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**Integrated Child  
Development Services  
in Karnataka**

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# INTEGRATED CHILD DEVELOPMENT SERVICES IN KARNATAKA

**Pavithra Rajan, Jonathan Gangbar and K Gayithri\***

## **Abstract**

*Karnataka is a progressive state in India, proactive in the implementation of ICDS. Nonetheless, the benefits of the program are not distributed as per the need, thereby resulting in varied malnutrition levels throughout the state. Therefore, it is necessary to examine the magnitude of the State's intervention in terms of financial inputs and programme coverage on malnutrition. This paper investigates the funding patterns, physical infrastructure, and human capital components of the ICDS programme over time and analyzes them in relation to malnutrition levels at the sub-state level (region-wise, division-wise and district-wise) for Karnataka. Although Karnataka has consistently increased resources for the ICDS programme over time and generally uses the allocated resources completely, it cannot be implied that resources are being used efficiently. Therefore, a technical efficiency analysis, using the Data Envelopment Analyses Program version 2.1, was undertaken to examine how efficiently the resources of the Supplementary Nutrition Component of ICDS were being used to reduce the levels of malnutrition in the various districts of the state of Karnataka. It was found that certain districts in the State are better performing than the others over time. In the year 2007-08, the technically efficient districts were Chickmagalur, Davanagere, Dharwad, Gadag, Gulbarga, Kodagu, Kolar, Mysore and Tumkur; while in the year 2012/13, the districts of Bagalkot, Bangalore Urban, Belgaum, Bellary, Bidar, Gadag, Haveri, Kodagu, Koppal, Mandya, Raichur and Udupi were most technically efficient. Further research needs to be undertaken to examine 1. the technical efficiency of SNP component of ICDS at the sub-district level and 2. the implications of the WHO Child Growth Monitoring Standards on the technical efficiency of the districts.*

## **Introduction**

India's Integrated Child Development Services (ICDS) programme has served as the Government of India's (GOI) flagship programme for addressing the holistic developmental needs of the child since its inception in 1975. The ICDS programme, which is a centrally sponsored scheme, is comprised of a comprehensive set of services aimed at laying the foundation for the proper physical and mental development of children 0-6 years; as well, adolescent girls and pregnant and lactating mothers are covered by the scheme.

In 2001, ICDS was universalized following the issuance of an order by the Supreme Court of India, which has resulted in a substantial increase in the resources allocated towards the programme. In fact, during the last 7 years (FY 2007/08 to FY 2013/14), the resource provision for ICDS has increased by approximately 66% (Kapur, 2013). However, it has yet to be determined as to whether this increase in resource provision has bolstered any improvement in service delivery and enhanced the achievement of programme outputs and outcomes. What is apparent in ICDS's post-universalization phase is that the programme remains regressively distributed across the country and that resources are not allocated as per the need (Das Gupta et al, 2005). The regressive distribution of the ICDS programme is also an issue at the sub-state level.

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Karnataka, which is a progressive state in India, has been highly proactive in the implementation of the ICDS scheme. Nonetheless, the benefits of the programme are not distributed as per the need of the districts within the state of Karnataka, hence resulting in varied malnourishment, morbidity and mortality levels across different districts. As well, in general, ICDS continues to experience challenges with regard to service delivery, with challenges ranging from an over-emphasis on certain programme components, namely the Supplementary Nutrition Programme (SNP), to over-burdened and under-trained human capital, as well as a tendency to neglect key beneficiary groups. Therefore it is necessary to examine the magnitude of the State's intervention in terms of financial inputs and programme coverage on malnutrition.

This paper will investigate the funding patterns, infrastructural components and human capital components of the ICDS programme over time and analyze them in relation to malnutrition levels throughout the State of Karnataka. First, it is necessary to provide a brief overview of key elements of the ICDS programme that will be discussed in further sections. The following section will look at the situation of Karnataka with regard to ICDS at the regional level by comparing it with its regional neighbours, namely, Andhra Pradesh, Kerala and Tamil Nadu. From there, an analysis will be conducted at the sub-state level of Karnataka in order to shed light on whether the ICDS programme is being implemented as per the need in the state. Ultimately, the goal of this paper is to test the Technical Efficiency<sup>1</sup> of the ICDS programme's Supplementary Nutrition component in order to see how well resources are being used to achieve intended outcomes. The Technical Efficiency of ICDS's SNP programme will be determined through the utilization of the Data Envelopment Analysis technique. This will provide clear insight into how the SNP is performing within the State, from which, policy conclusions can be drawn.

## **Integrated Child Development Services - Policy Overview**

Outlined below are important elements of the ICDS policy that are discussed in greater detail in further sections.

**Infrastructure:** ICDS services are delivered by Anganwadi workers (AWWs) at Anganwadi Centres (AWCs) at the village level. The norms regarding AWCs dictate that one AWC is meant to cover between 400-800 beneficiaries.

**Funding Patterns:** The funding patterns under the ICDS scheme follows a top-down model that bifurcates the programme into two components: ICDS General (G), which is meant to cover the operational costs of the programme and ICDS Supplementary Nutrition (SN), which is provided for the Supplementary Nutrition component of ICDS. The norms that dictate how funding is provided for these two components differ, and have also evolved over time. Since 2009, the norms as they related to ICDS (G) ensure that the 90% of the funding comes from the central government and that the remaining

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<sup>1</sup> "Technical efficiency refers to the physical relation between resources (capital and labour) and [a particular] outcome. A technically efficient position is achieved when the maximum possible improvement in outcome is obtained from a set of resource inputs. An intervention is technically inefficient if the same (or greater) outcome could be produced with less of one type of input" (Page 1136, Palmer and Torgerson, 1999).

10% are covered by each respective state. Prior to 2009, the central government was responsible for providing 100% of the funding for ICDS (G). For ICDS (SN), the norms have evolved from no central assistance (prior to 2005/06) to a 50:50 central-state contribution (from 2005/06-2008/09). This norm is still applicable across all states with the exception of the North Eastern states, where the norm from 2009/10 onwards was changed to 90:10 central-state contribution for Supplementary Nutrition.

**Nutritional Component:** The ICDS (SN) component is the largest element of the ICDS programme. Supplementary feeding is provided to all eligible beneficiaries for 300 days per year. The purpose of this component is to bridge the protein-energy gap and average dietary intake of children and pregnant and lactating women. The norms for ICDS (SN) expenditure per beneficiary per day fall under 3 categories: (1) children aged 6-72 months (2) severely malnourished children 6-72 months and (3) pregnant and lactating women. From 2008 onwards, these norms have been revised. The daily expenditure for category 1 has increased from INR 2 to INR 4; category 2 from INR 2.7 to INR 6 and category 3 from INR 2.3 to INR 5. For children 0-6 months, exclusive breastfeeding is emphasized; whereas for children 6 months to 3 years, a Take Home Ration (THR) in the form of wheat or rice is given. Lastly, for children 3-6 years, hot cooked meals are provided at the AWCs.

**Policy Goals and Measurement:** The primary goal of the ICDS policy is to improve health and nutrition of children aged 0-6 years, pregnant and lactating mothers and adolescent girls. Key output indicators of the scheme relate to anthropometric measurements and infant mortality rate.

The above mentioned elements of the ICDS policy outline the normative framework for implementing this programme. It is necessary to examine how these norms are translating into practice at the regional and sub-state level.

## **The Southern Region – Karnataka's Standing**

The Southern Region of India is composed of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. It is a highly progressive region as far as Human Development indicators are concerned; the Human Development Index reveals that all states in the South Region rank within the top 12 in the country. Within the region, the State of Karnataka is of particular interest, specifically with regard to its efforts to address child and maternal health and nutrition. With the exception of its slightly better standing than Andhra Pradesh, Karnataka appears to be struggling in the region. Its Infant Mortality Rate (IMR) in 2011 was significantly higher than that of Tamil Nadu (22 per 1000 live births) and Kerala (12 per thousand live births) at 35 per thousand live births (SRS Bulletin, October 2012, Registrar General of India). As well, on top of its high proportion of the population living below the poverty line when compared to its regional neighbours, Karnataka was the worst performing state in the region according to the State Hunger Index 2008 (Government of Karnataka, 2010-11). Although all states in the region allocate a relatively similar proportion of their budget to social services, on average Karnataka has spent less as a percentage of its Gross Domestic State Product (GDSP) during 2001/02 to 2008/09 to these services. In Karnataka, the state's overall poor regional performance in the area of child and maternal

health and nutrition can partially be attributed to the fact that there are apparent district level disparities across the state. As well, the wide variation in the number of children aged 0-6 years between the districts indicates that there are also different developmental needs across the state. Karnataka's performance as it relates to its human development indicators, more specifically the area of child and maternal health and nutrition, is likely affected by the fact that there are wide disparities within the state.

When looking more closely at the top-performing states in the region, Kerala and Tamil Nadu have been able to thrive in improving the state of child and maternal health and nutrition largely because of both top-level political commitment, as well as bottom-up awareness and demand for high quality services (Rajivan, 2006). The aforementioned factors are two of many factors that are attributable for the high performance of these states, but they are significant because the so called "sandwich effect" of top-down commitment and bottom-up demand have resulted in high quality interventions that are accountable to their beneficiaries. In the case of Tamil Nadu, the issue of hunger and malnutrition has been a political priority since the 1960s, which is long before the Supreme Court of India began placing pressure on the Central Government to take appropriate action to remedy this issue (i.e. the universalization of the Integrated Child Development Services (ICDS) programme). Because of its long standing commitment to this area, the Government of Tamil Nadu has been able to develop successful programs, such as the Tamil Nadu Integrated Nutrition Project (established in the 1980s), that are linked through a multi-sectoral approach and were formed "between what was electorally attractive (visible public funded feeding) and what was technically recommended (multi-sectoral nutrition schemes) (Rajivan, 2006). Taking a closer look at the ICDS programme across the region might yield some insights into the performance of Karnataka and its efforts to address child and maternal health and nutrition.

Looking at the funding patterns for the ICDS programme in the region, it can be seen that both expenditure and the state component of the expenditure have increased quite substantially over the past five years. In terms of per capita expenditure on both ICDS (G) and ICDS (SN), Karnataka appears to generally be spending less per beneficiary than all other states in the region, with the exception of 2009/10 and 2010/11 where it is spending the most and second most per beneficiary for the Supplementary Nutrition Programme (please refer to Table 1). Despite this recent increase in expenditure, it cannot be implied that the performance of the ICDS programme in Karnataka is improving because as Nayak et al (2006) highlights, program effectiveness is dependent upon efficient resource allocation.

**Table 1: Per capita Funds Released, Expenditure and State Component for ICDS (G) and ICDS (SNP)**

<b>ICDS (G)</b>	<b>2006/07</b>			<b>2007/08</b>			<b>2008/09</b>			<b>2009/10</b>			<b>2010/11</b>			
<b>Region</b>	<b>FR</b>	<b>EXP</b>	<b>SC</b>	<b>FR</b>	<b>EXP</b>	<b>SC</b>	<b>FR</b>	<b>EXP</b>	<b>SC</b>	<b>FR</b>	<b>EXP</b>	<b>SC</b>	<b>FR</b>	<b>EXP</b>	<b>SC</b>	<b>FR</b>
Andhra Pradesh	447.4	458.19	10.76	513.21	473.5	-39.7	531.4	456.18	-75.2	714.1	786.88	72.77	670.69	674.59	3.9	33.29
Karnataka	519.1	382.88	-136.3	359.07	432.4	73.37	488.73	563.28	74.55	494.7	537.13	42.45	468.86	638.64	169.78	-10.72
Tamil Nadu	810.9	889.39	78.53	732.34	853.4	121.1	1154.3	1063.13	-91.2	1072	1057.1	-14.8	1056.7	1374.1	317.37	23.26
Kerala	1089	1158.1	69.07	1018.3	987.7	-30.6	1050	1002.65	-47.4	740.8	978.57	237.8	1067.1	899.37	-167.7	-2.06
<b>ICDS (SNP)</b>	<b>2006/07</b>			<b>2007/08</b>			<b>2008/09</b>			<b>2009/10</b>			<b>2010/11</b>			
Andhra Pradesh	185.1	426	240.88	270.61	618	347.4	363.76	672	308.2	615.4	1029	413.7	292.96	1281	988.04	36.81
Karnataka	255.4	519	263.59	239.61	555	315.4	271.57	612	340.4	619.1	1332	712.9	570.32	1320	749.68	55.22
Tamil Nadu	366.3	771	404.73	300.78	813	512.2	429.49	909	479.5	562.2	1179	616.8	668.79	1221	552.21	45.23
Kerala	294	531	237.01	229.79	930	700.2	313.79	795	481.2	547.1	1095	548	502.55	1545	1042.5	41.5

\* FR – Funds Released

\* EXP – Expenditure

\* SC – State Component

\* Data Source: Comptroller Auditor General Report, 2013.

