Working Groups deliberated on the various issues and presented the first draft reports in the third meeting of the Working Group held on January 6, 2017. The first draft report was discussed and keeping in view the observations and suggestions of the members of the Working Group, the draft report of the Working Group was prepared and circulated to all members. The Report was finalised thereafter.

ANNEXURE 1

Tables Corresponding to Figures

Table 1 *Production of Principal Crops in Kerala*

Sl. No.	Crops	Area (Ha.)		Production (MT)		Productivity (Kg. /Ha.)	
		2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
1	Rice	199611	198159	564325	562092	2827	2837
2	Pulses including Tur	2989	3601	3019	3409	1010	947
3	Pepper	84065	85431	29408	40690	350	476
4	Ginger	4538	4800	21521	22989	4742	4789
5	Turmeric	2430	2470	6253	6820	2573	2761
6	*Cardamom	39730	39730	14000	16000	352	403
7	Areca nut	100008	96686	100018	125925	1000	1302
8	Banana	62261	61936	531299	545431	8533	8806
9	Other Plantains	54512	56761	362395	468320	6648	8251
10	Cashewnut	49105	45436	33375	29715	680	654
11	Tapioca	67589	75496	2479070	2943919	36679	38994
12	Coconut	808647	793856	5921	5947	7322	7491
13	**Coffee	85359	85359	66645	67700	781	793
14	\$ Tea	30205	30205	62938	65174	2084	2158
15	# Rubber	548225	549955	648220	507700	1182	923

Table 2 *Area under cultivation of principal crops in Kerala (Source: Economic Review 2015)*

Sl. No	crop	Area	1960-61	1970-71	1980-81	1990-91	2000-01	2012-13	2014-15
1	Paddy	'000 Ha.	778.9	874.9	801.7	559.45	347.45	197.28	198.15
2	All Pulses	-do	44.1	39.54	33.86	23.38		2.948	3.601
3	Total Food grains	-do	1565.1		1778	1496.2	331.69	358	156.24
4	Sugarcane	-do-	9.15	7.65	8.04	7.62	3.37	1.74	
5	Rubber	-do	132.84	188	237.8	384	474.36	545	549.96
6	Tea	-do	39.79	37.27	36.13	34.71	36.85	30.21	30.21
7	Coconut	-do	500.76	719.14	651.37	870	925.78	798.16	793.856
8	Aracanut		54.26	85.82	61.24	64.82		101.78	96.69
9	Groundnut	-do	16.03	14.69	9.4	12.82		0.699	
10	Pepper	-do	99.75	11.75	108.07	168.51	202.13	84.71	85.43
11	Cardamom	-do	28.6	47.49	56.38	66.89	41.29	41.6	39.73
12	Ginger	-do-	12	12.17	12.66	14.14	11.61	4.51	4.8

Table 3 *Outlets opened by SupplyCo in Kerala from 2010-11 to 2016-17*

Sl. No.	Details	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17*

1	Maveli Stores	58	18	27	36	27	28	5
2	Super Markets	17	15	8	8	9	17	7
3	Maveli Super Stores	0	0	0	0	0	1	0
4	People's Bazar	1	3	1	2	3	2	1
5	Medical Stores	1	0	2	5	7	5	3
6	Petrol Bunks	0	0	1	1	0	1	0
7	Mobile Maveli Stores	9	0	1	11	0	1	0
8	Hyper Markets	2	0	1	0	0	1	0

*Source:* Kerala State Civil Supplies Corporation (SupplyCo)

Table 4 *Distribution of Rice & Wheat, Kerosene and Sugar through the PDS in Kerala -All schemes (ANP, AAY, BPL, and APL etc.)*

Year	Rice(MT)	Wheat(MT)	Kerosene(KL)	Sugar(MT)
<b>2010-11</b>	1159597	186545	196923	86776
<b>2011-12</b>	1276636	153955	166424	60316
<b>2012-13</b>	1265618	180268	125196	58076
<b>2013-14</b>	1302739	200564	120192	54264
<b>2014-15</b>	1328835	178976	94077	55255
<b>2015-16</b>	1322896	252746	114422	53664
<b>2016-17*</b>	651959	154874	54025	28913

