



## **Diversified Traditional Wooden Implements Used in Agriculture and Animal Husbandry Practices in Ladakh**

**Nazir Ahmed<sup>1\*</sup>, Maria Abbas<sup>2</sup>, Asif Malik<sup>1</sup>, Afzal H. Akand<sup>3</sup>, Lyaqat Ali<sup>4</sup>, Bilal Ahmad Lone<sup>5</sup> and M. I. Bhat<sup>5</sup>**

<sup>1</sup>Krishi Vigyan Kendra, SKUAST, Kargil, Ladakh, Kashmir, India.

<sup>2</sup>CWDB Project, SKUAST, Kargil, Ladakh, Kashmir, India.

<sup>3</sup>Division of Veterinary Extension, Faculty of Veterinary Sciences and Animal Husbandry, SKUAST, Kashmir, India.

<sup>4</sup>Krishi Vigyan Kendra-Leh, SKUAST, Ladakh, Kashmir, India.

<sup>5</sup>Krishi Vigyan Kendra, SKUAST, Budgam, Kashmir, India.

### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author NA designed the study, performed the statistical analysis. Author MA wrote the protocol and authors AM and AHA wrote the first draft of the manuscript. Authors LA and BAL managed the analyses of the study. Author MIB managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

The traditional wooden tools are the necessities of the daily life of the people of Ladakh region and are linked directly with geographical conditions of the region. A lot of diversity in the wooden tools used by the tribal farmers of Ladakh since ancient times is observed. The tools are made up of different, locally available materials in a unique fashion by the localities. These wooden implements are preferred over modern one's because of their multipurpose uses. Secondly these traditional

\*Corresponding author: E-mail: [animaldr2@gmail.com](mailto:animaldr2@gmail.com);  
Email: [alonebilal127@gmail.com](mailto:alonebilal127@gmail.com);

implements find wide applicability in the region because of steep terrain, where the scope of mechanized farm implements is very limited. In the present study few important traditional tools of Ladakh have been presented. The important tools viz; *chepo, shak, zungba, rzgeem, saddle, khem, khaczhay, thoughk, gourgur, butter churner, plough, smeing, rbhat, grookook* etc. have been described in detail in this paper.

**Keywords:** Ladakh; tribal farmers; traditional wooden tools.

## 1. INTRODUCTION

Ladakh is a cold arid desert region of Jammu and Kashmir. It covers an area of 59146 sq km [1], having two districts i.e Kargil and Leh, with an estimated population of 2,74, 289 [2]. The Kargil, district head quarter town is located at a distance of 205 km from Srinagar, 230 km from Leh and 210 km from Skardo (Pakistan). This location indicates that the whole block has been a major transit route to all these important places in past centuries. The people of the Kargil block are facing developmental challenges on account of social, economic and geographic exclusion, depleting livelihood base, and lack of modern technological interventions in farming. Leh is the headquarter block of the tribal district and has the distinction of being the centre of all socio-economic and political activities. Leh the headquarter of the district is located at an altitude of 2900 to 5800 m above mean sea level [3]. Indus and its tributaries flow through the length of the three valleys of Leh block. Soil is poor, dominantly sandy or silt loam in areas irrigated by Indus river water. Climate is cold and dry, with an annual precipitation of around 100mm. Summers are short with maximum temperature 35°C followed by long windy autumn and winter of freezing temperatures as low as -25°C. Because of high mountains all round and heavy snowfall during winter, the area remain inaccessible to rest of the world for nearly six months [4,5,6, and 7].

## 2. METHODOLOGY

Two districts of Ladakh division of Jammu and Kashmir, viz; Leh and Kargil were selected. In each district four remote villages were selected viz: (Igu, Sakti, Durbuk and Miru) and (Silmo, Lalung, Batalik and Darchik) respectively, for the study. Information and data was generated local survey during 2015, from local people in the selected villages. Data was collected largely through questionnaire, interviews of people and on spot direct observations.

## 3. RESULTS

Following are the various wooden implements along with their method of preparation, used by the people of Ladakh in agriculture and livestock sector.

### 3.1 Shak

Soft branches of green willow are woven to make this special traditional door called as shak. It is used in animal shed as well as in lawn for fencing. Its length and width is about 5 feet and 3 feet respectively in sheds whereas in lawn its length and width varies according to the size of lawn (Fig. 1).



