

# Status of Carpet Industry in Nepal and Policy and Programme of HMG

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## HISTORICAL BACKGROUND

Traditional carpet weaving has been practiced in the Himalayan Regions of Nepal for hundreds of years. It is not possible to exactly date the beginning of this type of carpet making in Nepal. The fact that carpets have been in use in Tibet, the bordering area of China, for at least the past nine hundred years gives us a fairly good idea about the long tradition of carpet weaving practice in the adjoining area of Nepal, specially the northern districts like Solokhumbu, Taplejung, Manang, Mustang, Humla, Jumla, Dolpa etc. However, the carpet making was not for commercial purpose. Marketing of the products was almost non-existent. Carpets would adorn only the houses of rich and noble people.

Because of prevailing sheep farming in those areas people utilized the wool for making various useful commodities. Most commonly, the general people would make the cheaper kinds of the carpet or *Radi* (flooring material) *Pakhi*, (covering material) and *Lukuni* (clothing material).

The carpet industry as of today is only a few decades old. Around 1949 for the first time a training programme in carpet weaving (Persian and Tibetan) was conducted by the then Cottage Skill Training Bureau (Gharelu Elam Talim Kendra), mostly for the military jawans. This training programme was discontinued the next year because of the lack of wool and financial support till 1956 when carpet-weaving skill was imparted to both male and female workers. In 1959, many Tibetan refugees entered Nepal bringing with them their carpet making skill. This carpet weaving technique was exploited by the International Red Cross and SATA (Swiss Association of Technical Assistance Program), by establishing the Jawalakhel Handicraft Centre in 1960. This organization, which initially started as a carpet weaving centre for Tibetan refugees, mostly women, laid the foundation for the carpet industry of Nepal.

Carpet weaving became a commercially viable industry with the financial and marketing support of the Swiss Red Cross. The carpet weaving workshops established in many other areas of Nepal (Chailsa, Pokhara, Dhorpatan etc.) guaranteed the economic existence of the Tibetan refugees to a certain extent. The first meagre export

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local and regional levels. The Eight Plan's task of preparing "The Agricultural Development Perspective Plan" will hopefully build on the close, interdependent and complimentary relationships among agriculture, irrigation, forestry and the natural environment, and expedite the poverty alleviation and economic growth. Evidently, it is the actions that are more important to transform the agriculture and to increase the peoples welfare.

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of Nepalese carpet was made in 1962 to Switzerland, and since then the Western market for Nepalese carpet has grown at a steady rate.

In 1963 the Department of Cottage and Village Industries established a pilot project named Nepalese Carpet Industry Limited in Patan Industrial District to promote and develop the growing carpet industry. This project, although not successful by itself, did make a big contribution for the development of carpet industry in Nepal. Carpet weaving units were gradually set up by private entrepreneurs and this pilot project was also sold off to a private industrialist. During 1972 and 1973 private sector carpet production began in full swing and many retail shops began to emerge in the Kathmandu Valley to cater to the tourist trade. By 1976 the number of carpet factories reached 11 and major European importers established contacts with the manufacturers and the number of importing countries also began to grow. After this the carpet industry grew even at a faster pace and the number of carpet related industries has grown to more than 3000 units and is still growing. In fact it gives the impression that carpet industry is the most significant and competitive industry for Nepal.

#### **CURRENT STATUS OF THE INDUSTRY**

Commercial production of carpets was started only in 1960, but the carpet industry has emerged as a major industry of Nepal in just three decades. One of the reasons for the fast growth of this industry is that almost the entire product (more than 95 percent) is exported. The share of earnings from carpet export in the total foreign currency earnings of Nepal has also grown steadily to around 60 percent at present. During the last decade the quantity of carpet export grew on an average rate of about 35 percent per annum. Value-wise (in NRs) this average growth rate per annum is even more than 50 percent.

#### **Carpet Export**

The carpet industry is fully export-oriented industry. The carpet export figures for the last two decades is given in Table 1.

Table 1  
Carpet Exports From Nepal

Fiscal Year	Export Quantity sq. m.	Value '000 Rs.
1972/73	10,458	2,497
1973/74	13,065	3,772
1974/75	18,577	7,853
1975/76	19,784	9,276
1976/77	47,473	27,906
1977/78	26,530	23,944
1978/79	53,279	45,819
1979/80	66,775	55,367
1980/81	79,623	65,590
1981/82	98,204	83,929
1982/83	105,622	137,756
1983/84	262,826	263,350
1984/85	227,199	248,361
1985/86	329,518	376,414
1986/87	465,296	627,535
1987/88	802,100	1211,785
1988/89	913,582	1589,191
1989/90	1154,000	2284,496
1990/91	1628,318	3701,992
1991/92	2371,451	7130,928
1992/93*	979,950	3057,056

\* First four months. (Compare with corresponding figures for 1991/92 : approx. 706,100 and 2120,000 respectively).

