CONSULTANCY ON CANE & WOODEN FURNITURE INDUSTRIES

Initiated and Funded by: National Enterprise Development Authority

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Study on Furniture Industry

1. Introduction
2. Cluster Orientation
3. Diagnostic Study
4. Best Practices
5. Transformation
6. Development Framework
7. Project Proposals
8. Monitoring & Evaluation Mechanism
9. Conclusions & Recommendations
10. Action Plan

1. Introduction

1.1 National Enterprise Development Agency (NEDA) established in 2006 under the Ministry of Enterprise Development and Investment Promotion to facilitate and proactively support the development, growth and competitiveness of the Sri Lankan enterprises as an integral part of the national economy of Sri Lanka awarded a consultancy assignment on Cane & Furniture Industries to the National Chamber of Commerce of Sri Lanka (NCCSL) on 25th May 2007

1.2 The assignment was to undertake a development study to determine competitive determinants of both the Cane Furniture industries at Wewaldeniya and the Wood-based Furniture industries at Moratuwa and make recommendations to improve their Competitiveness. The terms of reference (TOR) of the consultancy assignment is attached. Vide Annex 1

1.3 Having emphasized in their Corporate Declaration of Vision the development of small and medium enterprises (SMEs), NCCSL has affiliated the Federation of Associations of Small and Medium Enterprises (FASMEs) and the District Associations of Small and Medium Enterprises (DASMEs) as its institutional framework for this purpose at the national level and the district levels.

1.4 NCCSL recently launched the Business Promotion Fund (BPF) with financial assistance received from the Government of the Netherlands to create a sustainable SME sector through enhancing competitiveness. One of the development measures advocated by NCCSL to improve the competitiveness of SMEs is promoting co-operation among SMEs without hindering individual initiatives to develop the enterprise.

1.5 Whilst providing financial assistance to SMEs on individual basis through BPF, NCCSL observed that financial and technical assistance have to be provided to groups of SMEs either located in the same area (Geographical Clusters) or belonging to the same industrial Sub-sector (Industrial Associations) as well to complement their activities under BPF to improve competitiveness of SMEs.

1.6 Hence, NCCSL was very much interested in finding out determinants of competitiveness of Wood-based furniture industries in Moratuwa and Cane furniture Industries in Wewaldeniya and ascertain their needs to improve the competitiveness and expressed its willingness to undertake the consultancy assignment referred to for the benefit of its membership of SMEs.

1.7 The team of consultants sub-contracted by NCCSL for this consultancy assignment examined the secondary data and deployed two undergraduates of the Department of Forestry and Environment of the University of Sri Jayawardenepura to carry out the field survey of the furniture industries in Moratuwa and Wewaldeniya to collect the required data.

1.8 The team of consultants also held a series of discussions/interviews with stakeholders of the furniture industries in Moratuwa and Wewaldeniya to obtain their views/ recommendation to improve the competitiveness of the furniture industry. The list of stakeholders interviewed is attached. Vide Attachment 11.

1.9 Review meetings were held with NCCSL and NEDA to ensure that all the issues pertaining toTOR are addressed by the consultants and to ensure that their recommendations are based on comprehensive analysis of the firm and industry conditions.

1.10 The consultants during their field visits observed that the development programs hitherto implemented in respect of furniture industries are either based on the 'hands off' approach exclusively relied on market forces or the top down distributional model promoted under the 'intervention approach' by the government and the various projects implemented under those programs have failed to address the issue of competitiveness of furniture industries.

1.11 As a consequence, despite of policy prescriptions and development assistance provided through National Budgets and various Donor Projects, most of SMEs in general and in particular SMEs engaged in the furniture industry in Moratuwa and Wewaldeniya depicted an unimpressive survival rates. Hence, the consultants suggest that a new development approach has to be adopted to improve the competitiveness of the furniture industries.

2. Cluster Orientation

2.1 New Development Approach

2.1.1 As the "hands-off" approach and the "interventionist approach" failed to address the development needs of those clusters, the consultants are of the view that a cluster-oriented development approach has to be explored to address the development constraints of the two clusters that retard their growth. For this purpose, clusters have to be identified as a distinct entity, their unique features have to be highlighted and global experience on development of those have to be examined.

2.1.2 The Cluster-oriented new development approach should neither undermine the effectiveness of the market forces nor over depend on intervention by the government

2.2 Definition of Clusters

2.2.1 A geographical concentration of enterprises that produce and sell a range of similar/ related/ complementary products and services are defined as a cluster. "Clusters are geographic concentration of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for an example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions-such as universities, standard-setting agencies, think tanks, vocational training providers, trade associations-that provide specialized training, education, information, research, and technical support." (Clusters and the New Economics of Competition- *Harvard Business Review*, Boston, Nov/Dec 1998, Michael E.Porter)

2.2.2 There are multiple paths for development of clusters and no single model of clusters prevails. Hence, there is a wide variety of development models of geographical clusters in the world. In the case of furniture clusters, in one model highly integrated small and medium size companies exist in geographically concentrated local systems. The examples are the furniture districts in Italy, Demark and the Philippines. In another model there is a simple concentration of furniture companies with a low level of integration between them prevails in a large territory and the examples are Carolina in USA and Guangdong in China.

2.2.3 Since Moratuwa wherein wood-based furniture industries are agglomerated and in Wewaldeniya where the cane furniture industries are physically concentrated have most of those features of the above mentioned clusters, we can classify Moratuwa and Wewaldeniya as geographical clusters of furniture manufacturing industries. Although they fall in to the first model, in comparison with the clusters described by Porter these clusters are under developed entities.

Moreover as in those developed clusters there is no non-hierarchical institutional mechanism that enables furniture industries to operate in a competitive and complex environment in these two geographical clusters. .

2.2.4 Clusters through *Networks* arrangement elevate the level of small firms to the level of the cluster firms to face the competition 'outside' effectively and promote co-operation versus competition among small firms within the clusters. These networks thus promote a new competition as explained by Best.
"New competition entails flexible response, networking, customization and new forms of inter-firm organization (in clusters) rather than classic cost/price competition dominated by hierarchically organized firms."
(New Competition: Institution of Industrial Restructuring- *Cambridge Polity Press* 1990, M.Best)

2.2.5 Unlike the Moratuwa Wood-based Furniture Cluster (MWFC) and the Wewaldeniya Cane-based Furniture Cluster (WCFC), the Developed Clusters elsewhere have promoted cooperation among small firms in the cluster and succeeded as an alternative to markets and hierarchies in production and innovation. The consultants further observed that the process of complementation and specialization institutionalized in the Developed Clusters is also not found in MWFC and WCFC.

2.2.6 In the Developed Clusters, the process of complementation is formed and sustained through inter firm co-operation. The Specialization is created in those clusters through the interaction with supporting institutions

2.2.7 Industry Associations, R&D/Innovation/ Productivity Centers, Standard Setting Bodies, Universities and Vocational Training Centers, Enterprise Support Service Providers, Banking and other Financial Mechanisms are the supporting institutions. They are located outside the hub of the Developed Clusters.

2.3 Classification of Clusters

2.3.1 Clusters have no unique form. " Clusters come in many forms, each of which has a unique development trajectory, principles of organization and specific problems. Two broad distinctions however, can be made. The first is between clusters that originate as spontaneous agglomerations of enterprises and other induced by public policies and designated as 'constructed clusters'. The latter range from techno poles and industrial parks, to incubators and 'Export Processing Zones'
(Local Clusters, Innovations and Sustained Competitiveness- Lynn Mytelka & Fulvia Farinell-Oct 2000)

2.3.2 The consultants classify MWFC and WCFC as spontaneous clusters. Those were not constructed by governmental agencies. They evolved over the years as geographical concentration of furniture industries without any compulsion or inducement by the government.

2.3.3 Mytelka & Farinell have further distinguished the spontaneous clusters as follows:-

- Informal Clusters
- Organized Clusters
- Innovative Clusters

2.3.4 The principal characteristics of these three clusters have been determined based on the configuration of cluster firms, their traditional habits and practices, competences, the nature and intensity of their interaction and the degree of change in the cluster overtime. Vide Table 1.

Table 1. Types of Clusters and Their Performance

Type		**Spontaneous Clusters**	
	Informal Clusters	**Organized Clusters**	**Innovative Clusters**
Examples	Suame Magazine (Kumasi- Ghana)	Nnewi (Nigeria) Sialkot (Pakistan)	Jutland (Denmark) Belluno(Italy)
Critical Actors	Low	Low to Medium	High
Size of Firms	Micro & Small	SMEs	SMEs & Large
Innovation	Little	Some	Continuous
Trust	Little	High	High
Skills	Low	Medium	High
Technology	Low	Medium	High
Linkages	Some	Some	Extensive
Cooperation	Little	Some not sustained	High
Competition	High	High	Medium to High
Product Change	Little or Nothing	Some	Continuous
Exports	Nil	Medium-High	High

Source: UNCTAD-1998 (Adapted by Mytelka & Farnelli-October 2000

2.3.5 Neither MWFC nor WCFC is an Innovative Clusters. Those two furniture manufacturing clusters fall either into the category of Informal Cluster or to the category of Organized Cluster. Based on the findings of the diagnostic study and the special characteristics of the two clusters, the appropriate category for MWFC &WCFC will be determined.

2.3.6 The main characteristics of Formal and Organized Clusters given below will be the yardstick for the determination of the category of MWFC & WCFC. Vide Table 2.

Table 2 Characteristics of Informal & Organized Clusters

Type	Informal Cluster	Organized Cluster
Main Characteristics		
Size of Firm	Micro & Small	Small & Medium
Entry Barrier	Low	Low to Medium
Management Capabilities	Weak	Medium
Level of Technology	Low	Low-Medium
Skills of Workers	Low	Low-Medium
Opportunities for Skills Upgrading	Nothing	Little
Co-ordination & Networking	Nil	Some
Trust	Little	Medium
Information Sharing	Low	Medium
Cut-throat Competition	High	Low-Medium
Infrastructure	Poor	Better
Supporting Institutes	Not Available	Some Available
Linkages	Nil	Some

2.3.7 The Informal clusters as well as the Organized Clusters undergo a process of transformation to improve their capacity to face competition. For an example, the Suame Magazori cluster in Kumasai (Ghana) consisting of 5000 craftsmen in small garages and workshops making spare parts for and repairing automobiles began their transformation through the establishment of linkages between clients and suppliers and networking with research institutions such as the Technology Consultancy Centre at the University of Science and Technology in Kumasai.

2.3.8 When the IMF Structural Adjustment Program liberalized imports in 1980 the growth of the Suame Magazori cluster slowed down. The enterprises that moved from repair to manufacturing fared better and most of them survived. In contrast hundreds of enterprises confined their activity to repairing collapsed. The lesson we can learn from this case is that those who transformed themselves to manufacture from repairing could face competition successfully, despite of importing used cars and second hand parts.

2.3.9 Accordingly, informal clusters have to transform themselves to organized clusters by raising the level of technology and undertaking more value-added functions. The Dictum is 'Fitters must raise their technology and the enterprises must change their role from that of repairer to that of manufacturer.'

2.3.10 The organized clusters in their process of transformation to innovative clusters, improve their competence level through training and apprenticeship and upgrade their technological capability. The cooperation and the networking that emerged among the member firms will be further consolidated. The firms in the organized clusters will exhibit the capacity to undertake technology adoption, to design new products and processes when they reach the realm of innovative clusters.

2.3.11 The successful transformation of formal and organized clusters to the respective superior cluster depend on the effectiveness of the policy prescriptions and their implementation as the market forces often fail to provide the necessary impetus for the transformation. Hence, the government has to play an active role in the transformation process of clusters by prescribing policy measures/prescriptions.

2.3.12 For designing of policy prescriptions, the competitiveness determinants of the Clusters have to be clearly understood. Hence, as a prerequisite for transformation of MCFC & WCFC to superior clusters, the competitiveness determinants of those clusters have to be identified. This exercise will be undertaken in the diagnostic study of those clusters in Chapter 3.

2.4 Role of NEDA

2.4.1 NEDA has been setup as the 'focal point for representation, recognition, and resolution of issues faced by national enterprises and for the coordinated provision of inputs and services in order to stimulate the growth of a vibrant national enterprise sector in a competitive market environment.' Accordingly NEDA can facilitate the process of transformation of MCFC & WCFC by the coordinated provision of inputs and support services of those clusters.

2.4.2 In terms of the provisions made in the Act No: 17 of 2006, NEDA is empowered to declare special economic zones that shall be growth centers for enterprise development. By using that provision NEDA can play a unique role in the transformation process of MCFC & WCFC by declaring those clusters that encompass contiguous geographical areas as special economic zones (SEZs).

2.4.3 Effectiveness of NEDA's contribution can be assessed through the achievement of innovative cluster status by either of MCFC or WCFC. Innovative clusters are well structured manufacturing clusters capable of meeting global competition effectively.

2.4.4 The World Survey of Manufacturing Clusters conducted in 2003 have covered around (44) forty-four structured furniture manufacturing clusters and less institutionalized furniture manufacturing clusters. One of the goals of the promoters of MCFC & WCFC including NEDA should be to get those geographical clusters listed in this Global List of Renowned Manufacturing Clusters. The names and the locations of the forty-four furniture manufacturing clusters surveyed in 2003 are given below.

Vide Table 3.

Table 03: World Renowned Furniture Manufacturing Clusters

Country	Name of Cluster
Italy	Bari and Matera, Brianza, Forli, Manzano, Padova and Verona, Pesaro, Tuscany, Treviso and Pordo
Austria	Oberosterreich
Denmark	Salling
France	Lorraine, Pays de la Loire, Ile-de-France, Alsace, Aquitania
Germany	North Rhine, Westphalia
Spain	Basque countries, Catalonia, Murcia, Valencian Community
United Kingdom	Eastern England, East Midlands, North East, North West, West Midlands, Yorkshire and Humberside
United States of America	North Carolina, West Michigan
Brazil	Bento Goncalves, Sao Paulo
Mexico	Jalisco
South Africa	Western Cape
Australia	Melbourne
New Zealand	Hawke’s Bay
China	Dongguan, Shunde, Zhongshan, Shenzhen, Guangzhou
Indonesia	Jepara
Malaysia	Muar
Philippines	Cebu
Japan	Shizuoka and Aichi, Okawa, Kanto and Tokyo, Hokkaido
Source: Furniture Manufacturing Clusters- A World View, CSIL Milano July 2003	

2.4.5 However, mere declaration of those two furniture clusters as SEZs, will not ensure that enterprises within those clusters will be globally competitive and those will achieve innovative cluster status to be listed as Renowned Cluster, unless an appropriate industrial sub-sector policy package is introduced and a comprehensive development program for the transformation of MCFC &WCFC is launched.

2.4.6 The consultants are of the view that the sub-sector industrial policy package designed for MCFC & WCFC should not be confined either to macro economic policies or to micro economic policies. They recommend that both the framework approach and the ingredient approach be amalgamated in the design of Development Framework of MCFC & WCFC so that macro economic policies and the micro economic policies can be effectively harnessed for the transformation of those two clusters to superior clusters.

2.4.7 For the purpose of designing the development framework, a detailed analysis of MCFC &WCFC has to be undertaken and propose policy measures to address the constraints that adversely affect the competitiveness determinants of the two clusters. The detailed analysis will be done in the Diagnostic Study that follows.

3. Diagnostic Study

3.1 Overview of Furniture Industry

3.1.1 Furniture industry of Sri Lanka has a long history of producing household wooden furniture. Nowadays furniture manufacturers in Sri Lanka using wood, rattan, metal, fiberglass and plastics produce a mixed range of products including household, office, kitchen and garden furniture. Vide Attachment I

3.1.2 However wooden furniture is the major production and exports of the furniture industry of the country. Rattan furniture is the next important furniture industry mainly caters to the domestic market and there is growing export market for rattan furniture that use imported rattan.

3.1.3 Wood is supplied to the furniture industry either by timber resources in Sri Lanka or by imported timber. Asian countries are the major source of imported raw materials. Solid wood is mainly imported from Malaysia and Thailand. Veneer and plywood are sourced from Taiwan, while rattan is imported from Indonesia.

3.1.4 The leading positions of the wooden and cane furniture in the market have been adversely affected with the emergence of furniture substitutes making use of raw materials such as plastic, fiberglass and metal. Hence, the customer perception of wooden & cane furniture is very important in the present highly competitive furniture industry market and in these context properties of wood and rattan is a critical factor.

3.1.5 Although wood is much heterogeneous than plastic, metal and other raw material substitutes, it has its own distinct properties that make furniture made out of wood unique in appearance like color, grain or odur, differences in specific gravity, texture or strength among the species and exclusiveness in usage because of the features such as trend, reliability, environmental friendliness and archaisms. In view of those properties customers will perceive wooden furniture as a unique item which cannot be replaced easily.

3.1.6 Meanwhile, the position held by rattan furniture as high-end designer good product with high quality and high price has shifted to the mass market as a commodity, because of the proliferation of low quality, mass produced rattan furniture came from China, Indonesia and Malaysia. Having realized this drawback rattan furniture makers in the Philippines now attempt to move back to specialty product market with novel designs.

3.1.7 Moreover, an image problem has been created for rattan furniture in the Western countries as a consequence of bad positioning by furniture dealers. Western stores positioned the rattan furniture as garden and outdoor furniture and the buyers of those furniture discovered in no time that these products are easily damaged by the elements in temperate climate. Hence, rattan furniture exporters now position their products as indoor furniture items that can match interior décor.

3.1.8 Another recent change in the global market is the increasing demand from hoteliers and public entities for rattan furniture. Periodical changes in designs and easy disposal without creating environmental hazard are the reasons for the increasing demand.

3.1.9 Emerging trend in the global market for furniture using multiple natural materials is also favorable for the rattan furniture industry.

3.1.10 Hence, the wooden & cane furniture industry will not be a sunset industry because of its substitutes and substandard products and it remains as a rejuvenating sustainable industry with high export potential.

3.2 Structure of Furniture Industry

3.2.1 The Forest Department categories timber based industries (excluding rattan and other non-forestry material based industries) into six categories. The number of enterprises registered under each category based on records mentioned in the Administration Report (1999) of the Conservator of Forest is indicated below.

Category	Number of Enterprises
(1) .Saw Mills	1439
(2). Timber Depots	2328
(3). Mechanized Carpentry Sheds	1702
(4). Manual Carpentry Sheds	2065
(5) Furniture Shops	1272
(6) Fire Wood Depots	115
Total	8921

3.2.2 It is reported that 53% of timber based enterprises are not registered as the Census of 1995 disclosed the existence of 16,824. Moreover owning to the prevalent civil conflict actual number of timber based industries can not be ascertained.

3.2.3 Rattan furniture industry is dominated by cottage industrialists and most of them have not registered their businesses.

3.2.4 The furniture industry in Sri Lanka is a privately owned industry. According to the Central Bank Report of 2003, around 95% of the total share of the industry is owned by the private sector and the balance 5% is held by the Government.

3.2.5 There are over 9000 furniture and other wood-working industrial plants in the country, most of those are concentrated around Moratuwa- known as the furniture city of the country.

3.2.6 Amongst those there are 10 large scale furniture manufacturing plants that use advanced technology appropriately through combining with the traditional technology. These large enterprises each with a workforce more than 100 use rubber wood, imported medium density fiberboard (MDF) and other panel products. They export higher percentage of their annual production whilst catering to the demand of the domestic market as well..

3.2.7 The items of exports made by these large enterprises are toys, wooden-components, crafts, parquetry, carvings, sport items, home decorations and the household items.

3.2.8 These exporters use valuable hardwood as well as treated rubber-soft wood to produce quality furniture conforming to the international standards. They have installed modern machinery and employ high skilled employees to improve the productivity of the enterprise and to remain competitive in the export market.

3.2.9 On the other hand. Micro, Small and Medium Enterprises (MSMEs) dominate the structure of furniture industry by numbers. But most of them are in the informal sector and especially manual carpenter sheds seek no registration under the Government.

3.2.10 Those non large scale wooden furniture industrialists mainly use expensive timber such as teak, mahogany, kolon and jak as raw materials and cater mostly to the demand of the local market.

3.2.11 The geographical agglomeration of enterprises mainly MSMEs is another special feature of the local furniture industry. The concentration of wooden furniture industries in the city of Moratuwa and the grouping of cane furniture industries in the location of Wewaldeniya are some examples of those agglomerations.

3.3 Economic Aspects

3.3.1 During the recent times, the contribution made by the Wood &Wood Products (W&WPs) to the Total Industrial Production of Sri Lanka has progressively reduced. The percentage share of W&WPs of the Total Industrial Production in 1994 was 0.8% and this figure has reduced to 0.65% in 2004. Thus, the economic importance of W&WPs including wooden furniture has declined in the recent past.

3.3.2 However the growth trend of the furniture industry is relatively better. According to the trend analysis of growth values undertaken by EDB, Wooden Crafts Items, Parquet Flooring except the Broom Sticks and Other Wood Products have recorded an adverse trend as indicated below.

Product	Value (US$)-1994	Value (US$)-2003
Broom Sticks	2.0Mn	3.3Mn
Other Wood Products	0.0Mn	5.0Mn
Wooden Craft Items	15.0Mn	0.1Mn
Parquet Flooring	1.5Mn	0.5Mn
Furniture	1.6Mn	1.5Mn
Overall Wood Industry	20.1Mn	10.4Mn

Thus the decline of growth in the furniture industry is not that steep as that of the Overall Wood Industry.

3.3.3 Hence, furniture industry has more opportunities to arrest and reverse the adverse trends of the wood- based industries and make a better contribution to the economy.

3.3.4 The investment realized by the Board of Investment of Sri Lanka (BOI) since 2000 highlights the opportunities available for W&WPs. BOI realized investments from 22 industrial firms making W&WPs in 2000 and the corresponding number of firms increased to 24 in 2003.

3.3.5 Nevertheless, economic value-addition in the furniture industry will not increase significantly in view of the use of imported timber and rattan as the local supply base of those raw materials has depleted over the years. Hence, it is necessary to expand the domestic timber resource base through cultivation and using scienctific methods in harvesting of timber.

3.3.6 It has been reported that there are no proper ways and means of handling wood waste in MWFC. By re-using wood waste for panel production, the economic value addition can be increased whilst managing environmental hazards caused by heaps of wood-waste.

3.3.7 The cost of production-especially cost of electricity can be drastically reduced by using wood-waste for co-generation of power.

3.4 Description of Geographical Furniture Clusters

A. Names of the Clusters

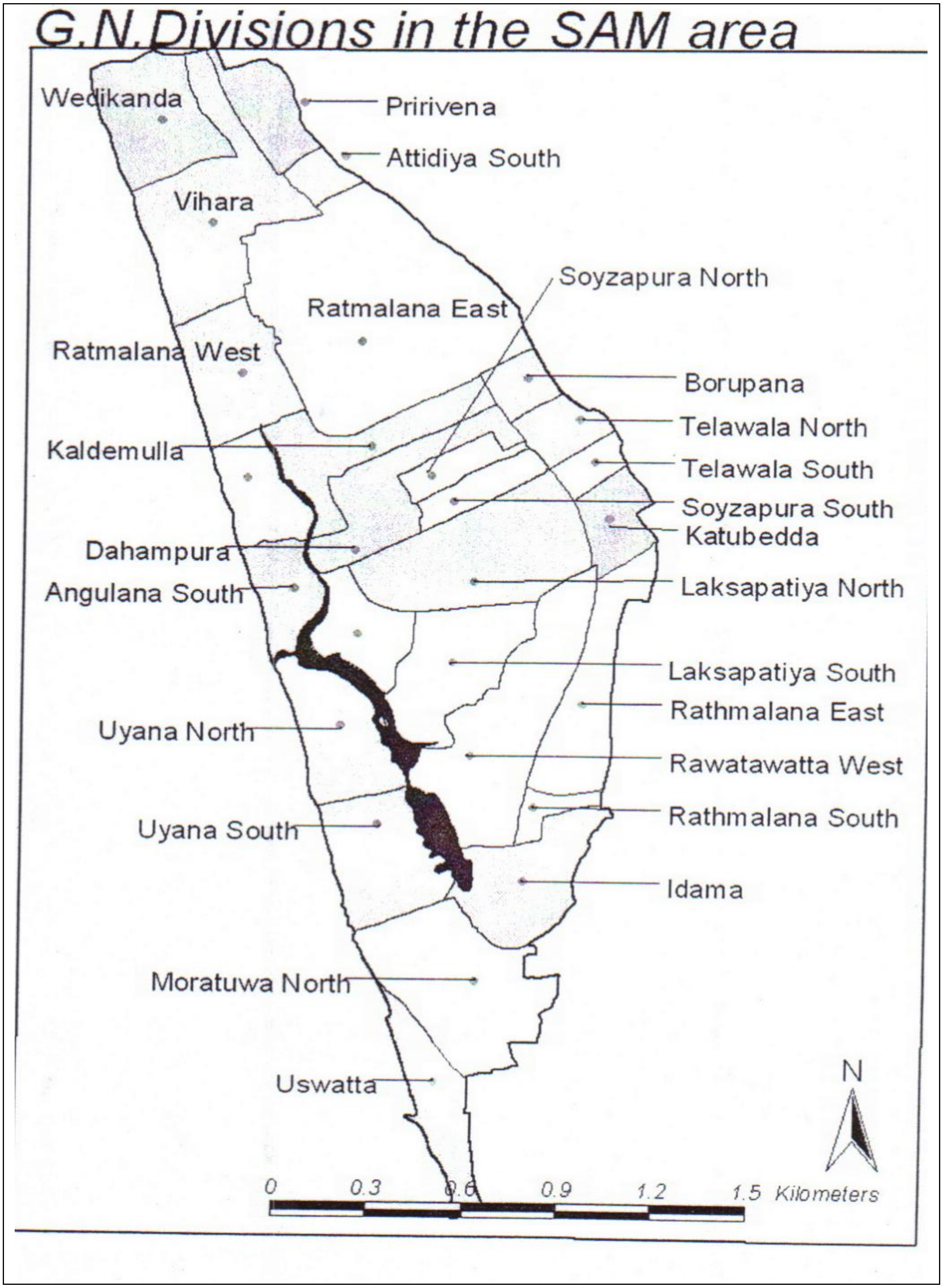
- Wood Furniture Manufacturing Cluster of Moratuwa
- Cane Furniture Manufacturing Cluster of Wewaldeniya

B. Geographical Spread of the Clusters

B1. Moratuwa Wooden Furniture Manufacturing Cluster

Moratuwa is the South Gate of the City of Colombo and located in the Southern boundary of the Colombo District, covering an area about 23.4 sq.m.

