Traditional foods and beverages of Ladakh

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Ladakh, truly described as high altitude cold-arid desert is one of the far most eastern regions of J&K state, India. Because of unfavourable and hostile environment prevailing over the region, cultivation is limited to a very less scale (both time and place). Under these conditions, one of the major reasons behind human habitation is the ingenuity of local people, who has devised new and sustainable way of living. One major product of this ingenuity is the traditional foods and beverages, which over the time has been evolved (through outside influence and local resources available) and established in the fooding system of *Ladakhi* people. An attempt has been made to bring forth those dishes and beverages, which are true representative of the region. The very common dishes like kholak and paba has been described in detail including the preparation methods.

Keywords: Ladakh, Traditional foods, Beverages, Ladakhi, Kholak, Paba

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Ladakh constitutes the easternmost trans-Himalayan part of J&K state of India, bordering Pakistan and China. Truly described as cold arid desert, it covers an area of 59,146 sq km situated along the valleys of the Indus river^{1.} Intensive sunlight, high evaporation rate, strong winds, and fluctuating temperature (30-40°C) characterize the general climate. With spare vegetation, there is little moisture in the atmosphere. Because of high mountains all round and heavy snowfall during winter, the area remains inaccessible to the outside world for nearly six months in a year (Fig. 1)². The growing season is only a few months long every year. But over the centuries, the people of Ladakh developed a farming system uniquely adapted to this unique environment. Farming is small scale; traditionally, each family owns a few acres of land, and their whitewashed mud houses are grouped together in villages whose size varies according to the availability of water. The principal crop is barley, the mainstay of traditional Ladakhi food. In the valleys there are orchards, and up on the high pastures, where not even barley grows, people husband yaks, cows or sheep. The poorest people drink chhang (local barley beer), often in place of the more expensive tea³⁻⁶.

conditions) that around 64 different kinds of

CHINA

Karakoram

Karakoram

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PAKISTAN

A drink called tsigu chhu is made from ground apricot

Fig. 1—Location map of the study area kernels and water, at least in Dhomkar area of lower Ladakh (Fig. 2). A wild fruit, chasta ruru, usually known as tsestallu (Seabuckthorn, Hippochae rhamnoides), is used for preparing juice and jam (Fig. 3). Regarding the interventions made by various research and developmental institutions, there has been a tremendous improvement in the diversity, quantity and quality of cultivated crops (especially vegetables). It has been demonstrated (on field

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vegetables can be successfully grown in Ladakh. Presently, local farmers in Ladakh are successfully growing newly introduced crops like kale, parsely, celery, summer squash, okra, and various cucurbits. The increase in crop diversity has helped them to increase their income and improve the nutritional uptake. It is providing income to the local farmers.

Traditional foods and beverages

Most of the foods and beverages described are made throughout the region. However, the elevation of the cultivable land affects both the length of the growing season and the choice of crops produced. The staple diet of region is huskless barley, or grim, which is roasted and ground for use as flour, *tsampa* (Tibetan) or *namphey* (*Ladakhi*), or for making the local beer brew, *chhang*. For a quick, nutritious and warming breakfast or lunch it is hard to beat butter tea with *kholak*. These foods are easy to make, simple, least fuel consuming, ingredients available locally and preferred. The majority of the dishes that follows are sustaining food for the people of a remote region.

Bakeries

Breads are made from wheat flour (*Paqphey*) as well as barley flour (*narjen*– meaning uncooked barley) or a mixture of the two. At times breads are also made from pea or lentil flour. Sometimes, pea and wheat are mixed and ground into flour which makes it more nourishing and palatable⁷.

Tagi Khambir or Skyurchuk (Browned sour dough bread)

A bread (tagi is the general name for bread) eaten throughout Ladakh. Skurchuk is the name by which the bread is generally known in the villages (Skyur means sour, chuk means mixed with); thagi khambir is its Leh name. Before baking powder was available, Ladakhis use local soda (pul) from the Nubra valley. In a traditional kitchen the dough would first be cooked on a cast iron plate placed over one of the cooking holes in the stove, under which is the fire of wood or cow dung (Fig. 4). Then it will be finished off on the ambers inside.

