

Cluster Mapping of Gem and Jewellery Sector in India

Overview, Objectives and Methodology

NCAER TEAM

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November 24, 2018**

- Brief Profile of NCAER
- Overview of Gems & Jewellery Sector
- Clusters identified by GJEPC
- Need for Cluster Mapping Study
- Key objectives of the study
- Broad Scope of the study and Parameters & Variables
- Methodology – Unit and Cluster Mapping
- Methodology – Manpower Skill Competency Mapping
- Points for Suggestions and Comments

* Oldest and largest independent, non-profit, economic policy research institute.

* The focus on generating and analysing empirical evidence to support and inform policy choices.

* One of a handful of think tanks globally that combine rigorous analysis and policy outreach with deep data collection capabilities, especially for household surveys.

* During more than the sixty years of its existence, NCAER has achieved significant socio-economic outcomes through its contribution to policy engagement, outreach, and academic discourses.

• Recent work:

- Indian Human Development Survey (IHDS).
- The NCAER Data Innovations Centre (NDIC)
- Monitoring and Evaluation of Handloom Clusters.
- Building Synergies: Matching Business Reforms to the 'Ease of Doing Business' (EoDB) Index.
- Addressing India's skilling challenges.
- Constructing national Tourism Satellite Accounts (TSA) for India and regional accounts for States and UTs.

Overview of the Gems & Jewellery Sector

Key characteristics of Gems & Jewellery Sector (**Manufacturing**) using different government data sources (NIC: 321)

Indicators	Number of Units			Number of Workers		
	Rural	Urban	Total	Rural	Urban	Total
Economic Census 2013-14	130069	311100	441169	241039	956083	1197122
ES-NSSO 2010-11	249543	455738	705281	453266	1069538	1522803
ASI 2010-11	89	1295	1384	12612	119959	132571
ES-NSSO+ASI	249632	457033	706665	465877	1189497	1655374
EU-NSSO 2011-12	-	-	-	600688	1422792	2023480

While these data provide some insights on structure of the sector, there are variations in findings among different data sources, making the Cluster mapping study much more important

Note: ES - Enterprise Survey; ASI - Annual Survey of Industries; EU - Employment Unemployment Survey; NSSO - National Sample Survey Office

Overview of the Gems & Jewellery Sector

Key Characteristics Of Gems & Jewellery Sector (**Manufacturing + Services***) Using Different Government Data Sources (NIC: 321, 24205, 46498, 46697, 47733 And 95293)

Indicators	Number of Units			Number of Workers		
	Rural	Urban	Total	Rural	Urban	Total
ES-NSSO 2010-11	372405	735959	1108364	610592	1572261	2182853
ASI 2010-11	96	1319	1415	13076	120342	133418
ES-NSSO+ASI	372501	737278	1109779	623668	1692603	2316271
EU-NSSO 2011-12	-	-	-	794167	1871409	2665575

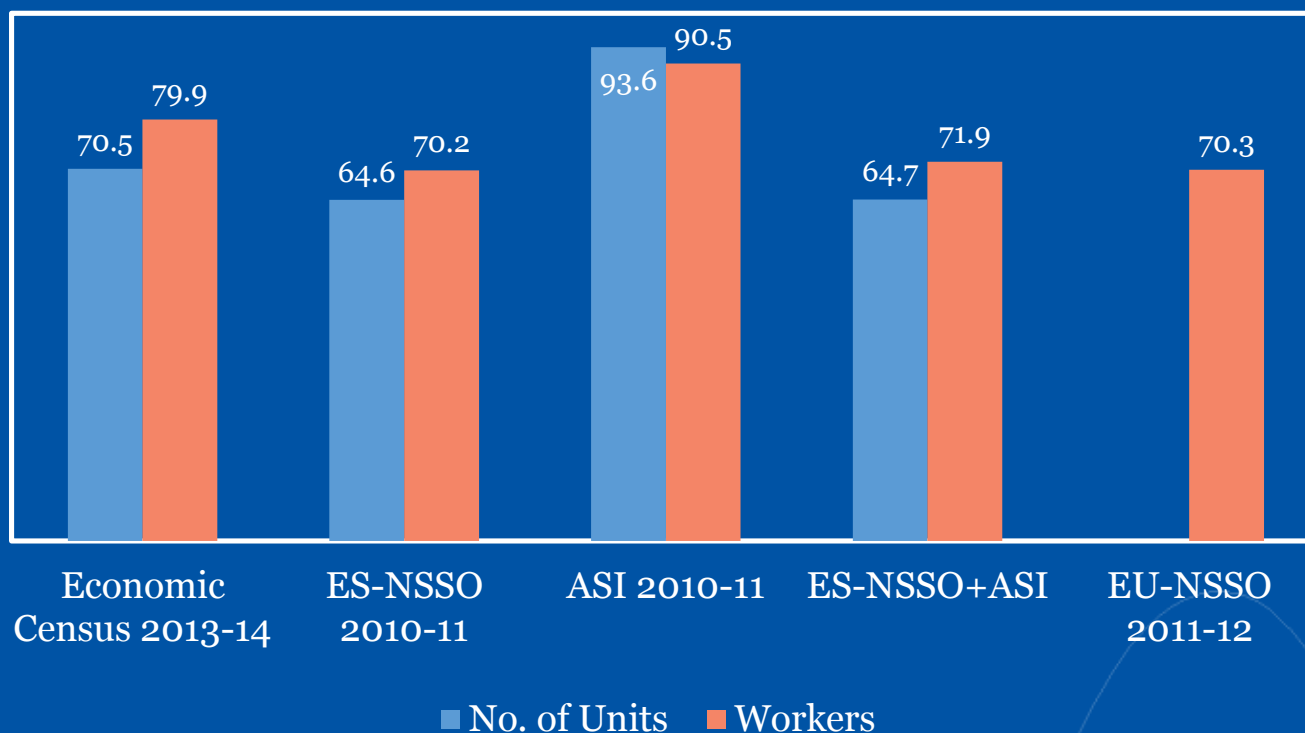
*(Including Production and refining of precious metals, Repair and Wholesale and Retail Trade)