However, Karnataka and Andhra Pradesh, which are states both in the lower tier of the region, consistently cover a greater percentage of their SNP eligible beneficiaries for the ICDS programme than both Tamil Nadu and Kerala (please refer to Table 2). This is despite also having a substantially greater level of beneficiaries (please refer to Table 3). Regardless, of the coverage of the ICDS programme in Karnataka, what matters is the quality with which the programme is being delivered. Looking at the levels of malnutrition across the region, it is apparent that Karnataka is not on par with the rest of the region, as it consistently has a lower level of children with normal nutritional status and a higher level of both moderate and severe malnutrition than the rest of the region between 2006/07 to 2008/09 (please refer to Table 4).

**Table 2: Coverage of SNP Beneficiaries (in INR lakhs)**

Coverage SNP Beneficiaries								
	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
Year	Eligible	Covered	Eligible	Covered	Eligible	Covered	Eligible	Covered
2006/07	65.84	41.04	58.2	37.52	30.94	11.27	56.14	23.85
2007/08	70.9	50.79	59.57	39.01	31.93	14.01	50.57	27.01
2008/09	70.18	53.95	58.91	40.59	33.62	13.84	50.2	28.22
2009/10	69.16	50.71	60.28	43.1	32.24	13.52	51.43	28.67
2010/11	70.61	53.79	61.81	44.1	32.48	12.57	51.29	29.84

\* **Data Source:** Comptroller Auditor General Report, 2013.

**Table 3: Number of Beneficiaries**

State	2006/07	2007/08	2008/09	2009/10	2010/11
Andhra Pradesh	4,889,671.36	5,069,255.66	5,221,875.00	5,084,256.56	5,462,841.53
Karnataka	3,683,429.67	3,880,540.54	4,026,960.78	4,252,402.40	4,135,378.79
Kerala	1,000,907.91	1,322,878.23	1,303,410.34	1,342,324.00	1,206,797.71
Tamil Nadu	1,174,199.62	1,532,688.17	1,729,811.32	2,425,388.13	2,466,601.94
<b>Total</b>	10,748,208.57	11,805,362.60	12,282,057.45	13,104,371.09	13,271,619.97

\***Data Source:** Comptroller Auditor General Report, 2013.

**Table 4: Levels of Nutrition within the South Region (Pre-WHO Child Growth Standards)**

State	Andhra Pradesh			Karnataka			Kerala			Tamil Nadu		
Year/ Nutrition Status	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
2006/07	46.76	53.11	0.13	46.60	53.08	0.32	61.19	38.75	0.06	60.89	39.05	0.05
2007/08	48.12	50.99	0.92	47.42	52.31	0.27	60.87	39.07	0.06	61.17	38.81	0.02
2008/09	50.06	49.87	0.08	48.04	51.67	0.31	62.22	37.78	0.05	62.4	37.6	0.02

\***Data Source:** Comptroller Auditor General Report, 2013.



## WHO Child Growth Standards

The Ministry of Women and Child Development adopted the WHO Child Growth Standards for measurement of nutrition levels in the ICDS programme so as to adhere the international standards for assessing anthropometric measurements for children 0-6 years of age. These standards will pose certain challenges in monitoring the progress of child nutrition status because essentially the categorization of the nutrition status has changed from previous years. These new Growth standards are anticipated to increase in the proportion of children with normal nutrition status, as well as children suffering from severe malnutrition (Ministry of Women and Child Development, Government of India. <http://wcd.nic.in/icds/icds.aspx>). It is worth noting that among the states in the Southern Region, Karnataka has the highest percentage (2.84%<sup>2</sup>) of severely malnourished children in 2010/11. This will be discussed in further sections. Please refer to Table 5 which depicts nutrition status in South India following the adoption of the WHO Child Growth Standards. These standards will create new hurdles for the states across the country in their attempt to address the issue of child malnutrition because there is likely to be substantial changes in the figures reported from the district level. Therefore, there are likely to be changes in "district ranking" i.e. a high-burden district may become a top-performing district, which has implications regarding funding required for future interventions. This seems likely to distort the accuracy of the actual need at the district level. Ultimately, changing the standards by which nutrition status is measured would change the scope by which the state must intervene. This will be evidenced in detail in further sections of this paper.

**Table 5: Levels of Nutrition within the South Region (WHO Child Growth Standards)**

State	Andhra Pradesh			Karnataka			Kerala			Tamil Nadu		
Year/ Nutrition Status	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
2009/10	50.58	49.34	0.08	49.17	50.53	0.3	62.51	37.42	0.06	63.52	36.46	0.02
2010/11	51.28	48.63	0.08	60.5	36.66	2.84	63.08	36.83	0.08	64.78	35.2	0.02

\*Data Source: Comptroller Auditor General Report, 2013.

## Maternal and Child Health and Nutrition in Karnataka

The population of the state of Karnataka is 6.11 crore as per the 2011 Census. It accounts for 5.05% of India's population. The population density has increased by 15.6% between 2001 and 2011, with a decline in the birth rate by 9% and death rate by 6.5% (Government of Karnataka, 2012-13). What is a matter of interest for this paper is the decline in the child population of 0 to 6 years by 2.3%. The Government of Karnataka has initiated many programs to improve maternal and child health and nutrition (please refer to Table 6). The Integrated Child Development Services was initiated as a pilot project in the state of Karnataka in the year 1975. In the year 2000, the Adolescent Girl Scheme was

<sup>2</sup> This is the percentage of severe malnutrition as reported by the Comptroller Auditor General's Report, 2013. Alternatively, it was found from data provided by the Ministry of Women and Child Development, Bangalore, India that the severe malnutrition rate was approximately 3.3%. This number was calculated by averaging the severe malnutrition levels across all districts for 2010/11.

introduced within ICDS to ensure better health and nutrition for adolescent girls. At the outset, an initial assessment of the nutrition levels in the state revealed that approximately 65.88% of the children had a normal nutritional status, 32.52% were moderately nourished and 1.6% were severely malnourished. The assessment in 2008/09 showed that 48.03% were normally nourished, 51.66% moderately malnourished and 0.31% were severely malnourished. Between 2007 to 2011, the average expenditure on ICDS as a percentage of expenditure in the Social Service Sector was 2.84%. The expenditure has experienced a constant increase over time. However, over these years, the trend in the nutritional status does not seem promising.

**Table 6: Table showing the Maternal and Child Health and Nutrition Initiatives by the State of Karnataka (Excluding ICDS)**

Project	Year Initiated	Programme Description	Programme Details		Achievements
Sabaka (Rajiv Gandhi Scheme for Empowerment of Adolescent Girls)/ Kishori Shakthi Yojana (KSY)	Implemented in 9 districts on a pilot basis in 2012/2013 under ICDS	<ul style="list-style-type: none"> <li>Empower adolescent girls in the age group of 11-18 years by bringing improvement in their nutritional and health status and upgrading various skills.</li> <li>Under KSY, two adolescent girls are provided SNP in each AWC</li> </ul>	2012/2013	433.60 lakhs	102252 adolescent girls to be reached
Balsanjivini	2010/11 (16 crores is the budgetary allocation per year)	<ul style="list-style-type: none"> <li>Focuses on the rehabilitation and treatment of severely malnourished children</li> </ul>	2011/12	4.45 crores	59333 children reached (medical expenses covered)
			2011/12	11.55 crores	6127 children reached (medical admission)
			2012/13	4.00 crores	53333 children reached (medical expenses covered)
			2012/13	1.92 crores	3777 children reached (medical admission)
Karnataka Comprehensive Nutrition Mission	2012/13	<ul style="list-style-type: none"> <li>Improve nutrition levels by providing energy dense fortified supplementation</li> <li>Make available low cost nutritional supplements</li> </ul>	2012/13	5 crores	This project is currently being piloted in three blocks in the state, Gubbi, Shikaripura and Bellary Rural.

## Micro Picture of Karnataka

Within the state of Karnataka, as far as maternal and child health and nutrition is concerned, there seems to be regional disparity, with certain districts performing better than the others. As emphasized in the report by Dr. Nanjundappa Chair in 2010, it is important to study the intra-state disparities, especially in the state of Karnataka, wherein “regional imbalances are considered as one of those acute issues in Indian states” (Page 4, Shiddalingaswamy and Raghavendra, 2010). The districts in the southern region of Karnataka like Mysore, Mandya, Tumkur, Kolar and Chickmagalur are better performing than the northern districts like Uttar Kannada, Bidar, Gadag and Koppal, which have shown a decline in the performance over time (Government of Karnataka, 2012-13). Thus, looking at the regional disparity in the state, it was suggested by the Government of Karnataka that these deficiencies need to be addressed through focused programs. Special attention to bettering the implementation of the ICDS program has been suggested to improve maternal and child health and nutrition. Thus, it is of importance to look at the district-wise data to understand the performance of ICDS in the state of Karnataka.

Presently, Karnataka consists of 30 districts. Earlier, the state was comprised of 27 districts. The new districts of Yadgir, Ramnagara and Chikkaballapura were recently formed and hence the data for these districts is not available for all the years. Hence, the recent data for these districts have been merged into their respective districts from which they were formed (Yadgir from Gulbarga; Ramnagara from Bangalore Rural and Chikkaballapura from Kolar). Thus, the district wise analyzes for the state of Karnataka will display data from 27 districts and not 30.

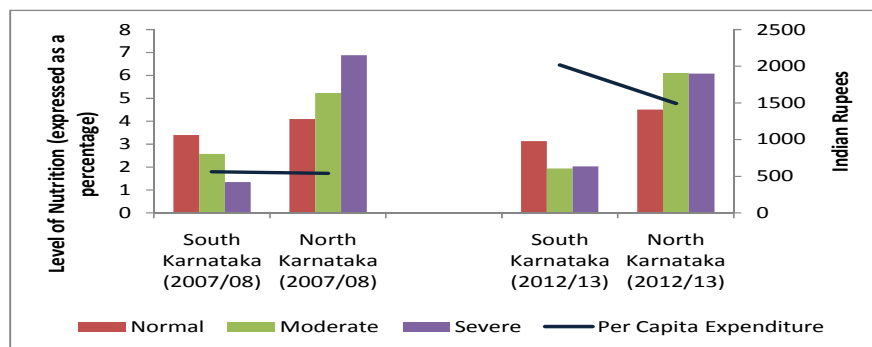
## Region-Wise Performance of ICDS

For the purposes of this section, the state of Karnataka is divided into two regions, namely South and North Karnataka and further into four divisions<sup>3</sup> as per the report by Dr. Nanjundappa Chair (Shiddalingaswamy and Raghavendra, 2010). The South Region consists of Bangalore and Mysore divisions and the North consists of Belgaum and Gulbarga divisions. It was stated in this report that South Karnataka has always been a better performing region in the state as compared to North Karnataka, with greater differences in the per capita incomes (Rs. 21,326 in North Karnataka as opposed to Rs. 28, 992 in South Karnataka). Hence, it was of interest to look into the regional variations within the state to note the differences in the performance of ICDS over time. Data was analyzed over two time points, 2007-08 and 2012-13 (These time points are the earliest and the latest periods for which the data was available). The findings were in line with those from the Nanjundappa Chair Report. What can be seen is that the nutritional status for South Karnataka was better than that of the North in 2007-08, while having similar per capita expenditure (please refer to Figure 1). Over time, the South region has spent much more in per capita terms, and also realized a much greater improvement in the levels of moderate and severe malnutrition. Although expenditure and nutrition cannot be directly linked, it is interesting to note that the North, the historically worse performing

<sup>3</sup> **Bangalore division:** Bangalore Urban, Bangalore Rural, Chitradurga, Davangere, Kolar, Shimoga and Tumkur; **Gulbarga division:** Bellary, Bidar, Gulbarga, Koppal and Raichur; **Belgaum division:** Bagalkot, Belgaum, Bijapur, Dharwad, Gadag, Haveri and Uttar Kannada; **Mysore division:** Chamarajanagar, Chickmagalur, Dakshina Kannada, Hassan, Kodagu, Mandya, Mysore and Udupi.

region in the state is investing lesser resources, despite having a more apparent issue as it relates to child and maternal malnutrition. Looking further at the Division-Wise performance of ICDS in Karnataka will provide further insights to the regional variations, more specifically, which are the pockets of the State that are performing better and worse.

