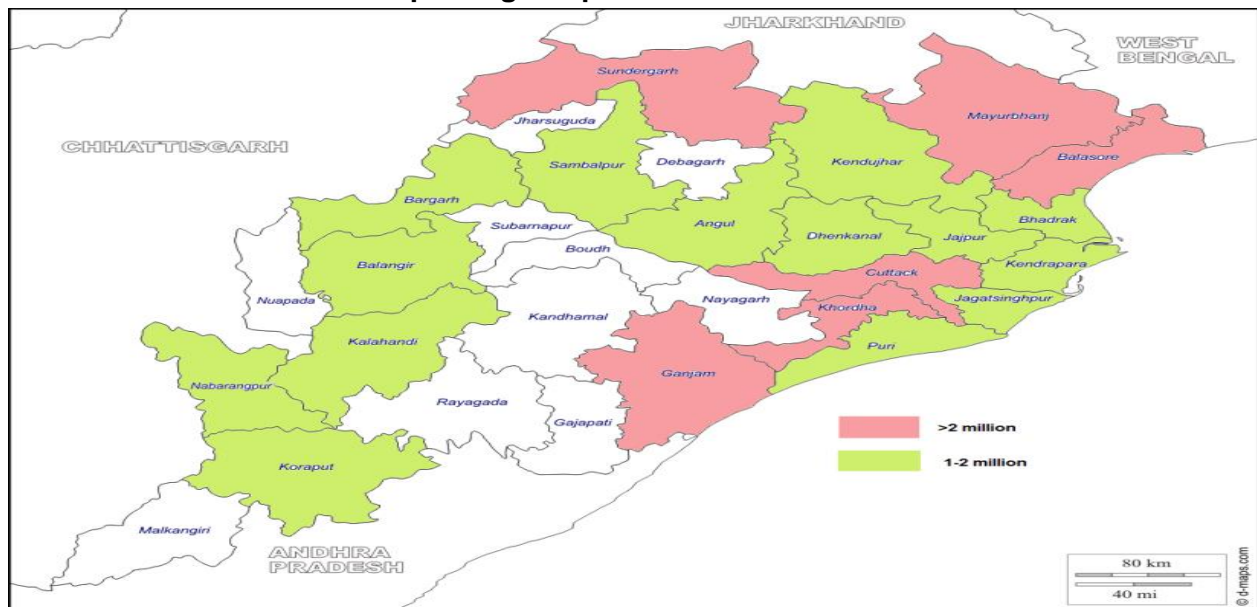


## DEMAND ANALYSIS

### A. Population Analysis

1. Odisha is a diverse state with few pockets of growth. According to the Census of India 2011, the population of Odisha is about 42 million with an uneven geographic distribution. Out of the 30 districts, six districts have a population of 2 million and above, accounting for 36% of the state's population. Another 14 districts have a population of 1 million and above and account for another 48% of the population. Therefore, nearly 84% of the total population resides in just 20 districts of the state (Map 1).

**Map 1: High Population Districts in Odisha**



Note: Data are from the project preparatory technical assistance analysis.  
Source: Government of India. National Sample Survey, 2011–2012. New Delhi.

2. In a migration survey conducted in 2007–2008 as part of the National Sample Survey, nearly 11.4 million people from Odisha had a migratory status—almost 10.4 million moved within Odisha while 1.0 million people moved out of Odisha. Around 38% migrants were located in the coastal regions of Odisha and 33% were located in the northern regions. Among the other states, the largest number of people from Odisha located to Chhattisgarh (22.0%), followed by Andhra Pradesh (15.5%), West Bengal (14.3%), Maharashtra (11.3%), Gujarat (7.9%), and Uttar Pradesh (7.3%). Of those who migrated within Odisha, 17.8% reported to be working in the trade, hotel, and restaurant sector; 15.5% in manufacturing; 9.3% in transport; and 8.7% in construction.

3. The state also has the largest population proportion of tribals in the country. The scheduled tribe population is 9.6 million (22.9%) and the scheduled caste population is 7.2 million (17.2%). The national average for scheduled tribe is 8.6% and scheduled caste is 16.6%.

4. The youth population in Odisha is at an all-time high with nearly 34% population aged 15–34. However, the socioeconomic statistics of this age group is weak. The unemployment rate for this age group is 6.8% (India: 5.8%), while the underemployment rate is much higher at 10.8% (India: 5.9%). Only 6.6% of the youth have diploma, graduate, or postgraduate

certificates; 32.5% have education just up to grade 8; another 25.0% is educated only up to grade 10; and less than 10.0% have any kind of vocational training or higher education. Youth having received or receiving formal vocational training in Odisha is 1.8% (2.5% for men and 1.1% for women); lower than the India average of 3.7%. The same indicator is 0.4% for scheduled tribe women and 0.5% for scheduled caste women.