Description of NIC codes

Category	NIC Code	Description
Manufacturing	24205	Production and refining of precious metals (such as gold, silver platinum etc.) and alloys
	32111	Manufacture of jewellery of gold, silver and other precious or base metal metal clad with precious metals or precious or semi-precious stones, or of combinations of precious metal and precious or semi-precious stones or of other materials
	32112	Working of diamonds and other precious and semi-precious stones including the working of industrial quality stones and synthetic or reconstructed precious or semi-precious stones
	32113	Production of worked pearls
	32114	Manufacture of coins, including coins for use as legal tender, whether or not of precious metal
	32119	Manufacture of other articles of gold, silver and other precious and semi precious metal and stone
	32120	Manufacture of imitation jewellery and related articles
Trade	46498	Wholesale of precious metals and jewellery
	46697	Wholesale of precious stones
	47733	Retail sale of jewellery and imitation jewellery
Services	95293	Repair and alteration of jewellery

Overview of the Gems & Jewellery Sector

Units and Workers in Urban India by Different Sources (% to Total)



More than 70% workers in G&J sector are from Urban India

Overview of the Gems & Jewellery Sector

Distribution of G&J Towns, Units and Workers (Urban India)

Indicators	No. of Gems & Jewellery Units					Total
	Less than 100	100-199	200-499	500-999	1000 & More	
Urban India						
No. of Towns	5730	273	191	37	29	6260
No. of Units	95005	38264	58364	25479	93988	311100
No. of Workers	211041	91582	139795	85106	428559	956083
No. of Units Per Town	16.6	140.2	305.6	688.6	3241.0	49.7
No. of Workers per Units	2.2	2.4	2.4	3.3	4.6	3.1
Percentage of Towns	91.5	4.4	3.1	0.6	0.5	100.0
Percentage of Units	30.5	12.3	18.8	8.2	30.2	100.0
Percentage of Workers	22.1	9.6	14.6	8.9	44.8	100.0

38% of G&J units (urban) employing 54% of workers are located in just 1.1% towns

Source: Economic Census, 2013-14

Overview of the Gems & Jewellery Sector

Distribution of G&J Villages, Units and Workers (Rural India)

