

District wise skill gap study for the State of West Bengal

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- **Objectives of the study**
- **Methodology**
- **State Analysis**
- **Recommendations**

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Objective of the study

West Bengal District Skill Gap Study objectives would include a review of the following at an overall state and for all districts:

- Socio-economic profile – demography, economic profile of district by industry, state of education.
- Identify developmental opportunities keeping in mind factor endowments and stakeholder perspectives.
- Identify specific developmental initiatives/projects which have an impact on employment generation.
- Articulate the aspirations of the youth.
- Identify the current and future (2012- to 2022) skills and manpower requirements by industry and estimate the gap that exists.
- Study the existing VT infrastructure booth in the private sector and the government domain.
- Suggest suitable interventions/recommendations to address the skills gap.
- Recommendations have to be specific and actionable.
- Recommendations should also include specific initiatives that NSDC can take based on the mandate of the organization.
- Create an action plan with indicative timelines

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Methodology

KPMG has adopted a structured methodology to understand the skill ecosystem in West Bengal, assess incremental manpower needs, and collate insights, to arrive at recommendations to address the manpower skill gaps in the districts of the state.

- Salient Features of the Study include:
 - Socio-economic Profile: State/Districts
 - Sectoral Focus: NSDC priority sectors along with district level potential sectors
 - Voice of Stakeholders: Capturing insights from stakeholders involved in skill training
 - Estimation of Manpower Supply: State/Districts
 - Assessment of Existing Skill Training Capacity: State/Districts
 - Computation of Incremental Employment Potential: Using a sector specific approach
 - Manpower Supply-Demand Gap: State/Districts

Methodology

Research Methodology of the Study

- The study was carried out through both primary and secondary research methodology, as well as qualitative and quantitative techniques.

Primary Research: Primary research inputs were collected through research techniques such as in-depth discussions, formal interviews, and Focus Group Discussions (FGD). Interview schedules, FGD Guidelines and points for field observations were developed in accordance to the study objectives. Consultation meetings were conducted with State Government Departments, District Administration Officials, Skill Training Providers, Skill Training Beneficiaries, Industry Representatives, Migrant Labour to understand their perspectives on skill development

Activity	
Primary Interactions	250
FGDs across West Bengal	15
Students participated in FGDs	300

Secondary Research: Secondary Data were collected from number of sources including central, state and district government/administration agencies, especially the Department of Economics and Statistics, Department of Industries - and program specific information from departments with a mandate in skill training, and from studies commissioned by funding agencies, NGOs etc.,

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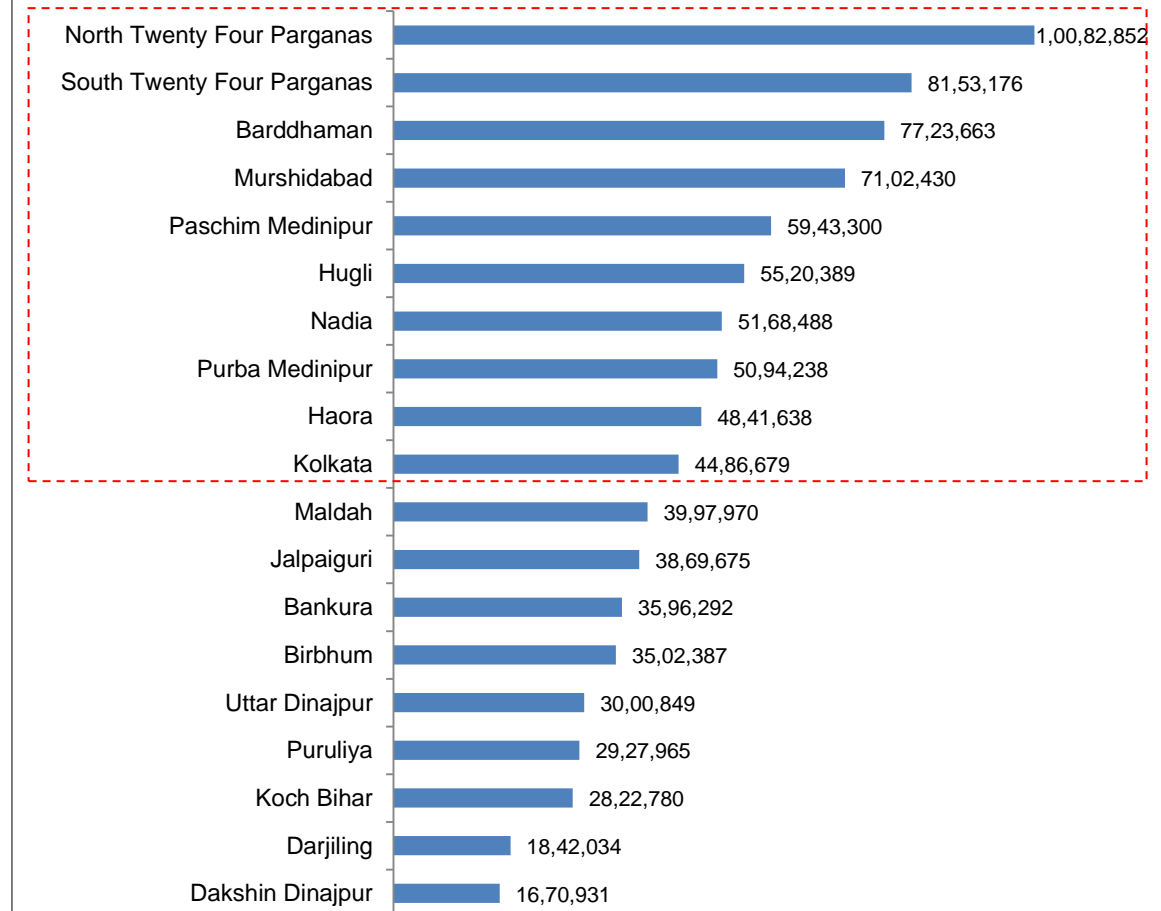
State Analysis-Social Profile

Socio-economic indicator	West Bengal	India
Population(2011)	91.3 million	1210 million
Decadal Population Growth Rate(2001-11)	13.93%	17.64%
Population Density(2011)	1029 Persons/Sq km	382 Persons/Sq km
Percentage of Rural Population (2011)	68.11%	68.84%
Percentage of ST Population (2001)	5.5%	8.2%
Percentage of SC Population (2001)	23.02%	16.2%