Please see the Map.



Western Boundary of Moratuwa is the sea shore with a small fisheries harbour and the extent of sea shore is about 10.4 km. Boat repairs and boat building were undertaken in the last two centuries and the people in this area thereby acquired the skills of wood crafting.

The North and East boundaries of Moratuwa are natural water bodies. These water bodies especially the Bolgoda River is used for timber transport.

Thus this area processes two location specific advantages – Skill Base and Transport Facilities for timber that create necessary conditions for growth of wood-based furniture industry.

Besides those advantages, Moratuwa is also well equipped with physical infrastructure facilities such as roads, communication facilities, and electricity etcs.

The Apprenticeship Training Institute and the University of Moratuwa located within this area provide the skilled workforce and the S&T manpower required by the furniture industries

Table 04: The Profile of Moratuwa

1. Geographical Area (sq.m.)	23.4 sq.m.
2. Sub-Divisions	Moratu Eliya, Moratu Pitiya, Moratu Uyana, Moratu Mulla, Moratu Wella, Moratu Dikwella.
3. Villages ▪ Moratu Eliya ▪ Moratu Pitiya ▪ Moratu Uyana ▪ Moratu Mulla ▪ Moratu Wella ▪ Moratu Dikwella	 ➢ Kaldemulla, Thelawala, Ratmalana, Borupana. ➢ Katubedda, Kuduwamulla. ➢ Uyana, Rawathawaththa, Angulana, Laxapathiya. ➢ Moratumulla, Kadalana, Willorawaththa, Molpe, Indibedda. ➢ Diggarolla, Horakele. ➢ Koralawella, Egodauyana, Katukurunda
4. Grama Niladari Divisions	Kaldemulla, Borupana, Dhampura, Soyzapura North, Soyzapura South, Telawala North, Telawala South, Katubedda, Angulana South, Laksapathiya North, Laksapathiya South, Uyana North, Uyana South, Rawatawatta West, Rawatawatta East, Rawatawatta South, Idama, Moratuwa North and Uswatta .

The Mortatuwa is administered by the Divisional Secretary of Moratuwa.

B2. Wewaldeniya Cane Furniture Manufacturing Cluster.(WCFC)

WCFC) is located in the village called Radawana in the Mirigama Electorate of the Gampaha District. Around 20 shops selling cane furniture along the Colombo-Kandy road is the entry point to WCFC. Both the activities of manufacturing and selling of cane furniture are conducted as family businesses by 650 families living in six Grama Nildari (GNs) divisions enclosing WCFC which has a history well over 300 years. The total workforce engaged in this traditional industry is in the range of 3000.

WCFC come under the administrative purview of the Mirigama Divisional Secretariat.

Table:05 The Profile of Welwaldeniya

1. Geographical Area (sq.m.)	
2. Grama Niladari Divisions-	Radawadunna, Radawadunna Central division, Radawadunna Lower division, Hadidehikanda, Kammalpitiya, Imbulgasovita.

Unlike in MWFC more women are engaged in the cane furniture manufacturing industry inWCFC. Shaving and cutting cane into required lengths and making frames for the furniture are the activities undertaken by men in carpentry sheds while women display their dexterity by engaging in the cane weaving of furniture open door and in house when it rains. This skill base is a location –specific advantage of WCFC.

Colombo –Kandy highway is the northern boundary of WCFC and its easy access to this highway is another location-specific advantage.

Although a ‘constructed’ geographical cluster- Mirigama Export Processing Zone is located at Loluwagoda in the same divisional secretariat (Mirigama) area, there are no business linkages between the spontaneous cluster of WCFC and the constructed cluster of Mirigama.

WCFC is equipped with modest road network and a highway (Colombo-Kandy Road) and other physical infrastructure facilities such as communication and electricity.

C. Details of Cluster Units

C1. Data on Moratuwa Wood-based Furniture Cluster (MWFC)

Wood-based furniture industries in Moratuwa area have been classified using different criteria by Government and Semi-Government agencies. According to the database maintained at the Moratuwa Divisional Secretariat, there are 1685 wood-based furniture industries in the Moratuwa Town Council area. Vide Table 06

Table 06 : Wood-based Industries Registered in the Moratuwa Town Council

Category	1995	1996	1997	1998	1999
Carpentry Sheds > 250 sq.ft.	1200	1210	1221	1224	1235
Carpentry Sheds Between 250- 500 sq.ft	379	380	389	389	395
Carpentry Industry Above 500 sq.ft	32	33	34	35	37
Carpentry Industry Company Scale	18	16	16	18	18
Total	1629	1639	1660	1666	1685

Source: Statistical Division- Moratuwa Divisional Secretariat (2000)

The carpentry sheds below 250 sq.ft can be grouped as cottage carpentry industries and it is the smallest wood working industry in MWFC. Company scale carpentry industry with higher floor area and production capacity is the largest category of furniture industries in the cluster.

A field survey of furniture industries was conducted by the Industrial Development Board (IDB) in 2000 to prepare a database of wood working industries in Moratuwa area. The findings of the survey are listed below. Vide Table 07.

Table 07: The Total Number of Woodworking Industries in Moratuwa Municipal Council Area

Carpentry Industries	1445
Saw Mills	270
Total	1715

Source: IDB Survey-2000

The difference in the total number of furniture industries indicates that all the industries are not registered with the Municipal Council.

Most of the furniture industries in MWFC have mechanized production process as indicated below. Vide; Table. 08

Table 08: Classification of Furniture Industries based on Production Process

Category of Furniture Manufacturing Industries	Manual Carpentry Sheds	Mechanized Carpentry Sheds	Mechanized Carpentry Shed with Furniture Shop	Mechanized Carpentry Shed with Saw Mills
Less than 250 Sq.mts	13%	87%	0%	0%
Between 250 & 500 Sq.mts	0%	66%	17%	17%
Above 500 Sq.fts	0%	62%	19%	19%
Company Scale	0%	34%	33%	33%
Average	3%	63%	17%	17%

Source: T.A.D.S. Jayapala-.A Study on the Status of Furniture Manufacturing Industries (FMI) in Moratuwa Area (Unpublished Thesis-2002)

C2. Data on Cane-based Furniture Cluster Units

Most of enterprises in Wewaldeniya cluster belong to the category of cottage (micro) industries. Only 14 cane furniture industries are registered with the Divisional Secretariat. However there are more than 400 micro enterprises in WCFC. Those are in the informal sector.

D. Products Manufactured in the Clusters

D1. Wood-based Furniture Items made in the Moratuwa Cluster

Cluster firms manufactured a variety of products with a range of designs. The list of products and the varied designs of five products are given below
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Products	Range of Designs
1. Elmairah 2. Bed 3. Bookrack 4. Cabinet 5. Chair 6. Cot 7. Couch 8. Cupboard 9. Dressing Table 10. Easy Chair 11. Chair Set 12. Stools 13. Sary Cupboard 14. Sofa 15. Table 16. Travel Racks	1.Elmairah * Katayan Elmairah (2 door)/ (3 door) * Plain Elmairah (2 door)/ (3 door) * Viyakara Elmairah (2 door)/ (3 door) 2. Beds * Kakuluwa beds, * Katayan beds * Beeralu beds * Cupboard beds * Normal beds 3.Cabinets * Beeralu Cabinets, * Piyano Cabinets * Building Cabinets 4.Chairs * Avan chairs, * Bristol chairs, * Gittor chairs * Kathira Puttu chairs 5. Couch * Baby couch * Normal couch * Singha Kakkul couch * Telephone couch

D2. Cane-based Furniture Items made in the Wewaldeniya Cluster

Household furniture (Chairs, Tables, Corner, Stands), Book racks, Beds, Kitchen racks and stools and giftware are the main products made in WCFC.

E. Principal Markets

E1. Markets of Moratuwa Clusters

Both semi-finished and finished furniture are marketed in the local market. 80% of the furniture marketed in MWFC is semi-finished furniture. The furniture with out sanding and polishing is described as semi-finished furniture. The furniture workshops with the floor area between 250-500sq.ft only produce semi-finished furniture for the local market.

The large-company scale furniture manufacturers make and display both semi-finished and finished furniture in their showrooms and allow customers to make their choice. They have their own transport service to deliver the purchased furniture.

A few companies in MWFC undertake export orders as well.

E2. Markets of Wewaldeniya Cluster

Local sale of cane furniture is mainly done through the shops established along the extent of the Colombo-Kandy road fall within the area of WCFC. When on the spot purchases can not be made, both the whole sale and retail buyers place orders through the shops.

Cane furniture for export markets are made in WCFC on a sub-contracting basis for two exporters operating their businesses outside WCFC. Thus there is no direct exports of cane furniture is undertaken within WCFC.

F. Supply of Raw Materials

F1. Supply of Raw Materials in Moratuwa Cluster

MWFC use more heavy wood (above 800kg/m3) timber than soft wood (below 800kg/m3). It was observed in the field survey that most carpenters in MWFC prefer to work with heavy wood as it more suitable for joinery work.

Timber is transported in log form or as sawn timber to MWFC. The Teak timber is the biggest quantity of timber brought to MWFC and Alstonia, Ginisapu, Jak, Kolon, Lunumedella, Mahogany and Satin are the other timber species transported to the Moratuwa cluster.

Since there is a shortage of good quality timber in the local market, timber is imported to fill the gap.

F2. Supply of Raw Material in Wewaldeniya Cluster.

WCFC used both locally procured as well as imported rattan. Calamus ovaidens, Calamus chwaitesi, Calamus Pseudotenuis, Calamus Kotang, Calamus delicatulus, Calamus Rivalis, Calamus Digitatus, Calamus pachystemonus and Calamus Radiatus are the local varieties of rattan used for making furniture in this cluster.

Local rattan is collected from wild and no formal cultivation of rattan is undertaken. Hence, the local supply base has diminished and unless a crash program is launched to cultivate rattan, cane furniture industry will not be sustainable in the long run.

Rattan is also imported from Indonesia, Singapore (Malaysia), Thailand and India to bridge the gap. WCFC use more than 60% of imported rattan for the cane furniture industry.

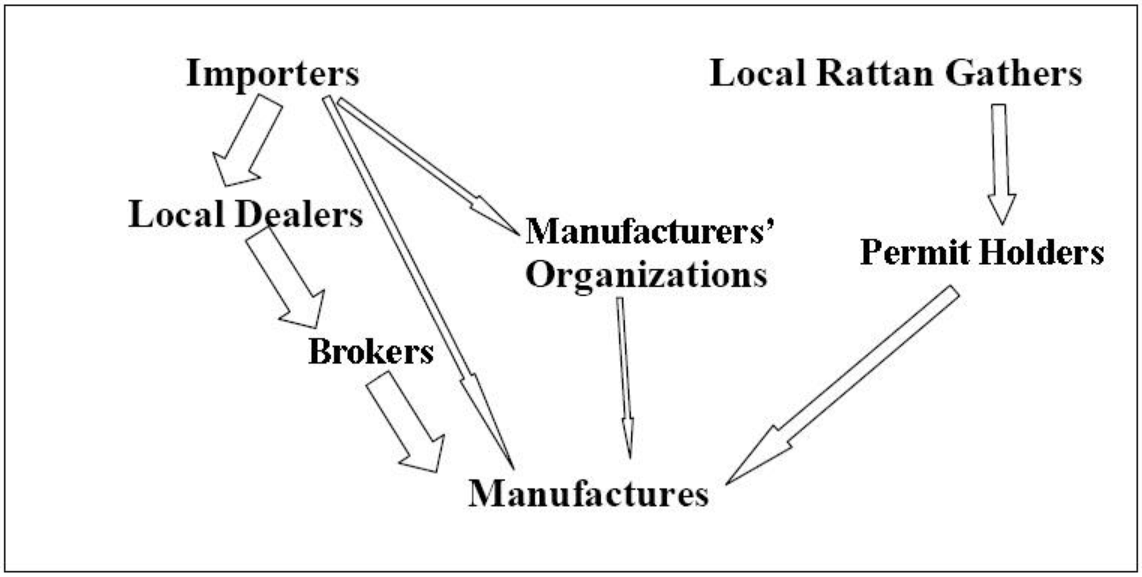
F3. Supply-Chain Analysis of Wewaldeniya Cluster

There are two sources of supply of rattan to WCFC as depicted below. Since most of the cluster-firm fails to pay for the rattan purchased from them, importers are not willing to sell rattan directly to the manufacturers and retain the service of brokers to sell imported rattan.

The Co-operative Society of Cane Manufacturers is the only manufacturers' organization and it is defunct in view of its officer bearers are not acceptable to the ruling party. It is observed that the office bearers of this cooperative society replaced each time when the ruling political party of the country changes. The politicization process of cooperatives has ruined the cooperative movement in Sri Lanka, especially in villages like Radawadunna, as a result the expected role of providing procurement services to members- import and distribute of rattan or procure rattan from local sources using the permit and distribute to the cluster firms is not played by the cooperative society of the cluster.

In the circumstance, the brokers with permit holders enter the supply chain and keep a higher margin for them and cause the cost increase of the raw materials.

Figure 2: Supply Chain of Rattan



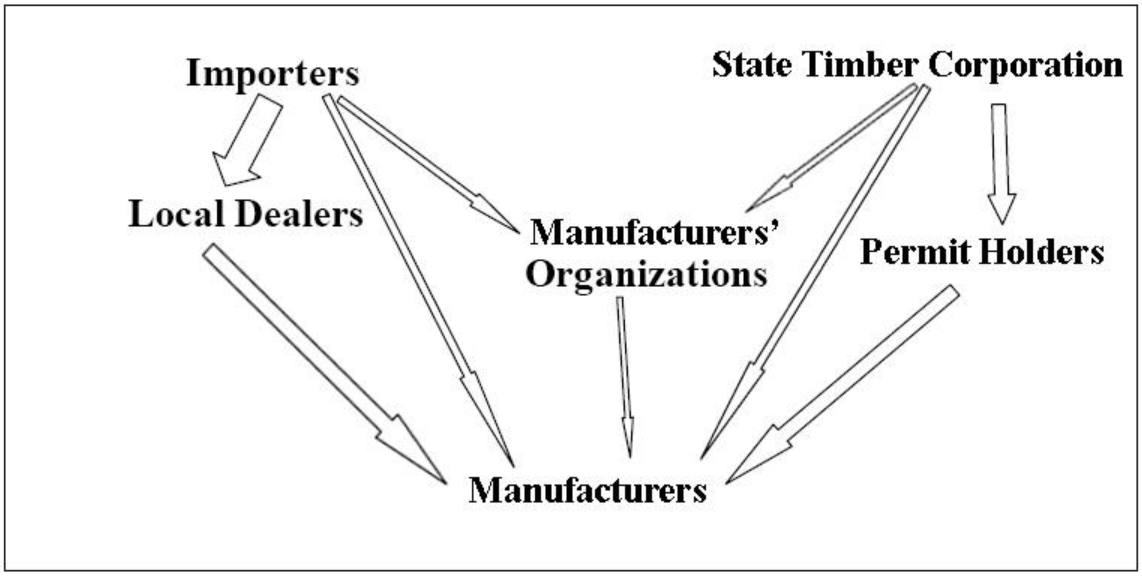
F4 <u>Supply-Chain Analysis of Moratuwa Cluster.</u>

MWFC has no difficulties in the procurement of imported timber as there are uninterrupted and well functioning routes for the delivery of imported timber as depicted below.

Moratuwa Wood Workshop Owners (Guaranteed) Company (MWWOC) is the manufacturers' organization operating in the cluster representing mostly the SMEs. It is more interested in the procurement of local timber rather than the imported timber. The monopolistic supplier of local timber from the Govt. Forests- the State Timber Corporation (STC) prefers to deal with manufacturers through individual permit holders rather than working through the manufacturers' organization.

The cost of timber can be reduced if the manufacturers' association is empowered and STC directly deal with them as a whole sale distributor of timber requirements for SMEs in the cluster. For this purpose STC must enter into a forward contracting agreement with MWWOC that will facilitate planned harvesting and timely delivery of timber to the cluster, so that so that stock holding cost of STC can be minimized and the regular supply of timber to the cluster firms can be ensured.

Figure 3: Supply Chain of Timber



H. Strength, Weakness, Opportunities and Threat (SWOT) Analysis

H1. SWOT Analysis of Moratuwa Cluster

a) Strengths

- Strong local demand for Wooden Furniture
- Local customer loyalty built over the years
- Close proximity to the Main Harbor and Commercial Capital of the Country-Colombo for import and exports of raw materials and finished products
- Strong domestic market linkages- The leading manufacturers are also distributors of furniture and others have established good linkages with established marketing channels for local sales
- Access to main roads of the country- Galle road, Kandy road, Negambo road, Hanwella road and Ingiriya Panadura road and the Bolgoda Lake encircling three boundaries of the cluster have made the delivery of timber and sawn timber easy
- Traditional knowledge of woodcraft- 68% of the workers gain industrial training of woodwork from their fathers
- Industrial Culture

b) Weaknesses

- Deteriorating quality of raw material due to poor outsourcing of technical services such as seasoning- of the two methods of seasoning- Air or Natural Seasoning and Kiln or Artificial Seasoning, most of the furniture manufacturers use the Air Seasoning which lacks the advantages of rapidity, adaptability and precision and also different categories of furniture manufacturers apply timber preservatives in different levels (micro 15%, small 11% medium 33% and large 41%).
- No quality control systems established in most furniture factories- a few has got ISO 9000 certificate
- Poor progress on formulating forward contracting agreements for procurements of raw materials, speculative operations of timber traders and poor market orientation of the State Timber Corporation in its raw material trade cause periodic shortages of timber required for the industry
- Informal subcontracting arrangements with primary contractors and the non availability of a institutional arrangement like sub-contracting exchange retard the progress on developing business linkages in the clusters
- Dearth of new designs and new products- No facilities available for SMEs in the cluster to create new designs and develop new products despite the fact that competent public institutions such as Design Center of the University of Moratuwa, and the Product Development facilities of Apprenticeship Training Institute exist within close proximity to the cluster. Most SMEs copy the designs found in the overseas furniture manufacturers' catalogues
- No R&D Initiatives for innovations- No formal linkage has been established with the two universities (University of Sri Jayawardenepura and the University of Moratuwa) located in close proximity to the cluster and no other R&D initiatives are initiated with Public R&D institutions such as ITI for product or process development in the furniture industry.

c) Opportunities

- Scope of the Cluster to evolve into an export hub- R&D initiatives with the Universities and Public R&D institutes and non-equity Research and Technology Partnerships with overseas Wooden Furniture Clusters introduce innovations for export market development
- Scope for expanding domestic market for making high value-added products through design development
- Introduction of ready-to-assemble(RTAs) and Do-it-yourself (DIY) furniture made with the application of advanced technology

- Scope for technology up-gradation through acquisition of bend wood technology and application of CAD/CAM that makes designing easy and reduce production time.
- Production of ‘Green Furniture’ to address the environmental concerns
- Growing demand for replicas of Dutch Antique furniture with modifications
- Introduction of Multiple Financing tools- Credit Guarantee Scheme, Venture capital funds etcs.
- Scope to explore the use of alternatives to the electricity supplied through the national grid system and develop local energy base through bio-fuels and co-generation of power by making use of wood- waste

d) Threats

- Raw material wood other than rubber wood most the times in short supply to cluster enterprises, though imported timber is available at a price
- Procedural delays in delivery of timber caused by the Monopolistic supplier- State Timber Corporation.
- Depleting natural timber resource base
- Supply of cheap substitutes- plastic, fiberglass and steel furniture
- Growing consumer preference for price competitive imported furniture offering variety and good designs due to changing life styles
- Migration of skilled employees

H2. SWOT Analysis of Wewaldeniya Cluster

a) Strengths

- Good demand for Cane furniture in Upper and Middle Class domestic customers
- Local customer loyalty built over the years
- Best craftsmanship
- Close proximity to Clombo- Kandy Highway
- Industrial Culture
- Engagement of young people as skilled workers
- Flexible working time
- Use of both imported and locally procured cane/rattan
- Use of composite material-cane and glass sheet,

b) Weaknesses

- Use of traditional designs for cane furniture
- View cane furniture as utility items not as fashion items that require constant change in designs
- Reluctance on skills development
- Lack of orientation on entrepreneurship and preference to a livelihood than a micro business
- Poor inter firm cooperation
- No group initiatives to procure raw material on competitive terms
- Failure to comply with terms of trade in sub-contracting agreements

c) <u>Opportunities</u>

- Growing demand from fashion conscious customers
- Increasing orders from institutional buyers like Hoteliers
- Export potential for mixed medium design cane furniture that use rattan and other natural indigenous materials
-

d) <u>Threats</u>

- Competition from synthetic cane products manufacturers
- Depleting natural cane resources
- Oligopoly on supply of cane
- Oligopoly on export trade
- Growing influence of middlemen in the supply chain

I. Political, Economical, Sociological and Technological (PEST) Analysis

I 1. PEST Analysis of Moratuwa Cluster

a) <u>Political</u>

- Commitment of Political parties for development of cluster, though different approaches are adopted
- Political interference in distribution of timber quota from the State Timber Corporation
- Political bargaining power of cluster firms are under utilized

b) <u>Economical</u>

- Slow productivity growth
- Capacity under utilization
- No cooperation among cluster firms for joint activities
- Low value addition
- Under utilized export potential
- Limited application of Forward Contracting Arrangements
- Poor cost control methods
- Higher wastage of timber residue
-

b) <u>Sociological</u>

- Poor image of carpenter in the society as a wage earner close to the poverty line due to insufficient income levels and to low income retention potential caused by alcoholism and gambling
- High rate of school drop outs of carpenter's children has made youth unemployment a social problem

d) <u>Technological</u>

- Use of obsolete machinery
- No professional design development service
- Failure to use information technology for sourcing technology and markets
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I.2 PEST Analysis of Wewaldeniya Cluster

a) <u>Political</u>

- High level of political activities has created divisions among industrialists
- Political parties use self-help organizations of cluster firms for their political activities

b) <u>Economical</u>

- Value-Addition remains static
- Cane furniture is considered as a livelihood and not as a business that generate profits

- No product differentiation and preference to make standard items has made cane furniture a commodity not an industrial product to make more economic gains
- Labor productivity has not deteriorated due to engagement of young workers and working in flexi times
- Poor business relationships and reluctance to share information deter development of inter-firm linkages

c) Social

- Socially well integrated community
- Social relationship is given higher priority than the business relationships
- Political relationships disturb social harmony as well as business relationships
- High rent seeking due to political influence
- Without taking own initiatives to solve socio-economic problems to seek political favoritism to solve those problems

d) Technological

- Labor intensive technology
- Apply outdated technology for treatment of rattan and use hand tools instead of power tools
- Limited product design capacity

J. Analysis of Cluster Characteristics

J1. Moratuwa Cluster Characteristics Analysis

Although SMEs numbering more than 1600 have failed to become the most critical actor in the cluster SMEs , they have a higher degree of influence and present themselves as a medium level actor.

The low number of large firms in the cluster has demonstrated their ability to produce new products and improve their production process through application of new technologies.

Since the large firms and SMEs of MWFC conduct their businesses in a closely knitted physical environment a trust prevails amongst themselves and do not take the risk of letting down one another. However a higher degree of trust prevails among large enterprises than the SMEs in the cluster

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With the use of power tools and production machinery, the skill level of the cluster has increased over the years and the labor productivity of MWFC thereby has improved. However the high cost of electricity adversely affects the competitiveness of the cluster.

The large firms in the cluster use advanced technology and have a totally integrated production process with saw mills and timber treatment facilities. The majority of cluster firms are SMEs and they use medium level technology.

The large firms in the cluster outsource furniture components from SMEs and promote business linkages. Some SMEs also supply furniture components and furniture items to large firms located outside the cluster on sub contracting basis.

Large enterprises and SMEs have a close cooperation in the cluster, though the cooperation among SMEs is not so close due to competition.

In view of the substitutes and the slow growth of demand for wooden furniture, a high degree of competition is found in MWFC. However furniture is not marketed as a commodity in the cluster and more product differentiation and introduction of new products take place.

Export market is not high in the cluster, but a steady growth of exports is registered.

Since the above mentioned characteristics are similar to those of organized clusters, we can conclude that MWFC is an organized cluster that can be upgraded to an innovative cluster by implementing a comprehensive development program.

J2. Wewaldeniya Cluster Characteristics Analysis

There are 650 cottage industries are located in this cluster and most of them are micro enterprises and some are small enterprises. No medium or large scale industries are found here.

Only family members can enter into this business in the cluster. Others cannot enter into the cane manufacturing industry because of the social barrier that deter provision of shelter to others in the cluster and not because of high capital cost.

Most of cane furniture manufacturers in the cluster operate their cottage industry as a livelihood and not as a business that can generate a surplus for expanding the business. Hence they failed to develop the management capabilities that a growing business would require.

The labor intensive technology used in the cluster is a low level technology that can be upgraded through application of power tools.

The workforce in the cluster is adroit and most of the workers are dexterous. The competitive advantage of WCFC is this skill base. However, there is no opportunity to upgrade the skills as the manufacturing process is not mechanized.

There is no information sharing among cluster firms because of cut throat competition.

There are no supporting institutions available within the cluster, though some attempts are now made to establish a common service center.