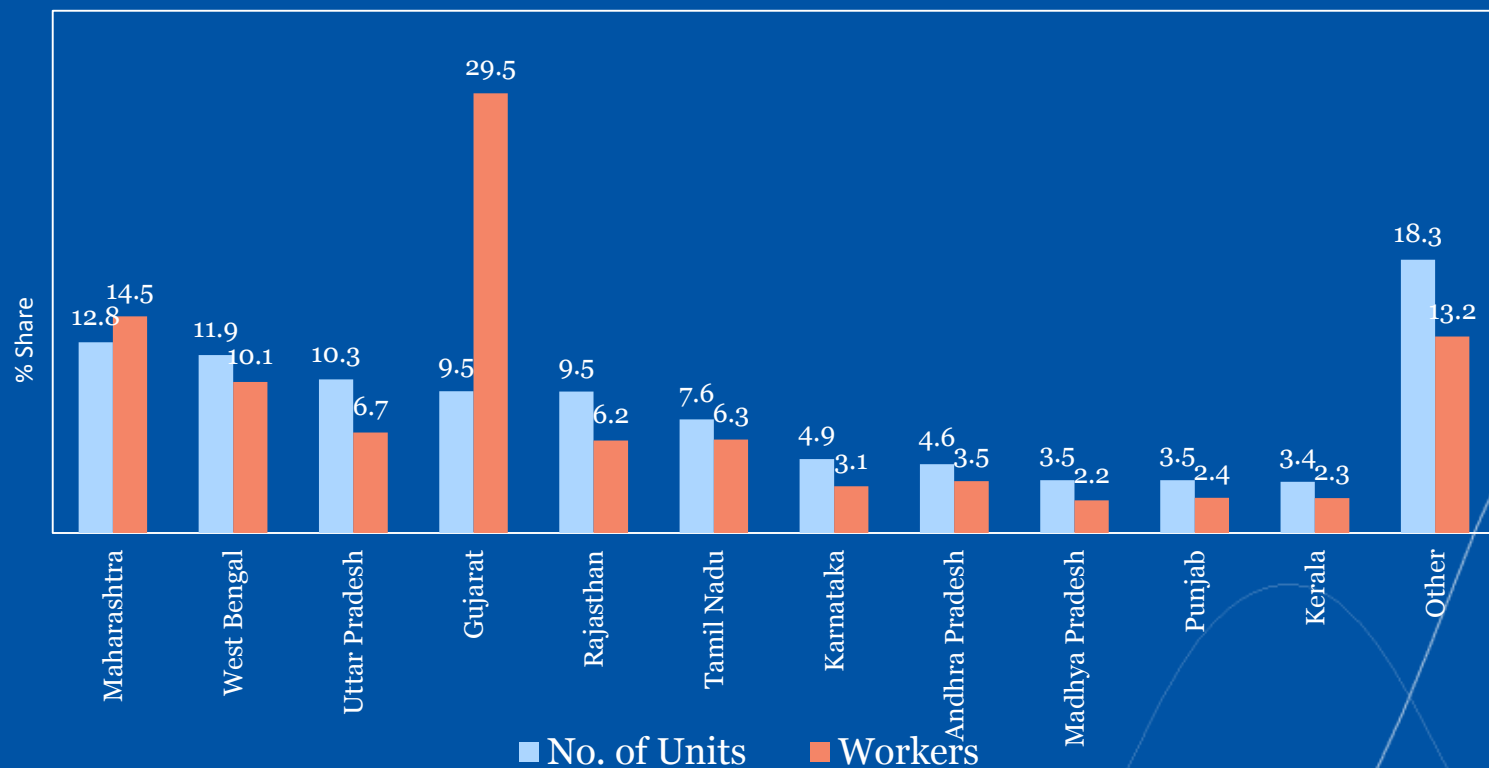
Indicators	No. of Gems & Jewellery Units					
	One Unit	2 Units	3 Units	4 Units	> 4 Units	Total
Rural India						
No. of Villages	18819	7894	4193	2468	6921	40385
No. of Units	18819	15968	12579	9872	72831	130069
No. of Workers	30668	26353	21007	16276	146732	241039
No. of Units Per Village	1.0	2.0	3.0	4.0	10.5	3.2
No. of Workers per Units	1.6	1.7	1.7	1.6	2.0	1.9
Percentage of Village	46.6	19.5	10.4	6.1	17.1	100.0
Percentage of Units	14.5	12.3	9.7	7.6	56.0	100.0
Percentage of Workers	12.7	10.9	8.7	6.8	60.9	100.0

