

صنایع دستی روستائی (قالیبافی) در حاشیه غربی دشت کویر*

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چکیده

فلات مرکزی ایران، با اشکال ژئومورفولوژیکی متفاوت، از حوضه‌های متعددی تشکیل شده که دشت کویر خود مجموعه‌ای از این حوضه‌ها می‌باشد (بویک، ۱۹۵۹، ص ۶). دشت کویر بین ۵۰° و ۳۲° شمالی و ۵۰° شرقی واقع شده دارای وسعتی حدود ۲۹۱۵ کیلومتر مربع است. در حاشیه این دشت بزرگ روستاها و شهرهای متعددی استقرار یافته‌اند، که از ۱۱ شهر معروف اطراف آن می‌توان نام برد، که کاشان یکی از شهرهای مذکور می‌باشد.

در این شکی نیست که قالیبافی یک پدیده جدیدی در کاشان نیست، ادواردز در کتاب خود تحت عنوان «قالی ایران» اشاره می‌کند که در اواسط قرن شانزدهم میلادی یک قالی در کاشان بافته شده که اکنون در موزه صنعت و هنر اتریش در وین نگهداری می‌شود.

قالیبافی در ناحیه مورد مطالعه (روستاهای شرقی کاشان) در ۳۰ سال گذشته توسعه بیشتری یافته، و قالیهایی بافته شده در ناحیه از کیفیت و مرغوبیت خاصی برخوردار است. فرشهای معروف این ناحیه در بازارهای داخلی تحت عنوان قالی شادسر معروف می‌باشد، که در طرح، مواد و کیفیت (۴۰×۴۰ گره) اغلب مشابه می‌باشند. این قالیها اکثراً توسط خانواده‌های (روستائی) در ناحیه بافته می‌شوند، که براساس برآوردهای انجام شده در یک جفت قالی شادسر ۲,۲۵۲,۸۰۰ گره وجود دارد که معمولاً در حدود ۴۶۸ روز بافته می‌شود، میزان تولید قالی شادسر ۷۶۷۶ مترمربع در سال ۲۰۰۳ بوده است. که میانگین ضریب قابلیت افزایش تولید در سال ۲۰۰۳ حدود ۲۷/۲ درصد محاسبه گردید، اگرچه دلائلی بر عدم افزایش ضریب قابلیت تولید (که قاعدتاً می‌بایست بیش از ۲۷/۲٪ باشد) وجود دارد که در متن بدان اشاره شده است.

واژگان کلیدی: قالی، کاشان، شادسر، قالیبافی

نکته: این مقاله برگرفته از نتایج یک طرح تحقیقاتی می‌باشد که تحت عنوان «بررسی و شناخت قالیبافی در روستاهای حاشیه غربی دشت کویر ...» با حمایت مالی معاونت محترم پژوهشی دانشگاه تهران انجام شده است. شماره طرح ۳۱۳/۱/۵۴۱.

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***Traditional Rural Industry with Respect of Carpet Weaving,
In The west Margin of Dashte-e-Kawir
Case Study: Kashan Region***

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Abstract

The interior of the Iranian high land encloses a central area of irregular shape consisting of a very large number of basins. The Dasht-e-Kawir or Kawir-e-Bozorg (great Kawir) is a collection of these basins (Bobek, 1959, P6).

The Dasht-e-Kawir occurs between 32°50' N and 50° E. the extent of Dasht-e-Kawir is about 2910 km² and is bordered by marginal villages and towns. Eleven towns are located at the edge of Dasht-e-Kawir, Kashan region is one of them, which is Located at the west.

There is no doubt that carpet weaving is not a new phenomenon in the Kashan region. Edwards has described in his book, "The persian carpet" a carpet which was woven in Kashan in the middle of sixteenth century, now it is to be seen in the Austrian Museum for Art and Industry, Vienna.

The carpet woven has developed over the last 30 years. In the area unlike the rest of the rural area in Iran, high quality carpets are woven. In the national market it is known as the Shad-Sar carpet which in design, material and quality (40×40 Knot's) are approximately similar.

The carpet have been produced mainly, by the majority of households in the area.

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Based on to estimate, a pair of standard size Shad-Sar carpets has 2,252,800 knots which will be woven in 468 days, on average 5.94 m² of carpet are woven by a skilled weaver in 468 days. The total production was calculated from the above estimate to be about 7676 m² for 2003. On average the coefficient of potentiality for increasing production was calculated for 2003 at about 27.2%. There are a few basic reasons for the cause of decreasing potential production. Also, in order to reach potential production in the area, the following suggestions are made.

- a. To advise and help the people to organize and supply good working conditions, materials and strange design, based on market demand.
- b. To establish carpet cooperatives for financial help facilities.
- c. To make certain health and social services are available for weavers.

Key Words: Carpet, Kashan, Shad-Sar, Carpet wearing

1- Introduction

There is no doubt that carpet weaving is not a new phenomenon in the Kashan region. However, unfortunately, there are no accurate documents about when carpet weaving started in the Kashan region.

Therefore, it is very difficult to determine with accuracy, the design and production of carpets in the past in the area, though there are some carpets in the famous museum which indicate the level of skill and progress of art in the region (Fig. 1).

Edwards (Edwards, 1956, P, 22) has described in his book "The Persian carpet" a carpet which was woven in Kashan, in the middle of the sixteenth century. Now it is to be seen in the Austrian Museum for Art and Industry, Vienna. He states:

"This carpet is in the first rank of the great carpets of the world. Some authorities, indeed, have declared it to be the finest carpet, ever woven. It is the only carpet listed here in which warp, weft and pile are of silk. Parts of the figures are brocaded in silver of silver gilt. It counts 27×29 Knots to the inch

which is far closer in weave than any other of the Sefavi carpets. The hunt¹ is a catch-as-catch-can affair."

Also, he has described the design in more detail and added:

"... it was probably woven about the middle of the sixteenth century, for Sultan Mohamd died about A.D 1555. The carpet has been attributed to kashan, on the grounds that the kashan is were accustomed to weave silken fabrics and that some silk carpets were undoubtedly woven there in the sixteenth century."

The interior of the Iranian highland encloses a central area of irregular shape consisting of a very large number of basins. The Dasht-e-Kawir or Kawir-e-Bozorg (great Kawir) is a collection of these basins (Fig.2).