**Figure 1: Regional Comparison of Levels of Nutrition and Per Capita Expenditure for ICDS**

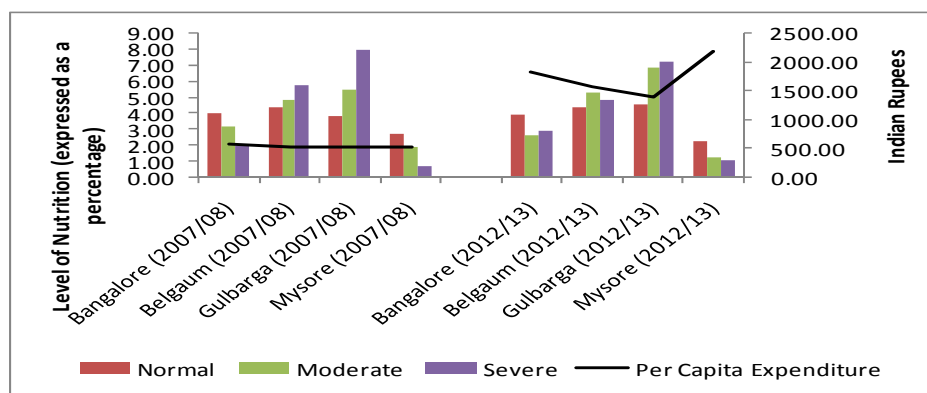


\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

### Division-wise Performance of ICDS

As seen above, the divisions that compose the South Region of Karnataka, Bangalore and Mysore are spending more per capita for ICDS over time as compared to their Northern counterparts, Belgaum and Gulbarga (please refer to Figure 2 and Appendix 2 for further details). As well, nutrition levels in 2007/08 and 2012/13 were again higher in Belgaum and Gulbarga compared to Bangalore and Mysore when expressed as a percentage of the State total. However, what is of concern are the levels of moderate and severe malnutrition specifically in Gulbarga at both time points. Examining the divisions at the individual district level could present a more concise picture on the state of ICDS in Karnataka.

**Figure 2: Divisional Comparison of Levels of Nutrition and Per Capita Expenditure for ICDS**



\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

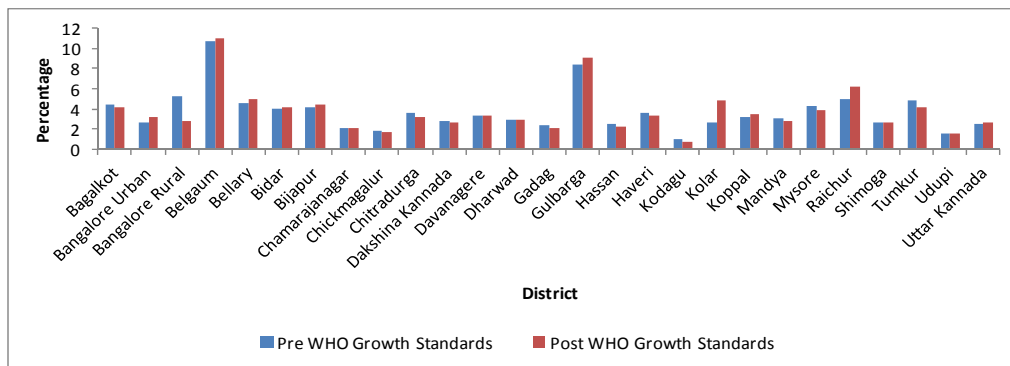
\*Please refer to Appendix 2 for detailed numbers.

## District-wise Performance of ICDS

### Beneficiary Details

According to the data from the Ministry of Women and Child Development, Bangalore, Karnataka, there appears to be a fairly consistent pattern in the distribution of beneficiaries across the districts in the state (please refer to Figures 3, 4, 5 and Appendix 3 for further details). It needs to be mentioned that beneficiary details are presented as a percentage of the state total for the particular category and year. The data has been analysed at two time points- Pre and Post WHO Growth Standards. The beneficiaries were examined based on three classifications: child, women and total beneficiaries. As mentioned, the distribution over time was found to be relatively consistent across the districts. However, there were some districts that stood out. Bangalore Rural showed a sharp decline in the numbers of child, women and total beneficiaries between the two time points. The district of Kolar showed a sharp increase in the number of child, women and total beneficiaries. Lastly, the district of Tumkur showed a gradual decline over time. The beneficiary numbers in the remaining districts remained fairly stable over time.

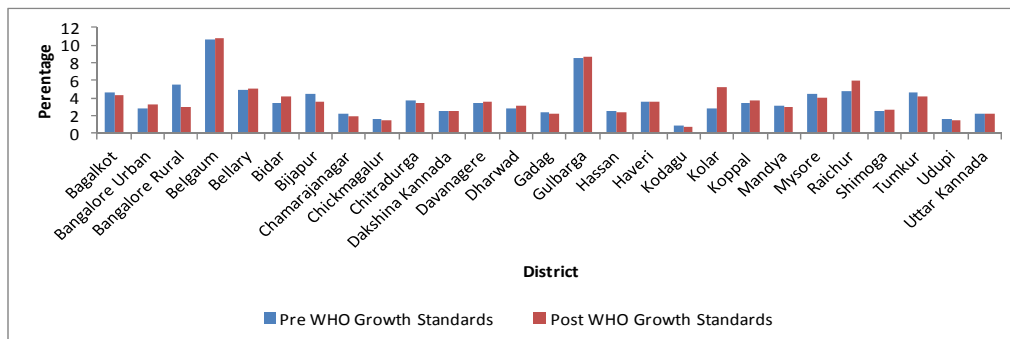
**Figure 3: Child Beneficiaries 0-6 years (SNP)**



\***Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 3 for detailed numbers.

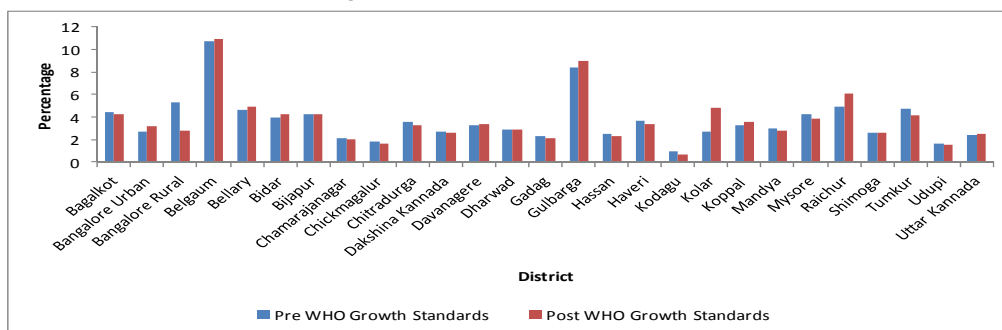
**Figure 4: Women beneficiaries (SNP)**



\***Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 3 for detailed numbers.

**Figure 5: Total Beneficiaries (SNP)**



\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 3 for detailed numbers.

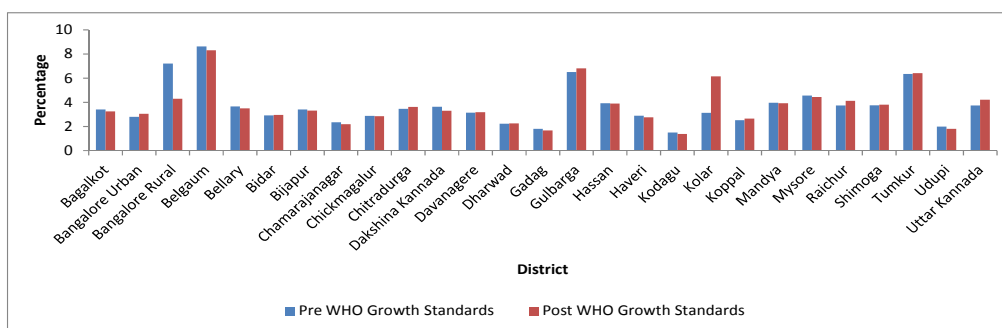
## Physical Infrastructure and Human Capital

### Anganwadi Centres

The districts of Belgaum, Gulbarga and Tumkur have the highest proportion of AWCs and the district of Kodagu has the least (please refer to Figure 6 and Appendix 4 for more details). The trends over time appear to be similar to the pattern displayed by the number of SNP beneficiaries (please refer to the above section). In Bangalore Rural, there was a fall in the number of operational AWCs between two time points. Kolar experienced a sharp increase in operational AWCs over time.

However, what is of concern, specifically in the North Region of Karnataka where levels of malnutrition are worse when compared with the South, is that the majority of AWCs cover an area greater than 800 people; whereas the norm states that one AWC should cover between 400-800 people (please refer to Table 7). The exception in the North Region are Uttar Kannada, Gulbarga and Koppal, which are in compliance. This undoubtedly has some impact on how the level of beneficiaries per AWC, and this is reflected in the average number of beneficiaries per AWC across the North and South Regions. In the North, the average number of beneficiaries per AWC is 77 versus 47 in the South. In the South Region, the picture is slightly different as the majority of districts are in compliance with the policy norm.

**Figure 6: Anganwadi Centres**



Data source: Ministry of Child and Women Development, Bangalore, Karnataka

\*Please refer to Appendix 4 for detailed numbers.

**Table 7: Population Covered per AWC and Number of Beneficiaries per AWC in 2012/13**

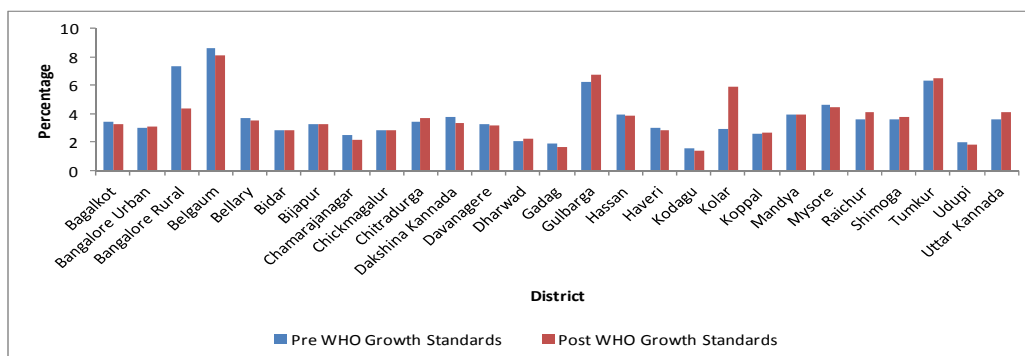
Region	Division	District	Population Covered per AWC	Number of Beneficiaries per AWC
North	Belgaum	Bagalkot	893	69
	Belgaum	Belgaum	903	86
	Belgaum	Bijapur	1034	107
	Belgaum	Dharwad	1259	74
	Belgaum	Gadag	963	74
	Belgaum	Haveri	836	82
	Belgaum	Uttar Kannada	536	38
	Gulbarga	Bellary	1060	90
	Gulbarga	Bidar	901	77
	Gulbarga	Gulbarga	863	73
	Gulbarga	Koppal	776	68
	Gulbarga	Raichur	732	90
South	Bangalore	Bangalore Urban	0	54
	Bangalore	Bangalore Rural	0	40
	Bangalore	Chitradurga	716	54
	Bangalore	Davabgere	951	78
	Bangalore	Kolar	703	45
	Bangalore	Shimoga	721	45
	Bangalore	Tumkur	656	43
	Mysore	Chamarajanagar	722	48
	Mysore	Chickmagalur	625	37
	Mysore	Dakshina Kannada	994	51
	Mysore	Hassan	713	35
	Mysore	Kodagu	637	37
	Mysore	Mandya	715	48
	Mysore	Mysore	1062	23
	Mysore	Udupi	1027	67

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

### Anganwadi Workers (AWWs) and Anganwadi Helpers (AWHs)

The change in the level of AWWs and AWHs (please refer to Figures 7 and 8) has been less pronounced between the two time points. Again, Bangalore Rural experienced a sharp decline in the number of AWWs and AWHs; whereas Kolar experienced an increase. These changes are in line with the above changes in the number of AWCs in these respective districts.