Source :Census 2001, 2011

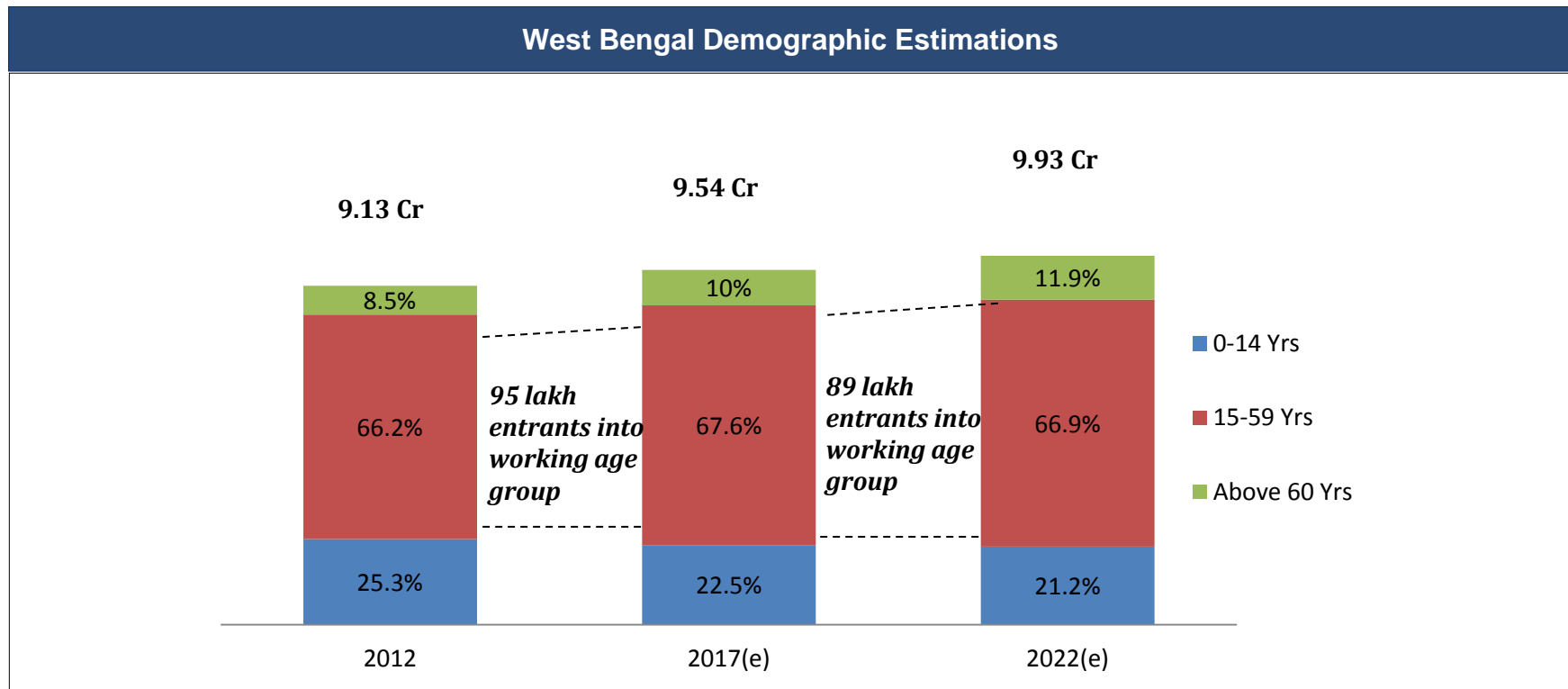
West Bengal has significant potential to become source to meet the human resource requirements in India...

District Wise Population Density (2011 Census)



Source :Census, 2011

State Analysis-Social Profile



Source : West Bengal Planning Commission, KPMG Analysis

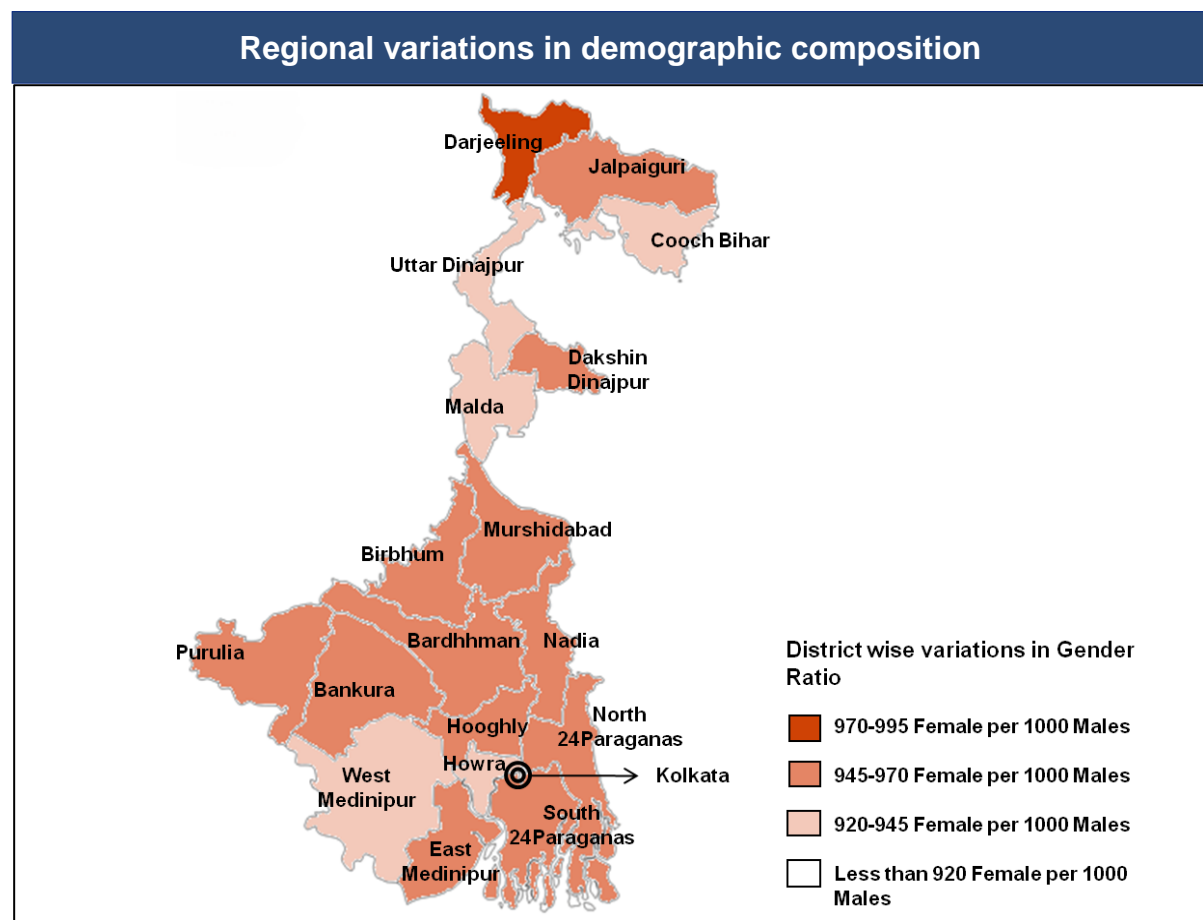
...experiencing an addition of around 18.5 million to the working age group over the next decade

State Analysis-Social Profile

Socio-economic indicator	West Bengal	India
Gender Ratio (2011)	947 female/1000 males	940 Female /1000 males
Overall Literacy Rate(2011)	72.97%	74.02%
Male Literacy Rate (2011)	79.51%	82.14%
Female Literacy Rate (2011)	66.06%	65.46%
Infant Mortality Rate(IMR), 2010	35	47
Death Rate(2008)	6.2	7.4