*Note:* \* as on 31.10.2016

*Breakup of Costs for the Budget*

*Supply Co Related Expenses.*

Table 5 *Outlay of the planned expenses for SupplyCo:*

Sl. No	Items	Onetime expense	Recurring expense	Amount in crores	Amount for 13 <sup>th</sup> Five Year Plan
a.	HR – salary and wages of staff employed (Rs.9crores x 12)**	--	108.00	108.00	540
b.	Transportation and handling (Rs.1663 crores x 12)**	--	199.66	199.66	998.3
c.	Rental charge (Rs.1.14 crore x 12)	--	13.68	13.68	68.4
d.	Overhead expenses (Rs.0.76 crores x 12)	--	9.12	9.12	45.6
e.	Other recurring and unforeseen expenses (Rs.0.38crores x 12)	--	4.56	4.56	22.8
f.	Training to staff	1.00	--	1.00	1.00
g.	Purchasing/hiring of vehicle for office	0.50	0.50	1.00	3.00
h.	Setting up of block depots (one-time)**	55.11	--	55.11	55.11
i.	Construction of intermediary godowns***	30.00	--	30.00	150.00
<b>TOTAL</b>		<b>86.61</b>	<b>335.52</b>	<b>422.13</b>	<b>1884.21</b>

Note: \*\*\*Refer to chapter 6

*Manpower Costs – Rs. 540 Crores*

Apart from the regular staff, additional staff will be recruited at all levels for the implementation of planned activities. The overall budget outlay for manpower including new staff is 108 crores. An officer in IAS cadre shall head the division of NFSA implementation. A division exclusive for the PDS activation will be setup. Additional staff requirement is as listed below:

Table 7 *Manpower Requirement*

Head Office	District Level Office	Block Depots
1 Manager	1 District Manager	1 Depot Manager
2 Assistant Manager	2 Assistant Manager	1 Junior Manager (QC)
3 Section Assistants	3 Section Assistants	3 Section Assistants
1 AS M/W	1 AS M/W	1 AS M/W

*Food grain movement expenses*

The lifting of food grains from FCI godowns and delivery of food grains to ARD, from block depots will be entrusted to transporter through e-tender. The transporter arranges suitable vehicles, collects food grains from godown and deliver at block godown and thereafter at ARDs. The unloading, re-stacking, stacking and loading will be carried out by local head load workers.

Loading charge of FCI, lorry rent from FCI to block depot and unloading charge and all coolies at block depots will come around Rs.80/Qtl. Mari coolie, loading charge at block depot, lorry rent from block depot to ARD will come around Rs.60/Qtl.

Total monthly requirements will be 1, 18, 750 MT x 140/Qtl = 16.63 crores

This is equivalent to 199.66 crores or Rs. 998.3 crores over 5 years.

*Cost for setting up Block Depots*

Table 6 *Cost of setting up Block Depots*

Items	Amount in crores
Infrastructure facilities weighting balance	3145000
Computer and accessories	175,000
Furniture	32000
Other incidentals	24000
<b>Total Cost for one Depot</b>	<b>3376000</b>
Total for 152 block depot	513200000
Computer, furniture, incidentals for district and HQ	3400000
Software cost SCMS and FMS	34500000
<b>Grand total</b>	<b>55.11 crores</b>

*ICT Infrastructure- 26.8 crores*

Table 8 *Cost of ICT infrastructure*

Sl. No	Item Description	Capital Cost	I Year	2 Year	3 Year	4 Year	5 Year	Total
1	Servers and other IT infrastructure for Data Centre	520	78	78	78	78	78	910
2	Servers and other IT infrastructure for Near DR	252	37.8	37.8	37.8	37.8	37.8	441
3	Servers and other IT infrastructure for DR Location	252	37.8	37.8	37.8	37.8	37.8	441
4	System Administration and Database Management of Servers for Five Years		96	105.60	116.16	127.78	140.55	586.09
5	Software development and Maintenance Charges of All applications	30	15	15	15	15	15	105
<b>Total Cost</b>								<b>2483.1</b>