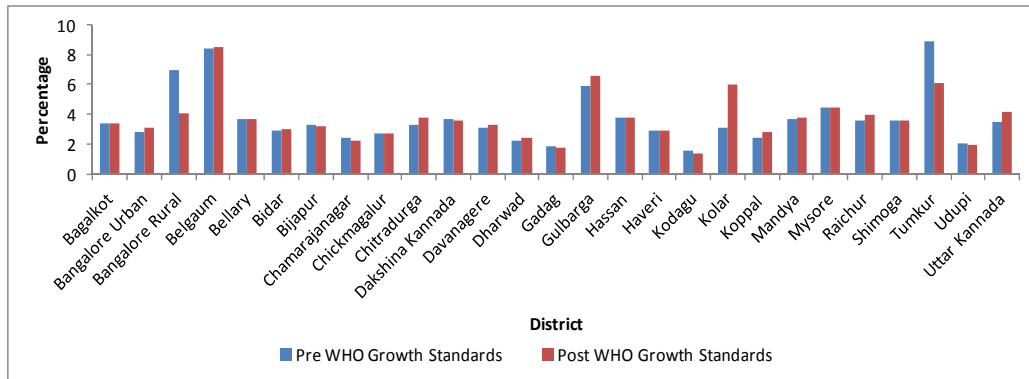
**Figure 7: Anganwadi Workers**



\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 5 for detailed numbers.

**Figure 8: Anganwadi Helpers**



\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 5 for detailed numbers.

## Nutrition Status

### Levels of nutrition from 2007/08 to 2009/10- Pre WHO Growth Standards

The district of Davanagere had the highest growth rate in the levels of normally nourished children over time, followed by Mysore, Udupi, Bijapur and Gulbarga (please refer to Table 8). Raichur had the lowest growth rate over time for normally nourished children, followed by Gadag, Chitradurga and Haveri. While looking at the levels of moderate nutrition, similar to the earlier findings, Raichur had the highest growth rate, followed by Gadag, Chitradurga, Haveri and Bidar. The other districts had negative growth rates, indicating a drop in the numbers of moderately malnourished children over time. The districts that showed the greatest progress in this front were Udupi, Mysore and Davanagere. The analyses for the levels of severe nutrition showed a different picture as compared to the levels of normally nourished and moderately nourished children. Dakshina Kannada was the best performing district and had the highest decrease in the levels of severe nutrition, followed by Bangalore Urban, Uttar Kannada and Raichur. The least achievement in reducing the levels of severe malnutrition was seen for the districts of Bagalkot, Kodagu and Hassan.



**Table 8: Level of Nutrition (As a Percentage of Column Total) Pre WHO Growth Standards**

District	2007/08			2008/09			2009/10			Growth Rate Over Time		
	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
Bagalkot	3.58	4.39	3.50	3.57	4.20	4.10	3.45	4.29	8.30	0.027	-0.027	0.576
Bangalore Urban	3.08	1.90	0.25	3.04	1.76	0.19	3.42	2.04	0.21	0.038	-0.062	-0.413
Bangalore Rural	3.62	2.21	0.77	3.73	2.15	0.72	3.56	2.03	0.63	0.052	-0.088	-0.232
Belgaum	13.01	14.32	17.61	12.32	14.10	19.30	12.79	13.94	18.34	0.04	-0.036	0.028
Bellary	3.81	5.88	10.09	3.60	5.89	9.41	3.66	5.63	8.94	0.044	-0.027	-0.112
Bidar	2.80	4.27	4.63	2.93	4.70	3.89	3.01	4.92	4.17	0	0.001	-0.282
Bijapur	3.33	4.64	3.85	4.73	6.51	7.08	4.95	6.44	7.31	0.075	-0.057	0.224
Chamarajanagar	2.28	1.93	0.39	2.23	1.81	0.46	2.05	1.63	0.47	0.06	-0.074	0.235
Chickmagalur	2.27	1.52	0.57	2.09	1.43	0.62	2.04	1.41	0.68	0.015	-0.022	0.212
Chitradurga	3.35	3.14	2.77	3.23	3.39	3.55	3.12	3.23	3.10	-0.016	0.015	0.091
Dakshina Kannada	3.01	2.01	1.52	2.96	1.88	1.29	2.84	1.88	1.04	0.031	-0.044	-0.437
Davanagere	4.00	4.34	5.76	4.63	4.30	5.12	4.31	4.17	5.00	0.092	-0.091	-0.211
Dharwad	2.82	2.82	4.33	2.81	2.63	4.23	2.78	2.77	4.54	0.036	-0.035	0.027
Gadag	2.09	2.54	2.99	1.92	2.53	2.62	1.78	2.47	2.45	-0.037	0.027	-0.159
Gulbarga	8.24	9.89	10.14	7.20	8.72	8.96	8.26	9.39	7.58	0.065	-0.054	-0.345
Hassan	2.72	1.99	0.45	2.74	1.87	0.47	2.59	1.85	0.59	0.038	-0.053	0.245
Haveri	3.07	3.84	6.35	2.93	3.68	6.10	2.77	3.72	6.70	-0.004	0.002	0.08
Kodagu	1.49	0.69	0.32	1.39	0.62	0.46	1.25	0.57	0.42	0.026	-0.057	0.33
Kolar	4.89	4.44	1.39	4.81	4.50	1.45	4.85	4.38	1.20	0.035	-0.038	-0.182
Koppal	1.82	3.21	6.97	1.78	2.99	6.66	1.87	3.26	5.84	0.054	-0.027	-0.247
Mandya	4.06	2.18	0.65	4.01	2.11	0.49	4.00	2.08	0.49	0.035	-0.064	-0.351
Mysore	4.40	3.99	1.11	5.08	4.05	0.99	4.90	3.91	1.02	0.088	-0.107	-0.186
Raichur	2.43	4.47	8.23	2.57	4.85	6.65	2.12	5.24	6.46	-0.166	0.068	-0.395
Shimoga	2.94	2.57	1.26	2.78	2.60	1.46	2.88	2.47	1.16	0.042	-0.047	-0.095
Tumkum	6016	3.77	1.78	5.85	3.65	1.73	5.73	3.36	1.54	0.041	-0.068	-0.105
Udupi	2.03	1.22	0.66	2.22	1.14	0.56	2.10	1.08	0.52	0.081	-0.152	-0.294
Uttara Kannada	2.73	1.83	1.65	2.85	1.94	1.45	2.91	1.87	1.29	0.045	-0.066	-0.397

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

\*Please refer to Appendix 6 for detailed numbers.

### **Levels of nutrition from 2010/11 to 2012/13- Post WHO Growth Standards**

The data for districts, namely, Bidar, Bijapur, Chamarajanagar, Gulbarga and Koppal is not available, due to which the current analysis included only data from 22 districts. The districts of Gadag and Bellary had a decrease in the numbers of normally nourished children from 2010/11 to 2012/13, when assessed using the new WHO Growth Monitoring Standards (please refer to Table 9). Chitradurga was the highest performing districts as far as normally nourished children were concerned, followed by Chickmagalur, Hassan, Tumkur and Uttar Kannada. Similar to the findings for normally nourished children, the districts of Gadag and Bellary had an increase in the moderately malnourished children over time. Raichur, as well, had a positive growth rate over time. Udipi performed the best in bringing down the levels of moderate malnutrition over time, followed by Chickmagalur, Mandya, Bangalore Urban and Tumkur. As per the new Growth Monitoring Standards by the WHO, surprisingly, the district of Bangalore Urban had a positive growth rate for the levels of severe malnutrition. For all the remaining districts, there was a decrease over time, with Bagalkot, Raichur, Tumkur and Haveri being among the top performing districts in reducing the numbers of severely malnourished children.

It is difficult to compare the levels of malnutrition from 2007/08 to 2009/10 with those from recent years as the Growth Monitoring Standards have changed. Nevertheless, certain implications could be drawn. Since well performing districts from 2009/10 already had higher levels of normal nutrition, their increase over time would be marginal compared to those at lower levels of nutrition. Therefore, when the norms changed in 2010/11, it was implied that the levels of normal and severe nutrition levels would increase. In addition, the less performing districts would get higher ranks as compared to previous years because their improvements would be more noticeable since they have more scope for improvement and the newer standards would amplify these improvements. Chitradurga and Chickmagalur, which were low performing districts in 2007/08 to 2009/10 as far as normally nourished children were concerned, became the highest performing districts during 2010/11 to 2012/13 assessments. An exception to this were the districts of Gadag, Bellary and Raichur for the levels of moderate malnutrition; they continued to be lower performing districts from 2007/08 to 2012/13 despite changing growth standards of measurement over time. However, Chickmagalur which was a low performing district in reducing the levels of moderate malnutrition in earlier assessment, became a high performing district during 2010/11 to 2012/13 assessments. Bangalore Urban, a high performing district for severe malnutrition in earlier assessment, was the only district, as per WHO Growth Monitoring Standards, to have a positive growth rate, thus indicating the extreme contrast over time. As opposed to this, Bagalkot, the district with the least performance during 2007/08 to 2009/10 as far as severe malnutrition is concerned, was rated the best performing district in 2010/11 to 2012/13.

**Table 9: Level of Nutrition (as a percentage of column total) Post WHO Growth Standards**

District	2010/11			2011/12			2012/13			Growth Rate Over Time		
	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
Bagalkot	4.54	5.84	12.02	3.37	4.62	5.79	3.44	4.43	3.13	0.143	-0.072	-6.279
Bangalore Urban	4.01	3.19	1.00	3.14	1.55	0.90	3.31	1.83	3.36	0.122	-0.586	0.368
Bangalore Rural	4.35	3.00	2.00	3.43	1.62	1.25	3.29	1.68	1.77	0.113	-0.497	-1.208
Belgaum	15.84	21.11	10.86	10.91	13.56	10.45	11.28	12.74	10.79	0.137	-0.274	-0.803
Bellary	6.03	6.78	9.34	4.62	5.91	8.76	4.60	7.15	8.00	-0.004	0.091	-1.61
Bidar	-	-	-	2.82	7.26	1.43	3.20	5.17	1.85	NA	NA	NA
Bijapur	-	-	-	4.62	5.52	5.94	5.20	7.23	3.86	NA	NA	NA
Chamarajanagar	-	-	-	1.94	1.58	1.24	1.83	1.47	1.34	NA	NA	NA
Chickmagalur	2.17	2.29	1.77	1.94	1.12	1.04	1.94	1.18	1.28	0.202	-0.74	-1.877
Chitradurga	3.72	4.95	7.05	3.37	2.90	5.25	3.26	2.98	3.76	0.215	-0.428	-2.761
Dakshina Kannada	3.85	2.22	1.91	3.06	1.38	1.48	3.32	1.41	1.27	0.105	-0.522	-2.399
Davanagere	5.73	5.63	3.92	4.19	3.29	4.06	4.30	3.61	3.70	0.116	-0.297	-1.053
Dharwad	3.44	4.07	3.80	2.55	2.75	4.60	2.53	3.28	5.52	0.056	-0.077	-0.392
Gadag	2.47	3.23	3.26	1.70	2.46	4.12	1.72	2.98	3.96	-0.006	0.052	-0.68
Gulbarga	-	-	-	8.31	10.80	6.85	7.71	8.95	9.65	NA	NA	NA
Hassan	2.98	2.72	0.95	2.51	1.58	0.65	2.55	1.60	0.70	0.147	-0.551	-1.89
Haveri	4.02	4.94	8.24	2.98	3.52	5.70	3.76	4.58	4.85	0.124	-0.104	-3.053
Kodagu	1.32	0.83	0.53	1.09	0.94	0.32	0.95	0.53	0.76	0.072	-0.301	-0.341
Kolar	3.47	2.79	0.94	4.63	4.11	3.16	4.95	3.89	2.59	0.065	-0.197	-0.41
Koppal	-	-	-	2.15	3.84	6.19	2.36	4.85	7.38	NA	NA	NA
Mandya	4.63	3.16	2.76	3.94	1.82	1.17	3.67	1.71	1.40	0.13	-0.589	-2.953
Mysore	5.80	4.35	2.02	4.46	3.34	2.34	1.74	1.38	1.31	0.044	-0.126	-0.287
Raichur	4.99	6.44	16.06	4.98	7.77	10.89	5.15	8.35	9.52	0.076	0.079	-3.691
Shimoga	3.80	3.18	1.72	2.96	1.76	2.21	3.19	1.89	2.73	0.132	-0.535	-0.338
Tumkum	6.64	4.84	5.78	5.31	2.57	2.32	5.29	2.61	2.55	0.145	-0.579	-3.504
Udupi	2.68	1.45	0.96	2.23	0.60	0.61	2.48	0.68	1.11	0.133	-1.148	-1.001
Uttara Kannada	3.49	2.97	3.13	2.78	1.83	1.29	2.96	1.85	1.85	0.144	-0.455	-2.594