Source :Census, 2011

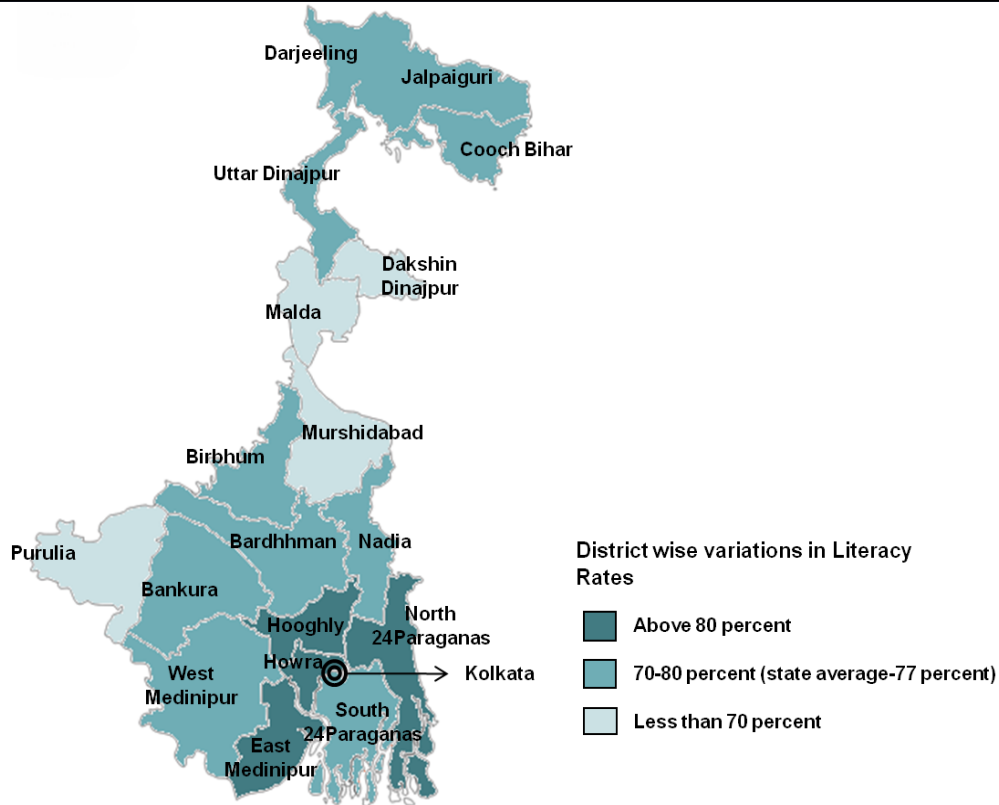
With significant regional variations in population and social composition...



Source :Census, 2011

State Analysis-Social Profile

Regional variations in literacy rates



Source :Census 2011

Performance of primary and secondary education

Category of Population	Population	Out Of School Children	Drop-out Percentage
5-8 Yrs	73,27,111	76,549	1.04%
9-13 Yrs	84,53,797	1,31,601	1.56%

Source :West Bengal Educational Statistics 2010-11

While the state has made considerable advances in improving school education, ensuring inclusiveness is a key challenge ahead...

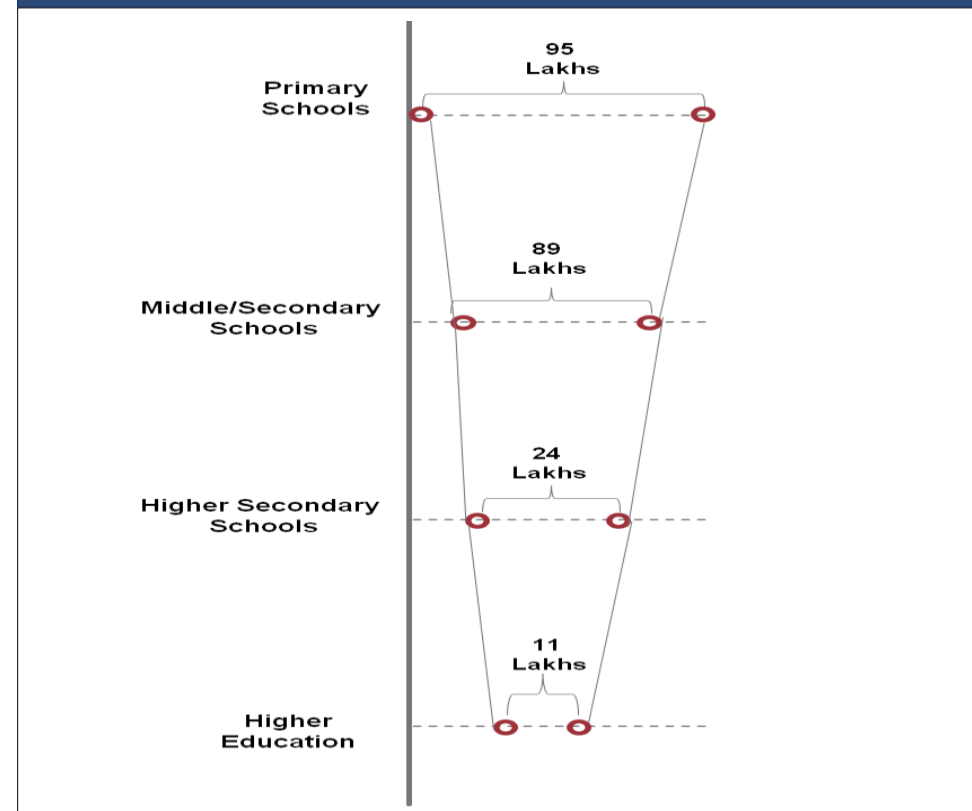
State Analysis-Social Profile

Higher Education Infrastructure

Category	UG Enrollments	PG Enrollments
Arts	789381	48171
Science	106661	20710
Commerce	88929	5031
Education	6686	2874
Law	4566	524
Engineering	66698	4713
Management	410	4235
Others	2817	8839
TOTAL	1066148	95097

Source :West Bengal Technical Education and Training Department

Drop-out rates across education levels



Source :West Bengal Educational Statistics 2010-11

Limited growth of higher education facilities in comparison to school education capacities is leading to high drop-out rates...

State Analysis-Social Profile

Vocational Education Infrastructure

Institutions	Number of Institutes / Centers	Annual Intake
Polytechnic Colleges(3yrs)	73	17, 185
ITI/ ITC(1yr/2yrs)	93	17,216
Vocational Education and Training	3500	2,13,000
STVT Centers (6 months)	139	6,900
Craft Training Institutes	2	60
VTP(Under MED-SDIS)	322	60,000

Source :West Bengal Technical Education and Training Department

Vocational education riding on Government thrust has a key role to play in building the gap...