## B. Workforce Analysis

5. The labor force participation rate (LFPR) as of 2011–2012 in Odisha is higher than the country average. The LFPR among women is also higher. However, the LFPR for women has significantly come down from 40.7% in 1999–2000 to 28.8% in 2011–2012 for those aged 15–34 and 43.2% to 34.7% for those aged 15–59 (Table 1). The same trend is also evident at the national level mainly triggered because of poor work conditions and poor wages (Table 1).

**Table 1: Labor Force Participation Rate—Time Series**

LFPR in PS +SS, 1991–2000; 2004–2005; 2011–2012												
LFPR	Odisha			All India			Odisha			All India		
	Ages 15–34						Ages 15–59					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1999–2000	79.1	40.69	59.1	79.1	37.26	58.4	87.3	43.16	65.0	86.5	41.47	64.4
2004–2005	85.4	47.02	65.2	79.6	40.53	60.2	90.4	49.74	69.8	87.1	45.4	66.6
2011–2012	80.1	28.76	53.2	70.9	27.52	49.5	89.5	34.67	61.6	82.7	33.11	58.3

LFPR = labor force participation rate

Note: Data from the project preparatory technical assistance analysis.

Source: National Sample Survey, 2011–2012.

6. There are 25.5% main workers, 16.3% marginal workers, and 58.2% nonworkers in Odisha, per the Census of India, 2011. Nearly 6.5 million (15%) of the population reported to be seeking or available for work. Of this, 4.2 million (65%) are aged 15–34.

**Table 2: Worker Profile**

S. No.	Worker Profile	Odisha (million)	Share (%)	India (million)
1	Total workers	17.54		482
2	Main workers	10.71		363
3	Marginal workers	6.83		119
4	Nonworkers	24.43		729
5	Marginal workers seeking or available for work	3.73		55
6	Nonworkers seeking or available for work	2.65		61
7	Seeking or available for work aged 15–34	4.19		77

Source: Government of India. Census of India, 2011.

7. A large number of the population is engaged in agriculture and allied sectors, but construction (12.9%) and manufacturing (8.9) are major sectors for nonfarm employment in Odisha. Another 9% are engaged in wholesale and retail trade and repair of vehicles. While all other sectors are in line with India averages, the construction sector dominates nonfarm employment in Odisha, compared to the manufacturing sector, which dominates nonfarm employment at the national level.

**Table 3: Sectoral Employment (%)**

S. No.	Sector	Odisha	India
1	Agriculture, forestry, and fishing	53.42	47.04
2	Manufacturing	8.93	12.58
3	Construction	12.97	10.71
4	Wholesale and retail trade; repair of motor vehicles and motorcycles	8.93	9.89
5	Transportation and storage	3.71	4.41
6	Education	3.13	3.10
7	Accommodation and food service	1.73	1.74
8	Public administration and defense; compulsory social security	1.40	1.82
9	Others (mining, electricity, gas, water supply, health care, ICT)	5.79	8.71

ICT = information and communication technology.

Note: Data are from the project preparatory technical assistance analysis.

Source: National Sample Survey, 2011–2012.

8. The agriculture sector has mostly workers with low education levels, while those who are able to complete secondary and higher education move into nonfarm activities such as manufacturing, wholesale and retail trade, transportation, etc. The construction sector also engages a number of people with low education levels and low training. Many farm laborers easily switch between construction and agriculture activities due to the seasonal nature of agriculture. Due to high entry barriers in the education and public administration sectors, the percentage of workers with high education levels are highest than any other sector.

**Table 4: Distribution of Workers in Odisha by Education Attained, 2011–2012**

	Distribution (PS + SS)					
	Illiterate	Up to Primary	Middle	Secondary and Higher Secondary	Diploma and Certificate Course	Graduate and Above
Agriculture, forestry, and fishing	39.68	26.76	23.67	8.72	0.03	1.14
Manufacturing	37.21	23.19	23.40	11.14	1.55	3.50
Construction	37.66	31.48	20.02	8.19	0.25	2.38
Wholesale and retail trade; repair of motor vehicles and motorcycles	14.66	18.62	31.49	24.48	0.65	10.1
Transportation and storage	14.83	27.91	32.99	17.66	0.28	6.33
Education	0.68	5.18	13.40	18.01	1.69	61.04
Accommodation and food service	8.54	42.42	29.20	18.97	0	0.87
Public administration and defense	2.70	6.25	15.95	37.42	0.72	36.95
Others (mining, electricity, gas, water supply, health care, ICT)	13.36	20.32	20.56	23.12	2.85	19.80
Total	32.86	25.40	23.70	12.03	0.47	5.55

ICT = information and communication technology

Note: Data are from the project preparatory technical assistance analysis.

Source: National Sample Survey, 2011–2012.

9. The movement of workers from agriculture and allied sectors is also an indication of the changing economy and greater dependence on the industry and services sectors. The employment share in industry in Odisha has gone up from 10.0% to 23.1% (by 13.09 bps<sup>1</sup> whereas India is up by 9.56 bps); while the services sector has gone up from 16.6% to 24.9% (by 8.39 bps while India is up by 6.47 bps). The share of agriculture sector has come down from 72.1% to 51.5% (by 20.63 bps compared to 15.82 bps at the all-India level).