\* NA- Data Not available

\* **Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

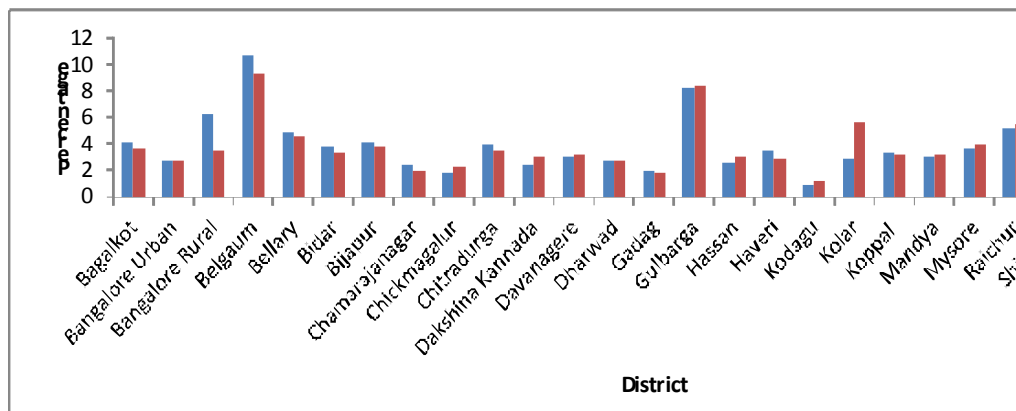
\* Please refer to Appendix 6 for detailed numbers.

## Funding Patterns

### ZP Release and Total Expenditure

The districts of Belgaum and Gulbarga have the highest ZP Release and Expenditure and the district of Kodagu has the least ZP Release and Expenditure (which is in line with the number of beneficiaries, physical infrastructure and the human capital) (please refer to Figure 9 and 10 and Appendix 7 for more details). Thus, for these districts, it can be inferred that the expenditure is in lines with the trends exhibited in the above sections. As well, over time there has been an increasing trend in terms of per capita expenditure allocated towards the ICDS SNP programme, with the district of Kodagu having the highest per capita expenditure in 2012/13 (please refer to Figure 11 and Appendix 8 for further details).

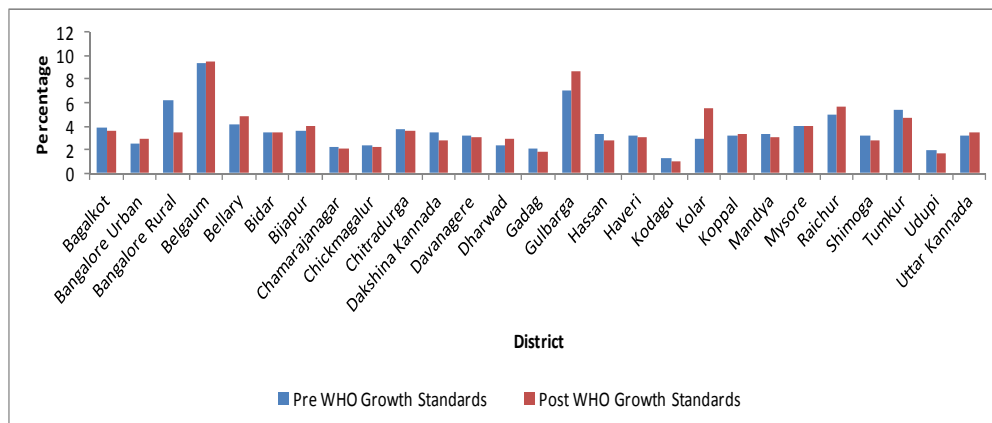
**Figure 9: Total Expenditure**



**Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

\* Please refer to Appendix 7 for detailed numbers

**Figure 10: ZP Release**



**\*Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

\* Please refer to Appendix 7 for detailed numbers

District	Pre WHO growth standards	Post WHO growth standards
Bangalore	~650	~1050
Bangalore Urban	~700	~1050
Bangalore Rural	~850	~1450
Belgaum	~700	~1150
Belgaum	~750	~1250
Bidhar	~650	~1050
Bijapur	~650	~1150
Chamarnahapur	~850	~1250
Chitradurg	~700	~1650
Chitradurg	~750	~1250
Dakshina Kannada	~650	~1350
Davanagere	~650	~1150
Dharmavaram	~650	~1150
Dharwad	~600	~1050
Gadag	~600	~1050
Gulbarga	~650	~1150
Hassan	~700	~1350
Haveri	~650	~1050
Kodagu	~700	~1850
Kolar	~750	~1250
Kopall	~700	~1150
Mandya	~700	~1250
Mysore	~600	~1150
Nasikur	~700	~1150
Shimoga	~700	~1150
Tumkur	~700	~1250
Udupi	~700	~1250
Uttar Kannada	~700	~1350

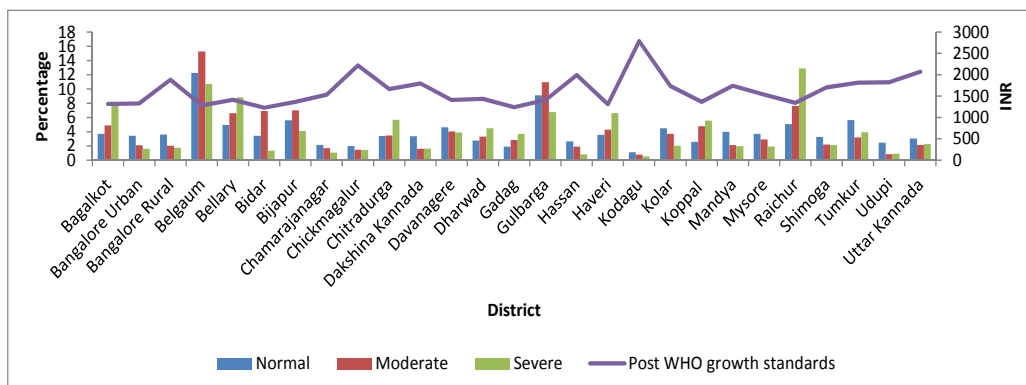
\* Please refer to Appendix 8 for detailed numbers

The Government of Karnataka expressed the importance of increased funding in order to promote maternal and child health and nutrition and reduce the levels of malnutrition (Government of Karnataka, 2012-13) and this was one of the important points to be included in the 12<sup>th</sup> Five Year Plan. With the data available from 2007/08 to 2012/13, an analysis was conducted on the nutrition levels and the funding patterns over time (please refer to Figures 12 and 13).

District	Blue Bar	Red Bar	Green Bar	Purple Bar
Bagalkot	3	4	5	13
Bangalore Urban	3	2	1	14
Bangalore Rural	3	1	0	16
Belgaum	12	14	18	14
Bellary	3	6	9	15
Bidar	3	4	5	13
Bidarur	4	6	7	14
Chamarajaneagar	2	1	0	17
Chikmagalur	2	1	0	14
Chitradurga	3	3	4	16
Dakshina Kannada	3	2	1	13
Davanagere	4	4	5	13
Dharwad	3	2	4	13
Gadag	2	2	3	11
Gulbarga	8	9	9	14
Hassan	3	2	1	15
Haveri	3	2	6	13
Koppal	1	0	0	15
Kolar	4	4	1	15
Koppal	2	2	7	14
Marcy	3	2	0	14
Mysore	2	1	0	11
Raichur	3	4	7	15
Shimoga	2	2	1	15
Tumkur	5	4	1	14
Udupi	2	1	0	14
Uttara Kannada	2	1	1	15

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**Figure 13. District wise Comparison of Levels of Nutrition Versus the Per Capita Expenditure after Change in the WHO Growth Monitoring Standards**



**\*Data source:** Ministry of Women and Child Development, Bangalore, Karnataka

Beyond increasing its expenditure for ICDS over time, Karnataka is a state that contributes higher levels of resources to the programme and also has a higher utilization rate of those resources (UNICEF India, 2011). However, increasing resources over time and using those resources completely throughout the fiscal year has not necessarily translated into effective implementation of the ICDS programme. In fact, effective implementation of ICDS depends upon the efficient utilization of available funds and other resources (Nayak et al, 2006). Additionally, outcomes, in this case nutrition outcomes, are impacted by direct expenditure as well as expenditure in related fields (Rao et al, 2005).

Based on this information, the following can be surmised - Karnataka's high financial allocation to the ICDS programme and high utilization rate does not imply efficient resource utilization, as was also seen in the levels of nutrition and per capita expenditure among different districts in the state of Karnataka. Since expenditure reporting is not sufficiently detailed at the block level and because it reports based on the two aggregated expenditure categories, ICDS (G) and ICDS (SN), it is best to examine the technical efficiency of ICDS in Karnataka based on district level information (UNICEF India, 2011). As well, this will provide insight into how ICDS is being implemented across the State. Furthermore, given that outcomes, as highlighted by Rao et al (2005), are impacted by direct and indirect expenditures, for the purposes of this paper it will be better to examine how well inputs are being used to achieve intended outputs of the Supplementary Nutrition Programme of ICDS across Karnataka.

## **Technical Efficiency of the Supplementary Nutrition Component of ICDS in Karnataka - A District Level Analysis**

### ***Methodology***

The methodology employed for this analysis was the Data Envelopment Analysis (DEA) Technique. The program used to conduct this analysis was the DEA program (Version 2.1) by Tim Coelli from the University of Queensland, Australia. It was an input oriented analysis that employed the Variable Returns to Scale (VRS) Model. The inputs for this analysis were 1. Per capita expenditure 2. Number of

Anganwadi Workers (AWWs) and Anganwadi Helpers (AWHs) 3. Number of Anganwadi Centres (AWCs) and Mini-Anganwadi Centres. The output was the number of children with normal nutrition status. Separate analyses were run for two time points (2007/08 and 2012/13) as a result of the adoption of the WHO Child Growth Monitoring Standards.

### **Results**

In the year 2007-08, the technically efficient districts were Chickmagalur, Davanagere, Dharwad, Gadag, Gulbarga, Kodagu, Kolar, Mysore and Tumkur; while in the year 2012/13, the districts of Bagalkot, Bangalore Urban, Belgaum, Bellary, Bidar, Gadag, Haveri, Kodagu, Koppal, Mandya, Raichur and Udipi were most technically efficient (please refer to Table 9). The least efficient districts in 2007/08 were Chitradurga, Hassan, Koppal and Uttar Kannada; while in 2012/13, Chickmagalur, Hassan, Tumkur and Uttar Kannada were among the districts with the least scores.

Although the outcome indicator cannot be compared between the two years due to the adoption of the WHO Child Growth Monitoring Standards, it is of interest to note that there has been a noticeable change in the districts in their technical efficiency scores. The more technically efficient districts in 2007/08 like Tumkur and Chickmagalur have become the least technically efficient in 2012/13. Hence, an opportunity exists to conduct further research that examines the technical efficiency of ICDS at the sub-district level. As well, there is a need to look at the WHO Child Growth Monitoring Standards and the implications that this change in measurement may have on the technical efficiency score of ICDS's SNP component at the district level.

