

## DEMAND ANALYSIS

1. This background note begins with a brief description of the educational profile of Kerala. This is followed by an analysis of key employment trends based on India's National Sample Survey and Annual Survey of Industries to understand the projected trend in demand for skilled labor across the different sectors and sub-sectors within Kerala. The purpose of this exercise is to ascertain the relevance of the vocational courses being offered under the Government of Kerala's Additional Skill Acquisition Program (ASAP).

### A. Kerala – Brief Education Profile

2. **Education.** The table below details the proportion of age-specific (cohort) population entering each school level:<sup>1</sup>

**Table 1: Proportion of Age-Specific (Cohort) Population**

	Educational Level	1946–1956	1956–1966	1966 –1976	1976–1986	1986–1996	1996–2006
<b>TOTAL</b>	Primary School	77.7%	88.0%	93.3%	96.6%	98.5%	99.3%
	Upper Primary School	47.4%	61.2%	74.8%	85.7%	95.2%	96.8%
	High School	21.7%	35.9%	51.1%	65.0%	79.8%	90.6%
	Higher Secondary School	6.4%	10.8%	13.5%	22.0%	30.3%	45.0%
<b>MALES</b>	Primary School	86.3%	91.9%	96.9%	97.7%	98.4%	99.3%
	Upper Primary School	58.8%	68.9%	80.5%	88.7%	95.4%	96.7%
	High School	30.8%	43.8%	60.0%	68.9%	78.4%	89.6%
	Higher Secondary School	11.1%	15.7%	16.2%	24.6%	26.8%	40.7%
<b>FEMALES</b>	Primary School	70.1%	84.6%	90.3%	95.8%	98.6%	99.4%
	Upper Primary School	37.9%	54.2%	69.9%	83.2%	95.0%	96.9%
	High School	14.5%	28.4%	43.3%	61.7%	81.0%	91.4%
	Higher Secondary School	3.0%	6.5%	11.2%	19.8%	33.1%	49.2%

Source: On the Diffusion of School Educational Attainment in Kerala State, Centre for Development Studies, 2011.

3. It is observed that there is a higher degree of drop-outs for males as compared to females during the transition between upper primary to higher school (Male: 7.1%; Female: 5.5%) and high school to higher secondary school (Male: 48%; Female: 42%). Probability of continuing schooling up to higher secondary was observed to be 0.55 for male students and 0.69 for female students. Table 2 shows the female dominance at all levels of higher education:

<sup>1</sup> On the Diffusion of School Educational Attainment in Kerala State, Centre for Development Studies, 2011.

**Table 2: Female Dominance in Higher Education**

	Integrated	Certificate	Diploma	PG Dip.	UG	PG	M Phil	PhD
Male	754	650	23,112	30	230,286	24,823	186	1,418
Female	1,040	6,253	32,490	133	300,704	41,909	413	1,451

Source: Annual Status of Higher Education of States and Union Territories in India, November 2013.

4. The continuance of education by females for a longer duration has also constrained their workforce participation. Table 3 details per 1,000 distributions for persons aged 15 years and above by educational classification according to usual principal status approach:

**Table 3: Per 1,000 Distribution for Person (15 years old and above)**

Educational Classification	Employed		Unemployed		Not in Labor Force	
	Male	Female	Male	Female	Male	Female
Not literate	431	119	4	2	565	879
Below Primary	598	213	0	4	402	782
Primary	677	154	3	8	321	838
Middle	746	181	9	16	245	803
Secondary	647	137	26	50	327	812
Higher secondary	460	145	66	101	474	754
Diploma/ certificate	566	211	64	207	370	583
Graduate	606	288	110	212	284	500
Post graduate & above	666	425	29	165	305	410
<b>Overall</b>	<b>634</b>	<b>175</b>	<b>30</b>	<b>59</b>	<b>336</b>	<b>766</b>

Source: Government of India, Ministry of Labour and Employment. 2013. *Report on Employment & Unemployment Survey, 2012-13*. Delhi.

## B. Demand Analysis

5. **Key assumptions.** (i) Industry growth will follow the sector-specific cumulative average rate of growth during the past 7 years; (ii) skills requirements will follow the same rate of growth of the industry; (iii) gender proportion at population, workforce, migration, etc., as recorded in actual by FY2011, will continue to remain through FY2017; and (iv) occupational opportunities and preferences continue to remain the same through FY2011–2017.<sup>2</sup> Suitable adjustments are made for new occupation profiles and changing aspirations of the youth.

