CHAPTER- 3

Role of Cluster Approach in Entrepreneurship Development in MSMEs India and Tripura.

3.1. Evolution of Industrial Cluster Concept.

3.2. Introduction of Cluster Approach in the field of SSI sector in India.

3.3. A brief outline of Industrial Clusters in India and Tripura.

3.4. Contribution of Clusters in SSI sector in India.

CHAPTER- 3

3.1. Evolution of Industrial Cluster Concept in international point of View:

The origin of industrial cluster concept has evolved from the idea of the classical and neo-classical theory of different economists, geographers; namely, Location Theory of Johann Henrich Von Thunen (1826), Marshall's Industrial District Theory, Least Cost Theory of Alfred Weber(1909), and the significant contribution of Michael Porter relating to industrial cluster theory in his world famous book 'The Competitive Advantage of Nations' in 1990 is considered renaissance in shaping the today's industrial cluster theory. The studies of the classical economists in the period of nineteenth century in regard to the spatial economics and the localization of industries paved the way for the concept of industrial clusters.

3.1. 1 Location theory:

Location theory, an integral part of spatial economics, is concerned with the geographic location of economic activity which mainly focused on where and why specific economic activities are located. It is based on the argument of optimum location of industry/firm for achieving the maximization of profit.

3.1. 1a. Von Thunen's Conceptual Model:

Modern Location economies began with Johann Henrich Von Thunen, a German Economist developed first the spatial economy, representing the theoretical step in studying of the spatial aspects from economy in his work 'The Isolated State' in 1826. Von Thunen in his conceptual model Stressed upon three factors such as the production, markets and transportation cost. In the era of globalization, these factors still act as powerful factors for the location of global production.

3.1. 1b. Theory of Alfred Weber:

General theory of industrial location developed by Alfred Weber, a German economist, in 1909 in his book entitled "Theory of the location of Industries" taking into account the several spatial factors for finding the optimal location and

minimal cost for manufacturing plants. According to him transport cost differential, labour cost differential and agglomeration economies and diseconomies are the three fundamental location forces. Weber's Least Cost Theory emphasized that industry choose the place for location where it can maximize its earning as profit by minimizing its costs.

3.1. 2. 'Industrial District' Concept of Marshall:

'Industrial district' as referred by Alfred Marshall, the English economist, is the place where Small and medium firms, which are specializing in different stages of the same production process, concentrated in the same locality, for enjoying the same economies of scale that only large companies normally get.

Marshall in his famous book "Principles of Economics" first referred the concept of 'Industrial District' which was based on the importance of external economies, for understanding the development of agglomerated clusters of small and medium sizes firms. The two dominant features of Marshallian's industrial district are high degrees of vertical and horizontal specialization and a very heavy reliance on market mechanism for exchange. The benefit of external economies which is emerged from the close proximity of actors in the process of economic activity was the main focal point of Marshallian's concept. His concept suggests that all firms and businesses belong to the same industry sector and proximity of firms in the same industry increases the innovation abilities of that locality. The result of which is that every one of that industrial district involved benefits from spill over of specialised knowledge. Such localisation economies which are external to the firm are internal to the industry, being a function of the scale of the industry at the localization.

The external economies which foster special cluster formation according to Marshall are three types: (i) economies resulting from access to a common labour market and shared public goods, such as infrastructure, (ii) economies from saved transportation and transaction costs (iii) economies from spill over. That is why Marshall put it in his book 'Principles of Economics'(Book 4, chapter x) that " When an industry has thus chosen a locality for itself, it is likely to stay there long; so great are the advantages which people following the same skilled trade get from

near neighbourhood to one another. The mysteries of the trade become no mysteries, but are as it were in the air". According to him various causes led to the localisation of industries; but the chief of localisation is the physical conditions such as climate and availability of raw materials.

Various cluster theories, stem from Marshall's concept of industrial district, highlighted the different roles and functions of industrial clusters (Asheim, 2000). The economic conditions that foster the development of industrial district in Great Britain recurred in roughly in the same manner in Italy in the period of 1954-1975. Marshllian concepts have been followed to explain the success of small firms in the Italy which were described as Marshllian industrial district.

3.1. 2a. Review of Marshall Concept by Becattini:

Becattini:(1989; 1991) argued that industrial district could be regarded as a "Creative milieu". The opinion of Becattini (1990b, p38) in the point of industrial district concept clarifies that mere agglomeration of firms is not enough for denoting an industrial district but other conditions such as attitudes and values of local population are also important in determination of positive performance. His view highlighted that industrial districts are socio-economic systems joining together a community of people with common values, culture and economy (market). The social relations between clusters member was not considered in Marshall's model as per observation of Becattini(2001) and Sforzi (2002).According to them social relations among community members played important role in the success of clusters in the rural areas of Italy, the Emilia-Romagna region. However Becattini's opinion was in the favour of industrial district concept and (1989; 1991) argued that industrial district could be regarded as a "Creative milieu".

3.1. 2b. Marshall's Industrial District Concept in the eye of Krugman:

Marshall's concept was also reinterpreted by recent economic geographers (Krugman'1991ab; Fujita et al., 1999 and Thisse, 2002).The source of industry agglomeration according to Krugman(1991b) is demand linkages among firms.

3.1.3. Industrial Complex Analysis Theory:

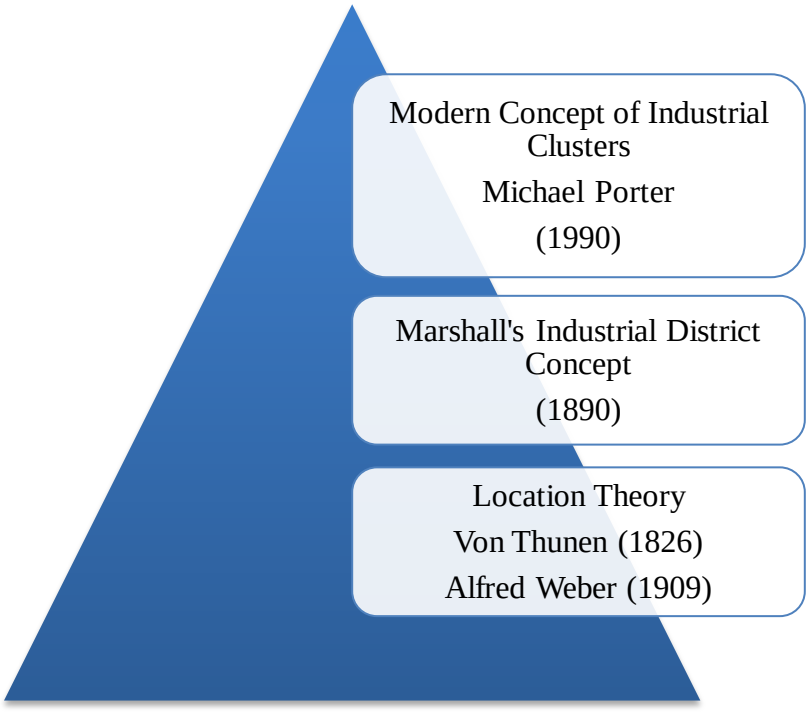
The theorists of Industrial Complex Analysis explain the emergence of large assembly of industrial plants and related industries and their installation in certain locales in countries around the world. Walter Israd (1956) developed the theory of Industrial Complex Analysis to make a systematic and comprehensive attempt at a general theory of location where he opined that the determinants of production activities are the successive influences of scale economies, localisation economies, and urbanization economies. According to him localisation economies obtain when plants of similar or related character (generally within a given industry) come together on a particular location. Such economies stem from the exploitation of a common resource pool, joint utilization of specialised facilities and infrastructure. In the word of Israd Industrial Complex is "a set of activities occurring at a given location and belonging to a group (sub-system) of activities which are subject to improve of production (technological), marketing or other inter-relations". Locational inter-dependence is the glue that binds the complex together as per opinion of Israd.

3.1. 4. Michael Porters Industrial Cluster Concept:

Porter's (1990) theory of industrial cluster concept today is widely accepted worldwide. He introduced the concept of cluster in his book "The Competitive Advantage of Nation" where he showed how cluster not only reduce transaction cost and boost efficiency but improve incentives and create collective assets in the form of information, specialised institutions and reputation among others. He used the Diamond shaped diagram which is based on four main pillars namely; factors conditions, demand conditions, related and supporting industries; firm strategy structure and rivalry, as the determinants of national advantage. The individual point of diamond or diamond as a whole affect four ingredients namely, the availability of resources and skills, information's that firms use to decide which opportunities to pursue with those resources and skills, the goals of individuals in companies, the pressure on companies to innovate and invest which led to a national comparative advantage.

Chart: 3.1

Evolution of Industrial Cluster Concept



3.1. 5. Definition of Clusters in International view point:

The root of cluster concept lies with the agglomeration theory which has appeared from the study of concerned literatures. There is no unanimously accepted definition of industrial clusters but one will find that different scholars and practitioners have conceptualised clusters differently from the definitional point of view. Industrial cluster concept divided conceptually in three categories (Chen, 2005) on the basis of the followings:

Chart: 3.2

Industrial Cluster Concept from the Definitional point of View

Category	Basis	Contributors
Category I	Industrial cluster based on the theoretical principles of localization economies.	Alfred Marshall is the pioneer in this field. Rosenfeld,1995; Schimz and Nadvi, 1999; Swann and Prevezer (1996)
Category II	Basedon inter-industry relationships found in input-output tables.	Czamansky (1974, 1979); Roepkeet et al. (1974) Bergman and Feser (1999'2000).
Category III	Economies of localization and Urbanization, internal return to Scale, Value Chain Linkage, and Technology Innovation etc.	Porter's Theoretical Approach. (1990,1998)

Alfred Marshall, the English economist is supposed to have propounded the cluster concept.

According to Rosenfeld, (1997) "A cluster is concentrations of firms that are able to produce synergy because of their geographical proximity and interdependence, even though their scale of employment may not be pronounced or prominent."

Swann and Prevezer (1996) defined cluster as "groups of firms within one industry based in one geographic area".

Morosini(2004) defined cluster as "socioeconomic entity characterised by a social community of people and a population of economic agents localised in close proximity in a specific geographic region".

Hill and Bernnan (2000) noted industrial cluster as "concentration of competitive firms or establishments in the same industry"

Bernner (2004) defined a local industrial cluster as "an industrial agglomeration that caused by local self augmenting processes".

According to **Feser** (1998) Economic clusters are not just related and supporting industries, but rather related and supporting institutions that are more competitive by virtue of their relationships.

Cooke and Huggins (2002) opined that clusters are geographically proximate firms in vertical and horizontal relationships, involving a localised enterprise support infrastructure with shared developmental vision for business growth, based on competition and cooperation in a specific market field.

Roelandt and den Hertag (1999) Clusters can be characterized 'as network of producers of strongly interdependent firms (including specialized suppliers), linked each other in a value adding production chain' .According to Enright a regional cluster is an industrial cluster in which members firms are in close proximity to each other. According to Krugman (1991) clusters are not seen as fixed flows of goods and services, but rather as dynamic arrangements based on knowledge creation, increasing returns and innovation in abroad sense. Krugman (1991) opined clusters as co-location of firms due to increasing return to scale lower costs of moving goods across space, etc.

Porter (1998) defined cluster as "Geographic concentration of interconnected companies and institutions in the particular field". He redefined the cluster concept in the year 2000 "as a geographically proximity group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities and defining it boundaries that can range from a single city or state to a country or even a group of neighbouring countries."

The analyses of Krugman and Porter's add to the economic relations and flows of goods the process of innovations that takes place inside the cluster through the transfer of information, know-how and experience.

3.1. 6. UNIDO Approach to Cluster Development:

Definition:

The UNIDO approach to cluster development mainly focused on removing obstacles to joint actions with the objective of encouraging collective action. The

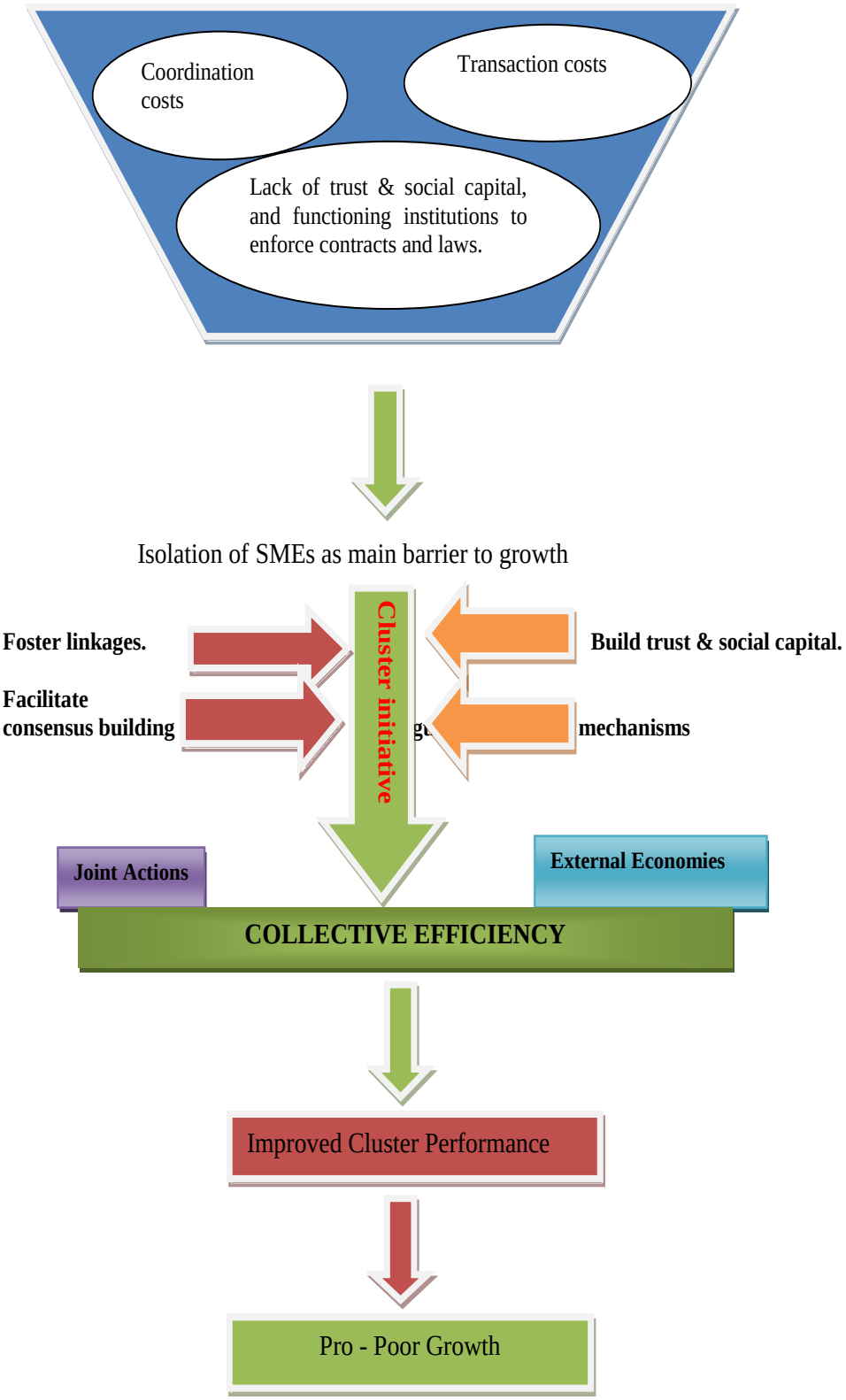
intervention logic underlying the cluster approach according to UNIDO is given here.