Very few cluster firms have developed business linkage with external business entities through sub contracting etcs.

In view of the above mentioned characteristics of WCFC, we can conclude that it is an informal cluster.

K. Competitive Determinants

K1. Competitive Determinants of Moratuwa Cluster

Table 12: Competitiveness Determinants

Competitiveness Determinants	Cluster Circumstance and recommendations / Options
A. Factor Conditions:	
1. Raw Material Availability	Large input base in terms of Hardwood. Good linkages for sourcing/import of other types of wood
2. Raw Material Prices	Exploitative pricing by traders (fluctuations in prices by between 30-50 percent a year) – scope for establishing raw material banks for direct bidding in auctions/tenders/purchase from plantations.
3. Quality of Raw Materials	Quality of raw material inconsistent – requirement in terms of direct sourcing options to ensure consistency.
4. Human Resource and Skill Availability	Adequate human resources with skill are available in the Cluster. The human resources available in the Cluster have traditionally inherited high levels of skill.
5. Capital Availability for optimal scale o investment (Upgradation of technology etc.)	The minimum capital required for raising funds from external sources is available with large scale/corporate firms in the Cluster. The funds required for optimal scale of investment for up-gradation of technology in SMEs would have to be raised from outside sources.
6. Availability of infrastructure	Large, Medium and Small units based cluster. Resource potential of individual units to upgrade is varied. Only large scale units have saw mills and timber treatment and quality testing equipments Relatively good infrastructure facilities (access to port, rail, and road transport facilities.
7. Cost of Infrastructure Services	High electricity cost and the interruptions of electricity supply adversely affect the industry – Some scope for exploring alternative energy options such as bio-fuel etc.

B. Demand Conditions:	
1. Market Size and Growth	Domestic housing market/demand is in a growth phase. Growth in the market is estimated at about 10-15 % a year. Increasing export market for furniture made out of soft wood
C. Structure of Firms and cluster:	
1. Cost and Capital Structure of firms	Poor cost structure in most cases due to small scale operations; poor capital resource base of smaller enterprises – scope for consortia operations.
2. Entry barriers into the clusters	Cheap imports with good design/finish and large retailer brands like Singer, Dhamro have little barriers – With better quality and finish barriers to entry may be raised.
3. Strength of customers and consumers	Middlemen retailers dictate terms in many cases. However, an initiative of the cluster association towards allocating territories, appointing franchised dealers and blacklisting retailers will strengthen their end.
4. Strength of input suppliers	Traders dictate prices – scope for raw material banks of common negotiation. Imports are being pursued on a networked basis by some manufacturers already.
5. Extent of rivalry amongst cluster enterprises	Intense price competition amongst micro and small manufacturers in the cluster enterprises.
6. Growth of Substitute Products	Substitutes to wood eat into margins – A major reason is the cost factor. Rubber wood (1/3 of the cost of teak) is an appropriate cost wise option if backed by good design/finish.
D. Support Enterprises and Institutions:	
1. Related enterprises (component suppliers, equipment manufacturers etc.) – existence as well as competitiveness	Poor presence of seasoning and advanced wood designing, quality standardization, finishing and testing facilities.
2. Support Public and Private Service Providers (testing services, export-import services, training input providers, financial institutions etc.) – existence as well as appropriate provision of services to enterprises.	Appropriate support organization/institutions exist within the cluster. But their scope to synergize roles over cluster development interventions remains under utilized.

K.2.Competitive Determinants of Wewaldeniya Cluster

Table 13: Competitiveness Determinants

Competitiveness Determinants	Cluster Circumstance and recommendations / Options
A .Factor Conditions:	
1. Raw Material Availability	Depleting natural rattan base is a serious problem. Good linkages for sourcing/import of rattan
2.Raw Material Prices	Exploitative pricing by traders (fluctuations in prices by between 30-50 percent a year) – scope for establishing raw material banks for direct bidding in auctions/tenders/purchase from plantations.
3.Quality of Raw Materials	Quality of raw material inconsistent – requirement in terms of direct sourcing options to ensure consistency.
4.Human Resource and Skill Availability	Adequate human resources with skill are available in the Cluster. The human resources available in the Cluster have traditionally inherited high levels of skill.
5. Capital Availability for optimal scale of investment (Up-gradation of technology etc.)	Micro and small units based cluster. Resource potential of individual units to upgrade is limited. The funds for optimal scale of investment for up-gradation of technology have to be raised from outside sources.
6.Availability of infrastructure	Relatively good infrastructure facilities (access to port, rail, and road transport facilities.
7. Cost of Infrastructure Services	High electricity cost is a deterrent for use of power tools.
B. Demand Conditions:	
1. Market Size and Growth	Domestic housing market/demand is in a growth phase. Growth in the market is estimated at about 10-15 % a year. However, the fact remains that the market is protected by customs tariff.
C .Structure of Firms and cluster:	
1. Cost and Capital Structure of firms	Poor cost structure in terms of reaping scale economies on various activities along the value chain due to small scale operations; poor capital resource base of smaller enterprises – scope for consortia operations.

2. Entry barriers into the clusters	With better quality and finish barriers to entry may be raised.
3. Strength of customers and consumers	Middlemen retailers dictate terms in many cases.
4. Strength of input suppliers	Traders dictate prices – scope for raw material banks of common negotiation. Importers of rattan have a oligopoly
5. Extent of rivalry amongst cluster enterprises	Intense price competition amongst tiny manufacturers.
6. Growth of Substitute Products	Substitutes to rattan eat into margins – A major reason is the cost factor. Plastic rattan is 1/5 of the cost of natural rattan.
D .Support Enterprises and Institutions:	
1. Related enterprises (components suppliers, equipment manufacturers etc.) – existence as well as competitiveness	No presence of advanced rattan furniture designing, no any quality standardization, non availability of treatment and finishing and testing facilities.
2. Support Public and Private Service Providers (testing services, export-import services, training input providers, financial institutions etc.) – existence as well as appropriate provision of services to enterprises.	No Appropriate support organization/institutions exist within the cluster.

4. Best Practices

4.1 Salzburg Wood Furniture Cluster (SWFC) in Austria

Name of Cluster: Salzburg, Upper Austria

Approximate Size: Radius 80 miles

Approx. number of firms: 290

Key Assets: Training Centers
Chamber of Commerce

Competitive advantages: Design Excellence, Access to EU

4.1.1 In view of its location near wood processing industry suppliers and easy access to Germany's major markets, Salzburg Wood Furniture Cluster (SWFC) in Austria possesses some significant location-specific advantages. Although some large firms employ more than five hundred, small firms employing a few employees are more in numbers and dominate the industrial structure as SMEs.

4.1.2 It has been reported that the strength of the manufacturers in SWFC rest on their artistic reflection of nature. 'They regard wood as much more than a simple input; it is seen as a marvelous, irreplaceable element to be artistically revealed in the end product.' This sentimental attachment to wood drives the manufacturers to carve furniture not to make uniform factory products.

4.1.3 Similar attitude prevailed in the old generation of carpenters in MCFC and they too considered wood as a marvelous product that can be handled artistically to produce unique furniture items. This friendly attitude towards wood has to be inculcated in the minds of new generation of carpenters in MCFC so that they will also produce high quality furniture with new features without regarding wood as another material input for their manufacturing activities...

4.1.4 The large scale manufacturers of furniture in SWFC address the needs of the high quality and high price market segment and distribute their products under brand names through selected chain stores. Meanwhile small scale manufacturers in SWFC cater to the needs of specialty goods market segment and produce individually-designed, high quality products for limited local markets. Their problem of uncompetitive prices is solved through high flexibility and specially designed pieces.

4.1.5 The large scale furniture manufacturers in MCFC may adopt the best practice of their counterparts in SWFC and produce high quality furniture for high price markets and increase their exports more than their local sales. They can produce under their own brand names or get the franchise from overseas furniture manufacturers through non-equity based research and development partnerships (RTPs) to produce their furniture for export markets. Non-equity based RTPs are now increasing in numbers more than equity based RTPs world over. Vide Fig.1

4.1.6 Similarly, small producers in MCFC can adopt best practice of customization of their counterparts in SWFC and produce specially designed furniture items. For them to adopt this practice, the required infrastructure has to be created in MCFC under the cluster development program.

4.1.7 The large firms in SWFC are using state-of-the art technologies such as “C’ technologies in their factories. Besides using the newest technologies, these large firms installed internal laboratories for material testing and product development. These best practices can be adopted by the large scale manufacturers so that eventually MCFC will become an innovative cluster

4.1.8 Enterprise support services provided by R&D institutes, Training institutes and Financial intermediaries accelerated the transformation process of SWFC into an innovative cluster. The interface between those support service providers and SWFC is a modal for MCFC to emulate.

4.1.9 Another best practice of SWFC is the organizing role played by the National and Regional Chambers. They supply SWFC with much useful information and engage in lobbing and promote inter firm cooperation. NCCSL may adopt this best practice of SWFC.

4.2 Mississippi State University (MSU)

4.2.1 Furniture manufacturers facing stiff global competition from China and other foreign suppliers have been assisted by the Mississippi State University of USA. The best practices of MSU can be adopted by the universities in Sri Lanka to assist the local furniture industry.

4.2.2 MSU recently solicited proposals from researchers across campuses aimed at improving competitiveness and sustainability of the Mississippi Furniture Industry. Around 10-20 of best proposals were selected for funding under the Small Business Agency grant. The Research Staff of MSU periodically visits the furniture factories and identifies problems faced by the industry and develop solutions through their research projects.

4.2.3 MSU through their research projects look at everything from strategic model of furniture industry to their use of Internet and even analyze the chemical composition of the paint the furniture manufacturer use. The universities of Sri Lanka also must undertake similar comprehensive research projects for local furniture industries. NEDA and National Science Foundation can jointly fund such research projects of local universities.

4.2.4 Another best practice of MSU is their outreach program to the furniture industry. The outreach program provides hands on assistance to emerging furniture-related companies, including those small-niche enterprises that specialize in hand made pieces.

4.2.5 MSU also make a remarkable contribution to the local furniture industry by assisting them to build up partnership with overseas furniture manufacturers to face the competition from overseas suppliers of furniture. For an example MSU assist American companies to send components to China, where they assemble those into furniture and get those furniture back to USA for the final assembly work. MSU help local furniture industrialists to do those work more efficiently and most cost-effectively. As a consequence the furniture industry in Mississippi is not dying, but it is changing to face the global competition effectively.

4.2.6 MSU recently established a 35,000 square foot facility to house a comprehensive furniture research, testing and technical assistance program. The University of Moratuwa is ideally located to put up such facility for the use of local furniture industry.

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4.3 Brazilian Furniture Manufacturers

4.3.1 China and Brazil are two countries of the leading 25 countries exporting furniture to USA and occupy first and ninth positions respectively. In 1996, Brazil exported US$ 59,208,000 worth of furniture and the export figure increased to US$ 379,474,000 in 2004 (increase of 640%). The corresponding exports figures for Exports made by Chinese Furniture manufacturers were US$ 950, 399,000 (1996) and US$ 8,893.279,000 (2004), an increase of 935%.

4.3.2 Observing this dramatic exports increase of furniture, Brazilian Furniture Manufacturers noted that China will export more furniture to Brazil using the raw material they purchase from Brazil. Hence, they adopted a new strategy to put up furniture factories and export furniture from China to USA. This outward investment is a best practice; other countries now follow to face stiff competition from Chinese exporters of furniture.

4.3.3 It is one of the objectives of NEDA is to assist local entrepreneurs to make outward investments, as an entrepreneurship promotion measurers. Sri Lanka furniture exporters using soft wood can be assisted to increase their export through such initiatives.

4.3.4 Hong Kong Furniture Manufacturers

4.4.1 Hong Kong Furniture Manufacturers (HKFMs) face global competition by striving to reduce costs of production, initiating stringent quality control measures, improving design concepts and capability, upgrading management skills and increasing marketing and sales effectiveness.

4.4.2 Accommodating to OEM orders from overseas buyers, without trying all the time to produce and export their own design based products, is another best practice of HKFMs. For an example some overseas retailers of Chinese furniture design their 'modified furniture' version to meet the taste of the local shoppers and get a Hong Kong agent to produce it in a factory in the mainland. With this practice the demand for replicas of Chinese antique furniture has increased. The antique furniture exporters in Sri Lanka must learn this lesson and try to modify their products to suit the tastes of the export market concerned.

4.4.3 Another best practice of HKFMs is their compliance with environmental requirements and meeting international standards in their target markets. They use fabrics that do not give off toxic fumes in the production process and produce 'Green Furniture' to address the environmental concerns.

4.4.4 Besides 'Green Furniture', HKFMs have produced the following series of innovative products to enhance the competitiveness of their furniture industry.

i. Multi-functional Chairs
ii. Furniture with Neutral Colors
iii. Retro Furniture
iv. Home Office Furniture
v. Ready-to-assemble (RTA) Furniture
vi. Do-it-yourself (DIY) Furniture

This new product development- innovations made in the furniture industry is yet another best practice of HKFMs that can be adopted by local furniture industry especially MWFC & WCFC.

4.4 Philippine Furniture Manufacturers

4.4.1 Philippine Furniture Manufacturers (PFMs) found that they cannot compete with furniture manufactures in China, Indonesia and Malaysia on account of their high labor and transport costs. Hence, they decided to invest in design excellence to distinguish their products from competitors.

4.4.2 Accordingly, PFMs engage on developing high-end, cutting edge rattan furniture and home accessory designs that use high quality raw materials, weaving, construction and finishing skills. Thus the ability of PFMs to design innovative mixed-medium designs that use rattan and natural indigenous material became their competitive advantage in the furniture industry.

4.4.3 The Cooperatives in Cebu and Pampanga Rattan Furniture Clusters in the Philippines have promoted inter-firm cooperation to manufacture rattan furniture using these advanced designs and thereby enhance the competitiveness of their rattan furniture clusters.

4.4.4 The National Cooperative Council of Sri Lanka can assist the Cooperative Society of Small Manufacturers established in WCFC to adopt the best practices of their counter parts in the Philippines to make innovative cane furniture products through a non-equity based Research & Technology Partnership (RTPs)

4.4.5 Accordingly, the two cooperative societies can enter into a Second –sourcing type of RTP.. This partnership agreement will effectively transfer technologies to local cane furniture by enforcing product specifications and assist the local rattan manufacturers to enter into export markets through co-production arrangements.

4.4.6 It has been observed that non-equity based RTPs have surpassed the equity based joint ventures in Business Collaboration even within the developing countries in the recent past. Vide Fig 1

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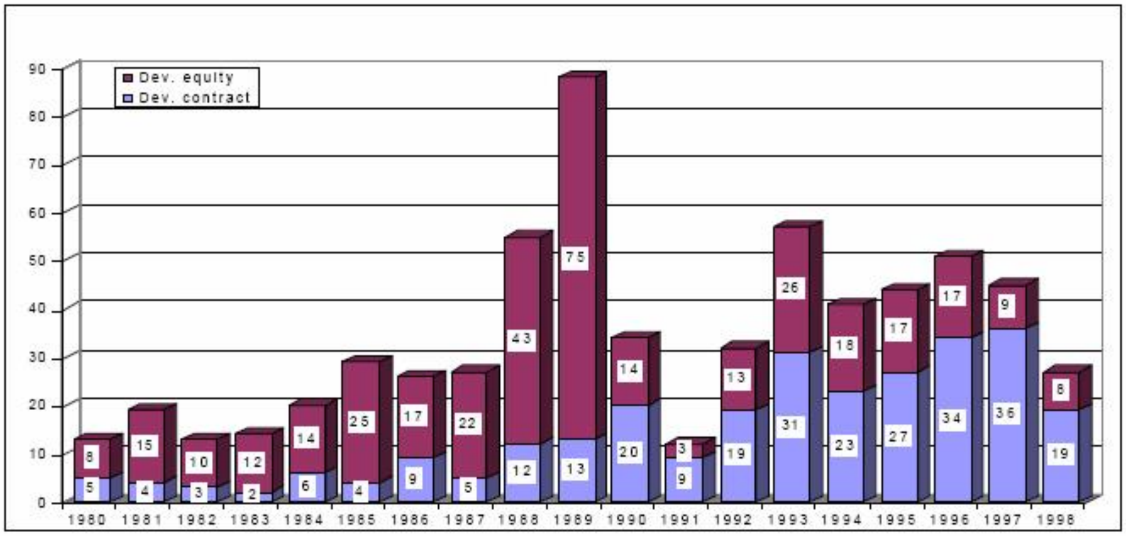
Figure 2b. Type of RTPs: developing countries
(Number)



Source: MERIT-CATI database.

4.5 <u>Success Factors of Furniture Industry</u>

4.5.1 The success factors of the Asian furniture manufacturers are equally important as best practices for improving the competitiveness of local furniture industry. The success factors of the Asian furniture manufacturers are given below for developing a guideline for the local industry. Vide Table 4..

TABLE 14 – CRITICAL SUCCESS FACTORS FOR THE LARGEST ASIAN FURNITURE EXPORTERS TO THE UNITED STATES OF AMERICA

Country/ 2004 US Exports	Success Factors	Downsides
CHINA (Xlutang & Becon 2002) US$8.89 billion	Continuous economic growth and improvement in Chinese living standards have attracted more furniture manufacturers	Manufacturers rely on imported wood as a raw material
	Labour cost and favourable policies on the part of local governments have been the main attractor for foreign Companies (Taiwan, Hong Kong, Singapore, South Korea, Malaysia) to relocate to China.	
	South East Asian countries target low to medium end market while Europeans & Americans aim for high-end customers	
TAIWAN (Muller 2004) US$649.5 Million	Well established furniture business	All wood for processing is imported from overseas. Labor wages are not competitive anymore
	Significant investment interest in furniture and wood products overseas	
	Wood is purchased directly from importers who provide information on species and production techniques and design trends to manufacturers, automatically expanding furniture business and sales	

MALAYSIA (Hoh 2004) US$626.1 Million	Coupling of cheaper native woods such as rubber wood with valuable veneers from the U.S. Ability of local government to market its products world wide Comparatively inexpensive wages	Lack of knowledge on U.S. hardwood users Lack of link between Malaysian importers/Users and U.S. hardwood suppliers
INDONESIA (Alarm 2004)	The industry has proposed forming a marketing board to promote products, develop new markets Producing more value added wood products such as fancy plywood, particleboard and furniture has been key marketing focus of the wood industry.	Deforestation rates (1.6 M ha/year)
THAILAND (Preechaptra 2004) US$471.3 Million	Industry has been diversified specially towards export-oriented manufacturing (70% of production goes to exports)	Ban on logging has stopped the development of parawood (derived from rubber trees) furniture
VIETNAM (Houng and Dao 2002)	More than 60 foreign Companies have invested in Vietnam in the last 6 years Government will assist industry to achieve US$ 1 Billion in exports by 2010 among the plan is more investment to upgrade technology and equipment. Also the industry plan to diversity into high quality products.	Illegal timber activities (40,000 M^3 in 2004) Wood-Processing sector relies on wood imports.
PHILIPPINES (corpus 2005 US$215.5 Million)	Focus on medium and high end market segment emphasizes on uniqueness of design and quality are a top priority. Strong foreign investment from US, Japan, Taiwan, Malaysia and UK	Reliable supply of local wood continues to be a problem

Source : A Review of Competitive Strategies of Furniture Manufacturers – Rado, Gazo & Henry J Quesada (2005)

5. Transformation

5.1. Policy Instruments

5.1.1 In view of the complexity of cluster transformation process, a wide range of policy instruments are applied for the advancement of furniture clusters. For the guidance of the transformation process of MCFC & WCFC, the widely used policy instruments are listed below:-

- Supply of Subsidized Credits
- Human Resources Development:- Training in production techniques, entrepreneurship, general management, ISO 9000 management quality system etcs
- Provision of Total Quality Control & Technical Assistance
- Supply of Internet Facility
- Provision of Advisory/ Extension Services
- Arrangement of Marketing and Promotion Facilities
- Setting up of Co-operatives of Small Scale Industrialists
- Establishment of Special Small Scale Industrial Estates
- Small Business Clinics
- Establishment of Common Service Facilities
- Implementation of Industrial Incubator System
- Partnership Programs
- Provision of Export Market Development Services

5.1. 2 According to Tambunan some of those policy instruments were used successfully in Indonesia in the development of the wooden furniture cluster in Jepara (Central Java). "A comprehensive development service package, including for example, technical upgrading through the provision of a common service facility, export training, investment into improvement of the regional infrastructure (container facilities, roads, telephones), helped the cluster to gradually develop export markets. Similar effects were brought forward by creating a small industrial estate combined with a common service facility for wood processing, a joint showroom and trade fair participation support in Sokoharjo, near Surabaya (East Java). The area is now a leading exporter of wooden, rattan and metal furniture."
(Source: Development of Small and Medium Scale Industry Clusters in Indonesia- Tulus Tambunan, Faculty of Economics, University of Trisakti, Grogol, West Jakarta, Indonesia)

5.1.3 Besides those factors, existence of strong local associations, long exposure to foreign tastes brought forward by international tourism, medium-scale investment by western immigrants married to Indonesians and the strong role of trading houses played in brokering and organizing exports immensely contributed for the transformation of Jepara wooden furniture cluster into an innovative cluster.

5.1.4 Services pertaining to those policy instruments are not always provided by the government for cluster development. NGOs, Co-operatives and Private sector firms also deliver those enterprise support services. Unlike the government those service providers offer their services on cost sharing or fee levying basis. As a consequence those services are obtained by the actual user and the delivery of services can be sustained. Due to budgetary constraints very often the governments have to curtail free delivery of enterprise support services.

5.1.5 On the other hand too centralized policy making process and its orientation towards standardized policy instruments rather than on a diagnosis of each cluster's specific potential, needs and constraints have made the transformation of clusters more problematic and time consuming in many countries.

5.2 Application of Policy Instruments

5.2.1 Correct targeting-need based enterprise support service delivery and the competence of service providers are crucial factors for the application of policy instruments in cluster development. There were instances where the promotion efforts bypassed the smallest enterprises that are most need of assistance, because of the wide definition of small industries used by the Ministry of the Central Government. Even there are cases reported in some cluster development programs in Indonesia that program executers from local government did not have enough knowledge on real need and problems such as difficulties in marketing and distribution of SMEs in their areas.

5.2.2 It has been reported in a study on development of clusters of building materials in Central Java that in practice, direct assistance frequently concerned brief sessions of one or two days for selected group of producers and such sessions were characterized by a great deal of theory and little attention was paid to how to improve the actual running of the business.

5.2.3 There are cases in Sri Lanka where SMEs failed to get the benefits of development assistance programs either due to their lack of interest or may due to the poor conditions of the awareness campaign on development assistance program The case in point is the establishment of Information Centers (ICs) for SMEs by NCCSL

5.2.4 With financial assistance received from the ICT Agency of Sri Lanka, five ICs were established by NCCSL in Puttalam, Anuradhapura, Matale, Ratnapura and Matara. These centers basically cater to the information needs of SMEs. NCCSL created a website for Federation of Associations of SMEs (FASMEs) in Colombo and websites for each District Association of SMEs (DASMEs) in the respective district office. The website of DASMEs carries the profile of SMEs that have furnished required data to make the profile in the district. It was reported that DASMEs' website is under-utilized and more profiles have to be added on to complete the district profile of SMEs.

5.2.5 DASMEs' website provides a web page for each SME member who is interested in displaying his/her product/service for easy market access through Internet. The service of website designing and development and hosting is in fact provided free of charge to the members of DASMEs in the first year as a promotional measure.

5.2.6 Although NCCSL assisted SMEs to promote sale of their products using this e-commerce mechanism, the response of SMEs was very much below the expectations. NCCSL planned to deliver web page hosting services to 800 SMEs by end of 2004, but only 300 SMEs opened webpage and the number decreased further in the subsequent years.

5.2.7 The main reason for this shortfall was not technical problems, but the lack or rather paucity of interest shown by SMEs in opening of webpage despite of free hosting. Perhaps SMEs might not have been aware of the advantages of e-commerce and webpage as a marketing tool.

5.2.8 Also some of those SMEs would have not reached the stage of growth that requires the application of e-commerce. NCCSL have taken the official statistics of SMEs based on the wide definition of SMEs used by the Ministries. As a consequence they have bypassed the small enterprises that are most in need of financial assistance or sub-contracting opportunity and offered them the access to the Internet which was not their high priority need.

5.2.9 Hence, ascertaining development stage of SMEs and in the case of cluster development, development stage of each cluster firm is a critical factor for successful designing and delivery of development assistance. In other words, a need-based technical and financial assistance service package appropriate to the development stage of the cluster firm has to be designed and delivered.

5.2.10 Having observed the activities of and examining secondary data and the field reports on the cluster firms of MWFC & WCFC, the consultants grouped the cluster firms based on their respective stages of development as indicated below. Vide Table 15

Table 15: Classification of Furniture Industries based on Growth Stages

Stage of Growth/ Name of Cluster	Start-ups	Growth	Expansion	Globally Linked	Total
Moratuwa Wooden Furniture Industries Cluster	10%	50%	35%	05%	100%
Wewaldeniya Cane Furniture Industries Cluster	40%	50%	10%	0%	100%

5.2.11 Recognizing their generic difference as organized and informal clusters, without advocating a standardized development package of policy instruments for both the clusters, the consultants developed a comprehensive development program containing a package of policy instruments for MCFC & WCFC separately to address the specific needs of cluster firms and the general constraints for development of the respective cluster and to harness specific potential of each cluster. Vide Table 16

Table 16: Enterprise Support Needs of Cluster Firms

Stage of Growth/ Development Management	Start-ups	Growth	Expansion	Globally-linked
Finance	Seed Capital, Working Capital,	Project Loans, Leasing Facilities, Working Capital,	Venture Capital, Leasing Facilities	Equity-based Joint Venture funding, Stock Markets,
Marketing	Sales Promotion	Market Development, Product Differentiation,	New Product Development,	Franchising

Technology	Industrial Incubators Manual & Semi Mechanized Process	Wood Workshop - Manual & Mechanized Process	Woodwork Factory -Fully Mechanized Process	Woodwork Factory Complex -Fully Mechanized Process with CAD/CAM Facilities
Human Resource Development	Skills Development	Skills Upgrading	Competence based Skills Development	Specialized Skills Development
General	Business Planning	Advanced Business Planning	Corporate Planning	Strategic Planning

5.2.12 Business Clinics will be held in the clusters with the participation of sectoral specialists- financial specialists, marketing specialists, wood production technology specialists, human resources development experts and industrial management specialists, to ascertain growth prospects of cluster firms and deliver expert advice for business growth.

