

# Pre-Feasibility Study

## HAND MADE CARPET MANUFACTURING



### Small and Medium Enterprises Development Authority

#### Ministry of Industries & Production

#### Government of Pakistan

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## 1. PROJECT PROFILE

### 1.1 PROJECT DESCRIPTION

#### The Carpet History

The carpet is the one of finest and most exquisite form of expression and has more than 2,500 years old history. The Iranians were amongst the first carpet weaver of the ancient civilizations and, through centuries of creativity and ingenuity building upon the talents of the past, achieved a unique degree of excellence.

The element of luxury with which the Persian carpet is associated today provides a marked contrast with its humble beginning among the nomadic tribes that at one time wandered the great expanse of Persia in search of their livelihood. Then it was an article of necessity to protect the tribes from the bitterly cold winters of the country. However, out of necessity, originated an art! Through their bright colors and magical designs, the floor and entrance coverings that protected the tribesmen from the ravages of the weather also brought gay relief to their dour and hardy lives. In those early days, the size of the carpet was often small, dependent upon the size of the tents in which the people lived.

Besides being an article of furniture, the carpet was also a form of writing for the illiterate tribesmen, setting down their fortunes and setbacks, their aspirations and joys. It also came to be used as a prayer mat by thousands of Muslim believers.

The Hand Made Carpet which is used as a decoration (more often) article was originally designed to provide comfort and warmth, has now become the practical and convenient household commodity evolved into an art form and a collector's item of great value.

### 1.2 OPPORTUNITY RATIONALE

#### 1.2.1 SIGNIFICANT POTENTIAL

The importance of the carpet sector is well understood by the government, NGOs and international actors, particularly since it is an important source of income for the rural population, particularly for women, and has a large potential for employment creation and poverty alleviation. Government's policy and international support are increasingly directed to the benefit of the industry.

Carpets have been one of Pakistan's significant export products, but currently their export growth is not satisfactory. It has therefore been decided to give specific attention to this sector and develop an appropriate strategy to remedy this situation. Consequently the Ministry of Commerce has been tasked to undertake planning for setting up of carpet cities in Lahore and Karachi. These cities will help to make our carpets more competitive in terms of price as well as quality and other standards.

Further, in order to strengthen the export sector and boost exports of the country, the Trade Development Authority (formerly Export Promotion Bureau) has extended

assistance for establishment of a number of institutions for training and development of human resources for export-oriented industries. Assistance has also been provided for strengthening of infrastructure for the exporting industries. Institutions under the scheme have been established in the private sector on the principle of public-private collaboration to ensure that the institutions are managed on professional lines while remaining responsive to the needs of the trade and industry, specially the export sector.

Establishment of the World Handmade Carpet Organization (WHCO) by the three major carpet manufacturing countries China, India and Pakistan which is being registered in Hong Kong. Besides, Pakistan, China and India are planning to hold joint exhibitions in the USA under the aegis of WHCO with a view to increasing carpet export share in one of the world biggest markets.

### **1.3 PROJECT BRIEF**

Carpets are the most important and best known handicraft item from Pakistan and a major export article. Traditionally carpets were made from purely natural raw materials such as hand-spun wool and dyes that were extracted from plants. The high quality and uniqueness of carpets established the international reputation of this craft. Although carpets are still produced in the traditional fashion today, increasing demand has led to large-scale production requiring industrially manufactured ingredients.

The proposed project envisaged the manufacturing of hand made carpet. The carpet manufacturer buys wool from the wholesaler, hires workers to make cones out of the wool for use by the home-based workers. A karegar (master crafts man) sets up the lachi and tani (main horizontal and vertical chords that embody the design) along which workers weave the carpet (loom). The carpet is collected from the household after completion, and is given to another worker to cut the extra strings, a process called kanni kichai. Other processes before handing the carpet over to the wholesaler/exporter include washing and tucking. During tucking, extra threads are cut and then the carpet goes to another artisan who washes it using some chemicals that give a shine to the carpet.

Carpets and rugs have two main parts, the pile (the top surface) and backing (the under surface). By technical definition, a carpet is a decorative woven textile, which is produced by knotting thick coloured threads (yarns) on the warp, compressed by the weft. Weft yarns are horizontal and warp yarns are vertical. Several distinct types of knot are used to produce carpets. The most important of these types are the Turkish knot and Persian Knot. The Turkish knot is wrapped around two warps and the Persian knot around a single warp.

Hand made Carpet industry is a multi-billion dollar industry which continues to grow rapidly and demanded in many countries especially in Europe and in U.S.A.

#### **1.4 MARKET ENTRY TIMING**

Hand made carpet is considered to be more of an article than a commodity and treated delicately and carefully. Therefore, demand for carpet remains almost consistent throughout the year, largely depending on the conduct of exhibitions and trade shows where traders display their products particularly in the foreign markets i.e. Europe and USA. As Hand made carpet is considered to be a costly item, its demand generally increases during seasonal, cultural and religious occasions i.e. Eid, Christmas, New Year arrival etc.

#### **1.5 PROPOSED BUSINESS LEGAL STATUS**

The legal status of business tends to play an important role in any setup; the proposed hand made carpet manufacturing Unit is assumed to operate on Sole Proprietorship basis.

#### **1.6 PROJECT CAPACITY AND RATIONALE**

##### **1.6.1 Raw Material Sourcing**

The basic (natural) raw material for carpet manufacturing is wool. Around 200 sheep breeds in the world are the source of this material. As far as quality is concerned, wool from different sheep breeds varies, immensely. Due to its superior strength, flexibility, elasticity, durability, waviness, luster and natural beauty, the wool of Asian sheep is most ideal for weaving carpets. Another important attribute of this wool is that it is superbly colour absorbent. Moreover, colour will never 'run' or 'bleed'.

Sourcing of raw material which mainly includes wool and cotton, while operating business in the interior Sindh is found to be convenient. A number of dyeing and wool manufacturing setups are operating in this area capable of providing any quantity and quality of wool desired by a carpet manufacturer.

#### **1.7 PROJECT INVESTMENT**

A total of Rs. 8 million (approximately) is estimated to be the cost of the project. The working capital requirement is estimated around Rs 3.8 million while Rs. 4.3 million would be the fixed investment. This would include cost of machinery, infrastructure development cost, advance rent, vehicle and purchasing of 50 carpets for the initial stages as it would not be wise to waste time in waiting until display and exhibition purpose carpets are ready.