6. **Sector analysis.** During the past 7 years, there is evidence of transition in the economic structure of the state—between primary (FY2005: 18% of the gross domestic product [GDP] to FY2012: 9% to GDP) to tertiary (FY2005: 60% of GDP to FY2012: 70% of GDP). The secondary sector seems to be stuck at the 20% range (FY2005: 23% to GDP to FY2012: 20% to GDP). However, given the state's development plans to promote growth of manufacturing sector,<sup>3</sup> there is considerable scope for continued growth.

7. Kerala is faced with a complex challenge, due to the compounded impact of the following factors:

<sup>2</sup> The fiscal year (FY) of the Government of India ends on 31 March. "FY" before a calendar year denotes the year in which the fiscal year starts, e.g., FY2014 begins on 1 April 2014 and ends on 31 March 2015.

<sup>3</sup> State Level Actions to Promote Growth of Manufacturing (*Resources and Capability Review*), Centre for Research, Planning & Action, July 2012.

- (i) higher dependence of the economy on growth in tertiary sector, with a constrained secondary sector;
- (ii) sudden and rapid decline of agriculture which provided employment opportunities for a large number of women, especially those residing in rural areas;
- (iii) over 60% of the population with higher educational attainments (above Class X) emigrating or migrating outside the state for better employment;
- (iv) reduction in the proportion of emigrants, coupled with higher return emigrants and inter-state out migrants;
- (v) higher proportion of male student drop outs by Class X, in contrast to increase in duration and higher educational attainment of female students not available for the labour market and also not meeting the skills demands that can catalyse industry growth; and
- (vi) increase in dependent (aged) population.

**Table 4: Trend in GSDP (at Factor Cost by Industry of Origin) at Constant Prices (2004–2005)**

Sectors/Subsectors	FY 2010		FY2011		FY2012	
	Share %	% Change	Share %	% Change	Share %	% Change
<b>PRIMARY SECTOR</b>						
Agriculture & Allied	11.5%	-1.6%	10.1%	-4.6%	9.1%	-1.0%
Agriculture	9.0%	-3.1%	7.9%	-4.5%	7.2%	-1.6%
Forestry & Logging	1.4%	3.1%	1.2%	-4.5%	1.1%	2.0%
Fishing	1.1%	5.7%	0.9%	-4.9%	0.8%	-0.1%
Mining & Quarrying	0.5%	34.6%	0.4%	-17.3%	0.3%	8.1%
<b>Total Primary Sector</b>	<b>11.9%</b>	<b>-0.5%</b>	<b>10.5%</b>	<b>-5.1%</b>	<b>9.5%</b>	<b>-0.7%</b>
<b>SECONDARY SECTOR</b>						
Manufacturing	7.6%	0.3%	7.6%	8.4%	7.4%	6.4%
Registered	3.3%	-2.4%	3.4%	10.9%	3.3%	6.4%
Unregistered	4.3%	2.5%	4.2%	6.5%	4.1%	6.4%
Construction	11.7%	11.3%	11.8%	8.9%	11.6%	7.8%
Electricity, Gas & Water Supply	1.3%	17.7%	1.3%	3.4%	1.3%	2.9%
Electricity	1.1%	16.5%	1.1%	2.1%	0.9%	1.4%
Gas	0.03%	3.3%	0.02%	3.2%	0.02%	3.5%
Water Supply	0.2%	30.2%	0.2%	12.6%	0.2%	13.5%
<b>Total Secondary Sector</b>	<b>20.63%</b>	<b>7.35%</b>	<b>20.70%</b>	<b>8.38%</b>	<b>20.23%</b>	<b>7.03%</b>
<b>TERTIARY SECTOR</b>						
Transport, Storage & Communication	13.8%	18.0%	14.8%	16.0%	16.1%	18.6%
Railways	0.5%	10.4%	0.5%	5.7%	0.5%	9.1%
Other Transports	7.4%	14.7%	7.3%	6.2%	7.3%	9.2%

Sectors/Subsectors	FY 2010		FY2011		FY2012	
	Share %	% Change	Share %	% Change	Share %	% Change
Storage	0.1%	9.9%	0.1%	13.9%	0.1%	10.8%
Communications	5.8%	23.3%	7.0%	29.3%	8.3%	29.2%
Trade, Hotels & Restaurants	21.2%	12.6%	21.4%	9.1%	21.4%	9.5%
Banking & Insurance	6.8%	10.4%	7.1%	13.5%	7.5%	14.5%
Real Estate Ownership, Business, Legal	11.6%	4.6%	11.3%	5.5%	11.3%	8.9%
Public Administration	3.9%	-2.7%	4.1%	13.2%	4.0%	8.0%
Other Services	10.2%	17.6%	10.1%	7.1%	10.1%	9.5%
<b>Total Tertiary Sector</b>	<b>67.5%</b>	<b>11.7%</b>	<b>68.8%</b>	<b>10.3%</b>	<b>70.3%</b>	<b>11.8%</b>

GSDP = gross state domestic product.