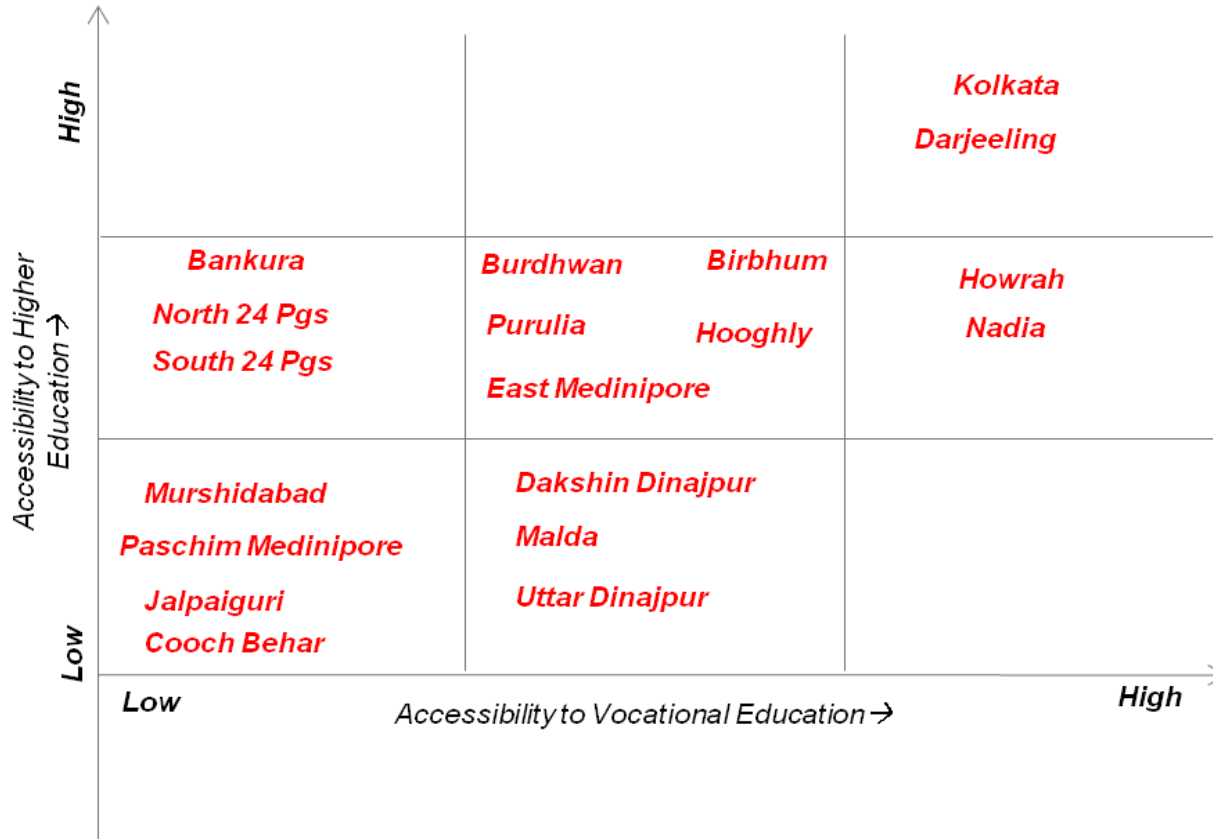
Government Scheme Training Details

Department	Description of Initiatives
Labour Department	<ul style="list-style-type: none"> Providing skill up gradation training to the pre -departure emigrant trainees. Arranging vocational guidance/counseling programs for assessment of job seekers ability to avail of the opportunities in employment market.
Micro & Small Scale Enterprises & Textile Department	<ul style="list-style-type: none"> 10185 sericulturists have been trained up for skill up gradation in plantation, rearing & reeling activities during 2011-12
Panchayat&Rural Development Department	<ul style="list-style-type: none"> Animal Resource Development in Dairy, Piggery, Goatery, Duckery, Poultry etc. Horticulture, floriculture, vermicompost and other bio-manure preparation, pottery, shoe making, bamboo/ cane product, mat, pati making.
Food Processing & Horticulture Department	<ul style="list-style-type: none"> Skill Development training through different schemes like National Horticulture Mission, ASIDE, RIDF etc.
Information & Technology Department	<ul style="list-style-type: none"> Skill demand potential on hardware sector has enriched by the Semiconductor Policy of Gol. Finishing school has been set up to make the fresh engineers industry-ready.

Source : KPMG Analysis

State Analysis-Social Profile

Regional variations in accessibility of higher and vocational education



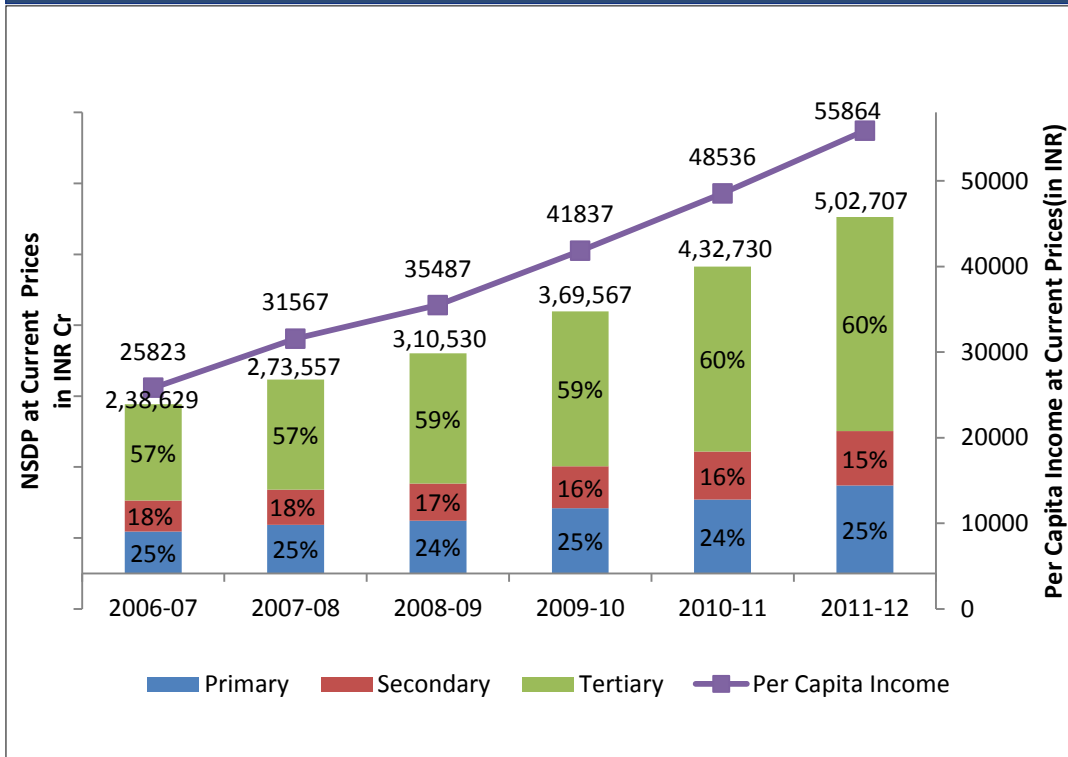
***Accessibility to higher education-**
Number of colleges per 1000 population

***Accessibility to vocational education-** Number of seats per 1000 population

Districts with low higher education and training infrastructure have to be high priority zones for capacity building...

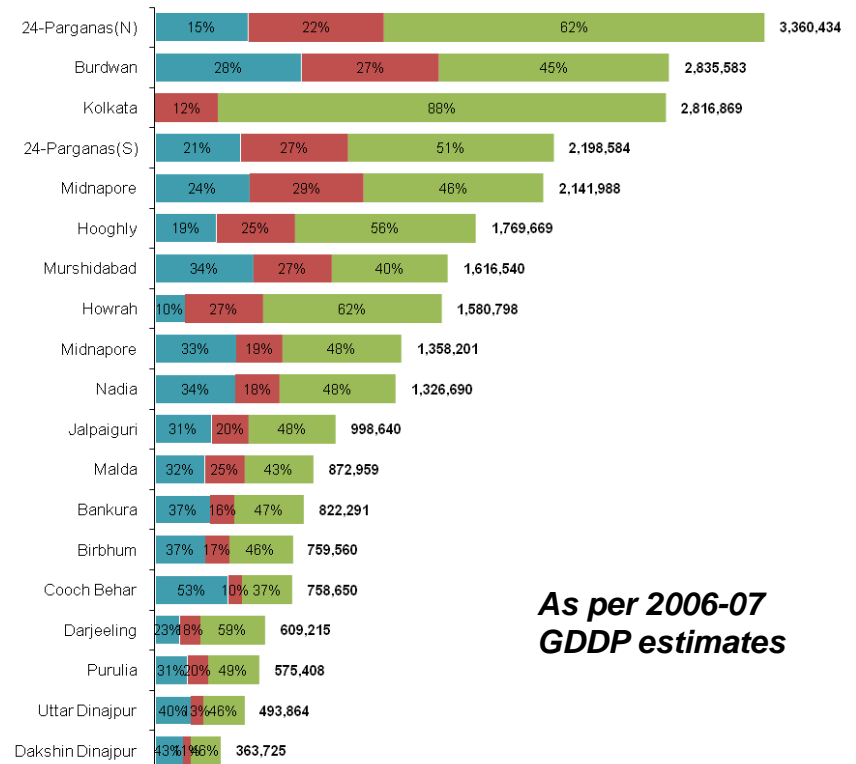
State Analysis-Economic Profile

Economy of West Bengal



State economy growth is driven by secondary and tertiary sectors...