Physical features in the arid central basins of Iran are extremely diverse and may have individual Persian names. One of these "Dasht" is described by Dehkhoda (Dehkhoda, 1995) as "an extensive level area". It is not, in fact, a firm and dry desert, although some Eruopean researchers have understood this to be so. Kawir is a large or small basin which is usually swampy or composed of lakes, the run off being dissipated by infiltration into the ground and evaporation from the lakes or swampy areas. If it is salty, the kawir is generally called Kawir-e-Namak, and the sandy Kawir is generally named Rig or Kawir-e-Rig (Bobek, 1960, p. 25).

(Fisher, 1968, p. 120) says "Kawir denotes an expanse of slime or mud viscous rather than free-flowing with frequent salt efflorescence of continuous thick layers at the surface".

The Dasth-Kawir occurs between 32°50' N – 36°30' N and 50° – 54° E . The extent of the Dasht-e-Kawir is about 2910 km² and is bordered by the marginal villages and towns. Eleven towns are located at the edge of Dasht-e-Kawir, Qom, Varamin, Garmsar, Semnan, Damgan, Sabzevar, Kashmar, Ferdos, Tabas, Aran, and Kashan.

1- SheKary or Shekargahe (Hunt or hunting garden) is a name of design in the Persian Carpet.

In the west of the Dasht-e-Kawir in Kashan region there are located number of villages, called desert area (Kawirat) which are, Fakhreh, Shahriary, Ali-abad, Rigen, Mohamad-abad, Kaghazi, Yazdelan, Qasem- abad and Hosain- abad.

The area weaver, especially mohamad-Abad, and Kaghazi weavers, have skill in weaving carpets with silk. They choose the hunting design for their carpet. This skill shows that carpet weaving has been practiced for a long time and was passed on from generation to generation in the area. In other words, according to an interview with old people, which was carried out in the area, they believe that carpet weaving has been carried out for a long time and it is not a new craft skill industry. However, there is no accurate information about the start of carpet weaving in the area. Edwards has shown in his book (Edward 1956, P, 334) in a table which is illustrated, the number of looms in the Kashan and Destrict. He has indicated the number of looms in local villages. In 1915 there were 1000 looms in the surrounding villages (including the east area). This means that carpet weaving was common in 1915 in the local villages as well as in the area.

2. The Technique of Carpet Weaving

The technique of carpet weaving changes from region to region in Iran. Basically it depends on the social conditions, skill and intellect of the weaver. The carpet resembles a painting and the weaver, a painter. When a weaver weaves a carpet, it is very difficult to produce another one exactly the same because one or more elements which are involved in the carpet weaving, e.g. material, design and the weaver's emotion and feeling, may be changed. These factors affect the quality of the carpet and as a result, its cost. Therefore, in general, the quality of carpets changes from one region to another. Basically each region, city or each village, is known for a special type of carpet in the Iranian carpet markets.

The main points which cause these variations are the shape of the loom, the method of weaving and the sort of material and design. These factors are described as follows:

2-1- Structure of Loom

Two types of looms are used in Iran in general. First, the horizontal loom which is only used by the tribal people, or in some parts of Iran. Secondly, the vertical loom which is used in most parts of Iran, as in Kashan city and all the villages of the region.

The vertical loom consists of a fixed sar dar (upper warp beam) and a Zir dar (cloth beam or lower beam), the ends of which fit into slots in the side pieces, (side beam).

Pahlu- Dar (Fig 3).

2-2- Warp Winding

Chelah- davani (warp winding) The work is carried out by a very skilled specialist, Chelah- Davan (warp winder). The warp has been twisted formerly and has been wound up in the spools on to the loom. The lower ends of the warp are laced to a rope which is wrapped around the Zir- Dar. The upper ends of the warp are wrapped around a rod, which is called Fandak. It is suspended with a pair of strong ropes from the warp beam. The loose upper ends of the warp are twisted together into ten or more bunches and tied together.

Fandak or Sar- Dar, which is used for the next carpet (Taie-Qali). Tension of the warp is obtained by driving Goveh (wedges) into slots. Also, there is a Neirah- Pich (rod, heddle)- about 4-6 cm., diameter- which is formed by winding a strong cotton twine in continuous loops around a horizontal pole and every second warp thread. A second horizontal thin rod 3-5 cm., in diameter which is called Haf, is inserted to form the shed rod between the front and behind the warp strings.

The weaver sits on a Takhteh (plank), the end of which rests on the bottom rungs of two ladders. As the work proceeds the plank is raised, so that in time the weaver may be working 1-1.5 m. above the floor level. When the height of the plank has reached about 0.5m., below the end of the carpet (usually the length of the carpet is about 2 m., in this area), the height is enough for completion of the carpet. Now the plank is with-drawn from the first position, and the upper ends of the warp are loosened for the next carpet (two

small ones which are often woven as a pair or Joft) and the lower end of the warp are laced again to the rope which is wrapped around the Zir- Dar. Tension is again maintained by wedges, and the action is repeated as before, until the next carpet is finished. Sometimes, before each single carpet is finished, the carpet is with-drawn because possibly the weavers cannot work at such a high level, or the height of the side pieces of the loom or the roof of the work place is low, so the carpet is free. The Cheleh- Davan (warp winder) is then lowered and sewn along its whole length to the rope wrapped around the cloth beam. The loose ends of the warp are again bunched and tied along the Fandak. Tension is restored by driving the wedges into the side slots, and the work of weaving begins again.

2-3- Instruments

A few simple instruments are used for carpet weaving.

(a) *A sharp knife for cutting the yarn after the knot is made. Usually the knife which is used is a special one. Its length is about 20 cm., and the handle of the knife is about 10 cm., (Fig. 4).*

(b) *A pair of shears is used for trimming off the ends of the yarn after each row of knots is finished. The size of the shears varies and usually there is no standard size used in the area.*

(c) *Another essential instrument is a Dafeh or Shaneh (comb) for beating in the wefts. A normal comb- beater is used in the area, and has a heavy wooden body with an upstanding handle and projecting iron teeth. These pass through the warp strongs to beat in the wefts.*

(d) *Another instrument used, as a measuring scale for with a of the size of the carpet. It is called a Gereh. It is a piece of flat iron, its length is 6.5 cm., or equal to the size of old - fashioned cigarettes in Iran, which are called Oshno. It is exactly 6.5cm.*

2-4- Knotting The Pile

The carpet is woven using two kinds of Risheh (knot), Persian knot Farsi baf or Shahry baf (town carpet) and Turkish knot Turky baf or Dahaty baf (village carpet) in Iran (Fig. 5).