<sup>1</sup> Basis percentage points.

**Table 5: Distribution of Workers Aged 15–59 in the Labor Force**

Year	Odisha					India			
	Agriculture	Mining	Industry	Services		Agriculture	Mining	Industry	Services
1993–1994	72.08	1.36	10.02	16.55		61.04	0.84	15.07	23.06
1999–2000	68.33	0.92	13.26	17.49		58.52	0.63	16.16	24.69
2004–2005	59.82	0.88	18.50	20.80		54.63	0.66	18.81	25.90
2009–2010	57.51	1.05	20.18	21.26		49.82	0.72	21.97	27.49
2011–2012	51.45	0.50	23.11	24.94		45.22	0.62	24.63	29.53

Note: Data are from the project preparatory technical assistance analysis.

Source: National Survey, 2011–2012.

10. Formal employment in the unorganized sector in Odisha is very high compared to the national average. This means that establishments of the unorganized sector (employing less than 10 workers) also provide benefits and security to its workers; therefore, respondents of the survey tend to term their employment as “formal.” However, for the rest of the country, the vastness of informal employment in the unorganized sector is a serious issue from the point of view of labor security and labor rights. As reported in the Annual Survey of Industries, 2012–2013 (Appendix 2), out of the total number of 213,082 workers reported across sectors in Odisha, 124,590 (58.5%) are employed through contractors.

**Table 6: Informal and Formal Employment in the Organized and Unorganized Sectors, 2011–2012 (%)**

Sector	PS + SS			Informal	Formal	Total
	Informal	Formal	Total			
	Odisha			All India		
Unorganized	81.50	5.07	86.57	82.37	0.33	82.70
Organized	6.35	7.08	13.43	9.45	7.85	17.30
Total	87.85	12.15	100.00	91.82	8.19	100.00

Note: Data are from the project preparatory technical assistance analysis.

Source: National Sample Survey, 2011–2012.

11. Nearly 58% of youth employment (aged 15–34) is “self-employment” whereas at the national level, more youth can find wage- or salary-based employment. This is mainly because of the slow growth of the organized sector in Odisha. It is also important to note that wages in Odisha for youth aged 15–34 are almost 36% lower than the national average, while it is at par with the national average for workers aged 15–59. This means that experienced labor in Odisha is more valued than young pass-outs or graduates, indicating lower significance and value given to “skill premium” for young pass-outs. Hardly 6% of women get wage employment, and the rest have to depend on self-employment and casual employment—and this is for only those who are part of the labor force (~35% in Odisha). There is a significant wage differential compared to men almost in every category of women employment not just in Odisha but countrywide.

**Table 7: Category of Workers, 2011–2012**

Category of Workers	PS + SS											
	Odisha			All India			Odisha			All India		
	Aged 15–34						Aged 15–59					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Self-employed	55.42	64.91	58.12	44.06	55.09	47.06	57.04	65.40	59.44	48.74	55.61	50.65
Regular wage or salaried	13.64	6.00	11.47	22.51	15.26	20.54	13.73	5.87	11.47	21.23	13.40	19.05

PS +SS												
Category of Workers	Odisha			All India			Odisha			All India		
Casual	30.93	29.09	30.41	33.44	29.65	32.41	29.23	28.73	29.09	30.03	30.99	30.29

Note: Data are from the project preparatory technical assistance analysis.  
Source: National Survey, 2011–2012.

**Table 8: Wages under Different Worker Categories (average Rupees)**

Category of Wage Workers	Odisha			All India			Odisha			All India		
	aged 15–34						aged 15–59					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Regular wage or salaried	222.15	177.05	215.47	302.02	261.55	293.91	336.5	251.8	324.07	412.98	303.24	319.56
Casual wage labor in public works other than NREG works	137.89	100.00	129.63	127.81	109.14	121.68	136.67	129.33	134.17	127.31	110.56	121.43
Casual wage labor in NREG works	157.17	80.00	141.83	112.78	101.34	107.02	124.99	131.23	126.51	111.55	101.27	105.75
Casual wage labor in other types of work	129.89	85.90	121.45	151.69	103.16	141.64	128.37	88.59	121.12	156.26	104.64	143.94

Self-employed persons are further categorized as follows:

- (i) **Own-account workers.** Self-employed persons who operate their enterprises on their own account or with one or a few partners and who, during the reference period, largely ran their enterprise without hiring any labor. They could, however, have unpaid helpers to assist in the enterprise.
- (ii) **Employers.** Self-employed persons who work on their own account or with one or a few partners, and who largely run their enterprise by hiring labor.
- (iii) **Helpers in household enterprise.** Self-employed persons engaged in household enterprises, working full- or part-time, who do not receive salaries or wages regularly. They do not run the household enterprise on their own but assist persons living in the same household in running the household enterprise.

Regular wage or salaried employee are persons who work in others' farm or nonfarm enterprises (both household and nonhousehold) and, in return, receive salaries or wages on a regular basis (i.e., not daily or based on periodic renewal of work contract). This category includes not only persons getting time wages but also persons receiving piece wages; or salary and paid apprentices, both full-time and part-time.