**Table 10: Technical Efficiency scores over time**

<b>Technical Efficiency Score</b>		
<b>District</b>	<b>2007/08</b>	<b>2012/13</b>
Bagalkot	0.864	1
Bangalore Urban	0.831	1
Bangalore Rural	0.826	0.728
Belgaum	0.931	1
Bellary	0.833	1
Bidar	0.933	1
Bijapur	0.919	0.939
Chamarajanagar	0.861	0.793
Chickmagalur	1	0.626
Chitradurga	0.784	0.832
Dakshina Kannada	0.994	0.98
Davanagere	1	0.864
Dharwad	1	0.976
Gadag	1	1
Gulbarga	1	0.98
Hassan	0.771	0.677

Haveri	0.875	1
Kodagu	1	1
Kolar	1	0.717
Koppal	0.76	1
Mandya	0.911	1
Mysore	1	0.75
Raichur	0.821	1
Shimoga	0.801	0.762
Tumkum	1	0.63
Udupi	0.882	1
Uttara Kannada	0.701	0.648
Total	0.9	0.885

## Conclusion

Karnataka is a progressive state in the country as it relates to the implementation of the Integrated Child Development Services. As has been noted before, the benefits of this programme are not distributed as per the need. Having looked at the patterns of programme expenditure, physical infrastructure and available human capital over time, the Southern region, as compared to the Northern region of Karnataka, seems to have achieved better levels of nutrition given the expenditure. Further, in the Northern region, the division of Gulbarga, consisting of the districts of Bellary, Bidar, Gulbarga, Koppal and Raichur seems to be the worst performing with higher levels of malnutrition.

However, it appears some districts in the Northern Region, such as Belgaum and Gulbarga are attempting to meet the demand for ICDS. As the districts with the two largest beneficiary populations, there is consistency in the level of funding and proportion of physical infrastructure. That being said, a comparison of programme impact on nutrition status over time is not possible due to the introduction of the WHO Child Growth Monitoring Standards. What can be seen from running the technical efficiency analysis is that at present (based on data from 2012/13), the districts of Bagalkot, Bangalore Urban, Belgaum, Bellary, Bidar, Gadag, Haveri, Kodagu, Koppal, Mandya, Raichur and Udupi are the most technically efficient. Again, although the two time periods that were used for the technical efficiency analysis are not comparable per se, it is worth noting that there has been a noticeable change in the districts in their technical efficiency scores over time. With this in mind it is suggested that further research be undertaken to examine 1. the technical efficiency of SNP component of ICDS at the sub-district level and 2. the implications of the WHO Child Growth Monitoring Standards on the technical efficiency of the districts.



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**Appendix 1: Per Capita Funding Patterns for ICDS (G) and ICDS (SN) for the South Region**

Per capita ICDS (G)	2006/07			2007/08			2008/09			2009/10			2010/11		
State	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment
Andhra Pradesh	447.43	458.19	10.76	513.21	473.48	-39.73	531.40	456.18	-75.22	714.11	786.88	72.77	670.69	674.59	3.90
Karnataka	519.14	382.88	-136.26	359.07	432.44	73.37	488.73	563.28	74.55	494.69	537.13	42.45	468.86	638.64	169.78
Kerala	810.86	889.39	78.53	732.34	853.44	121.10	1154.28	1063.13	-91.15	1071.80	1057.05	-14.75	1056.68	1374.05	317.37
Tamil Nadu	1089.00	1158.07	69.07	1018.34	987.74	-30.60	1050.00	1002.65	-47.35	740.79	978.57	237.78	1067.06	899.37	-167.68

Per Capita ICDS (SN)	2006/07			2007/08			2008/09			2009/10			2010/11		
State	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment	Funds released	Expenditure	State Investment
Andhra Pradesh	185.12	426.00	240.88	270.61	618.00	347.39	363.76	672.00	308.24	615.35	1029.00	413.65	292.96	1281.00	988.04
Karnataka	255.41	519.00	263.59	239.61	555.00	315.39	271.57	612.00	340.43	619.06	1332.00	712.94	570.32	1320.00	749.68
Kerala	366.27	771.00	404.73	300.78	813.00	512.22	429.49	909.00	479.51	562.16	1179.00	616.84	668.79	1221.00	552.21
Tamil Nadu	293.99	531.00	237.01	229.79	930.00	700.21	313.79	795.00	481.21	547.05	1095.00	547.95	502.55	1545.00	1042.45

\*Data Source: Comptroller Auditor General Report, 2013.

**Appendix 2: Divisional Breakdown of Per Capita Expenditure, Physical Infrastructure, Human Capital and Beneficiary Numbers for 2007/08 and 2012/13 for ICDS in Karnataka**

**2007/08**

District	HDI Rank	Per Capita Expenditure	AWWs	AWHs	AWCs	Total Beneficiaries	Level of Nutrition		
							Normal	Moderate	Severe
Bangalore Urban	1	544.19	1535	1469	1457	102,998	3.08	1.90	0.25
Bangalore Rural	6	633.10	3629	3741	3816	213,769	3.62	2.21	0.77
Chitradurga	16	639.50	1683	1774	1809	143,336	3.35	3.14	2.77
Davanagere	12	485.94	1615	1660	1672	123,119	4.00	4.34	5.76
Kolar	17	563.67	1517	1637	1639	106,001	4.89	4.44	1.39
Shimoga	5	545.39	1784	1851	1960	99,786	2.94	2.57	1.26
Tumkur	15	619.40	3357	3375	3374	194,148	6.16	3.77	1.78
<b>Bangalore Division</b>		<b>575.88</b>	<b>15120</b>	<b>15507</b>	<b>15727</b>	<b>983,157</b>	<b>4.00</b>	<b>3.20</b>	<b>2.00</b>

District	HDI Rank	Per Capita Expenditure	AWWs	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Bellary	18	568.82	1869	2063	2067	187,905	3.81	5.88	10.09
Bidar	21	454.81	1498	1499	1503	146,583	2.80	4.27	4.63
Gulbarga	26	544.95	3347	3171	3373	314,451	8.24	9.89	10.14
Koppal	24	567.46	1274	1278	1276	122,482	1.82	3.21	6.97
Raichur	27	570.67	1823	1880	1882	175,039	2.43	4.47	8.23
<b>Gulbarga Division</b>		<b>541.34</b>	<b>9811</b>	<b>9891</b>	<b>10101</b>	<b>946,460</b>	<b>3.82</b>	<b>5.54</b>	<b>8.01</b>

District	HDI Rank	Per Capita Expenditure	AWWs	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Bagalkot	22	537.83	1786	1867	1885	174,488	3.58	4.39	3.50
Belgaum	8	573.48	4207	4223	4863	415,841	13.01	14.32	17.61

**2012/13**

District	HDI Rank	PCE	AWW	AWHs	AWCs	Total Beneficiaries	Level of Nutrition		
							Normal	Moderate	Severe
Bangalore Urban	1	1274.89	2070	1930	2094	174,656	3.31	1.83	3.36
Shimoga	5	1874.64	2376	2063	2431	128,180	3.19	1.89	2.73
Bangalore Rural	6	2201.05	2702	2316	2734	134,053	3.29	1.68	1.77
Davanagere	12	1621.80	2018	1932	2045	160,202	4.30	3.61	3.70
Tumkur	15	2127.38	4038	3532	4081	192,766	5.29	2.61	2.55
Chitradurga	16	1815.23	2301	2163	2318	159,135	3.26	2.98	3.76
Kolar	17	1926.04	3738	3505	3969	235,828	4.95	3.89	2.59
<b>Bangalore Division</b>		<b>1834.43</b>	<b>19243</b>	<b>17441</b>	<b>19672</b>	<b>1,184,820</b>	<b>3.94</b>	<b>2.64</b>	<b>2.92</b>

District	HDI Rank	PCE	AWW	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Raichur	27	1372.51	2588	2471	2635	302,685	5.15	8.35	9.52
Gulbarga	26	1462.55	4275	4063	4334	407,391	7.71	8.95	9.65
Koppal	24	1527.07	1724	1641	1792	168,818	2.36	4.85	7.38
Bidar	21	1284.99	1789	1726	1890	194,130	3.20	5.17	1.85
Bellary	18	1326.30	2247	2151	2314	250,867	4.60	7.15	8.00
<b>Gulbarga Division</b>		<b>1394.68</b>	<b>12623</b>	<b>12052</b>	<b>12965</b>	<b>1,323,891</b>	<b>4.61</b>	<b>6.89</b>	<b>7.28</b>

District	HDI Rank	PCE	AWW	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Bijapur	23	1430.61	2032	1849	2106	215,217	5.20	7.23	3.86
Bagalkot	22	1513.63	2076	2001	2116	200,082	3.44	4.43	3.13

Bijapur	23	562.22	1548	1798	1879	165,168	3.33	4.64	3.85
Dharwad	10	520.83	1042	1189	1191	119,632	2.82	2.82	4.33
Gadag	13	396.10	992	1004	1022	94,392	2.09	2.54	2.99
Haveri	20	530.07	1595	1617	1569	143,399	3.07	3.84	6.35
Uttar Kannada	7	620.90	1758	1832	1844	90,301	2.73	1.83	1.65
<b>Belgaum Division</b>		<b>534.49</b>	<b>12928</b>	<b>13530</b>	<b>14253</b>	<b>1,203,221</b>	<b>4.38</b>	<b>4.91</b>	<b>5.75</b>

Haveri	20	1475.46	1883	1830	1912	165,804	3.76	4.58	4.85
Gadag	13	1360.24	1071	1059	1106	104,552	1.72	2.98	3.96
Dharwad	10	1532.95	1433	1377	1467	143,668	2.53	3.28	5.52
Belgaum	8	1454.22	5070	4882	5294	517,359	11.28	12.74	10.79
Uttar Kannada	7	2332.00	2462	2299	2679	118,741	2.96	1.85	1.85
<b>Belgaum Division</b>		<b>1585.59</b>	<b>16027</b>	<b>15297</b>	<b>16680</b>	<b>1,465,423</b>	<b>4.41</b>	<b>5.30</b>	<b>4.85</b>

District	HDI Rank	Per Capita Expenditure	AWWs	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Chamarajanagar	25	622.73	1300	1314	1315	87,374	2.28	1.93	0.39
Chickmagalur	9	506.29	1478	1531	1539	72,978	2.27	1.52	0.57
Dakshina Kannada	2	435.24	2010	2058	2068	102,289	3.01	2.01	1.52
Hassan	11	576.48	1954	2103	2110	102,665	2.72	1.99	0.45
Kodagu	4	617.57	815	836	840	39,897	1.49	0.69	0.32
Mandya	19	538.42	1868	2003	2055	119,302	4.06	2.18	0.65
Mysore	14	488.45	2301	2413	2492	172,741	4.40	3.99	1.11
Udupi	3	566.07	1060	1112	1115	65,082	2.03	1.22	0.66
<b>Mysore Division</b>		<b>543.91</b>	<b>12786</b>	<b>13370</b>	<b>13534</b>	<b>762,328</b>	<b>2.78</b>	<b>1.94</b>	<b>0.71</b>

District	HDI Rank	PCE	AWW	AWHs	AWCs	Total Beneficiaries	Normal	Moderate	Severe
Chamarajanagar	25	1811.67	1365	1294	1413	91,675	1.83	1.47	1.34
Mandya	19	1986.93	2487	2186	2526	132,540	3.67	1.71	1.40
Mysore	14	1700.09	2783	2568	2827	188,562	1.74	1.38	1.31
Hassan	11	2232.59	2437	2163	2491	109,693	2.55	1.60	0.70
Chickmagalur	9	2393.23	1799	1612	1821	74,892	1.94	1.18	1.28
Kodagu	4	3215.19	851	803	870	31,321	0.95	0.53	0.76
Udupi	3	2083.64	1135	1125	1146	73,442	2.48	0.68	1.11
Dakshina Kannada	2	2135.14	2078	2059	2102	119,006	3.32	1.41	1.27
<b>Mysore Division</b>		<b>2194.81</b>	<b>14935</b>	<b>13810</b>	<b>15196</b>	<b>821,131</b>	<b>2.31</b>	<b>1.24</b>	<b>1.15</b>