Table 9 *Cost of Training infrastructure*

Sl. No	Item Description	Capital Cost	I Year	2 Year	3 Year	4 Year	5 Year	Total
1	Servers and other IT infrastructure for training Centre ( PC's/laptops - 40 no's , UPS, Projector, Electronic Board, Video Conference equipment's	36	5.4	5.4	5.4	5.4	5.4	63
2	Site preparation and maintenance charges 9 Furniture etc0	20	3	3	3	3	3	35
3	Charges for Trainers		12	14	16	18	21	81
4	Miscellaneous Charges	3	3	3	3	3	3	15
<b>Total Cost</b>								<b>194</b>

*Note: \*cost of building/ rent and maintenance is not included.*

*Cost of food grains and commissions*

*Subsidy for priority population and other eligible people*

As per 2011 population census Government of India identified 1, 54, 80,040 people of Kerala under priority section

Table10 *Priority Household Numbers*

Category	Household	Member	Food grain allocation	Quantity of food grain per year in MT
<b>AAY</b>	5,95,800	25,58,631	35 kg per household	2,50,236
<b>Priority</b>	28,37,236	1,29,21,409	5 kg per member	7,75,284
<b>TOTAL</b>	<b>34,30,036</b>	<b>1,54,80,040</b>		<b>10,25,520</b>

Table 711: *Food Grain Requirement for Priority households*

Item	Quantity/MT	Rate	Amount
<b>Wheat</b>	1,98,950.88	Rs.2000/MT	39,79,01,760
<b>Rice</b>	8,26,569.12	Rs.3000/MT	247,97,07,360
<b>TOTAL</b>	<b>10,25,520</b>		<b>287,76,09,120</b>

In addition to that Government of Kerala will provide 2 kg rice @Rs.2/- per kg to 1,21,50,771 people (APL-SS). Purchase price of food grains (based on November 2016 allotment under non-priority section (APL-SS) 1, 21, 50,771 people)

Item	Quantity/MT	Subsidy	Amount
<b>Rice</b>	2,91,618.50	Rs.6300/MT	<b>183,71,96,550</b>

Total amount required for providing food subsidy as per above calculation comes to **Rs.471.48 crore for 2017-18 which is equivalent to Rs. 2347 crores.**



*Commissions Cost for 5 years*

Table 12 *Commission Structure*

<b>Commission</b>	<b>Total Quantity</b>	<b>Amount per Qtl.</b>	<b>Total for 1 year</b>	<b>Total for 5 years</b>
Commission for intra state movement of foodgrains	10.25lakh MT	Rs.65/Qtl	33.32 crores (State Share @50%)	166.6 crores
ARD Commission Retail commission	10.25lakh MT	Rs.70/Qtl	35.88 cores (State Share 50%)	179.3 crores
ARD commission – Additional commission for PoS	10.25lakh MT	Rs.17/Qtl	8.72 cores (State Share 50%)	43.5 crores
ARD commission – extra commission (proposed)	10.25lakh MT	Rs.130/Qtl	133.25 cores (100% state share)	666.25 crores
<b>Cost to the State</b>	<b>Total</b>	<b>Rs. 281</b>	<b>Rs. 211.17 crores</b>	<b>1055.85 crores</b>

**Note:** \*Accepted ARD Viability to be added

*Food Grain Diversification*

Proposed Budget requirement for 1 year to introduce pulses and oil to 20% of the most vulnerable population and fortified cereals in the food basket through the public distribution system (ARD shops) in Kerala