56% of G&J units (rural) employing 61% of workers are located in 17% villages

Source: Economic Census, 2013-14

Overview of the Gems & Jewellery Sector

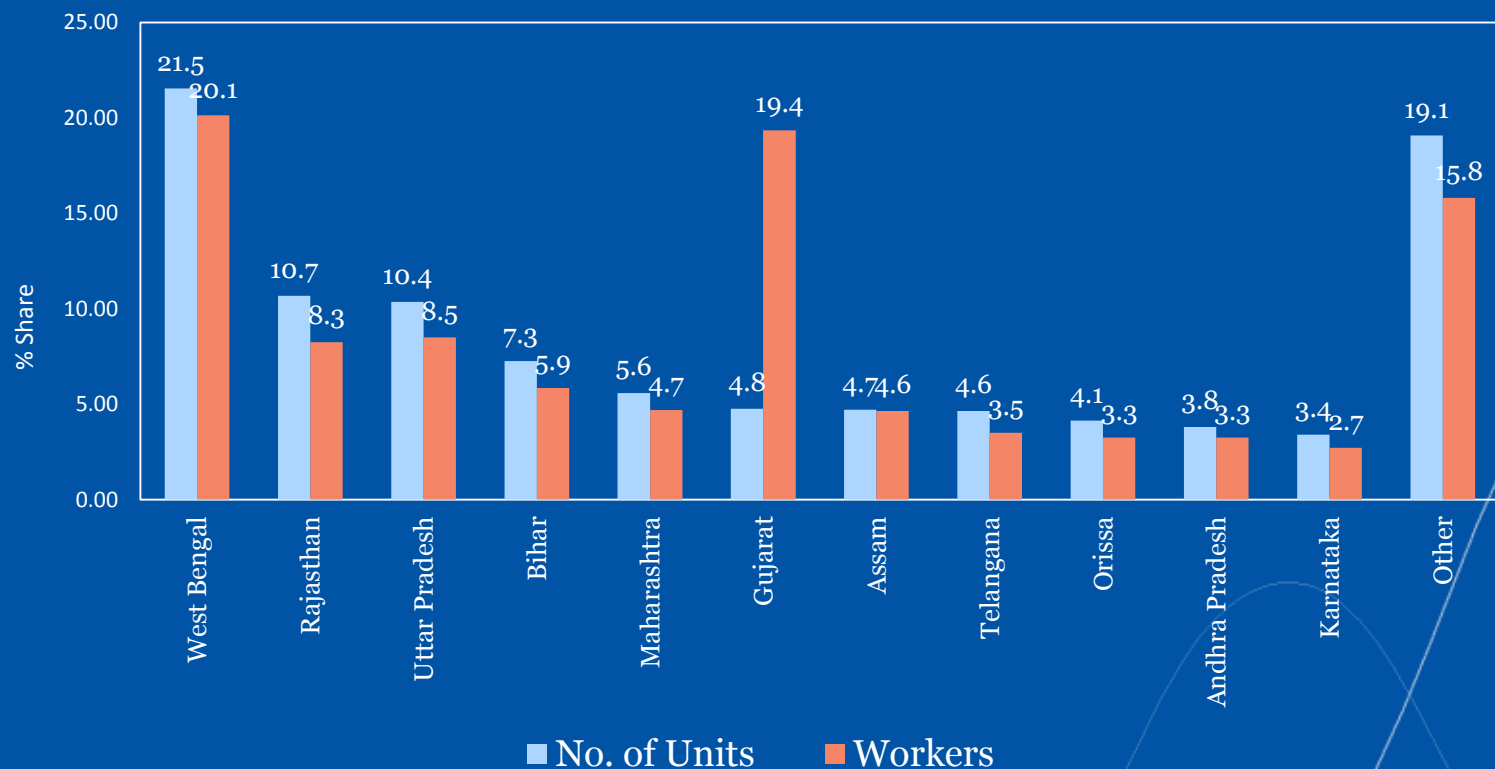
Distribution of G&J units and workers by state - Urban India