#### **1.8 PROPOSED PRODUCT MIX**

For the purpose of proposed pre-feasibility, following carpet sizes have been proposed. All of the carpets will be single knotted. As more than 95% of the total production would

be exported, choice of sizes have been made after referring to the most common hand made carpets demanded by the foreign markets i.e. Japan, USA and European Union.

|          |         |        |         |
|----------|---------|--------|---------|
| 3 x 2    | 4 x 2 ½ | 5 x 3  | 6 x 4   |
| 8 x 8    | 7 x 4 ½ | 9 x 6  | 8 x 5 ½ |
| 10 x 6 ½ | 10 x 7  | 10 x 8 | 11 x 8  |
| 12 x 9   | 10 x 14 |        |         |

## 1.9 RECOMMENDED PROJECT PARAMETERS

| Capacity   | Human Resource | Technology/Machinery | Location             |                        |
|--|----------------|----------------------|----------------------|------------------------|
| 110 carpets annually<br>70% capacity utilization (based on available no. of looms) | 21             | Local                | Mirpurkhas,<br>Sindh |                        |
| Financial Summary  |                |                      |                      |                        |
| Project Cost   | IRR            | NPV                  | Payback Period       | Cost of Capital (WACC) |
| Rs. 8.1 million  | 38%            | 9,984,598            | 3 years 5 months     | 17.50%                 |

## 1.10 PROPOSED LOCATION

Proposed location for setting up a hand-made carpet unit would largely depend on the availability of raw material and skilled labor. The proposed project would be based on interior Sindh including cities i.e. Thar, Mirpurkhas, Umer Kot, Islam Kot and Chachro etc., where both the skilled manpower and raw material are easily available. Precise location for the proposed project is assumed to be Mirpurkhas which is comparatively a bigger city in the interior Sindh, while trading and marketing office may be located at Karachi or Hyderabad.

## 1.11 KEY SUCCESS FACTORS/PRACTICAL TIPS FOR SUCCESS

Hand made carpet business is highly dependent on the marketing and business development efforts as most of the business (about 95%) would be generated through exports which depend on the availability of orders from the foreign buyers. Secondly, usage of good quality fiber and knot is also important. Based on our discussions with the existing stakeholders it was found that management of labor (carpet weavers) is a difficult job and hence critical for success. Following three elements will play major role in the success of the business:

1. Product promotion and marketing in the foreign markets
2. Recruitment and retention of competent manpower
3. Consistent and high quality standards

### 1.12 ORDER AND DELIVERY PROCEDURE:

Product order depends on the process adapted by the manufacturer regarding delivery. While going in export markets, there may be two types of clients: (1) Local traders who procure orders from foreign country and contact the manufacturer for the supply. In such cases, trader provides detailed product specification and order detail to the manufacturer with the delivery time and place. Manufacturer delivers products at the given location (2) Second scenario is the one when manufacturer has his/her own order procurement setup. He/she markets the product directly representing the company, and generates orders through participation in the foreign trade fairs and exhibitions, personal visits to the whole sale buyers/direct marketing and through internet marketing. In such instances customer provides the same details as for the local trader. These products are packaged separately with specification tags and weight. Product shipment is made through LC (letter of credit) and pricing depends on delivery terms i.e. FOB etc.

## 2. SECTOR & INDUSTRY ANALYSIS

Carpet weaving is basically a cottage industry with small setups spread largely in the rural areas of the country. Interior Sindh, Punjab and NWFP are the main sources of carpets for the traders who export this luxury product. Some of the large scale manufacturers also have their manufacturing setups working in Karachi, Hyderabad, Lahore, Gujranwala and Peshawar; however, after discussions with the industry stakeholders, once or twice in a year these exporters purchase hand made carpets from rural manufacturers.

As the industry is largely operating as an informal sector in the country, it would be difficult to mention here the number of units manufacturing hand made carpets. For indicative purpose, hundreds of thousands small scale home units are working across the country where people have livestock as their only source of income. During discussions with the carpet manufacturers and traders, it has been noted that quality of craftsmanship is better in Interior Sindh than any other area of Pakistan.

### 2.1 EXPORT GROWTH RATE<sup>1</sup>

Annual growth in export value of hand-knotted carpets on global level increased by 9% between 2003-2004. During 2003-04 and 2004-05 Pakistan achieved a growth of 5%, and 20% respectively. However, a negative growth of 8% during 2005-06 has been noticed.

### 2.2 DEMAND

Demand for Pakistani carpet against Afghani carpet has been rising in the international markets over the last few years and is the evidence of the better quality of the Pakistani

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<sup>1</sup> Trade Development Authority (formerly Export Promotion Bureau)

carpets. According to Carpet Manufactures and Exporters Association, Pakistani carpet traders would succeed in getting increased orders for Pakistani carpets in the international carpet exhibition held in Germany in January 2006<sup>2</sup>. With the expected outstanding level of the carpet export, it is hoped that this year (2006-2007) Rs 203.5 million export target would be achieved.

### **Wool scouring and spinning**

Quality carpets require quality wool and yarn. Some producers of quality carpets try to exclusively use local wool, but the supply of local wool is insufficient to meet demand. With the number of livestock increasing again, investment in more wool scouring facilities are necessary.

Spinning of high quality yarn, either from local or imported wool, offers substantial opportunities and is not dependent on an increasing local sheep population. As demand for high quality carpets is increasing, the demand for hand spun wool will also be increasing.

### **More efficient production using modern information technology**

Currently, most designs are sketched and plotted by hand. Investment in computer aided design (CAD) technology and associated training has substantial potential for efficiency gains. This also facilitates the interaction with overseas customers who can interact in the production process.

## **2.3 VALUE CHAIN, PRODUCTION PROCESS AND KEY INGREDIENTS**

In a formal carpet-manufacturing unit the operations generally undertaken are described below:

### **Carding**

Carding is the process of combing and cleaning the wool. Since wool is the basic raw material for carpet making, it should be fine and clean. In an effective carding, no fiber is intermingled with another and all foreign particles and dirt are removed. This helps in spinning, blending and wool mixing if necessary. Carding is done by hand and is also done using machines.

### **Spinning**

After carding, the wool fibers are drawn and twisted to make yarns of desired thickness. This process is called spinning. The yarn of soft 5-7 twist per inch is said to be ideal for carpets. Spinning is a traditional skill and generally wool is spun by hands. Though hand-

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<sup>2</sup> The News, Monday January 09, 2006

spun yarns have uneven structure, they provide a special look in a carpet. The wool should be well carded to obtain even yarns of desired thickness. Increasingly, machines are also being used for spinning as it is more efficient.

### **Dyeing**

Dyeing of wool can be a complicated process. It needs a lot of attention and experience to obtain wool of desired colour. The wool can be dyed either using natural dyes or synthetic dyes, and both have good and adverse effects.

Using natural dyes is more complicated and the colours obtained are not that brilliant, but it promotes special textures of carpets and is less harmful to the environment. On the other hand, synthetic dyes provide brighter colours in various shades with relative ease which is not possible with natural dyes. Chemical dyes are therefore used but natural dyes are also used whenever demanded.

### **Weaving**

The real making of carpets begins with weaving. A loom is a wooden frame which holds the carpet while it is being woven. There are two major kinds. One is the vertical loom and the other is the horizontal loom. A vertical loom consists of four bars. Two are horizontal—one at the top and one at the bottom. The other two go vertically from side to side so that it looks like a standing frame. The warp yarns are fixed between the top and bottom bars. A horizontal loom is simpler in structure. It is framed by four bars, looking like a quadrangle lying on the ground. The length of a carpet is determined by the distance between the top and bottom bars and the width by the two side bars and carpets woven on it are generally smaller. As on a vertical loom, the warp yarns are fixed between the top and bottom bars.