District wise breakup of economy in West Bengal



As per 2006-07
GDDP estimates

Source :District GDDP Estimations, WB State Planning Commission

To sustain the economic growth driven by secondary and tertiary sectors, need for skilled human resource is on the rise...

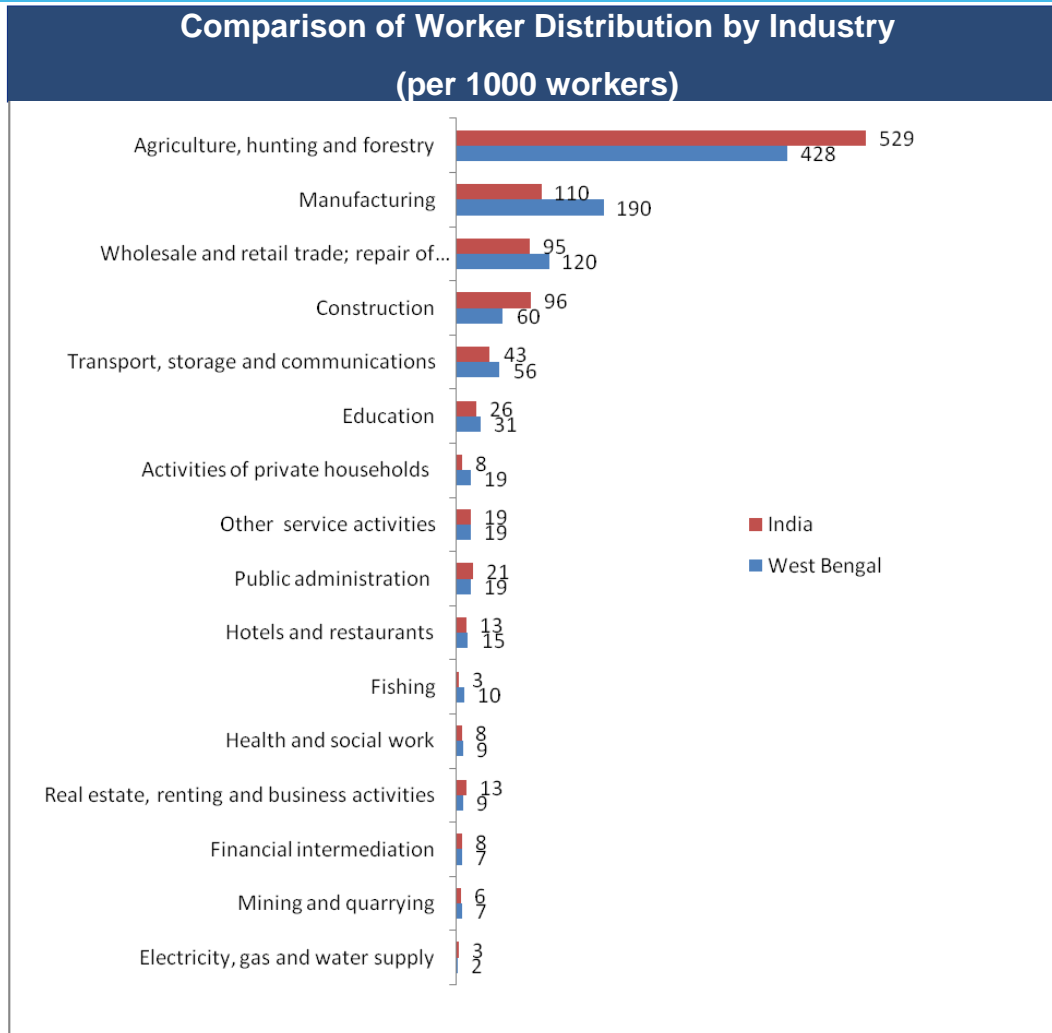
State Analysis-Economic Profile

Sector	Activities	Districts
Primary(Agriculture and Allied)	<p>Agricultural Crops: Rice, wheat, cereals, pulses, food grains, oil seeds, potato and jute.</p> <p>Agri-Allied Crops: Horticulture and Sericulture</p> <p>Agri-Allied Activities: Milk, egg and meat production</p>	Murshidabad, West Medinipore, Nadia, Burdwan, Cooch Behar, 24 North Paraganas, East Medinipore, Hooghly, Jalpaiguri, 24 South Paragnas
Secondary(Manufacturing)	Food Processing, Engineering, Iron & Steel, Jute, Tea, Leather and Petro Chemical sectors	Haldia, Kolkata, Asnsol Durgapur Region and Kharagpore regions.
Tertiary(Services)	IT-ITES, Retail, Transportation and Logistics(including port based logistics), Hospitality and Tourism, Healthcare	Kolkata, 24 North Paraganas, 24 South Paraganas, Howrah, Hooghly, Burdwan, Darjeeling, Nadia, West Medinipore, East Medinipore

Source : KPMG Analysis

Regional prominence of economic activities is high in the state...

State Analysis-Economic Profile

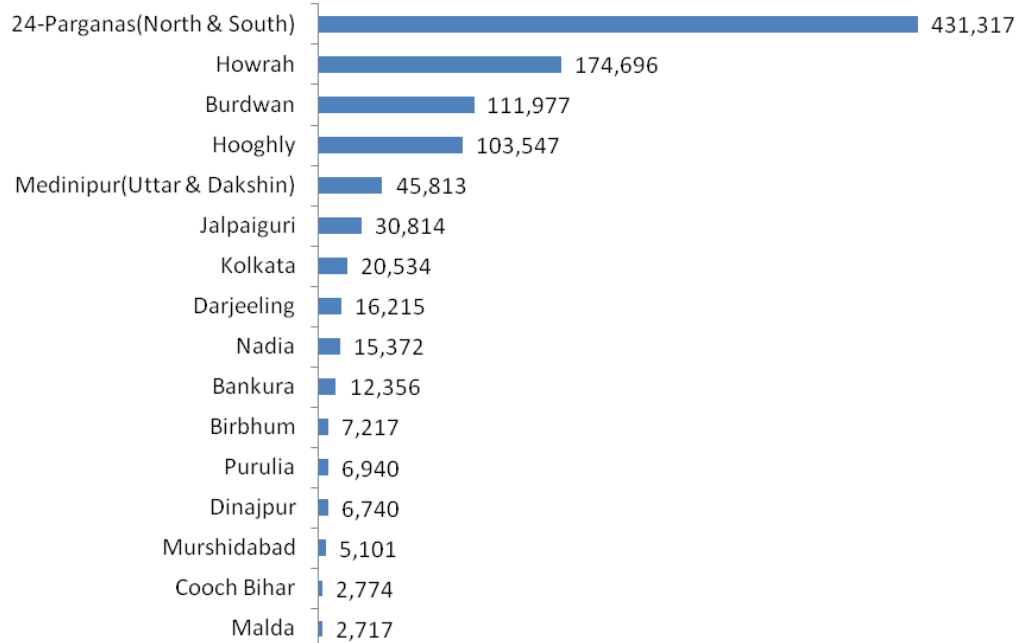


Source : NSSO 64th Employment Survey, KPMG Analysis

While the state is predominantly agrarian, dependency on manufacturing and trade, repair is significantly higher than state average...