Source: Trade Promotion Centre, HMG/N

#### Export Earnings from Carpet

The phenomenal growth of carpet export in the last two decades can be understood by studying Table 2, which shows the export earnings from carpet as compared to the total export of Nepal. The percentage share of carpet export was less than 2 percent in 1972/73, whereas it exceeded 65 percent in 1990/91. Last year it was about 58.5 percent.

Table 2

## Carpet Export Compared to Total Export From Nepal

Fiscal Year	Total Export Rs. '000	Carpet Export Rs. '000	Percentage share of carpet
1972/73	135,051	2,479	1.84
1973/74	172,280	3,752	2.18
1974/75	166,792	7,853	4.71
1975/76	266,303	9,276	3.48
1976/77	363,296	27,906	7.68
1977/78	601,329	23,944	3.98
1978/79	849,515	45,819	5.39
1979/80	780,605	55,367	7.09
1980/81	604,659	65,590	10.85
1981/82	462,307	83,929	18.15
1982/83	289,692	137,756	47.55
1983/84	483,738	265,350	54.85
1984/85	1,118,978	249,361	22.28
1985/86	1,760,786	376,414	21.38
1986/87	1,659,826	627,535	37.81
1987/88	2,488,643	610,778	24.54
1988/89	3,040,937	1,589,193	52.26
1989/90	4,388,989	2,294,694	52.28
1990/91	5,670,977	3,701,992	65.28
1991/92	12,184,836	7,130,928	58.52
1992/93*	4,531,294	3,057,056	67.46

\* First four months

Source: Trade Promotion Centre, HMG/N

Table two clearly indicate's that the carpet industry has greatly contributed to the national economy. In fact, now the economy seems to depend heavily on the carpet industry.

### Capital Investment in Carpet Industry

The registration of industrial units related to the carpet industry is shown in Table 3 and the fixed as well as working capital investment in the carpet industry during the last five years is shown in Table 4. The investment figures have been provided by the entrepreneurs while registering their units. Hence the real investment figures may differ. However, the figures provide very close estimates and the trend and growth of the industry.

Table 3

## Registration of Carpet Units In Nepal

Fiscal Year	Carpet Weaving	Woolen Yarn Spinning	Wool Carding	Carpet Washing	Total
Upto 1986/87	1942	574	-	-	2516
1987/88	166	311	-	-	477
1988/89	255	200	-	-	455
1989/90	347	216	-	-	563
1990/91	556	447	11	-	1014
1991/92	764	496	-	2	1262
1992/93*	115	34	-	1	150
Total	4030	2244	11	3	6437**

\* First 8 months

\*\* Assuming that only 50 percent are in operation there exist more than 3000 units.

Source: Department of Cottage and Small Industries, HMG/Nepal.

### Impact of Carpet Industry

The growth of the carpet industry has also made other positive impacts. First of all, it has provided direct or indirect employment to more than 250,000 workers, thus supporting the livelihood of more than a million people. The carpet industry employs more people than all other industries put together, and it is the biggest employer barring agriculture. In fact, it employs more people than HMG (civil servants). Also the carpet industry has been able to absorb uneducated and poor section of the population, and mostly women, thus providing social justice to some extent.

Secondly, it has provided linkage effect to many other industries like loom and spinning wheel production industry, construction industry, water supply industry (deep well boring), transport industry (for large movement of goods and people), and other service industries.

It is thought that not all the registered units go into production. Also many units which start production close down because of various reasons. Unfortunately such statistics are unavailable in the Department of Industry and Department of Cottage and Small Industries. During the last few years many carpet manufacturing firms came into existence and many are known to have closed down because of tough competition and inexperience in the business. But assuming that 50 percent of those industries registered go into production there seem to be more than 3000 units in operation.

Table 4

## Investment in Carpet Industry In Nepal

Fiscal Year					(Rs. '000)
	Carpet Weaving	Yarn Spinning	Wool Carding	Carpet Washing	Total
Upto 1986/87	2,942,788	507,000	-	-	3,449,788
1987/88	91,711	169,283	-	-	260,994
1988/89	104,274	64,639	-	-	168,913
1989/90	624,867	153,584	-	-	778,451
1990/91	208,380	166,430	11,134	-	385,944
1991/92	313,950	204,000	-	-	517,950
1992/93*	279,424	50,704	-	1,200	331,328
Total	4,565,394	1,315,640	11,134	1,200	5,893,368

\* First 8 months

Source: Department of Cottage and Small Industries, HMG/N.

The specific feature of the growth of the Nepalese carpet industry is that it did not enter the Western market as a competitor to other carpets, but rather as a product of new class, which created its own market. This exclusive method of introduction of the carpets to the foreign markets was made possible by the remarkable creativity and flexibility shown by the carpet industry.