5.3 Policy Instruments & Cluster Efficiency

5.3.1 The success of those development programs depends on the efficiency gains made by the cluster firms from the application of policy instruments as the efficiency of the cluster drives its competitiveness. The cluster efficiency has the following two dimensions:

- Interior efficiency of cluster
- Exterior efficiency of cluster

5.4. Role of Self-help Organizations

5.4.1 . The interior efficiency function relates to the activities of cluster firms and the self-help organizations located within the cluster. The cluster firms improve their business performance through collective efficiency gains made by developing, enhancing and harnessing internal co-operation among them. The internal co-operation enables cluster firms to improve their bargaining power in the procurement function to get high quality inputs at competitive prices. The cluster firms get higher prices for their products through joint negotiations with external buyers that made possible through the internal cooperation. Thus internal cooperation enhances the competitiveness of the cluster through the gains of interior efficiency.

5.4.2 The Self-help organizations such as cooperatives and social enterprises formed within the cluster by promoting inter-firm cooperation through confidence building measures and amicably resolving internal conflicts enhance the interior efficiency of the cluster. Those internal organizations also establish linkages with the firms/organizations outside the cluster for joint procurement of inputs by the cluster firms. By promoting business linkages with primary contractors outside the cluster, the Self-help organizations develop sub-contracting opportunities for cluster firms. Thus self-help organizations by promoting internal linkages among cluster firms and developing external linkages between cluster firms and the entities outside the cluster make a significant contribution to improve the interior efficiency of the clusters.

5.4.3 The government also plays an important role to promote interior efficiency of clusters by organizing joint action among cluster firms to procure inputs through forward contracting mechanisms, facilitating markets development for the products made within the cluster by helping cluster firms to participate at trade exhibitions and especially by establishing common service centers.

5.4.4 The common service centers (CSCs) are established within the cluster by the government. CSCs effectively transfer technology to cluster firms, provides common treatment facilities to strengthen the production system of cluster firms and offer training programs to improve skills of the employees of cluster firms. The governments make a significant contribution towards improvement of interior efficiency of clusters through the services offered by CSCs.

5.4.5 Nevertheless, the contribution made by the government sponsored and managed CSCs within clusters has progressively diminished in number of developing countries as a result of drastic reduction of government funding allocated to CSCs caused by budgetary constraints. Without timely replacement the equipments installed in CSCs became obsolete for want of funds and the quality of services offered by CSCs deteriorated with the departure of technical officers operated CSCs for better prospects elsewhere. For an example, Van Diermen based on his survey of Indonesian clusters confirmed that the deteriorating performance of government sponsored and managed CSCs mainly caused by budgetary constraints.

5.4.6 According to Van Dierman due to following reasons the implementation of CSCs failed in Indonesia.

- Types of services are highly supply oriented rather than demand driven
- Delays in replacement of existing equipments- Originally CSCs were supplied with modern technological machines and equipment After the economic crisis in 1997/1998, budget constraints prevented the replacement of existing machinery
- Indiscriminate delivery of services to cluster firms
- Failure to respond to entrepreneur needs- The government staff who run of the facilities had not had the appropriate training to respond to cluster firm’s needs
- Limited flexibility in delivery system of services- The structure of the facilities as part of the government meant that in most cases, there was not great enough flexibility in the system of responding to the changing needs of cluster firms.

(Source: Van Diermen, Peter (2004 “The Economic Policy Environment for Small Rural Enterprises in Indonesia”)

5.4.7 Similar situation prevailed in CSCs managed by the Department of Small Industries and the Industrial Development Board in Sri Lanka, though most of those CSCs are not located in most cases within clusters. With the transfer of ownership and management of CSCs to Provincial Councils, the adverse situation has further aggravated, as the budgetary provisions for capital expenditure is not adequate for sustaining existing CSCs and develop new ones.

5.4.8 Having realized the drawbacks of government sponsored CSCs in Sri Lanka and in other developing countries, Ministry of Rural Industries and Self-employment Promotion (MRI&SEP) has taken steps to strengthen Cooperatives of Small Industrialists as self-help organizations to develop and manage CSCs under the 1000 Industrial Village Development Program.

5.4.9 Whilst appreciating the initiative taken by MRI&SEP, the consultants express their reservation on the dependence on the cooperative societies in the present form that susceptible to political influence for cluster development, on account of the generic deficiencies of the Cooperative Movement of Sri Lanka that has been highlighted in the Presidential Commission on the Cooperative Movement of Sri Lanka-2000

5.4.10 Hence, the consultants are of the view that the cooperative societies in the present form can not be used as effective self-supporting organizations for the cluster development unless the cooperative movement is developed as a self-reliant and autonomous People's Voluntary Movement and regain its identity from the politicization that has taken place over the years through the implementation of the recommendations made in the Presidential Commission referred to.

5.4.11 Meanwhile, the consultant observed that a non-profit making, NGO like business entity called Moratuwa Woodwork Shop Owners (Guaranteed) Co. (MWSOC) has emerged as a self-help organization in MWFC. They maintain a show room to display and market furniture products made by the small and medium cluster firms. MWSOC also assist the cluster firms to get bank loans.

5.4.12 MWSOC have the features of a social enterprise. Social enterprises straddle the border between the public and the private sector and break new ground in the allocation and management of economic resources. They have social aims such as training or provision of services particularly for economically backward or disadvantaged groups. The consultants recommend that entities like MWSOC be promoted as social enterprises so that those can function effectively as self-help organization in cluster development activities.

5.4.13 Thus the government must be very cautious in selecting self-help organizations to manage common service centers and other cluster development initiatives and adopt its intervention measurers to suit the cluster conditions. In the case of Informal Clusters, the government intervention is very necessary for their transformation process. The government can be very selective in the development of Organized and Innovative clusters.

5.5 Role of Government

5.5.1 The government has to play an active role for improving efficiency of clusters. In the case of improving interior efficiency of clusters, the role of government will be a limited one with a clear exit strategy. The degree of intervention by government in cluster development will depend on the conditions of the cluster. More government intervention can be expected in the development of Informal Clusters like Wewaldeniya Cane Furniture industry cluster.

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5.5.2 The government has to fund and manage technical and financial assistance programs fully in the development of informal clusters. As a part of its exit strategy the government must shortly select and promote a self-help organization within the cluster to jointly manage the development programs and eventually transfer the programs for full management of the self-help organization on a sustainable basis when the joint management reach the stage of full cost recovery of the development assistance programs. .

5.5.3 In the case of Organized and Innovative Clusters the government will work with self-help organizations established within the cluster either on cost sharing basis or on the condition of offering fiscal incentives for delivery of technical and financial assistance for the development of clusters from the inception. When the self-help organizations reach the stage of full cost recovery of the services offered to the cluster firms, the government will exit from the program of delivering development assistance to improve the interior efficiency of the cluster..

5.5.4 Thus, the role of government in the activities undertaken for improving interior efficiency of clusters is limited in scope and confined to a short term period in contrast to the activities undertaken for improving exterior efficiency of the cluster.

5.5.5 The government can contribute for the improvement of exterior efficiency of the clusters through the following means

(i) Rationalize government regulations on land use pertaining to forest and rattan cultivation, harvesting and transportation

(ii) Develop national standards for raw material for an example in the case of rattan to ensure uniform quality requirements for rattan poles and enforce environmental regulations

(iii) Build up partnership between cluster firms and public R&D institutions for technology development

5.5.6 Whilst entrusting improving interior efficiency of the geographical cluster to cluster-firms and their self-help organization, the government by creating environment outside the cluster can improve exterior efficiency off the clusters. Both the dimensions interior and the exterior efficiency are equally important for enhancing the competitiveness of the cluster, as those relate to the determinants of competitiveness.

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6. Development Framework

6.1 Development Constraints

6.1.1 Adopting a progressive and incremental development approach in the development of the Wooden Furniture Cluster at Moratuwa (MWFC) and Cane Furniture Cluster at Wewaldeniya (WCFC) is advocated by the consultants.

6.1.2 WCFC is an informal cluster and it has to be developed as an organized cluster in the first stage of its development process. After reviewing the progress and ascertaining its growth potential, WCFC can be upgraded to an innovative cluster in its second stage of development process.

6.1.3 It is assumed that six years would be required based on international experience to transform WCFC from its Informal Cluster Form to an Organized Cluster Form and another four years to transform it to an Innovative Cluster Form.

6.1.4 In the case of MWFC, four years will be required to transform it from present Organized Cluster Form to an Innovative Cluster Form. Thereafter MWFC can be developed as an Export Hub within three years.

6.1.5 The success of the transformation process depends on the effectiveness of the development measures initiated by the stakeholders of MWFC &WCFC to resolve the development constraints.

6.1.6 These clusters face common development constraints as well as cluster-specific development constraints corresponding to respective development stage of each cluster. The development framework accordingly is formulated to address all those development constraints.

6.2 Common Development Constraints

6.2.1 The common development constraints are listed below:-

a) Policy

- Absence of an industrial cluster development policy
- Policy and law making processes at the national and at the provincial levels are characteristically inaccessible to the cluster firms & associations

- Lack of public policy initiatives to develop multiple financial tools to protect cluster firms from the ‘debt trap’ of formal and informal lenders
- Inflexible labor laws restrict retrenchment of unproductive workforce
- Non-availability of social insurance/security mechanism deter mobility of workforce

b).<u>Institutional Framework-Regulatory</u>

- Excessive regulations on transport of wood & finished products causing slow and unreliable movement of wood
- Lack of standards and grading for timber and rattan
- High cost of Forest Stewardship Council (FSC) timber certification scheme
- Procedural problems in obtaining certificates required by CEA and the Department of Forests
- Poor enforcement of product standards on wooden and cane furniture to ensure quality
- Absence of Geographical Indication scheme for providing legal protection for products of a cluster based on their uniqueness
- Non-institutionalization of sub-contracting and forward contracting agreements

c) <u>Institutional Framework- Development</u>

- No designated public agency at the national or provincial level to develop geographical clusters
- Government’s intervention for cluster development is without an exit strategy
- Inadequate support for developing self-help organizations for industrial cluster development
- Poor conditions of internal network of roads, drainage system and other physical infrastructure facilities

6.3 <u>Cluster-specific Development Constraints</u>

6.3.1 *Moratuwa Wooden Furniture Cluster (MWFC)*

6.3.1.1 Raw Material

- Inadequate wood supply in both quantity & quality
- Uncertainty of the regular supply of rubber wood
- Inferior quality of furniture fittings

6.3.1.2 Technology

- Inadequate supply of technical services- timber treatment and seasoning, machining, finishing etcs
- No quality assurance program

- Limited facilities for sourcing technology
- Limited application of CAD/CAM system
- Lack of R&D support

6.3.1.3 Marketing

- No common design centre to assist cluster-firms in resolving their design problems
- No sub-contracting exchange to facilitate business linkages
- Lack of marketing strategy to meet the competition from alternate products-plastic, steel furniture

6.3.1.4 Financial

- Dearth of working capital
- High cost of project financing
- No mutual credit guarantee scheme
- Limited use of Commercial Papers

6.3.2 Wewaldeniya Cane Furniture Cluster(WCFC)

6.3.2.1 Raw Material

- Irregular rattan supply in both quantity & quality
- Varied shelf life of imported rattan

6.3.2.2 Technology

- No technical service centre for the provision of rattan treatment, finishing & other related services for cluster-firms
- No quality assurance program
- Lack of design development facility

6.3.2.3 Marketing

- Production orientation in marketing
- Failure to recognize cane furniture as a design oriented product
- Prefer to sell cane furniture as a commodity not as an industrial product with added value
- Erratic pricing strategies

6.3.2.4 Financial

- No financial discipline among most cluster-firms
- High level of informal financial arrangements
- No group financing scheme developed.

6.4 Common Cluster Development Measures

6.4.1 Some of the policy instruments mentioned in Para 5.1.1 and new policy instruments such as Geographical Indication will be used to address the development constraints of the two furniture clusters.

6.4.2 However, a tailor made package of policy instruments will have to be used in respect of each furniture cluster, in view of the cluster-specific development constraints. Accordingly, the consultants will present separate Development Framework for each cluster describing cluster development measures to be undertaken to address both the cluster-specific and common cluster development constraints.

6.4.3 The consultants are of the view that to create an enabling business environment for cluster development, a national strategy for geographical cluster development has to be introduced by the national policy makers. The Ministry of Enterprise Development & Investment Promotion (MEDIP) has formulated a draft National Policy on Enterprise Development & Investment Promotion. The development of geographical cluster can be presented as a strategic initiative under the said national policy.

6.4.4 NEDA may design a national strategy for geographical clusters and formulate a comprehensive development program for development of those clusters. The two development programs presented in this report for the development of MWFC &WCFC can be implemented as pilot projects of the cluster development program.

6.4.5 The findings of the studies of two geographical clusters in Indonesia- rattan industries cluster in Padang (Western Sumatra) and the leather industries cluster in Yogyakarta have reported that one reason of Government failure in supporting those clusters was the lack of coordination between government agencies; sometimes different government agencies provided similar development schemes/programs for cluster development.

6.4.6 Hence, the consultants propose that NEDA may be designated as the national agency for development of geographical clusters to coordinate cluster development activities undertaken by different government agencies like IDB, NERD Centre, ISB, EDB etcs..

6.4.7 The promotion of clusters has to be undertaken with the participative role of local governments that have been best in touch with the needs of the local businesses. Local governments are not expected to lead clusters but provide the enabling environment for the growth of clusters. Accordingly, NEDA must closely work with local governments as development partners of geographical clusters.

6.4.8 Spontaneous Clusters like geographical clusters have self-regulating mechanisms and there are no hierarchical institutions to manage cluster affairs as in the case of constructed clusters like industrial estates wherein Industrial Development Board, Board of Investment (BOI) function as hierarchical institutions to manage the affairs of industrial estates.. Hence NEDA has to be cautious in introducing institutional mechanisms for management of geographical clusters that will destroy the organizational culture- the driving force of the cluster.

6.4.9 The self-help organizations formed by the associations of cluster enterprises usually provide the leadership, foster the organizational culture and stimulate the growth of the cluster for mutual benefits. Without creating new institutions, NEDA may empower the self-help organizations of cluster already existing for the implementation of their cluster development program.

6.4.10 Accordingly, NEDA has to solicit the cooperation of local governments and self-help organizations of clusters to implement the cluster development program. Since both MWCF & WCFC are located within the Western Province- NEDA may work with Industrial Development Authority-Western Province (IDA-WP) to ensure participative role of local government in the cluster development.

6.4.11 The consultants recommend that NEDA may function as the executing agency for the cluster development program and entrust the management of development program to a tripartite committee consisting of representatives of NEDA, IDA-WP and Self-help Organization of the respective cluster. After successful completion of the development program both the government agencies NEDA & IDA-WP may exit from the clusters and leave the development operations of the cluster in the self-regulating mechanism managed by the self-help Organization of the cluster so that the organizational culture of the cluster will be enriched.

6.4.12 During the cluster development phase, NEDA may assign one of its staff members as the Cluster Development Manager to co-ordinate development activities and implement the development program under the direction of the Tripartite Management Committee referred to. In the final year of the cluster development program, the identified Self-help Organization of the cluster may designate a manager for the cluster to understudy the NEDA official. When the cluster development program is successfully completed, NEDA official leave the cluster and hand over the affairs of the cluster to his understudy-designated manager of the cluster.

6.4.13 However, since there is no well developed self-help organization in the two clusters, the consultants recommend that NEDA as the executing agency of cluster development programs (CDPs) may develop MWSOC in MWFC and the registered small industrialists’ cooperative society of WCFC as Self-help Organization in collaboration with parent organizations at national level such as NCCSL and SLCC.

6.4.14 NCCSL as the parent body of district level SME Associations can provide technical assistance for institutional development of MWSOC. In the same way SLCC through capacity development program strengthen the cooperative society of WCFC to harness the development potential of the cluster.

6.4.15 With a view to implement CDP effectively and to provide incentives to cluster-firms to expand their operation without any hindrance, the consultants recommend that the contiguous areas of the two geographical industrial clusters namely MWFC & WCFC be declared as special economic zones by NEDA.

6.4.16 In view of the cluster-specific development constraints, a series of development program for each component of the value-chain of the respective cluster will be presented hereafter by the consultants.

6.5 Cluster-specific Development Measures for MWFC

6.5.1 The consultants recommend that MWFC may enter into memorandums on understandings (MOUs) on R&D Collaboration with the University of Moratuwa (UOM), the University of Sri Jayawardenepura (UOSJ) and the Industrial Technology Institute (ITI) for technology development. For the purpose of technology transfer MWFC may enter into MOUs with Industrial Development Board IDB). MWFC may sign a MOU with newly created Alternative Energy Resources Development Authority for development of bio-fuels.

6.5.2 The consultants envisage that UOM will outreach the cluster firms by adopting the best practices of the University of Mississippi. Initially UOM can undertake product designing and new product development for the cluster-firms and provide technical services to improve the production process after signing the MOU with MWFC.

6.5.3 Subsequently, UOM could extend its expertise knowledge on furniture manufacturing to other furniture industries located outside MWFC and establish the National Institute of Wood Technology for comprehensive furniture research, testing and technical assistance to the furniture industry as a public-private partnership for the benefit of all the furniture manufacturers.

6.5.4 ITI has developed a bending technology for furniture industry and cluster-firms can have access to the technology development work undertaken by ITI through mobile business clinics to be organized in the cluster.

6.5.5 Similarly (UOSJ) will extend its expertise knowledge to improve the quality of timber used in the furniture industry by establishing scientific grading, standardization and timber classification systems.

6.5.6 The consultants are of the view that MWFC can obtain geographical indication (GI) or appellation of origin for products developed in the cluster through the technological collaboration with MOU, UOSJ, and ITI and improve the competitiveness of MWFC.

6.5.7 . IDB as a technology bridging organization already provide technology transfer services to MWFC. Improved process of finishing technology developed by a Dutch firm had been introduced to the cluster-firms by IDB recently. Thus IDB can source technology regularly from local and international sources and transfer same to MWFC.

6.5.8 The consultants also recommends that IDB may launch a program for progressive manufacture of wood-working machines locally by building relationships between cluster firms and the manufacturers of wood-work machines and provide technical assistance to develop prototypes of those machines and test their technical capabilities to improve the quality of the machines.

6.5.9 The consultants observed in their diagnostic study of MWFC that cluster-firms mostly use air seasoning method instead of kiln seasoning for drying of timber. Kiln seasoning is done in closed chambers providing maximum control of air circulation, humidity and temperature. Hence, drying can be regulated so that occurrence of shrinkages can be minimized and the lower moisture contents can be maintained compared with air seasoning. As a result the firms using kiln seasoning get advantages of rapidity, adaptability and precision and reduce drying time significantly.

6.5.10 The cluster-firms complain that they cannot use kiln seasoning due to high costs of the kiln services offered to them. Hence, they demand the technical service of kiln seasoning at competitive prices. The consultants therefore propose the establishment of Kiln Drying and Wood Treatment Plant in MWFC as a public-private partnership to provide the required services at an affordable price. The proposed plant whilst reducing the high cost of seasoning will encourage the use of lesser utilized species and sap wood of durable species after appropriate treatment in the wooden furniture industry.

6.5.11 STC and IDB may be the public agencies in the public-partnership that will set up the Kiln drying and treatment facility and the cluster firms can join the partnership as private sector investors. This technical service providing agency should recover its operational costs and should not depend on treasury grants for its existence.

6.5.12 MWFC in the MOU with Alternative Energy Development Authority should undertake the development of bio-fuels or co-generation of energy by using logging waste and saw mill residue heaping of which has become a pollution problem in the cluster. MWFC may seek technical assistance from National Engineering Research & Development (NERD) centre for this purpose.

6.5.13 The Apprenticeship Training Institute (ATI) located in close proximity to MWFC has the modal furniture manufacturing process with all necessary machinery and equipments, tools and with skilled/resource persons conducts wood working training program mainly for youth. Ironically, the children of carpenters in MWFC prefer to get home-based apprenticeship training under their fathers rather than using the modern training facilities available at the next door of ATI

6.5.14 Hence, the consultants recommend that ATI may undertake skill intensity surveys of MWFC periodically and highlight the gaps in the skill base of the cluster and present a program for upgrading skills of the employed youth therein. It is necessary to undertake skill tests and issue certificates to those cluster employees according to their competency levels so that they will be motivated to follow the formal training programs in ATI to get higher training certificates for career advancement, as no enterprise based training programs are conducted by the cluster firms.

6.5.15 ATI also can adopt the in-situ training delivery method to improve the skills of the employees of MWFC. This method of SME client friendly training delivery was successfully implemented by the Swiss Contact project in their training programs conducted in 1990s for micro and small enterprises engaged in the light engineering industries in the Kalutara district.

6.5.16 Besides providing training for employees of MWFC, ATI can provide its contribution for the following two cluster-specific development measurers:-

- Establishment of Furniture Display Centre
- Industrial Incubator for Woodwork Trainees

6.5.16.1 *Furniture Display Centre*

ATI envisages operating its woodwork training centre as training cum production centre and undertaking commercial furniture manufacturing with the participation of trainees to earn additional income to ATI.

The consultants recommend that ATI may put-up a Furniture Display Centre facing the Galle Road in their premises to introduce the furniture made at the institution using new designs and materials. The cluster-firms may benchmark these products and improve the quality of their furniture products by conforming to product standards maintained by ATI.

The cluster-firms also can ascertain price competitiveness of their products by comparing the prices of the furniture products displayed at the centre.

Industrial Incubator for Woodwork Trainees

ATI can assist their trainees with entrepreneurial flair to commence their own furniture business through the establishment of an Industrial Incubator. The trainees successfully completed their training program will be provided physical space at a moderate rent in the industrial incubator for a three year period to develop a furniture industry of its own. The successful trainee as a budding entrepreneur will use the common facilities available at ATI and solicit his master trainer's advice to foster his fledging enterprise.

At the end of the three year period, the incubate as a small industrialist will leave the incubator and relocate his growing business either in the nearby MWFC or any other place he selected for further development of his enterprise. Another trainer will occupy the vacant space of the incubator thereafter and start developing his furniture enterprise and the cycle of generating entrepreneurs will continue in the industrial incubator.

6.5.17 The consultants recommend that NEDA as the national agency for entrepreneurship development may join hand with ATI and put up the industrial incubator for the furniture industry by using public buildings remained closed in MWFC area.

6.5.18 The consultants observed that the owner-managers of cluster-firms often have to close their workshops when they have to visit the above mentioned supporting institutions. On the other hand the staff of the supporting institutions also prefer client's visit to their places rather than outreaching clients in their working environment.

6.5.19 Hence, the consultants recommend that business clinics may be held in a common place of the cluster to have one to one meetings with cluster firms and their service providers of the supporting institutions and propose to establish a common service center for this purpose.

6.5.20 The common service centre (CSC) will operate as a one-stop service centre for the delivery of Industrial Extension Services & Business Clinic Services to the cluster firms. CSC managed by the identified Self-help Organization of MWFC will deal with the following:-

- Technical Advisory Services
- Financial Advisory Services
- E-commerce & Management Information Services

- General Office and Conference Hall Facility Services

6.5.21 The diagram presented below summarizes the concept of CSC. Vide Figure 2.

Fig.2: Businesses Clinics & Industrial Extension Service Centers
(One-*stop Service Centre for Furniture Manufacturers0*

Technical Advisory Services	Financial Advisory Services	E-commerce & Management Information Bureau	Conference Hall
Chambers for Universities & Public R&D Institutions	Chambers for Development Banks Public/ Co-operative		
Chambers for Technology Bridging Organizations Public/Private/NGOs	Chambers for Commercial Banks Public/Private		
Chambers for Business Development Service & Training Service Providers Public/Private/NGOs	Chambers for Leasing Companies & Other Financial Service Providers Public/ Private		General Office
Furniture Display & Waiting Hall	Furniture Display & Waiting Hall	Furniture Display & Waiting Hall	Furniture Display & Waiting Hall

6.5.21 The visiting experts of Engineering Design Centre of UOM will meet the cluster firms either on group or individual basis at the Chamber allocated to them and ascertain their engineering design needs and provide expert advice to develop new designs. Similarly, Research staff of ITI meet the cluster firms by prior appointment at their chamber and undertake R&D contracts to develop new products or to improve the production process through applying new process technologies It is envisaged that with the interface with R&D experts the cluster firm will upgrade their technologies and adopt the application of CAD/CAM system in their factories.

6.5.22 IDB officials will meet cluster firms by prior appointment in the chamber allocated to them to introduce new technologies to improve the productivity and arrange meetings with word-work machinery manufacturers and cluster firms to develop new machineries to meet their requirements.

6.5.23 Private sector business development service (BDS) providers also arrange meetings with cluster firms in the chamber allocated to them to ascertain business develop needs of each cluster enterprise according to its stage of development-Start-up, Growth, Expansion and Globally-linked and to design and offer BDS packages to reach the next stage of development of the respective enterprise. Thus without offering a general BDS package BDS providers through their clinic visits cater to the needs of cluster enterprises on an exclusive basis.