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

### Appendix 3: Number of Beneficiaries

District	2007/08			2008/09			2009/10			2010/11			2011/12			2012/13		
	Children (0-6)	Women	Total Beneficiaries	Children (0-6)	Women	Total Beneficiaries	Children (0-6)	Women	Total Beneficiaries	Children (0-6)	Women	Total Beneficiaries	Children (0-6)	Women	Total Beneficiaries	Children (0-6)	Women	Total Beneficiaries
Bagalkot	140,531	33,957	174,488	148,823	37,275	186,098	152,934	37,387	190,321	151,412	36,989	188,401	153,244	38,662	191,906	160,235	39,847	200,082
Bangalore Urban	83,315	19,683	102,998	85,531	22,236	107,767	96,198	25,192	121,390	104,372	25,954	130,326	102,592	25,773	128,365	140,715	33,941	174,656
Bangalore Rural	171,248	42,521	213,769	175,278	44,792	220,070	174,877	45,209	220,086	96,048	25,884	121,932	104,491	26,130	130,621	106,745	27,308	134,053
Belgaum	337,044	78,797	415,841	356,752	84,365	441,117	386,145	89,659	475,804	391,697	94,866	486,563	408,272	91,521	499,793	416,447	100,912	517,359
Bellary	150,218	37,687	187,905	149,553	40,636	190,189	153,016	40,767	193,783	163,803	41,642	205,445	182,269	44,566	226,835	200,725	50,142	250,867
Bidar	122,536	24,047	146,583	133,005	25,896	158,901	148,653	31,752	180,405	151,155	36,306	187,461	158,992	38,066	197,058	156,226	37,904	194,130
Bijapur	132,673	32,495	165,168	143,047	35,099	178,146	147,088	38,151	185,239	158,487	17,717	176,204	150,661	35,621	186,282	173,817	41,400	215,217
Chamarajanagar	70,867	16,507	87,374	72,683	17,688	90,371	72,848	17,202	90,050	78,762	16,976	95,738	71,539	17,089	88,628	75,025	16,650	91,675
Chickmagalur	60,079	12,899	72,978	60,304	13,695	73,999	62,081	13,248	75,329	59,435	13,575	73,010	59,372	13,758	73,130	60,820	14,072	74,892
Chitradurga	115,231	28,105	143,336	116,066	30,391	146,457	126,073	31,214	157,287	101,264	26,863	128,127	127,899	31,664	159,563	126,274	32,861	159,135
Dakshina Kannada	83,618	18,671	102,289	97,506	20,811	118,317	95,912	20,693	116,605	99,095	23,587	122,682	97,575	21,707	119,282	95,928	23,078	119,006
Davanagere	99,350	23,769	123,119	111,867	27,249	139,116	119,977	28,899	148,876	117,315	30,075	147,390	124,356	32,098	156,454	126,752	33,450	160,202
Dharwad	97,606	22,026	119,632	85,848	22,213	108,061	105,494	24,703	130,197	103,491	25,598	129,089	101,240	26,965	128,205	114,457	29,211	143,668
Gadag	76,463	17,929	94,392	79,333	17,819	97,152	78,833	19,197	98,030	77,005	18,992	95,997	77,495	19,779	97,274	83,338	21,214	104,552
Gulbarga	252,489	61,962	314,451	268,767	64,688	333,455	319,871	76,247	396,118	335,885	79,483	415,368	328,348	82,221	410,569	335,775	71,616	407,391
Hassan	83,288	19,377	102,665	83,905	20,436	104,341	87,736	21,542	109,278	78,759	21,022	99,781	83,428	21,047	104,475	88,135	21,558	109,693
Haveri	116,994	26,405	143,399	125,658	28,742	154,400	122,997	29,318	152,315	118,994	30,400	149,394	117,870	29,677	147,547	131,803	34,001	165,804
Kodagu	32,426	7,471	39,897	31,845	7,759	39,604	30,188	7,258	37,446	27,282	7,066	34,348	22,388	4,782	27,170	24,993	6,328	31,321
Kolar	85,189	20,812	106,001	90,494	22,514	113,008	93,754	24,169	117,923	172,261	46,449	218,710	168,428	45,296	213,724	188,676	47,152	235,828
Koppal	97,959	24,523	122,482	109,663	26,085	135,748	119,422	29,315	148,737	128,975	31,538	160,513	126,972	33,204	160,176	134,883	33,935	168,818
Mandya	95,623	23,679	119,302	102,159	24,839	126,998	102,272	26,104	128,376	98,462	25,868	124,330	98,523	25,205	123,728	105,724	26,816	132,540
Mysore	138,566	34,175	172,741	141,673	36,973	178,646	144,531	36,226	180,757	132,973	32,598	165,571	144,497	37,277	181,774	152,053	36,509	188,562
Raichur	146,038	29,001	175,039	168,198	40,562	208,760	181,192	44,185	225,377	207,352	54,132	261,484	223,021	55,148	278,169	250,032	52,653	302,685
Shimoga	82,006	17,780	99,786	91,069	20,701	111,770	94,448	21,631	116,079	93,053	23,502	116,555	97,004	23,176	120,180	103,637	24,543	128,180
Tumkur	159,011	35,137	194,148	159,974	36,875	196,849	161,122	37,333	198,455	155,499	36,449	191,948	154,713	37,041	191,754	155,170	37,596	192,766
Udupi	53,011	12,071	65,082	54,777	12,740	67,517	54,162	12,319	66,481	57,438	13,087	70,525	58,603	13,432	72,035	58,933	14,509	73,442
Uttar Kannada	75,160	15,141	90,301	83,205	18,147	101,352	94,299	18,993	113,292	93,189	20,255	113,444	95,119	20,191	115,310	97,851	20,890	118,741
<b>Total</b>	<b>3,158,539</b>	<b>736,627</b>	<b>3,895,166</b>	<b>3,326,983</b>	<b>801,226</b>	<b>4,128,209</b>	<b>3,526,123</b>	<b>847,913</b>	<b>4,374,036</b>	<b>3,553,463</b>	<b>856,873</b>	<b>4,410,336</b>	<b>3,638,911</b>	<b>891,096</b>	<b>4,530,007</b>	<b>3,865,169</b>	<b>930,096</b>	<b>4,795,265</b>

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

**Appendix 4: Number of Operational Anganwadi Centres and Mini Anganwadi Centres**

<b>District</b>	<b>2007/08</b>	<b>2008/09</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>
Bagalkot	1885	1885	2023	2047	2047	2116
Bangalore Urban	1457	1555	1742	1873	1873	2094
Bangalore Rural	3816	3863	4608	2729	2732	2734
Belgaum	4863	4865	4977	5294	5294	5294
Bellary	2067	2073	2117	2185	2185	2314
Bidar	1503	1580	1890	1890	1890	1890
Bijapur	1879	1879	2054	2106	2106	2106
Chamarajanagar	1315	1316	1381	1381	1381	1413
Chickmagalur	1539	1540	1816	1821	1821	1821
Chitradurga	1809	1811	2294	2301	2301	2318
Dakshina Kannada	2068	2063	2069	2098	2102	2102
Davanagere	1672	1678	2010	2010	2010	2045
Dharwad	1191	1194	1413	1420	1421	1467
Gadag	1022	1022	1033	1037	1037	1106
Gulbarga	3373	3373	4334	4334	4334	4334
Hassan	2110	2111	2468	2472	2472	2491
Haveri	1569	1656	1686	1689	1689	1912
Kodagu	840	847	868	869	870	870
Kolar	1639	1726	1962	3900	3902	3969
Koppal	1276	1370	1648	1648	1648	1792
Mandya	2055	2238	2479	2479	2479	2526
Mysore	2492	2493	2799	2827	2827	2827
Raichur	1882	2101	2401	2615	2635	2635
Shimoga	1960	2040	2403	2415	2415	2431
Tumkur	3374	3378	4081	4081	4081	4081
Udupi	1115	1115	1146	1146	1146	1146
Uttar Kannada	1844	1844	2679	2679	2679	2679
<b>Total</b>	<b>53615</b>	<b>54616</b>	<b>62381</b>	<b>63346</b>	<b>63377</b>	<b>64513</b>

\* Data source: Ministry of Women and Child Development, Bangalore, Karnataka

**Appendix 5: Number of Anganwadi Workers (AWW) and Anganwadi Helpers (AWHS)**

District	2007/08		2008/09		2009/10		2010/11		2011/12		2012/13	
	AWW	AWHS	AWW	AWHS	AWW	AWHS	AWW	AWHS	AWW	AWHS	AWW	AWHS
Bagalkot	1786	1867	1855	1879	1909	1894	1980	1969	1960	1881	2076	2001
Bangalore Urban	1535	1469	1544	1506	1739	1651	1830	1713	1842	1738	2070	1930
Bangalore Rural	3629	3741	3824	3857	4367	3970	2680	2325	2687	2296	2702	2316
Belgaum	4207	4223	4830	4856	4811	4843	4986	4947	5084	4836	5070	4882
Bellary	1869	2063	2018	2057	2020	2062	2120	2088	2150	2055	2247	2151
Bidar	1498	1499	1546	1576	1551	1737	1734	1798	1749	1689	1789	1726
Bijapur	1548	1798	1827	1870	1829	1868	2074	1928	2011	1784	2032	1849
Chamarajanagar	1300	1314	1309	1315	1353	1331	1369	1320	1343	1202	1365	1294
Chickmagalur	1478	1531	1527	1532	1596	1516	1745	1572	1758	1532	1799	1612
Chitradurga	1683	1774	1795	1800	2043	1923	2301	2185	2278	2140	2301	2163
Dakshina Kannada	2010	2058	2006	2060	2014	2048	2036	2036	2072	2047	2078	2059
Davanagere	1615	1660	1666	1671	1914	1811	1965	1890	1984	1876	2018	1932
Dharwad	1042	1189	1135	1179	1212	1370	1382	1370	1380	1343	1433	1377
Gadag	992	1004	1006	1012	1003	1016	1007	1005	1014	1004	1071	1059
Gulbarga	3347	3171	3332	3348	3378	3347	4127	3374	4203	3836	4275	4063
Hassan	1954	2103	2054	2103	2308	2141	2377	2101	2416	2151	2437	2163
Haveri	1595	1617	1646	1609	1637	1634	1672	1645	1667	1603	1883	1830
Kodagu	815	836	828	842	843	832	861	802	843	800	851	803
Kolar	1517	1637	1594	1723	1638	1771	3620	3565	3677	3278	3738	3505
Koppal	1274	1278	1362	1368	1549	1438	1631	1579	1635	1539	1724	1641
Mandya	1868	2003	2115	2004	2383	2152	2449	2149	2427	2130	2487	2186
Mysore	2301	2413	2486	2419	2656	2549	2735	2553	2791	2548	2783	2568
Raichur	1823	1880	1935	2053	2091	2050	2530	2131	2583	2308	2588	2471
Shimoga	1784	1851	1988	2014	2080	2043	2365	2079	2319	1947	2376	2063
Tumkur	3357	3375	3361	3371	3507	8022	4036	3507	4051	3507	4038	3532
Udupi	1060	1112	1083	1112	1102	1141	1127	1133	1132	1121	1135	1125
Uttar Kannada	1758	1832	1818	1837	2263	2156	2597	2418	2622	2387	2462	2299
<b>Total</b>	<b>50645</b>	<b>52298</b>	<b>53490</b>	<b>53973</b>	<b>56796</b>	<b>60316</b>	<b>61336</b>	<b>57182</b>	<b>61678</b>	<b>56578</b>	<b>62828</b>	<b>58600</b>