In the UNIDO context, clusters are defined as “geographical concentrations of inter-connected enterprises and associated institutions that face common challenges and opportunities”.

According to the definition of UNIDO, one will find two basic features of clusters. One feature is that a cluster consists of a critical mass of enterprises, which are located within a geographical proximity to each other and other feature lies with sharing the common challenges and opportunities.

In the context of geographical proximity, there is to be boundaries of a clusters but it is important to note here that one will not find any universally accepted method of interpreting the exact boundaries of a cluster. In this context, the distance is a major factor which is very much influenced by the cultural identity, social values and availability of the benefit of transportation.

Chart 3.3. Cluster Development: The Intervention Logic



Source: BITS Technical paper (2013),UNIDO.
http/www.unido.org/fileadmin/user_media_upgrade/What_we_do/
Topics/Business__investment_and_technology_services/CUP/UNIDOs_CLUSTER_APPROACH.PDF

The chart 3.3 deals with the intervention logic of cluster development as per UNIDO. Clusters create an environment for the development of SMEs. SMEs due to their small size, and dispersed location, are facing the constraint of isolation. The isolation constraint is emerged as major barriers to the SMEs development as SMEs, individually are not in a position to realize economies of scale, which creates difficulties in taking advantage of market opportunities that require the delivery of large stocks of standardized products even in compliance with international standards. Several factors namely, transaction costs, coordination costs, and adverse business culture hinder cooperation between enterprises.

Spatial proximity and shared strategic interests, the essential features of clusters allow enterprises and their support institutions in realizing shared gains through the process of joint actions between cluster enterprises which includes the purchase of joint bulk inputs or joint advertising, or shared use of equipment. According to UNIDO the accrued advantage to the cluster from such collective efforts is referred as collective efficiency. In the UNIDO technical papers it is referred that entrepreneur's willingness to engage in joint actions is a critical success factor to unleash their growth potential as collective efficiency improved the performances of cluster which in turn ensures the pro-poor growth.

3.2 Introduction of Cluster Approach in the field of SSI sector in India:

3.2.1. Evolution of Cluster Approach in India:

Cluster approach in India is not a new but an old age phenomenon. There is an evidence of century old clusters in India but this approach was not initiated then by the government or its agencies sponsored Scheme.

The inception of the Cluster Development Scheme was formally initiated dates back to the late eighties with an objective of thematic development. The noticeable momentum in regard to the cluster development, as a holistic approach, at the national level, took place with the adoption of such a programme by accepting the recommendation of Abid Hussain committee by the then Ministry of Small Scale Industry, (now Ministry of MSME) Government of India.

3.2. 1a. Cluster Approach in late Eighties in India:

In the late 1980s as an institution, the State Bank of India has taken up the cluster Development Project called 'SBI Project UPTECH'. During the period of late 1980s to 1990s, in India, Cluster Development was based on select thematic areas such as technology or quality up-gradation. The State Bank of India initiated cluster Development Project in1987, keeping view the objectives to upgrade the businesses of small enterprises including their management processes, quality, technology and markets. and soon followed by SIDBI through their Technological Up-gradation Fund Scheme (TUFS)IN 1991.United Nations Industrial Development Organisations (UNIDO) has come forward and made a study for identifying clusters in India in the year 1996 and 138 Traditional manufacturing & Micro Enterprises clusters were mapped.

3.2. 1b. Recommendation of Abid Hussain Committee:

The genesis of cluster development was brought into lime-light by Government of India in 1997.The Government of India introduced the cluster development programme by accepting the recommendation of Abid Hussain committee (which said "....this (cluster based approach) is a very practical approach to SME promotion in India since there already exist a large range of small scale industry clusters across the country…") in 1997 for support to small and medium enterprises. The more integrated cluster development programme was taken by UNIDO-CDP with a special emphasis on social capital as a key strategy for cluster development.

3.2. 1c. Vision for the Cluster Policy Framework in India:

According to "Policy and status paper on Cluster Development in India, 2007",Vision for Cluster Policy was suggested as –"The Indian industrial and services sector economy develops into an inter-connected array of clusters with a strong & enabling all round environments around them to achieve higher levels of global competitiveness with inclusiveness and equity. Inclusiveness will be ensured by including the lagging clusters and supporting initiatives that not only ensure greater economic growth but also address adequately the social and environmental concerns".

3.2.1d. Cluster Approach in the eye of Union Government through Budget Speech:

The Government of India emphasized on achieving industrial progress through clusters which have been expressed in Budget papers and official documents of various state governments. The Finance Minister in his speech on rural industrialization in 1999-2000 Budget proposed “a National Programme for Rural Industrialisation (NPRI) with the mission to set up 100 rural clusters every year to give a boost to rural industrialization".

In the Union Budget 2005-06 Government proposed to adopt the cluster development approach for the production and marketing of handloom products. The announcement of policy package in regard to the cluster development was made by the Government of India in August 2005.In the Union Budget 2005-06 Government proposed to adopt the cluster development approach for the production and marketing of handloom products. There was a highlight about the significance of clusters in the Union Budget 2006-07 where it is said that "…the Prime Minister has decided to constitute an Empowered Group of Ministers who will lay down the policy for cluster development and oversee the implementation…"

3.2. 1e. View of Planning Commission in regard to Cluster Approach:

Planning Commission in its approach paper to the 11th five year plan document also gave due importance on cluster approach stating that that "…..A cluster approach can help increase viability by providing these units with infrastructure, information, credit and support services of better quality at lower costs, while also promoting their capacity for effective management of their own collectives….."(Planning Commission: 2006).

3.2. 2. Definition of Clusters in the Context of India:

Number of agencies has come forward to launch the cluster development programme with a variety of definition, specifying a certain minimum number of units in a given measured location, keeping view the focus and typology of cluster.

According to **Integrated Handloom Cluster Development Programme (IHCDS)**a handloom cluster has been defined as one having a minimum of 500 looms.

National Minorities Development & Finance Corporation (NMDFC) considered a Handloom cluster, which has more than 75% of the population belong to "minorities".

Scheme of Fund for Regeneration of Traditional Industries (SFURTI), Ministry of MSME defines a micro village industry cluster having 500 beneficiary families of artisans/micro enterprises, suppliers of raw materials, traders, service providers etc., located within one or two revenue sub-divisions in a district (or in contiguous districts).

According to **DC (Handicrafts),** Ministry of Textiles Agglomerations having 100 artisans is to be considered as a artisanal cluster. In case of North East Region, Jammu & Kashmir and other hilly terrains, the clusters will have a minimum of 50 artisans.

According to **NABARD,** Micro enterprises and household units functioning on SHG mode and having a minimum of 50 beneficiaries up to a maximum of 200 are to be considered as cluster. In intensive clusters, the number of beneficiaries may go up to 500-700 and can even extend over a block or taluka.

As per opinion of **Government of Gujarat** minimum of 50 industrial units, indulging in the manufacture of the same or related products and located within a radius of 10 km in a particular location is to be termed as a cluster.

According to **Government of Orissa**at least 100 traditional artisans practicing the same craft for non-KBK districts and at least 50 traditional artisans in KBK districts and situated within a radius of 3-5 kms is to be defined as a Handicraft cluster as per.

According to **UNIDO- CDP** an industrial (traditional manufacturing) or an artisanal cluster requires at least 100 SME units or 50 handicraft units respectively in a town/ city or few villages and their surrounding areas. Further for a handloom cluster requires a minimum of 500 handlooms.

3.2. 3. Cluster Development Schemes/ Programmes in India:

UNIDO also did implementation of cluster development programmes in 7 clusters with a special emphasis on social capital as a key strategy for cluster development. Besides the cluster project, UNIDO developed a methodology to undertake cluster development keeping social capital as the focal point.

The DC SSI, Government of India initiated to start a cluster development project called 'UPTECH' in the year of 1998.It was a technology focused based approach which comprises of a diagnostic study, setting up of a demonstration plant and organising workshops, seminar etc keeping view the objectives for quicker diffusion of technology small enterprise clusters in the country. Subsequently Government of India had stressed upon the importance of cluster based development in various Budget speech. In the Union Budget speech of the year 1999-2000 the finance minister proposed a national programme for rural industrialisation (NPRI) with the mission to set up 100 rural clusters every year to give a boost to rural industrialisation. The then Ministry of Small Scale Industry, Government of India, has adopted the cluster development approach as an holistic approach, renaming the earlier scheme as Small Industry Cluster Development Programme (SICDP) in August 2003. The Scheme Small Industry Cluster Development Programme (SICDP) has not only been focusing upon technology up-gradation but on setting up of common facility centres, skill development, marketing, exports, testing, quality control etc. A series of "soft" interventions were mainly made under the umbrella of Small Industry Cluster Development Programme (SICDP) till March 2006. The necessity of suitable incorporation of 'Hard' interventions were felt which normally made to a cluster after achieving substantial maturity through series of "soft" interventions. SICDP guidelines were revised in a comprehensive manner in 2006, with a view to make Cluster Development Programme broader based

Chart:-3.4

Cluster Level Interventions

Soft Interventions	Hard Interventions
Diagnostic studies	Setting up of CFCs
Trust building	Common-production/ Processing centre
Capacity building	Design centre
Training & counselling	Testing facilities
Market development	Training centre
	R&D centre
	Effluent Treatment plant
	Marketing-Display/ Selling centre
	Common logistic centre
	Common Raw material Bank/ Sales Depot

Institutions under taken Cluster Development initiatives in India:

Several institutions had undertaken Cluster development initiatives in India. Some of these institutions are:

- ✓ Small Industries Development Bank of India (SIDBI),
- ✓ United Nations Industrial Development Organisation (UNIDO),
- ✓ Development Commissioner (MSME),
- ✓ State Bank of India (SBI),
- ✓ National Bank for Agriculture & Rural Development (NABARD),
- ✓ Textiles Committee, Ministry of Textiles
- ✓ Technology Information, Forecasting and Assessment Council (TIFAC),
- ✓ Khadi and Village Industries Commission (KVIC),
- ✓ National Institute for Small Industry Extension Training (NISIET), supported by DC(MSME) ,
- ✓ Entrepreneurship Development Institute of India,
- ✓ MSME Foundation (An EDI initiative with support of UNIDO.
- ✓ DC, (Handloom &Handicrafts), Ministry of Textiles.

Several schemes and programmes were launched by the different Ministries and Departments of Government of India and its agencies as well as by the state government and its institutions Pursuant to implement the cluster development programme. These schemes are highlighted below.

Chart:-3.5

Cluster Development Schemes/ Programmes in India

Schemes/ Programmes launched by different Ministries of government of India					
A.		**Ministry of Textiles, Government of India**			
	Name of the Scheme	Year of inception	Name of the Institutions	Focus of the Scheme	Typology of Cluster assisted
1	Baba Saheb Ambedkar Hastshilp Vikas Yojna	2001-02	DC, (Handicrafts), Ministry ofTextiles.	Development of Handicrafts clusters.	Handicrafts
2	National Programme for capacity building of textiles SMEs through cluster based approach	2002	Textiles Committee, Ministry of Textiles	Capacity Building	Textiles (Handloom & Powerloom)
3	Integrated Handloom Cluster Development Scheme (IHCDS)	2005-06	D C,(Handlooms), Ministry of Textiles	Development of Handloom clusters	Handlooms
4	Scheme for Integrated Textile Parks (SITP)	2005-06	Ministry of Textiles	Infrastructure	Textiles (Handloom & Powerloom)
Ministry of MSME, Government of India. SICDP renamed as MSCDP					
5	Micro and Small Enterprises Cluster Development Programme (MSECDP)	1998	Development Commissioner (MSME), Ministry of MSME	Productivity and competitiveness	Traditional manufacturing & Micro Enterprises
6	National Programme for Rural Industrialization	1999-00			Micro Enterprises
7	National Small Industries Corporation (NSIC)	2002-03	National Small Industries Corporation	Machinery and Equipment	Traditional manufacturing
8	Scheme of Fund for Regeneration of Traditional Industries (SFURTI)	2005-06	KVIC and Coir Board Ministry ofMSME	Productivity and competitiveness	Micro Enterprises
Ministry of Commerce and Industry, Government of India					
9	Industrial Infrastructure Up gradation Scheme (IIUS)	2004-05	Department of Industrial Policy and Promotion, Government of India	Infrastructure	Traditional manufacturing

B. Other Institutions					
10	UNIDO Cluster Development Programme, Delhi.	1996			
11	SBI Project UPTECH	1987-88	State Bank of India	Technology	Traditional manufacturing & Micro Enterprises
12	SIDBI Technological Up-gradation Fund Scheme (TUFS)	1991	Small Industries Development Bank of India (SIDBI)	Competitiveness	Traditional manufacturing & Micro Enterprises
13	NABARD Cluster Development Programme	2003-04	National Bank for Agriculture and Rural Development	Competitiveness	Micro Enterprises, Handloom & Handicraft
	NEDFI Cluster Development Programme	2004-05	NEDFI		Micro- enterprise
14	UNIDO Cluster Development Programme, Orissa	2005			
15	SIDBI-Financing and Development of SMEs	2006-07	Small Industries Development Bank of India (SIDBI)	Credit	Traditional manufacturing & Micro Enterprises
16	UNIDO Consolidated Project for SME Development in India	2007			
17	NMCC-Project Vikas with support from Microsoft	2006-07	National Manufacturing Competitive Council	Competitiveness	Traditional manufacturing
C. State Governments					
18	Scheme for Assistance to Cluster Development Industries	2000	Commissionorate, Government of Gujarat	Competitiveness	Traditional manufacturing & Micro Enterprises
19	Boosting employment through Small Industries Development	2000	International Labour Organisation (ILO)	Health & Hygiene	Traditional manufacturing & Micro Enterprises
20	Margin Money Scheme for Cluster Development Activities	2003	Department of Industries, Government of Kerala	Productivity and Competitiveness	Traditional manufacturing & Micro Enterprises
21	Grant Assistance to Cluster Development Activities		Industries Department, Government of Kerala	Training/Skill	
22	Integrated Cluster Development Programme	2004-05	Rural Industries Department, Govt. of Madhya Pradesh	Promotion of traditional products	Micro Enterprises Handloom &Handicrafts