62% of units and 73% of workers are located in 6 major states

Overview of the Gems & Jewellery Sector

Distribution of G&J units and workers by state - Rural India

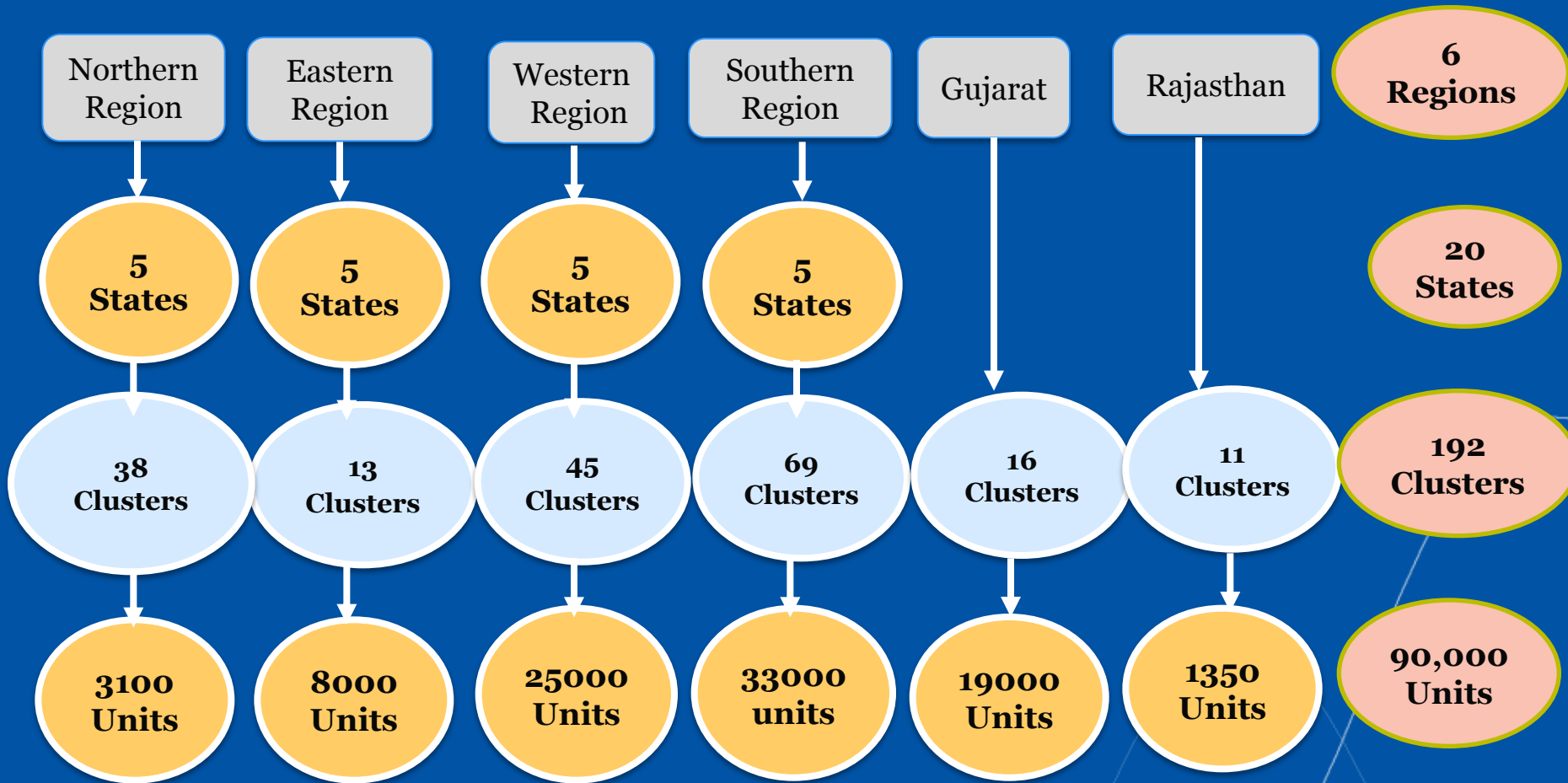


60% of units and 67% of workers are located in 6 major states

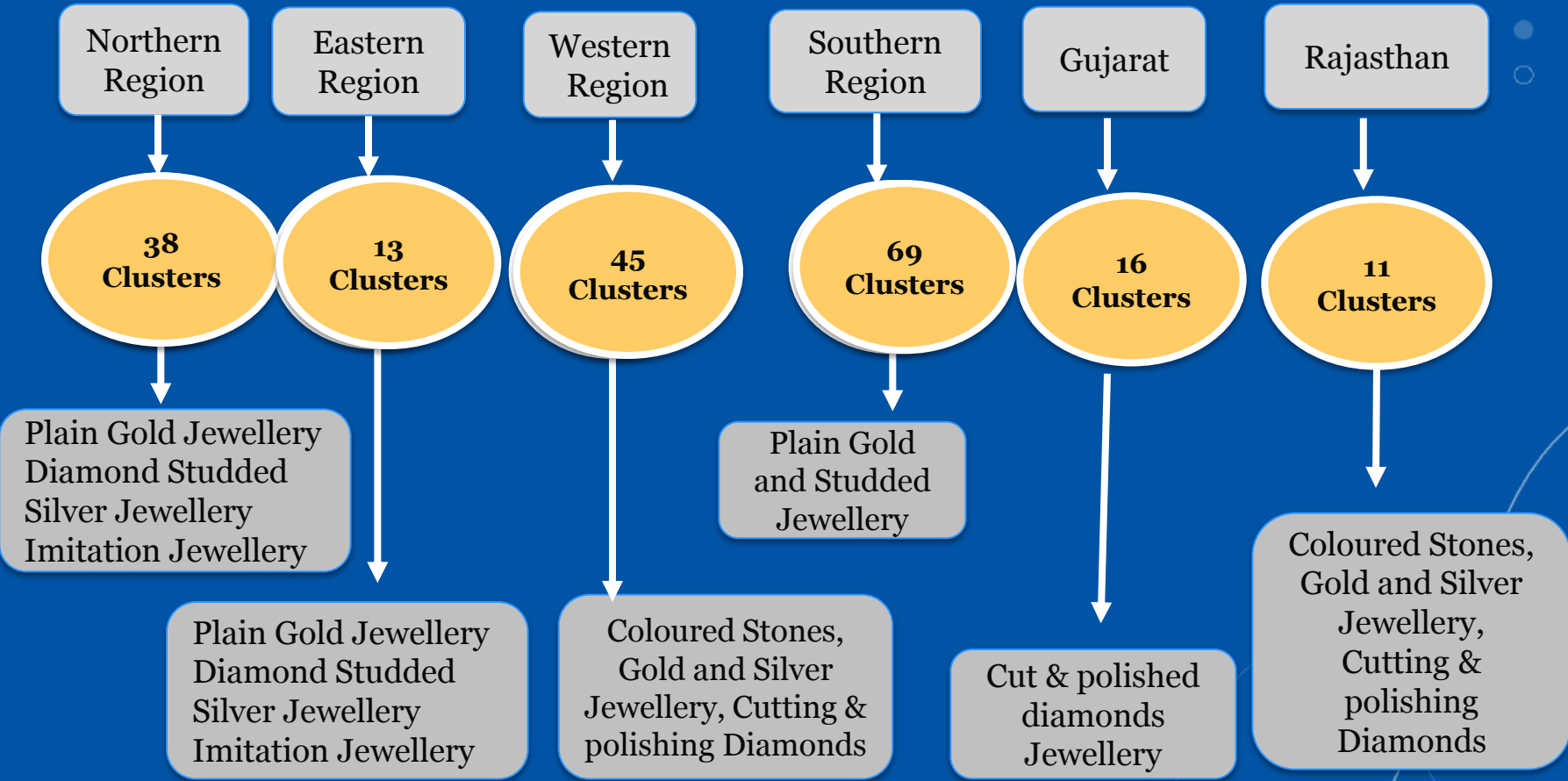
Clusters identified by GJEPC



Region & Cluster-wise Units



Region & Cluster-wise Products



Indicative List of the Clusters – North

No. of Clusters	38
No. of Units	3100
No. of Workers	1.40 lakh
States	Delhi, UP, Uttarakhand, Haryana, Punjab

- Saharanpur
- Naugarh
- Bareilly
- Jaswant Nagar
- Firozabad
- Jhansi
- Kanpur Nagar
- Lalitpur
- Lucknow
- Meerut
- Moradabad
- Agra
- Aligarh
- Jansath (Dist: Muzaffarnagar)
- Harahua
- Bhaironath
- Allahabad
- Harsinghpur
- Firozabad
- Hathras
- Almora
- Bageshwar
- Haridwar
- Pithoragarh
- Pataudi
- Bahadurgarh
- Seemapuri
- Kingsway Camp
- Madhu Vihar
- Nangloi
- Kapashera
- Chandni Chowk
- Karol Bagh
- Jalandhar
- Ludhiana
- Patiala

Indicative List of the Clusters - East

No. of Clusters	13
No. of Units	8000
No. of Workers	62000
States covered	WB, Odisha, Bihar, Assam, Chhattisgarh

- Domjur
- Sinthee & Dumdum
- Beldanga
- Bankura
- Magrahat
- Singur
- Ranaghat
- Berhampore
- Cuttack
- Ara
- Patna
- Guwahati
- Raipur

Indicative List of the Clusters - West

No. of Clusters	45
No. of Units	25000+