### THE CARPET MAKING PROCESS

In the carpet making process, wool is the primarily raw material which undergoes several processing steps. The age-old tradition has been maintained, but improvements have been gradually made as the market desires. The main processes can be outlined as follows:

- Scouring of raw wool
- Combing/Carding, Blending and Spinning
- Dyeing woollen yarn
- Weaving
- Carpet Washing and Finishing

#### Scouring of Raw Wool

Scouring of raw wool is done to remove natural and other impurities. The Tibetan wool usually comes in a very raw form, that is, with dirt, grease, vegetable matter, urine, perspiration etc. Scouring or washing is done in streams or with the help of alkalis and detergent chemicals in factories. After washing, the coloured wool is sorted out and only white wool is used. The Newzealand wool is imported after the scouring and sorting out stage and hence does not need this process.

### **Combing or Carding, Blending and Spinning**

Combing of dried pads of wool fibre is done manually by metallic brush to remove any unwanted material and to make the fibers align themselves in straight and parallel position. Till some years ago only hand combing was prevalent. But now, mostly mechanized combing or carding is used. Blending of Tibetan and Newzealand wool is also done simultaneously during the combing or carding process. In an effective carding, no fibre is intermingled and any dirt, vegetable matter or short fibers are removed. Also blending is better achieved and the wool appears shiny. Wool combing by hand is a tedious and time consuming job. The introduction of carding machine has made this job easy, more economical and productive. Carding process is very important for easy and effective spinning to obtain smooth and even yarns. Spinning is a traditional skill of the Nepali people. The spinning process draws and twists the wool fibers making yarns of desired thickness. Spinning is done in traditional sliver or spinning wheels, imported from India.

The wool with the fibre of 4" to 6" are best suited for spinning with 5 to 7 twists per inch which are best yarns for carpet weaving.

### **Dyeing Woolen Yarn**

Dyeing of woolen yarn can be done either by chemical or vegetable dyes. Before the discovery of chemical dyes, vegetable dyes were used. Madder, walnut, pipal, catechu, myrobalam etc. are the dye-bearing plants of Nepal. But vegetable dyes are not so fast to sunlight and chemical washing. Also the same shades of colour cannot be achieved in every batch of dyeing. So now a days mostly chemical dyes are used. There are three types of chemical dyes such as acid type, metal complex dye and chrome dye. The metal complex dye is popular for its fastness property tenable to sunlight, chemical washing and rubbing, which is important for carpet wool.

Dyeing used to be done traditionally in large open copper vessels or couldrons, by boiling upto 20 kilograms of yarn at a time, heated by wood-fueled stoves. These small dye lots made it difficult to match colours exactly between lots. This traditional dyeing method in the past few years has given way to fully enclosed furnace like stoves which can dye upto fifty kilograms at a time. But now a days more fuel efficient dyeing machines are used. These machines can dye many more hanks in one lot, but basically the dyeing process is the same. Still improved version of the dyeing machines using the technology of steam dyeing have been introduced in 1984.

The steam process allows dyeing of lots upto 300 kilograms at a time. In steam dyeing, the wool is not stirred but the steam heated dye water is circulated around it. As a result, the yarn retains a stronger fibre with less felting.

### **Weaving**

Nepalese carpets are woven on a vertical loom made of wood or steel. The loom is nothing but two vertical poles fixed by a horizontal base to keep it rigid. In the upper and lower portion of loom are placed two movable horizontal wooden beams upon which the cotton wrap threads are tied in the form of an endless chain. When the carpet is woven to a certain height, the tension is released and the woven part is pushed



downwards to a workable height and the unwoven part is moved upward behind the loom. This process is repeated till the weaving is complete. For easy maneuvering of the woolen yarn is rolled into balls of different colours.

Weaving is the most important aspect of carpet making. The loom size can vary according to the size of carpet to be made, but the most common loom is 10' high and 13' wide. Weaving is done manually by making knots of woolen yarn into the cotton warp thread with the help of a metallic weaving rod. In big looms upto 12 workers weave simultaneously. Weaving does not require physical strength but it requires deft fingers and hence female weavers outnumber male weavers. The hand knotted carpets of Nepal are woven in Tibetan knotting system. Other systems of weaving carpets practiced in other countries are the Turkish Knot and the Persian Knot.

In the Tibetan knotting system the woolen yarn is tied with two warp threads at different positions with the help of a weaving rod. This process is continued breadth-wise from left to right. The cotton weft is then inserted in between the warp threads alternatively. Then it is beaten with a hammer and the wool around the weaving metallic rod is cut with a pile cutting blade and thus the woolen pile or carpet surface is formed. The pile height is determined by the diameter of the weaving rod used. It is at this stage that the design and colours of the carpet are achieved, by using various coloured yarns during the weaving (knotting) process.