After the warp is laid, the weaving begins. Hanks of various colored yarn hang above the weaver's head and the yarn is woven into the carpet according to a prescribed pattern.

The knotting in the area is Farsi baf (town carpet). The weaver grips two adjacent warp threads with her fingers (the weavers are often the women of the area), draws them towards her and slings a thread of Rang or Cork (pilewool) behind these two warp threads, and winds the end of the woolen thread into the right side of the warp thread. She then pulls the knot tight and cuts the thread ends with the sharp edge of the knife. When one Rag (row) of knots has been completed, the weaver pulls down the Haff, and turns down the Nireh pich and with this action makes a gap between the front and back warp threads. Then the Pud (weft threads) are woven as it passes through in the gap.

The area carpet is double wefted. First the Pud-e-Zakhim (thick weft) is woven and after, the Pud-e-Nazek (thin weft). When the wefts have been woven, the weaver returns the shed rod and heddle rod to the first position.

Now the weaver carefully takes hold of them between finger and thumb and pulls them towards her to tighten the knots.

Next the weaver compacts (Shaneh-Zadan) the wefts and knots with the beater comb, and the ends of the yarn are trimmed. After the trimming off the ends of yarn, one Rag of weaving is finished, and the work of knotting begins again.

2-5- Carpet Material

Four important materials are used for carpet weaving in the area. Wool, which is called Rang is used in the area and is of high quality being spun in a factory. The best quality wool which is called Kork, is used for first- class carpets in the area and is imported from other parts of Iran.

The production of wool in the Kashan region is not of prime importance and usually the wool producers sell their wool to the wool merchants in Kashan City. Hand spun wool is not used in the area carpets because it is not the best quality and is not suitable for Kashan carpets. So they prefer to buy the high quality Rang or kork from the market, and sell raw

wool to the wool merchant. This wool usually makes up two thirds of the carpet materials in weight. Silk is the least important material but still used, mainly in the area studied. The output of silk rugs is small. About 10 percent of carpet production has been in silk and pure silk carpet is very rarely woven in the area, usually for depicting flowers or animals.

Cotton is used as Tar (warps) and Pud (wefts) in the carpet. Mill spun cotton is produced by the mills (factories) which have been built in Kashan. The production quality of these factories is very good and most of the cotton which is produced in the region is sold to these factories. The Faghihi factory produce is very famous in the Kashan region. Cotton (warps and wefts) makes up one third of the weight of the carpets in this area.

2-6- Dye houses (Rangrazi)

One of the most important things in carpet making is the quality of colour of pile wool. The weavers and contractors themselves prepare pile wool, and order suitable colours from the Rangrazis, (dye houses) to dye the wool in accordance with the design which they have prepared beforehand.

The large Rangrazis are located in Kashan City. Dyes are boiled in large earthenware vats, 1 to 1.5 m. in height. They are heated by kerosene under pressure and one vat is capable of handling as much as 50 to 60 kg., of wool in one batch.

The principal traditional dyes which were used in Kashan were Nill (indigo), Ronas (maddler), Qarmez-Daneh (cochineal), walnut husks, pomegranate rind, henna, and straw, but recently European dyes have been used in the majority of dye houses (although a few of the main Kashan carpet merchants still have their yarns dyed in the traditional manner). All pile wools are dyed at the dye-house by a specialist. The most important point which the weavers have to watch, is to ensure that each batch of wool of the same colour is dyed in one vat at the same time, in order to get the same colour. If this does not happen it is very difficult for a dyer to dye another vat of wool to exactly match the same colour. This can result in a difference in pile colour, especially if it is used as the background Zamineh (field) of the carpet, which will show up after weaving. This is called Rageh (contrast) and it is one of the most important faults in carpet manufacturing, but rarely found in carpets

from this area. This is undoubtedly one of the reasons for the high cost of carpets from this area.

2-7- Design

In this area the carpets are woven according to a pattern which is drawn by a Naghash (designer). Although there are many villagers and nomad weavers who work their traditional designs without any drawing or pattern, many of the designs are passed on from generation to generation.

The Nagsheh (design) are drawn on graph paper, every khaneh (square), representing one knot. (Fig. 6) A design often consists of a part of a carpet design, to include usually a quarter of the outer medallion, one quarter of the field and one corner of the border.

In the majority of Persian carpet the first and most important element is balance, the left and right halves of the carpet must be identical, and in most carpets the top half and bottom half must also be the same.

The most common designs at the present time in the area are Torange Mehrab (centre medallion), Shah-Abasi (King Abasi), but other kinds of designs like Shekargah (hunting or hunting garden) Gol va Gldan (floral), Torang-Ardabili, Mina Khani, and Bid-Majnuni (the weeping willow) have been used in the past. About 90 present are Torang Mehrab, with a red or dark blue Zamineh (field) and about 10 per cent of the rest, usually made of silk, are from the Shekargah (hunting and floral design).

The number of designs needed for an identical carpet of a size 208×143 cm., (the area standard carpet) consists of 3.5 sheets. They comprise of a quarter of a medallion, one corner, one quarter of the field and a part of the border which is to be repeated a certain number of times. The number of designs for a floral or animal design for the above size, consists of six sheets.¹ The cost of each sheet was 100,000 Rials (\$15) in 2003 These

1- 22 (Gareh= 6.5 cm) × 40 (number of knots in each gareh = 880 knots in width
32 (Gareh) × 40 = 1280 knots in the length or 1280 mm² in design
880 × 1280 = 1126400 knots in carpet or 1126400 mm² in the design
1126400 ÷ 6 = 187733.5 mm² on one sheet of design extent.

drawings have been prepared by specialized carpet designers (Naqash) in Kashan City. In many cases the carpet designers have previously been skilled weavers.