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

**Appendix 6: Levels of Nutrition (expressed as percentage)**

District	2007/08			2008/09			2009/10			2010/11			2011/12			2012/2013		
	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
Bagalkot	42.4	57.4	0.3	44.0	55.7	0.3	43.5	55.9	0.6	56.1	35.9	8.1	58.2	39.4	2.4	65.4	33.5	1.1
Bangalore Urban	59.5	40.5	0.0	61.6	38.4	0.0	61.9	38.1	0.0	70.9	28.1	1.0	80.0	19.4	0.6	80.8	17.7	1.5
Bangalore Rural	59.7	40.3	0.1	61.7	38.3	0.1	62.9	37.0	0.1	73.1	25.1	1.8	80.5	18.8	0.7	82.4	16.8	0.8
Belgaum	45.0	54.6	0.4	44.6	54.9	0.4	46.9	52.7	0.4	58.8	39.0	2.2	61.1	37.5	1.4	68.2	30.6	1.2
Bellary	36.8	62.6	0.6	36.0	63.4	0.6	38.5	61.0	0.5	60.8	34.0	5.1	59.6	37.6	2.7	60.6	37.5	2.0
Bidar	37.1	62.5	0.4	36.6	63.1	0.3	37.2	62.6	0.3	NA	NA	NA	43.8	55.7	0.5	60.5	38.9	0.7
Bijapur	39.3	60.4	0.3	40.2	59.5	0.4	42.5	57.1	0.4	NA	NA	NA	61.7	36.4	1.9	63.8	35.3	0.9
Chamarajanagar	51.6	48.3	0.1	53.3	46.6	0.1	54.9	45.0	0.1	NA	NA	NA	70.6	28.3	1.1	75.0	24.0	1.0
Chickmagalur	57.4	42.5	0.1	57.6	42.3	0.1	58.3	41.6	0.1	63.7	33.5	2.8	77.0	22.0	1.0	79.8	19.2	1.0
Chitradurga	49.0	50.8	0.2	46.8	52.9	0.3	48.2	51.5	0.3	56.6	37.5	5.8	68.4	29.0	2.6	72.2	26.3	1.6
Dakshina Kannada	57.5	42.4	0.2	59.4	40.5	0.2	59.3	40.6	0.1	76.1	21.8	2.1	81.1	18.0	1.0	85.0	14.3	0.6
Davanagere	45.3	54.3	0.4	49.8	49.8	0.4	49.9	49.8	0.3	65.5	32.1	2.4	70.9	27.4	1.7	74.1	24.7	1.2
Dharwad	47.4	52.2	0.4	49.5	50.0	0.5	49.1	50.4	0.5	60.7	35.7	3.6	63.4	33.9	2.8	64.3	33.1	2.6
Gadag	42.6	57.0	0.4	41.1	58.5	0.4	41.1	58.6	0.3	58.0	37.8	4.2	56.4	40.3	3.3	57.7	39.8	2.5
Gulbarga	42.9	56.8	0.3	43.3	56.4	0.3	45.9	53.8	0.2	NA	NA	NA	60.2	38.6	1.2	67.3	31.1	1.6
Hassan	55.3	44.6	0.1	57.6	42.3	0.1	57.6	42.4	0.1	68.0	30.9	1.2	75.9	23.6	0.5	79.7	19.9	0.4
Haveri	41.8	57.7	0.5	42.3	57.1	0.6	41.7	57.8	0.6	58.1	35.5	6.5	61.3	35.8	2.9	66.3	32.1	1.6
Kodagu	66.1	33.8	0.1	67.5	32.4	0.1	67.9	31.9	0.1	74.9	23.4	1.6	69.8	29.7	0.5	80.8	18.0	1.2
Kolar	49.9	50.0	0.1	49.8	50.1	0.1	51.7	48.2	0.1	70.7	28.3	1.0	68.7	30.1	1.1	75.6	23.6	0.7
Koppal	33.7	65.6	0.8	35.3	63.9	0.8	35.6	63.8	0.6	NA	NA	NA	51.3	45.1	3.6	53.4	43.5	3.1
Mandya	62.8	37.1	0.1	63.8	36.2	0.0	65.1	34.9	0.0	72.9	24.7	2.4	81.0	18.4	0.6	83.8	15.6	0.6
Mysore	50.0	49.9	0.1	53.8	46.2	0.1	54.8	45.1	0.1	71.8	26.8	1.4	72.3	26.7	0.9	75.1	23.8	1.1
Raichur	32.7	66.6	0.7	32.8	66.6	0.5	28.1	71.4	0.5	55.0	35.3	9.6	54.9	42.2	2.9	59.6	38.4	2.1
Shimoga	50.8	49.0	0.1	49.7	50.1	0.2	53.0	46.8	0.1	69.4	28.9	1.7	76.2	22.4	1.4	79.9	18.8	1.3
Tumkur	59.7	40.2	0.1	59.8	40.1	0.1	62.2	37.7	0.1	70.9	25.7	3.4	80.0	19.1	0.8	83.0	16.3	0.7
Udupi	60.0	39.9	0.1	64.4	35.5	0.1	65.3	34.7	0.1	77.6	20.9	1.5	87.8	11.6	0.6	89.5	9.7	0.8
Uttar Kannada	57.4	42.4	0.2	57.6	42.2	0.2	60.1	39.8	0.2	67.9	28.7	3.3	74.8	24.4	0.8	79.3	19.8	0.9
<b>Total</b>	47.4	52.3	0.3	48.0	51.7	0.3	49.1	50.6	0.3	64.4	32.1	3.5	65.9	32.5	1.6	70.6	28.1	1.3

\* Data source: Ministry of Women and Child Development, Bangalore, Karnataka; \* NA – Not available



**Appendix 7: Total Expenditure (in Lakh Indian rupees)**

District	2007/08		2008/09		2009/10		2010/11		2011/12		2012/13	
	ZP Release	Expenditure	ZP Release	Expenditure	ZP Release	Expenditure	ZP Release	Expenditure	ZP Release	Expenditure	ZP Release	Expenditure
Bagalkot	999.72	938.45	1028.62	1026.46	2189.47	1817.18	2261.9	2261.9	2325.09	2352.9	2663.77	3028.51
Bangalore Urban	594.03	560.5	608.56	606.94	1492.1	1323.05	1608.02	1608.02	1874.75	1874.75	2226.68	2226.68
Bangalore Rural	1453.86	1353.37	1548.57	1491.87	3714.29	2840.2	2077.31	2077.31	2080.27	2275.7	2738.62	2950.57
Belgaum	2449.48	2384.78	2518.91	2393.07	5114.52	5040.66	5867.14	5867.14	5874.81	5947.56	7304.17	7523.54
Bellary	1121.67	1068.84	1151.28	1148.32	2263.24	2181.5	2515.21	2515.21	3825.57	3825.57	3327.26	3327.25
Bidar	912.2	666.67	948.69	956.73	1883.3	1808.56	2234.4	2234.4	2372.77	2372.77	2188.09	2494.56
Bijapur	934.17	928.61	957.94	958.11	1974.5	1881.37	2215.05	2215.05	2629.56	2629.56	3078.92	3078.92
Chamarajanagar	595.99	544.1	614.84	606.19	1269.92	1106.57	1266.1	1266.1	1227.75	1294.82	1599.27	1660.85
Chickmagalur	462.39	369.48	550.88	550.91	1558.28	747.46	1630	1630	1474.22	1474.22	1452.52	1792.34
Chitradurga	946.78	916.63	978.88	974.9	2059	1755.13	2258.62	2258.62	2059.33	2264.3	2795.99	2888.66
Dakshina Kannada	815.54	445.2	834.7	684.52	2072.68	1153.59	1939	1939	1649.58	1988.6	1852.16	2540.95
Davanagere	846.04	598.28	900.4	838.05	1695.2	1354.72	1942.67	1942.67	2018.35	2018.35	2110.28	2598.16
Dharwad	679	623.08	694.51	661.26	1247.24	1153.21	1567.53	1567.53	1995.36	1995.36	2202.36	2202.36
Gadag	531.07	373.89	588.54	571.7	1070.42	883.26	1106.12	1106.12	1165.68	1165.68	1422.16	1422.16
Gulbarga	1804.24	1713.6	1863.39	1949.42	3866.46	3874.26	4889.58	4889.58	6509.13	6509.13	5958.32	5958.31
Hassan	791.74	591.84	813.81	675.92	1952.19	1089.03	1913.12	1913.12	1594.59	1911.12	1960.83	2449
Haveri	891.22	760.11	915.74	907.14	1676.53	1517.6	1751.35	1751.35	1897.7	1897.7	2446.38	2446.37
Kodagu	283.94	246.39	293.46	250.99	766.27	384.84	770.27	770.27	736.39	787.43	626.72	1007.03
Kolar	648.78	597.5	753.65	738.34	1803.35	1278.88	3508	3508	3398.31	3587.21	3999.59	4542.13
Koppal	710.78	695.04	728.59	723	1983.11	1676.78	2009.63	2009.63	2069.65	2093.66	2554.44	2577.97
Mandya	832.41	642.35	853.91	765.35	1936.61	1403.41	1873	1873	1954.64	2145.79	2323.5	2633.48
Mysore	1032.39	843.75	1058.96	1027.36	2279.38	1424.88	2497.12	2497.12	2541.32	2543.3	2971.82	3205.72
Raichur	998.76	998.89	1021.74	1014.46	3397.74	2746.1	2872.71	2872.71	4308.23	4308.23	4090.96	4154.39
Shimoga	802.32	544.22	823.36	784.01	1757.63	1249.75	1873	1873	1682.67	1949.55	2063.91	2402.91
Tumkur	1386.89	1202.55	1425.07	1183.82	3051	1952.97	3148	3148	2728.98	3198.32	3411.64	4100.87
Udupi	432.4	368.41	449.7	428.71	1193.81	689.59	1200	1200	993.36	1210.18	1157.78	1530.27
Uttar Kannada	714.67	560.68	730.62	727.35	2047.33	1139.35	2140	2140	2238.15	2292.55	2599.53	2769.04
<b>Total</b>	<b>24672.48</b>	<b>21537.21</b>	<b>25657.32</b>	<b>24644.9</b>	<b>57315.57</b>	<b>45473.9</b>	<b>60934.85</b>	<b>60934.85</b>	<b>65226.21</b>	<b>67914.31</b>	<b>73127.67</b>	<b>79513</b>

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

**Appendix 8: Per Capita Expenditure (in Indian rupees)**

<b>District</b>	<b>2007/08</b>	<b>2008/09</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>
Bagalkot	537.83	551.57	954.80	1200.58	1226.07	1513.63
Bangalore Urban	544.19	563.20	1,089.92	1233.84	1460.48	1274.89
Bangalore Rural	633.10	677.91	1,290.50	1703.66	1742.22	2201.05
Belgaum	573.48	542.50	1,059.40	1205.83	1190.00	1454.22
Bellary	568.82	603.78	1,125.74	1224.27	1686.50	1326.30
Bidar	454.81	602.09	1,002.50	1191.93	1204.10	1284.99
Bijapur	562.22	537.82	1,015.64	1257.09	1411.60	1430.61
Chamarajanagar	622.73	670.78	1,228.84	1322.46	1460.96	1811.67
Chickmagalur	506.29	744.48	992.26	2232.57	2015.89	2393.23
Chitradurga	639.50	665.66	1,115.88	1762.80	1419.06	1815.23
Dakshina Kannada	435.24	578.55	989.31	1580.51	1667.14	2135.14
Davanagere	485.94	602.41	909.97	1318.05	1290.06	1621.80
Dharwad	520.83	611.93	885.74	1214.30	1556.38	1532.95
Gadag	396.10	588.46	901.01	1152.24	1198.35	1360.24
Gulbarga	544.95	584.61	978.06	1177.17	1585.39	1462.55
Hassan	576.48	647.80	996.57	1917.32	1829.26	2232.59
Haveri	530.07	587.53	996.36	1172.30	1286.17	1475.46
Kodagu	617.57	633.75	1,027.72	2242.55	2898.16	3215.19
Kolar	563.67	653.35	1,084.50	1603.95	1678.43	1926.04
Koppal	567.46	532.60	1,127.35	1252.00	1307.10	1527.07
Mandya	538.42	602.65	1,093.20	1506.47	1734.28	1986.93
Mysore	488.45	575.08	788.28	1508.19	1399.15	1700.09
Raichur	570.67	485.95	1,218.45	1098.62	1548.78	1372.51
Shimoga	545.39	701.45	1,076.64	1606.97	1622.19	1874.64
Tumkur	619.40	601.38	984.09	1640.03	1667.93	2127.38
Udupi	566.07	634.97	1,037.27	1701.52	1679.99	2083.64
Uttar Kannada	620.90	717.65	1,005.68	1886.39	1988.16	2332.00
<b>Total</b>	<b>552.92</b>	<b>596.99</b>	<b>1,039.63</b>	<b>1381.64</b>	<b>1499.21</b>	<b>1658.16</b>

\*Data source: Ministry of Women and Child Development, Bangalore, Karnataka

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