The overseas importers have found that they can impart their own specialized looks into the carpets by providing their own designs and working closely with the manufacturers.

The degree of fineness of carpets depends on the fineness of the yarn. The finer the yarn the more knots are to be made per unit area. The carpets with 35 to 100 knots per square inch are manufactured. Naturally the more the knots per square inch the more the cost of the carpet. At present carpets with 40-60 knots per square inch are predominant.

After the carpet is completed it is removed from the loom and designs are clipped in physical relief according to the buyer's choice.

### **Carpet-Washing and Finishing**

Until a decade ago, all carpets were exported unwashed, while the importers were washing the products in their own washing plants in Europe. As carpet production increased, the European washing facilities were overburdened, resulting in considerable delays in timely delivery. Hence, carpet washing was introduced into Nepal, by necessity. There was an added advantage that carpet washing could be done at a much cheaper rate locally.

In 1990 a considerable number of carpet washing units opened up in the Valley, giving rise to the concerns about effects of carpet washing on the Valley's environment and the quality of locally washed products. But carpet washing in Nepal has come to stay and the quality has been comparable to the sophisticated European process.

At present; most carpet washing facilities are manual. Carpet is washed in a solution of various chemicals (sulphuric acid, caustic soda, bleaching powder etc.) and

detergents. The wet carpets are placed in open flat concrete platforms and manually washed using large wooden flat spade-shaped scrubbers. This is done with intermediate rinsing and final washing with water. But mechanised carpet washing has also been lately introduced in Nepal. It is expected that many mechanical washing units will be established in coming years. At present more than 80 percent of the carpet export is in the washed form and the remaining quantity is exported unwashed for washing overseas before marketing.

After washing the carpets are dried in the sun and checked for any defects. Using scissors any excess wool is trimmed off. Also clipping of designs is done in physical relief to give the carpets a finished look. During carpet washing some portions of the carpets may lose colour, in which case these parts are redyed before packing the carpets for export.

### TECHNOLOGY IN USE

Till the commercial production of carpets in the early 1960's the carpet industry was basically a traditional cottage industry, utilizing the ancient technology used for centuries in Tibet. Even now it remains as such in a scattered form, but in the last three decades it has gone through a gradual metamorphosis specially in the last decade, a much more marked change has taken place in the production process and the technology used. The introduction of modern technology in the areas of combing, dyeing, designing, and washing has made the industry much more efficient. The weaving technique is however maintained to give the Nepalese carpet the handicraft look, for which it has become popular.

### Wool Technology

As the organised carpet industry came to Nepal from Tibet, originally 100 percent Tibetan wool was used for carpet making. This quality wool comes from the flocks of sheep raised in the high Himalayan plateau, where the climatic conditions are severely cold. The colder the climate the better the wool. The high lands wool from Tibet is rich in lanolin which ensures longevity. The Tibetan wool, with extended use, will only get better shine and lustre. The Tibetan wool has another advantage: it has a medulla - a soft, oily inner core through which the colour dyes are absorbed. That is, every hair of the wool absorbs dyes from inside out. That is why the Tibetan wool is more desirable, as the colour is more durable. It can be washed and the colours do not fade easily; they are locked inside.

But as the carpet industry gathered momentum, the supply of wool from Tibet and highland regions of Nepal could not keep pace with the demand. Hence other supply sources were explored and the Newzealand wool was tried about a decade ago. A carpet made from 100 percent Newzealand wool while initially soft lustrous and luxurious, would not wear well with time. Hence the blending technique of Tibetan and Newzealand wool was practiced. Originally more of Tibetan wool was blended with less of Newzealand wool. This percentage slowly changed to 50:50 and today the ratio of Newzealand wool to Tibetan wool is generally 80:20. Of course, still some carpets are produced with 100 percent Tibetan wool and some manufacturers produce carpets with as low as 5 to 10 percent Tibetan wool. Normally, the blending ratio is fixed according

to the agreement between the buyer and the manufacturer. Higher the blending of Tibetan wool, higher the price the carpet fetches.

There are many varieties of wool depending on the type of sheep, sheering age, climate etc. Even the wool from the same sheep varies according to the part of the body from which the wool comes. For carpet making good quality long fibre is the best. Hence the standard of wool imported from Newzealand has been fixed at 128 type 4-6 inches fibre length.

### **Wool Carding Technology**

Before 1984 all the processes of carpet making were manual or hand operated. The combing (or carding when machines are used) of raw wool was done by hand using brushes or combs of metallic wire. Today, carding is almost wholly done mechanically with machines imported from India. With the introduction of the carding machines the blending of Tibetan and Newzealand wool has been better. Also it has made spinning easier and smoother, increasing substantially the amount of yarn a spinner can produce per day.