State Analysis-Economic Profile

Average Daily Employment in Registered Factories (2011)



Source : West Bengal Labour Department

Growth of MSME Employment

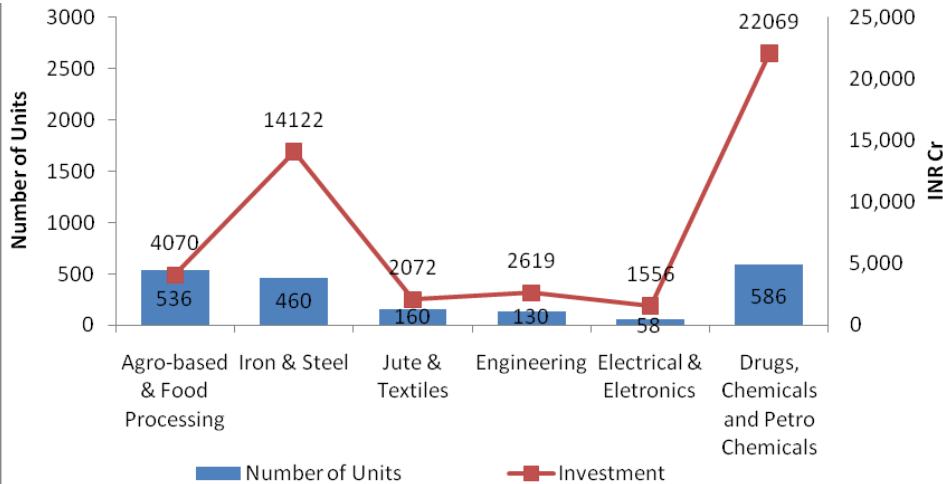
Year	Number of Units	Employment
As on 2006-07	42,635	3,65,228
2007-08	17,618	1,83,242
2008-09	13,415	1,37,150
2009-10	11,668	1,31,669
2010-11	10,099	1,21,944
2011-12	13,446	1,20,446
As on 2011-12	1,08,881	10,59,679

Source : Industries Dept WB, Small and Medium Scale Industries Dept West Bengal

State has witnessed significant growth in industrial employment over the last five years...

State Analysis-Economic Profile

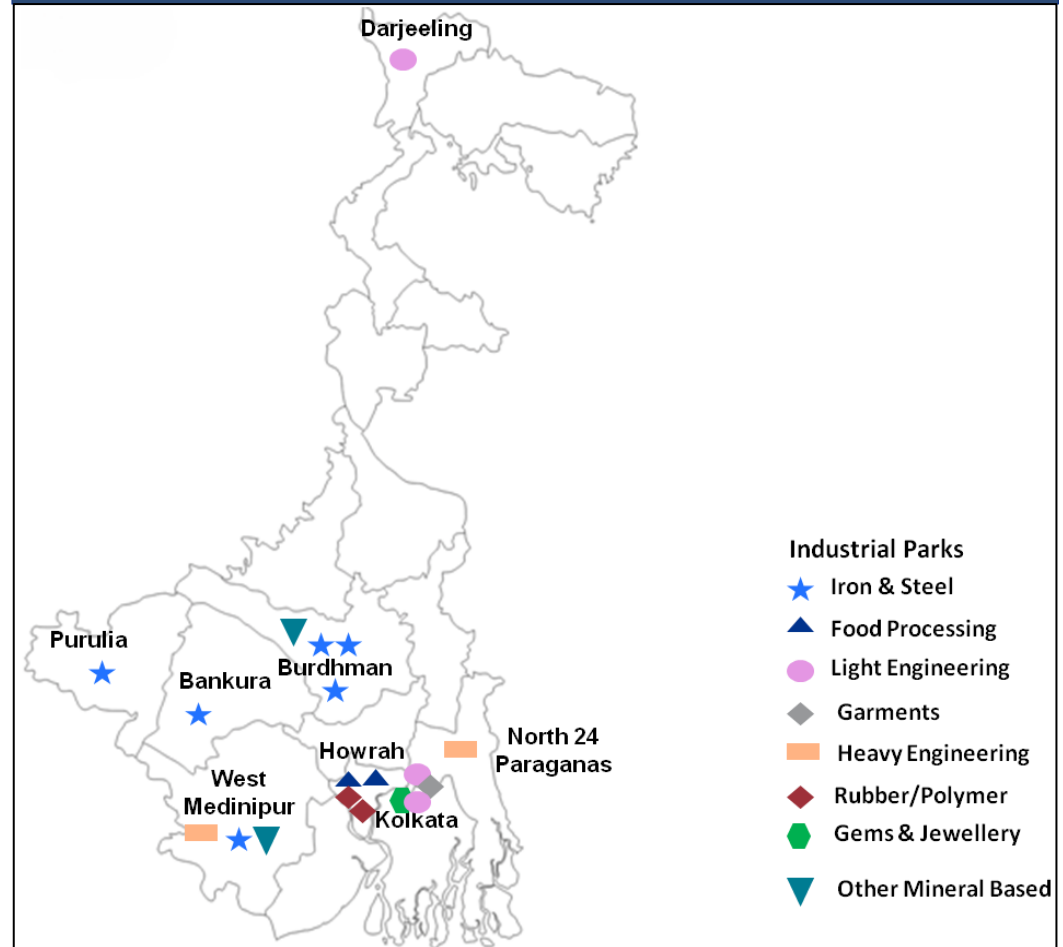
Large Scale Industrial Growth (1991-2009)



Source : Industries Dept WB

...supported by conducive Government policies and improving industrial infrastructure

Industrial Infrastructure in West Bengal Pradesh



Source : Industries Dept WB

State Analysis-Economic Profile

Clusters identified for Small Scale Industrial Development

Region	Sector
Howrah	Metal Spare Parts
Howrah	Shuttle Cock Mfg.
Kolkata	Fan Manufacturing
Howrah	Foundry
Malda	Honey Processing
Purulia	Shellac
Burdwan	Rice Mill
24-Parganas [S]	Silver Filigree
24-Parganas [S]	Zari Embroidery
Purba Medinipur	Cashew Nut Processing
Burdwan	Wood Carving
Bankura	Roofing Tiles
Nadia	Brass & Bell Metal
Murshidabad	Plastic Products
Nadia	Gold & Silver
Siliguri	Clay Pottery
Jalpaiguri	Plastic Products
Durgapur	Red Bricks
Kolkata	Hosiery Products
Birbhum	Brass & Bell Metal
Burdwan	Dokra
Purba Medinipur	Horn Products
Uttar Dinajpur	Mustard Oil

...expected to continue over the next decade resulting in significant realignment of workforce

Source : KPMG Analysis

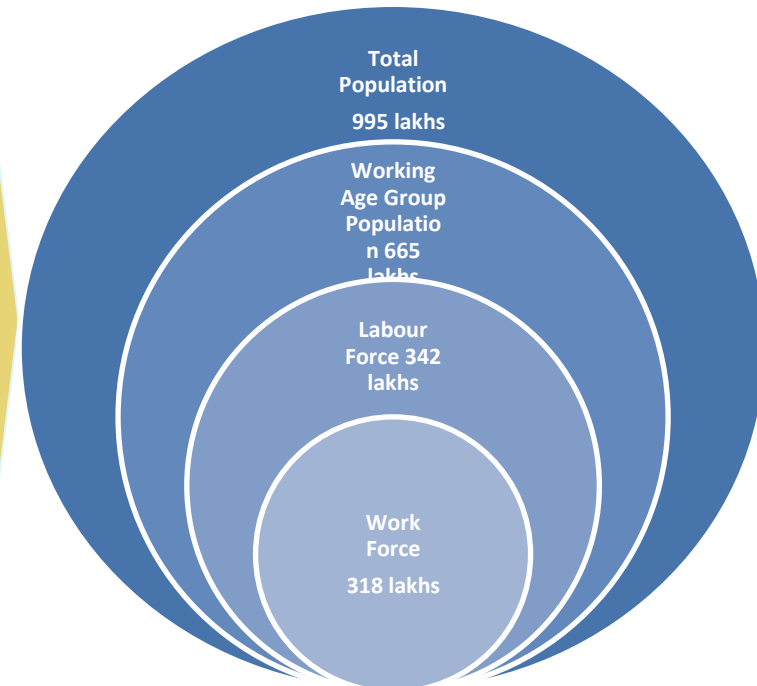
State Analysis- Labour Force Estimations

West Bengal Workforce Estimations (in lakhs)

Year	Population	Working Age Population	Labour Force	Work force	Incremental Supply 2012-17	Incremental Supply 2017-22
2012	913	604	311	288		
2017	955	645	332	308	95	
2022	995	665	342	318		90

Source : Census 2011 NSSO 64th Round of Employment Survey, KPMG Analysis

Human Resource Supply-2022



State workforce would reach 31.8 million by 2022 from current estimates of 23.9 million...