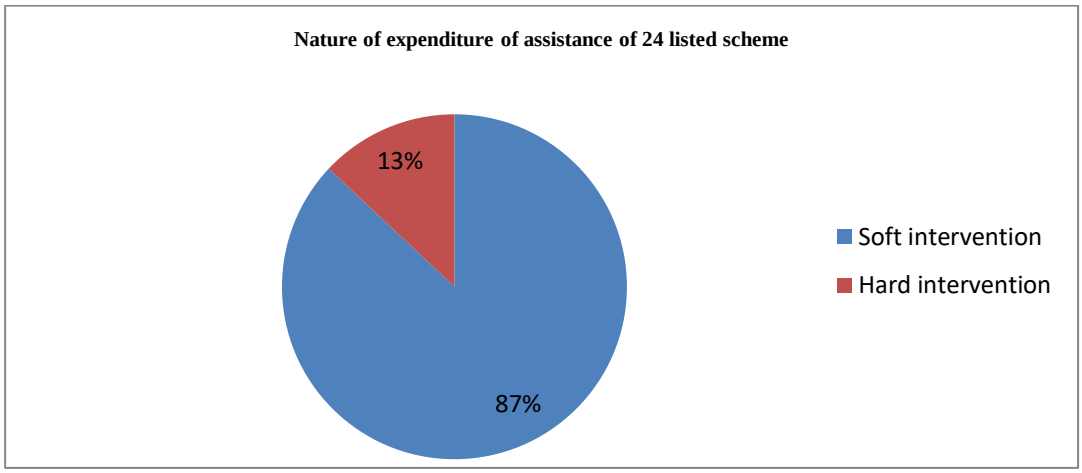
23	Craft Village Scheme (ShilpgramYojna)	2004-05	Department of Handicrafts, Government ofOrissa Director(Handicrafts)	Employment	Handicrafts
24	Cluster Development Programme	2005-06	Industries Department Government of Rajasthan,	Productivity and competitiveness	Handloom & Handicraft
25	NMDFC Micro Financing Scheme through Cluster Development Approach	2005-06	National Minorities Development & Finance Corporation (NMDFC)	Employment	Micro Enterprises

Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

The cluster development initiatives have been passing over more than two decades in India. During this period several agencies have come forward with different schemes for supporting the cluster development initiatives. There are twenty five such schemes/ programmes, as presented above chart 3.5. Nine out of these 25 schemes were introduced by the different Ministries, Government of India, namely, 4 schemes by the Ministry of MSME, 4 schemes by the Ministry of Textiles and rest of one by the Ministry of Commerce and Industry. The State Governments also have come forward with the different schemes to initiate the cluster approach at the concerned state level clusters, namely, the Government of Gujarat, Government of Kerala, Government of Madhya Pradesh, Government of Orissa, and Government of Rajasthan. The financial and technical institutions of India are not keeping themselves away from contributing this holistic approach but devised schemes/ programmes for supporting clusters within the country. These institutions are State Bank of India, Small Industries Development Bank of India, National Bank for Agriculture and Rural Development, NEDFI, National Minorities Development & Finance Corporation (NMDFC), National Manufacturing Competitive Council (NMCC). The international institutions like as UNIDO, ILO have taken part in implementing the various schemes relating to cluster development. Bureau of Energy Efficiency was also in the line for promoting cluster development initiatives.

Financial assistance was estimated at Rs 700 crore in regard to the resource allocation under the above listed 24 schemes till 2006-07 by the MSME Foundation in 2006 except the Scheme for promotion Energy Efficiency in MSMEs, MSECDP of West Bengal. The share of Central Government and state Government contribution were 91.4% and 2.4% respectively of the total estimated amount. The techno-financial institutes and international organisations contributed the rest of 6.2%total amount of assistance.

Chart-3.6



Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

It is also a matter of concern that out of the total amount of assistance 87% was incurred for soft intervention and remaining 13% for hard intervention as revealed from the chart 3.6.

3.3. A brief outline of Industrial Clusters in India and Tripura:

3.3.1 Clusters in India:

At present there are more than 10000 clusters are operating in India. There are Out of these clusters, 600 traditional industrial SMEs clusters, 7,000 artisan/micro enterprise clusters and about 2,500 untapped rural industry clusters. Some of these clusters are so large that they account for nearly 80.0 per cent of production of a selected product within the country. (www.ibef.org)

Classification of Clusters in India:

In India, from policy perspective a three-way classification was followed for clusters. The clusters are classified as under:

- **High-tech Clusters.**
- **Traditional manufacturing Clusters.**
- **Microenterprise Clusters.**

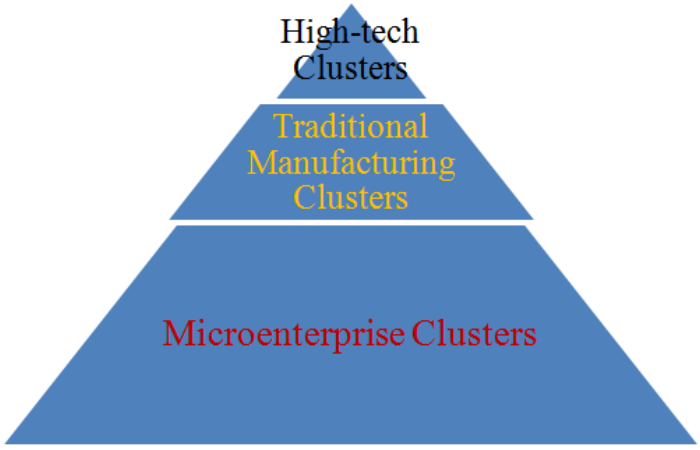
High-tech Clusters: These clusters are highly knowledge intensive clusters targeting innovation for existence. These clusters have international market connectivity and contribute more in export earnings. Clusters are those engaged in the field of IT and IT enabled services, computers, bio-technology and related services, precision instrumentation or avionics, etc termed as High-tech Clusters.

Traditional Manufacturing Clusters: These clusters comprise the non high-tech and non-microenterprise clusters and main target of these clusters are to increase competitiveness generation of employment. These clusters tend to cater to the local, national and global markets. These clusters use the relatively more advanced technology and contribute significantly in terms of generation of employment and manufactured output.

Low-tech Clusters: These are poverty intensive microenterprise clusters. These clusters comprise the handloom; handicraft and other micro enterprises. The importances of these clusters are mainly lying with employment generation among the marginalized section of the society and poverty alleviation. These clusters serve to the nation in the direction of achieving inclusive growth.

Chart-3.7

Distribution of Clusters by Typology in India



Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

Foundation for MSME in its 'Policy and status paper on Cluster Development in India', 2007 opined that there is a lack of reliable database about the cluster level information on the basis of the above classification but relying upon independent survey/study (secondary analysis) by various ministries/agencies/ institutes, it has described that there are around 6600 goods based clusters in India. Most of these clusters are low tech micro enterprise clusters belonging to the artisanal- handloom & handicraft and micro enterprise segments which fall in the third category and total number of these clusters stands to about 6000. 99 percent of the remaining clusters are traditional manufacturing clusters and less than one percent only accounts for high-tech clusters. The chart-3.7 discloses the distribution of clusters in the country according to typology.

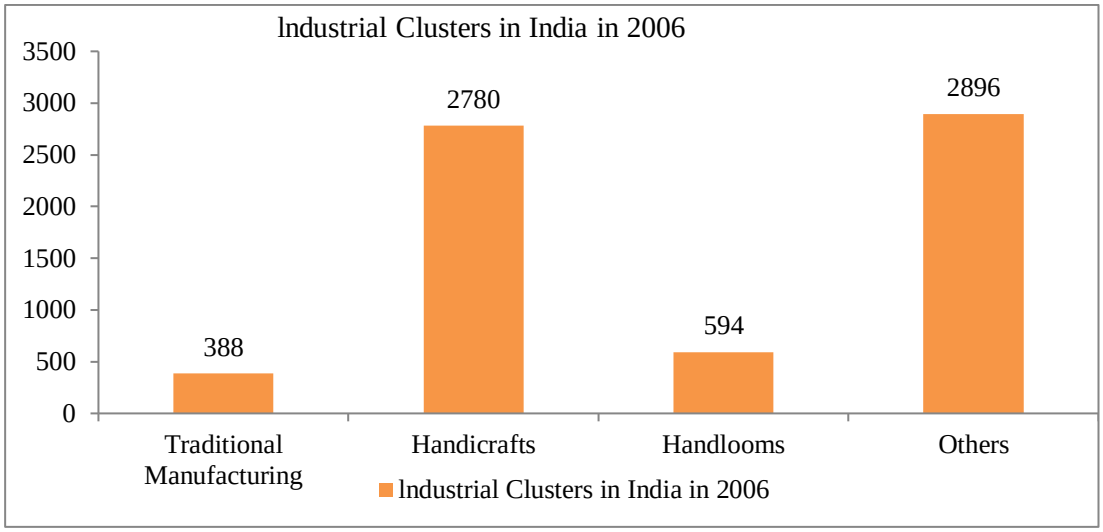
Table 3.1

Industrial Clusters at a Glance in India

Clusters	No of Clusters	% of Clusters
Traditional manufacturing	388	6
Handloom	594	9
Handicrafts	2780	42
Others	2896	43
Total	6658	100

Source: Policy and status paper on Cluster Development in India, Foundation for MSME Clusters

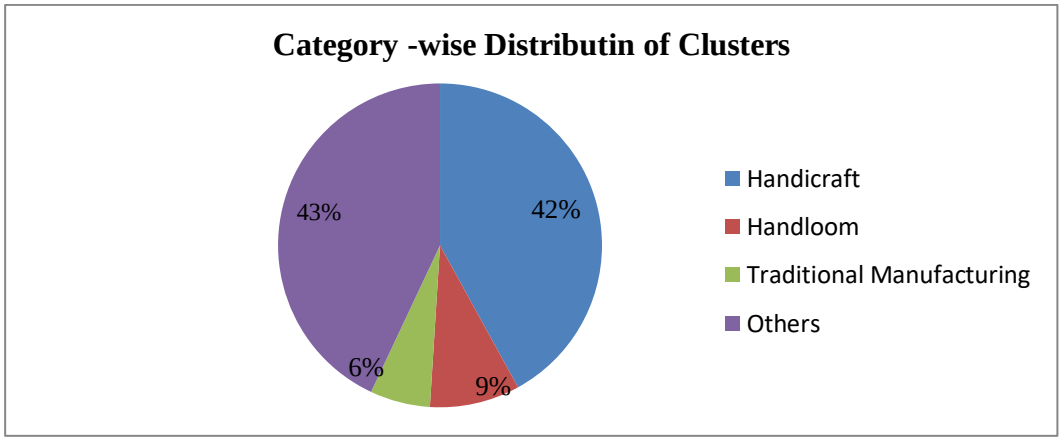
Chart-3.8



Source: Policy and status paper on Cluster Development in India, Foundation for MSME Clusters

The above chart-3.8 highlights that there were 6658 clusters in traditional manufacturing, handloom, handicrafts and others segments in India as per report in 2007 of Foundation for MSME Clusters in its 'Policy and status paper on Cluster Development in India'. Out of these clusters, major portion of clusters are found in handicrafts segment which alone had 2780 clusters .There were only 388 and 594 clusters in traditional manufacturing and handloom segment respectively. The remaining clusters were in the pocket of other segment. The higher concentration of clusters in handicraft sector indicates that most of the clusters are low- tech cluster as the handicrafts industry mainly based on labour intensive, households sector.

Chart: 3.9



As per the above pie chart 3.9 it is focused that handicraft as an industry segment has been dominating with 42% shares in the field of industry clusters. The share of handloom and traditional manufacturing in industry clusters were only 9% and 6% respectively and 43% remains for others category.

Table: - 3.2

Region-Wise Distribution of Industrial Clusters in India in 2006-07

Region	Traditional Manufacturing		Micro Enterprises						Total Cluster	% of Total Cluster
			Handicraft		Handloom		Others			
	Number	%	Number	%	Number	%	Number	%		
East	36	9.28	645	23.2	43	7.24	464	16.0	1188	17.7
West	140	36.09	764	27.5	134	22.6	787	27.2	1825	27.4
South	89	22.95	502	18.1	214	36.0	858	29.6	1663	24.9
North	123	31.7	716	25.7	140	23.6	698	24.1	1677	25.0
North-East	0	0	153	5.5	63	10.6	89	3.1	305	4.5
Total	388	100	2780	100	594	100	2896	100	6658	

Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

The table 3.2 mirrors that clusters have been spread over across the country. The industrial clusters have touched upon each and every region of the country. It is a matter of concern that the share of NER in terms of total clusters is only 4.5% and there is no traditional manufacturing cluster in the hands of NER. In this connection it may be appropriate to say that NER has been lagging behind not only due to geographical constraint but lack of proper care from the side of the state and national level implementing authorities in regard to promoting the entrepreneurial activities in this region through cluster approach. The west region with 27.4% share of country's total cluster occupies the highest position followed by north with 25% and south with 24.9% of clusters. The share of east region with 17.7 % clusters is also not encouraging.

There were 388 clusters in Traditional Manufacturing sector, out of which west region occupied the highest position with 140 such clusters, and the share of north and south region in such clusters reported 31.7% and 22.95% respectively. The share of east region is found to be low only 9.28% but without occupying any such clusters north east region has placed its miserable industrial position.

With 27.47% shares of that clusters west region was in the highest position. The second and third positions in this regard have gone to north and south region with 716 and 645 clusters respectively. There are only 153 such clusters in the hands of north east region, in terms of percentage of share this is only 5.51% but in case of handloom clusters, the share of this region is 10.61%.The position of this region is quite healthy but in case of other Micro Enterprises, this region shows its inability to promote entrepreneurship through clusters. It is a matter of concern that north east region had clusters in handloom and handicraft sector which follow the low-road approach, which only play role to generate the employment opportunity and very little scope to enhance the contribution to the national economy in respect of production and export earnings.

Table:-3.3
Typology of Clusters and their Contribution to National Economy

Parameters	Clusters		
	Micro enterprise	Traditional manufacturing	High-tech
Typology of products	Handloom, Coir, Handicraft, Village industries	Leather & Leather product, Automotive components, ceramics etc.	Information Technology, Bio- technology, Tourism,Computers, Education, Pharmaceuticals, etc.
Number of clusters	6000	388	20 (approx)
% of total clusters	93.6%	6.1%	0.3%
Share of employment	80%	14%	6%
Average wage levels	Low	Medium	High
Growth rate (2002-07)	Negative or marginally positive	Positive (10% -15%)	Positive (20% -30%)

Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

The above table-3.3 provides the information about the typology of the clusters and their significance to the country's economy. One will find that in India, about 93.6% of the total clusters are micro enterprise clusters and these clusters have the capacity to generate more employment opportunity for the rural segment of the society. Though the levels of wage and growth rate were found to be low but these clusters have been contributing to the national economy to minimise its pressure of unemployment with a minimum invested capital. The main features of these clusters are low-road approach. On the other side high- tech clusters have the satisfactory growth rate and wage level is also high but the behavior of these

clusters are similar with the large scale industries in respect of creation of employment for masses. These clusters lead to wealth centralisation and contribute to the national economy through exports.