The introduction of carding machines has also created some problems. These machines could also blend well the waste wool (cut pieces from the weaving process called Zhindu) into fresh wool. The price of Zhindu being almost 20 times cheaper than new wool some unscrupulous manufacturers began to blend upto 10 to 15 percent Zhindu with fresh wool causing the quality of carpets to deteriorate, which in turn created problems in marketing.

### **Dyeing Technology**

The biggest technological revolution in the carpet industry of Nepal has taken place in wool dyeing process. Like carpet weaving, primitive wool dyeing technique also came to Nepal from Tibet. Vegetable dyes were most commonly used supplemented by only a few dyestuffs like rhubarb, lac, indigo etc. Dyeing was a closely guarded secret, the tradition being passed on by fathers to sons or valued friends. The tradition of vegetable dyeing continued, though vegetable dyeing takes more time than chemical dyeing. Vegetable dyed carpets also commanded higher prices. The range of colours that can be extracted from a single substance depending on its preparation, mordants and types of pots used, is tremendous. Hence it is almost an art.

Vegetable dyeing can produce many shades of brown, yellow, blue and red colours. Tea, walnut and catechu are used to get brown colour. Lac is used for red, magenta and pink shades. Indigo is used for blue colors. But dyeing is such a sophisticated process that the water, vessels used etc. can give a different shade. Also vegetable dyeing requires repeated dyeing to achieve the correct shade.

Vegetable dyed carpets were mostly in demand till the early 1980's. Now, mostly the per-metalised dyes imported from Switzerland (Sandoz, Ciba-Geigy) and Germany (BASF) are used cheaper variety of dyes imported from India are also used, but for quality carpets the European dyes preferred. Dyeing machine from India has been introduced. However, producing a particular shade of colour requires the utmost technical expertise and artistry. But in Nepal the technical know-how has spread well

and even the loftiest level of dyeing can now be accomplished. Unlike the vegetable-dyed carpets the colours of chemically-dyed carpets do not change over time.

### **Design Technology**

In the beginning most of the carpets produced were influenced by Tibetan designs depicting dragons, snow lions, phoenixes, flowers etc. Significant change has taken place in designing new carpets. Symbols of religious significance, the most commonly used designs, have slowly given way to modern designs and colour pattern. Most carpet factories have full-time designers to come up with new original attractive designs. The importers have also arranged to provide their own designs and specifications as well as colour patterns.

The versatility and adaptability of the Nepalese weavers to weave newer designs every time has contributed a lot for the boom of the carpet industry in Nepal. The trend now a days include ethnic designs, oriental themes, and country styles. The western consumers are also interested in cultural and historical aspects. The borders have changed for flower and geometric designs. Modern geometric designs on the whole carpet have also become quite important.

The early weavers needed an original carpet to copy the designs into a new one. They began to learn to weave graphic art designs into a carpet. Now of course any complicated design can be easily handled by the weavers.

### **Weaving Technology**

The weaving technology as such has not changed during the last three decades of the industry. The looms also have not changed apart from some improvements. In fact, it is this hand weaving technique that gives the uniqueness to the Nepalese carpet, and the technology is better left unchanged, otherwise the peculiarity of the Nepalese carpet could be lost affecting the market share of exports.

### **Washing Technology**

The carpet washing was an unknown technology to the Nepalese and all of the carpet exports was in unwashed form. In the last decade the washing technology has been absorbed by the Nepalese manufacturers. Initially manual washing technique was used, but now mechanised washing is beginning to take roots. It is not at all a complicated technology. The only important thing is to be environment-friendly i.e. disposing the effluent water only after treating.

## **MANPOWER AND TRAINING FACILITIES**

The carpet industry for the initial few years from 1960 employed mostly the Tibetan refugees. However in the late 1960's and early 1970's many private sector entrepreneurs entered the carpet business. The techniques were learnt from the Tibetans and now they are in a very small minority. It is estimated that about 2,50,000 to 3,00,000 people are engaged in the carpet industry. The reason for easy access to the industry for the common man or woman is that in most of the carpet making process not much skill is required. For example, in wool scouring, washing and dying

operations raw unskilled hands can be used without any problems. For spinning of yarn a few days of training is sufficient to start with and for weaving, a few weeks of apprentice training will do to start work. Practice improves their skill and efficiency. Since most of the yarn spinning and carpet manufacturing units pay at piece rates, the workers have to improve their efficiency and productivity to earn more and more. This has played a vital role in self training of the manpower.

For the specialized types of man-power like supervisors, dyemasters, weaving masters etc. the Department of Cottage and Small Industries has been providing training to appropriate candidates. Short term (6 months) and long-term (1 year to 2 years) courses were being provided, but now the long-term courses have been discontinued because of its doubtful performance or use. However, the Department is rethinking about the training programme in coordination with the Carpet Industries Association and the Carpet and Wool Development Council.