State Analysis- Incremental Manpower Requirement

Sector	2012-17				2017-22			
	Unskilled Category	Semi-Skilled Category	Skilled Category	Total	Unskilled Category	Semi-Skilled Category	Skilled Category	Total
Sericulture	81000	NA	NA	81000	72000	NA	NA	72000
Animal Husbandry	360000	NA	NA	360000	300000	NA	NA	300000
Pisciculture	113789	NA	NA	113789	65022	NA	NA	65022
Agro based & Food Processing	28743	23539	5885	58166	24122	19298	4824	48245
Iron & Steel	25536	19068	4767	49371	19534	15627	3907	39069
Jute & Textiles	9651	7721	1930	19303	7931	6345	1586	15863
Auto/Engineering	21267	17013	4253	42533	17410	13928	3482	34821
Electrical & Electronics	5713	4571	1143	11426	4677	3742	935	9354
Drugs, Chemical & Petrochemicals	10904	9540	2385	22830	9763	7810	1953	19525
Rubber & Plastic Products	11127	8901	2225	22253	9109	7287	1822	18218
Region Specific Industries(Tea, Gems & Jewellery, Port Based Industries)	4027	3222	805	8055	3297	2638	659	6594
Manufacturing/Assembling/Processing-MSME	205668	119973	17139	342780	171900	100275	14325	286500
Repairing & Maintenance	57672	33642	4806	96120	48060	28035	4005	80100
Construction	911922	138170	55268	1105359	699476	186527	46632	932635
IT&ITES	NA	38700	141300	180000	NA	25800	94200	120000
Healthcare	211269	25855	46993	284116	359367	43979	79935	483280
Transportations and Logistics	421927	61001	25417	508345	349660	50553	21064	421277
Trade, Retail	952956	137777	57407	1148140	686128	99199	41333	826660
Hospitality	174917	62470	12494	249881	169776	60634	12127	242537
Communication	93251	38971	6959	139181	77279	32296	5767	115342
Banking and Financial Services	103982	12233	6117	122331	96539	11358	5679	113576
Education and Training	26442	20868	52000	99310	17628	13912	34667	66207

Source : KPMG Analysis

State Analysis- Incremental Manpower Requirement

Sector wise focus districts for organized employment opportunities...

Sector	Focus Districts
IT-ITES	Kolkata, North 24 Parganas Nadia, East Medinipore West Medinipore, Burdhwan
Transportation & Logistics	Kolkata, East Medinipore, Howrah, Darjeeling
Hospitality & Tourism	Darjeeling, Jalpaiguri, South 24 Parganas
Retail	Kolkata, Howrah, East Medinipore, North 24 Parganas
Healthcare	Kolkata, Darjeeling
Financial Services	Kolkata, Howrah, North 24 Parganas
Mining	Burdhwan, Birbhum
Sericulture	Malda, Murshidabad, Jalpaiguri
Fisheries	South 24 Parganas
Auto- Engineering	West Medinipore, Howrah
Jute-Textile Industry	Howrah, Hooghly
Chemical & Petro Chemicals	East Medinipore
Iron & Steel	Burdhwan, Birbhum, Purulia
Food Processing	Burdhwan, Hooghly
Gems & Jewellery	Kolkata
Renewable Energy(Solar)	South 24 Paragans, Purulia

Source : KPMG Analysis

State Analysis- Supply Demand Gap(2012-17)

Skill Category	Incremental Demand	Incremental Supply	Source of Supply	Training Gap 2012-17
Skilled	4.49 lakhs	11 lakhs	From higher education institutes	-6.51 lakhs
Semi Skilled	7.83 lakhs	15.38 lakhs	From Vocational Training Institutes and Various Govt Training Schemes	-7.55 lakhs
Un-Skilled	38.31 lakhs	68.62 lakhs	School drop-outs without any access to formal skill training	-30.31 lakhs

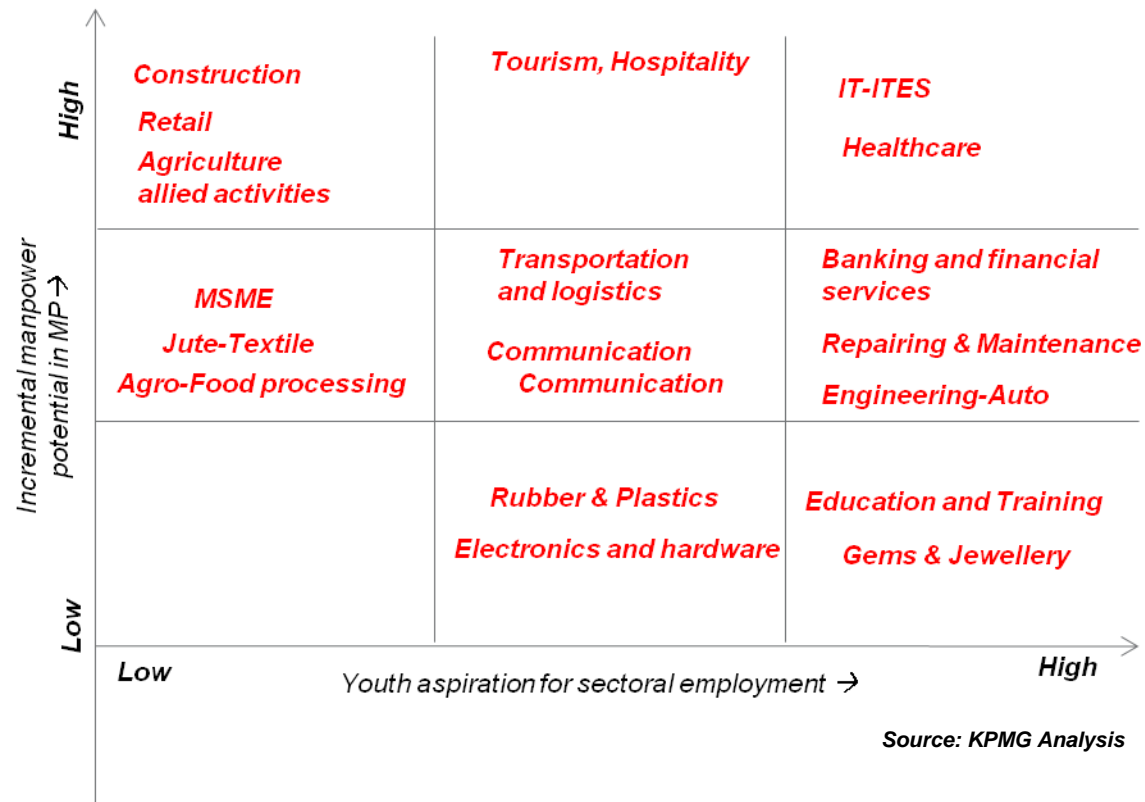
- **Significant opportunities to develop skilled workforce in the state to be employed outside the state/country**
- **Vast scope of employment in un-organized sector for un-skilled workers and limitations of the study in terms of sectoral coverage attribute to the surplus manpower in this category.**
- **Excess supply in high skilled category would indicate relatively low employment opportunities in this category within the state expected to result in migration of skilled workforce from the state**