Tagi Buskhuruk (Puffed unleavened bread)

The dough is the same as for *tagi shrabmo* (similar to *chappati*), but the rounds are made thicker and small in size (*Buskhuruk* means unleavened). They are cooked briefly as above, but are allowed to puff up, and are then, if possible, put in the ashes of stove or fire. Traditionally, it is backed on a plate placed on a cow dung fire, covered with another plate and more dung.

Tagi Thalkhuruk (Bread uncovered and baked in ashes)

This is lighter than *tagi thalshrak* (covered and backed in ashes) and is therefore good for people who are not well (Fig. 5). The dough is made in the same way but the bread is cooked uncovered on a plate, on the ashes – *thalkhuruk*.

Tagi Mer-Khour

It is thick round bread, dough made off lour mixed with molten butter and well beaten egg white. To make the bread more attractive and shinny, egg yolk is spread on the upper surface of the bread. These are baked by placing them over flat sheets of iron covered with hot ash from all sides. After it is fully backed, it gives a mouth watering flavour and is removed from the iron sheet.

Tagi Thal-Khour

It is similar to *tagi mer-khour* except the butter and egg. It is backed directly in hot ash, charcoal or dung fire.

Tagi Tain-Tain

It is soft to eat and resembles a *dosa* except that it is thicker and is served with milk or tea. It is made by putting a thick paste of wheat flour (fermented overnight) over moderately heated *tava* spread with a thin layer of fat or oil.

Tagi Kiseer/Giziri

It is made as *tagi tain-tain* where wheat flour is substituted by buckwheat flour.

Skien/Mayaro

It is made by making dough of flour and sheep fat, given the shape of an ibex horn and then backed on charcoal. While consuming it is broken, and the bread along with the fat is heated in a bowl and mixed together. It is made especially during *losar* (*Ladakhi* New Year–generally falls in December-January), decorated on the kitchen shelf and is presented to close relatives and neighbours (Fig. 6).

Kaptsey/Makhori

Thick round bread made of wheat flour. The edge is turned, twisted and pressed to give a woven appearance, cooked in oil medium and sugar may be added as per the taste. It is presented when a girl child is born. In *Baltis* and *Shin* tribes (in Kargil district), it is also presented by the grooms family to the brides family during the betrothal and marriage ceremonies. At *Losar* the *Dard* or *Shin* tribals of Drass, stuff the

makhori with animal fat and send it as present to the close female relatives like daughters, sisters, and close cousins.

Tagi Tsabkhur (Ground sprouted wheat bread)

It is very easy to cook and the taste is very sweet, but making the flour from the sprouted wheat or barley is a little complicated and interesting. *Tsabkhuruk* means sprouted grain and cooked covered (as opposed to *thalkhuruk*, which means not sprouted and uncovered). It is said to be good for pregnant women.

Sephe Tagi (Freshly sprouted wheat bread)

This bread is made in springtime in the Zanskar valley. The grain is sprouted as above, but is used fresh when the sprouts are about 1 cm long. The sprouts are crushed in a pestle and mortar and then mixed with water. This mixture is added to flour to make moist/loose dough. The dough is cooked with a little fat, or dry, on a heated stone or griddle. It swells, like *tagi khambir*, and is eaten split with a little fat or butter added inside.

Khura (Sweet deep fried biscuits)

It is made especially for *Losar*. When a married girl visits her parent's home during *Losar*, she will carry with her plate of *khura* for the family members (Fig. 7). In olden days, local flour would be used, and may be still in use in some villages. Nowadays, a few people use rice flour to achieve an even finer consistency. The technique for giving shape to this biscuit is quite tricky. They can be salty, in which case uses salt syrup instead of the sugar one.