For specific jobs like designing and quality control, some expatriate experts are also given work permit and non-tourist visa. Many skilled workers from India are also abundantly used. But for most jobs the labour contractors or the manufacturers themselves are providing on-the-job training. The Carpet and Wool Development Council has recently been providing short-term (two weeks) training on wool dyeing.

But considering the Importance of the carpet industry and its growing nature, training facilities at present are negligible and it is felt that a full-fledged training centre catering to the carpet industry dealing in all aspects is of utmost importance.

### QUALITY CONTROL AND COMPETITIVENESS

The Nepalese carpet is a unique product with superior quality. The quality of a carpet depends on a series of factors like, wool quality, proper scouring and combing, uniform hand spinning, use of good dyes and dyeing technique, proper weaving craftsmanship according to given design and colour pattern and maintenance of knot density and pile height, washing and finishing process etc. Hence quality control has to be done at each stage of production.

The world carpet business is very competitive. The major suppliers of hand-knotted carpets to the global market are India, Pakistan, China, Afganistan, Nepal, Iran, Turkey, Morocco, Germany, U.K. etc. The highest market share (25 percent) is captured by India with China (21percent) just trailing behind. Nepal has done very well in the past few years to overtake many other countries and reach the fourth largest supplier position with a market share of about 10 percent in 1991. This has been possible because of the strict adherence to stungent quality control of the product. Of course, some business men, with an itch to make quick money have tried to export lower quality products using wool waste, more Newzealand wool ratio, low quality dyes, lesser knot density etc. Fortunately, such evil practices have been controlled to some extent, and the market has not reacted too badly. Also the major importers have their own representatives in Nepal to check on Quality, and the real carpet manufacturers have good credibility.

The Nepal Bureau of Standards and Metrology has brought out many national standards relating to the carpet industry and at present it is working on some more. The

existence of national standards on all aspect of carpet manufacture will go a long way in helping the further growth of this industry..

### ENVIRONMENTAL ISSUES AND HEALTH HAZARDS

Carpet Industry is concentrated in the Kathmandu Valley. Almost fifty percent of the carpet industries are located in Boudha, Jorpati, Chabahil and Baneshwor, (Fig. 1). Other areas are Koteshor, Tahachal, Dallu, Swayambhu and Balaju, besides of areas of Bhaktapur and Patan. Most of the units are scattered along the Bagmati, Bishnumati and Dhobikhola, the reason being that plenty of water is required for wool scouring, dyeing and carpet washing. Also it is easier to just let the effluent flow into these streams.

This is exactly why the carpet industry has become the target of criticism in some quarters. The frequently heard criticism, is that the carpet industry (washing and dyeing) is responsible for the water pollution in the Kathmandu Valley. However the arguments have been publicised on an ad hoc basis without detailed studies or facts and figures. The fact that sewage and garbage created by the alarmingly dense population of the valley is the main source of river pollution is ignored. This is not to say that the carpet industry is not polluting the environment. The pollution resulting from the carpet dyeing and washing seems to be small compared to the sewage pollution.

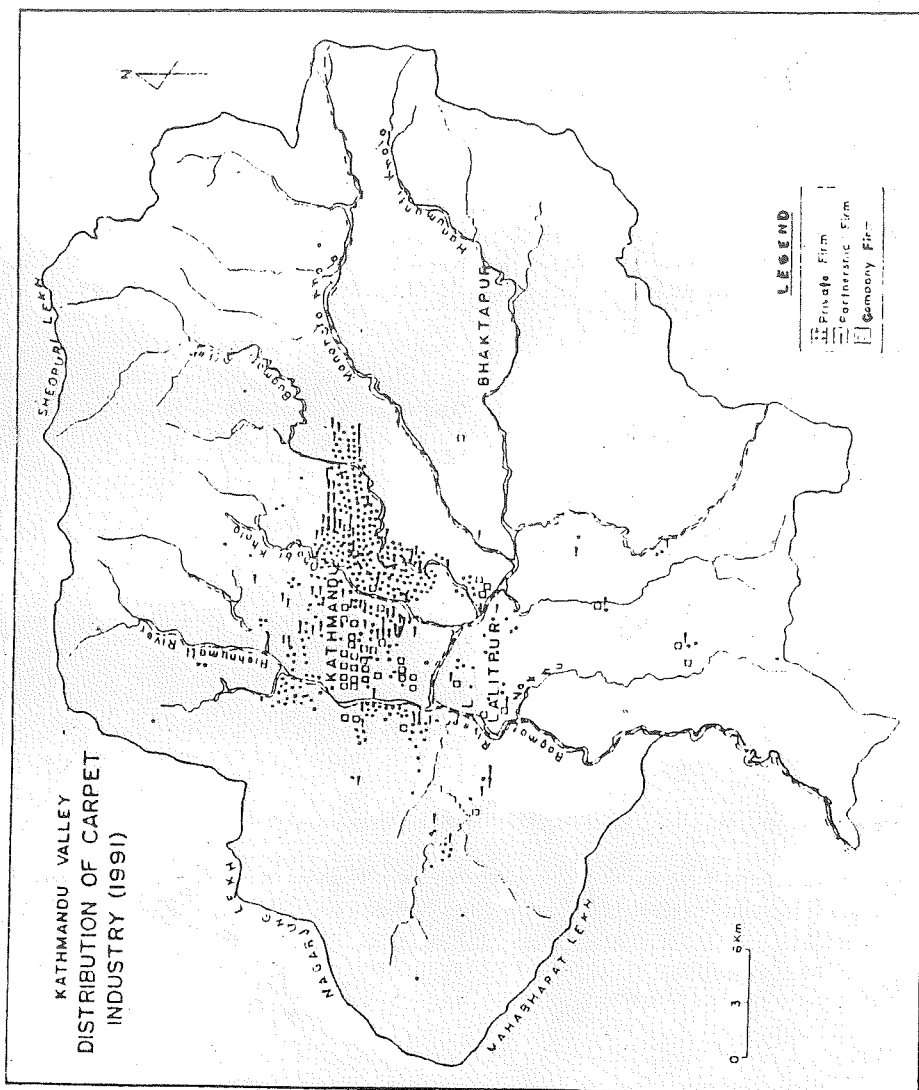
In April 1992 a report on Carpet Washing Commissioned by GTZ and prepared by a German Consultant, H. Roolart was published. Although Mr. Roolart identified several ways on improving the carpet washing process, he did note that "the opinion that carpet-washing is the reason of the filthy dirty water in the rivers is definitely not true."