No. of Workers	3.60 lakhs
States covered	MP, Maharashtra, Rajasthan

- Bhopal
- Indore
- Jabalpur
- Akola
- Aurangabad
- Dhule
- Kolhapur
- Hupari
- Nasik
- Sholapur
- Thane
- Udgir
- Jalgaon
- Jalna
- Latur
- Nagpur
- Nanded
- Pune
- Satara
- Ichalkaranji
- Ratnagiri
- Chiplun
- Mahad



Indicative List of the Clusters - South

No. of Clusters	69
No. of Units	33000
No. of Workers	3.60 lakh
States covered	Tamil Nadu, AP, Telangana, Karnataka, Kerala

- Tirunelveli
- Devakottai / Karaikudi
- Dharapuram / Township
- Coimbatore
- Erode & other towns
- Karur
- Madurai & other towns
- Pollachi
- Chennai
- Virudhunagar
- Vellore
- Thiruvarur
- Tiruppur
- Thoothukudi
- Pondicherry
- Villupuram
- Kovilpatti
- Tiruppur
- Tiruchirappalli
- Thiruvannamalai
- Perambalur
- Salem
- Tadipatri
- Guntur & other towns
- Proddatur & Kadapa
- Visakhapatnam
- Nellore & other towns
- Hyderabad
- Suryapet
- Karimnagar
- Bangalore
- Udupi
- Bangarpet
- Bagepalli
- Nelamangala
- Belgaum
- Bellary
- Bijapura
- Chennapatna
- Chikmagalur
- Chintamani
- Chitradurga
- Davangere
- Hassan
- Yadgiri
- Virajpet
- Theerthahalli
- Sidlaghatta
- Ranebennur
- Puttur
- Piriapatna
- Moodbidri
- Mangalore
- Mandya
- Magadi
- Kundapura
- Koppal
- Kollegal
- Kolar
- Karkala
- Kanakapura
- Thrissur
- Malappuram
- Calicut
- Ernamkulam(cochin)
- Kottayam
- Cannannore (kannur)
- Trivandrum
- Palakkad