6.5.24 Financial service providers (FSPs) also will make use of the clinic visits to outreach cluster enterprises and the latter will make use of the opportunity to compare the financial service packages offered by FSPs under the same roof without making visits to each bank. The cluster firms may explore the possibilities for getting credit guarantee company status for their association from FSPs so that the collateral requirements for loan financing can be minimized.

6.5.25 The cluster firms can make use of IT facilities installed at the CSC and the sub contracting exchange established therein to market their products. The technical assistance from the United Nations Industrial Development Organization (UNIDO) may be obtained by NEDA for the establishment of the sub-contracting exchange. Thus CSC will provide a package of enterprise support services to cluster firms to build up vertical business linkages with external firms and horizontal business linkages amongst themselves and thereby enter into export markets with their improved competitiveness.

6.5.26 With a view to build up international linkages and to promote export of furniture, the consultants recommend that an International Furniture Exhibition & Auction Centre (IFE&AC) be set up near the Ratmalana Airport that will be developed as a regional airport shortly as per the development plans of the government.

6.5.27 Establishment of IFE&AC will pave the way to develop MWFC as an Export Hub once it reach the form of an innovative cluster with the successful implementation of the above mentioned development measurers. Hence, the consultants suggest that NEDA may coordinate the development activities for the establishment of IFE&AC and appoint a working group consisting of representatives of EDB, Airport & Aviation Authority, National Exporters Association and the representative of the self-help organization of MWFC to formulate a project proposal for IFE&AC.

6.5.28 The consultants are of the view that cluster development activities of MWFC can be accelerated and export markets can be sustained through the international co-operation of business chambers. Hence, the consultants recommend that NCCSL may enter into a MOU with Salzburg Chamber of Commerce (SCC) of Austria that has been a meaningful and beneficial governance institution for the development of Salzburg Wooden furniture Cluster (SWFC). Vide Attachment 3.

6.5.29 The consultants believe that the experience gained by SCC in cluster development can be harnessed by NCCSL for the development of MWFC through the provisions made in the proposed MOU. For an example, NCCSL can facilitate forming of Non Equity-based Research & Technology Partnerships (RTPs) between cluster firms in SWFC and those in MWFC by making provisions to that effect in the MOU.

6.5.30 UNCTAD has reported that equity-based RTPs (traditional joint ventures) have gradually become less popular relative to non equity- based RTPs such as Joint R&D Pacts and Joint development agreements and the latter have provided the main mechanism for inter-firm collaboration during the past couple of decades. (Source: Partnerships and Networking in Science and Technology for Development: UNCTAD/ITE/TEB/11-2002)

6.5.31 NCCSL may promote the appropriate Non Equity-based RTP, out of the following four types through the MOU signed with SCC

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- Joint R&D Pacts and Joint Development Agreement
- Customer-Supplier Relationships
- Second-Sourcing
- Licensing

6.5.32 Those RTPs will pave the way for making innovations-new products or new processes and improve the competitiveness of MWFC dramatically.

6.6 Cluster-specific Development Measures for WCFC

6.6.1. The consultants are of the view that developing informal cluster of WCFC to the level of organized cluster needs more involvement of the government and the poverty and gender issues of the cluster make the government's participation in the cluster development mandatory. A large number of cluster employees of WCFC are the recipients of income support scheme-Samurdhi, as they are not getting a regular income from the cane furniture industry.

6.6.2. On the other hand almost 50% of the cluster employees are women working under difficult conditions and improving their working conditions also has to be an objective of the cluster development program.

6.6.3. However, sooner or later as a part of its exit strategy the government has to work with a cluster community based organization as self-help organization to entrust the governance responsibility of WCFC. The consultants observed that the government has identified the cooperative society of small industries in Radawana as the community based self-help organization to assign the responsibility of industrial village development.. However, because of the political affiliations of the office bearers of this cooperative society, it has failed to get the fullest cooperation of the cluster-firms and now it remains defunct.

6.6.4. The Presidential Commission on the Cooperative Movement of Sri Lanka (2000) identified the political affiliations of office bearers of the cooperative societies as a major cause for the downfall of the cooperative movement and made a series of recommendation to regain the identity of cooperatives from the politicization that has taken place and to develop cooperatives as a self-reliant and autonomous people's voluntary movement.

6.6.5. The consultants are of the view that unless those recommendations are implemented to promote and foster the spirit of co-operation among the cluster firms, the present cooperative society will not be a successful self-help organization for the cluster development of WCFC.

6.6.6. On the other hand, the movement of Cooperative Thrift & Savings Society-popularly known as SANASA has expanded as an apolitical cooperative movement in Sri Lanka, because the officer bearers of SANASA societies are debarred from engaging in active politics and holding positions in the political parties. Since the implementation of the recommendations of the Presidential Commission on the Cooperative Movement may take some time, the consultants recommend that a cooperative society of the Sanasa Movement may be promoted as a self-help organization in stead of the present defunct Cooperative Society for the cluster development activities of WCFC.

6.6.7. .In view of the depleting natural resources of rattan, cluster firms of WCFC now depend more and more on imported rattan for their cane furniture industry. It has been the practice world over to restrict export of raw materials and insist on value-addition. Accordingly, the continuous supply of imported rattan cannot be assured and local supply base of rattan has to be expanded for the sustainability of the cane furniture industry in Sri Lanka. For this purpose instead of collecting wild rattan from riverbeds in the country, a scientific cultivation of rattan has to be undertaken.

6.6.8. Technical assistance for cultivation of rattan can be obtained from the International Centre for Bamboo and Rattan (ICBR) that promote sustainable development of bamboo and rattan and provide services to INBAR -the first non-profit, intergovernmental organization headquartered in China for development of Bamboo and Rattan based industries.. ITI has already signed a MOU with INBAR for cultivation of Bamboo and the Department of Agriculture has allocated land for the bamboo cultivation project.

6.6.9. Hence, the consultants recommend that the Forestry & Environment Dept. of the University of Sri Jayawardenepura may seek technical assistance from ICBR for the cultivation of rattan in Sri Lanka and NEDA as the national institute responsible for enterprise development coordinates the activities pertaining to the cultivation of rattan as a development measure for cluster enterprises in WCFC.

6.6.10. Lack of uniform quality requirement for rattan poles has been identified as the main cause for haphazard harvesting of rattan and for the prevalence of bad ecological governance for rattan. By prescribing species, sizes and volume of rattan poles to be harvested uniform quality requirement for rattan can be assured. Expert assistance from University of Sri Jayawardenepyra can be obtained for setting standards for rattan poles and for introducing good governance for the management of natural/cultivated resources of rattan

6.6.11. The consultants are of the view that R&D departments of other universities also can make some contribution for the development of WCFC For an example, the labour productivity of the cluster firms can be increased by mechanization of the activities of shearing and scraping of rattan presently done manually. Having noted a similar time consuming and arduous manual activity of peeling of cinnamon bars in the cinnamon clusters, the University of Ruhuna through their R&D activities introduced a cinnamon peeling machine to improve the labour productivity of the industry. Hence, the consultants recommend that the University of Peradeniya may undertake similar R&D activity for the improvement of labour productivity of WCFC.

6.6.12. The consultants observed that exporters of cane products in Sri Lanka currently export cane furniture as a commodity and make their contribution for the proliferation of low-quality, mass-produced cane furniture in the global market. Hence the consultants hold the view that the industry must move into a niche market by concentration on unique designs for its long term interest. This strategy has been successfully implemented in the cane furniture industry in the Philippines.

6.6.13. Hence, the consultants recommend that University of Visual & Performing Arts (UVPA) in collaboration with the National Design Centre (NDC) develop new designs for cane furniture. New designs are required for cane furniture as home accessories to meet the demand of the buyer’s interest in overall home concept. Another area is the institutional buyers market. Hoteliers are as institutional buyers very interested in buying cane furniture for their hotels with unique designs. NEDA may coordinate the design development activities of UVPA & NDC for the development of WCFC.

6.6.14. The consultants observed that action has been taken already by the Ministry of Rural Industries & Self-employment Promotion (MRI&SEP) to put up a common service center (CSC) for WCFC. It is envisaged that CSC will provide rattan treatment facilities and other related technical services, technology transfer services and training facilities to cluster firms. The establishment of CSC has delayed because of the objections raised for the site selected for CSC. The consultants recommend that NEDA may coordinate with MRI&SEP to ensure that development and management of CSC will be entrusted to the most suitable self-help organization and to avoid the duplication of delivery of same cluster development services by different government agencies.

6.6.15. The consultants further recommend that the scope of activities of CSC be further expanded to conduct mobile business clinic services to cluster firms by Visiting Experts of Universities and Public R&D Institutes, Financial Service Providers and BDS Providers.

6.6.16. The consultants observed that the simple marketing structure of WCFC- the 20 cane furniture shops established along the Colombo-Kandy Main Road to sell the cane furniture made in the cluster has the potential of becoming the hub of a dynamic cluster. With the expansion of the Main Road these shops have limited ground space for expansion. Hence, the consultants recommend the construction of a new building complex with two three storied buildings on either side of the Main Road and a small container yard on the by road leading from the Main Road to the villages wherein the cluster firms are located to provide additional services to cluster firms.

6.6.17. The ground floors of the two buildings will be reserved for vehicle parking. The first floors of the buildings will be allocated to the present shop owners to continue their business in a more modernized setting with e-commerce facility.

6.6.18. In the building facing the cluster firms, the second floor will be reserved for a Resturant and a Reception/ Conference Hall. The second floor of the other building to be located on the other side of the Main Road will be reserved for Cane Furniture & Cane Giftware Design Centre. The visiting resource persons from UVPA & NDC and foreign design experts if any can make use of this centre for development of new designs for the benefit of cluster firms.

6.6.19. The consultants believe that the proposed building complex as a Cane Furniture Emporium and the Design Center will become a hive of activities to generate more businesses for cluster firms.

6.6.20. With a view to promote vertical linkages with large exporting cane furniture companies and the cluster firms of WCFC, the consultants recommend that three blocks of land in the Mirigama Export Processing Zone be allocated for local or foreign exporters engaged in the export business of cane furniture. BOI may offer the supporting industries facility available at WCFC for investment promotion.

6.6.21. The consultants are of the view that the bilateral collaboration with dynamic foreign cane furniture clusters has to be built up to accelerate the development of WCFC. For this purpose the consultants recommend the formation of RTPs as mentioned in the Para 4.4.4 of this report.

6.6.22. The consultants recommend that NEDA also explore the possibilities for bilateral cooperation with the Govt. of Canada for a development program for both the geographical clusters –MWFC &WCFC. The consultants noted that the Canadian Government already implements-The Private Enterprise Participation (PEP) Project to provide technical assistance for the development of the geographical clusters. The PEP endorses ‘the creation of Associations to stimulate cluster activities. This concept is based on the fundamental axiom that the new whole is stronger than the loose collection of its component parts’. Vide Attachment 2..

6.7 Development Plan for MWFC

6.7.1 Vision

To improve the efficiency of the furniture industry in the country to serve domestic market and to increase the export of wood products

(Quoted from TOR)

6.7.2 Goal

To seek recognition for Moratuwa Wooden furniture Cluster (MWFC) as a World Renowned Furniture Cluster

6.7.3 Grand Objective

To transform MWFC from Organized Cluster Form to the Innovative Cluster Form

6.7.4 Targets

- Increase Domestic Sales by 20% per annum
- Increase Export Sales by 25% per annum
- Changed Products mix (over a period of five years)
  - Multi Functional Chairs 5% of Total Production
  - Home Office Furniture 20% of
  - Ready-to assemble (RTA) Furniture 10%
  - Do-it-yourself (DIY) Furniture 5%

6.7.5 Strategies

- Make Wooden Furniture for High Quality and High Price Market
- Promote Vertical Linkages between Cluster Firms and Global Furniture Manufacturers
- Promote Horizontal Linkages among Cluster Firms
- Introduce Advanced Technology- CAD/CAM application etc
- Upgrade the Skill Base of the Cluster
- Introduction of E-commerce
- Rationalization of Supply Chain Management

6.7.6 Development Plan Matrix

The development programs and projects based on the policy instruments applied to operationalize the above-mentioned development strategies are presented in the Development Plan Matrix presented below. Vide Table 05.

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Development Programs & Projects – Moratuwa Furniture Industry Cluster

Focus: Transformation of Organized Cluster into Innovative Cluster

Development Management / Partner Development	Policy Initiatives Public / Business	Institutional Framework Development Public/ Non Public	Physical Infrastructure Development	Marketing Development	Technology Development	Human Resources Development	Financial Resources Development
Public Sector							
MED&IP	Inclusion of Geographical Cluster Development as a Policy Initiative of the National Enterprise Development Policy						
NEDA	Formulate the National Geographical Cluster	Establishment of the Geographical Cluster Development	Establishment of the Common Service Center	Establishment of E-commerce & Management Information	Development of the program for the promotion of research &	Introduction social insurance scheme for the employees of	Development of the Self-help Organization of the Cluster as a Credit

	Development Program	Division		Bureau	development partnerships (RTPs) with external entities and the cluster firms	cluster firms	Guarantee Company.
IDB	Design the Project Proposal for the Common Service Centre				Program for Technology Sourcing & Technology Transfer implemented through Business Clinic Visits		
ATI		Establishment of Industrial Incubator for Woodwork Trainees Establishment of Furniture Display Centre				Undertake Skill Intensity Survey of the Cluster Assess competency level of cluster Employees and Certify the same	
EDB	Design the Project Proposal for the establishment of International Furniture Exhibitions & Auction Centre for development of exports			Program for the participation of cluster firms in International Wooden Furniture Fairs for export promotion			
IDA-WP		Establish Geographical Industrial Cluster Service Unit					

<u>Academia</u>							
Universities							
UOM					Undertake Technology Audit of Cluster Firms Introduce CAD/CAM technology to cluster firms Contractual Agreements with cluster firms for new process/products development		
UOSriJ					Introduce Timber Certification, Standards Scheme		
Public R&D Institutes							
ITI					Introduce Wood Bending Technology		
<u>Business Sector</u>							
Private Enterprises				Develop Vertical & Horizontal Business linkages	Provision of Business Development Services	Provision of Business Development Services	Provision of Financial Advisory Services
Social Enterprises							
NCCSL		MOU with Chamber of Commerce of Austria					

MWWOC *Public Enterprise Sector* State Timber Corporation		Re-orient as a social enterprise to be the Self-help Organization of the cluster		Organize Furniture Fairs & Display Centre	Establishment of Technical Services Centre as a Public Private Partnership .		
Global Development Partners Bi-lateral Collaboration Multi-lateral Collaboration		Sri Lanka – Canada Technology Cooperation for Cluster Development		UNIDO Technical Assistance for the Sub-contract Exchange			

Abbreviations:

MED&IP= Ministry of Enterprise Development & Investment Promotion
NEDA = National Enterprise Development Authority
IDB = Industrial Development Board
EDB = Export Development Board
IDA-WP = Industrial Development Authority- Western Province
UOM = University of Moratuwa
USri J = University of Sri Jayawardenepura
MWWOC= Moratuwa Wood Workshop Owners (Guaranteed) Company

6.8 Development Plan for WCFC

6.8.1 Vision

To improve the efficiency of the furniture industry in the country to serve domestic market and to increase the exports of wood products

(Quoted from TOR)

6.8.2 Goal

To seek world recognition as a Cane Furniture Cluster

6.8.3 Grand Objective

To transform the Wewaldeniya Cane Furniture Cluster (WCFC) from its informal form to an organized cluster form

6.8.4 Targets

- Increase of Domestic Sales by 20% per annum
- Increase of Exports by 15% per annum
- Change in Product Mix- - Green furniture (Cane & Other Natural material combined furniture) increased by 5%
  - Advanced Designed Cane Furniture increased by 15% per annum

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6.8.5 Strategies

- Promote Vertical Linkages between Cluster Firms and Global Cane Furniture Manufacturers
- Promote Horizontal Linkages among Cluster Firms
- Make Advanced Design Cane furniture
- Introduce cane and other natural material mixed cane furniture as green furniture
- Rationalization of Supply Chain Management

6.8.6 Development Plan Matrix

The development programs and projects based on the policy instruments applied to operationalize the above-mentioned development strategies are presented in the Development Plan Matrix presented below. Vide Table 6..

Table 06

Development Program & Projects –Wevaldeniya Furniture Industry Cluster

Focus: Transformation of Organized Cluster into Innovative Cluster

Development Management / Development Partner	Policy Initiatives Public / Business	Institutional Framework Development Public/ Non Public	Physical Infrastructure Development	Marketing Development	Technology Development	Human Resources Development	Financial Resources Development
Public Sector							
MED&IP	Inclusion of Geographical Cluster Development as a Policy Initiative of the National Enterprise Development Policy						
NEDA	Formulate the National Geographical Cluster Development Program	Establishment of the Geographical Cluster Development Division	Establishment of the Cane ware Emporium Establishment of the Common Service Centre	Establishment of E-commerce Centre Establishment of Design Development Centre	Development of the Program for the Promotion of Research & Development	Introduction of the Social Insurance Scheme for the workers of the cluster firms	Development of the Self-help Organization of the Cluster as an Intermediary for Micro Financing
IDB			Formulate the		Develop a		

			project Proposal for the Common Service Centre		program for technology transfer and upgrading		
UDA			Formulate the project proposal for the Cane ware Emporium				
NDC				Formulate the project proposal for the Design Development Centre			
NAITA						Asses the Skill Levels of cluster employees and certify their capability Design a skill development program after ascertaining the training needs through a skill intensity survey	
EDB				Promote Export of cane furniture through participation at International Fairs etc			
BOI			Reserve Plots in Mirigama Export Processing Zones for Cane furniture exporters				

IDA-WP		Establish a Cluster Service Unit		.			
Academia UOV&PA UOPA				Development of New Design for Cane ware	Development of new machinery for cane shearing & winding		
Business Sector Private Enterprises Cooperative Enterprises National Cooperative Council of Sri Lanka		MOU with National Cooperative Council of the Philippines		Develop Vertical & Horizontal Business Linkages	Promotion of Business Development Services	Promotion of Business Development Services	Promotion of Financial Advisory Services
Global Partners Bi-lateral Multi-lateral		Technical Assistance from Canada for Cluster Development Technical Assistance from International Centre for Bamboo &					

		Rattan					

7. Project Proposals

7. 1 A summary of the project proposals to be developed under the cluster development program is presented below. Vide Table 07.

Table 07: Schedule of Project Proposals

Title of Project Proposal	Project Proposal Developer	Funding Agency	Project Period	Reference
Technical Assistance for Cluster Development	NEDA	CIDA	2008-2010	
Research & Technology Partnerships	NCCSL	Austrian Chamber of Commerce	2008-2011	
Research & Technology Partnerships	National Cooperative Council of Sri Lanka	International Cooperative Alliance	2008-2011	
Technical Assistance for Cane Cultivation	NEDA	International Centre for Bamboo & Rattan	2008-2012	
E-commerce Centers	NEDA	ICTA- Sri Lanka	2008-2010	
Common Service Centers	IDB	NEDA	2008-2009	
Technical Service Center	IDB	NEDA, STC, IDB and the Private Sector	2008-2009	
Cane Ware Emporium	UDA	NEDA & UDA	2008-2009	

8. Monitoring & Evaluation Mechanism

8.1 The monitoring & evaluation mechanism (MEM) for cluster development established at NEDA will track the performance indicators of the following:-

- Cluster Firms
- Whole Cluster
- The Self-help Organization

8.2 In addition to the monitoring the performance of those actors of the cluster, MEM will assess the effectiveness of the policy measures/ instruments used for cluster development by evaluating the following outcomes:-

- Economic Development-- Value Addition, Exports, Tax Income
- Social Development- Employment, Social Harmony, Drugs & Alcoholism
- Technology Development- Patents, New Products, New Process, Alternate Energy Development
- Human Resource Development- Skill Levels, Number of Scientists, Technologists and other Professionals
- Management of Environment- Waste Disposal

8.3 The consultants recommend that a baseline survey of each cluster has to be undertaken by NEDA to determine the current statistical base of each performance indicator and the current level of achievement for the outcomes. The findings of the survey can be validated by using the data of the Annual Industry Surveys undertaken by the Department of Census & Statistics and the IDA-WP.

8.4 The consultants further recommend that the following measurers be taken to improve the quality and reliability of the data collected from the cluster-

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- Every month Progress Reports from the cluster-firms be collected and sent to NEDA by the Self-help Organization of the cluster.
- A questionnaire be sent to the cluster firms by NEDA and it may collect the filled questionnaire directly

- Periodical inspections of the cluster firms may be undertaken by NEDA and IDA-WP to ascertain the progress of the transformation of the cluster.

9. Conclusions & Recommendations

9.1 Conclusions.

9.1.1 Wooden furniture industrial firms of various sizes and cane furniture industrial firms mostly of micro and small sizes are clustered respectively in Moratuwa and Radawadunna (Wewaldeniya) and those agglomerations resemble the characteristics of geographical clusters

9.1.2 These geographical clusters are spontaneous clusters and almost all the firms in these clusters have their beginning as micro enterprises and recorded a gradual growth within the cluster.

9.1.3 Most of the renowned furniture clusters with globally competitive cluster firms have grown out of spontaneous clusters through a transformation process with three forms of development stages - informal, organized and innovative.

9.1.4. Moratuwa Wooden Furniture Cluster (MWFC) has the characteristics of an organized cluster and the Wewaldeniya Cane Furniture Cluster (WCFC) resembles an informal cluster.

9.1.4 Development of these two clusters towards globally competitive clusters requires the ascertaining of competitiveness determinants, applying appropriate policy measures and fostering self-help organization within the cluster.

9.1.5 Each cluster has cluster –specific development constraints and common development constraints. Hence without developing a common development Program separate development plans have to be formulated for each cluster

9.2 Recommendations

9.2.1 Adopt a scientific approach for development of MWFC & WCFC - i.e The Cluster Transformation Process

9.2.2 Research & Technology Partnerships (RTPs) be established between the successfully transformed furniture clusters and these two furniture clusters to adopt the best practices

9.2.3 Obtain international technical assistance for cluster development from bilateral and multilateral sources

9.2.4 Strengthen a Self-help Organization within each cluster to entrust the governance of the cluster as an exit strategy of the Government

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10. Action Plan

10.1 The Action Plan for the implementation of the Recommendations of this Consultancy Report is presented below. Vide Table 08.