State Analysis- Supply Demand Gap(2012-17)

Sector	Key Skill Requirements
Tea Plantations, Processing	Lack of adequately trained manpower both for plantation and processing units. Pruning, weeding and fertilizing are some critical role in plantations. In the processing units, drier operator is a critical skill required.
Sericulture	Awareness levels about advanced pest control techniques are low among cocoon cultivating farmers. Constant skill up gradation for cultivation, fertilizing and pest control are required.
Fisheries	Skill requirements for operating mechanized boats and fish processing are in demand, with majority of workforce still relying on primitive methods.
Animal Husbandry	Low awareness levels about cross breed varieties and fodder techniques, with majority of farming communities opting for animal husbandry as a mere supporting activity along with cultivation.
Farming	Operation, repair and maintenance of farming equipment. There is an increasing need to promote micro irrigation and water management programs in districts witnessing low rainfall and sustainable farming techniques. Lack of knowledge on marketing and processing among marginal farming communities.
Auto- Engineering Manufacturing	Auto industry is facing severe skill shortages in workshop like Painting, Welding (spot), Fitting, Casting and Maintenance.
Drugs, Chemicals & Petro Chemicals	Mechanical, electrical and instrumentation trades are key skill requirements in the industry. Boiler operator, lab staff, process supervisors and quality staff are other key trades in these industries.
Jute &Textile	Industry faces severe attrition problems. Considering the high levels of automation in power looms, industry requires semi skilled operators for Ring frame operation, weaving, processing and Bar-coding machine operations.
Port Based Industries	Industry faces acute shortage of various equipment operators ranging from conveyor belt to cranes.
Tourism & Hospitality	Travel agents are a key requirement for the industry along with tour guides. Hotel & Restaurant industry requires qualified chefs with expertise in multiple cuisines along with front desk executives with good English communication skills.
Healthcare	Allied healthcare workforce including technicians and Para medics is an area that would witness significant shortages considering the low institute supply to these trades.
Banking & Financial Services	Sales and marketing along with data entry operators are among key roles attracting significant employment into the sector.
Construction	Semi skilled to unskilled workers category accounts for 85 percent of the industry workforce. Site roles like mason, bar benders, welders and painters, are critical requirements within construction industry.
Education	Teaching faculty across levels lack skills pertaining to usage of advanced learning tools like digital content.

State Analysis- Skill Development Attractiveness

Skill Development Attractiveness in West Bengal



... stakeholders need to work on building a positive image of skill development

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Recommendations-Government

Government

- **Capacity building in Vocational Education:** Focus on districts with low penetration of higher education and training capacities-Paschim Medinipore, Jalpaiguri, Cooch Behar, and Murshidabad along with districts having low penetration of vocational education and medium level of higher education penetration- Bankura, North & South Parganas
- **Setting up Anchor Institutes for Manpower Development:** To function as focal centre for training programs in the respective sectors , Engineering-Auto (West Medinipore, Howrah), Iron & Steel (Burdhwan), Jute- Textile (Hooghly), Tea Processing (Darjeeling), Gems & Jewellery (Kolkata), Mining (Birbhum), IT/ITES (North 24 Parganas), Chemical and Petro Chemicals (East Medinipore), Sericulture (Malda), Fisheries (South 24 Parganas), Solar Energy (South 24 Parganas), Port Based Industries(East Medinipore) and Tourism (Darjeeling)
- **Incorporating Skill Training in mainstream K12 Education:** Developing a framework for incorporating vocational courses in mainstream school education through a joint committee comprising members of Department of School Education , Department of Vocational Education& Training , NSDC and Association of State Board Schools
- **Increased Focus on Demand Driven Skill Training Programs and validating the effectiveness of choices made through tracer studies:** Increase the effectiveness of skill training programs delivered by government departments such as HUPA, DRDA, Dept. Of MSME, Department of Agriculture, Department of Food Processing, Department of IT, and other Departments with a skill development mandate - by ensuring creation of skill supply oriented towards skill demand
- **Technology enabled Faculty Development Model:** Initiative aims at continuous development of faculty skills in their respective domains through periodic VSAT based training sessions
- **Transforming District Employment Exchanges to Skill Management Centers (SMC):** Aimed at enlarging the role of District Employment Exchanges to Skill Management Centres that will reach out to government and private industry to gather information on vacancies at district, state and national level - and make the information available to relevant job seekers in the district
- **Modernization of Vocational Training Institutes:** Seek active support from industries in modernization of ITI s/ Polytechnics to met the emerging needs of industry.

Recommendations-NSDC/SSCs

NSDC/SSCs

- **Anchoring Skill Development in West Bengal through PPP initiatives:**
 - Setting up a joint skill development task committee at state and district levels comprising of NSDC /SSCs, Industry, NSDC partner training companies and representatives of Government of West Bengal to plan, implement and monitor skill development initiatives in the state
 - Collaborative training with Government under Rural Livelihood Mission ,National Urban Livelihood , MES scheme, Special Central Assistance to the Scheduled Caste sub plan and the Tribal sub plan, and other central training schemes for skill development
 - Designing industry relevant programs and developing curriculum along with WBSCVT
 - Working with Anchor Institutes on knowledge sharing and skill development activities in specific sectors
 - Supporting initiatives to incorporate skill training in mainstream K12 Education through trainer and infrastructure support along with NSDC partner institutes
- **Focus sectors of West Bengal:** Support partner institutes focusing on Iron & Steel, Auto-Engineering, Jute & Textile, Construction, Retail, Tourism and Port Logistics sectors in West Bengal through SSCs.
- **Focus Districts:** NSDC could support training capacity development in districts with high employment opportunities-Howrah, North 24 Parganas, Kolkata, Burdwan, Darjeeling, East Medinipore
- **Sector Level Skill Mapping:** NSDC/Sector Skills Councils would need to conduct detailed occupational standard mapping for priority sectors in West Bengal

Recommendations

Industry

- **Setting up of SSCs:** Support setting up of national and state level SSCs in West Bengal to address the skilling needs of industries
- **Supporting Skill Development Initiatives:**
 - Ensuring certification of skill levels for workforce based on occupational standards of respective industries
 - Recruitment preference for qualified skilled professionals
 - Encouraging up skilling of existing workforce in collaboration with training institutes
 - Supporting establishment of sector specific training institutes in industry clusters
 - Assistance in developing and designing skill development programs
 - Supporting modernization of vocational institutes, faculty training
 - Promoting industrial training of vocational students

Training Providers

- Focus on Government endowment training schemes of Rural Livelihood Mission, National Urban Livelihood, MES scheme, Special Central Assistance to the Scheduled Caste sub plan and the Tribal sub plan, and other central training schemes for skill development in less developed districts of the state
- **Finishing schools:** Targeting employment in services sectors with high salary potential– eg: IT&ITES and Banking and Financial Services
- Supporting initiatives to incorporate skill training in mainstream K12 Education through trainer and infrastructure support
- Active participation in skill development task committees at state and district levels.
- Modernization of institutes matching the needs of industries
- Faculty training in collaboration with industries

Thank You



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