Weaving a hand woven carpet is very time consuming and laborious. A good weaver can weave about 4-5 square meters in one month. While weaving, a row of pile yarns are knotted to the warp yarns firstly. Next two weft yarns are woven through the warp. The knots and weft yarns are then packed down tightly on previously woven rows with a comb like device. After knotting several rows, ends of pile yarns are cut to create an even rug surface. The knotting process is then repeated. The knot density of a carpet ranges from 9 – 40 knots per square inch. However, the most common knot densities of carpets are 15, 16 and 24 knots per square inch.

### **Washing**

After a carpet is woven, it is washed to remove dirt and to restore the original shine of the wool. Washing brings sheen and lustre, and therefore, it is as important a step as coloring, designing and weaving. This is the final stage of carpet weaving and hence requires a lot of careful handling. Before washing, the carpet may go through the stage of burning the back of the carpet, rubbing with wired brush etc. to make it even. Washing is done with

water mixed with soap, bleaching powder and other natural chemicals. After washing, the carpet is kept in the sunlight for drying and then it is sent for clipping.

### **FIBERS USED IN CARPET MANUFACTURING**

Fibers are the basic components from which the strands are made. There are a variety of carpet fibers available and used including nylon, acrylic, polyester, wool, polypropylene, cotton and silk. Each of them has advantages and disadvantages; however, natural fibers are generally used and preferred by the buyers world over.

### **COLOR**

When choosing a carpet, color will be one of the most important elements considered by the buyer. It is the first impression a carpet gives and, the contrast of various colors creates the difference in designs. This is just the same in all other art fields, where the same rule applies.

The colors of a carpet are mainly identified by the background color and the border color. The background color is dominant. It usually covers the entire carpet with the exception of the border and the most commonly used colors are various shades of red, beige and yellow. However, there are examples where the background and the border are so distinguishable as colorful designs will always outweigh the less vibrant color of the border.

### **FOUNDATION**

In referring to ' foundation' we describe the basic components of a carpet. These are two in number, namely warp yarns and weft yarns. Usually the same fiber is used for both the warp and the weft and this can be either cotton or wool. In handmade carpets, cotton is most commonly used but wool is used mostly in places where it is readily available. Silk is used for silk carpets and generally for those with silk piles. Though expensive, silk is highly favored as a foundation material because it is very strong.

#### **Warp**

Warp yarns are the vertical strands of fiber stretching from the top to the bottom of a carpet. They are extremely important components because the knots are tied to them and the weft yarns are woven through them. If the warp yarns are not of even tension, a carpet will wrinkle.

#### **Weft**

The weft yarns are the horizontal strands. They are woven through the back and front warp yarns and added before or after the rows of knots, to prevent them from becoming loose.

## 2.4 ENVIRONMENTAL & PROTECTION ASPECTS

Small carpet manufacturing units have no significant environmental impacts. There is no noise and gaseous emissions involved. Environmental impacts usually caused by a carpet manufacturing unit are:

- Discharge of effluent
- Dust and wool emissions
- Smell
- Solid wastes

### Discharge of Effluent

During dyeing and washing processes, liquid waste is generated. This waste has high Biological Oxygen Demand (BOD) and is colored in appearance. BOD and color is due to use of dyes, chemicals and soaps during the dyeing and washing processes.

### Dust and Wool Emissions

Dust and wool emissions during carpet weaving may cause lung disease to workers upon extended exposure. Therefore, it is proposed for the workers to be provided with masks to prevent inhalation of the injurious substances.

### Smell and Solid Wastes

Use of dyes and chemicals brings about smell. This smell is only limited to the carpet manufacturing unit's internal atmosphere and does not cause nuisance to the surrounding communities. Finishing leads to the generation of solid wastes which is usually discarded in open area. It is proposed for the prospective entrepreneur to ensure proper arrangements for the disposal of the health hazardous waste.

## 2.5 MITIGATION OPTIONS

To mitigate the environmental impacts caused by a carpet manufacturing unit, following mitigation measures can be adopted:

### Discharge of effluent

- Good housekeeping
- Control of the amount of chemicals used in dyeing and washing
- Replacement of soap with detergent
- Liquid effluent will not be discharged into a river, stream or any water body.
- Liquid effluent will be treated by screening and sedimentation before being discharged into sewer.

### Dust and wool emissions

- Proper ventilation and use of dust markers

**Smell**

- Providing workers with nose coverings
- Proper ventilation

**Solid waste**

- Installation of incinerator for solid waste burning
- Solid waste burning at any government approved burning pit
- Selling of solid waste to outside contractors
- Handing over solid wastes to municipal authorities

**3. MARKET INFORMATION**

There are thousands of small and large scale manufacturing setups working in the industry. Although industry is scattered all over the country, yet, handmade carpet manufacturing industry in Sindh is largely settled in interior. Thar, Mipurkhas, Umerkot, IslamKot and Chachko are the main locations. Precise statistics on number of units and their classification is not available because of small home based setups.

**3.1 MARKET POTENTIAL**

Based on our discussions with the industry stakeholders, overall market of handmade carpet is growing rapidly and if proper marketing strategy is formulated along with participation in foreign fairs and exhibitions, it could prove to be a major foreign exchange earning sector of the economy.

Although there are a number of small scale exporters of Handmade carpets, some of the most well know traders of carpets include Afghan Carpet, Zainab Carpet, Princess Rug Palace and Samar Carpets.

**3.2 STRATEGY FOR DEVELOPMENT**

The most important factors that determine the price of a hand-knotted carpet are the number of knots per sq. inch., complexity of design and the quality of wool. A carpet with an intricate design, more knots per sq. inch., and made with high quality wool fetches a higher price. The major markets for such carpets are USA, Europe, and Japan. Many carpet exporters also display their products on the web. According to carpet wholesalers, there is a limited domestic market for carpets due to its high prices. Most of the local buyers of hand made carpets are the expatriate Pakistanis.

**3.3 TARGET MARKETS**

Based on our discussions with the carpet exporters, following sizes with respect to export regions have been identified:

| Europe  | America | Japan   |
|---------|---------|---------|
| 3 x 2   | 3 x 2   | 3 x 2   |
| 4 x 2 ½ | 4 x 2 ½ | 4 x 2 ½ |

| Europe    | America | Japan     |
|-----------|---------|-----------|
| 5 x 3 ½   | 5 x 3   | 6 ½ x 4 ½ |
| 6 ½ x 4 ½ | 6 x 4   | 8 x 5 ½   |
| 7 x 4 ½   | 8 x 5   | 8 x 6 ½   |
| 8 x 5 ½   | 9 x 6   | 6 x 6     |
| 7 x 5     | 10 x 8  | 6 ½ x 6 ½ |
| 8 x 6 ½   | 12 x 9  | 8 x 8     |

Leading importers of handmade carpets from Pakistan are listed below<sup>3</sup>:

### Leading Five Importers of Carpet from Pakistan

| Country | Million US\$ |           |           |           |           |
|---------|--------------|-----------|-----------|-----------|-----------|
|         | 2004 – 05    | 2003 – 04 | 2002 – 03 | 2001 – 02 | 2000 – 01 |
| USA     | 109.78       | 88.89     | 89.4      | 95.64     | 112.16    |
| Germany | 29.97        | 29.97     | 22.68     | 31.23     | 43.48     |
| Italy   | 27.6         | 20.19     | 19.97     | 14.00     | 14.5      |
| France  | 15.00        | 12.00     | 9.93      | 12.58     | 13.61     |
| UK      | 13.6         | 10.77     | 12.00     | 15.75     | 16.00     |