Indicative List of the Clusters - Gujarat

No. of Clusters	16
No. of Units	19000
No. of Workers	15 lakh +

- Ahmedabad
- Palanpur
- Deesa
- Visnagar
- Jasdan
- Mahuva
- Amreli
- Junagadh
- Bhavnagar
- Botad
- Gariyadhar
- Savarkundala
- Palitana
- Surat
- Rajkot
- Baroda

Indicative List of the Clusters - Rajasthan

No. of Clusters	11
No. of Units	1400
No. of Workers	1 lakh +

- Jaipur
- Pratapgarh
- Bikaner
- Sirohi
- Jodhpur
- Churu
- Kota
- Nathdwara
- Udaipur
- Bhilwara



- G&J is an important sector in Indian economy, contributing 7% to GDP*
- The industry contributes significantly to country's foreign exchange reserves
- Huge domestic market as well – largest consumer of gold in the world.
- In Diamond Polishing, India is a global leader with 95% market share
- **But, no plausible statistics available on exact number of clusters, units and workers employed. Various other key characteristics not known, which may be useful in the promotion of the industry and formulating policies for it.**

Key Objectives of the Study

- Mapping of Units and Clusters across different regions along with product segments.
- Assessing the number of employment in this sector across different regions along with product segments.
- Mapping and measure the overall health of clusters/Units in terms of output, employees, skills, technology etc.
- Assessing Contribution of G&J sector in India in terms of Income, Output, Employment, Value Addition etc.
- Assessment of Skill Gaps, Technology Gaps , logistics & infrastructure gaps
- Assessment of Trade Potential and Trade Competitiveness of Gem and Jewellery Sector

Broad Scope of the Study and Parameters & Variables

Parameters & Variables	Levels
<p>Unit mapping – Estimate total number of units in the sector); Present performance in terms of turnover; technology readiness; manpower (skill & unskilled); production and output</p>	
<p>Cluster mapping – Total number of clusters and their performance in terms of turnover; technology readiness; manpower (skill & unskilled); production and output</p>	
<p>Manpower Competency mapping – Number of employees engaged (Contractual/permanent); Gender based distribution; Qualifications; Skill training; Experience; Knowledge to the latest techniques/systems/methods etc.; Readiness to adopt new techniques/ designs/methods etc. and Workers' Issues and challenges.</p>	<ul style="list-style-type: none"> • Regions • Rural-unban • Segments
<p>Economic parameters mapping – Resources; turnover; credit/ finance; investment; production (quantity & value); output etc.</p>	
<p>Gap mapping – Difference in existing and desired performance/capacities of the units in terms of manpower and technology</p>	

Methodology - Unit and Cluster Mapping

- **Define Cluster**
- **Identify Clusters using Primary and Secondary data**
- **Formulate Sampling Methodology for Primary Survey**

–Sample Size:

Manufacturing units/Traders/Retailers – 6600

Around 75% sample will be selected from urban India

–Sample Frame:

Economic Census 2013-2014 and the data provided by GJEPC (no. of units & workers of 192 clusters; list of exporters & associations and list of institutions) will be the base for sample selection