Ready to serve Kholak (tsampa/namphey mixed in butter tea)

It is the most commonly used food that involves no cooking. The dish is the ultimate quick and easy breakfast, lunch, trek or anytime food. The flour is made by grinding the roasted grains of barley (generally known as *tsampa* in Tibetan and *namphey* in *Ladakhi*), foxtail millet (*tse-tse phey*), or wheat (*choptsos*) to a fine powder which is generally referred to as *phey. Kholak* is made by adding the powder to any liquid or semi-liquid and bought to a consistency, where it does not stick to the hand through proper mixing and accordingly named (Fig. 8).

Tsiri Kholak (diluted chhang kholak)

In some villages, especially in the Sham area they boil peas, then dry and ground them into flour, *shranphey*, to be used with *namphey* or *kholak*.

In the Zanskar valley, in place of tea, *kholak* may be made with *tsiri* or *singri*, which is diluted *chhang*⁸.

Sbangphe (Chhang residue *kholak*)

The *chhang* (fermented barley drink) residue is dried and ground together with roasted barley. It is then mixed with butter tea, or sometimes water, and left overnight to be eaten the next morning, with *snamthuk*.

Chuu kholak

Chuu means water. *Phey* is added to water with a pinch of salt or sugar. Mostly used by hunters or travelers when nothing else is available.

Cha Kholak

Cha means tea. *Kholak* made by adding *phey* to tea (made from green tea leaves and salt in place of sugar).

Der Kholak

Derba means butter milk. This is made by adding *phey* to butter milk.

Chhang Kholak

Chhang means local barley made fermented drink. *Phey* is added to *chhang*. It has a sour taste and is mostly preferred by travelers.

Phemar (Kholak for the sweet-tooth)

Phemar is usually served only to guests or on special occasions such as weddings. *Phey* is added to salt tea with a lump of butter. Sugar can be added depending upon individual's choice.

Chubtsos (one of the major ingredients of phemar)

For *chubtsos*, wheat grain is boiled and made soft. Then it is strained, sun dried and roasted in a big pan, it is then mixed half and half with *namphey* and kept specifically for this dish (*Kholak*). To make *kholak*, *chubtsos* is added to tea with a large lump of butter and sugar to taste. It taste better than the rest of the *kholaks*, and is mostly served on special occasions only.

Kushi Phey Kholak (crushed dried apple with namphey)

This is made in villages for wedding and the parties to celebrate a baby's first year.

Chuli Phe Kholak (Powdered dried apricot with namphey)

This is a refreshing food mostly used by travelers. It is mildly laxating.

Baril (Walnut and apricot kernel dip)

This is from Sham area, or anywhere where there are walnuts. It can be eaten during breakfast or lunch, with bread or *kholak*.

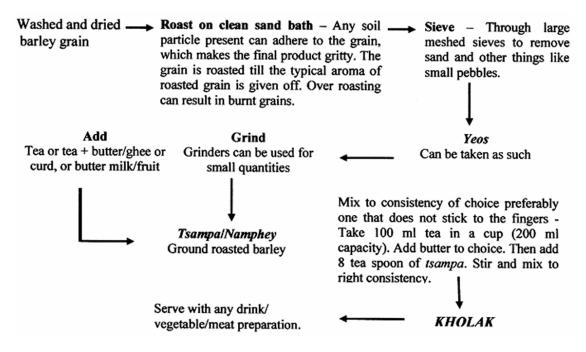


Fig. 8—Preparation of Kholak

Thud (Butter and dried cheese brick)

Common in Changthang and Zanskar valley, it is made by mixing local butter, ground dried cheese and sugar together. This mixture is then shaped into a brick. It will keep for a long time, especially in winter.

Ruskhu (Soup made from bones)

It can be eaten with *kholak* or *paba*, or on its own.

Others

Yogurt, curd and vegetables (especially roots like radish and swede). *Kholak* can be taken as such with tea, butter, vegetable/meat preparations, *tsamik*, *chhang* etc.