Casual labor are persons who are informally engaged in others' farm or nonfarm enterprises (both household and nonhousehold) and, in return, receive wages according to the terms of the daily or periodic work contract.

Public works are activities sponsored by the state government or local bodies, and which cover local area development works like construction of roads, dams, bunds, digging of ponds, etc., as relief measures; or as an outcome of employment generation schemes under poverty alleviation programs such as the Mahatma Gandhi National Rural Employment Guarantee works, Sampoorna Grameen Rozgar Yojana, National Food for Work Programme, etc. The coverage of schemes under "public works" is restricted to those schemes under poverty alleviation programs, or relief measures through which the government generates wage employment.

Note: Data are from the project preparatory technical assistance analysis.  
Source: National Sample Survey, 2011–2012.

### C. Skills Demand Analysis

12. Odisha has shown significant improvement on key social indicators such as literacy, school drop-out rates, key health and gender indicators, etc. Implementation of national and state level programs such as Sarva Shiksha Abhyan, Rashtriya Madhyamik Shiksha Abhiyan, National Rural Health Mission, etc. has helped improve access to public services in the state. This has led to a significant improvement in development indicators such as school enrollment in all levels, reduction in drop-out rates, and higher education.

**Table 9: Enrollment and Drop-out Rate in School Education in Odisha**

Year	Primary Level		Secondary Level		Higher Secondary Level	
	Enrollment ('000)	Drop-out Rate (%)	Enrollment ('000)	Drop-out Rate (%)	Enrollment ('000)	Drop-out Rate (%)
2013	6,388	1.97	1206	16.49	17.5	N/A
2010	6,579	2.60	959.7	51.00	401.5	N/A
2005	5,838	18.49	N/A	62	NA/	N/A

N/A = not available.

Source: www.indiastats.com.

13. While it is estimated that almost 450,000 students appear for secondary examination, of which almost 300,000 qualify the exam, the state does not have the capacity to offer opportunities to all students to enroll in institutions that provide technical training. Moreover, most of the state-level institutions fail to provide skills that make individuals employable. It has been found that most individuals trained in state-level institutions require further inputs to ensure employability.

14. The need to develop the state's capacity to provide employability skills is further accentuated by the fact that as per the Census of India, 2011, the population aged 14–35 is going to rise by about 16% by 2022, thereby heightening the need to further increase capacity at the state level to deliver skills training and enable new entrants to the workforce to be employable.

15. While the private industrial training centers (ITCs) or industrial training institutes in Odisha have the highest annual capacity to train, the utilization reported is only 55% mainly because of high level of trainer vacancies, poor infrastructure, and high fees. In addition, since many students have to work for a living and their opportunity cost for attending training is high, their expectation is high on the quality and relevance of the courses and training. The high expectation, if not met, usually leads to high drop-outs or irregular attendance. All these point to the mismatch between the demand of people and the courses being offered.

**Table 10: Training Capacity in Odisha**

Institutions	Annual Capacity	List of Trades
Government ITIs	8,500	Fitter, Electrician, Mechanic Motor Vehicle, Mechanic Machine Tool Maintenance, Mechanic Refrigeration and Air Conditioning, Machinist, Welder
Private ITIs	40,000	Fitter, Electrician, Mechanic Motor Vehicle, Mechanic Machine Tool Maintenance, Mechanic Refrigeration and Air Conditioning, Machinist, Welder
Government polytechnics	1,700	Civil, Electrical, Mechanical, Electronics
Private polytechnics	11,000	Civil, Electrical, Mechanical, Electronics



Institutions	Annual Capacity	List of Trades
OSEM (short-term)	13,000	Fitter, Welder, Tally, Data Entry, BPO, Retail and Sales, Electrician, Hospitality, Sewing Machine Operator, Computer Hardware
MORD: DDUKVY (short-term)	6,000	Electrical, Security Guard, BPO and Call Center, ITES, ITES - Data Entry, Tally and Book Keeping, Retail Sales, Welding, Industrial Sewing Machine Operator, Hospitality - General
Vocational training schools	4,000	Agriculture, Health and Paramedical, Engineering and Technology, Business and Commerce, Home Science
Other departments	15,000	Agriculture Services, Electrical, Security Guard, BPO and Call Center, ITES, ITES - Data Entry, Tally and Book Keeping, Retail Sales, Welding, Industrial Sewing Machine Operator, Hospitality - General
Engineering colleges	10,000	Civil, Electrical, Mechanical, Computer Science, Electronics
Diploma colleges	10,000	BBA, BCA, BA, BSc
Others	7,000	
<b>Total</b>	<b>126,200</b>	

BPO = business process outsourcing, BSc = \_\_\_\_\_, ITES = IT-enabled services.

Note: Data are from the project preparatory technical assistance analysis based on secondary information from department websites.