Traditional Manufacturing) Clusters in India: In India there are 388 Traditional Manufacturing) Clusters as per record of MSME Foundation, 2006. The State-wise distribution of such clusters is highlighted in the table given below.

Table: - 3.4

State-wise Distribution of SME (Traditional Manufacturing) Clusters in India

Serial No	State	Clusters	% of Total Clusters
1	Maharashtra	58	14.94
2	Gujarat	49	12.62
3	Uttar Pradesh	34	8.76
4	Andhra Pradesh	32	8.24
5	Punjab	30	7.71
6	Tamil Nadu	28	7.21
7	Haryana	24	6.18
8	Rajasthan	20	5.15
9	Delhi	19	4.89
10	Karnataka	19	4.89
11	West Bengal	17	4.38
12	Orissa	13	3.35
13	Kerala	10	2.57
14	Madhya Pradesh	10	2.57
15	Jammu &Kashmir	04	1.03
16	Bihar	03	0.77
17	Jharkhand	03	0.77
18	Himachal Pradesh	03	0.77
19	Uttaranchal	03	0.77
20	Chhattisgarh	02	0.51
21	Goa	01	0.25
Total		388	

Source: http://www.dcmsme.gov.in/clusters/clus/smelist.htm#clus

In India, traditional manufacturing clusters are concentrated within 21 states as cited in the above table-3.4. The Medium growth rate and medium wage level are

the unique features of these clusters. It is also a matter of concern that north eastern region is remained untouched from the traditional manufacturing clusters. This focuses that north east region has no option but to depend on local resource and inherent skill based artisanal industry sector and there is a little scope to remove the industrially under achiever livery. It is observed from the chart that economically and industrially developed states are in better position in terms of such clusters. More than 50% of 388 clusters are occupied by five states, namely, Maharashtra, Gujarat, Uttar Pradesh, Andhra Pradesh, Punjab and less than 50% of such clusters are found in rest of 16 states. It is a matter of concern that one third of the states of our country remain untouched from the benefit of Traditional manufacturing clusters. Maharashtra with 14.94% of such clusters occupied the highest position in terms of Traditional Manufacturing Clusters in India followed by Gujarat with12.6% clusters, and Uttar Pradesh with 8.74 such clusters. Goa with 0.25% such cluster occupied lowest position in the country in terms of Traditional Manufacturing Clusters.

Table 3.5
Progress under the MSE-CDP in India

Sl. No.	Physical Progress			Infrastructural Development	
		2012-13	2013-14	2012-13	2013-14
1	New clusters under taken for DSRs.	45	81	107 new ID centres have been sanctioned (including 01 in the year 2012) since inceptions of the scheme.	170 new ID centres have been sanctioned since inceptions of the scheme.
2	New clusters under taken for Soft interventions.	37	21	Out of 107 new ID centres, 83 ID centres have been completed.	Out of 107 new ID centres, 116 ID centres have been completed
3	Final approval for new CFC Accorded.	16	21	A total of 11646 plots allotted to small and tiny units	A total of 12607 plots allotted to small and tiny units
4	New ID and up-gradation of ID centres approved.	13	17		
5	Monitor and sanction of fund in the earlier approved CFCs and IDs	10	10	4271 units established.	6055units established
6	In principle approval made for CFCs	42	15	Employment generated to 60166 persons.	Employment generated to 89105 persons.
7	In principle approval made for Infrastructural Development.	05	11		

Source: Annual Report 2012-13, 2013-14 of MSME, Govt. of India.

It is mirrored from the above table 3.5 that cluster approach has the positive effect in promotion of entrepreneurship. The table reveals the increasing trend in respect of establishment of units. A total of 11646 plots and 12607 plots allotted to small and tiny units. 4271 units established in 2012-13 and the establishment of units were increased to 6055 in 2013-14.the generation of employment was also increased by 28939 in 2013-14 than2012-13.

Table 3.6

Physical performance of the MSE-CDP scheme (up to 31.01. 2016)

	Completed	On Going
Diagnostic Study	408	159
Soft Interventions	235	106
Common Facility Centers	34	70
Infrastructure Projects	126	52

Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI.

The above table 3.6 reveals that Central Government has sincerely undertaken the cluster development programme in the field of MSME sector considering the importance of clusters in creating competitiveness in the era of globalization and to remove the pressure of unemployment. Physical performances in regard to diagnostic study of 408 projects are completed and 159 are ongoing as on 31st January 2016. As on that date soft intervention is completed for 235 projects and 106 such projects are ongoing. 34 common facility centres already completed and ongoing projects are 70. 126 infrastructure projects are completed and 70 such projects are ongoing which implies the popularity of cluster approach in the field of MSME sector.

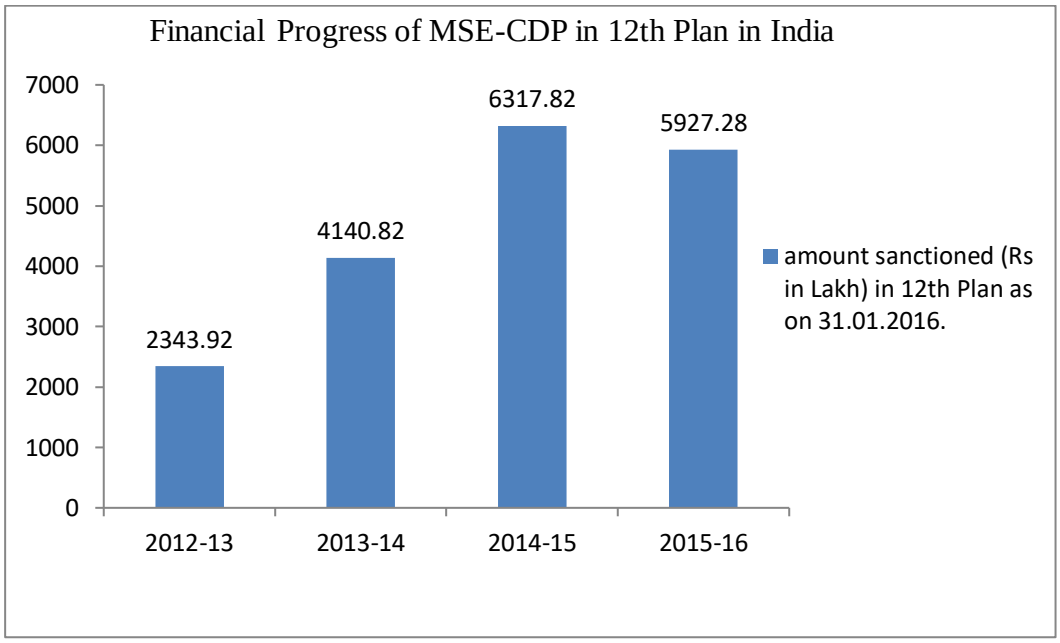
Table 3.7

Financial Progress in MSE-CDP in 12th Plan as on 31.01.2016.

Year	Amount sanctioned (Rs in Lakh)
2012-13	2343.92
2013-14	4140.82
2014-15	6317.82
2015-16	5927.28

Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI.

Chart:-3.10.



Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI.

It is an encouraging fact that during the 12th Plan period the trend of sanctioned amount in MSE-CDP is found to be increasing which is highlighted from the chart 3.10.The sanctioned amount has increased by 170% in the 3rd year of 12th plan period, i.e. in 2014-15 in comparison to 1st year of 12th plan period, i.e. 2012-13which is the notation of sincere efforts in regard to promote entrepreneurship in MSME sector through cluster approach.

3.3.2. Clusters in North East Region:

Country's most industrially backward region is North East Region. The introduction of cluster approach was made in India with a view to accelerate the entrepreneurial activities in Micro Enterprise sector and to make this sector globally competitive to achieve the inclusive growth of the nation. In the inclusive entrepreneurial point of view the establishment of more clusters is the need of the hour but one will find that no induced cluster is set up in this region. Only natural clusters have been performing in this region.

Table 3.8

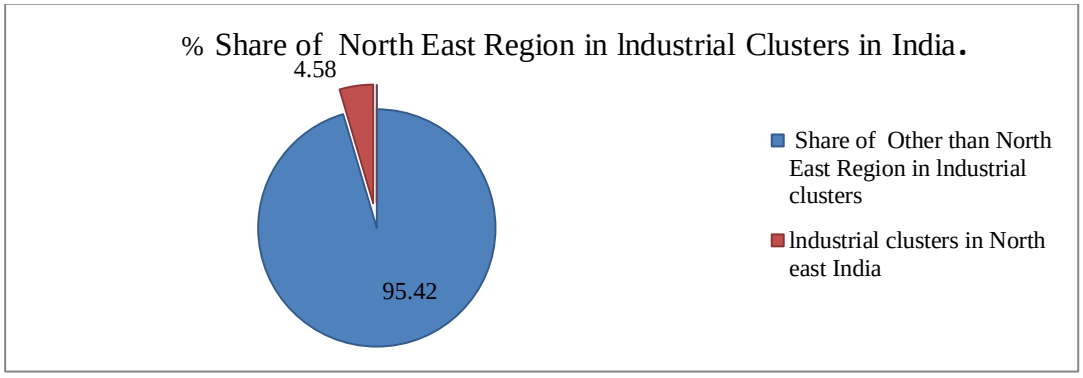
Clusters in North East Region in India in 2006

Typology of clusters	India	North East Region	
		Total Clusters	% of Country's Total Clusters
Traditional Manufacturing	388	Nil	Nil
Handicraft	2780	153	5.5
Handloom	594	63	10.6
Others	2896	89	3.1
Total	6658	305	4.58

Source: Compiled from Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

The table 3.8 highlights that NER is not capable in holding the share of country's Traditional Manufacturing clusters. This region is satisfied with 4.58% shares of country's total clusters. The share of this region is relatively encouraging only in handloom clusters.

Chart-3.11



Source: Policy and status paper on Cluster Development in India, 2007.Foundation for MSME Clusters.

The chart 3.11 reveals that North eastern region shares the one sixth of the geographical area of the country but there is lack of consistency in terms of share of industrial clusters. This region has to satisfy with 4.58% shares of country's industrial clusters

Table: 3.9.

Physical Status of Interventions under MSE-CDP in NER as on 31-01-2016

State	Diagnostic Study		Soft Interventions		Common Facility Centers		Infrastructure Projects	
	Completed	On going	Completed	On going	Completed	On going	Completed	On going
Arunachal Pradesh	2	2	1	1	0	0	0	1
Assam	15	7	10	3	1	0	9	6
Manipur	4	4	3	6	0	0	0	6
Meghalaya	4	3	2	1	0	0	0	0
Mizoram	5	2	3	0	0	0	2	0
Nagaland	9	3	2	5	0	0	1	0
Sikkim	1	0	1	0	0	0	0	0
Tripura	4	2	1	1	00	00	00	3
Total in NER	44	23	23	17	01	00	12	16

Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI.

The table 3.9 reveals that the total completed projects in regard to diagnostic study stands to 44 projects and 23 are ongoing as on 31st January 2016 in NER. As on that date soft intervention is completed for 23 projects and 17 such projects are ongoing. In terms of Common facility centre the due initiatives are not observed in the NER as only one such centre is completed and the relatively developed state in NER has got it. 12 infrastructure projects are completed and 16 such projects are ongoing in NER but the share of completed infrastructure projects is concentrated within three states in this region, namely Assam, Mizoram and Nagaland. There is no infrastructure project in the hands of Sikkim and Meghalaya. It is to be said that common facility centre is the basic requirement for developing the collective efficiency but such initiative found to be absent in the states of NER except Assam.

Table: 3.10.

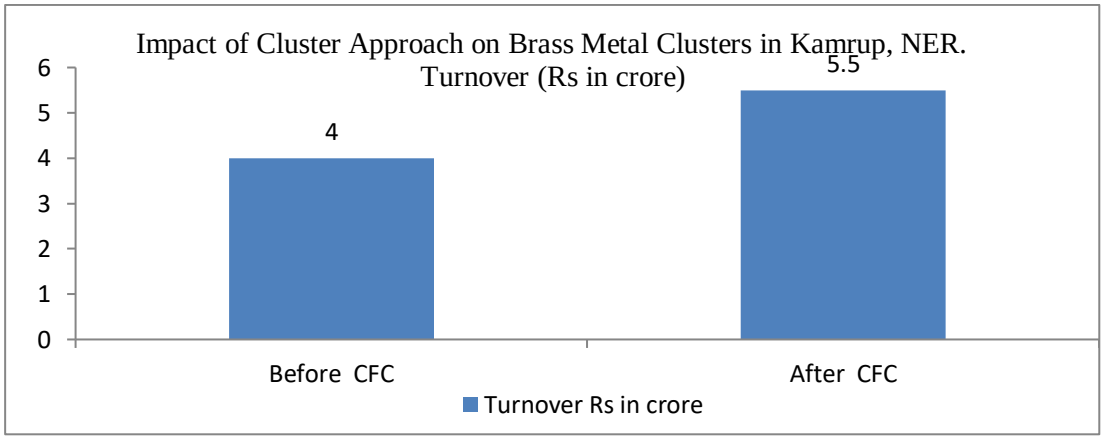
Fund Released under MSE-CDP in NER

State	2014-15	2015-16
Arunachal Pradesh	NIL	NIL
Assam	125.34	85.58
Manipur	330.25	600.00
Meghalaya	Nil	Nil
Mizoram	3.75	Nil
Nagaland	8.21	35.5
Sikkim	1.00	Nil
Tripura	256.29	203.20

Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI

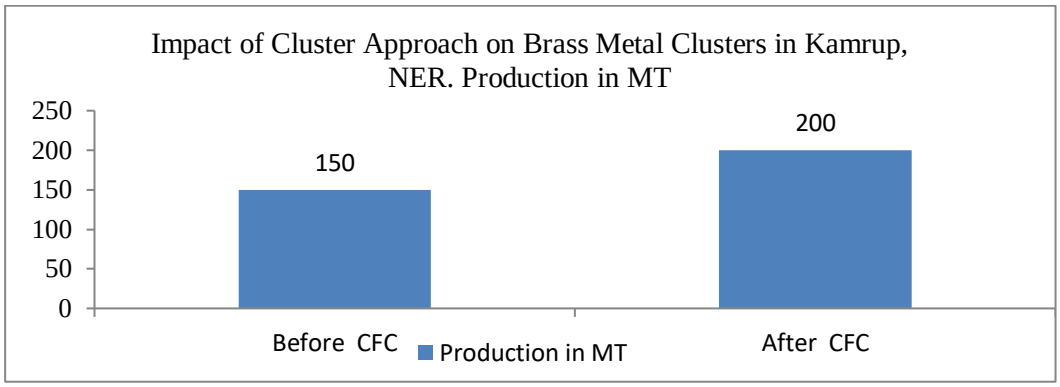
Table: 3.10 mirrors that there is no fund released to the two states of NER, namely Arunachal Pradesh and Meghalaya under MSE-CDP during the financial year of 2014-15 and 2015-16. Manipur is a state among NER has got maximum fund in the said two financial years followed by Tripura.