3- Availability of Labour (Weavers)

The total population of the ten villages in the area came to 7,536, or 1,374 households, and the total number involved in carpet weaving (weavers) was calculated, from the questionnaire connected with the survey conducted by the author in the area, to be about 2,313 persons, or 31.6 per cent of the total population (Tab. 1).

The range of ages was between 7-50 years. About 99% of the weavers were female, there being only 23 male adults classified as permanent full- time weavers.

In the whole of the area it was found that there were 46 persons who gave miscellaneous services in connection with carpet making- Cheleh- davans (servicemen) were hired to prepare the looms and wind the warp around the beams. They are paid per day by the owners. There were also 26 brokers involved in the buying and selling of the carpets. Brokers usually try to satisfy both purchaser and seller based on average price- often two prices are proposed, one from each side. After the transaction usually each side pays 2.5% of the cost of the carpet to the broker. Table 1 shows the specification of labour in the area in 2003.

Table.1 The Specification of the Labour in the Area in 2003

<i>Variable</i>	<i>Number</i>
<i>Number of households</i>	<i>1,373</i>
<i>Population</i>	<i>7,536</i>
<i>Average number of persons in each household (Size of family)</i>	<i>5.46</i>
<i>Total number of weavers (over 7 years old)</i>	<i>2,313</i>
<i>Male weavers</i>	<i>223</i>
<i>Female weavers</i>	<i>2,090</i>
<i>Private weavers</i>	<i>2,056</i>
<i>Under contract weavers</i>	<i>261</i>
<i>Servicemen (Cheleh- davan)</i>	<i>46</i>
<i>Brokers</i>	<i>26</i>

Source: Field survey

4- Utilization of Labour

According to the questionnaire survey made in the area by the author in 2003, there were 1,252 dars (operated looms) in operation in the villages. The total households numbered 1,379 and, on average, each loom was operated by 1.1 families. In other words, there was approximately one loom per house hold, i.e. 91 per cent of families were engaged in carpet weaving and only 9% of the households, usually consisting of an elderly couple or single man, were not involved in carpet weaving.

As stated previously, the total number of carpet weavers was 2,313 persons with a range of 12 in Shahriary village to 910 persons in Abuzid-abad village (Table. 2). The average age of the female weavers was about 18 years old but the average age of male weavers was 25 years because younger men often preferred to engage in agricultural activities, go to cities and work in the factories, or take up employment as building laborers. But the women, especially young girls, have to stay home and so carpet weaving is a very suitable occupation. Recently, agricultural activity is developed such as development of with regard to special characteristics of the area, cultivation of rose for extraction of rose water. But cultivation does not usually need more than the available male laborers. Also, the income from carpet weaving (which will be discussed later) is much higher than any other activity carried out in the area.

The total number of annual man- hours per year was calculated for each village, and the results are shown in Table 2. The working timetable for weaving is divided into two parts, daily and yearly. First we will consider the daily timetable. The weaving starts at 7.0 a.m, continues until 12 noon when there is a lunch break for one hour. Work starts again at 1.0 p.m and continues until 5 p.m. There are two breaks, in the morning and afternoon, which together total about one hour. However, the majority of weavers work for a minimum of 8 hours per day and even though most of the weavers work for themselves and are not under contract, they still work according to a daily timetable. Those who are under contract do not take such long breaks, because any neglect in the weaving will mean a reduction in income. On occasions some of the housewives have to interrupt their weaving in order to look after their young children or do housework, but then they may work during the night or start earlier in the morning.

The second part, the yearly timetable for the weavers is divided into two sections: formal holidays and informal holidays (times of illness or incapacity).

Formal holidays during the year consist of 52 Jomah (Fridays) and 19 holidays (religious days), together with celebrations for the Now-Roz (New Year festival at the beginning of Spring).

Table 2. utilization of Labour (weavers) in the area in 2003

No. of villages	1	2	3	4	5	6	7	8	9	10	
Villages	Fakhreh	Shahriary	Rigen	Ali-Abad	Mohamma d-Abad	Abuzaid- Abad	Kaghazi	Yazdelan	Qasem- Abad	Hosain- Abad	Total & Average
<i>No. of looms in each Village</i>	50	6	62	82	139	492	143	29	61	139	1,252 T*
<i>No. of households</i>	54	6	70	94	150	524	156	32	69	210	1,379 T
<i>Population</i>	257	38	378	445	752	3,162	789	171	344	1,200	7,536 T
<i>The size of family</i>	4.8	6.3	5.4	4.7	5	6	5	5.3	5	5.7	5.4 A**
<i>No. of weavers</i>	83	12	114	125	261	910	254	55	120	356	2,317 T
<i>% of weavers of population</i>	32%	31%	30%	34%	35%	29%	32%	32%	35%	29.6%	30.6 A
<i>Total annual labour forces man- day/year</i>	21,912	3,168	30,096	40,128	68,904	240,240	67,056	14,520	31,680	93,989	610,632 T
<i>Total ann. labour forces man- ho/year</i>	175,296	25,344	246,768	321,024	551,232	1,921,920	536,448	116,160	253,440	751,872	4,885,056 T
<i>Average weavers per loom</i>											
<i>Average weavers per household</i>	1.53	2	1.83	1.85	1.87	1.84	1.77	1.9	1.96	2.56	1.84 A
<i>Tot. ann. miscellaneous service man-day/year</i>	1.66	2	1.63	1.61	1.74	1.73	1.62	1.71	1.73	1.69	1.67 A
<i>% of family involved in carpet making</i>	315	45	459	747	1,026	4,320	801	189	459	1,340	8,127 T
	92	100	88	87	92.5	94	91.6	90.5	88.5	66	90.8

* Total

** Average

Source: Field survey

As for informal holidays, all female weavers usually have some problems or illness which, on average, was calculated to be about 20 days per year for each weaver. Also, when a carpet is finished, before the work of weaving begins again, at least 10 days are needed to prepare the materials, design and warp winding, etc.

However on average during a year there are at least 82 days when weavers are off, so they work 263 days, at an average of 8 hours per day.

In summary, in 2003 on average, about 4, 885, 056 standard man hours/year work was done by the 2,313 labourers. In fact each labourer worked 2,104 smb/year.