Action Progam

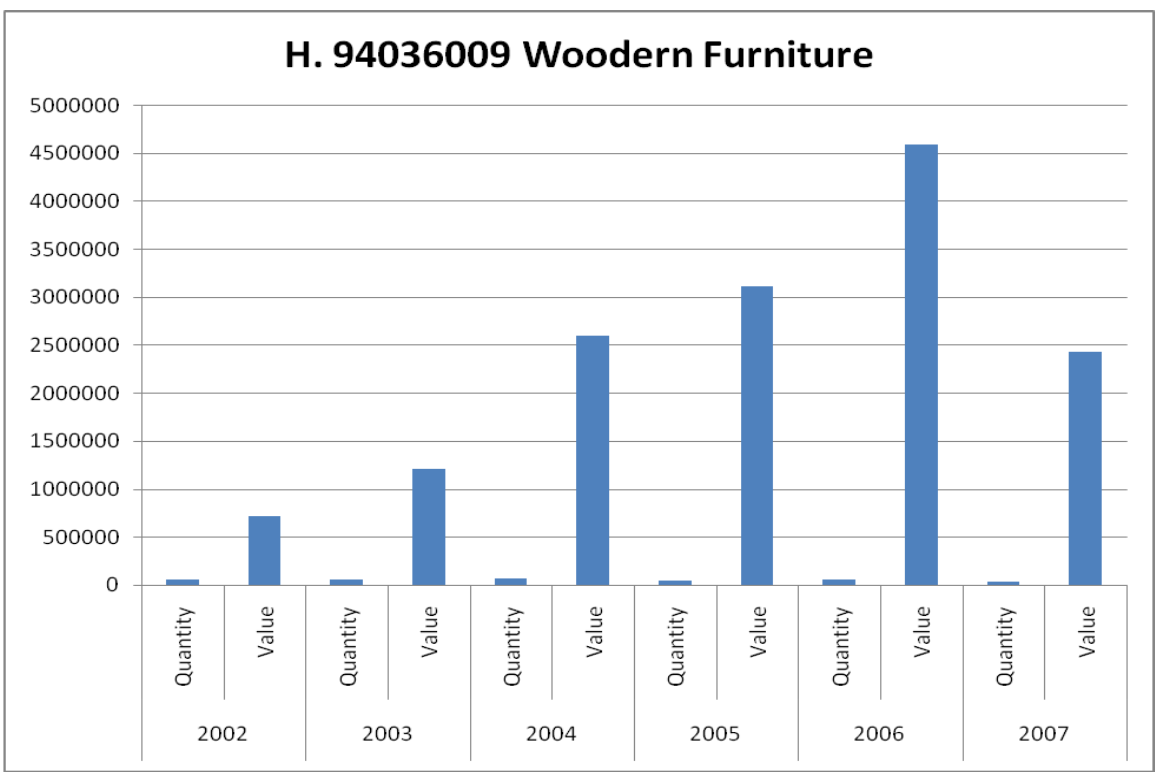
Responsible Agency	Related Agencies	Action Program	Reference	
			Main Report	Appendix
MED&IP	**NEDA & Stakeholders of Geographical Clusters**	**Formulation of National Policy on Development of Geographical Clusters**	**6.4.3**	
NEDA	**Business Chambers, R&D Institutions and other Stakeholders of Geographical Clusters**	**Development of National Geographical Cluster Development Program**	**6.4.4**	
MED&IP	**NEDA IDB & EDB,**	**Designation of NEDA as the National Agency for Development of Geographical Clusters**	**6.4.11**	
MED&IP	**NEDA**	**Declaration of Moratuwa Wooden Furniture Cluster and the Wewaldeniya Cane Furniture Cluster as Special Economic**	**6. 4.15**	

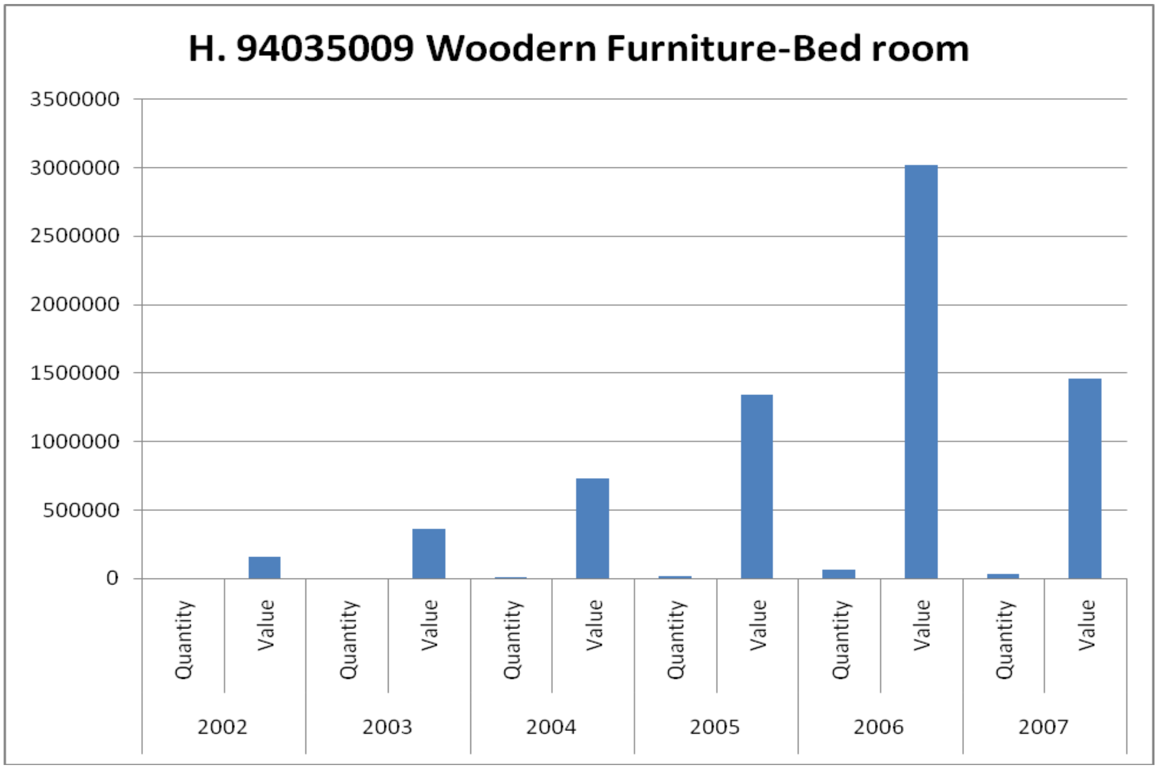
		Zones		
NEDA	**IDB &STC**	**Establishment of Technical Services Center for provision of Kiln Drying Services and Treatment Services at Moratuwa as a Public-Private Partnership**	**6.5.11**	
NEDA	**IDB**	**Establishment of a Common Service Center at Moratuwa**	**6.5.20**	
NEDA	**UDA**	**Establishment of Cane furniture Emporium and Design Center at Wewaldeniya**	**6.6.19**	
NEDA	**IDB**	**Establishment of a Common Service Center at Wewaldeniya**	**6.6.12**	
NEDA	**ATI**	**Establishment of Industrial Incubator and Furniture Display Centre at Katubedda**	**6.5.16**	
NEDA	**EDB, NEA, Airport & Aviation Authority and MWWOC**	**Development of Project Proposal to establish an International Furniture Exhibition & Auction Centre at Ratmalana**	**6.5.26**	
NCCSL	**SCC**	**Signing of MOU between the Salzburg Chamber of Commerce of Austria and the National Chamber of Commerce of Sri Lanka**	**6.5.28**	**Attachment:3**
UOSJ	**ICBR**	**Signing of MOU between International Centre for Bamboo and Rattan (ICBR) and the University of Sri Jayawardenepura (UOSJ)**	**6.6.7**	
SLNCC	**NCCP**	**Signing of MOU between National Cooperative Council of the Philippines (NCCP) and the Sri Lanka National Cooperative Council**	**6.6.21**	
MF&P, MED&IP and NEDA	**The Government of Canada**	**Bilateral Technical Cooperation Agreement between the Government of Canada and the Government of Sri Lanka for Cluster Development**	**6.6.22**	**Attachment:2**
MF&P,MED&IP and NEDA	**UNIDO**	**Multilateral Technical Cooperation Agreement between the Government of Sri Lanka and the United Nations Industrial Development Cooperation (UNIDO) for establishment of Sub-contract Exchange for**	**6.5.25**	

		Cluster Development		

Attachment 01

The Mixed Range of Furniture Exports

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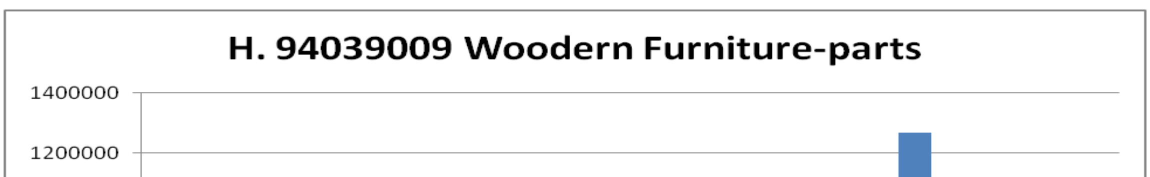
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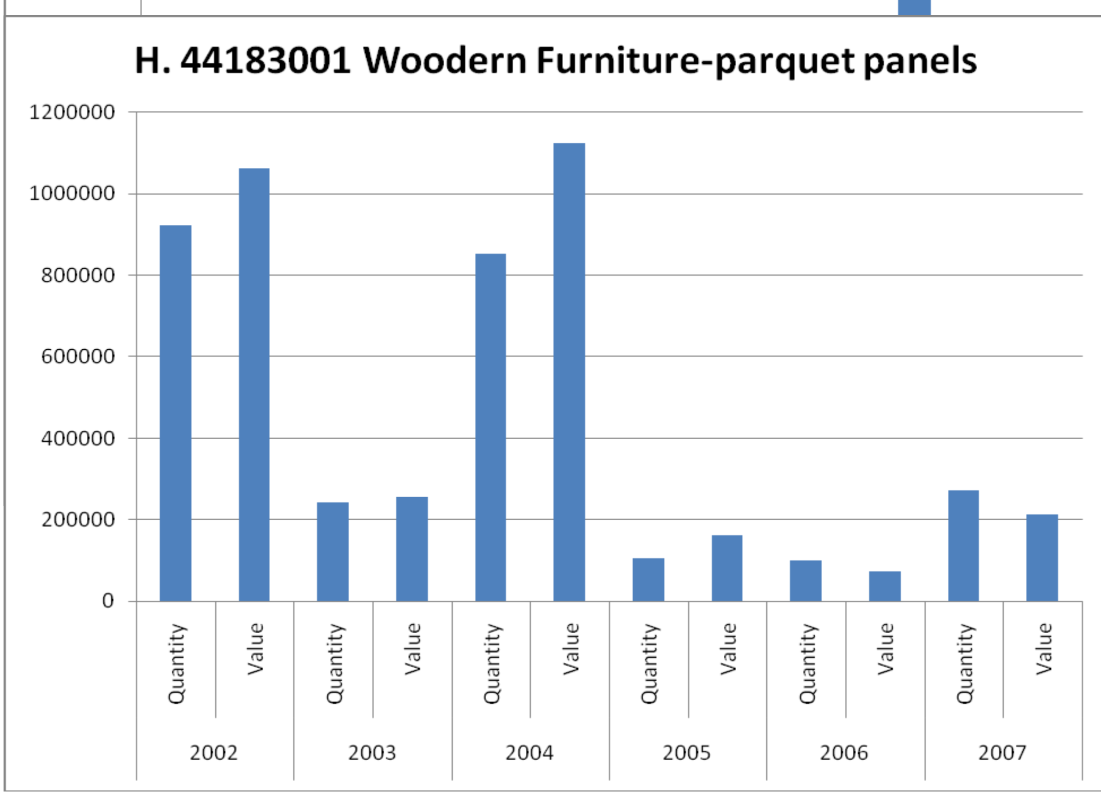
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Value
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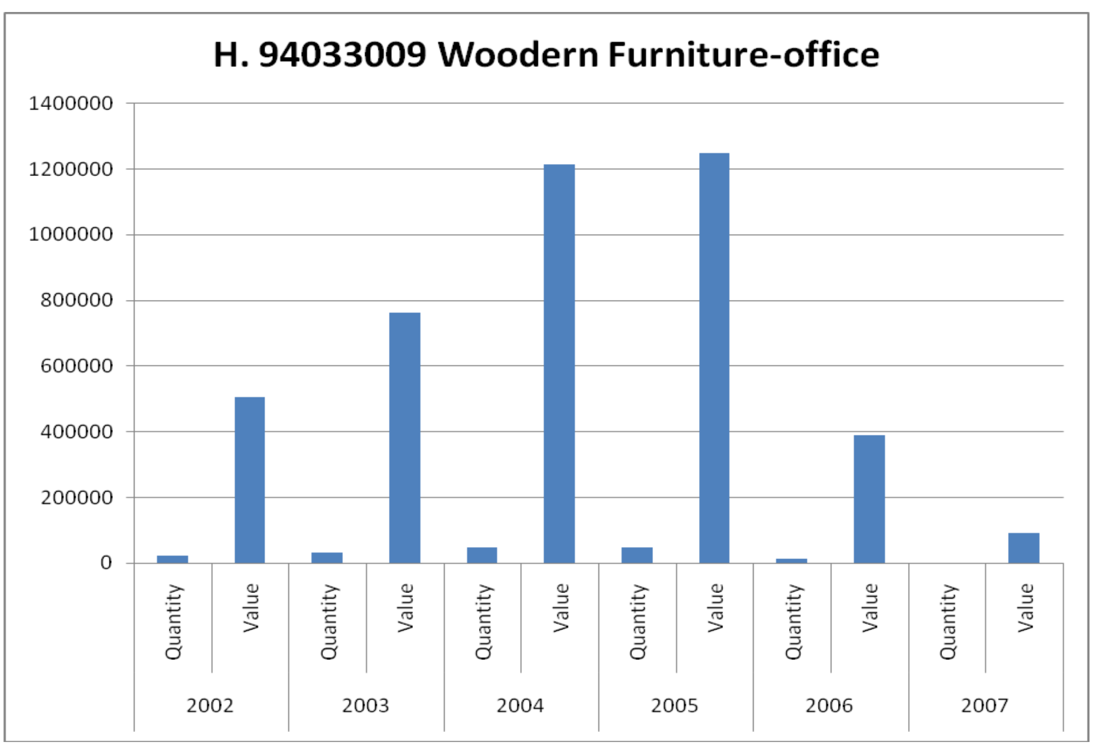
2005
2006
2007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2004
2005
2006
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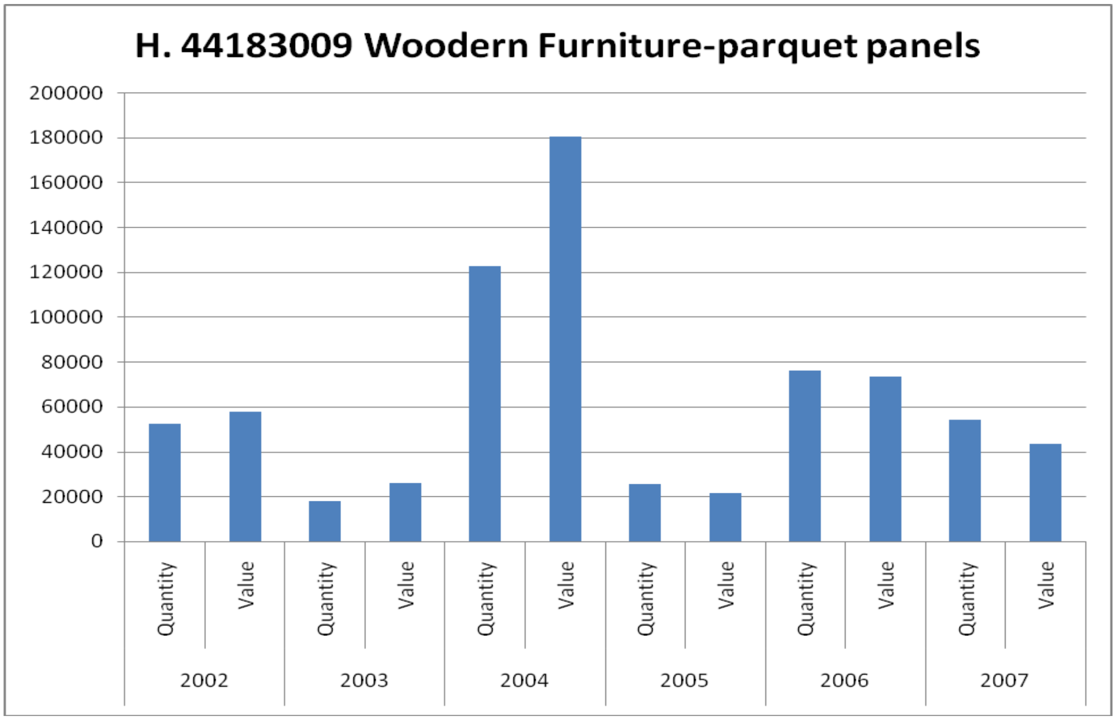
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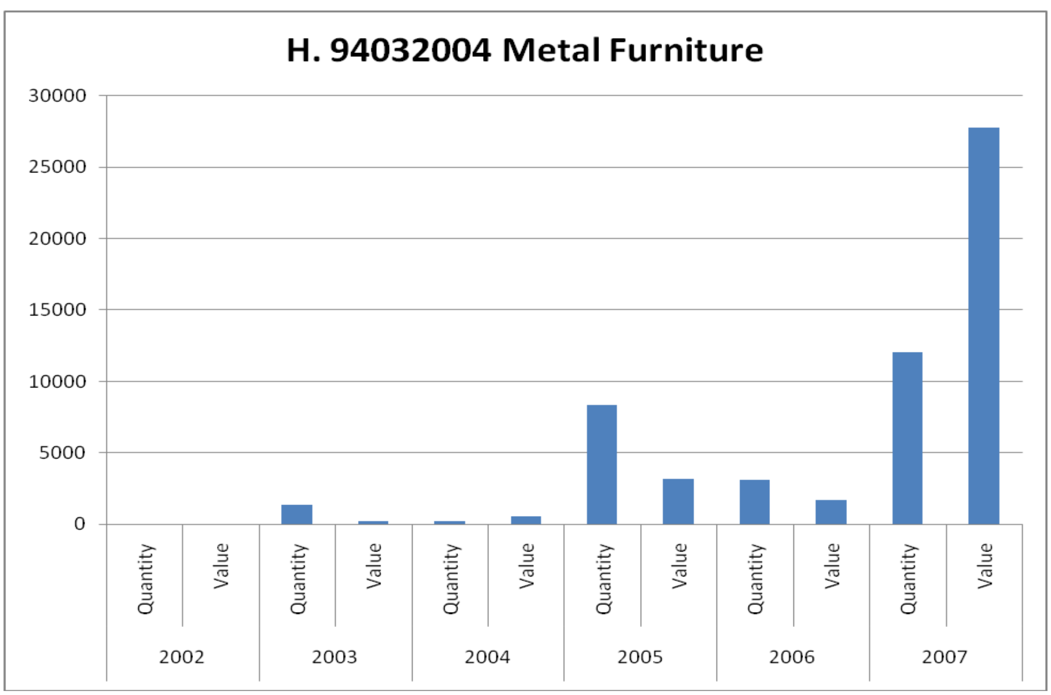
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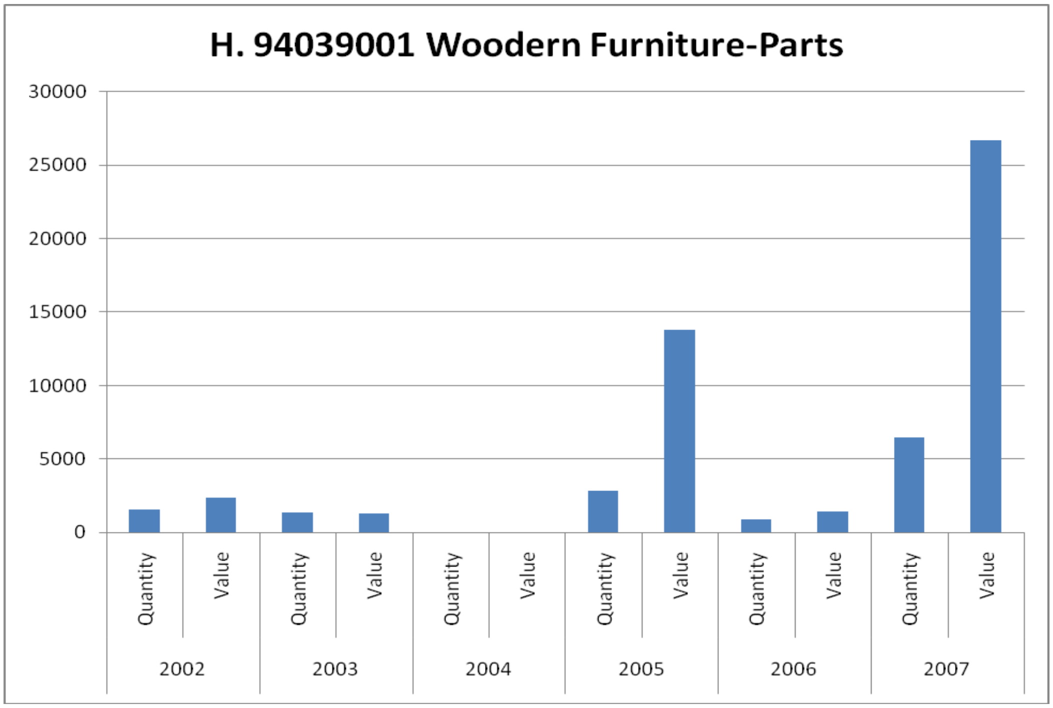
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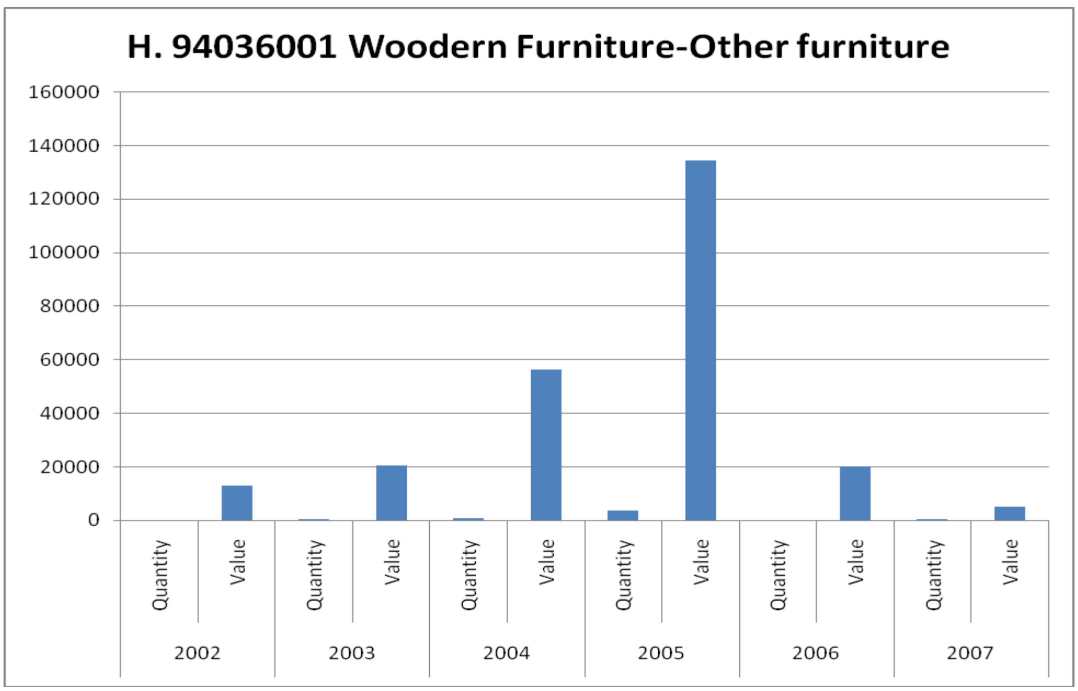
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Value
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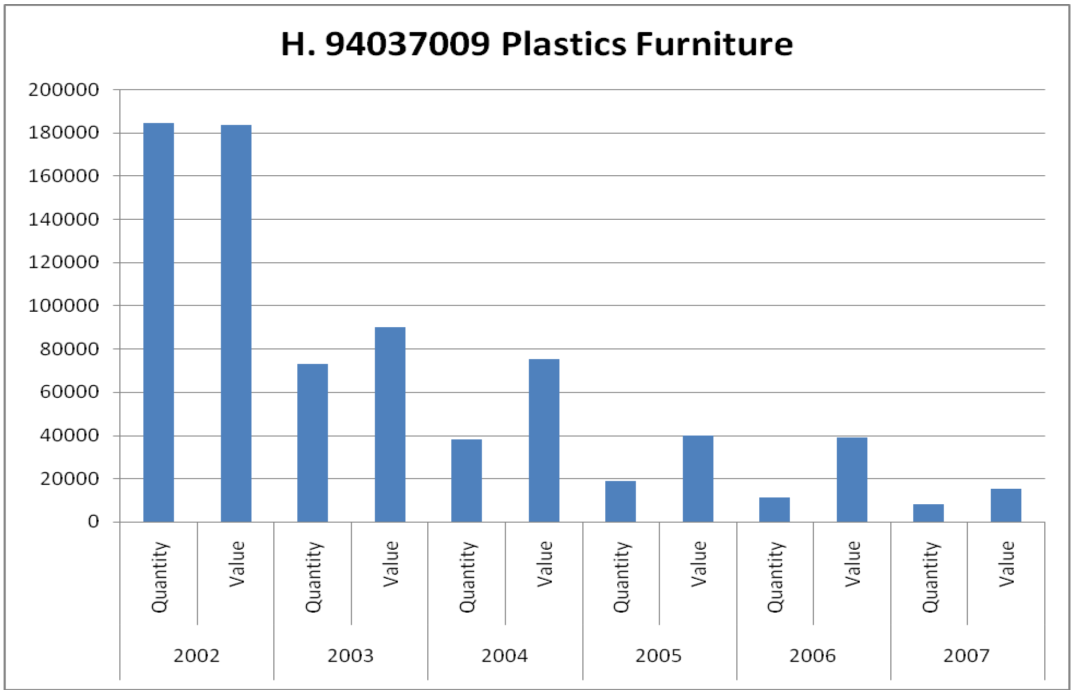
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Quantity
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2006
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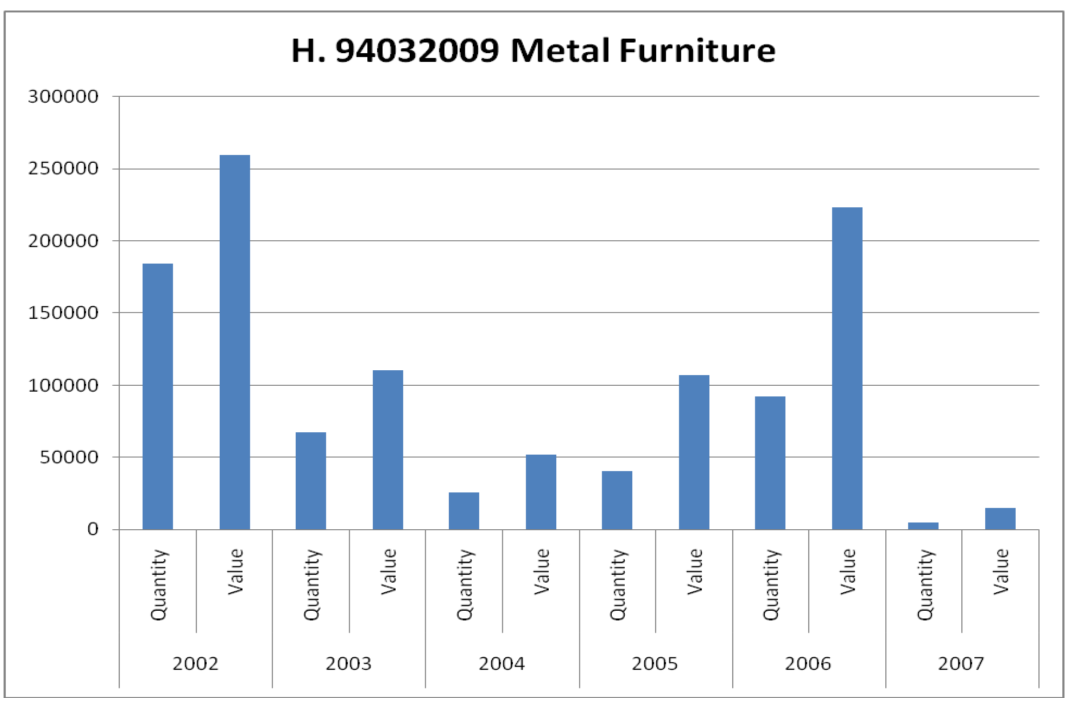
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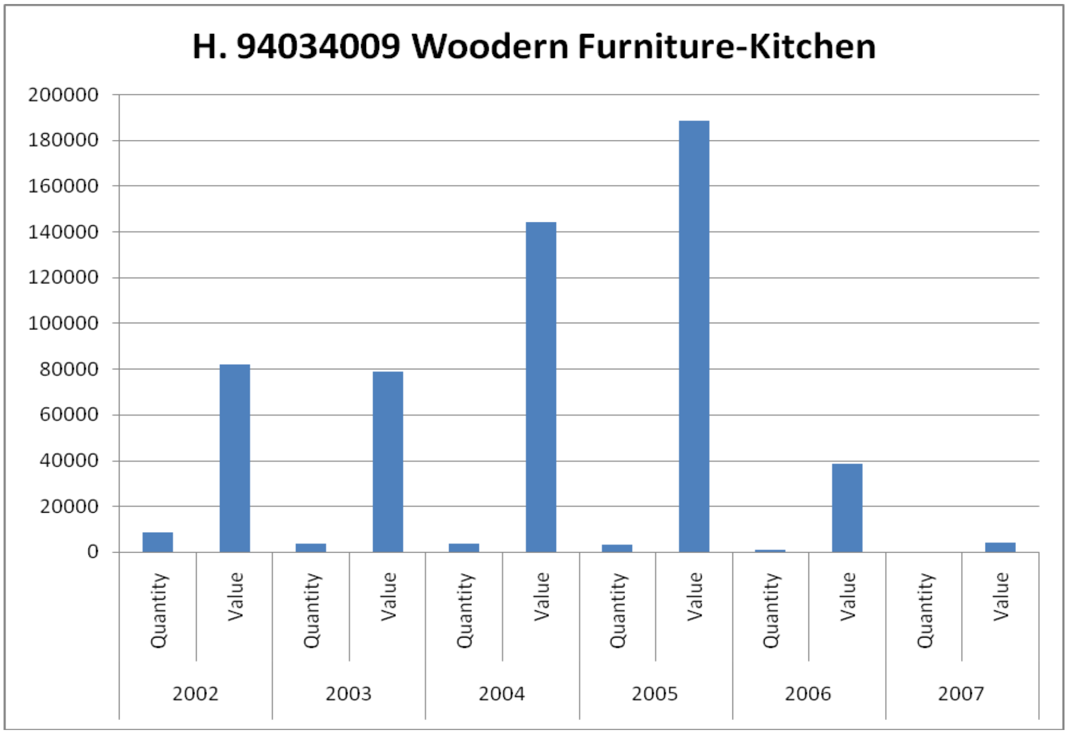