Chart: 3.12



Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI

Chart: 3.13



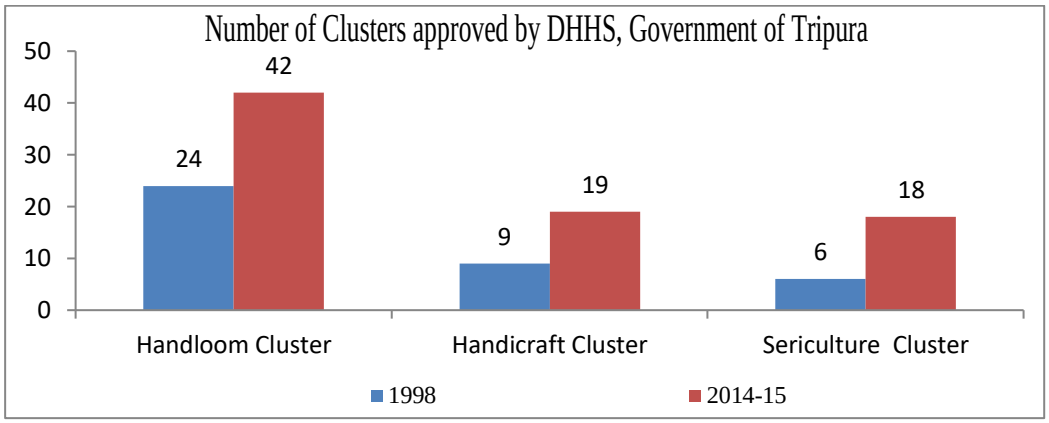
Source: Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-Cluster Development Programme, (2016) Ministry of MSME, GOI

Chart: 3.12 and Chart: 3.13 highlight the impact of setting up of Common facility centre on firm performances under the umbrella of clusters. It is observed that performances of the firms after setting up of CFC is better in terms f production and turnover in the Brass metal cluster of Kamrup, Assam which is an artisanal cluster. It may be allowed to say that setting up of more CFC in the region of North East is the need of the hour for stimulating the artisanal clusters which at present found to be low in this region.

3.3.3. Clusters in Tripura:

The Government of Tripura has taken initiative to introduce cluster approach with a view to bring the unorganized and dispersed artisans of handicraft, and handloom sector where marginalized segment of the society are engaged in the entrepreneurial activities, into a organized platform for their socio economic development since 1997. The chart 3.14 gives a highlight of clusters run by the DHHS, Government of Tripura. Number of Clusters approved by DHHS, Government of Tripura.

Chart -3.14



Source: DHHS, Government of Tripura.

The chart 3.14 reveals the scenario of clusters sponsored by DHHS, Government of Tripura. Maintaining the commonalities with national programme, the state government also initiated and taken care in cluster approach especially in the handloom, handicraft, and sericulture sector .the increasing rate of such clusters supports this view.

Besides the state government there are also several agencies, namely, TRIBAC, KVIB, TCB, MSME-DI, IIE, Guwahati, TBM, also acting as implementing agency in some clusters in this state which are given below.

Chart-3.15

Clusters in Tripura (other than DHHS, government of Tripura sponsored) Scheme

Cluster	Products	Implementing Agency
Gandhi gram Crafts Processing cluster, Tripura West.	Bamboo Products	Tripura Bamboo and cane Development Center (TRIBAC)
Bee-Keeping cluster, Agartala,	Bee keeping	Tripura, KVIB
Tripura Coir Cluster,Agartala	Coir	TCB
Bamboo Agarbatti Sticks Bagabasa, Melagarh, West Tripura	Agarbatti Sticks	MSME-DI, Agratala
Paper Bags Subhasnagar, Agartala Tripura	Paper Bags	MSME-DI, Agratala
Brick kiln cluster Jirania, West Tripura		Director & Industries and Commerce, Govt. of Tripura
Hapania Jute Cluster, West Tripura.	Jute product	IIE, Guwahati

The Chart -3.15 highlights the clusters which are not promoting by DHHS, government of Tripura. Out of these clusters two are managed by MSME-DI

Agartala, each of one by IIE, Guwahati,TCB, Tripura Bamboo and cane Development Centre (TRIBAC), Tripura, KVIB.

3.3.4. Handicraft Clusters in India:

The handicraft clusters in India are century old clusters. These clusters are natural clusters. In India the handicraft cluster contributes significantly in generating rural employment and in promoting balanced growth of the nation. There are about 2864 handicraft cluster are estimated as per Working Group Report on Handicrafts for the 12th Five Year Plan covering all the states of the country. The table 3.11 gives an highlight of such clusters.

Table: - 3.11
State wise Distribution of Handicrafts Clusters in India

State	District	District with Cluster	No of Clusters
Andhra Pradesh	23	23	150
Assam	27	21	26
Arunachal Pradesh	16	08	09
Bihar	37	27	135
Chhattisgarh	16	05	27
Delhi	09	07	42
Daman & Diu	2	1	1
Goa	2	2	38
Gujarat	26	23	198
Haryana	20	16	38
Uttar Pradesh	71	62	325
Himachal Pradesh	12	12	49
Jammu &Kashmir	22	15	179
Jharkhand	22	14	42
Karnataka	27	24	147
Kerala	14	14	90
Lakshadweep	01	01	03
Madhya Pradesh	50	44	154
Maharashtra	35	29	208
Manipur	09	09	22
Meghalaya	07	04	11
Mizoram	08	03	04
Nagaland	08	08	17
Orissa	30	32	268
Punjab	20	11	34
Pondicherry	04	01	02
Sikkim	04	03	14
Rajasthan	33	24	108
Tamil Nadu	31	27	143
Tripura	04	04	61
Uttaranchal	13	13	62
West Bengal	19	19	257
Total	622	506	2864

Source: Working Group Report on Handicrafts for the 12th Five Year Plan.

India has a rich heritage of art and crafts. Depending on the expertise and inherent skills of the artisans, many natural clusters, have been formed and engaged in producing a particular craft product. Such type of clusters spread over across the country specialising in particular craft item. As per the Report of Working Group on Handicrafts for the 12th Five Year Plan table 3.11 revealed that there are 2864 handicraft clusters in India as reflected in. The encouraging fact is that handicraft clusters covered all the states and Union Territories of the country. Highest number of such clusters is found in Uttar Pradesh and with only one cluster Daman & Diu is in lowest position. There are clusters in north eastern region, out of which, Tripura with 61 clusters has the highest position and Mizoram with 4 clusters is in lowest position.

Chart: 3.16

Craft-wise Production Centre in India

Sl.No	Craft	Cluster	State
1	Art metal ware and metal craft	Moradabad	Uttar Pradesh
2	Wood craft	Saharanpur, Jodhpur,	Uttar Pradesh, Rajasthan
3	Hand printed textiles	Farukabad, Jaipur, Barmer, Bagh,	Uttar Pradesh, Rajasthan Madhya Pradesh,
4	Carpet	Bhadohi,Mirzapur, Jaipur, Srinagar & Anantnag	Uttar Pradesh, Rajasthan Jammu & Kashmir
5	Zari and zardosi	Agra, Varanasi, Bareilly, Surat	Uttar Pradesh, Gujarat
6	Embroidery	Srinagar & Anantnag	Jammu & Kashmir
7	Lace and crochet goods	Narsapur	Andhra Pradesh
8	Imitation jewellery	Delhi Jaipur	Delhi Rajasthan
9	Lacquer Craft	Channapatna Varanasi,	Karnataka Uttar Pradesh,
10	Dhokra Craft	Bastar	Chhattisgarh
11	Stone curving	Mahabalipuram Bhubaneswar Agra, Varanasi, Jaipur	Tamil Nadu Orissa Uttar Pradesh, Rajasthan
12	Appliqué work	Puri Ahmedabad and Kutch	Orissa Gujarat
13	Tie &Dye /Batik craft	Puri, Bhuj Jaipur Pochampalli	Orissa Gujarat Rajasthan Andhra Pradesh
14	Bamboo and cane	Assam, Tripura, Manipur Meghalaya,Mizoram,Nagaland Arunachal Pradesh West Bengal, Kerala.	North-eastern Region West Bengal, Kerala

Source: Working Group Report on Handicrafts for the 12th Five Year Plan.

The above chart -3.16 mirrors the craft product of the concerned clusters. These clusters have not been producing same nature of handicraft product but different nature of product, depending on the expertise and skills of the artisans and the availability of raw materials of particular region. Each and every cluster has a speciality in respect of their product and this cluster is also often known in the name of that product. The following table mirrored the craft product of the concerned clusters. These clusters have not been producing same nature of handicraft product but different nature of product, depending on the expertise and skills of the artisans and the availability of raw materials of particular region. Each and every cluster has a specialty in respect of their product and this cluster is also often known in the name of that product. Moradabad cluster of Uttar Pradesh is known for Art metal ware and metal craft, Narsapur cluster of Andhra Pradesh is known for Lace and crochet goods, North-eastern Region is known for Bamboo and cane cluster. Mahabalipuram, Bhubaneswar Agra, Varanasi, Jaipur is known for Stone curving clusters.

Considering the significant contribution of cluster, Government of India introducing various schemes stressing upon to stimulate the handicraft sector under cluster approach, Baba Saheb Ambedkar Hasta Shilpa Vikas Yojana (BAHVY) is a one of the Schemes**.** The DC, (Handicrafts), Ministry of Textiles, Government of India, launched Baba Saheb Ambedkar Hasta Shilpa Vikas Yojana (AHVY Scheme) in the year 2001-02, thrusting upon the need based approach for integrated development of potential handicrafts clusters in the country. The focal point of this scheme was to empower the craft persons by ensuring their participation at all stages of the implementation of this scheme, and also to overcome the various constraints, like lack of education, capital, market intelligence, poor exposure to new technologies and institutional framework, faced by handicraft sector, as by nature, it is unorganised. The scheme starts with social interventions such as conducting a diagnostic study and prepares a DPR (Detailed Project Report) for 5 years for promoting handicraft clusters which are self sustained and managed by artisans or their collective initiatives.

Under the umbrella of this scheme, a package of support was provided to the artisans' of handicraft clusters. In addition to enhancement of capacity building for catering to target markets this package spread over its hands to support basic inputs and infrastructure. There were five types of interventions under this scheme, namely, social, technological, marketing, financial, and infrastructure. Each and every intervention has some components.

Chart: 3.17

Interventions and their Components under (BAHVY) Scheme

Social Intervention	Technological Intervention	Marketing Intervention	Financial, Intervention	Infrastructure Intervention
Diagnostic survey and formulation of project plan.	Development and supply of improved modern tools.	Organising Exhibitions.	Margin money support.	Establishment of Resource centre for major crafts.
Community empowerment for mobilisation of artisans into SHGs.	Design and Technical development workshops	Publicity through printing and electronic mode and brand building campaign.	Wage compensation to cluster manager	Establishment of e- kiosks.
Issuance of identity card to the artisans.	Training of Artisans.	Setting up of handicraft Emporia.	Service charges to implementing Agencies.	Creation of raw material banks.
	Organising workshop, Symposium.	Market assessment.	Engagement of experts.	Setting up of common facility centre.
	Technological status and need based study, and research provision.	Establishment of ware housing-cum-common work shed.	Credit guarantee.	Technological assistance by Setting up of facility centre by Exports /Entrepreneurs.
		Entrepreneurship development programme.		

Source: http://www.handicrafts.nic.in/ahvy/ahvymain.htm

Under the umbrella of AHVY scheme, a package of support was provided to the artisans' of handicraft clusters, the chart 3.17 glimpse upon such intervention. In addition to enhancement of capacity building for catering to target markets this package spread over its hands to support basic inputs and infrastructure. There were five types of interventions under this scheme, namely, social, technological, marketing, financial, and infrastructure. Each and every intervention has some components.

Chart: 3.18
Raw Material Bank under (BAHVY) Scheme

		Year of sanction	Crafts	Location
1	Karnataka State Handicraft Development Corporation. (KSHDC), Karnataka.	2007-08	Wooden craft, Multi craft and Lacquer craft	Sagar,Sirisi, Kurnta, Soraba, Mysore, Chennapatna, and Bangalore.
2	Jammu and Kashmir State Forest Corporation, Srinagar, Jammu and Kashmir.	2007-08	Khatumband	P.C. Depot, Srinagar.
3	Handicraft Development Corporation of Kerela Ltd.	2008-09	Wood craft	Trivanthapura, Ernakulam, Trissure, Kozicode, and Kannur
4	Andhra Pradesh Handicraft Development Corporation. Andhra Pradesh.	2008-09	Red Sandar wood based Craft	Hyderabad and Tirupati.
5	Nagaland Handloom and Handicraft Development Corporation. Nagalad.	2008-09	Cane & Bamboo and Wood based craft	Half Nagarjan, four Dimapur.
6	Mizoram Apex Handloom and Handicraft Cooperative Societies Ltd. Mizoram.	2008-09	Cane & Bamboo and Wood based craft	Treasury Square, Aizwal.
7	District Rural Development Agency, Gazipur, Uttar Pradesh	2008-09	Jute craft	Gazipur, Uttar Pradesh
8	Tamil Nadu Handicraft Development Corporation. Tamil Nadu	2008-09	Metal craft	Swami Malai, Tamil Nadu.
9	Assam Apex Weavers and Artisans Cooperative Federation Ltd.	2008-09	Bell Metal craft	Sarthabri, Barpeta,Assam.
10	Madhya Pradesh Hasta Shilpa Evan HatKargha Vikas Nigam Ltd. Bhopal.	2008-09	Leather craft	Indore
11	North-Eastern Handicraft and Handloom Development Corporation, Assam.	2008-09	Cane craft.	Guwahati

Source: http://www.handicrafts.nic.in/ahvy/ahvymain.htm.

The Raw material bank is the urge of artisans as artisans in most of case depends on middle man for collecting raw materials. The chart 3.18 points out the location of raw materials in the country. It is a matter of concern that in NER, there are four such bank comprising three state namely, Assam, Nagaland Mizoram and such type of bank is absent in rest of the states of NER including Tripura.