16. According to the National Skill Development Corporation (NSDC) Skill-Gap Study (2012) of Odisha, total job opportunities are highest in semiskilled and skilled categories. If mapped to the National Skill Qualification Framework levels, the maximum requirement would be in the L4 to L7 levels.

**Table 11: Skill Demand by Type of Skill**

Type of Skill	Job Opportunities (million)		Training Capacity (million)	Incremental Skill-Gap (million)
	2011	2026	2011–2026	2011–2026
Semiskilled (diploma, graduates, vocational training, ITI pass-outs)	3.2	5.03	1.38	0.45
Skilled (engineers, doctors, technologists)	3.33	6.21	0.41	2.47
Highly skilled (MBA, MCA, M.Tech. CA)	1.09	2.25	0.04	1.12
<b>Total</b>	<b>7.62</b>	<b>13.49</b>	<b>1.83</b>	<b>4.04</b>

Note: Data are from the project preparatory technical assistance analysis.

Source: National Skill Development Corporation. 2012. *Skill-Gap Study, 2012*. Odisha.

17. While the absolute training capacity gaps are significant in highly skilled, skilled, and semiskilled categories, the incremental gap in the semiskilled category is lower than the other categories. District-level analysis shows that the highest gap in the semi-skilled category are in the districts of Bolangir, Cuttack, Ganjam, Kalahandi, and Nabrangpur.

18. While planning for the numeric targets and gaps is important, the assessment of quality of training in the existing training network is more important from the point of the view of employability of graduates. For example, the drop-out rates and the rate of failure at secondary and senior secondary levels are high. According to a tracer study of ITCs graduates conducted by the World Bank, the employment rate of ITC graduates in Odisha is low at 37%. According to the World Bank study of five skill development schemes of the Government of India (2014), the placement rate is less than 30%.

19. Short-term skill development such as those of Deen Dayal Upadhyaya-Grameen Kaushalya Yojana, Odisha State Employment Mission, NSDC, etc., also face immense challenges including inability of such programs to offer a career, value proposition of such training programs not being evident to the industry, absence of competency standards, restricted mobility to students across education and training systems, and low paying capacity among students for such programs.

20. The Odisha Skill Development Project would target nearly 140,000 students from an estimated drop-out population of 1.7 million in Odisha; 10,000 students from the existing 1.5 million students in secondary and higher secondary schools; and another 50,000 from 400,000 students studying in various colleges.

**Table 12: Estimated Population against Project Targets**

S. No.	Learner Groups	OSDP Target	OSDP Target	OSDP Target	Estimated Population (million)	Remarks
<b>A.</b>	<b>Outside the Education System</b>			<b>140,000</b>	1.7	Aged 15–18
1	School drop-outs or pass-outs		95,000			
a.	<i>NEET</i>	70,000				
b.	<i>Employed (RPL)</i>	25,000				
2	ITI pass-outs, diplomas, graduates		40,000			
a.	<i>Unemployed</i>	30,000				
b.	<i>Employed</i>	10,000				
3	Self-employed		5,000			
<b>B.</b>	<b>Within Educational Institutions</b>			<b>60,000</b>		
4	Students in grades 9, 10, 11, 12		10,000		1.5	Aged 15–18
5	Students in ITIs, polytechnics, engineering, general graduate colleges		50,000		.4	Aged 15–22
	<b>TOTAL</b>			<b>200,000</b>	<b>3.6</b>	

ITI = industrial training institute, NEET = National Eligibility and Entrance Test, OSDP = Odisha Skill Development Project, RPL = recognition of prior learning.

Note: Data are from the project preparatory technical assistance analysis based on secondary information from department websites.

#### **D. Sectoral Demand Analysis**

21. Odisha's economy is gradually shifting from agriculture to industry and services. The share of agriculture in total gross state domestic product decreased from 30.53% in 1996–1997 to only 15.39% by 2014–2015. Over the same period, the share of the industry sector almost doubled from 17.85% to 33.45%. Although the share of services remained around 51%, the compounded annual growth rate of services is 6.38%, lower than that of industry, which has grown at a compounded annual growth rate of 10.21% from 1995 onward.

22. The high growth of the industry sector was mainly driven by the growth of registered manufacturing and mining and quarrying. Within registered manufacturing, the highest growth has come from industries in basic metal and alloys, followed by food products, chemical and chemical products, and nonmetallic mineral products, respectively.<sup>2</sup> Repairing and services, food processing, glass and ceramics, engineering, and textiles are some of the domains with a large number of micro, small, and medium enterprises in the state, offering employment to a large section of the workforce.

<sup>2</sup> C. Bal, A. Das, and S. C. Kumar. 2015. Silver Lining in Odisha Organised Manufacturing Sector. *Economic and Political Weekly*. L(15). 11 April.