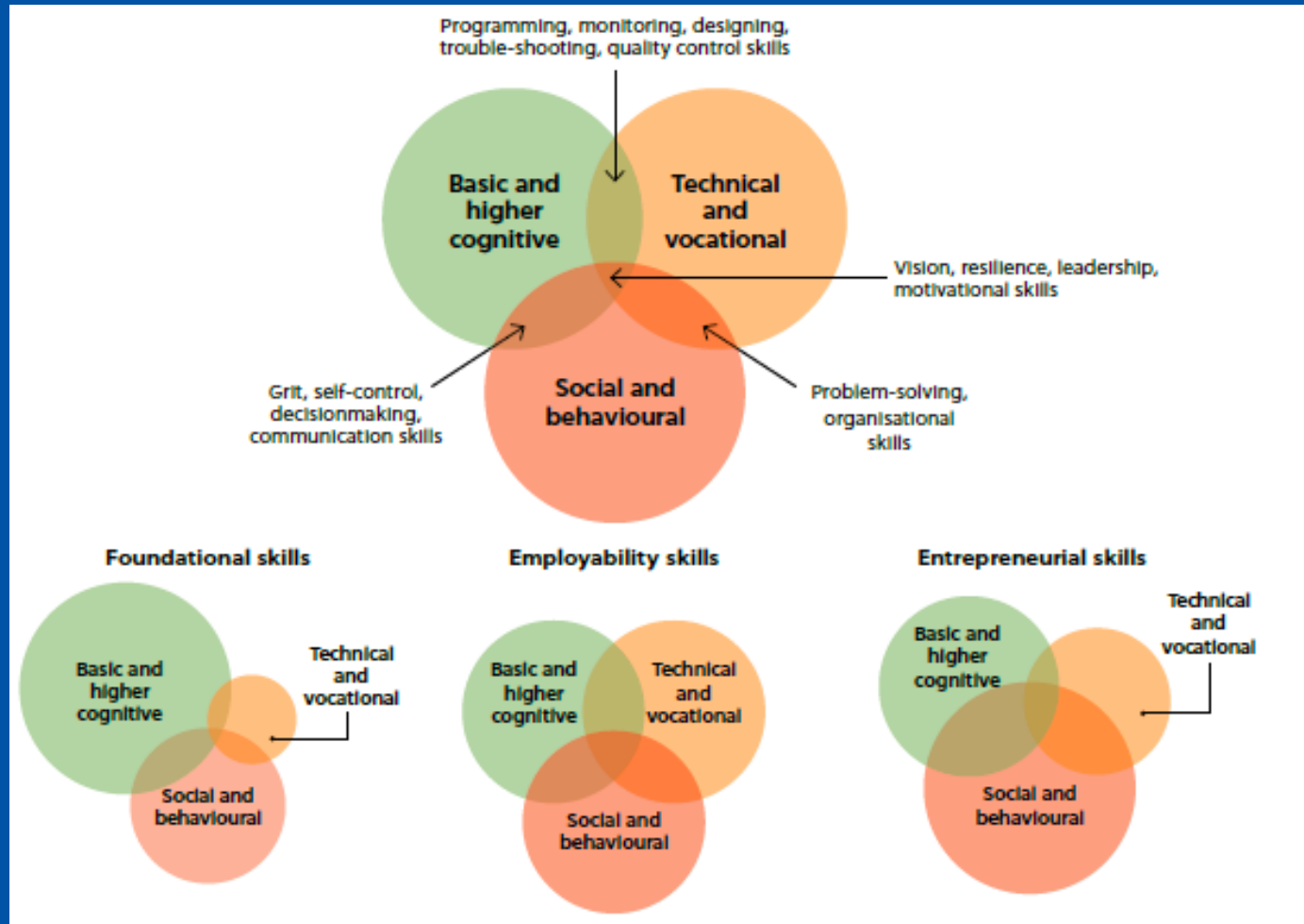
– **Survey characteristics:**

- Representative of 6 regions, rural-urban areas and G&J segments
- Administered through structured specific questionnaires for
 1. Manufacturing units/Traders/Retailers
 2. Exporters
 3. Associations
 4. Institutions

Methodology – Manpower Skill Competency Mapping

- **Identification of Skill Competency parameters**
- **Development of Skill Competency standards**
- **Skill Mapping and Gap analysis**

Definitions and concepts of Skill to assess Skill Competency



Points for Suggestions and Comments

- We welcome any suggestions on the following
 - Approach of the study
 - Clustering
 - Cooperation in conducting survey

Thank You



Methodology – Economic Parameters Mapping

- **Construction of indices to assess economic strength of the clusters using estimates on:**
 - Skilled labour
 - Export
 - Sales
 - Technology Infrastructure
 - Financial Strength
 - Physical Infrastructure

Methodology – Trade competitiveness

- **To be measured at country level using**
 - International data on trade
 - Trade potential of segments
 - Economic techniques



Selected Large Projects and Flagship Programs of NCAER

India Human Development Survey (IHDS):

- * Nation-wide Panel Data
- * 42,000 households

- India's only large-scale National Panel study
- India's only survey-based study on Human Development

Third Handloom Census of India and Photo ID Cards of All Handloom Weavers :

- * Nation-wide Census
- * 27.8 lakh Households

- World's largest data collection done on CAPI device
- India's only census commissioned to a non-Govt organization ever
- More than 40 lakh photo-identity cards made

Monitoring and Evaluation of Handloom Clusters:

- * Nation-wide
- * 1 lakh households

- Involves concurrent monitoring and evaluation of the 254 handloom clusters across 23 states of India

Selected Large Projects and Flagship Programs of NCAER

Rural Economic and Demographic Survey (REDS):

- * Nation-wide Panel Data (17 states)
- * 4674 Villages and
- * 44,721 households

- World's second oldest panel survey
- India's oldest & largest rural panel survey study

Agriculture outlook and Situation Analysis for Food Security:

- * Nation Wide
- * 25,805 agricultural households

- Focusses on integrating information relating to inputs, outputs, and markets for the major agricultural products to provide an assessment of the emerging agricultural outlook in the economy

Study on Unaccounted Income/wealth Inside and Outside India:

- * Nation -Wide
- * Analytical Study
- * Unstructured/ Structured enumeration and survey involving several lakh establishments and households

- To analyse the extent of unaccounted income and wealth inside and outside the country