### 3.4 EXPORTS OF CARPETS<sup>4</sup>

Global exports of hand-knotted carpets and other textile floor covering stood at 1.68 billion US\$ in 2004. Pakistan occupies 3<sup>rd</sup> position among hand-knotted carpet exporting countries in the world. Pakistan's export performance in hand-knotted carpets for the last six years is given below:

| Million US\$ |           |           |           |           |           |
|--------------|-----------|-----------|-----------|-----------|-----------|
| 2005-2006    | 2004-2005 | 2003-2004 | 2002-2003 | 2001-2002 | 2000-2001 |
| 254.7        | 277.8     | 231.4     | 220.9     | 249.5     | 288.8     |

## 4. PRODUCTION PROCESS

### 4.1 PRODUCTION PROCESS FLOW:

Carpet design (the basic drawing or chart) and the material is provided to the carpet weaver who then devises the process of weaving. Carpets are made in two different ways. The knotted weave and the flat weave. Knotted weave is the more widely used method.

<sup>3</sup> Trade Development Authority (Formerly Export Promotion Bureau, Export News) 12-2006

<sup>4</sup> Trade Development Authority (Formerly Export Promotion Bureau)

As its name suggests, in this technique, knots are created. A strand is tied around two adjoining warp yarns, creating a knot. After a row of knots is completed, one or several weft yarns are woven through the warp yarns. Then a special comb is used to beat the knots and weft yarns tightly together. The weaving process begins at the bottom of a loom and as the knots and weft yarns are added, the carpet moves upward until it is finished. Different weaving groups use different kinds of knots. Some are symmetric; some are asymmetric while others are more complex.

To form a symmetric knot, a piece of strand is wrapped over two adjoining warp yarns and both ends of the strand are then pulled back together to surface between the two warp yarns, forming a cut. To form an asymmetric knot, a piece of strand is wrapped around one warp yarn and then passed under its adjoining warp yarn. The two ends are brought to surface separately, creating better-look designs. Once the weaving is completed, washing and cleaning process is applied to make carpet ready for sale.

## 4.2 RAW MATERIAL REQUIREMENT

Wool being the major raw material used for hand made carpet manufacturing, understanding of different kinds of wools available and used in Pakistan is necessary. Following wools are generally used by carpet manufacturers in Pakistan:

| Wool Description | Colour      |
|------------------|-------------|
| New Zealand      | White       |
| Local            | Yellow      |
| Iraq Sanchia     | Pure Yellow |
| Afghanistan      | Grayish     |

In order to produce 3 sq. ft of carpet, one kg of wool is required. For the proposed project, during initial stages, a total of around 3000 sq. ft. of carpet with different sizes will be produced during a year. This would draw a sufficient volume of wool to be used as basic raw material. It has been estimated that a total of 84 kg wool/fiber will be required for one month production.

## 4.3 MACHINERY REQUIREMENT

Tools which are used to produce handmade carpets are not completely the same in the various carpet producing areas. The most commonly used tools are listed below:

### 1. The Design Picture

Before weaving a carpet, the weavers will first have a colored drawing of it, which will guide them in both designs and colors. The picture is drawn on squared paper, usually by famous artists and designers. The weaver must follow every intricate detail.

## 2. Loom

Loom is the basic equipment used for the weaving purpose of carpet. A loom is a wooden frame which holds the carpet while it is being woven. Details of loom have been discussed in the section 2.3 under the heading of Weaving.

## 3. Comb

After the completion of a row of knots and one or several weft yarns, a special comb is used to press the weft and knots tightly together to make the carpet even and durable and to secure knots in place.

Other commonly used tools are scissors and knives, both used to cut piles and strands. At times, spindles are used to spin fibers into strands, playing the same role as a spinning wheel. Equipments and their respective costs required for the proposed carpet manufacturing unit have been provided in the following table:

| S. No.                      | Machine           | Required No. of Units | Size (feet) | Total Cost (in Rupees) | Local/Imported |
|-----------------------------|-------------------|-----------------------|-------------|------------------------|----------------|
| 1                           | Loom              | 10                    | 14          | 350,000                | Local          |
| 2                           | Support Structure |                       |             | 50,000                 | Local          |
| <i>Total Machinery Cost</i> |                   |                       |             | <i>400,000</i>         | <i>Rs.</i>     |

#### 4.4 EQUIPMENT MAINTENANCE

It is expected that equipments will be serviced on an annual basis. During the projection period, maintenance expenses are estimated to be around 3% of the total cost of machine.

### 5. LAND & BUILDING REQUIREMENT

#### 5.1 LAND & BUILDING REQUIREMENTS FOR HAND – MADE CARPET UNIT

After the discussion with market players, around 200 sq. yards area in Mirpurkhas will be sufficient for installation of 10 looms. An amount of Rs. 800,000/- has been estimated to be utilized for purchase of premises in the suburban area of the city. A small office would also be needed in Hyderabad or Karachi. This space will be used for clients meetings and necessary marketing and promotion activities and will be procured on rent.

### 6. HUMAN RESOURCE REQUIREMENT

Carpet industry is a highly specialized and labor intensive. A total 21 persons will be required to handle the production operations of the proposed hand made carpet manufacturing unit. The business unit will work on shift basis (12 hours daily as is the norm of the industry). Technical staff with relevant experience will be required for operating looms.

Total approximate manpower requirement for the business operations along with their respective salaries has been provided in the table below:

(Pak. Rs.)

| Staff Title                                  | No of Persons | Individual Salary | Monthly Salary | Annual Salary    |
|--|---------------|-------------------|----------------|------------------|
| 1. Business Unit Manager/Owner               |               |                   |                |                  |
| <b>Production Staff</b>                      |               |                   |                |                  |
| Supervisor / Manager                         | 1             | 12,000            | 12,000         | 144,000          |
| Loom Operators                               | 14            | 5,000             | 70,000         | 840,000          |
| <b>Total Production Staff</b>                | <b>15</b>     |                   | <b>82,000</b>  | <b>984,000</b>   |
| <b>General Administration/ Selling Staff</b> |               |                   |                |                  |
| Accountant                                   | 1             | 10,000            | 10,000         | 120,000          |
| Packaging Department Staff                   | 2             | 4,000             | 8,000          | 96,000           |
| Office Assistant                             | 1             | 6,000             | 6,000          | 72,000           |
| Guard  | 1             | 4,000             | 4,000          | 48,000           |
| Driver                                       | 1             | 4,000             | 4,000          | 48,000           |
| <b>Total G A /S Staff</b>                    | <b>6</b>      |                   | <b>32,000</b>  | <b>384,000</b>   |
| <b>TOTAL</b>                                 | <b>21</b>     |                   | <b>114,000</b> | <b>1,368,000</b> |

It is proposed that Loom operators or carpet weavers should have sufficient experience (minimum two years) of working on carpet weaving loom whereas, supervisor should have a minimum of five years of supervisory level experience in a carpet manufacturing unit. Both loom operators and supervisor should have sufficient knowledge about carpet weaving techniques, loom adjustment procedure, color selection and matching; and other technical aspects discussed in this report.