Paba (Mixed grain and legume flour pudding)

Another most commonly used food in Ladakh is *paba* and is popular in all the classes all over the region (Fig. 9). It is another healthy dish often taken to the fields, for lunch at sowing or harvesting time. *Paba* flour is called *yotches* and can have different ingredients, depending on what is grown in the area. It can include barley or wheat or both with any of the legumes like peas, broad beans or lathyrus to male it more nutritious and palatable which is half roasted and ground⁷. In some places, they grind caraway (locally known as *kosnyot*) seed with the flour to give a good flavour³. Traditionally, *paba* is cooked in a

special stone pot called *doltok*. Some of the dishes or soups are oftenly taken with *paba*.

Tsamik

It is a sauce made from coriander and mint leaves, radish and onion. All the items are pounded in a mortar. To this, chilly powder and salt is added. Sometimes, curd or butter milk is added to obtain a thick paste. The simplest *tsamik* is a mix of dried and crushed chilies with salt. In the Zanskar valley, radish leaves as well as dried leaves of wild plants are used; it is a yogurt dip for eating with *paba*.

Tangthur (Green-leafed vegetables and buttermilk or yogurt)

Quite a variety of green leafy vegetables are grown in Ladakh such as spinach, *ldums* (cos lettuce), mongol, salad (Chinese cabbage), sugar beet (leaves only), radish leaves, celery (leaves only) and cabbage. Some people also use chrysanthemum leaves (*pato*). In villages, *tangthur* made with wild green vegetables is served. The proportion of vegetables to butter milk (or yugurt) depends on choice.

Zathuk (Nettle soup)

Nettle (*Urtica hyperboria*) grows high up in Ladakh. In winter, especially in villages, people take it with *paba*. People in Tibet and Ladakh, believes that the great Tibetan Yogi Milarepa, while meditating in the mountains survived by eating nettle.

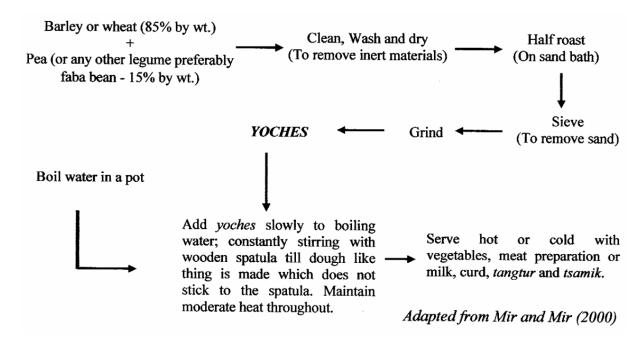


Fig. 9—Preparation of Paba

Tsong chhu (Onion soup)

This is very simple and quick to make.

Markhu (Tsampa with melted butter)

A little *tsampa* is added to melted butter.

Sharjen (Thick dried or frozen meat soup)

In former times this soup was common in most part of Ladakh, but nowadays it is found mostly in Changthang and Zanskar areas.

Tsha chhu or Shespa (meat broath)

This is another soup from the Zanskar valley and it has two versions⁸. In one, meat, salt and spices are boiled up in water with a small amount of *paba*, and eaten with it. In the other it is simply a soup, made without *paba* and eaten with it.

Thukpa

Thukpa is the generic term for a variety of soups (using wheat or barley flour in many cases) and what we might call stews with wheat flour noodles. Literally, it means over cooked. It is a thick soup or noodle cooked to taste. It is made from namphey, wheat flour, or rice and is accordingly named. In the villages, the flour used will be the strong local variety. Chhurphe, the dried cottage cheese is what gives those dishes a special zip (Fig. 10). The procedure varies with the main ingredients and is supposed to provide warmth in winter, cure cold and also as an elixir for curing constipation in the elderly people.

Tsap-Thuk

Tsap is flour made from pre-germinated barley. The barley grains are washed and kept in a sunny place till they germinate. The germinated barley seeds are dried and then ground into flour. The flour is cooked in plain water. No salt or sugar is added. It has a sweet taste. Its use is restricted to the winter months and is believed to be good for stomach and effective in couch control. It is a food used during extreme cold months.