Source: Government of Kerala. 2013. *Gross Domestic Product of Kerala and India from 2004-05 to 2011-12*. Thiruvananthapuram.

8. The demand analysis (Table 4) shows that the key growth sectors in the state include:
- (i) **Communication**, which consistently grew with 2% contribution to GDP in FY2005 to 8% in FY2012;
  - (ii) **Banking and insurance**, which contributed over 5% to the GDP in FY2005 has steadily grown to contributing to over 7%;
  - (iii) **Construction**, consistently contributes to over 12% of the GDP between FY2005 to FY2012;
  - (iv) **Tourism sector**, especially the Trade, Hotels & Restaurants sub-sectors, continues to dominate the state's economic structure with its consistent contribution of over 21%; and
  - (v) **Real estate ownership, business, legal, etc.**, consistently contributes to over 11% of the GDP over FY2005–2012.

9. Table 5 estimates the additional demand for skilled workforce assuming the above growth patterns will continue until FY2017.

**Table 5: Estimated Sector and Sub-Sector-Wise Additional Workforce Demand (FY2017)**

Sector/Sub-Sector	Manpower Demand	
	Male	Female
<b>Primary Sector</b>	<b>(88,542)</b>	<b>(39,905)</b>
Agriculture, Forestry, and Fishing	(94,469)	(39,905)
Mining and Quarrying	5,927	
<b>Secondary Sector</b>	<b>1,607,996</b>	<b>502,799</b>
Manufacturing	479,876	227,033
Electricity, gas, steam, and air conditioning supply	3,072	389
Water supply, sewerage, waste management, and remediation activities	2,047	7,386
Construction	1,123,001	267,991

<b>Tertiary Sector</b>	<b>3,637,422</b>	<b>1,120,978</b>
Wholesale and retail trade; repair of motor vehicles and motorcycles	913,384	173,421
Transportation and storage	1,457,904	40,263
Accommodation and Food service activities	137,008	22,297
Information and Communication	198,806	75,493
Financial and Insurance activities	125,345	64,906
Real estate activities	113,842	-
Professional, scientific and technical activities	455,365	572,557
Administrative and support service activities	39,427	5,192
Public administration and defence; compulsory social security	21,403	2,263
Education	16,897	16,906
Human health and social work activities	13,518	9,186
Arts, entertainment and recreation	7,886	133
Other service activities	104,105	37,061
Activities of households as employers; undifferentiated goods and services producing activities of households for own use	32,532	101,300
	<b>5,156,876</b>	<b>1,583,872</b>

#### Total Additional Workforce by FY2017

Source: Asian Development Bank analysis.

10. Table 6 shows details of the sub-sectors with current and projected levels of strong, moderate, and low employment demand in a gender-disaggregated manner.

**Table 6: Summarizing Key Current and Emerging Trends in Labor Demand**

	<b>Occupational Profile with STRONG Employment Prospects</b>
	Occupational Profile with MODERATE Employment Prospects
	Occupational Profile with VERY LOW Employment Prospects

Occupational Profile	Current		Projected	
	Male	Female	Male	Female
<b>Primary Sector</b>				
Agriculture, Animal husbandry labourers				
Cultivator				
Fishermen / Fish related work				
Mining and quarry worker				
<b>Secondary Sector</b>				
<b>Manufacturing</b>				
Blacksmith				
Chemical engineer				
Fabrication worker				
Food processing and related worker				
Machinery repair worker / Welder				
Manufacturing labourer				
Mechanical engineer				
Shoe maker				
<b>Construction</b>				
Brick layer				
Building electrician				
Carpenter				