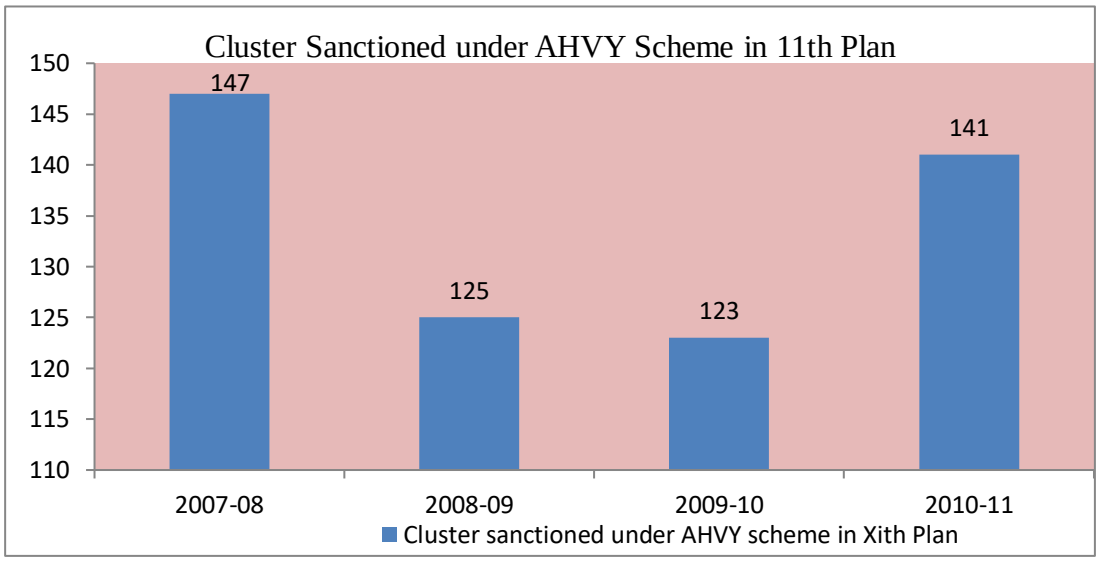
Table 3.12
Performances of AHVY Scheme During the 11th Plan

Year	Clusters sanctioned	SHG Formed	Artisans covered
2007-08	147	2796	38266
200\8-09	125	4233	61821
2009-10	123	3776	58614
2010-11	141	4385	64159

Source: Working Group Report on Handicrafts for the 12th Five Year Plan.

Table-3.12 discloses that the coverage of artisans under the umbrella of AHVY scheme has been increased from 38266 in 2007-08 to 64159 in the year 2010-11. It may be said that AHVY scheme are going on positive direction to fulfill its objectives.

Chart -3.19



Source: Working Group Report on Handicrafts for the 12th Five Year Plan.

The chart 3.19 reveals the number of clusters sanctioned under AHVY Scheme in the 11th plan period. 536 clusters were sanctioned during the period starts from 2007-08 to 2010-11. During the period maximum number of cluster were sanctioned in 2007-08 and it is observed that only123 clusters were sanctioned in the period of 2009-10.

Table 3.13

State-Wise Clusters Sanctioned under AHVY Scheme during 11th plan in India

State	Cluster	SHGs	Artisans covered
Andhra Pradesh	35	1163	16487
Assam	28	1234	18049
Arunachal Pradesh	05	80	1400
Bihar	21	693	11484
Chhattisgarh	08	145	2350
Delhi	07	50	2010
Goa	2	630	1000
Gujarat	24	360	12522
Haryana	16	126	4568
Uttar Pradesh	72	2148	29696
Himachal Pradesh	07	613	2183
Jammu &Kashmir	39	496	8388
Jharkhand	17	258	6608
Karnataka	16	258	3908
Kerala	10	228	4348
Madhya Pradesh	23	630	8000
Maharashtra	17	583	7490
Manipur	21	617	10011
Meghalaya	05	175	3000
Mizoram	04	137	1717
Nagaland	12	370	5715
Orissa	19	656	10306
Punjab	10	230	3300
Pondicherry	01	30	600
Sikkim	02	68	1110
Rajasthan	22	439	6960
Tamil Nadu	18	510	7865
Tripura	21	602	9276
Uttaranchal	19	525	6201
West Bengal	32	992	12257
Chandigarh	02	65	700
Daman Diu	01	12	250
Total			

Source: Working Group Report on Handicrafts for the 12th Five Year Plan.

Table-3.13mirrors that maximum artisan of the state of Uttar Pradesh is covered under AHVY Scheme in sanctioned clusters followed by Assam. There are 21 cluster were sanctioned under AHVY Scheme covering 9276 artisans.

It is highlighted from the Table 3.13 that in the 11th plan period, the state, Uttar Pradesh has gained maximum benefit in terms of sanctioned of handicraft clusters under AHVY Scheme with a number of cluster 72 and 29696 artisans were benefitted by forming 2148 SHGs in these clusters. Only 98 clusters were sanctioned for north-eastern region during this period under such scheme and Assam alone had the 28 clusters, followed by Tripura and Manipur with 21 clusters for each state. Sikkim is the state in NER got only two such clusters but the artisan coverage ratio of cluster was 550. The highest artisan coverage ratio of cluster was found in Assam with 644, followed by Meghalaya, Sikkim, Nagaland, and Tripura and the lowest artisan coverage ratio of cluster was found in Arunachal Pradesh in NER.

Table 3.14

Proposal for Clusters under AHVY Scheme for 2014-15

Region	General	SC	ST	Total
Eastern	11	04	01	16
North East	11	04	00	15
Northern	14	02	02	18
Western	13	02	2	17
Southern	15	02	00	17
Central	12	03	02	17

Source : DC Handicrafts cluster cell.

Table-3.14 discloses that the proposal for region wise set up of clusters in 2014-15. The proposal for clusters for NER is found to be lowest. There was a proposal for only 15 clusters under AHVY Schemes. The proposal for maximum number of clusters i.e.18 clusters was made for the northern region and followed by western, southern and central region where for each region 17 clusters were proposed.

3.3.5. Handicraft Clusters in North East Region:

Table 3.15
Handcraft Clusters in North East India

State	Total Districts	No of Cluster	District Covered
Arunachal Pradesh	16	09	08
Assam	27	26	21
Manipur	09	22	09
Meghalaya	07	11	03
Mizoram	08	04	03
Nagaland	08	17	07
Sikkim	04	14	03
Tripura	04	61	04
Total in North East		164	
India	622	2864	397

Source: Working Group Report on Handicrafts for the12th Five year Plan. Ministry of Textiles, Govt. of India.

The table 3.15 mirrors that the share of NER in handicraft clusters is only 5.7% of country's total handicraft clusters in 2010-11. In terms of handicrafts clusters Tripura occupy the highest rank covering all the districts of the state and Mizoram with only 4 clusters is occupying lowest rank. Among the North East State Dimapur cane and Bamboo cluster, of Nagaland plays significant role in terms of export the product in the Indian Institute of Entrepreneurship Guwahati is making intervention to develop that cluster. Before intervention by IIE, yearly export was estimated worth us 6000. After intervention the rising in export was identified in 2005-06 and 2007-08 export was made Rs. 7, 00,000 and worth US 16,000 respectively. Barpeta cane and Bamboo cluster of Assam which is assisted under SFURTI scheme extended facilities to 1382 artisans and Annual production estimated for the year 2010-11 worth Rs. 1014 lakh.

Table: 3.16
Scheme wise Budget Allocation in Handicraft Sector in NER during 11th Plan

Scheme	2007-08		2008-09		2009-10	
	BE**	EXP*	BE	EXP	BE	EXP
AHVY	8.00	6.24	14.00	10.29	14.00	13.93
Design & Technical upgradation	3.00	1.87	4.00	2.26	4.00	6.38
Marketing support	8.00	4.55	12.50	8.30	12.50	8.26
Handicraft Artisans Comprehensive Welfare Scheme	19.00	18.67	18.00	29.69	18.00	18.23
Research & Development	1.00	0.25	2.00	0.28	2.00	0.59
Human Resource Development	3.00	1.41	2.00	0.89	2.00	2.06
Infrastructure Projects	2.00	00.00	1.50	0.00	1.50	0.25
TOTAL NER	44.00	32.99	54.00	51.71	54.00	49.70
Total in India	220.00	162.85	220.00	206.08	220.00	210.58

Source:-Ministry of Textiles, accelerating Growth and Development of Textiles Sector in NER.** Budget Estimate; * Expenditure

It is observed from the Table-3.16 that Govt. of India has given special emphasis by granting more than 20% grants of the country's total grant to the North East with objective to enhance the entrepreneurial activities in these states in handicraft sector which has an ample scope to promote. Gouripur cane and Bamboo cluster of Assam is made an export worth Rs. 9.20 lakh in the year 2010-11. The estimated Annual Production was Rs. 150 lakh. IIE, Guwahati is acting as technical agency for both the clusters.

Table 3.17
Handicraft Artisans Benefited under AHVY Scheme in NER

States	2005-06	2006-07	2007-08	2008-09	2009-10
Assam	2356	1140	4374	6680	2895
Arunachal Pradesh	500	200	400	200	500
Manipur	3405	1025	1550	2000	2584
Nagaland	1330	810	550	660	1000
Meghalaya	300	300	500	500	500
Mizoram	75	200	360	200	650
Tripura	513	112	1300	2683	2526
Sikkim	0	0	0	1110	0

Source: Lok Shaba Starred Question No.3772 & 4862 dated on 19.12.2006 & 26.8.2010.

Table-3.17 mirrors that maximum artisan of the state of Assam is benefitted through AHVY scheme followed by Manipur and Tripura under AHVY scheme in the states of NER.

3.3.6. Handicraft Clusters in Tripura:

The state government has initiated and taken care in introduction and implementation of cluster approach in the handicraft sector maintaining the commonalities with national programme. In Tripura cluster approach has been adopted since 1997-98 by the state government with a view to bring the unorganized artisans into a organized plat form for their economic and social empowerment.

Table: 3.18

Handicraft Clusters in Tripura as on 20014-15

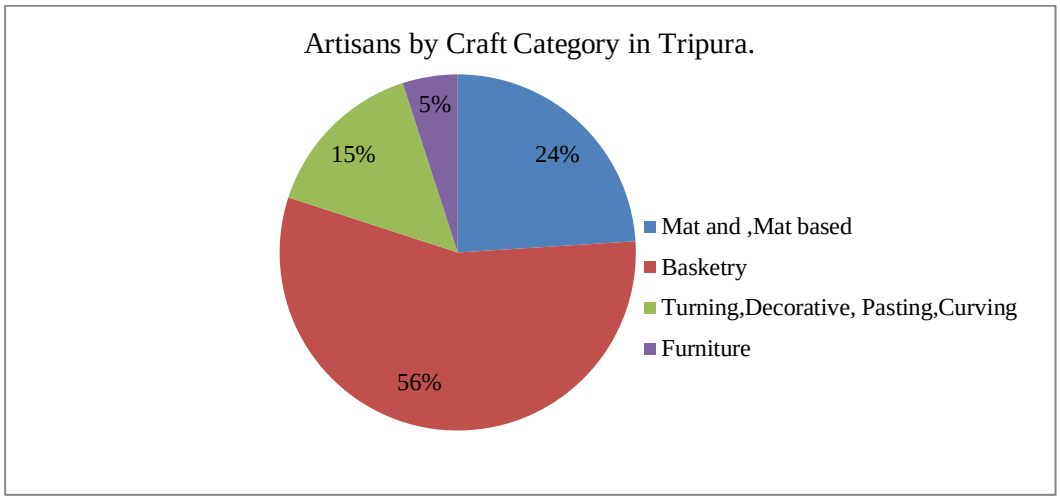
Name of the implementing agency	Clusters	Product
DHHS	19	Bamboo & cane Products
TBM (ILFS)	25	Bamboo & cane Products
MSME-DI, Agratala	01	Bamboo Agarbatti Sticks
TRIBAC	01	Bamboo Products

Source: DHHS, TBM Annual Report,2014-15, & MSME-DI, Agartala.

Maintaining the commonalities with national programme, the state government has initiated and taken care in introduction and implementation of cluster approach in the handicraft sector. At present there are 19 handicraft clusters approved by the state government and there are also 25 number of bamboo clusters run by TBM and ILFS is working as implementing agency. TRIBAC and MSME-DI, Agartala also acted as implementing agency for one cluster each as cited the table 3.18. In addition to these clusters there are about 64 clusters run by NGOs who directly received grant from DC, Handicraft Government of India.

The artisans in these clusters are producing the bamboo and cane based product, namely mat, basketry, turning, decorative item, pasting, curving and furniture. Out of the artisans engaged in bamboo based handicraft sector, most of artisans are producing basketry item.

Chart 3.20



Source: Annual Progress Report, 2013-14, TBM

In Tripura there are several decorative products and other utility items in handicraft sector such as mat and mat based item, Basketry panels, Screen, turning, pasting, curving, and furniture. Though there is no census at all in handicraft sector to find the exact number of craft wise artisans but per annual Report of Tripura Bamboo Mission about 24% artisans in bamboo and cane product is engaged in producing mat and mat based product, 56% in basketry,15% in turning , Decorative item, Pasting, Curving and only 5% in producing furniture.. It is noteworthy to mention that most of the artisans in Agartala and Jogendranagar clusters have been engaged in producing mat and mat based product. The concentration of basketry item is foundin Charilam and Nalchar clusters. Turning, Decorative item, Pasting, Curving items are mainly produced by master crafts artisans.

Chart: 3.21

AHVY Schemes Implemented Under Jurisdiction of M&SEC, Agartala.

Name of NGOs implemented AHVY	Year of Sanctioned	Name of Cluster	Craft
.Human Welfare Council, Ujan Abhoynagar, Agartala	2001-02	Reshambagan	C&B & Jute
-do-	2001-02	Durlavnarayan	Cane& Bamboo
Society for welfare & Social Research, Saratpalli, Shibnagar, Agartala.	2001-02	Barjala	Cane& Bamboo
-do-	2005-06	Bholananda Palli	Embroidery
Gramin Mahila Kalyan Samity, College Tilla, Agartala.	2001-02	Jugendranagar/ Aralia	Embroidery
Craftsworld, Jorapukur Par, Madhya Banamalipur, Agartala	2004-05	Santirbazar, Julaibari,	C&B, Sitalpati& Terracotta
Palli Unnayan Sanstha, Bardowali, Agartala	2004-05	Charipara,Belabor, W. Pratapgarh	C&B,Terracotta & Jute
Sanghadip, Sripur, Dharmanagar,	2003-04	Sripur, Dewanpasa Dharmanagar	C&B, Jute& Embroidery
Teresa Welfare Society	2002-03	Namapara & Chilanchara	Cane & Bamboo
Bankimnagar Women Development Society	2004-05	Kalabagan Bankimnagar, Khamtinbari	Cane & Bamboo
Anubhav Women Welfare Society	2004-05	Anandanagar	Cane& Bamboo & Jute
Merit research Society	2007-07	Uttar Ramchandragh	Cane &Bamboo
Women welfare Society	2001-02	At Nalgaria	Cane &Bamboo
BENU, Katlamara	2001-02	Katlamara	Cane &Bamboo
Nari Kalyan Samity, Khilpara, Udaipur	2007-08	Mirza, Tulamura	Cane &Bamboo
DISHARI, Belonia	2007-08	Gaborchara, Sonaichari	Cane &Bamboo
Prabaha- Dhalai	2007-08	Nalichara, Dhalai	Cane &Bamboo
Voluntary Social Development Organization, Harina, Sabroom	2007-08	Sabroom	Cane&Bamboo, Sitalpati
Rural Women Welfare Society, Sedai Mohanpur	2007-08	Ambasa	Cane &Bamboo
Tripura Tribal Area Autonomous District Council	2008-09	Mandwai,Tripura (w)	Cane &Bamboo
Tripura Tribal Area Autonomous District Council	2008-09	Killa, Tripura (s)	Cane &Bamboo
Women Development Society, Vill-Ranirgaon, Tripura (w)	2008-09	Teliamura	Cane& Bamboo
Mahila Seva Samity, Algapur, Dharmanagar	2008-09	Baruakandi	Cane &Bamboo
Tripura Women Welfare Society, Maichara, Belonia	2008-09	Maichara, Kalabaria	Cane &Bamboo
Voluntary Health Association of Tripura(VHAT)	2009-10	Rajnagar & Kathalia Cluster	Cane & BambooJute
SHAMPARKA	2009-10	Badharghat, Dukli Block	Cane &Bamboo JuteEmbroidery
Women Craft Society of Tripura	2009-10		
Vivekananda Social Welfare Society,	2009-10	Hrishyamukh,	Cane&Bamboo