Chhan-Thuk

Half cooked barley grains are beaten in a pestle and mortar. They are rolled into small balls. These balls are frozen and stored for use during long winter months. Small quantities of this *chhan* are added to *thukpa* and mostly cooked with the head and leg parts of goat/sheep.

Ngamthuk (Tsampa soup)

This soup can be eaten at any meal, generally at breakfast, when it makes a cheering start, especially in winter. It is given whenever somebody catches cold. To make it more nutritious, small pieces of meat, local pea and *chhurphe* is also added.

Jamthuk (Unroasted barley flour soup)

This soup is the same but is made with unroasted barley flour.

Pakthuk (wheat flour noodle soup)

Pakphe means wheat flour or dough. This dish can be eaten at any time of year and is very cheering in

the winter. In this season, the *labuk* (local radish-large pink-skinned), dug up from an underground storage pit and the spinach reconstituted from what was dried on the roof of the house during the growing season; those who have a green house, have fresh green leafy vegetables, *Pakthuk* in the Zanslar valley is made using butter instead of the vegetable oil⁸. For this dish, *Ladakhis* do not use potatoes, carrots or swedes, as these are sweet. Before onions were widely available, villagers would have used *skotse* (*Allium przewalskianum*) – wild garlic, as flavouring, and in some remote area they still use it. Nowadays, some people add tomatoes to the onion. The simplest version omits the cheese, peas, and eggs.

Guthuk (9 ingredients soup)

Made like *pakthuk*, this is a special soup for one of the days of the *Losar* celebration. These ingredients, which are some of the 9 for the soup, would be specially obtained for *Losar*.

Thenthuk (Soup with hand made noodles)

Thenthuk, the Tibetan name for this dish, meaning something torn. The dish is like *pakthuk* but with short noodles.

Gyathuk (Chinese *thukpa*)

Chinese cuisine has influenced this sophisticated modern version of *pakthuk*, often made for parties. It is sometimes served with meat only.

Lama Pakthuk (Monks' wheat flour soup)

This dish is often made for monks when they came to the house to say special prayers³.

Trimthuk (Soup with hand rolled noodles)

A dish which is made mainly for people who are sick.

Trapthuk

To make this, add salt to the liquid in which *drapu* dumplings have been boiled (*drapu* is dumplings with ground apricot kernel sauce). It is more common in apricot growing areas, such as sham. *Drapu* is a very nutritious dish, eaten for dinner on its own, particularly after threshing, or on fast days. The liquid in which the dumplings have been cooked is known as *trapthuk*. The sauce can be kept for 2-3 days.

Chhu Tagi (Bow-tie noodle stew)

The literal meaning is water bread (*chhu* means water and tagi means bread). This dish would originally have been very simple with just a little salt and perhaps onion to flavour the $tagi^3$. These days,

vegetables are added to it. The dough can be made into different shapes (Fig. 11). Potatoes and carrots are a common combination, although it can be taken with green leafy vegetables. Adding meat to it is also common (for which the meat has to be cooked earlier before putting the shaped dough, so that both is cooked simultaneously). In the Zanskar valley, this dish is known as *chubtse* (*chubtsos*)⁷.

Skyu (Cap-shaped noodles stew)

This dish is similar to *chhu tagi* and, like it, originally very simple. The ingredients are as for *chhu tagi*. Generally, moderately less water is added, compared to *chhu tagi*, but it should certainly not be as dry as *kholak* or *paba*. If meat is added, then it has to be pre-cooked with ginger or garlic, or both as in *chhu tagi*. In the Sham area, apricot kernels are sometimes used if there is no meat available. There is another version of *skyu* known as *O-Skyu* in which milk (*oma*) is added with water for the sauce. It is made mainly in villages, where there is a ready supply of fresh milk. It is a very tasty variant.

Paktsa Marku (Noodle balls in water)

This is a version of *Skyu* often made at the beginning of the first Tibetan month for fasting, during which many Buddhist devotees do not eat 'hot' food like onions or garlic. It is also made in *gompas* (monastery), when it is known as *lama paktsa*. There the sugar, and sometimes butter, will be omitted.