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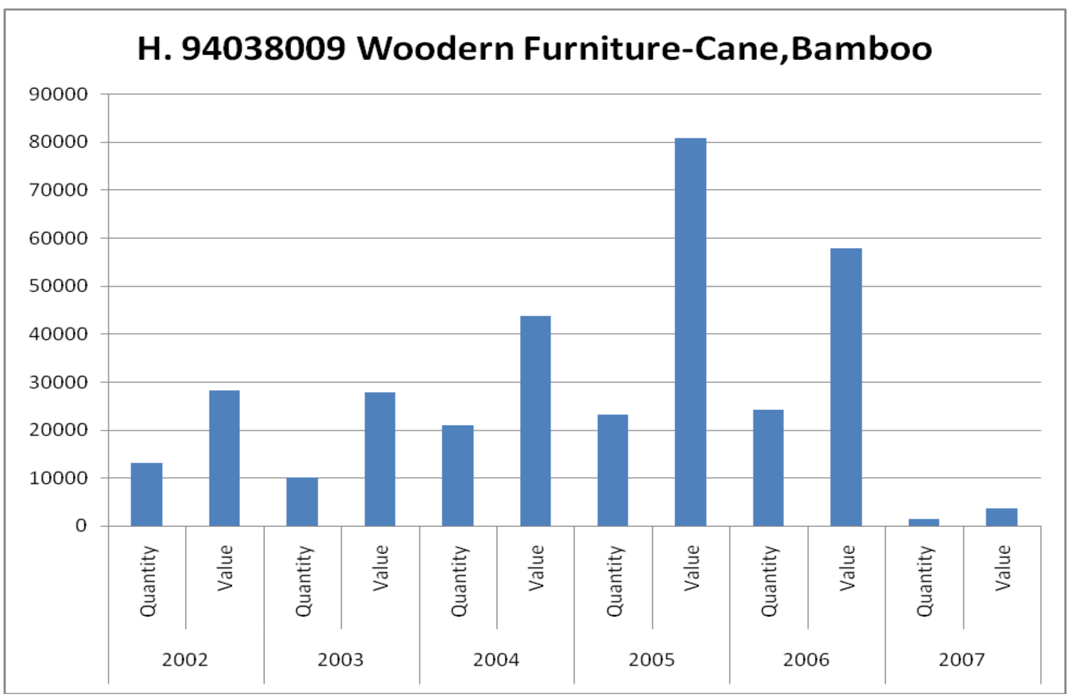

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Value
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2004
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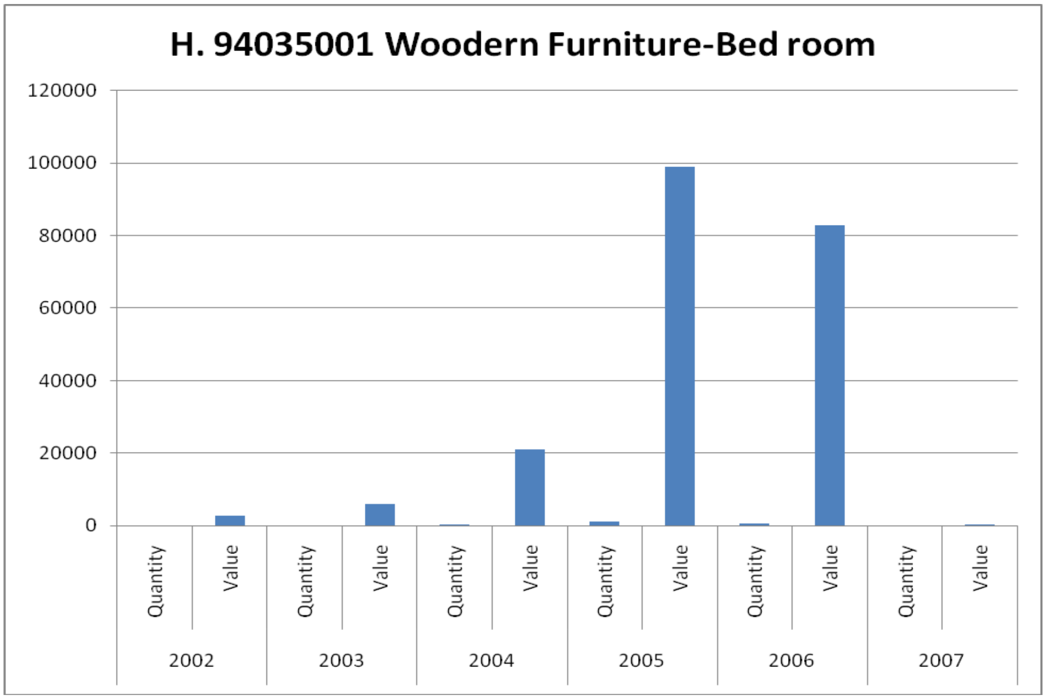
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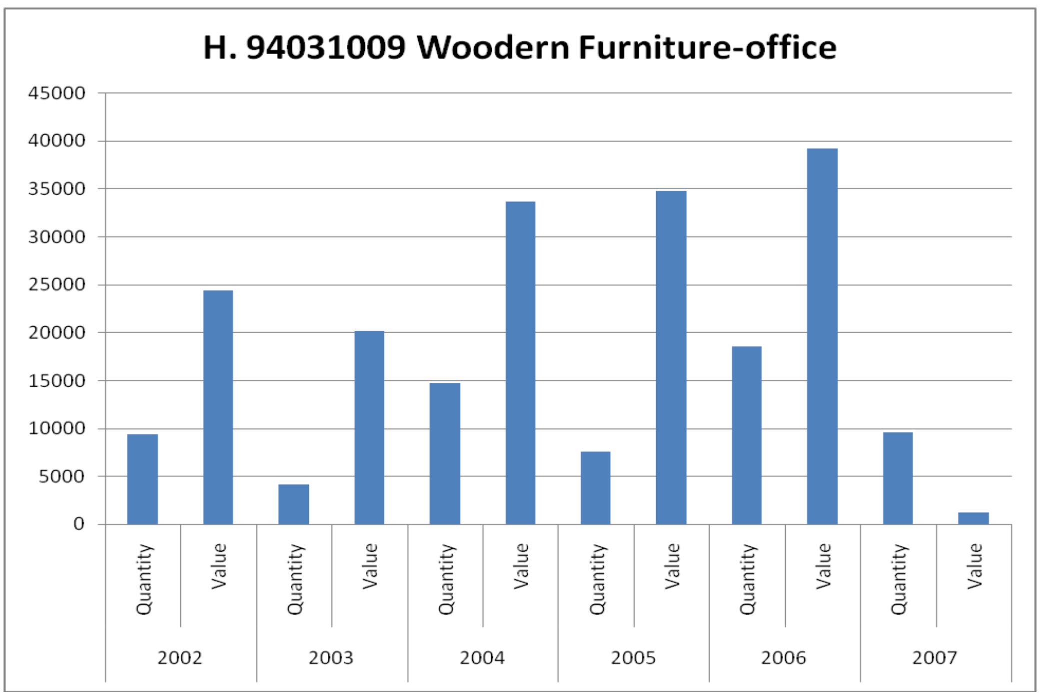
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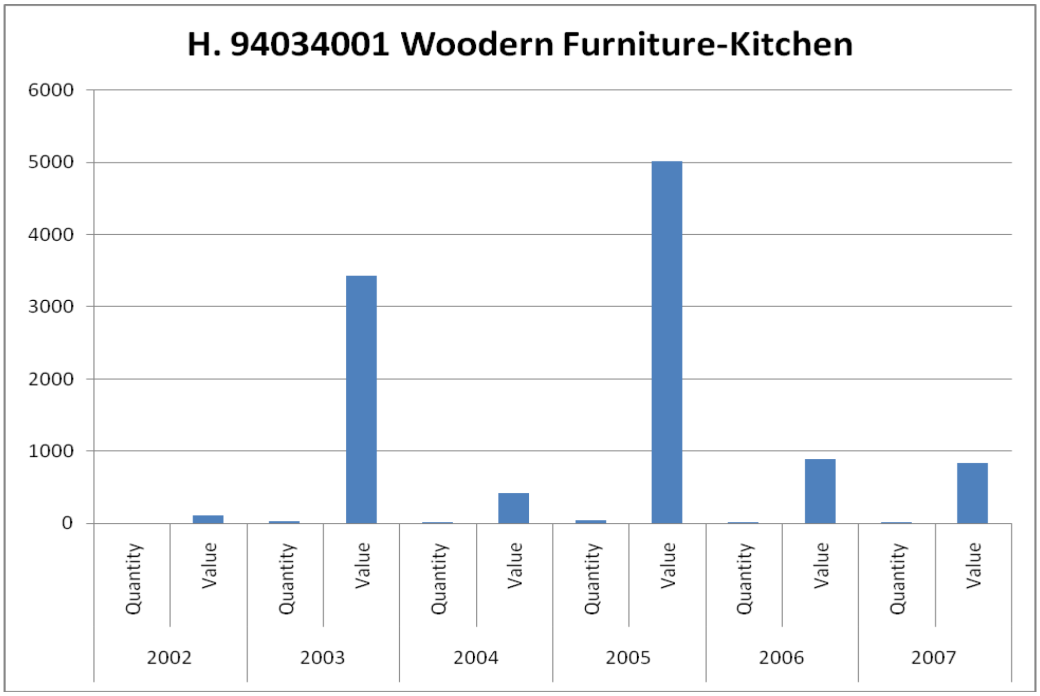
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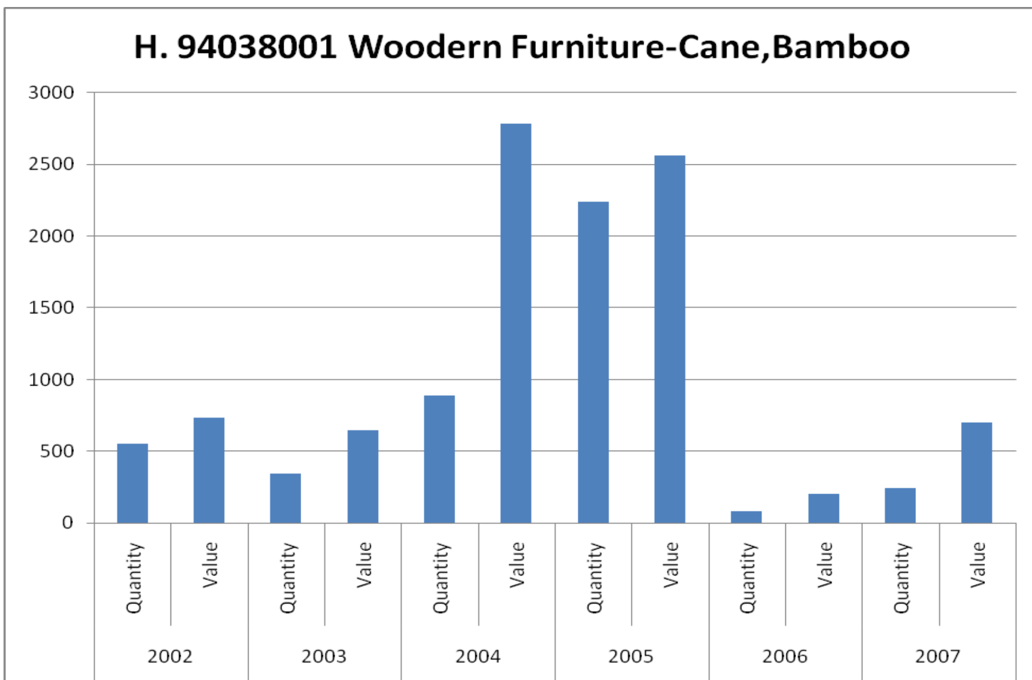
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Quantity
Value
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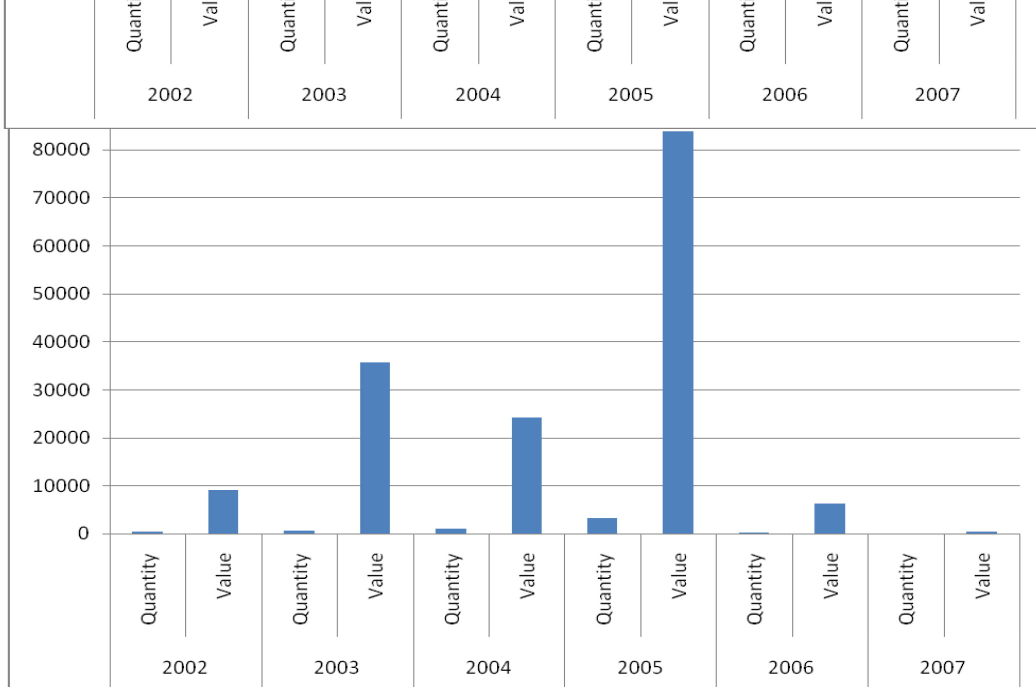
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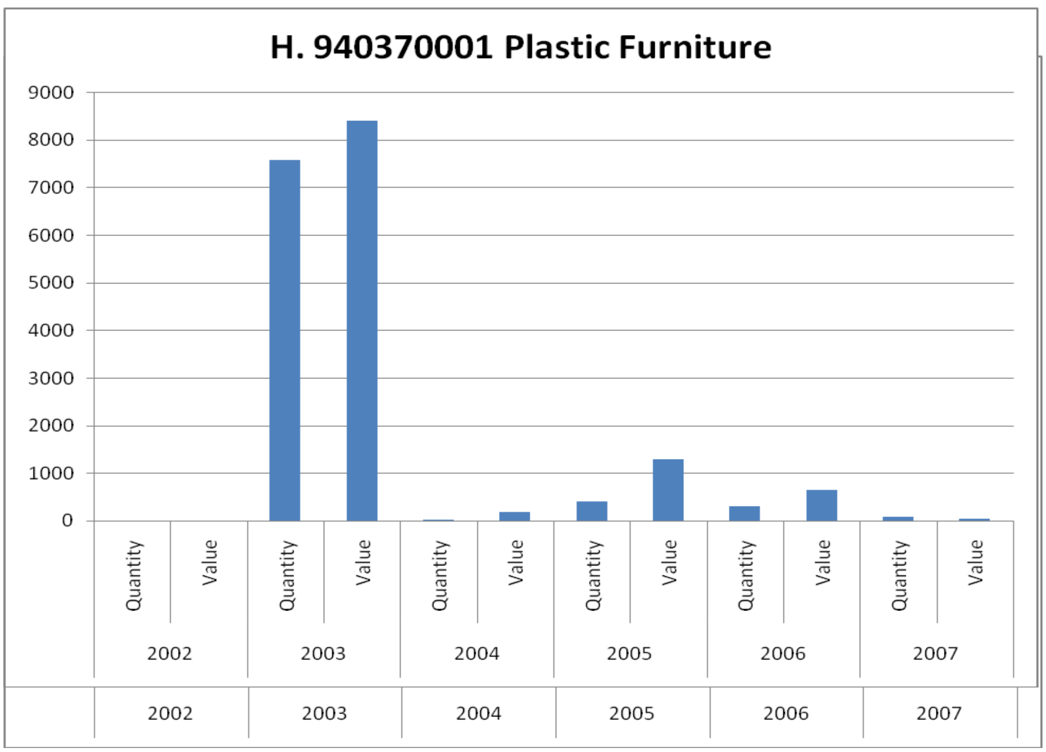
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4000
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Quantity
Value
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H. 940360 Woodern Furniture
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2004
2005
2006
2007


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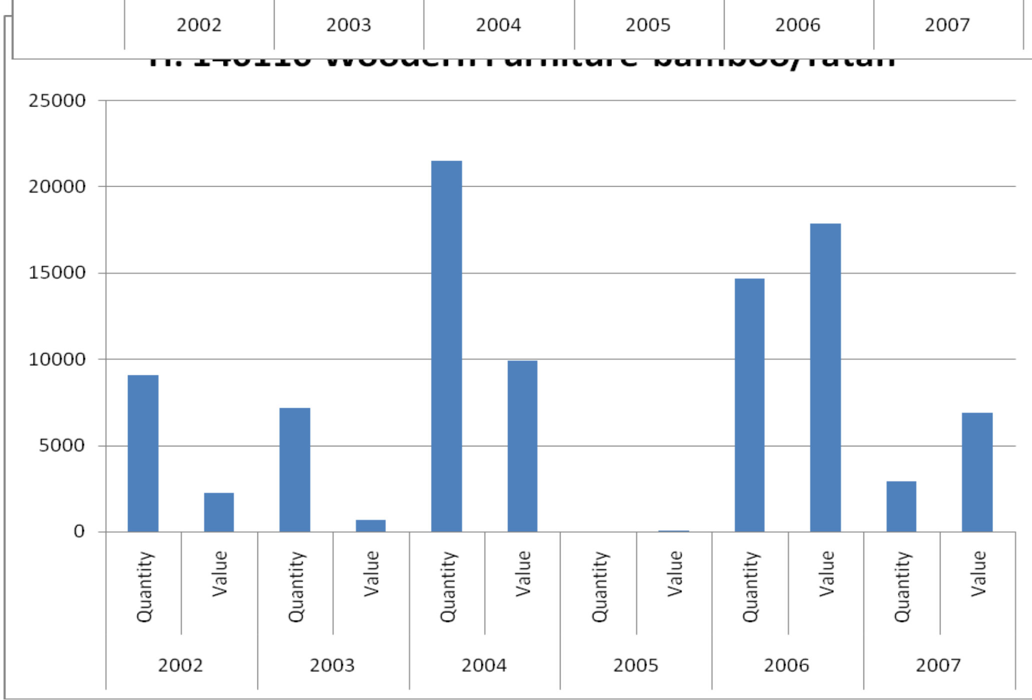
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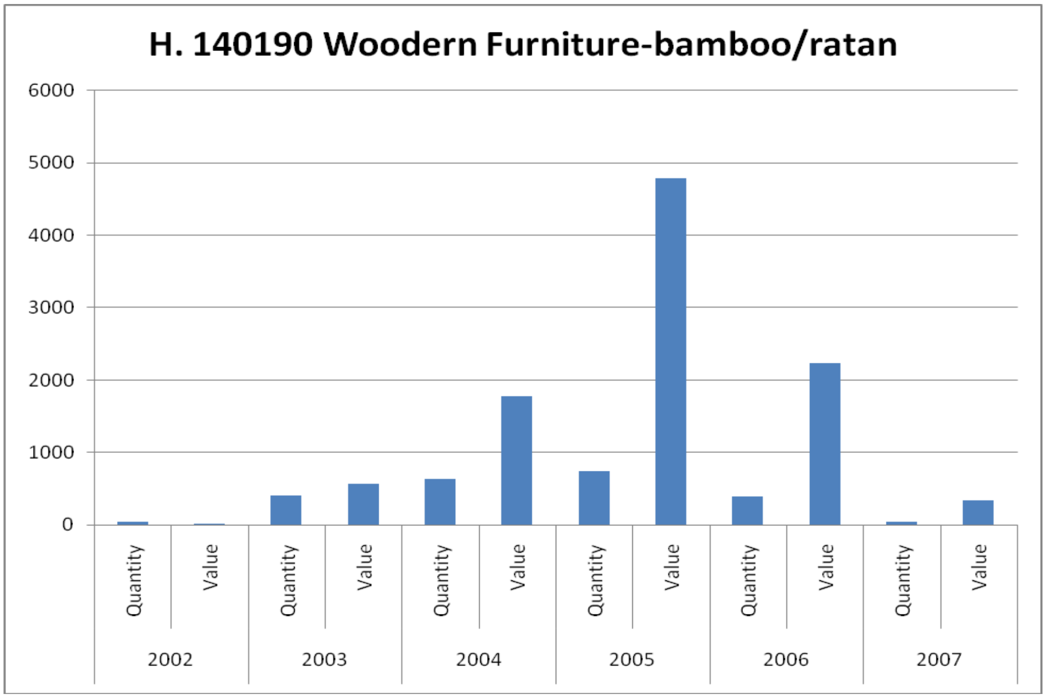
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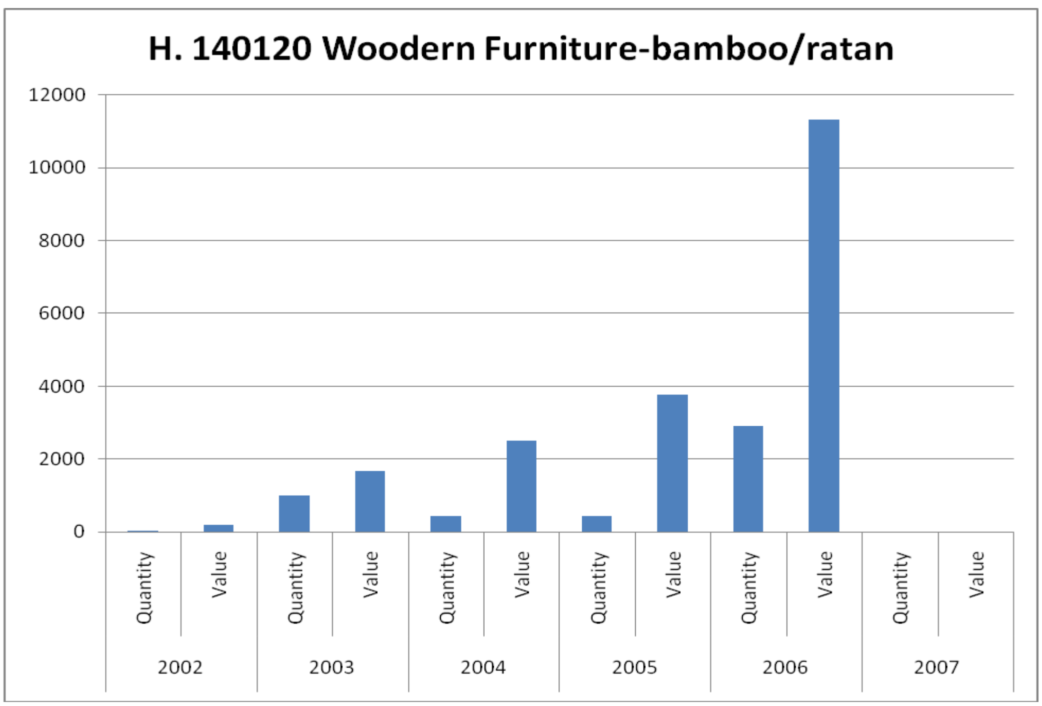
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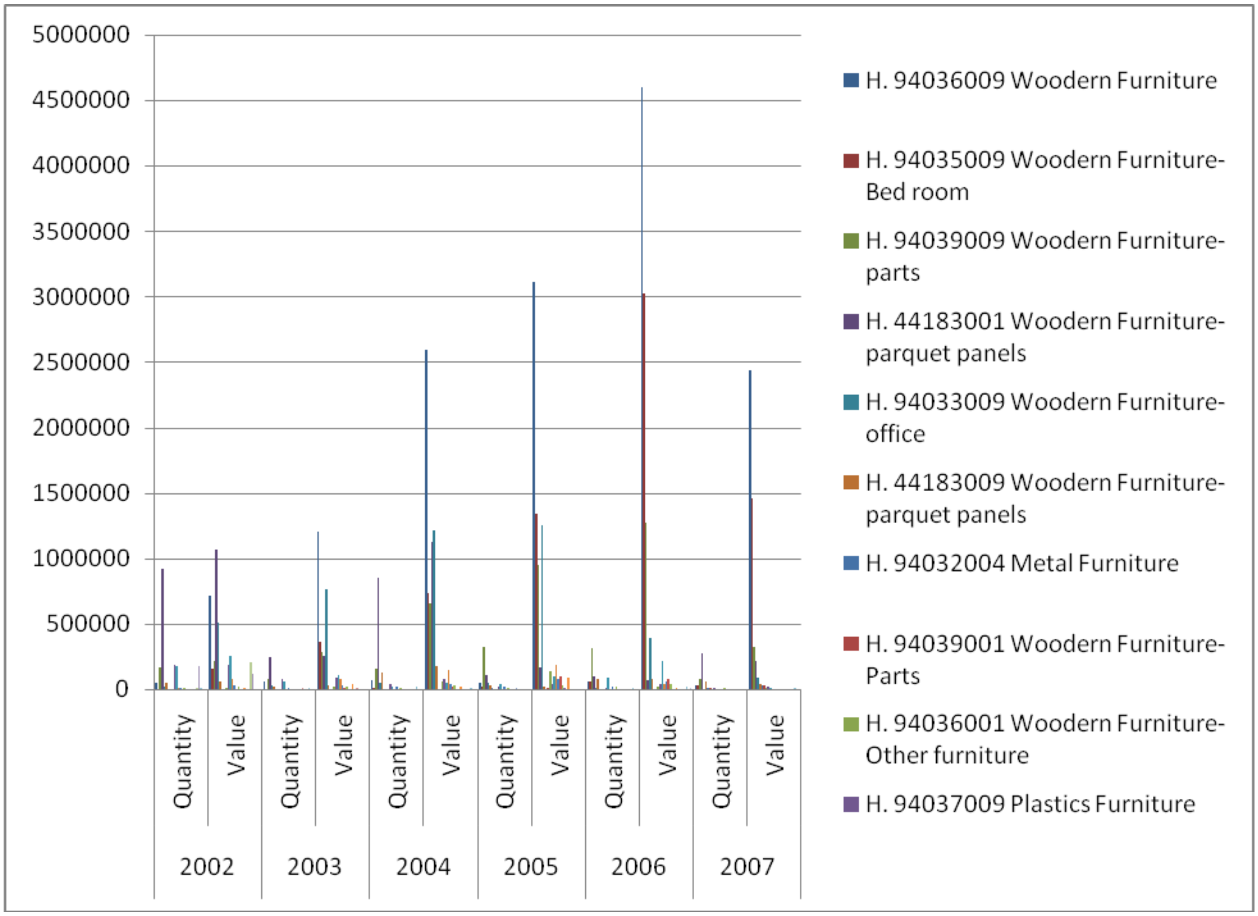