**Fig. 1. Shak**

### 3.2 Zungba

It is made from thick stem of willow (*changmaa*) or poplar (*zubeerpa*). The thick stem of willow or poplar is cut and then finished and carved in such a way that it makes bowl shaped trough. It is about 4 to 6 feet long and 2 to 3 feet in width. Fodder and water is kept in it for livestock. It acts as a traditional manger for their livestock. It is also used as washing tub for heavy clothes such as namdas and blankets. It is kept fixed at one place outside the house, usually near animal shed or at one side of lawns (Fig. 2).



Fig. 2. Zungba

### 3.3 Rzgeem

Locally called as *shukpa*. It is made of Juniper tree. The finished wooden pieces are fastened together with the help of nails to make it hollow cylindrical instrument with four feet height. Iron rings are fixed along its circumference to keep it in fixed shape. Then it is kept in water for complete one day so that it will swell up and water leakage from it is prevented. After that it is placed outside the cattle shed for giving water to livestock (Fig. 3).

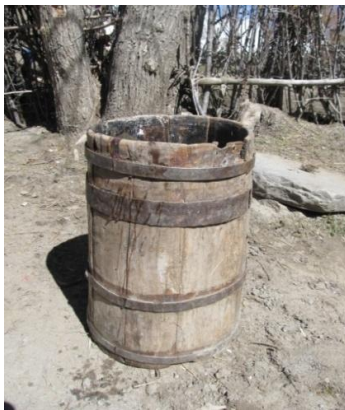


Fig. 3. Rzgeem

### 3.4 Saddle

Locally called as *zagaa*, made up of wooden pieces. Some rings and ropes are attached to it with a purpose of tying it under the abdomen region of horse and donkey, to keep it fixed on their back. It is mostly used in animal in border areas of Ladakh. The people of border areas rear donkey and horses and use *zagaa* for transporting goods for army from base camp to

top camp. *Zagaa* is also used by changpa people of some region for carrying load at the time of migration with their livestock on pasture land for grazing (Fig. 4).



Fig. 4. Saddle (*Zagga*)

### 3.5 Khem

It is very common wooden instrument found in areas where snow fall is more such as Drass, Panikhar, Sanko, Chaskore etc. It is having long wooden handle with length of about 2.5 to 3.5 meters, and a broad wooden base with 1 to 2 feet breath. It is mostly used to remove snow from terrace of their houses and also used in spreading night soil and dung in field crop (Fig. 5).



Fig. 5. Khem

### 3.6 Khaczhay

It is a 5 to 6 feet long instrument, made of willow tree. The base is broad and is having four to six fingers like structures, which are attached with the long handle by soft twigs of willow. It is used for pressing the straw, grasses, busa (*phugma*)



in a big room to its full compaction for winter (Fig. 6).



Fig. 6. Khaczhay

### 3.7 Though

It is traditional roofing system giving appearance of beautiful and attractive wooven roof. It is made of poplar (*zubeerpa*) and willow (*changmaa*).The willow twigs are cut into 4 to 5 feet long thin pieces and then placed horizontally on the roof. The thick logs of poplar (*phyames*) are cut into about 10-15 feet long pieces and then are placed vertically beneath the thin willow twigs (*Karibu*) to support them. One more thick log of poplar is placed horizontally at the center of roof to support the previous structures (Fig. 7).



Fig. 7. Though

### 3.8 Daa

Daa is used in archery which is the main game of the region. It is made up of dry and straight twig of willow tree, it is about 2.5 feet long having conical tip of iron called as *doo*. 4 feathers are used at the end which helps it to travel through

air at high speed. Different colour tape is used for its decoration. People of the region are engaged in archery during off season especially during winter months (Fig. 8).



Fig. 8. Daa

### 3.9 Barma

A round traditional wooden instrument use for butter making, in which raw milk is allowed to stand undisturbed for a few days to ferment in it. A wooden stick butter churner (*Barma*) for stirring is held in the centre of the gourgur by a small hole in the lid. Women folk rotate the stick by special rope locally called as *Srugma* until the fat solidifies (Fig. 9a,b).

The region is mostly having hilly areas where mechanized farming is not possible so the people are still using traditional agricultural instrument in their daily life. Some important traditional agricultural instruments are described below.