**Table 13: Micro, Small, and Medium Enterprises and Employment in Odisha**

Domain	Number of MSMEs	Employment	Contribution (%)
Repairing and services	46,441	149,813	20.3
Food and allied	2,7284	147,543	20.0
Glass and ceramics	9,257	143,320	19.4
Engineering and metal-based industries	13,887	101,281	13.7
Textiles	9,162	53,411	7.2
Forest and wood-based industries	7,572	46,749	6.3
Miscellaneous manufacturing	6,946	33,310	4.5
Chemical and allied	3,038	23,684	3.2
Paper and paper products	3,187	17,537	2.4
Rubber and plastics	1,858	11,570	1.6
Electrical and electronics	1,204	7,655	1.0
Livestock and leather	465	2,605	0.4
<b>TOTAL</b>	<b>130,301</b>	<b>738,478</b>	<b>100.0</b>

MSME = micro, small, and medium enterprises.

Source: Government of Odisha Economic Survey, 2014–2015.

23. According to the NSDC Skill-Gap Study (2012), the highest incremental demand is expected in the banking, financial services, and insurance sector followed by the education and skill development sector itself, which has an incremental skill-gap of nearly 700,000 over the next 10 years (until 2026). While the absolute demand in construction sector would be high, the incremental skill-gap in the sector is not as high as some of the services sector. This is mainly based on the assumption that the training capacity in the construction sector is high compared to the services sector.

**Table 14: Incremental Demand Supply Gap**

Sector	2011–2026
Construction material and building hardware	77,070
Banking, financial services, and insurance	902,692
Education and skill development	692,849
Health care	651,037
IT and ITES industry	614,363
Media and entertainment	400,582
Tourism, travel hospitality, and trade	656,018
Others	<10,000
<b>Total</b>	<b>4 million</b>

IT = information technology, ITES = information technology-enabled service.

Note: Data are from the project preparatory technical assistance analysis.

Source: National Skill Development Corporation. 2012. *Skill-Gap Study, 2012*. Odisha.

24. While NSDC estimates are based on comparison between the training requirement and training capacity, the overall potential of the employment is maximum in the construction sector followed by the manufacturing sector, given the decreasing share of agriculture and allied sectors and the increasing share of the nonfarm sector. Employment in sectors other than agriculture that may shrink are public administration and in trade, hotel, and restaurant services.

**Table 15: Employment Potential in Odisha**

NIC Code	Sectors and Subsectors	Workforce Demand, 2022	
		Male	Female
<b>Agriculture Sector</b>			
A	Agriculture and animal husbandry, forestry and logging	-1,238,774	-730,608
<b>Manufacturing Sector</b>			
B	Mining and quarrying	20,490	25,414
C	Manufacturing (registered + unregistered)	1,356,549	922,272
<b>Services Sector</b>			
F	Construction	1,015,984	363,757
H	Railways, transportation, and storage	310,625	8,499
K	Banking and insurance	154,577	14,661
D+E	Electricity, gas, and water supply	47,327	17,955
J	Communication	32,951	3,125
O	Public administration	-25,027	-1,826
G+I	Trade, hotel, and restaurant	-215,129	-29,903
S	Other services	6,691	952
<b>Total</b>		<b>1,466,262</b>	<b>594,297</b>
<b>Total demand</b>		<b>2,060,559</b>	

Note: Data are from the project preparatory technical assistance analysis.

Source: National Sample Survey, 2011–2012.

## E. Geographic Demand Analysis

25. Odisha is known to have a mobile workforce and the state is one of the net exporters of labor across the country to major cities such as Hyderabad, Surat, Delhi, Mumbai, Chennai, Jamshedpur, etc., mainly for the construction, gem cutting, and hospitality sectors. A large section of the workforce also migrates as unskilled laborers in brick kilns and construction sites in Andhra Pradesh.

26. Based on the NSDC Sector Skill-Gap report and the emphasis on sectors under government initiatives such as Make in India, Table 16 provides an overview of the sectors that may have the potential of offering employment to workforce from Odisha at the national level.

**Table 16: Sectors with National Potential for Employment**

S. No.	Sector	Employment Potential at National Level
1	Construction	Green
2	Automobile	Green
3	Food processing	Yellow
4	Mining	Yellow
5	Ports and communication	Yellow
6	Banking and financial institutions	Green
7	Health care	Green
8	Tourism and hospitality	Yellow
9	Renewable energy	Yellow
10	Agriculture and allied activities	Red
11	Gems and jewellery	Red
12	Handicraft	Yellow
13	Media and entertainment	Yellow
	High potential for employment	Green

S. No.	Sector	Employment Potential at National Level
	Medium potential for employment	
	Low potential for employment	

Note: Data are from the project preparatory technical assistance analysis.

Source: National Skill Development Corporation. 2012. *Skill-Gap Study, 2012*. Odisha.

27. Since OSDP aims at providing skills to the workforce in Odisha to meet the demands of the international market, it is important to also map the skills required by potential international employers. It has been found through a large number of studies that the European and other developed economies will be facing a challenge identifying skilled workers to fuel economic growth in these countries. Most countries will be facing the challenge of replenishing their aging workforce and also finding suitable individuals to fill the new job opportunities created.