Udayan Yuba Sangha Vill- Shantipur, P.O. Pecharthal, Dist. Tripura (N)	2010-11	Shantipur, (North District)	Embroidery
Baba Langthorai Sevashram Vill- Uttar Langtarai, P.O. Chowmanu, Dist. Dhalai, Tripura	2010-11	Uttar longthorai Natinmanu Gobindrabri East Chawmanu West Chawmanu West Malidhar. ,Dhalai Distt.	Cane & Bamboo Jute craft
Tripura Rural Development Society Vill- West Nalchar, P.O. Nalchar, Sonamura, Dist. West Tripura.	2010-11	Kalaban Chandul Tulamora Taibandal Mohanbhog West & South Distt.	Mat craft & Bamboo Basketry craft
Uptakhali Science Club Vill & P.O.Uptakhali, Dharmanagar, Dist. Tripura North	2010-11	Uptakhali Kubjar Lalchara Dupirbond Samrupharh Bhadrapally Kancharighat	Cane & Bamboo Jute
Bidyasagarh Samaj Kalyan Sangsad Vill- Pachim Noagaon, West Tripura.	2010-11	Pachim Noagaon Village	Bamboo Craft
Women's Welfare Society Vill- Nalgaria, P.O. Ranir Bazar, Dist. West Tripura, PIN- 799035.	2011-12	Gandhigram Gaon Panchayat (West Tripura)	Embroidery & Bamboo matting Craft
Tripura Handloom & Handicrafts Development Corporation, MBB Sarani, Agartala-799001.	2011-12	Melaghar & Khowai (West Tripura)	Cane&bamboo, Terracotta
Women's Welfare Service Vill- Karailong, P.O. Teliamura, Dist West Tripura.	2011-12	Gabordi,Amarendranagar,Hirapur,J.K.Nagar,Jampuijala,Kendrai ch ara,KilaBarma, (West Tripura)	Cane & Bamboo and Jute
Santikali Mission, Vill- Debta Para, P.O. Birendranagar, Dist. West Tripura, PIN- 799045.	2011-12	Manu Rural Development Block ,Distt. Dhalai	Artistic textiles on Loin loom
Progressive Social & Cultural Organisation, Vill & P.O. Rangutia, Bamutia, Dist. West Tripura, 799211	2011-12	Border area of Rangutia,West Distt.	Cane & Bamboo and Jute
ASHRAY' – Vill & P.O. Gournagar, Kailashar, Dist. North Tripura.	2011-12	Kailashahar Cluster	Cane &bamboo, Embroidery doll making,

Source: DC, Handicrafts, GOI, M S&EC, Tripura state folder

AHVY scheme was implemented through the Marketing and Service Extension Centre, Agartala to the NGOs and other government agencies such as TTADC, and THHDCLwhich is observed from the chart 3.21. About 34 organisations have been benefitted through the AHVY scheme which was implemented in this state since 2001-02.

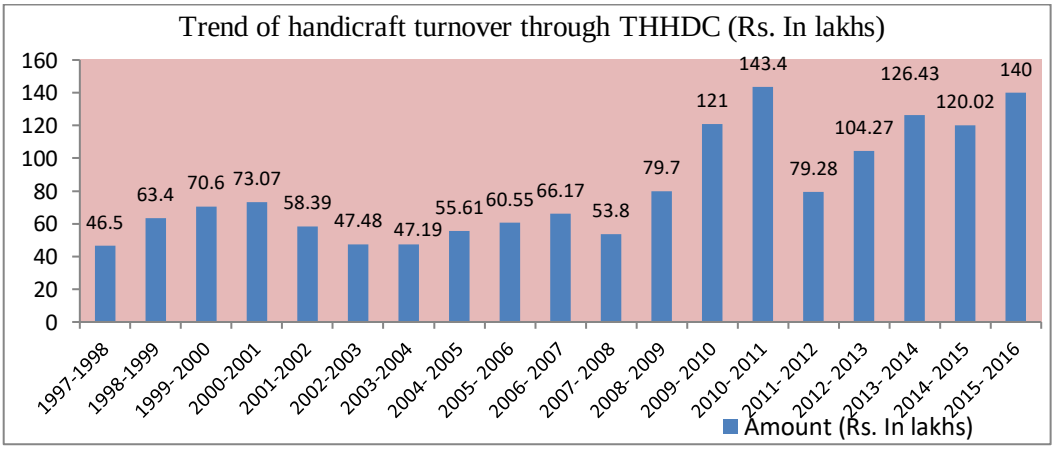
Table 3.19
Fund sanctioned for Infrastructure Development in Tripura by D C (Handicrafts), GOI.

Location	Implementing Agency	Year of Establishment	Sanctioned Rs in lakh.
Nutannagar, Airport Road Agartala, Tripura.	Tripura Handicrafts Development Samity.	Common Facility Centre. (1997-98)	32.20
		Craft Development Centre (1992).Commencement of the CDC 1995-96.S.O.N:11/19/91-MSS/145 Dt 21.01.92	3.56
		Handicraft Emporium.	11.44
Katlamara	Bamboo Enterprise Nation United	Common Facility Centre Dt. 27.09.2002.	30.06
Indranagar, Near ITI Agartala,	THHDC	Common Facility Centre	15.00
		Handicraft Emporium (1997-98).	12.64
Purbasha, MBB Sarani, Agartala,	THHDC Corporation.	URBAN HAAT	384.00

Source: DC, Handicrafts, GOI, M S&EC, Tripura state folder

The table 3.19 mirrors that D C (Handicrafts), GOI has been granting fund for the setting up of the common facility centre with a view to promote the entrepreneurial activities in the handicraft sector brining the artisans in a common platform since 1997-98. Under the process of infrastructure developmental grant three organisations, namely, Tripura Handicrafts Development Samity, Bamboo Enterprise Nation United, and Tripura Handloom & Handicrafts Development Corporation. (THHDC) have received grant. Urban-Hut is established by the THHDC at Agartala which was already inaugura.ted

Chart -3.22



Source: Tripura Handloom & Handicrafts Development Corporation.

The chart 3.22 highlights the turnover of handicrafts through THHDCL. It is reported that 10% of the total product is sold through THHDCL. In this context the trend of turnover is encouraging which implies that cluster promotes the entrepreneurial activities.

3.4. Contribution of Clusters in SSI sector:

It is globally recognized that industrial cluster contribute significantly to the economic development of a nation stimulating mainly the MSME sector in respect its growth and performances. One will find large body of literature highlighting the contribution of clusters in respect of export earnings as well as generation of employment in the industries under the umbrella of clusters across the world.

3.4.1. Contribution of Some Successful of Clusters in the Global Context:

There are increasing evidences across the world irrespective of developed as well as developing nations that MSMEs under the umbrella of cluster approach can boost their competitiveness. Several literatures viewed in favour of contributions of clusters to the competitive advantage of developed nations. It is observed that leather cluster of Arzignano, the knitwear cluster of Prato, the tiles making cluster of Sassuolo, the chair manufacturing cluster of Manzano of the region of Third Italy were contributed significantly to the economic development of the concerned nations during the period of recessions occurred in the 1970s and 1980s when the large integrated firms, in the similar branch of production system thriving in making response to the rapid changing pattern of customers behaviour and their demand. In respect of generation of employment, 199 industrial clusters of Italy recorded a significant contribution. 42.5% of the country's manufacturing employment was provided by such clusters in Italy in 1996. There were around 9,000 firms in textile cluster of Prato and around 44,000 persons were employed in such firms in Prato cluster. The turnover of this cluster was estimated round US$ 5.3 billion/year and 60 per cent of its output was exported. The significant contribution of Germany's Tuttlingen surgical instrument cluster was evidenced from its share of export in world market for surgical instruments which accounts for about 55% of world exports of surgical instruments. The cluster has recorded 55% share of the world market for surgical instruments in 1999 and annual

turnover in 1999 was estimated US $ 610 million. In Latvia, business cluster enterprises account for 50% of the total exports, 39% of the GDP and 43% of the total value added.

The Sialkot surgical instruments cluster of Pakistan is a pride of Asian region. This cluster is an export oriented cluster, and 90% of its output is exported which accounts for about 20% of world exports of surgical instruments and occupy the rank of the second largest exporter in the product of surgical instruments in the world.

3.4.2. Contribution of Clusters in Indian Context:

In India, one will find several evidences regarding the contribution of industrial clusters towards the economic development of the nation by enhancing the entrepreneurial activities in the arena of MSME sector. There are several successful natural clusters across the country. Panipat cluster produces 75 per cent of all blankets in the country; Ludhiana in Punjab produces 95 per cent of the country's woolen knitwear, 85 per cent of the country's sewing machines and 60 per cent of the nation's bicycle and bicycle parts. Bangalore IT cluster contributed 38% of India's total IT exports in 2013. Tirupur knitwear cluster is an export oriented cluster of the country. The Tirupur clusters contributes 80.0 per cent to total cotton hosiery export, and Agra exports shoes worth USD60.0 million annually.

According to Tirupur Exporters Association (TEA), Knitwear exports from Tirupur have registered a growth 15.5 per cent in terms of rupee and 15.9 per cent in terms of foreign currencies during the financial year 2014-15. The export of Knitwear products has increased to Rs.20730 crore in 2014-15 from Rs. 18000 crore in 2013-14.

The analysis of data in different period of SSI census clearly disclosed that clusters in registered SSI Sector significantly contribute to its economy in terms of employment generation and value of gross output.

Table 3.20

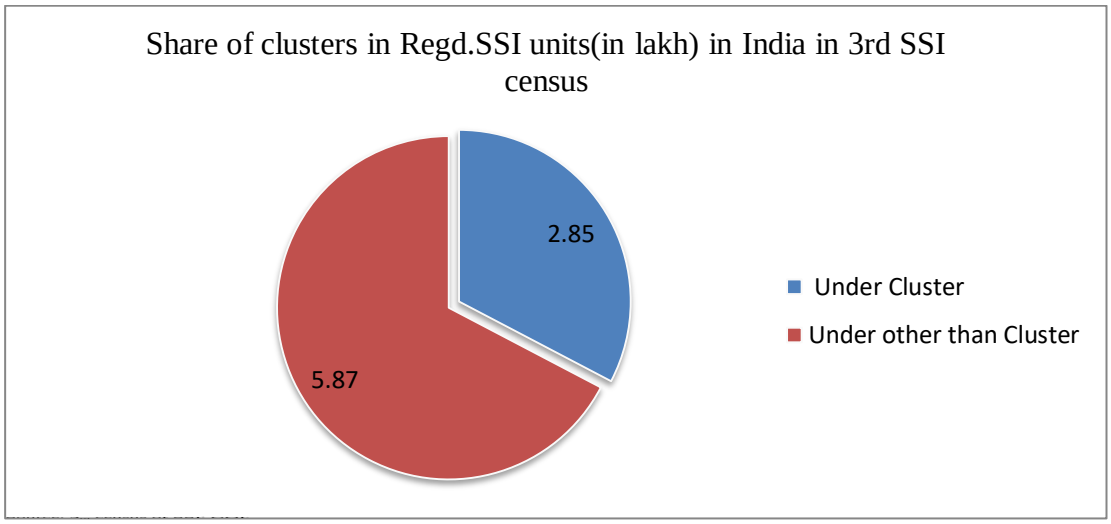
Contribution of clusters in Registered SSI Sector in India in 3rd Census of SSI

	Estimated number of units	Employment In persons	Fixed Investment Rs in crores	Gross output Rs in crores
For 1223 Clusters engaged in the mfg. Activity in Regd. SSI sector	285150	1398846	15812.03	32862.00
For mfg. Activity in Regd. SSI sector	872449	5056666	83433.69	193390.68
Share of the 1223 clusters in the mfg. Activity in Regd. SSI sector (%)	32.68	27.66	18.95	16.99

Source: 3rd census of SSI, GOI.

Clusters in small scale industry sector were identified in India from the second census of SSI units. And from that date various policy decisions have been taken by the government of India. In view of the importance of SSI sector the attempt for identification of clusters was still in existence during the third all India SSI Census and fourth all India Census of MSMEs. A criterion was made to consider a cluster for the purpose of 3rd census of SSI .A district having minimum 100 registered units engaged in the manufacturing the same product as per ASICC2000 (at 5 digits)was considered a cluster for that product in that district. Based on this criterion, third all India SSI Census identified 1223 clusters in the registered sector and these clusters units were produced the 321 variety of products as per the table 3.20. During the period of 3rd SSI Census, the number of units was estimated about 8, 72,449 out of which, 2,85,150 units were performing their manufacturing activities under the umbrella of 1223 clusters which constitute 32.68% of the country's total registered manufacturing units of the SSI sector. These registered manufacturing units have been contributed 16.99% of the total gross output by investing 18.95% of the total fixed investment of the SSI sector.

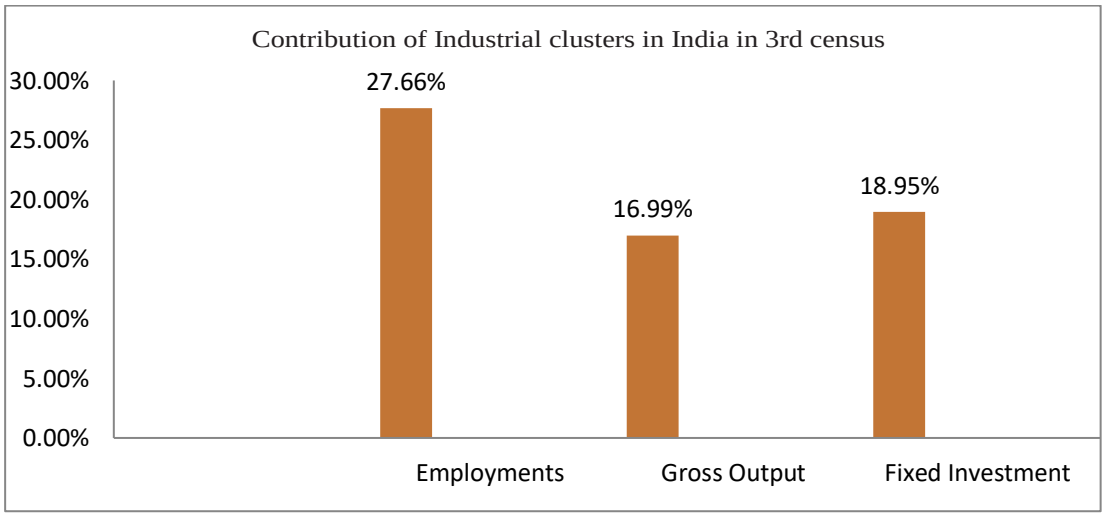
Chart-3.23



Source: 3rd census of SSI, GOI.