Also the total man-days/year (md/year) was estimated at about 610,632.

The survey showed that there was 1.84 weavers per loom and 1.67 weavers per household (table.2).

5- Carpet Weaving System

Two types of carpet are woven in the area: Qalie-shakhsi (Private carpets), and Qalie-mozdei (contract carpets).

(a) Private weaving

All private carpet materials are prepared by the weaver and the carpet is woven according to a certain design. The materials are often purchased from the Kashan wool merchants, and the design is ordered at least once a month before weaving begins.

The private weavers usually observe traditional rules of time and holidays, etc., which are common in the area, although their work is not under such strict regulations as contract carpet weaving. However, private weavers usually try to finish the carpet as soon as possible and sometimes work overtime for long hours because of the financial benefits. According to the field investigation carried out by the author in 2003 about 89% of the total carpets produced in the area, were woven privately. In other words, approximately 2,056 m² of the carpets produced were woven by the private weavers. From about 2,317 weavers, 2,056 persons or 89% of the total weavers have been involved in private weaving

and 261 or 11% of the total weavers have been under contract with merchants and only a few of these received a daily wage (Table.3).

The daily wage of a weaver depends on her skill in weaving. Usually the wage of a good weaver was about 70000-120000 Rials (\$10-15). Young girls, who usually fill in the rest after the skilled weaver has worked out the outlines, received 10000 to 20000 Rials (\$ 1.5-3).

Receiving a daily wage is very rare, because nearly all the weavers are involved in private or contract weaving. Sometimes, however, weaving may have to stop for one reason or another, e.g., the loom has broken, the wool has finished, or the carpet is finished. In which case the unemployed weavers are hired by other weavers and are paid by the day.

Table. 3 The Type of Carpet Production in the area in 2003

<i>No. Name of village</i>	<i>Total carpet prod. (m²)</i>	<i>Private prod. (m²)</i>	<i>Contract prod. (m²)</i>	<i>% of Privete Prod.</i>	<i>% of Contract Prod.</i>	<i>No. of Private weavers</i>	<i>No. of Contract weavers</i>
<i>1- Fakhreh</i>	205	186	18	91.2	8.8	76	7
<i>2- Shahriary</i>	32	-	32	0.0	100	-	12
<i>3- Rigen</i>	300	214	86	71.3	28.7	81	33
<i>4- Ali- Abad</i>	524	350	72	82.3	17.7	125	27
<i>5- Mohamad- Abad</i>	678	622	48	91.7	8.3	239	22
<i>6- Abuzaid- Abad</i>	2,550	2,385	175	93.5	6.5	851	59
<i>7- Kaghazi</i>	527	468	59	88.8	11.2	225	29
<i>8- Yazdelan</i>	122	110	12	90.1	9.9	49	6
<i>9- Qasem- Abad</i>	302	254	48	84.1	15.9	101	19
<i>10- Hosain- Abad</i>	892	776	117	86.9	13.1	309	47
<i>Total</i>	6,033	5,366	667	88.9	11.1	2,056	261

Source: Field investigation

(b) Contract weaving

Contract carpet weaving usually consists of three types in the area. In each type of weaving contract, the carpet contractor (Dar garden) supplies all materials to the sub-contractor, except for the loom.

In the first type of contract, a fixed amount of money is paid to the weavers by the Dar garden in five or six installments. The first installment is paid when an agreement has been reached. The price paid to the sub-contractor vary from 120,000 to 150,000 Rials (\$150-200) per Joft-Qali (2 carpets) 32×22 Gerah or 5.94 m^2 of 80/40 quality carpet (80 warp strands and 40 knots every 6.5 cm., or about 15×15 knots per square inch).

In this type of contract the subcontractors are sure of a fixed income which will be paid to them.

(ii) In the second type of contract (price work), the weavers are paid by the number of knots woven. The unit of payment in the area is 880 knots, or one Rag. The usual wage per Rag was 10000 Rials (\$1.2). A skillful weaver can produce 6 (Rags) in a day. This type of contract encourages the weavers to work hard each day.

In this type of contract, constant surveillance is absolutely vital because some dishonest weavers may fail to tie the knot in the yarn, or alternatively may tie Jufti (a double) knot around four wrap strands instead of two. In the former case, the design becomes blurred, and in the latter the carpet loses density and weaving quality, but by using such techniques a weaver can weave twice as rapidly.

(iii) In the third type of contract, the wage of the weavers is determined by the cost of the carpet. After the sale of the carpet, the contractor takes the value of the materials and credit, which he has paid formerly, plus usually 150,000 Rials (\$200), as interest on his capital. The rest of the selling price, minus an amount for brokerage, is paid to the weaver. In this case the weavers try to weave the carpet to the best quality because they will benefit from a higher selling price according to its standard. In this type of contract, the wage of the weaver also depends on the level of the carpet market, both nationally and internationally. This type of contract is more common than the others in the area.

There were about 18 contractors in the area each of whom has, on average, 8 contracts. The contractors were living in Kashan or in the villages. The contractors are usually capitalists or they were merchants.

10-6- The Qualities of the Shad- sar Carpet

The carpets of the Shad- sar are double wefted and woven with the Farsi knot. The quality, which is generally woven in the area, is a nominal 40×40 knots to the Gerah (one Gerah= 6.5 cm). This is equivalent to 15.5×15.5 knots to the inch. For comparison, the Kashan hunting carpet that is held at the Austrian Museum for Art and Industry, Vienna, had 27×29 knots to the inch (Edwards 1953, P.22) The Shad- Sar carpet is one of the best quality carpets in the Iranian markets and is usually classified as a first class carpet in the Kashan market.

The usual size of these woven in the area is 22×32 Gerah, or 143×208 cm., (2.97m²). These are called Qalicheh. Two small ones are often woven as a pair. Qalicheh (each measuring 2.97 m²).

The number of knots which are tied in a pair of Shas- Sar in the area is calculated as follows:

$(32 \times 40) \times (22 \times 40) \times 2 = 2,252,800$ knots, where 32cm. is the length of the carpet in Gerah, 40 is the number of knots per Gerah and 22cm. is the width.