## 7. FINANCIAL ANALYSIS & KEY ASSUMPTIONS

The project cost estimates for the proposed “Handmade Carpet manufacturing unit” have been formulated on the basis of discussions with industry stakeholders and experts. The projections cover the cost of land, machinery and equipment including office equipment, fixtures etc. Assumptions regarding machinery have been provided, however, the specific assumptions relating to individual cost components are given as under.

### 7.1 LAND & BUILDING

Land for setting up the proposed hand made carpet Manufacturing unit would be purchased and which will cost around Rs. 0.8 million for a 200 yards area at the surrounding location of Mirpurkhas city. It has been assumed that it would be a pre-constructed place; however, for installation of looms, renovation and necessary customization of the premises will be required. For this purpose approximately Rs. 1.5 million will be required, which has been assumed to be depreciating at 10% per annum using diminishing balance method.

### 7.2 OVERALL FACTORY & OFFICE RENOVATION

To renovate the factory / office premises in Year 5 and Year 10, a cost would incur for which an amount equivalent to 5% of the total factory/office construction cost is estimated.

### 7.3 FACTORY / OFFICE FURNITURE

A lump sum provision of Rs. 100,000 for procurement of office/factory furniture is assumed. This would include table, desk, chairs, and office stationery. The breakup of Factory Office Furniture & Fixtures is as follows:

| Item                                      | Number | Total Cost     |
|---|--------|----------------|
| Table & Chair for Owner                   | 1      | 5,000          |
| Tables & Chairs for Admin. Staff          | 1      | 3,000          |
| Chairs at factory                         | 10     | 6,000          |
| Curtains & Interior Decoration for office | -      | 5,000          |
| Chairs for Workers/Labor                  | 6      | 5,000          |
| Electrical Fittings & Lights              | -      | 60,000         |
| Others                                    | -      | 16,000         |
| <b>Total</b>                              |        | <b>100,000</b> |

### 7.4 DEPRECIATION TREATMENT

The treatment of depreciation would be on a diminishing balance method at the rate of 10% per annum on the following.

1. Machinery
2. Land & Building Construction and formation
3. Vehicles
4. Furniture and Fixtures etc.

### 7.5 UTILITIES

Necessary expenses in account of utilities for factory and office will cost around Rs. 19,000 per month. This would include electricity, telephone and fuel expenses for the day to day business activities. Breakup of expenses has been provided under:

| Utility             | Total Monthly Cost (Rs.) | Total Annual Cost (Rs.) | Annual %age Increase |
|---------------------|--------------------------|-------------------------|----------------------|
| 1. Electricity      | 5,000                    | 60,000                  | 5%                   |
| 3. Telephone        | 4,000                    | 48,000                  | 5%                   |
| 4. Fuel for Vehicle | 10,000                   | 120,000                 | 5%                   |
| <b>Total</b>        | <b>19,000</b>            | <b>228,000</b>          |                      |

### 7.6 WORKING CAPITAL REQUIREMENTS

It is estimated that an additional amount of 3.8 million rupees (approximately) will be required as cash in hand to meet the working capital requirements. These provisions have been estimated based on the following assumptions for the proposed business.

| Description                                       | Amount in Rs.    |
|---|------------------|
| First Three Months Salaries (Production staff)    | 250,000          |
| First Three Months Utilities Charges              | 55,000           |
| First Three Months Rent – Office                  | 105,000          |
| First Three Months Misc. Expenses                 | 15,000           |
| Raw Material Inventory for Three Months           | 375,000          |
| Advertisement Expense – Conferences & Exhibitions | 3,000,000        |
| <b>Total</b>                                      | <b>3,800,000</b> |

As the business will be export oriented, participation in the foreign exhibitions and trade shows would be essential and will account for a major expenditure. For this purpose a provision of Rs. 3,000,000/- has been made.

### **7.7 VEHICLE FOR SUPPORT AND MAINTENANCE SERVICES**

A loading vehicle would be required for providing services for the transportation of material, finished carpet from factory (Mirpurkhas) to trade and marketing office located at Karachi and labor etc. For this purpose a transportation vehicle has been proposed which will cost around Rs. 700,000 (Shehzor 2200 CC).

### **7.8 SELLING & DISTRIBUTION EXPENSES**

For the purpose of this pre-feasibility, it has been assumed that the Hand made carpet manufacturer would mainly be engaged in exports, however, to cover the printing cost of promotion material and selling expenses a provision of selling and distribution expenses has been assumed which will cost around 2% of the annual sales.

### **7.9 MISCELLANEOUS EXPENSES**

Miscellaneous expenses of running the business are assumed to be Rs. 5,000 per month. These expenses include various items like office stationery, daily consumables, traveling allowances etc. and are assumed to increase at a nominal rate of 10% per annum.

### **7.10 FOREIGN PROMOTION AND ADVERTISEMENT BUDGET**

As the business will be export oriented, participation in the foreign trade shows and exhibitions would be necessary to draw demand for the products. For this purpose a lump sum provision of Rs. 3 million has been assumed.

### **7.11 RAW MATERIAL INVENTORY**

Based on our assumptions for the production facility, orders and availability of desired material, it would be necessary to maintain 3 months raw material inventor for production of carpets.

### 7.12 FINISHED GOODS INVENTORY

The proposed setup is assumed to maintain finished goods inventory to meet urgent order supplies from the export market and for display sampling and exhibitions. For this purpose, around 50 finished carpets have been assumed to be purchased from market at the beginning of the business. This inventory level will be maintained throughout projected period.

### 7.13 REVENUE PROJECTIONS

Out of maximum capacity of 110 carpets annually on 10 looms, initial manufacturing capacity has been assumed to be at 70%. This is based on the assumption that 10 standard sized looms (6ft.) working on single shift basis with 12 hours daily can produce around 160 standard sized carpets (6x4) in a year. Such a manufacturing facility if used for 8.5 hours a day will manufacture 110 carpets of the standard size in a year.

The carpets will be of export quality which will generate annual revenue around Rs. 9 million at initial stage with 70% capacity utilization. For the projection purposes, annual revenue growth rate of 5% has been assumed which would cover anticipated growth in the industry as well price. Based on our discussions with the industry experts and entrepreneurs, it is anticipated that the sales price will vary according to location. Therefore, most precise sales price and growth will not be wise. However, for the purpose of this study following prices have been assumed:

| Size             | Production | Export Price |
|------------------|------------|--------------|
| 6 x 4 (15 Knot)  | 12         | 80,000       |
| 6 x 4 (16 Knot)  | 12         | 85,000       |
| 6 x 4 (24 Knot)  | 12         | 100,000      |
| 8 x 5 (15 Knot)  | 10         | 120,000      |
| 8 x 5 (16 Knot)  | 10         | 125,000      |
| 8 x 5 (24 Knot)  | 10         | 155,000      |
| 10 x 8 (15 Knot) | 4          | 160,000      |
| 10 x 8 (16 Knot) | 4          | 165,000      |
| 10 x 8 (24 Knot) | 4          | 200,000      |

#### 7.14 ACCOUNTS RECEIVABLES

Considering the industry norm particular to the Hand made Carpet manufacturing unit, it has been assumed that 70% of the sales will be on cash whereas remaining 30% sales will be on credit to traders. A collection period of 60 days is assumed for the credit sales.