Table 13 *Food Grain Diversification Budget*

		<b>Total No. of Priority Households (AAY)</b>	<b>Total No. of Priority Households (PHH)</b>	<b>Total No. of households</b>
		595,800	2,837,236	3,433,036
<b>1. Pulses</b>	<b>Total Requirement per year (in MT)</b>	14299.2	68093.664	82392.864
<u>Rate per Kg: Rs. 22 - Rs. 41</u>	<b>Total Budget Required per year ( in Cr. Rs)</b>	31.458	149.806	181.264
<u>Quantity allocated per household: 2 kg</u>		58.627	279.184	337.811
<b>2. Edible Oil</b>	<b>Total Requirement per year (in Metric Litres)</b>	14299.2	68093.664	82392.864
<u>Rate per litre: Rs. 82 -119</u>	<b>Total Budget Required per year (in Cr. Rs)</b>	117.253	558.368	675.621
<u>Quantity allocated per household: 2 ltr.</u>		170.160	810.315	980.475

<b>Total Budget Required(per year) for 1&amp;2 for only 20% of the most vulnerable population</b>	<b>29.742</b>	<b>141.635</b>	<b>171.377</b>
	<b>45.757</b>	<b>217.900</b>	<b>263.657</b>
<b>Total Budget required for 5 years (2017-2022) for 1&amp; 2 for only 20% of the most vulnerable population</b>	<b>148.712</b>	<b>708.174</b>	<b>856.886</b>
	<b>228.787</b>	<b>1089.499</b>	<b>1318.286</b>
	Total No. of Priority Households (AAY)	Total No. of Priority Households (PHH)	Total No. of households
	<b>595,800</b>	<b>2,837,236</b>	<b>3,433,036</b>
Food Grain Allocation (Rice)	<b>35 kgs</b>	<b>5 kg per household member</b>	
<b>3. Fortified Cereals (Rice)</b>	<b>Total requirement of Fortified Rice per year (in MT)</b>	<b>250236</b>	<b>851170.8</b>
Incremental Cost of proving fortified rice: Rs. 0.83	<b>Total Budget Required per year (in Cr. Rs)</b>	<b>20.770</b>	<b>1101406.8</b>
		<b>70.647</b>	<b>91.417</b>
<b>Total Budget Required for 1 years (in Cr. Rs) for 1, 2 &amp; 3</b>	50.512	212.282	262.794
	66.527	288.547	355.074
<b>Total Budget required for 5 years (2017-2022) for 1, 2 &amp; 3</b>	252.560	1061.410	1313.970
	332.635	1442.735	1775.370

*Introduction of IEC materials at ARDs*

Table 14 *Budget for IEC Activities at ARD*

<b>No. of ARDs in Kerala</b>	<b>14335</b>
Cost per IEC material	200
Total Cost incurred for IEC materials/year in Rs	2867000
Cost for 5 years from (2017-2022) in Rs	1,43,35,000

*ANNEXURE 2*

**PROCEEDINGS OF THE MEMBER SECRETARY  
STATE PLANNING BOARD  
(Present: Sri. V. S. Senthil IAS)**

Sub: Formulation of Thirteenth Five Year Plan 2017-22 – Constitution of Working Group on **Civil Supplies & PDS** - Orders issued.

**ORDER No. 130/2016/PPD/SPB**

**Dated: 20/9/2016**

As part of the formulation of Thirteenth Five Year Plan, State Planning Board has decided to constitute Working Groups for various key sectors of development. Accordingly Working Group on **Civil Supplies & PDS** is constituted with the following composition.

### **Co-Chairpersons**

1. Dr. K. Narayanan Nair, Former Director, CDS – 9447050759, 0471-2328836 - [knntvm@gmail.com](mailto:knntvm@gmail.com)
2. Smt. Mini Antony IAS, Secretary to Government, Department of Food and Civil Supplies - 9496007020 - [secy.food@kerala.gov.in](mailto:secy.food@kerala.gov.in)

