

- If there are stars in the sky, it is predicted to have a clear sky the next day, if not, then it is believed to have rain the next day.
- If reddish color cloud appears in the morning, there would be rain or snow fall that day.
- If the streaks of clouds appear in orange colour in the south, sun is expected the next day.
- If one experiences a body or joint pain, then he would say that the weather will be gloomy and might rain any time.
- If one feels thirsty or very dry without any reason, it is likely that the following day will be a sunny day.
- When nose bleeds, it is believed to rain.
- If cows are seen dancing, then it is known to rain the next day and it snows when calf moos.
- If the frogs croak any time of the day, it brings rain or believes that it is going to rain.
- When *chiligpa* (*kben* bird) chirps while raining heavily, it signifies sunshine and vice versa.
- Crackling of bamboo indicates dry weather.
- They also judge the weather by the direction of the smoke from anywhere. If the smoke goes up the mountain side, fine weather is expected and if it moves down towards the lower elevations, bad weather is predicted.

4.5. INDIGENOUS ARITHMETIC

The indigenous system of numerical reading begins with *chig* (one) and goes on as the Roman numerical counting.

Long before when there were no numbers to represent or had modern means of calculation, Bhutanese used fingers, pebbles and stones, sticks, rosary beads to represent numbers. The counting goes till *khey chig* (twenty) and on every count of twenty they use one stone. And the counting goes on:

khey chig (20x1)	- khe chig (20)
khey khechig (20x20)	- nyi shu chig (400)
khey nyi shu chig (20x400)	- kheychen chig (8,000)
khey khechen chig (20x8000)	- yangchen chig (160,000)
Pched	- a half
Pched dang nyi	- one and a half
Ched dang sum	- two and a half
sum cha chig	- one third
zhi cha chig	- one fourth
nga cha chig	- one fifth and so on

4.6. ASTROLOGICAL KNOWLEDGE

Bhutanese follow lunar calendar to keep track of time and the events in their day to day activities. Moon cycle goes through its phases from New Moon, quarter moon, Full Moon, and back to new moon in a period that lasts one month (30 days). Some lunar days depending on the shape of the moon especially the full moon day is considered to be auspicious to perform meritorious activities.

Astrology

Astrology or *Kartsi Rigpa* (*skar rtsi rigpa*) plays an important part in the life of the Bhutanese, who believe that supernatural powers, both good and evil, as well as the stars and planets, exert a profound influence on human life. The Bhutanese turn to astrology not only to understand these influences, but also to avoid potentially unfavourable times and heighten the effects of favorable periods.

Thus, the Bhutanese will consult astrologers on the birth of a child (*ke tsi*), a marriage in the family (*bag tsi*), prior to the construction of a house, to ascertain the auspicious hours for a funeral (*shin tsi*), and for numerous other purposes like promotion, start of a new journey, etc. Horoscopes also cast at the beginning of each year to have a forecast of the year's ill-fortunes and to determine appropriate remedies (*lomoi-tsi*). The 12 year signs, the Eight Trigrams, the Nine Numeric Squares, the Nine Planets and the 28 constellations are all interpreted according to their elemental properties of Wood, Fire, Earth, Iron and Water, and their effects on a person is thereby calculated according to their influences.

Since astrology is closely linked to astronomy, both occupy a position of honour in traditional Bhutanese scholarship. While Bhutanese astrology is derived from the Indian system (*kar tsi*), its astronomy is of Chinese origin (*nag tsi*).

The evolution of the unique Bhutanese system known as *Thunmongi Tsizhi* owes itself to Kuenkhen Padma Karpo, one of the great spiritual masters of the Drukpa Kargyu tradition. It was formally adopted in the seventeenth century, after Lama Lhawang Lodro, the chief tutor of Zhabdrung Ngawang Namgyal, meditatively authenticated its veracity at Cheri Dorjedhen, the initial seat of the Drukpa Kargyu tradition in Bhutan.

The twelve year animal signs emanating from the twelve interdependent happenings that begins with the mouse and ends with the pig have been paired up with the five elements such as earth, water, fire, wind and wood. Again, each of these elements must repeat until all the twelve year animal signs have a chance to become, say, earth mouse. Then this pair is also identified as a male and female, like male earth mouse or a female earth mouse. This completes a sixty-year cycle which is also called *rab-jung*.

In sixty-year cycles, the names of years consist of a combination of one of these animals and one of the five elements of wood, fire, earth, iron and water, which in turn is associated with a pair of animals, the first of which is male and the second female. Thus, one year may be designated Male Iron Mouse Year and another as Female Iron Ox Year. Bhutanese astrological calculations assign specific meaning to each of these various elements and animals.

Due Zhi (Four Seasons)

Just as the four seasons are enjoyed in most countries of the world, Bhutan also shares the four natural seasons perfectly dissipated throughout the year in the country. The group of months forming one particular season is however calculated based on the lunar readings on the Bhutanese calendar. It is not entirely different from the western style of calculations but sometimes the seasons in Bhutan are ahead by a month or two or fall behind by a month or two compared to the western calendar readings.

Sokha (Spring)

The 2nd, 3rd and the 4th months are basically considered *sokhai due* or the season of spring. Generally, this is the most pleasant season of the year. The flowers start to pop out their bud making the whole environment picturesque and fresh. Nevertheless, this is the time when farmers start to prepare for the big tasks awaiting summer. They prepare their farmlands for paddy transplantations. It is understood that farmers plough their fields pre-summer so that the soil remains soft and

ready for paddy seedlings. Various vegetables are also planted during this time of the year. In the olden days, this used to be a season of scarcity as their previous crops have been used up and the new crop has just been sown in the soil.

Bja/yar da (Summer)

Bja/yarda or the summer season is the busiest time for farmers. The farmers are involved most intensely in paddy cultivation. Farmers have to keep their fields continuously watered day in and day out. Rice is the most important staple food for every Bhutanese. From times immemorial, Bhutanese have always been self-sufficient in staple food especially rice and maize. Bhutan's produce are all organic and due to the favorable climatic conditions, rice is said to be liked by overseas consumers while organic vegetable produce are in high demand in the domestic market. Bhutan also exports apple, potatoes and oranges in substantial quantities to countries like India and Bangladesh. Therefore, the farmers make the most of summer. The 5th, 6th and the 7th month are considered the summer months on the Bhutanese calendar. One of the most important factors in a successful summer for the rural people is the timely monsoon rains for better yield.

Serkha or Toenka (Autumn)

The fall or autumn season is basically preparing for the cold winter. It starts off with the collection of late blooming crops and vegetables. Stock-piling of fodder for the livestock are also actively carried out during this season. Planning for excursions to cities, pilgrimage, migration or visiting relatives also takes place during the later part of autumn season. Villagers also go to the forest to collect firewood to heat their homes during the impending cold winter. The 8th, 9th and the 10th months make up the autumn season of the year on the Bhutanese calendar.

Guen da (Winter)

The 11th, 12th months and the 1st month of the New Year collectively form the winter season. During the earlier part of this month, farmers usually prepare manure by collecting fallen foliage gathered from the ground. Winter months are cold and snowfall is expected during this season particularly at mid altitudes and above. Therefore, farmers are less active in their fields and more into travelling to warmer places while some families embark on sacred pilgrimage. However, the ones who choose to stay back in the village normally have to look after the cattle.