A provision for bad debts has been assumed equivalent to 2% of the annual credit sales.

#### 7.15 FINANCIAL CHARGES

It is assumed that long-term financing for 5 years will be obtained in order to finance the project investment cost. This leasing facility would be required at a rate of 15% (including 1% insurance premium) per annum with 60 monthly installments over a period of five years. The installments are assumed to be paid at the end of every month.

#### 7.16 TAXATION

The business is assumed to be run as a sole proprietorship; therefore, tax rates applicable on the income of a non salaried individual taxpayer are used for income tax calculation of the business.

#### 7.17 COST OF CAPITAL

The cost of capital is explained in the following table:

| Particulars                      | Rate  |
|----------------------------------|-------|
| Required return on equity        | 20%   |
| Cost of finance                  | 15%   |
| Weighted Average Cost of Capital | 17.5% |

The weighted average cost of capital is based on the debt/equity ratio of 50:50.

#### 7.18 OWNER'S WITHDRAWAL

It is assumed that the owner will draw funds from the business once the desired profitability is reached from the start of operations. The amount would depend on business sustainability and availability of funds for future growth.

- 7.19 ANNEXURES
7. 19.1 Summary of Key Assumptions
7. 19.2 Cost and Revenue Sheet
7. 19.3 Projected Income Statement
7. 19.4 Projected Balance Sheet
7. 19.5 Projected Cash Flow Statement

| Summary of Key Assumptions                                     |  |                    |
|--|--|--------------------|
|  |  | (in Pak. Rs.)      |
| Sr. No.  | PARTICULARS  | TOTAL COST/DETAILS |
| <b>Fixed Capital</b>   |  |                    |
|  | <b>Machinery</b>   | <b>400,000</b>     |
|  | Vehicle for support and transportation   | 700,000            |
|  | Cost of Land & Building  | 800,000            |
|  | Construction & Renovation  | 150,000            |
|  | Factory / Office Furniture   | 100,000            |
|  | Advance Deposit ( 6 months)  | 210,000            |
|  | Preliminary Expenses - First time Purchase of finished 50 carpet                             | 1,933,969          |
|  | <b>Total Fixed Capital</b>   | <b>4,293,969</b>   |
| <b>Working Capital</b>   |  |                    |
|  | <b>Utilities - Three Months (Office &amp; Factory)</b>                                       | <b>162,000</b>     |
|  | 1. Electricity/Month   | 5,000              |
|  | 2. Diesel for Vehicles and Machinery   | 10,000             |
|  | 3. Office Rent   | 35,000             |
|  | 4. Telephone/Month   | 4,000              |
|  | <b>Salaries - Three Months (Production Staff)</b>  | <b>246,000</b>     |
|  | <b>Promotion Budget</b>  | <b>3,000,000</b>   |
|  | <b>Raw Material Inventory - three months</b>   | <b>373,332</b>     |
|  | <b>Misc. Expenses - Three months (@ 5000 /month)</b>   | <b>15,000</b>      |
|  | <b>Total Working Capital</b>   | <b>3,796,332</b>   |
|  | <b>TOTAL PROJECT COST</b>  | <b>8,090,301</b>   |
|  | <b>Loan Finance</b>  | <b>4,045,151</b>   |
|  | <b>Equity Financing</b>  | <b>4,045,151</b>   |
|  | <b>Debt:Equity Ratio (50:50)</b>   | <b>50.00%</b>      |
| <b>PROJECT RETURNS AND OTHER FINANCIAL</b>                     |  |                    |
|  | IRR  | 38%                |
|  | NPV  | 9,984,598          |
|  | Payback Period (Years)   | 3 Years 2 Months   |
|  | Debt Equity Ratio  | 50:50              |
|  | Cost of finance  | 15%                |
|  | Weighted Average Cost of capital   | 17.50%             |
| <b>OTHER ASSUMPTIONS</b>                                       |  |                    |
|  | Depreciation   | 10%                |
|  | Machinery Annual Repair & Maintenance (as %age of total cost of Machinery)                   | 3.00%              |
|  | Selling & Distribution Expenses  | 2.00%              |
| <b>Factory Operations and Capacity Utilisation Assumptions</b> |  |                    |
|  | Increase in Production (Annual)  | 10%                |
|  | Increase in payroll due to increase in capacity/Overtime cost utilization (from fourth year) | 5%                 |
|  | Annual sales price increase  | 5%                 |
|  | Operational Hrs./day   | 12                 |
|  | Operational Days / Month   | 26                 |
|  | Operational Months   | 12                 |
|  | Annual Operational Days  | 312                |
| <b>Economy related assumptions</b>                             |  |                    |
|  | Electricity charges growth rate  | 5%                 |
|  | Increase in Salaries   | 10%                |
|  | Increase in Misc. Expenses   | 10%                |
| <b>Cash Flow Assumptions</b>                                   |  |                    |
|  | Sales on Credit - as %age of total   | 30%                |
|  | Sales on Cash - as %age of total   | 70%                |
|  | Accounts Receivable period (months) - only for 30% credit sales                              | 2                  |
|  | Provision for bad debts (only on 30% credit sales)   | 2%                 |
|  | Raw Material Inventory - (Months)  | 3                  |
|  | Finished Goods Inventory   | 50                 |

## HAND MADE CARPET MANUFACTURING UNIT COST AND REVENUE SHEET

### 1. REVENUE CALCULATION

#### Monthly Production

Maximum Capacity 110 Carpets Annually  
Capacity Utilization 70% Beginning of Year

|                         | Unit Produced | Weighted Average Price | Amount (Rs.) |
|-------------------------|---------------|------------------------|--------------|
| <b>Total Production</b> | 77            | 118,974                | 9,161,026    |

**Gross Annual Sales 9,161,026 Rs.**

|   |            |                  |            |
|---|------------|------------------|------------|
| Provision for Carpet in Stock                             | 50 carpets |                  |            |
| Estimated Finished Goods Inventory at the end of the Year |            | 1,758,154        | Rs         |
| <b>Total Annual Sales</b>                                 |            | <b>9,161,026</b> | <b>Rs.</b> |

### 2. COST CALCULATION

|                   | Unit Produced | Weighted Average Price | Amount (Rs.) |
|-------------------|---------------|------------------------|--------------|
| Carpet Production | 77            | 35,163.08              | 2,707,557    |

#### Annual Cost of Production

|                   |  |           |             |
|-------------------|--|-----------|-------------|
| Raw Material Cost |  | 1,493,326 | Rs. / annum |
| Labour Cost       |  | 1,214,231 | Rs. / annum |
| Misc. Material    |  | 50,000    | Rs. / annum |