Source: Export Development Board of Sri Lanka

Attachment 2

The Private Enterprise Participation [PEP] Project

Cluster Development

The Cluster TA Platform

- Canadian technical assistance to clusters of like SMEs constitutes the core programming area of the PEP Project today
- The work PEP is doing with individual clusters may last for two years or more
- Much in the way of human and financial resources will be invested in individual clusters
- The competition for selection, and the PEP Management Team's criteria for selection, are both very acute
- A protracted search and research period, followed by an exhaustive, prerequisite 'baseline' or entry-data analysis, combine to pay significant returns on the resources invested, over the course of time.
- PEP endorses the creation of Associations to stimulate cluster activities. This concept is based on the fundamental axiom that the new whole is stronger than the loose collection of its component parts.

Clusters defined [in PEP terms]

- For the purposes of PEP's TA work in Indonesia today, is best defined as: "...a sectoral and geographical concentration of business enterprises."[1]
- The geographic scope of a cluster can range from a single city or state to a country or even a network of countries."[2]

Clusters in the Developing World

- The clusters must be dynamic and the key players in the cluster must buy in
- PEP has taken the approach of 'building on champions' in this regard; first finding 'winners' in the cluster and then concentrating TA efforts on them to develop new products, new methodologies, etc., once the 'winners' are successful, the rest of the cluster will jump on the bandwagon as the word spreads.
- A survey undertaken by Sandee and others [1994] to assess the effectiveness of a cluster development program in Central Java found that TA is relevant and helpful in the case of 'dynamic clusters.'[3]
- Such clusters evince a demand for technical and financial assistance to accommodate growth processes that have been put on track by producers and buyers
- In Central Java case, traders frequently requested that producers in a woven cloth cluster shift to new designs in high demand
- When a dynamic cluster can be identified, the application of TA and linkage mechanisms to outside markets can have an extremely positive and measurable impact, particularly in the area of business growth and poverty reduction.

TA Support from Seed to Consumer

- The PEP Project has made a general commitment to provide TA to its clusters that will address all of their technical needs, from seed to consumer.
- One-shot, three-week support is not the most desirable approach to proving TA in an exhaustive manner
- The current approach allows for a work plan to be developed, that will accommodate working with a cluster from the seed stage, right through to the consumer.
- With PEP's emphasis on 'dynamic clusters' with export or export-capable competence, the opportunity to provide tangible TA dealing with exports and export markets addresses a major and widely shared weakness for Indonesian SMEs
- Matching Canadian TA Strengths with Demand The Results Based Management process undertaken for the PEP 'Pilot' Project revealed that PEP's most effective work was conducted with manufacturers and processors [i.e., not retailers or members of the service sector].
- Cluster work the new PEP Project is undertaking today is limited to manufacturers/processors, and the concentration is on indigenous Indonesian economic activities, including: wood products, metal products, stoneware/pottery production, agribusinesses and aqua businesses and garments, all of which can be effectively addressed by a plethora of Canadian specialists.

Fulfilling PEP’s Mandate of Poverty Reduction through TA to SMEs

- PEP is restricting itself to working with ‘dynamic clusters’ where the application of Canadian technical expertise has a better than even chance of creating net new jibs, thereby reducing poverty. At the same time, PEP is addressing issues of gender equity and environmental protection in all of its activities
- The early results from PEP’s work with its new cluster partners are very encouraging
- Increased production volumes with the rattan furniture manufacturers in East Java and garment industry members in Bali
- Possibilities for a number of new stoneware products in South Sulawesi, and the promise of ‘pure’ coconut oil production in North Sulawesi.

[1] Alie, Nahruddin, “Helping SMEs to [through... sic] the Network of Relationships: An Overview of the UNIDO Experience,” Program Officer, UNIDO Field Office, Jakarta. Jurnal Teknologi Industri dan Informasi, Vol. 1, No. 2, Desember 2000.

[2] This definition is taking license, in a ‘try anything to see if it sticks to the wall’ approach, with Michael Porter’s characterization of clusters. The above definition is simply a re-phrased version of his definition of clusters [P. 199] to make it a bit more generic. Porter, Michael E., On Competition, A Harvard Business Review Book, 1998.

[3] Sandee, H., P. Rietveld, H. Supratikon and P. Yuwono, 1994. “Promoting Small-Scale and Cottage Industries in Indonesia: An Impact Analysis for Central Java.” Bulletin of Indonesian Economic Studies 30[3]:115-42.

Rattan Furniture Cluster

This district has long been known as an area of traditional wickerwork.

The Association

ASPIRASI- The Association of Rattan Business Centre Cluster is the name of the rattan furniture cluster formed under the auspices of the PEP Project in February of 2002. Through the creation of ASPIRASI, the members of the cluster will be able to benefit from their joint efforts. ASPIRASI is located in the area of Gresik, East Java is located one hour by car from Suribaya.

Ongoing TA

- Providing direct assistance to 40 rattan furniture manufacturers
- Improving plant operations
- Management capabilities, marketing effectiveness
- Networking, cooperative action
- Group training through workshops and individual assistance during factory visits

- Workshops in marketing and production management
- One to one factory visits to advise and assist in developing marketing initiatives, production planning, and productivity improvement through improved plant layout, materials handling, employee and supervisory training, new production and system development

Benefits through ASPIRASI

- Economy of scale in sourcing of Raw Material and Supplies- better pricing and payment terms
- Common Finishing- sale of service by existing companies with finishing capacity/capabilities
- Better price realization from importers- joint negotiations/ open line of communication
- Common/ shared facility of business communication
- Joint show room in the community

Location

The area of Gresik, East Java is located one hour by car from Suribaya

Attachment 3

Wooden Furniture Cluster: Naturally Better

Key cluster concepts: natural resource-based cluster, mixed modern/traditional/‘natural’ product lines, strong national cluster governance, significant Chamber of Commerce involvement, deep national support institutions, multiple-jurisdiction cluster

Description

The region includes six smaller political districts spread over intersecting portions of two adjoining provinces, Salzburg and Upper Austria. The location near wood processing industry suppliers and Germany’s major markets offers significant advantages to the region. The wooden furniture industry in this area comprised in 1991 some 290 firms with about employees. Some firms employ 500 or more, but small firms with only a few employees are the more typical case.

Since nearly half of Austria is covered with wood , there are many wood and paper cluster sites from which to choose when studying one of Austria's most important industries. The value-chain of Austria's solid wood and paper industry yielded a net production value of 114 billion Austrian Schillings (between 3.5 and 4% of the total Austrian production) and a export surplus of nearly 20 billion Austrian Schillings in 1991. The export surplus is achieved mainly by the saw mill and the paper industry.

Although the furniture industry is a net importer relative to national demand, the region between the political districts Hallein and Ried im Innkreis(from south of Salzburg up north to the German border near Passau) hosts some very successful and competitive producers of wooden furniture. The strength of these manufacturers rests on their artistic reflection of nature. They regard wood as much more than a simple input; it is seen as a marvelous, irreplaceable element to be artistically revealed in the end product. The furniture industry segment of the wood and paper cluster presents an environmentally attractive sub-group for study, due to its low-impact dependency for natural resources. The region offers valuable opportunities to see how respect for sustainable inputs easily coexists with economic success, and how industrial clusters are governed by well organized national and regional Chambers of Commerce.

Product Market Scope

The district produces furniture in all fields: chairs and seats, office shop furniture, wooden kitchen furniture, and other furniture. The production of the large scale producers addresses the high quality and high price market segment. Their production is preferably distributed under brand names through selected chain stores. Sales abroad often exceed the national sales.
In contrast, small firms produce individually designed, high quality products for limited local markets. Their problem is that prices are often not competitive. Small firms occasionally overcome this disadvantage through high flexibility and specially designed pieces, although such firms are among a small minority.

Performance

Performance of the region's furniture industry can be judged only after distinguishing between two groups: small manufacturers that face severe competition from cheap products offered by big chain stores, and large scale producers that are able to increase both export and national sales quite dramatically. In the first three quarters of 1997, Austrian exports in furniture increased by 24% in comparison with an 13% increase in imports. Although Austria remains a net importer of furniture, Team 7 managed to export 75% of its production in 1996 to countries like Germany, Italy, Switzerland, and Japan. It and other large firms in the region are equipped with the newest production technologies bought on the international market.

Computer-assisted-technologies are now responsible for production in the large firms. In addition, these firms possess laboratories for material testing and product development. The large firms are supplied with inputs from all over Austria. However, the most important production factor - highly skilled labor - is recruited from the regional labor market. Certain large firms such as Voglauer enjoyed continued success with high quality farmhouse style furniture, while others were forced through the 1979 recession to change their strategy. Team 7, for example, moved to the production of naturally treated solid wood furniture. Team 7 was a pioneer in the modern field of "natural living". Other leading firms in the region have explored similar opportunities to produce furniture" in harmony with nature". Tradition and nature are the key words that now describe product lines of local firms.

By entering their market niche early, regional firms have re-shaped themselves successfully for international competition. Their success stimulated the local wood industry such many small firms have now become recognized suppliers of high quality products.

In sharp contrast, other small firms remain unable to buy more advanced or even use their existing machinery efficiently. Material tests have to be conducted off-site in institutes like the"Austrian Forest Products Research Laboratory"(Österreichisches Holzforschungsinstitut).Inputs supplied mainly by local firms means that the negotiation space on price or specifications is necessarily limited. Thus, the performance is quite uneven between these two groups of manufacturers. This is partly expressed through a divergence in their relative ability to react to recent developments in demand and available technologies. However, some Austrian success stories show that space remains for small firms willing to cooperate as a means of overcoming inherent size disadvantages.

Organization

1. Firms

In 1991, approximately 300 local furniture manufacturers employed 5,800 workers. However, a few outstanding firms figure more prominently in this picture of the region. They are responsible for the good international reputation this region enjoys as a furniture producer. For example, Team 7 is one of the ten best known furniture producers in Germany (in Austria it is the best known). These firms all engage in the production of high quality end-products with special emphasis on tradition and harmony. Several regional firms supply key technologies (CAD and CAM systems) and woodworking machine-tools to the cluster.

Key Firms:

- **Team 7:** Team 7 specializes in the production of natural furniture, meaning only special timber from Austria and other natural materials are used in production. When production cannot be done in-house, production partners are sought. Team 7 and three other firms cooperated recently to provide jointly needed worker training and education. In 1997, the 410 employees of Team 7 produced turnover valued at 750 million Austrian Schillings. Germany, with 60% of total sales, has been the most important national market, followed by Austria (25%), Switzerland (7%), and Japan (3%). Although formal cooperation with the Holztechnikum Kuchl (a combined vocational training and research center for wood) is rare, HTL Mödling (school and testing lab for wood industry) is extensively involved in various Team 7 activities.

- **Voglauer Möbel:** Voglauer Möbel employs 600 employees to produce traditional hand painted furniture; it also specializes in the design and furnishing of complete hotel rooms. In the latter case, the firm cooperates with other design/production partners (regional and national) to supply a complete solution to the customer. In the case of hand painted furniture, the firm cooperates with regional seat and chair producer HASAG to offer a complete product line. The product line emphasizes traditionally designed furniture. The design is done in-house by highly qualified craft-workers. Production machinery is bought in Germany, but all other inputs are supplied by Austrian firms.

- **Wiesner-Hager Möbel:** Wiesner-Hager is specialized in the production of seats, chairs and office furniture. The design of the furniture is all done inhouse. The firm cooperates with Team 7 to offer a combined training program. 460 employees produced furniture valued at 520 million Austrian Schillings in 1996. The export share was 36%, with Germany, France, and Switzerland being the most important foreign markets.

- **HASAG Möbel:** The production of HASAG covers mainly upholstered furniture. As discussed above, HASAG cooperates with Voglauer Möbel to offer completely equipped hotel rooms. In 1996, turnover valued at 300 million Austrian Schillings was produced by 300 employees, 20% of which was exported to Germany, Switzerland, and Italy.

2. Relationship between Firms

Cooperation is obviously taking place between both large and small firms in the region, although many more opportunities for cooperation and joint production exist. Some larger firms are very open to strengthen existing connections and building new links. The small firms often work together with each other on a day to day basis, but not nothing like managed cooperation is evident in some industrial clusters. However, new links between small and large firms are becoming evident. Large firms are increasingly willing to outsource parts of the production that demand the highly flexible production system of smaller firms.

3. Support Services

Reflecting its importance to Austria, several national institutions provide support services to the industry and its cluster components. The Austrian Forest Products Research Laboratory (AFPRL) in Vienna is a major contact point for the wood industry to learn about new materials and their characteristics. The HTL Mödling (near Vienna), the best Austrian school concerned with wood, also serves as a research institute. Both institutes are reliable sources of information and quality tests. The University of Agricultural Sciences (BOKU) in Vienna offers research capacities related directly or indirectly to wood. The supra-regional initiatives “PRO HOLZ” and the “ARGE Interior Decoration” act as continuing networks for information, product development and research. The EUREKA Wood Initiative promotes pan-European market-oriented research and development.

Within the region, the Holztechnikum Kuchl plays the most prominent role by combining several different types of vocational training an research, all of them concerned with wood. It supplies highly skilled professionals to the wood industry and acts as a cooperation partner for local firms requiring assistance in fields of research and testing. The technology park Holz-Techno-Z Lungau, now under construction, sees its goal as enhancing the diffusion of innovative technologies and enforcing cooperation. The national and regional Chambers of Commerce are key organizers of this cluster, and supply it with much useful information. Beyond, the Chambers of Commerce engage in lobbying and support inter-firm cooperation. The Institute for Economic Development (WIFI) supports businesses through the provision of technical assistance. Various banks and business services not specific to the cluster form a healthy service industry environment necessary for economic development. Ready access to good highway systems is of significant importance to the region, particularly its proximity to Germany - the major foreign market.

Governance

The furniture industry in the region is governed locally and nationally mainly by the Chambers of Commerce. As the legal representative of the local firms, a local Chamber of Commerce serves as the regional economy’s advocate. The Chambers’ tasks consist mainly of pursuing the interests of their members and providing specialized services. For example, the Salzburg Chamber of Commerce pushed for the establishment of Holz-Techno-Z Lungau and joined the Province Salzburg in supplying financial support to the technology park. Strong pressure from the Salzburg Chamber of Commerce led to a new building regulation that allows public buildings (like kindergardens) to be constructed of wood. The services directly offered include tailor-made courses, business and technology consulting, information on new laws, support for potential start-up businesses, expert opinion on credits and so on. Additionally, the Chamber of Commerce operates, with the assistance of a private business consultant, a special designed program for joiners called EUROFIT, which enhances the competitiveness of the local firms and promotes cooperation among them. The goal of all Chambers' activities is to shape the province's economy for regional as well as global competition.

Different branches of the Austrian Federal Economic Chambers of Commerce play key roles in organizing and supporting various sectors of the wood industry. The Austrian Furniture Industry, which is a small branch of the Austrian Federal Economic Chamber, represents the interests of its members. It also supplies a range of useful services, working closely with regional chambers. Through seminars and image campaigns, joint chamber efforts are designed to boost the long term development of the furniture industry. A competition aimed at selecting Austria's best new furniture for inclusion in a permanent collection has as its objective to stimulate the design and production of high quality furniture. Austrian Furniture Industry opportunities for possible cooperation between cluster members is boosted through the provision of a shared data base. The system of chambers has an important impact on the furniture industry, and thus, can be regarded as a meaningful and beneficial governance institution.

Institutions

Many organizations of relevance to the furniture industry are drawn from among a rich mixture of regional and national institutions. However, in sharp contrast to other clusters that are highly concentrated in one or few region(s), national institutions play a much more significant role in supporting all the elements of this widely dispersed cluster.

Key examples in the field of research and development are the Austrian Forest Products Research Laboratory, the University for Agricultural Sciences, the HTL Mödling and the Holztechnikum Kuchl; all have proved to be major sources of support for the wood and thus also the furniture industry.

Through marketing and public relation the initiative "PRO HOLZ" and the ARGE Interior Decoration have increased the public awareness of the quality of Austrian furniture, and thus, national demand for these new products.

Chamber Of Commerce (WK)/The Austrian Furniture Industry

The Austrian Federal Economic Chamber coordinates and represents the supranational and national interests of Austrian commerce and industry. The nine regional chambers and the federal chamber work closely together. The task of these institutions is to represent the members' interests and to provide services and consulting to its members (by law, all firms must be members of the Chamber of Commerce). Thus, the system of chambers forms a key institution in the cluster.

Key Contact: Dr. Bosnjak, phone: 01/50105-3228; Mag. Felser, phone: 0662/8888-287

Institute for Economic Development (WIFI)

The Institute for Economic Development (WIFI) supports businesses through the provision of technical assistance and offers a variety of focused education and training programs.

The Austrian Forest Products Research Laboratory (AFPRL)

This institute acts as a valuable partner for the wood industry. Applied research is done at the institute, new materials are tested and information is provided through an extensive library.
Key Contact: DI Krenn, phone: 01/7982623-0

University of Agricultural Sciences (BOKU) Vienna

BOKU students are able to study everything related with wood in a university setting. Beyond the instructional programs, BOKU offers a variety of activities in advanced Wood Sciences and Technology covering fields from wood biology, wood physics, forest products development and manufacturing as well as forest products marketing and trade. BOKU sees its mission as conducting and fostering basic to advanced wood science.
Key Contact: Prof. Dr. März, phone: 01/47654-1001

Holztechnikum Kuchl (Technical Institute for Wood)

At the Holztechnikum Kuchl 700 students and vocational trainees are able to study many different subjects concerning wood. Local furniture firms benefit from cooperative research and testing opportunities available through the Holztechnikum. Great interest has also been shown by firms in the newly established School of Interior Decoration. Certain firms maintain close contacts with students from all parts of this school, either as future workers perhaps as future customers (many kids of furniture chain stores visit this school). Holztechnikum also serves as a technology consultant for the Holz-Techno-Z.
Key Contact: Dr. Lackner, phone: 06244/5372-129

Holz-Techno-Z Lungau

The technology park Holz-Techno-Z Lungau is not directly located in the region, although it is strongly linked with the region through cooperative contracts with the Holztechnikum Kuchl. The Holz-Techno-Z is being built at the moment and anticipates its completion at the end of 1998. The role of the technology park is to provide facilities and infrastructure to small firms and to foster the transfer of technology.
Key Contact: Holztechnikum Kuchl, phone: 06244/5372-0

HTL Mödling

The HTL Mödling serves two important purposes: the School for Wood trains highly qualified employees, and its testing lab performs material tests for small firms, thus forming an important link to industry. The academic personnel are heavily engaged in helping small firms by provision of information and acting as catalytic points for inter-firm cooperation.
Key Contact: Prof. Kranlich, phone: 02236/408-705 or 755

PRO HOLZ

The initiative "PRO HOLZ" engages in public relations and marketing for the valuable natural product “wood“. "PRO HOLZ" is a functioning network, an active supplier of information, and a product development promoter.

ARGE Interior Decoration
ARGE Interior Decoration is for the furniture industry what "PRO HOLZ" is for the basic wood industry .

EUREKA WOOD INITIATIVE

Eleven European countries have joined to create this EUREKA umbrella project. The EUREKA WOOD INITIATIVE promotes innovative ideas to improve the competitiveness of
the European wood industry. Strong emphasis is placed on market-oriented research and

development activities. In addition, the WOOD INITIATIVE serves as a platform for international cooperation in research and development.

Funds

The adjoining provinces of Salzburg and Upper Austria offer different grants that improve the regional infrastructure, support small firms, promote business start-ups, enforce restructuring, increase the adaptation of new technologies, etc. These grants are small in comparison to the national grants but nonetheless play a welcome role for the local industry cluster. The regional financial support scheme usually supplements various national or international support schemes. The following major national funds are the focus of the following discussion.

Austrian Research Fund (FFF or RPF)

The research promotion fund (RPF) for commercial enterprises finances research projects of natural and legal persons in the field of application-oriented and technology-oriented research through contributions or loans. For research projects that result in immediate economic benefits for the applicant, a fair cost contribution is assessed to the applicant. It is the essential task of the RPF to raise business-related research in Austria to the EU-level. Companies should be motivated to participate in cross-border cooperation in research and development, particularly on projects that could otherwise not be carried out or only with great difficulty.

Since early 1995, this fund has been supervised by the Ministry of Economic Affairs. Because of the paucity of wood related research, the FFF started a special program "HOLZFORSCHNUG" to intensify research in this field.
Key Contact: DI Schörghofer, phone: 01/5124584-0

K-Plus

Program in preparation. This program aims at improving the links between public sector research and the industrial sector. The Austrian Ministry of Science and Transport (BMWV) is trying to promote academic-industrial collaboration through setting up competence centers. As defined by the BMWV competence centers are collaborative research institutions aimed at high-quality, pre-competitive and industrial basic R&D activities that fulfill the needs of the industrial sector and preserve high academic standards. As planned up to 60% of the competence center's budget will be provided through public funds.
Key Contact: Dr. Stampfer, phone: 01/53464-3412

BÜRGES

BÜRGES defines its goal as supporting the foundation of new businesses. The costs involved in setting up a new business are partly subsidized by the fund. The BÜRGES development bank provides surety for credits earmarked for investment.

Innovation Agency

The Innovation Agency was founded in 1984 to support and encourage new ideas. The agency provides assistance to new businesses by offering consulting services and supplying seed capital. Beyond this technical feasibility and market studies are supported. The Innovation Agency has installed an internal patent loan scheme to help Austrian inventors to finance international patents.

Furniture

National Government
Federal Ministries
Chamber of Commerce Austria
Province Salzburg
Province Upper Austria
Chamber of Commerce Salzburg
Chamber of Commerce Upper Austria
Austrian Holz Austrian
Forest Techno-Z Research Fund
Products Divers (FFF)
Research Laboratory
Regional K-Plus
HTL Mödling
Grants BÜRGES
Holztechnikum Kuchl
Innovation
BOKU Vienna Agency
Institute for Economic Development Salzburg
Institute for Economic Development Upper Austria
Initiative "PRO HOLZ"
ARGE Interior Decoration
EUREKA Wood Initiative
Initiators and Organizers
Research Financial
Centers Support
Other Support
Institutions
Core: Cluster
Team 7, Voglauer Möbel,
Wiesner-Hager Möbel,
HASAG Möbel, and some
other 250 small and medium
size firms
TECHNODAT, Felder, etc.
Wooden Furniture Cluster: Naturally Better
10 Inner circle: Region, Outer Circle: National/International