This chart 3.23 mirrored that during the period of 3rd census there were 2.85 lakh registered manufacturing units in 1223 clusters and 5.87 lakh registered manufacturing units other than clusters area in India. The 32.68% of the country's total registered manufacturing units of the SSI sector had been functioning under the umbrella of 1223 clusters in the period of 3rd census.

Chart-3.24

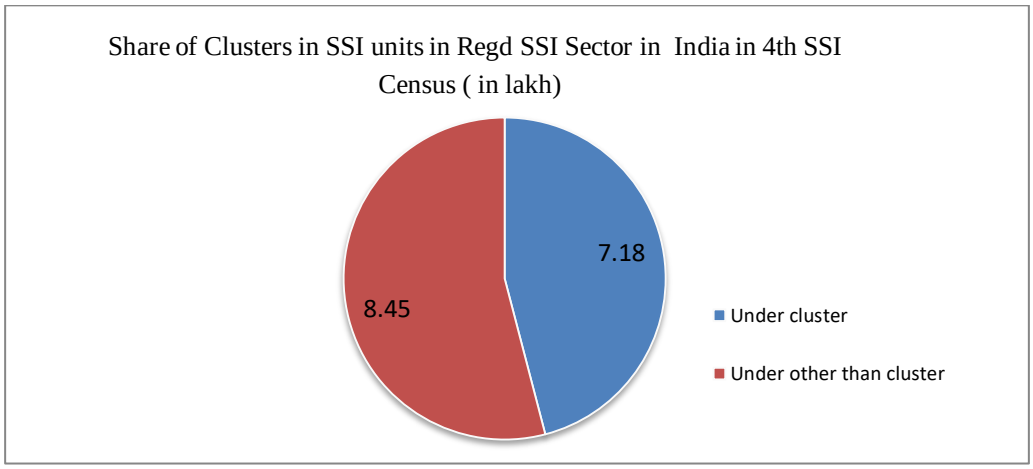


Source: 3rd census of SSI, GOI.

The chart -3.24 reveals the contribution of industrial clusters in 3rd census period. The registered manufacturing units in industrial clusters had contributed 16.99% gross output by investing 18.95% of the total fixed investment of the total

manufacturing units of the SSI sector. About 27.66% of total employments of SSI in 3rd census period were contributed by the industrial clusters.

Chart -3.25



Source: 4th census of SSI, GOI

The chart-3.25 mirrored that there were 7.18 lakh registered manufacturing units in 2443 clusters and 8.45lakh registered manufacturing units other than clusters area in India during the period of 4th census. The clusters covered 45.92% of the country's total registered manufacturing units of the SSI sector.

Table 3.21

Contribution of Clusters in Registered SSI Sector in India in 4th census of SSI.

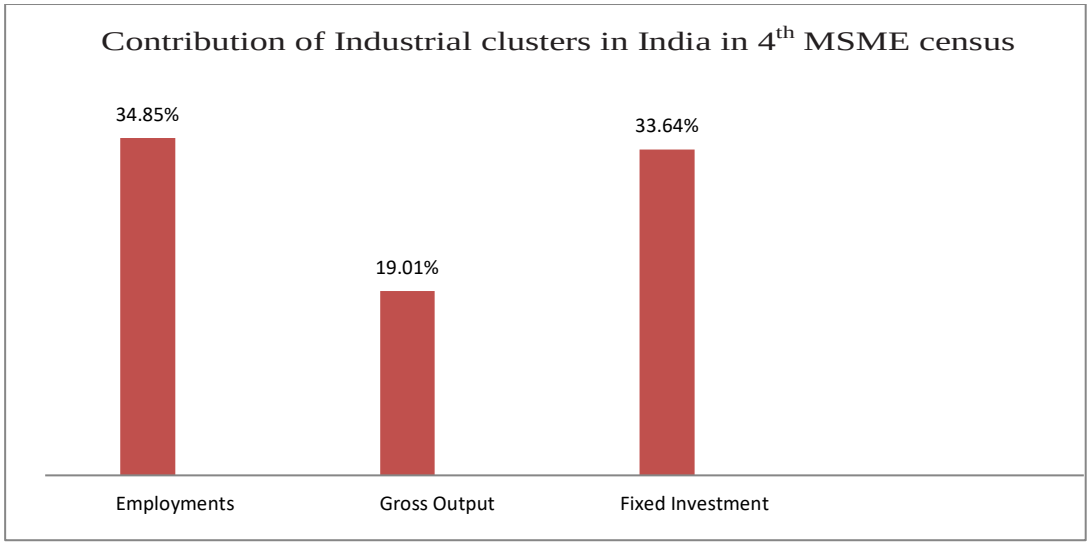
	Estimated number of units (in lakh)	Employment (In'000)	Fixed Investment Rs in crore	Gross output Rs in crore
For 2443 Clusters engaged in the mfg. Activity in Regd. SSI sector	7.181	324.4507	151096.49	134463.49
For mfg. Activity in Regd. SSI sector	15.63	930.9490	449138.44	707510.30
Share of the 2443 clusters in the mfg. Activity in Regd. SSI sector (%)	45.92	34.85	33.64	19.01

Source: 4th census of SSI, GOI

The increasing trend of clusters in registered MSME sector is reported from the above table-3.21. The total number of clusters in registered manufacturing units of the SSI sector has increased by1220 during the period of five years with effect from 2002 to 2006. There were 1223 clusters in third census of SSI which has

increased to 2443 clusters in 4th census that clearly reveals the acceptance of cluster approach for rapid industrialisation in India. The 4th census of SSI also highlights the contribution of clusters in the field of micro, small and medium enterprise sector. Under the umbrella of clusters 45.92% of total industrial units of registered SSI sector has been working and producing 19.01% of output. These clusters also have been generating 34.85% of employment in SSI sector.

Chart -3.26



Source: Final Report 4th MEME Census 2006-07, Registered Sector.

The chart -3.26 mirrors the contribution of industrial clusters in 4th census period. The clusters in registered manufacturing MSMEs significantly contributed to the country's MSMEs. It is highlighted that industrial clusters contributed about 34.85% of total employments of country's MSMEs. 19.01% of the total gross output by investing 33.64% of the total fixed investment of the MSMEs.

Table 3.22

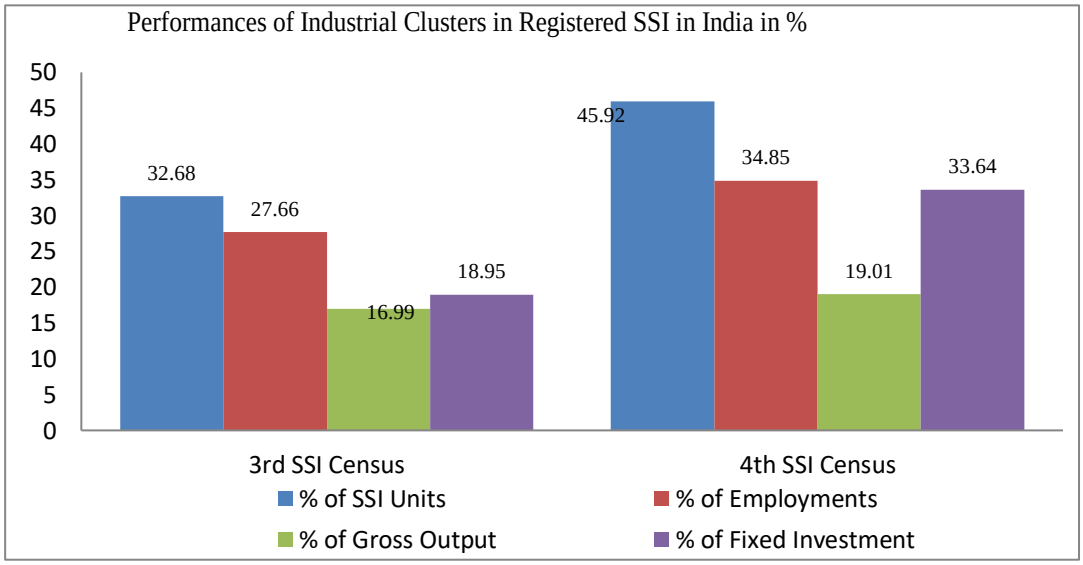
Contribution of Clusters in Registered Sector in India: A Comparison between 3rd& 4th SSI Census

Census	Clusters	Estimated no.of units (in%)	Employment (in %)	Fixed Investment (in %)	Gross output (in %)
3rd	1223	32.68	27.66	18.95	16.99
4th	2443	45.92	34.85	33.64	19.01

Source: Final Report 4th MEME Census 2006-07, Registered Sector.

The table 3.22 reveals the popularity of cluster approach in promotion of industrial development in Registered SSI Sector in India. During the period between 3rd and 4th census of SSI, the number of clusters increased by about 100%.

Chart -3.27



Source: Final Report 4th MEME Census 2006-07, Registered Sector.

The chart 3.27 highlights the increasing trend in creation of employment, and value of gross output in the industries operating under the cluster Approach. The number of units in 4th census is increased to 45.2% increased from 32.68% in 3rd census. Accordingly employment is also increased to 34.85% in 4th census. The table also illuminates the positive impact on gross output which is increased to 19.01% in 4th census from 16.99 in 3rd census.

Table 3.23

Growth of Clustered SSI in Registered Sector.

Census	Clusters	Estimated no. of units in percentage	Employment in percentage	Fixed Investment in percentage	Gross output in percentage
3rd	1223	32.68	27.66	18.95	16.99
4th	2443	45.92	34.85	33.64	19.01
% change in 4th over 3rd census	(+) 99.75	(+)13.24	(+) 7.19	(+)14.69	(+) 2.02

Source: Final Report 4th MSME Census 2006-07, Registered Sector.

The increasing trend of clusters in registered MSME sector is observed from the table 3.23 during this two census period and with 100% increasing rate of clusters

during this period has made the remarkable revolution in the field of cluster approach. The increasing trend in terms of number of units and employment is found to be 13.24% and 7.19%. The fixed investment and gross output are increased by 14.69% and 2.02% respectively. The increasing trend of clusters as well as their capacity to cover additional 13.24% industrial units and 7.19% employment in comparison to 3rd census signifies the acceptance of cluster approach for promotion of entrepreneurial development in registered manufacturing unit of MSMEs.

Table-3.24

Activities of Regd. SSI sector: A comparison between Cluster and total Manufacturing sector

	Activity in total Regd. SSI sector in cluster		Activity in total Regd. SSI sector	
	3rd Census	4th Census	3rd Census	4th Census
Per unit Gross output (Rs in lakh)	11.52	18.72 (6.25%)	22.16	44.38
Per unit Fixed Investment ((Rs in lakh)	5.54	21.03 (279%)	9.56	28.71
Fixed Investment per worker (Rs in lakh)	1.13	4.65	1.6	4.82
Gross output per worker(Rs in lakh)	2.34	4.14	3.82	7.60

Source: Final Report 4th MSME Census 2006-07, Registered Sector.

The table- 3.24 illuminates the potentiality of cluster approach in enhancing the growth of MSMEs in India. Gross output is one of the indicators of measuring the growth of this sector. It is revealed from the table that per unit total gross output has increased from Rs 11.52 lakh in 3rd census to Rs 18.72 lakh in 4th MSME Census. Per unit fixed investment is also increased to Rs 21.03lakh in 4th census in clustered industry from Rs 5.54 lakh. The Fixed Investment per worker and Gross output per worker in clustered industry are found to be increased. The increasing scenario is observed in the total SSI registered manufacturing sector also. It is observed that industries in cluster in terms of gross output per worker and fixed investment per worker are able to keep pace with the country's the total SSI registered manufacturing sector.

Cluster approach plays significant role in development of MSMEs and their competitiveness in the era of globalization. It is observed from the above discussion that the performances of MSMEs under the umbrella of cluster approach in registered SSI sector are quite encouraging. In the 3rd SSI Census period the number of industrial unit under the umbrella of clusters found to be 2.85 lakh which is increased to 7.18 lakh in 4th MSME census reference year 2006-07. The increasing rate of clustered SSI units in 4th MSMEs over the 3rd SSI Census is observed 13. 24%. The increasing rate in total number of industrial units is the positive indication of cluster approach towards the development of entrepreneurship. One will find that increasing rate is not only found in total number of unit in SSI sector but positive growth rate is observed in employment. The increasing rate in employment in 4th MSMEs Census over 3rd SSI Census in clustered SSI units in registered sector is observed 7.19%. The increasing rate in fixed investment and Gross output in 4th MSMEs Census over 3rd SSI Census in clustered SSI units in registered sector are observed 14.69% and 2.02% respectively.

The potentiality of cluster approach in enhancing the growth of MSMEs in India is measured by the following indicators, namely, per unit Gross output, per unit fixed investment, Gross output per worker. Gross output is one of the indicators of measuring the growth of this sector. It is observed from the discussion of the present chapter that per unit total gross output has increased from 11.52 lakh in 3rd SSI Census to 18.72 lakh in 4th MSME Census. Per unit fixed investment is also increased to 21.03 lakh in 4th MSME Census from 5.54 lakh in 3rd SSI Census in clustered industry. The increasing rate is also observed in case of Fixed Investment per worker and Gross output per worker in clustered industry. Fixed Investment per worker in clustered industry in 4th MSME Census is increased to 4.65 lakh from 1.13 lakh in 3rd SSI Census. It is observed that industries in cluster in terms of gross output per worker and fixed investment per worker are much better than the country's total SSI Regd manufacturing sector. Under the prevailing situation Government of India highly stressed upon to bring the maximum micro and small industries under the cluster approach which is observed from the report of Prospects & Activities Reflecting Cluster's Highlights and Achievements of MSE-

Cluster Development Programme, (2016) Ministry of MSME, Government of India. Clustered industry not only generating employment but capable to earn foreign money through export. Tirupur cluster is a contributor of country's 80% cotton hosiery export and the export of Knitwear products has increased from Rs. 18000 crore in 2013-14to Rs.20730 crore in 2014-15.Agra exports shoes worth USD60.0 million annually. IT cluster, Bangalore contributed 38% of India's total IT exports in 2013.In Tripura there is no traditional manufacturing cluster in this state but clusters are found in Handloom, Handicraft, and Sericulture. Such clusters contribute in generating rural employment to marginalized section of the society and promote rural economy through inclusive entrepreneurship.

The above discussion highlights that in the national context clusters through providing positive entrepreneurial environment such as setting up of CFC, setting up of Raw-material Bank, increasing connectivity, enhance the entrepreneurship in MSMEs.