### **Members**

1. Sri. V. K. Balakrishnan IAS, Director, Civil Supplies, Public Office Building, Trivandrum, Mob: 9446327878 - [ccsitcell@gmail.com](mailto:ccsitcell@gmail.com)
2. Dr. M. Madhusodhanan, Institute of Sustainable Development and Governance, Thiruvananthapuram, Mob: 9447817123
3. Sri. Sunil Devassy, Programme Policy Officer (TPDS), Commissionerate of Civil Supplies, Public Office Building, Trivandrum, 9947363949 - [sunil.devassy@wfp.org](mailto:sunil.devassy@wfp.org)
4. Sri. Ankit Sood, Head- Systems Reform, UN World Food Programme, 2, Poorvi Marg, Vasant Vihar, New Delhi – 11005709871535111
5. The Managing Director, Supply Co, P.B No: 2030, Maveli Bhavan, Maveli Road, Gandhi Nagar, Kochi-682 020.0484- 2206775 - [cmd@supplycomail.com](mailto:cmd@supplycomail.com)
6. Sri. Dineshkumar Tripathi, Deputy General Manager, FCI, Pattom Palace, Kesavadasapuram, Trivandrum -9746473608 - [srmke.fci@gov.in](mailto:srmke.fci@gov.in) [dinesh.fci@gmail.com](mailto:dinesh.fci@gmail.com)
7. Dr. Jaya, Senior Faculty, IMG, Thiruvananthapuram [facultyimgjaya@gmail.com](mailto:facultyimgjaya@gmail.com)
8. Sri. J. Udayabhanu, Working President, AITUC, PS Smarakam, Nandavanam Gardens, Pattom, Trivandrum. Mob: 9446796705
9. Sri. Mohandas C.T., State Informatics Officer, NIC, Vellayambalam - [sio-ker@nic.in](mailto:sio-ker@nic.in) 9447066886
10. Sri. Ajith Brahmanandan, Technical Director, NIC, Vellayambalam - [ajithb@nic.in](mailto:ajithb@nic.in) 9446513525

### **Convener**

Dr. V. Santhosh, Chief, Perspective Planning Division, State Planning Board - [chiefppdspb@gmail.com](mailto:chiefppdspb@gmail.com)

## Co-Convener

Sri. P. Shaji, Joint Director, Perspective Planning Division, State Planning Board

## Terms of Reference

1. To review the development of the sector with emphasis as to progress, achievements, present status and problems under its jurisdiction during 11<sup>th</sup> and 12<sup>th</sup> Five Year Plan periods.
2. To evaluate achievements with regard to the plan projects launched in the sector, both by the State Government and by the Central Government in the State during these plan periods.
3. To list the different sources of data in each sector and provide a critical evaluation of these data sources, including measures for improvement.
4. To identify and formulate a set of output and outcome indicators (preferably measurable) for each sector and base the analysis of the previous plans on these indicators.
5. To outline special problems/issues pertaining to Civil Supplies and PDS sectors.
6. To suggest, in particular, a set of projects which can be undertaken during the 13<sup>th</sup> Plan period in the sector.
7. To examine and suggest measures to ensure maximum utilisation of central government projects and programmes of assistance in the field of Civil Supplies and PDS in the State during the 13<sup>th</sup> plan period.
8. The Chairperson is authorised to modify Terms of Reference with the approval of State Planning Board. The Chairperson is authorised to invite, on behalf of the Working Group, experts to advise the Group on its subject matter. These invitees are eligible for TA and DA as appropriate.
9. The Working Group will submit its draft report by 1<sup>st</sup> December 2016 to the State Planning Board.
10. The non- official members of the Working Group will be entitled to travelling allowances as per existing government norms. The Class I Officers of GOI will be entitled to travelling allowances as per rules if reimbursement is not allowed from Departments.

*Sd/-*

**V. S. Senthil IAS**  
**Member Secretary**

To

The persons concerned

Copy to:

The Accountant General, Kerala (A&E) with C/L  
The Sub Treasury Officer, Vellayambalam.  
P.S. to Vice Chairperson, State Planning Board  
C.A. to Members  
C.A. to Member Secretary  
C.A. to Sr. Administrative Officer  
P.P.O, Publication, Computer, Accounts Sections  
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*Chief, PPD*  
*State Planning Board*