Occupational Profile	Current		Projected	
	Male	Female	Male	Female
Civil engineer (construction)	Yellow	Red	Green	
Civil engineer (design)			Green	Green
Construction worker / labourer	Green	Yellow		
Contractor	Yellow	Red		
Crane operator / Lift operator / Safety officer	Red	Red		
Electrical engineer	Yellow	Red		
Electrician	Green	Red		
Floor layer	Yellow	Red		
Plumber / pipe fitter	Green	Red		
Electricity, Gas & Water Supply	Yellow	Yellow		
<b>Tertiary Sector</b>				
<b>Transport &amp; Storage</b>				
Automobile Engineer	Red	Red		
Heavy truck and lorry driver	Yellow	Red		
Loading / Unloading worker	Green	Red		
Locomotive engine driver	Red	Red		
Motor vehicle driver	Green	Red		
Motor vehicle mechanic	Green	Red		
Porter in railway station / airport	Yellow	Red		
Storekeeper	Yellow	Red		
Transport labourer	Green	Red		
Vehicle cleaner	Yellow	Red		
<b>Communication</b>				
Computer Professional, Assistant	Yellow	Green	Yellow	Yellow
Data entry operator	Red	Red	Yellow	Yellow
Cable layer and related work	Yellow	Red	Green	Red
<b>Trade, Hotels &amp; Restaurants</b>				
Bakery worker	Yellow	Red		
Barber / hairdresser	Yellow	Red		
Beautician	Red	Red	Red	Green
Book binding related worker	Yellow	Red		
Cook in Hotels and Restaurants	Yellow	Red		
Physical Fitness & Dietician			Yellow	Green
Hotel administration staff	Yellow	Red		
Proprietor	Green	Red		
Shop Salesman	Green	Green		
Street vender	Yellow	Red		
Tourist Guides & Language Translators			Yellow	Red
Waiter in restaurant	Yellow	Red		
<b>Banking &amp; Insurance</b>				
Actuary			Yellow	Yellow
Credit Analysts			Yellow	Green
Capital Markets Analysts			Yellow	Yellow
Commodity Markets Agents			Yellow	Yellow
Insurance agent	Yellow	Red	Green	Red

Occupational Profile	Current		Projected	
	Male	Female	Male	Female
Money lender				
<b>Real Estate Ownership, Business, Legal, etc.</b>				
Advocate & Legal service				
Facilities Management				
Site agent				
Site supervisor				
<b>Public Administration</b>				
Cashier, ticket clerks, clerks, accountant				
Door keeper and Security staff				
Journalists / Newspaper reporter / editor				
Manager				
Messenger				
Office clerk / accounting clerk				
Peon				
Politician				
Project Management				
Sweeper and related worker				
<b>Other Services</b>				
Chartered Accountant / Cost Accountant				
Child care worker / Anganwadi worker				
Doctor				
Domestic helper				
Geriatrics/ Palliative Care				
Household worker / Maid / Servant				
Housekeeper / cook in households				
Laboratory / X-ray Technician				
Naturopathy/ Nature Therapy				
Nurse and Nursing assistant				
Painter				
Pharmacist				
Photography related worker				
Physiotherapy				
Poojari / Pastor				
Repair of electronic equipments				
Sewer / embroidery related work				
Tailor / dress maker				
Teacher / Lecturer				
Washer man				

Source: Asian Development Bank analysis

11. Table 6 shows that the tertiary sector, in particular communication; banking, finance, and insurance; hospitality and tourism; and health care will see robust growth in terms of labor demand in the coming years. These are also the areas where ASAP is offering vocational training. Some of ASAP's training courses being offered as of July 2014 are summarized below:

- (i) **Communication.** Vocational courses for basic information technology, data entry operators, mobile communication, PC hardware and networking, optical fibre

communication, mobile handset salesmen, and various business process outsourcing-related jobs.

- (ii) **Banking, finance, and insurance.** Vocational courses to train as certified capital markets professionals, mutual fund and insurance agents, banking services associates, loan advisors, accountants, and customer care executives.
- (iii) **Allied health care.** Certificate courses to train as Dental Assistants, Community Nursing, and Palliative Care Assistants.
- (iv) **Hospitality.** Certificate courses to train in Hospitality Management, Food & Beverages, Front office Management, and Housekeeping Operations.
- (v) **Electronics.** Certificate courses to train in Electronic Product Testing and Printed Circuit Board Manufacturing.
- (vi) **Other growth areas.** Certificate course to train as Retail Associates, Plumbing Associates, Media Correspondent, and Junior Rubber Technicians.

12. It needs to be noted that these areas also match with the emerging youth aspirations as noted in the Kerala Skill-Gap Study, 2013 commissioned by the National Skill Development Corporation.<sup>4</sup> Table 7 provides details.

**Table 7: Youth Aspirations in Kerala**

<b>INCREMENTAL MANPOWER DEMAND</b>	<b>High</b>	Building Construction	Communication	BFSI
	<b>Medium</b>	Food Processing	Retail Real Estate Services Chemicals and Pharmaceuticals Travel, Tourism, and Hospitality	IT & ITes Health care Engineering Products-MSME Education and Skills Development
	<b>Low</b>	Handlooms and Handicrafts	Utilities Transportation and Logistics Textiles and Garments	Media Entertainment
		<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>YOUTH ASPIRATIONS</b>				

BFSI = Banking, Financial Services and Institutions, IT = information technology, ITES = information technology-enabled services, MSME = Ministry of Micro, Small, and Medium Enterprises.

Source: Kerala Skill-Gap Study, 2013

<sup>4</sup> Government of India, National Skill Development Corporation. 2013. *District-wise Skill-Gap Study of Kerala, 2012–2022*. Delhi.