28. Countries across the world are facing a shortage of skilled workforce in the areas of oil and gas, mining and construction, manufacturing, mechanical trades and engineering, and plant operations.<sup>3</sup>

**Table 17: Sectors with International Opportunities for Employment**

Sl. No.	Region	Key Countries Affected	Main Industries Impacted
1.	America	United States	Oil and gas
			Mining
			Manufacturing
			Mechanical trades and engineering
2		Brazil	Oil and gas
3.	Europe	European Union	Mechanical trades
			Manufacturing
			Life sciences and health
			Plant operation
			ITES
4.	Asia and the Pacific	Japan	Manufacturing
			Engineering
		Australia	Oil and gas
			Mining and construction
5.	Middle East		Construction
			Health and wellness
			ITES
6.	Africa	East Africa	Oil and gas
			ICT
			Construction

ICT = information and communication technology, ITES = information technology-enabled service.

Source: Talent Shortage Survey Results, Manpower Group (2012).

<sup>3</sup> Talent Shortage Survey Results, Manpower Group (2012); Deloitte and Manufacturing Institute (2011).

29. Similarly, according to the European Centre for Vocational Training, as to the medium-term forecast for demand and supply of skilled workforce, Europe will be facing a huge challenge of replacing the existing aging workforce and hiring skilled workers to expand production. While there would be a significant requirement for senior corporate executives by 2020, a trained workforce would be additionally required in extraction and building trades (60% more than 2010), stationary plant and related operations (51.5% more than 2010), mining and construction (55% more than 2010), and customer services (46% more than 2010).

### Appendix 1: International Job Openings (Expansion and Replacement Demand) by Occupation

Occupation	Change, 2010–2020 (‘000)			Change, 2010–2020		
	Female	Male	Total	Female	Male	Total
<b>Legislators, senior officials, and managers</b>	1,440	8,456	9,896	7.5	44.2	51.7
Legislators and senior officials	170	32	202	29.5	5.6	35.1
Corporate managers	1,349	5,767	7,116	12.7	54.4	67.1
Managers of small enterprises	-79	2,655	2,576	-1.0	33.4	32.4
<b>Professionals</b>	2,675	12,357	15,031	8.3	38.1	46.4
Physics, mathematics, and engineering science professionals	844	3,463	4,307	10.7	44.0	54.7
Life science and health professionals	87	884	972	2.2	22.1	24.3
Teaching professionals	-596	3,129	2,533	-6.7	35.2	28.5
Other professionals	2,339	4,880	7,220	20.1	42.0	62.1
<b>Technicians and associate professionals</b>	4,471	10,375	14,846	11.7	27.1	38.7
Physics and engineering science associate professionals	751	2,647	3,398	8.6	30.5	39.1
Life science and health associate professionals	-12	1,553	1,542	-0.2	25.7	25.5
Teaching associate professionals	442	740	1,182	14.3	23.9	38.1
Other associate professionals	3,290	5,434	8,724	16.1	26.5	42.6
<b>Clerks</b>	-1,193	6,075	4,882	-5.0	25.4	20.4
Office clerks	-1,850	4,638	2,788	-9.5	23.9	14.4
Customer services clerks	657	1,436	2,093	14.5	31.8	46.3
<b>Service workers and shop and market sales workers</b>	2,196	7,945	10,141	6.8	24.8	31.6
Personal and protective services workers	1,496	5,169	6,665	7.2	25.0	32.2
Models, salespersons, and demonstrators	700	2,776	3,476	6.2	24.4	30.6
<b>Skilled agricultural and fishery workers</b>	-2,036	2,094	58	-21.0	21.6	0.6
<b>Craft and related trades workers</b>	-2,143	12,457	10,314	-7.5	43.4	36.0
Extraction and building trades workers	-10	7,371	7,361	-0.1	60.1	60.0
Metal, machinery, and related trades workers	-1329	2,740	1,412	-12.5	25.9	13.3
Precision, handicraft, craft printing and related trades	-178	487	308	-13.0	35.6	22.5
Other craft and related trades workers	-625	1,859	1,234	-14.1	41.8	27.8
<b>Plant and machine operators and assemblers</b>	-124	5,375	5,251	-0.7	28.9	28.2
Stationary plant and related operations	108	1,032	1,141	4.9	46.6	51.5
Machine operation and assembly	-247	1,758	1,511	-3.6	25.5	21.9
Drivers and mobile plant operators	15	2,584	2,599	0.2	27.1	27.3
<b>Elementary occupations</b>	1,991	7,958	9,949	8.6	34.4	43.0
Sales and services elementary occupations	1,153	4,725	5,878	7.8	31.9	39.6
Agricultural, fishery, and related services	-107	557	450	-6.3	32.9	26.6
Mining, construction, manufacturing, and transport	944	2,675	3,619	14.3	40.6	54.9
<b>All occupations</b>	<b>7,224</b>	<b>73,086</b>	<b>80,310</b>	<b>3.2</b>	<b>32.2</b>	<b>35.3</b>

Source: European Centre for the Development of Vocational Training (Cedefop). . Odisha. Medium-Term Forecast 2020.