7- Carpet Production in The Area

All the carpets which are produced in this area have approximately the same quality, although the merchants do recognize differences in quality from one carpet to another. They also easily recognize the place of weaving, even sometimes the names of the weavers because this may affect the quality of the carpet and, as a result, the cost. According to the author's investigations and interviews carried out with weavers in the area and carpet merchants in Kashan's Bazaar (market), they believe that the quality of carpets changes very little from village to village in the area and adjoining village,. This makes it easy to estimate production, and give a statistical analysis of carpet production in the area.

7-1- Potential Production

A skilled woman weaver ties, on average, ten knots a minute; (this includes wefting, beating and trimming). This scale has been measured by the author in all the villages in the area. The weavers themselves, however, believe that a skilled woman weaver weaves 5 to 6 rows (rag) per day (8 hours) of standard size Shad- Sar carpet (32×22 Gerah).

Thus, according to the first estimation, a pair of standard size Shad- Sar carpets has 2,252,800 knots, which will be woven in 468 days.

According to the second estimation a pair of standard size carpets will be woven in (32×40):5.5 ×2=465.5 days where 32 is Gerah, 40 is the number of knots per gerah and 5.5 is the average rows which are woven per day. The two estimations are very close together: on average 5.94 m² of carpet are woven by a skilled weaver in 466.5 days. Therefore, a square meter of carpet is woven in 80 days by a skilled weaver. The total production was calculated from the above estimation to be about 7676 m² year.¹ (Table.2).

The actual production was calculated, from the questionnaires filled out in the area in 2003 for each village, to total about 6033 m² (Table. 4). The range of carpet production varies from 32 m² – 2550 m² in Shahriary and Hosain- Abad villages respectively.

The coefficient of potentiality for increasing production (percentage) was calculated from the following formula:

$$P_{in} = 100 \frac{(P_p - P_a)}{P_a}$$

where P_{in} is the coefficient of potentiality for increasing production as a percentage, P_p is the potential production, and P_a is the actual production. On average the coefficient of potentiality for increasing production was calculated for 2003 at about 27.2%. P_{in} varies from one village to another; the range of variation being 19% in Abuzid- Abad to 59.7% in Kaghazi (Table. 4)

¹- 610632 (Smd/yea) ÷ 80 (one m²/80 days) = 7676m² .

There are a few basic reasons for the cause of decreasing potential production in the area and these are as follows:

(a) Skill in Carpet Weaving

The technique of weaving in the area is often shown to a child by her mother who, in the same way, learned it from her own mother. Girls start carpet weaving at an early age i.e, 6 to 7 years old, but of course, at that age they do not have the ability to do it as well as their mothers. Also, it is customary for the forewoman (head weaver or skilled weaver) to weave the design outlines, whereas the younger weavers fill in the rest. The potentiality was calculated by counting the production of a skilled worker (i. e. an adult skilled weaver) but, in fact, some weavers (especially young weavers) are not skilled and so cause a decrease in production.

(b) Seasonal Conditions

The hot summer weather which occurs for at least four months of the year (June-September), decreases the potential carpet production, because looms are often located inside the houses that are not and do not have air conditioning in the area. Sometimes some of the forewomen change the time of weaving from daytime to nighttime, and often the youngest weavers go to sleep in the evening. In addition, summer is the harvesting time and the women occasionally help their husbands so obviously for one reason or another, production decreases during summer months.

(c) Working Conditions

Most of the work places are not suitable for carpet weaving because there are no factories and the looms are located in the houses. If the house is large it may be occupied by two or more families and there may be two or more looms. So often, bad conditions such as lack of light, hot weather, uncomfortable or unsuitable planks for the weavers to sit on, etc., have an impact on decreasing production.

(d) Health Services

A high percentage of carpet weavers usually suffer from the lack of health services because there is no permanent health service centre in the area. On Saturdays only, a visiting doctor and two nurses come to Abuzaid- Abad village clinic for 5 or 6 hours; therefore, weavers have to go to Abuzaid- Abad from surrounding villages, or during the week they have to go to Kashan for that facility.

8- Conclusion

Although the carpet weaving is not a new phenomenon, it has developed over the last 30 years. In the area, unlike the rest of the rural areas in Iran, high quality carpets are woven. The technique of carpet weaving is similar to that for the Kashan carpet and in the national market it is known as the Kashan carpet in special name of Shad- Sar. Their design, material and quality (40×40 Gareh) are approximately similar.

The carpets have been produced mainly, by the majority of households in the area, about 91% of the households are engaged in carpet weaving. According to field observations and the author's experience, the carpet is produced by a suitable method in the area, although suggestions have been made by specialists for increasing carpet production, such as locating all the looms in one area i.e. a factory, and using a particular design, size and material etc. However, it should be noted that, according to local interviews with the author, the majority of weavers do not like to go to a public place for carpet weaving because of private and social problems. Moreover many weavers work overtime, e.g. during the night, earlier in the morning or at the weekend. However, in order to reach potential production the following suggestions are made:

- a) To advise and help the people to organize good working conditions.*
- b) To establish carpet cooperatives for financial help facilities.*
- c) To make certain health and social services available for the weavers.*
- d) To establish a nursery for helping the mothers.*

On the other hand, we should not forget that high production is not the only aim of these suggestions; it is important to provide suitable social security and social services facilities for the weavers, and children should be prohibited from carpet weaving.

To increase the carpet income, the raw materials should be prepared by cooperative shops in the area and supplied to the weavers directly. The role of the middlemen should be eliminated as much as possible, thus reducing the gap between producer's selling price and the purchaser's buying price.