Steam cooked

Timok (Streamed bread twist)

This steamed bread (Fig. 12) dish originates in Tibet and is made mostly in the eastern (*Changthang*) area of Ladakh. *Timok* are good with cooked vegetables or *dal*.

Mok Mok (Steamed dumplings filled with meat or vegetables)

A dish that originates from Tibet, probably with Chinese influence (Fig. 13). The meat version is often served as a starter at parties or on special occasions when it will be eaten with pickle or *chutney*. As a super dish for the family it will probably be accompanied by a simple soup made from either mutton bones or vegetable stock, also served with a salad of tomatoes and onions (a modern introduction).

Loko Mok Mok (Cup-shaped dumplings)

This originates in Tibet and nowadays is mostly confined to the Zanskar valley. The dough is made as for *chhu tagi*, moderately dry/stiff. Break off small pieces to make into balls, and then push in with thumb

to make a shape like a handless cup. The dumplings are boiled, or steamed like *mom mok*, and eaten with vegetables or meat.

Beverages

Gur Gur Cha or Shrusma Cha (Butter tea)

Usually a supply will be made in the morning, put in a clay samovar heated with cow dung – and served at frequent intervals throughout the day. Often extra butter will be put in the tea to be soaked by bread; *tsampa* may also be added at times, anything from just one pinch to quite a lot.

Khunak (Salted black tea)

This is the basic tea *chhathang* (boil the tea leaves in an open pot and make a concentrate, is then poured off and stored in a jag or jar as the basis for the drink. It can be kept for a few days) to which water is added and boiled up with salt but not churned. People in the Kargil area tend to drink this and milk tea rather than *gur gur cha*.

Cha Shrul (Butter tea with tsampa)

This is butter tea with enough *tsampa* mixed in to make it soup like.

Chuli Chhu (Apricot juice)

Chulli is one of the less refined types of apricot and is usually dried with the stone removed. In early spring when nothing much is available, the dried fruit is soaked and the juice is drunk. A drink made out of apricot kernel is *tsigu chhu*. This drink is made with apricot kernels (*tsigu*) ground and mixed with water. It comes from the sham area, where apricot grows abundantly.

Chhang (Fermented barley drink)

In Ladakh, chhang is the general word for alcohol, but here it refers to the barley drink. Skyems is the polite word for chhang. The Ladakhi word for yeast is phabs. It mostly comes from the Nubra valley and can be found in the market in nuggets form. There are various ways of making this brew, (generally prepared in wooden drums known as Zem), resulting in different strengths (Fig. 14). This drink would be submitted to carefully tasting by one of the older ladies and pronounced good or not so good. Mostly, liberal dollops of tsampa will be put on top of the poured drink and this is called chhang shrul. As a sigh of honour, guests are served chhang with a small piece of butter on the beautiful brass pot, known as chhabskyen, from which chhang is usually served, or one put on the glass (Fig. 15).

Arak (Distilled chhang)

It is made by collecting the boiled-off vapour from alcoholic drinks. *Chhang* and *arak* is made in small quantities throughout Ladakh (only by the Buddhist households).

Rguntshang (Fermented grape drink)

Grapes are grown in the lower valleys of Ladakh, in the Da-Hanu areas, where the *Brokpa*, or *Dards*, live. This drink is mildly alcoholic.

Milk products

Milk and its products is a major and important ingredient in many of the food and beverages (e.g. *o-skyu* and *gur gur cha*, respectively) in Ladakh (Fig. 16).

Sri (Post natal milk)

It is the milk, obtained from the cow, *dri* or *dzomo* for a day or two after she has given birth. The milk is heated and is then left to stand, after which it is eaten with *tagi shrabmo* and a little sugar or salt. The mother of the house (in whose house the calf has been born) tries to makes it available to every member of the family and next door neighbours, especially the children.

Labo (Cottage cheese)

it is eaten fresh with *chappati* or *kholak*; sometimes sugar is added.

Chhurkhu (whey)

It is very nutritious and has the property to give instant energy. Generally farmers take it just after they have finished their work (like ploughing).