**TOTAL ANNUAL COST OF PRODUCTION 2,757,557 Rs. / annum**

| HAND MADE CARPET MANUFACTURING UNIT                  |           |            |            |            |            |            |            |            |            |            |
|--|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Projected Income Statement (Rs.)                     | Year 1    | Year 2     | Year 3     | Year 4     | Year 5     | Year 6     | Year 7     | Year 8     | Year 9     | Year 10    |
| <b>Net (Adjusted Sales)</b>                          | 7,358,454 | 10,405,169 | 12,027,640 | 13,902,561 | 16,069,159 | 18,572,749 | 21,465,683 | 24,808,437 | 28,670,876 | 33,133,705 |
| <b>Cost of Sales</b>                                 | 3,175,326 | 3,460,459  | 3,772,485  | 4,179,498  | 4,635,576  | 5,147,110  | 5,721,369  | 6,366,626  | 7,092,301  | 7,909,127  |
| Raw Material Cost                                    | 1,543,326 | 1,697,659  | 1,867,425  | 2,054,167  | 2,259,584  | 2,485,543  | 2,734,097  | 3,007,507  | 3,308,257  | 3,639,083  |
| Labor (Production Staff)                             | 984,000   | 1,082,400  | 1,190,640  | 1,375,189  | 1,588,344  | 1,834,537  | 2,118,890  | 2,447,318  | 2,826,652  | 3,264,783  |
| Other Utilities                                      | 648,000   | 680,400    | 714,420    | 750,141    | 787,648    | 827,030    | 868,382    | 911,801    | 957,391    | 1,005,261  |
| <b>Gross Profit</b>                                  | 4,183,128 | 6,944,710  | 8,255,155  | 9,723,064  | 11,433,583 | 13,425,639 | 15,744,314 | 18,441,811 | 21,578,575 | 25,224,578 |
| <b>Gross Profit Margin</b>                           | 57%       | 67%        | 69%        | 70%        | 71%        | 72%        | 73%        | 74%        | 75%        | 76%        |
| <b>General Administrative &amp; Selling Expenses</b> |           |            |            |            |            |            |            |            |            |            |
| Salaries   | 384,000   | 422,400    | 464,640    | 511,104    | 562,214    | 618,436    | 680,279    | 748,307    | 823,138    | 905,452    |
| Factory/Office Miscellaneous Expenses                | 60,000    | 66,000     | 72,600     | 79,860     | 87,846     | 96,631     | 106,294    | 116,923    | 128,615    | 141,477    |
| Amortization of Preliminary Expenses                 | 386,794   | 386,794    | 386,794    | 386,794    | 386,794    | -          | -          | -          | -          | -          |
| Depreciation Expense                                 | 135,000   | 121,500    | 109,350    | 98,415     | 88,574     | 80,466     | 72,420     | 65,178     | 58,660     | 52,794     |
| Maintenance Expense                                  | 12,000    | 12,000     | 12,000     | 12,000     | 12,000     | 12,000     | 12,000     | 12,000     | 12,000     | 12,000     |
| International Promotion Expenditures                 | 3,000,000 | 3,300,000  | 3,630,000  | 3,993,000  | 4,392,300  | 4,831,530  | 5,314,683  | 5,846,151  | 6,430,766  | 7,073,843  |
| Selling & Distribution                               | 147,169   | 208,103    | 240,553    | 278,051    | 321,383    | 371,455    | 429,314    | 496,169    | 573,418    | 662,674    |
| <b>Subtotal</b>                                      | 4,124,963 | 4,516,797  | 4,915,937  | 5,359,224  | 5,851,111  | 6,010,518  | 6,614,989  | 7,284,728  | 8,026,597  | 8,848,240  |
| <b>Operating Income</b>                              | 58,165    | 2,427,913  | 3,339,219  | 4,363,840  | 5,582,472  | 7,415,122  | 9,129,325  | 11,157,083 | 13,551,978 | 16,376,338 |
| Financial Charges (15% Per Annum)                    | 567,480   | 473,065    | 363,472    | 236,262    | 88,601     | -          | -          | -          | -          | -          |
| <b>Earnings Before Taxes</b>                         | (509,315) | 1,954,848  | 2,975,747  | 4,127,578  | 5,493,871  | 7,415,122  | 9,129,325  | 11,157,083 | 13,551,978 | 16,376,338 |
| <b>Net Profit</b>                                    | (509,315) | 1,466,136  | 2,231,810  | 3,095,684  | 4,120,403  | 5,561,341  | 6,846,993  | 8,367,813  | 10,163,983 | 12,282,254 |
| <b>Monthly Profit After Tax</b>                      | (42,443)  | 122,178    | 185,984    | 257,974    | 343,367    | 463,445    | 570,583    | 697,318    | 846,999    | 1,023,521  |

| HAND MADE CARPET MANUFACTURING UNIT   |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Projected Balance Sheet (Rs.)         | Year 0           | Year 1           | Year 2           | Year 3           | Year 4           | Year 5            | Year 6            | Year 7            | Year 8            | Year 9            | Year 10           |
| <b>Assets</b>                         |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |
| <i>Current Assets</i>                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |
| Cash & Bank Balance                   | 3,423,000        | 1,173,892        | 1,627,789        | 2,575,741        | 4,016,044        | 6,178,651         | 9,419,038         | 12,889,939        | 17,321,540        | 22,983,384        | 30,183,345        |
| Raw Material Inventory                | 373,332          | 128,611          | 141,472          | 155,619          | 171,181          | 188,299           | 207,129           | 227,841           | 250,626           | 275,688           | 303,257           |
| Finished Goods Inventory              | 0                | 1,758,154        | 1,933,969        | 2,127,366        | 2,340,103        | 2,574,113         | 2,831,525         | 3,114,677         | 3,426,145         | 3,768,759         | 4,145,635         |
| Accounts Receivable                   | 0                | 370,144          | 520,258          | 601,382          | 695,128          | 803,458           | 928,637           | 1,073,284         | 1,240,422         | 1,433,544         | 1,656,685         |
| Advance Rent                          | 210,000          | 210,000          | 210,000          | 210,000          | 210,000          | 210,000           | 210,000           | 210,000           | 210,000           | 210,000           | 210,000           |
| <b>Total Current Assets</b>           | <b>4,006,332</b> | <b>3,640,800</b> | <b>4,433,488</b> | <b>5,670,108</b> | <b>7,432,456</b> | <b>9,954,521</b>  | <b>13,596,329</b> | <b>17,515,742</b> | <b>22,448,732</b> | <b>28,671,375</b> | <b>36,498,923</b> |
| <i>Fixed Assets</i>                   |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |
| Plant Machinery & Facility            | 400,000          | 360,000          | 324,000          | 291,600          | 262,440          | 236,196           | 212,576           | 191,319           | 172,187           | 154,968           | 139,471           |
| Factory Construction                  | 150,000          | 135,000          | 121,500          | 109,350          | 98,415           | 96,074            | 86,466            | 77,820            | 70,038            | 63,034            | 64,230            |
| Land                                  | 800,000          | 800,000          | 800,000          | 800,000          | 800,000          | 800,000           | 800,000           | 800,000           | 800,000           | 800,000           | 800,000           |
| Furniture & Fixtures                  | 100,000          | 90,000           | 81,000           | 72,900           | 65,610           | 59,049            | 53,144            | 47,830            | 43,047            | 38,742            | 34,868            |
| Vehicle                               | 700,000          | 630,000          | 567,000          | 510,300          | 459,270          | 413,343           | 372,009           | 334,808           | 301,327           | 271,194           | 244,075           |
| <b>Total Fixed Assets</b>             | <b>2,150,000</b> | <b>2,015,000</b> | <b>1,893,500</b> | <b>1,784,150</b> | <b>1,685,735</b> | <b>1,604,662</b>  | <b>1,524,195</b>  | <b>1,451,776</b>  | <b>1,386,598</b>  | <b>1,327,938</b>  | <b>1,282,645</b>  |
| <i>Intangible Assets</i>              |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |
| Preliminary Expenses                  | 1,933,969        | 1,547,176        | 1,160,382        | 773,588          | 386,794          | -                 | -                 | -                 | -                 | -                 | -                 |
| <b>Total Assets</b>                   | <b>8,090,301</b> | <b>7,202,975</b> | <b>7,487,370</b> | <b>8,227,846</b> | <b>9,504,985</b> | <b>11,559,183</b> | <b>15,120,524</b> | <b>18,967,518</b> | <b>23,835,330</b> | <b>29,999,313</b> | <b>37,781,567</b> |
| <b>Owner's Equity</b>                 | <b>4,045,151</b> | <b>3,745,151</b> | <b>4,711,286</b> | <b>6,243,096</b> | <b>8,438,780</b> | <b>11,559,183</b> | <b>15,120,524</b> | <b>18,967,518</b> | <b>23,835,330</b> | <b>29,999,313</b> | <b>37,781,567</b> |
| <b>Long Term Liability</b>            | <b>4,045,151</b> | <b>3,457,825</b> | <b>2,776,084</b> | <b>1,984,749</b> | <b>1,066,205</b> | <b>0</b>          | <b>0</b>          | <b>0</b>          | <b>0</b>          | <b>0</b>          | <b>0</b>          |
| <b>Total Equity &amp; Liabilities</b> | <b>8,090,301</b> | <b>7,202,975</b> | <b>7,487,370</b> | <b>8,227,846</b> | <b>9,504,985</b> | <b>11,559,183</b> | <b>15,120,524</b> | <b>18,967,518</b> | <b>23,835,330</b> | <b>29,999,313</b> | <b>37,781,567</b> |