Fig.1. The Carpet of Kashan
Source : Edwards , 1953

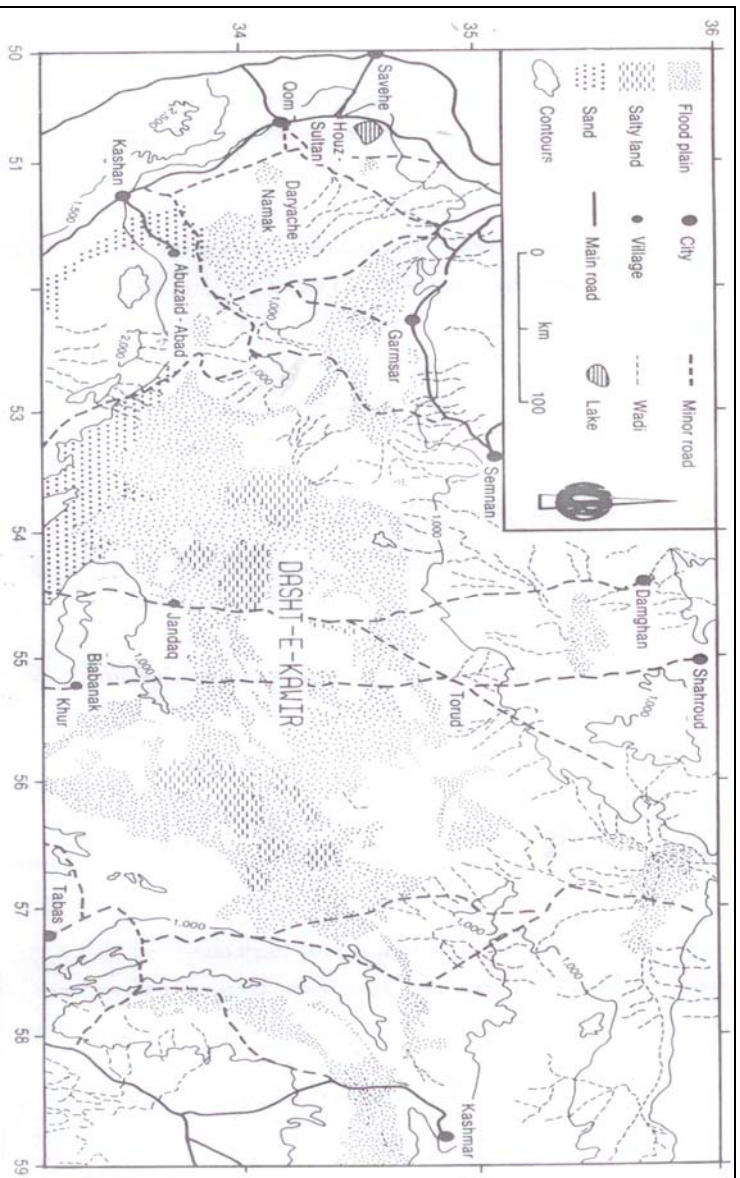


Fig.2. The Dasht – e - Kavir its Margion

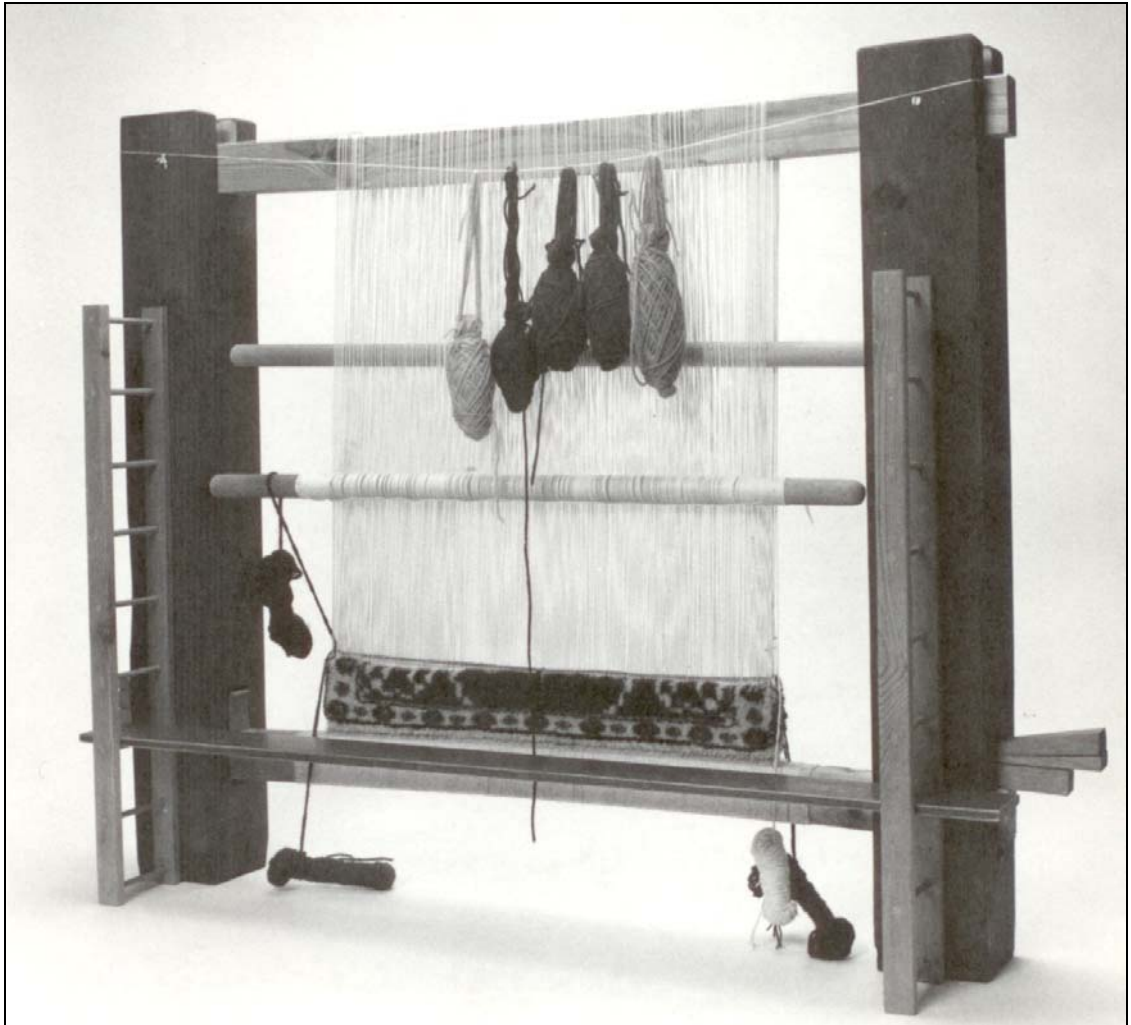


Fig.3. Structure of vertical loom