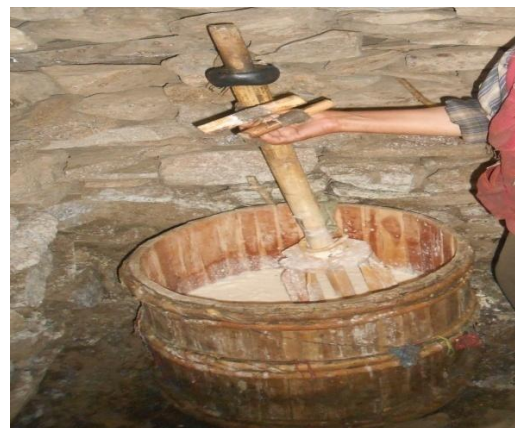


Fig. 9a. Gourgur



Fig. 9b. Srugma and Barma



Fig. 11. Smeing

### 3.10 Plough

Before introduction of mechanized farming it was used in almost all parts of the country. Now it is restricted to only hilly regions where the road connectivity is not available. It is a specially designed wooden instrument having long handle, which is fixed in another wooden instrument kept horizontally on the neck of two bulls at the time of ploughing. It has a handle for holding and a L shaped base, which penetrates into the field at the time of ploughing, Its local name is *Shoul* (Fig. 10).



Fig. 10. Plough

### 3.11 Smeing

It is an important instrument used to remove the unwanted grass in kitchen garden and field crops. Particularly by women of the area. It's about one feet in length. Handle of this instrument is made of cylindrical wooden piece and rest of the portion is made of iron with sharp penetrating tip (Fig. 11).

### 3.12 Groomkook

It has a wooden handle for holding and curved convex iron portion, having sharp ridges on lower surface and has a smooth upper surface, it is used for harvesting of field crop, fodder and cutting of thorny plants and soft twigs of various trees for fodder purpose (Fig. 12).



Fig. 12. Groomkook

### 3.13 Zoourba

It is having same shape as that of groomkook but is small in size and is used to remove the bark of willow for animal feeding during scarcity of fodder during winter (Fig. 13).

### 3.14 Chepo

It is most common wooden instrument found in almost every house of the region. It is made up of willow locally called as *changmaa*. Mostly soft willow twigs (*salcam*) are cut and used for



weaving this basket. Men are involved for its making. It takes complete one day for its preparation. It is conical shape and present in different sizes. It is carried on back with the help of fastening rubber belts. It is used in the region for various purposes such as to carry fodder, animal waste, fuel, wood, grain, clothes for washing at river banks. It is also used to carry young one of human (Fig. 14).



Fig. 13. Zoourba



Fig 14. Chepo

### 3.15 Rbhat

It is made of willow tree and is having broad base with seven to ten fingers like structure used for breaking the large clay clouds into small pieces and leveling of the agriculture land after ploughing. It has about five to seven feet long wooden handle (Fig. 15).

### 3.16 Pankha

It is also made up of willow tree and is having a broad base, which is used for breaking the large

clay clouds into small pieces, leveling of the agriculture land after ploughing and is also used during irrigation of field crops to give direction to water. It is having same length as that of *rbhat* (Fig. 16).

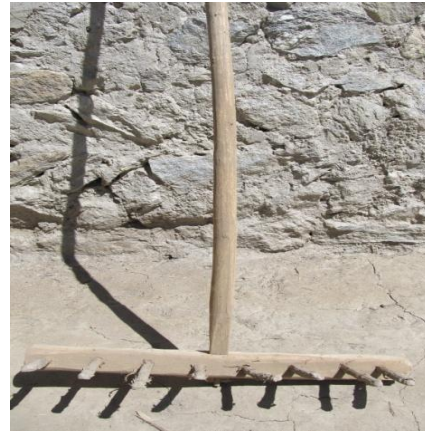


Fig. 15. Rbhat



Fig. 16. Pankha

## 4. DISCUSSION

It is clear from the results that the wooden implements used in agricultural and livestock sector in the region are very important as far as geographical and climatic condition of the area is concerned. Machine mechanization in agriculture sector is restricted to lower areas of the region where as in upper areas the traditional wooden tools are used to carry out day to day agricultural related activity. People are very hard worker and are having lot of traditional skill. It was observed that these products are prepared by adopting traditional practices in Ladakh. People of this area are having lot of interest in preparation of

these products and utilize these products to fulfill their daily needs.

## 5. CONCLUSION

Various wooden tools in Ladakh are prepared according to the topography, by local people through traditional methods, to meet their daily needs in agriculture sector, livestock sector and house hold activities. These products are easy to handle, environment friendly and very useful for these people. These diversified wooden tools are prepared from locally available trees and are in great demand in the region because of its simple and easy use. These tools are indicative of the simplicity of their ways of life and also an indicator of their hard shipness. The art and craft of Ladakh is as novel as people themselves. Owing to such harsh climate it would have been impossible to survive in Ladakh, without the use of these important wooden implements.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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