| HAND MADE CARPET MANUFACTURING UNIT            |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Projected Statement of Cash Flows (Rs.)        | Year 0             | Year 1             | Year 2             | Year 3             | Year 4             | Year 5             | Year 6             | Year 7             | Year 8             | Year 9             | Year 10            |
| <b>Cash Flow From Operating Activities</b>     |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Net Profit                                     | 0                  |                    | 1,466,136          | 2,231,810          | 3,095,684          | 4,120,403          | 5,561,341          | 6,846,993          | 8,367,813          | 10,163,983         | 12,282,254         |
| Add: Depreciation Expense                      | 0                  | 135,000            | 121,500            | 109,350            | 98,415             | 88,574             | 80,466             | 72,420             | 65,178             | 58,660             | 52,794             |
| Amortization Expense                           | 0                  | 386,794            | 386,794            | 386,794            | 386,794            | 386,794            | -                  | -                  | -                  | -                  | -                  |
| (Increase) / decrease in Receivables           | -                  | (370,144)          | (150,115)          | (81,124)           | (93,746)           | (108,330)          | (125,180)          | (144,647)          | (167,138)          | (193,122)          | (223,141)          |
| (Increase) / decrease in RM                    | -                  | 244,721            | (12,861)           | (14,147)           | (15,562)           | (17,118)           | (18,830)           | (20,713)           | (22,784)           | (25,063)           | (27,569)           |
| (Increase) / decrease in FG Inventory          |                    | (1,758,154)        | (175,815)          | (193,397)          | (212,737)          | (234,010)          | (257,411)          | (283,152)          | (311,468)          | (342,614)          | (376,876)          |
| <b>Net Cash Flow From Operations</b>           | <b>0</b>           | <b>(1,361,783)</b> | <b>1,635,638</b>   | <b>2,439,286</b>   | <b>3,258,848</b>   | <b>4,236,312</b>   | <b>5,240,387</b>   | <b>6,470,901</b>   | <b>7,931,601</b>   | <b>9,661,844</b>   | <b>11,707,461</b>  |
| <b>Cash Flow From Financing Activities</b>     |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Receipt of Long Term Debt                      | 4,045,151          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Repayment of Long Term Debt                    |                    | (587,326)          | (681,741)          | (791,334)          | (918,545)          | (1,066,205)        | -                  | -                  | -                  | -                  | -                  |
| Owner's Equity                                 | 4,045,151          | (300,000)          | (500,000)          | (700,000)          | (900,000)          | (1,000,000)        | (2,000,000)        | (3,000,000)        | (3,500,000)        | (4,000,000)        | (4,500,000)        |
| <b>Net Cash Flow From Financing Activities</b> | <b>8,090,301</b>   | <b>(887,326)</b>   | <b>(1,181,741)</b> | <b>(1,491,334)</b> | <b>(1,818,545)</b> | <b>(2,066,205)</b> | <b>(2,000,000)</b> | <b>(3,000,000)</b> | <b>(3,500,000)</b> | <b>(4,000,000)</b> | <b>(4,500,000)</b> |
| <b>Cash Flow From Investing Activities</b>     |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Capital Expenditure                            | (1,100,000)        |                    |                    |                    |                    | (7,500)            |                    |                    |                    |                    | (7,500)            |
| Factory/Office Furniture                       | (100,000)          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Preliminary Operating Expenses                 | (1,933,969)        |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Purchase of Raw Material Inventory             | (373,332)          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Advance Rent                                   | (210,000)          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| Purchase of Land                               | (950,000)          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| <b>Net Cash Flow From Investing Activities</b> | <b>(4,667,301)</b> | <b>0</b>           | <b>0</b>           | <b>0</b>           | <b>0</b>           | <b>(7,500)</b>     | <b>0</b>           | <b>0</b>           | <b>0</b>           | <b>0</b>           | <b>(7,500)</b>     |
| <b>NET CASH FLOW</b>                           | <b>3,423,000</b>   | <b>(2,249,108)</b> | <b>453,897</b>     | <b>947,952</b>     | <b>1,440,303</b>   | <b>2,162,607</b>   | <b>3,240,387</b>   | <b>3,470,901</b>   | <b>4,431,601</b>   | <b>5,661,844</b>   | <b>7,199,961</b>   |
| <b>Cash at the Beginning of the Period</b>     | <b>0</b>           | <b>3,423,000</b>   | <b>1,173,892</b>   | <b>1,627,789</b>   | <b>2,575,741</b>   | <b>4,016,044</b>   | <b>6,178,651</b>   | <b>9,419,038</b>   | <b>12,889,939</b>  | <b>17,321,540</b>  | <b>22,983,384</b>  |
| <b>Cash at the End of the Period</b>           | <b>3,423,000</b>   | <b>1,173,892</b>   | <b>1,627,789</b>   | <b>2,575,741</b>   | <b>4,016,044</b>   | <b>6,178,651</b>   | <b>9,419,038</b>   | <b>12,889,939</b>  | <b>17,321,540</b>  | <b>22,983,384</b>  | <b>30,183,345</b>  |