Fig.4. Instruments of carpet weaving

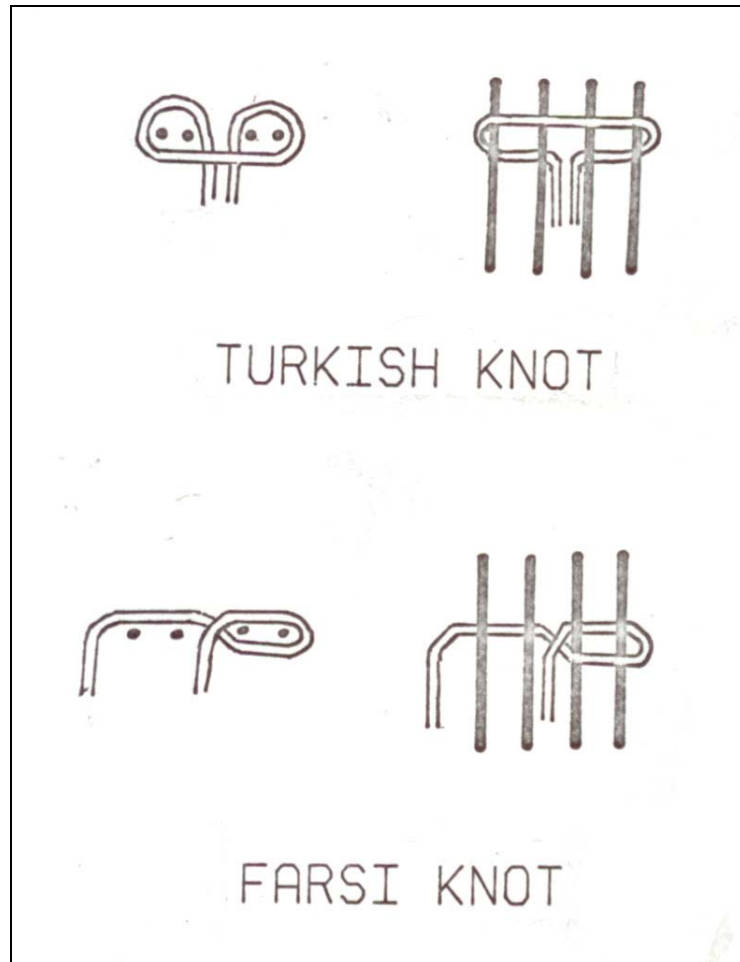


Fig.5. Types Of Konts

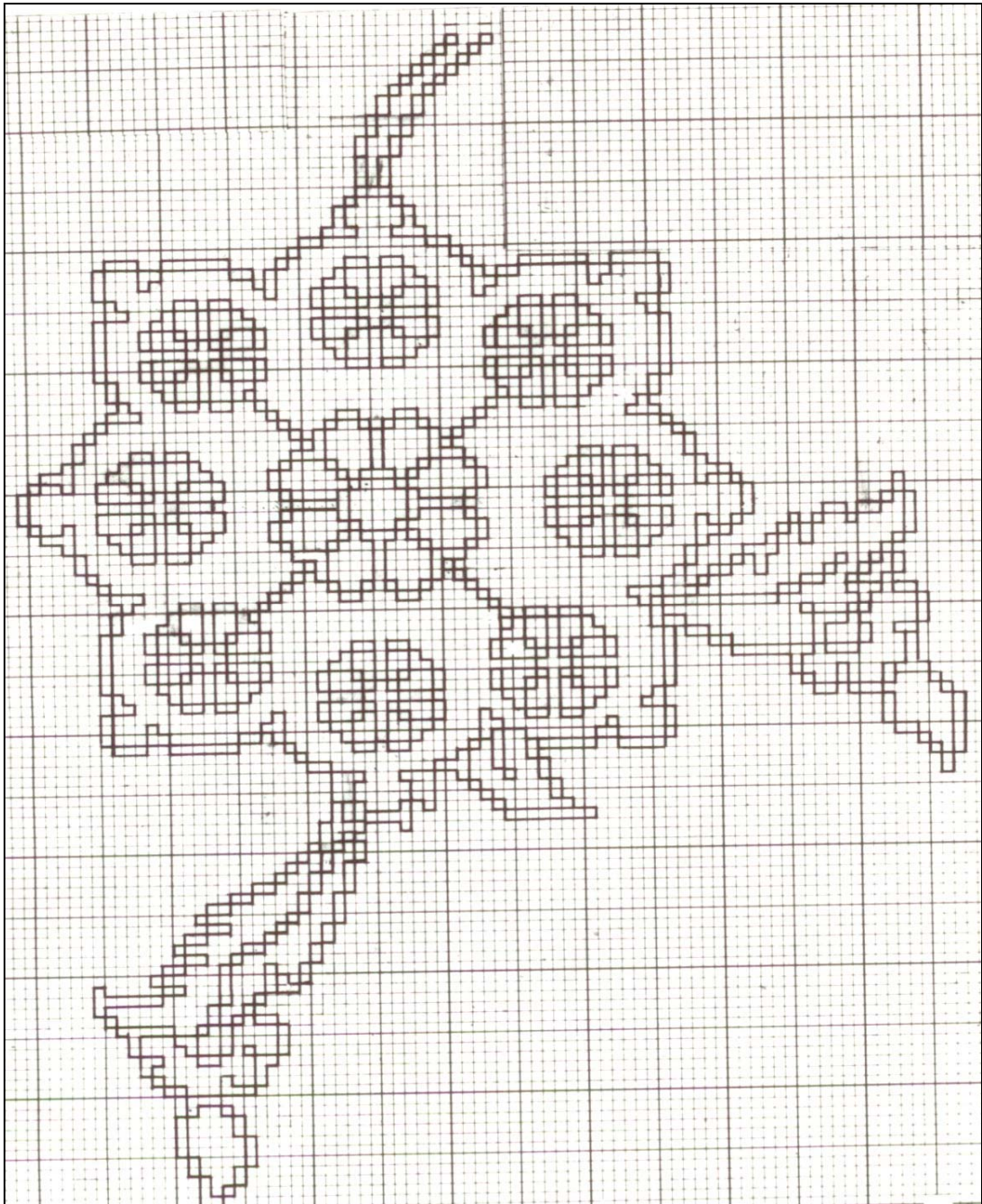


Fig.6. Capet Desing

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