**Appendix 2: Number of Persons Engaged in Sectors in Odisha**

NIC Code	NIC Code Description	Number of Persons Engaged	Workers (1)	Employed through Contractors (1.1)	Directly Employed (1.2)	Men (1.2.1)	Women (1.2.2)	Employees other than Workers (2)	Supervisory and Managerial (2.1)	Other Employees (2.2)
241	Manufacture of basic iron and steel	126650	103944	66005	37940	37095	845	22637	13825	8812
242	Manufacture of basic precious and other nonferrous metals	26474	20277	12167	8110	7596	514	6196	3828	2368
106	Manufacture of grain mill products, starches and starch products	21310	18036	9922	8114	6724	1390	3128	1326	1802
239	Manufacture of nonmetallic mineral products nec	16957	12712	6138	6574	6117	457	4103	2020	2083
120	Manufacture of tobacco products	10702	10213	9509	705	637	68	425	130	295
107	Manufacture of other food products	6720	4918	1394	3524	2632	892	1765	569	1196
201	Manufacture of basic chemicals, fertilizer and nitrogen compounds, plastics, and synthetic rubber in primary forms	6507	5761	4137	1624	1580	44	733	531	202
170	Manufacture of paper and paper products	6264	4985	3022	1963	1909	54	1267	945	322
251	Manufacture of structural metal products, tanks, reservoirs, and steam generators	3867	3430	2514	916	912	4	394	198	196
110	Manufacture of beverages	2892	2100	1213	887	758	129	772	230	542
221	Manufacture of rubber products	2462	2156	1	2155	2155	0	302	176	126
191	Manufacture of coke oven products	2098	1798	1127	671	659	12	295	162	133
105	Manufacture of dairy products	1854	1374	546	828	787	41	480	164	316
131	Spinning, weaving, and finishing of textiles	1743	1505	389	1116	925	191	234	61	173
222	Manufacture of plastics products	1681	1316	276	1041	1024	17	359	164	195
243	Casting of metals	1594	1283	645	638	625	13	312	161	151
202	Manufacture of other chemical products	1485	1275	673	602	547	55	208	117	91
139	Manufacture of other textiles	1260	1100	14	1086	1069	17	155	56	99
273	Manufacture of wiring and wiring devices	987	840	160	680	676	4	146	59	87
104	Manufacture of vegetable and animal oils and fats	960	853	410	443	438	5	99	50	49
102	Processing and preserving of fish, crustaceans, and mollusks	839	577	10	567	459	108	258	172	86



NIC Code	NIC Code Description	Number of Persons Engaged	Workers (1)	Employed through Contractors (1.1)	Directly Employed (1.2)	Men (1.2.1)	Women (1.2.2)	Employees other than Workers (2)	Supervisory and Managerial (2.1)	Other Employees (2.2)
108	Manufacture of prepared animal feeds	717	453	227	226	172	54	262	77	185
162	Manufacture of products of wood, cork, straw, and plaiting materials	712	557	427	130	126	4	152	88	64
282	Manufacture of special-purpose machinery	590	419	83	336	329	7	166	100	66
271	Manufacture of electric motors, generators, transformers, and electricity distribution and control apparatus	557	404	22	382	357	25	151	72	79
259	Manufacture of other fabricated metal products; metal working service activities	531	411	11	400	384	16	92	56	36
310	Manufacture of furniture	513	331	134	197	197	0	178	125	53
181	Printing and service activities related to printing	465	222	0	222	197	25	242	29	213
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	411	255	3	253	236	17	155	46	109
192	Manufacture of refined petroleum products	316	265	135	130	130	0	49	31	18
281	Manufacture of general purpose machinery	299	237	114	123	123	0	61	27	34
161	Sawmilling and planing of wood	275	203	29	174	174	0	51	31	20
016	Support activities to agriculture and postharvest crop activities	269	219	0	219	198	21	45	16	29
293	Manufacture of parts and accessories for motor vehicles	207	147	50	97	97	0	59	48	11
302	Manufacture of railway locomotives and rolling stock	113	63	0	63	63	0	50	50	0
279	Manufacture of other electrical equipment	88	76	45	31	31	0	11	9	2
103	Processing and preserving of fruit and vegetables	82	67	20	47	39	8	14	5	9
331	Manufacture of jewellery, bijouterie, and related articles	47	32	0	32	31	1	13	9	4

NIC Code	NIC Code Description	Number of Persons Engaged	Workers (1)	Employed through Contractors (1.1)	Directly Employed (1.2)	Men (1.2.1)	Women (1.2.2)	Employees other than Workers (2)	Supervisory and Managerial (2.1)	Other Employees (2.2)
581	Publishing of books, periodicals, and other publishing activities	42	26	0	26	26	0	16	11	5
Other		12115	8242	3018	5224	5125	99	3860	2493	1367
	<b>Total</b>	<b>263655</b>	<b>213082</b>	<b>124590</b>	<b>88496</b>	<b>83359</b>	<b>5137</b>	<b>49895</b>	<b>28267</b>	<b>21628</b>