But because of the hue and cry made by the "environmentalists" and the concern shown by Western buyers, progressive carpet manufacturers have also become sensitive to environmental issues. They have begun to ensure that there are no negative impact on the environment. For example, some manufacturers neutralize the chemicals in the effluent before being discharged into the river. Some new washing and dyeing units have also established effluent treatment plants.

There is also some solid waste from the carpet industry in the form of waste wool clippings from the weaving and finishing process and ash from boilers (using rice husk) in the dyeing plants. But these are environment friendly and act as excellent fertilizer. The waste wool loosens the soil and retains water and generates nitrogen so essential for plants.

In the carpet making process the workers are exposed to wool fibre, dyes and chemicals, including acids and alkalis. With proper protection like gloves or masks these health hazards could be minimized. Most of the workers involved in carding and spinning units complain about respiratory diseases as a result of inhaling fine wool fibers. The carpet weavers seem to have wrist pains. But any occupation has its own hazards, and hence the carpet industry cannot remain an exception. Hence the industry should be watchful and prepared for treatment of its workers. Also efforts should be made to minimize the hazards.

Figure: 1



Source : IUCN

## THE CASE OF CHILD LABOUR

Another criticism leveled at the carpet industry concerns the use of child labour. This is such an emotional issue that anyone with a little sense will be touched by the wide media coverage. It is a fact that child labour is used in carpet industry, but definitely not to the extent of 50 percent as sweeping ad hoc claims are made. There are two kinds of child labour-the first being the children of weavers themselves who join their parents in a sort of fun-and-game attitude, and the second being the children who are sent by their parents to work due to compulsion of their poverty. Besides child labour is also widely being used in other sectors as well.

Of course one should not try to justify the use of child labour. Children are best left at school, but have those people who frown upon child labour calculated how many more schools are needed every year to meet the need of new arrivals. And there are not enough schools in the country at present, to take care of all the children under fourteen.

The paradox of child labour is that it is being viewed with the eyes of a Westerner. The citizens of western countries are living in a society where everything is guaranteed by the state. But here we do not have social security. If all the carpet manufacturers were to leave out the proven child labour from the industry, no one will make proper arrangements for their welfare.

There is already a law banning the employment of child labour (under fourteen). But in a country where birth certificates are the exception rather than the rule, it can be quite a challenge to determine the age of the hill tribe youngsters, who look under fourteen even/in over twenty, because of the Mongoloid nature (the absence of beard or moustache in young boys).

Anyway, His Majesty's Government of Nepal has recently taken action against a few carpet manufacturer's for employing child labour. This action may have satisfied the people who profess for the cause of prevention of child labour to some extent.

## POLICY AND PROGRAMME OF HMG

The carpet industry has established itself as the most important industry of Nepal. It has made significant contribution to the economic progress of the country and to social justice by providing jobs to the poorer section of the people from remote areas. It is the biggest employer after agriculture and it is the biggest foreign currency earner since the last few years.