Chhurphe (dried cottage cheese)

It is made by forming *labo* into nuggets and then dried. It is mostly used in *thukpa*.

Conclusion

Ladakh's local economy, which has provided enough food for its people is now being invaded by produce from industrial farms located on the other side of the Himalayas. Due to which for many *Ladakhis*, it is no longer worthwhile to continue farming. For instance rice, which had previously been a luxury in the *Ladakhi* diet, but now that it was so cheap, it quickly became a staple³. And as the desire to appear modern grows, people are rejecting their own culture. Even the traditional foods are no longer a source of pride. In addition to these, these changes carry with them the danger inherent in any

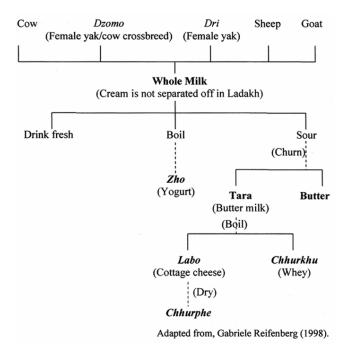


Fig. 16—Preparation of milk products

cash crop scheme the world over: that such crop will replace those that are needed for the survival of the local population. Despite all these, there have also been positive changes both to the quality of life and in attitudes to traditions and the culture. Government has helped with irrigation schemes to bring more land under cultivation. The establishments of various research institutes related to agriculture, with expertise in sustainable agriculture and the use of renewable energy has let to the wide spread and beneficial introduction of green house technology, one instance where Government subsidies are well spent³. This, where they have been constructed, have already made it possible to extend the growing season, providing, for most of the winter, fresh green leafy vegetables such as spinach, celery and lettuce, together with herbs such as mint and coriander. The inevitable monotony of dried vegetables has thereby been much relieved, and the diet, has improved in respect of fresh vegetables especially during winter season - the bleakest time of year as far as fresh

produce is concerned, when ground stored and dried vegetables have mostly been used up and the roads are not yet open. In spite of the influx of a cosmopolitan culture as a result of boost in tourism, and better connectivity with the outside world with improving communication infrastructure (virtual and real), people in Ladakh are still fond of their traditional foods. The traditional food system is followed especially in marriages and other cultural ceremonies. These traditional foods of Ladakh are prepared by making use of the indigenous agricultural products and are simple and easy to make with rare use of spices. The foods are indicative of the simplicity of their ways of life and also an indicator of the impact of surrounding environment of the people living in this area. Among the foods, kholak, paba, skyu and khambir are the most common foods. While the consumption of meat is more among the nomads of Changthang, whose main occupation is pastoral farming. consumption is comparatively more in Muslims, especially during winter season.

References

- Anonymous, *Statistical Digest*, (Government of Jammu and Kashmir), 1993.
- 2 Angchok D & Singh P, Traditional irrigation and water distribution system in Ladakh, *Indian J Traditional Knowledge*, 5 (3) (2006) 397.
- 3 Reifenberg G, Ladakhi Kitchen, (Melong Publication of Ladakh, Leh), 1998.
- 4 Vigne GT, Travels in Kashmir, Ladakh, II, (Iskardo), 1842, 344-45.
- 5 Fraser D, *Transhimalaya unveiled* (originally *The Marches of Hindustan*, ca. 1906), I (reprint), 1986, 106.
- Rizvi J, Ladakh: Crossroads of High Asia, (Oxford University Press), 1983.
- 7 Mir MS & Mir AA, Ethnic foods of Ladakh (J&K) India, In: Dynamics of Cold Arid Agriculture, edited by Sharma JP & Mir A, (Kalyani Publication, New Delhi), 2000, 297-306.
- 8 Crook John H & Osmaston Henry A, Himalayan Buddhist Villages: Environment, Resources, Society and Religious Life in Zangskar, Ladakh, (Motilal Banarsidass Publication, Delhi), 1994.
- 9 Norberg H, *Ancient Futures: Learning from Ladakh*, (Oxford University Press, New Delhi), 1992.