The credit for the success of the carpet industry mostly goes to the private sector carpet manufacturers. But the government policy towards the carpet industry of not interfering with the market forces, has no doubt helped. Realizing the importance of the carpet industry His Majesty's Government of Nepal has established the Carpet and Wool Development Board, under the chairmanship of the Assistant Minister of Commerce. The main aim of this council is to provide a one-window service to the carpet industry to make it easier for them to work with the government, and also to address to the



issues of the carpet industry like quality, market development, environmental protection, child labour and other problems.

The broad policy and programs of the government towards the carpet industry has been as follows:

- Encouragement to the private sector for development of the carpet industry.
- Liberal attitude for import of raw materials, machinery and other equipments.
- Open General License (OGL) system for import of wool and other materials.
- Inclusion of manual carpet weaving in the Cottage Industry category so that no excise, sales tax, or income tax is levied.
- Upto 50 percent of the investment on pollution control or environmental protection measures to be deducted from taxable income.
- Exemption of customs duty and sales tax on raw materials used and excise on the product if exported.
- No licence system for carpet export and only 0.5 percent duty on export.
- Income tax exemption on earnings from export.
- Commercial Banks provide upto 80 percent pre-export finance on the basis of L/C.
- Retention scheme of foreign exchange for exporters on their export earnings.
- Organized system for the issuance of the Generalised System of Preference (GSP) form.
- Testing and certification services by Carpet and Wool Development Council for using IWS wool mark label.
- Weaver's training program conducted by the Department of Cottage and Small Industries and the Cottage and Small Industries Development Board.
- Wool dyeing training program carried out by the carpet and Wool Development Council (CWDC).
- Colour forecast and shades matching services provided by CWDC.
- Light fastness, wet fastness and grease content testing service by CWDC.
- Quality development and export promotion services by CWDC.
- Up-to-date information services on product and market provided by CWDC.
- The trade Promotion Centre (TPC) has been involved in market promotion and expansion, playing the role of match maker between International market and the carpet industry.
- Participation in International Trade Fairs for exploring potential markets.
- Publicity of the Nepalese carpets in new market areas (like USA, Australia, Newzealand, Japan etc.) by distribution brochures and booklets through UNDP and International Trade Centre etc. by TPC.
- Keeping the carpet industry in harmony with the environment.
- Discouraging child labour in the carpet industry.
- Prevention of quality deterioration and use of waste wool etc.

## SUGGESTIONS AND RECOMMENDATIONS

Although the carpet industry has come of age, the market competition suggests that the industry should always remain alert and watchful. Many problems being faced by the industry should be analysed carefully and solutions sought so that it can flourish

without hinderance. Some suggestions and recommendations have been provided as follows:

Everyone involved in the carpet industry must honestly work hard to maintain the image of the Nepalese carpet as a unique and quality product and win the confidence of the consumers. Quality should not be sacrificed for quick money.

There is still a big gap in qualified and skilled manpower, hence extensive training programmes on various aspects of the industry, like dyeing, designing, weaving, washing etc. should be launched jointly by the industry and HMG.

- The carpet and Wool Development Board should be developed further as an institution to provide any information, technical and other support services to the industry.
- The Board should also have a statistical and monitoring unit to collect and disseminate all necessary information about the industry.
- The Nepal Bureau of Standards and Metrology should develop the Standards for Nepalese Carpet to maintain its uniqueness.
- The Carpet and Wool Development Board should formulate a clear cut policy on all aspects of the carpet industry.
- The environmental issue being of technical nature, detailed studies and analysis have to be conducted and standards and norms fixed for compulsory following.
- The child labour issue is a tricky problem. Child labour should be discouraged in the organised production units. May be this will provide jobs to adult unemployed.
- The minimum export price (f.o.b.) for the carpet should be fixed and reviewed after calculation of all costs of production. Provision of incentives or extra facilities to companies exporting at higher prices should be considered to increase the foreign exchange earning.

## CONCLUSION

In Western Europe the Nepalese carpet is seen as a trend setter. It has brought new meaning to the idea of interior decoration. The importers themselves are employing qualified artists and designers to come out with new designs with attractive combination of colours and ideas in close cooperation with the manufacturers. It is because of these innovations that the sale of Nepalese carpets is growing. The basic reason for the success of the Nepalese carpet in the Western markets is that it did not enter the market as a competitor to other carpets but rather as a unique product in its own right. But it should not be forgotten that to remain in the market lots of dedication and innovation are required from all concerned quarters to maintain the image of the Nepalese carpet as a unique product, amidst similar copies being flooded by other countries.

Evidently, Nepal and its people have reaped many benefits from the magnificent carpet industry. The rapid growth of the industry has created its own problems and complications. But the solutions to the problems are not so challenging or insurmountable. By working in close harmony rather than being at odds with one another, the carpet industry and His Majesty's Government of Nepal should be able to exploit the favourable economic situation generated by the carpet industry, so that it should flourish even better for many many years to come.

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