

## Chug landscapes

**Date:** various

**Location:** Chug valley, Dirang circle, West Kameng district, Arunachal Pradesh, India.

**Short description:** This collection of videos, audio and photo files displays Chug landscapes between 2012 and 2017. The Duhumbi people live in a valley traditionally known as the Chug valley. This valley is located on the southern slopes of the Eastern Himalayan ranges, but not directly on the slopes descending from the great Himalayan range. The watershed between the Tibetan plateau and the southern Himalayan ranges lies to the north and descends till the Mago valley where we find the Brokpa villages of Mago, Thingbu (Thengpoche) and Luguthang (Lungthang, Lugorthang). Between Lungthang and Chug lies the Zela massif, which runs in south-westerly direction from the main Himalayan range till the Bhutan border. The Chug valley has a north to south orientation and is intersected in the middle by the Chug river, locally known simply as *Khow Odok* 'big water', *Phrangley Khow* 'Phrangley water', *Khowma Khow* 'water-mother water', with *khowma* commonly referring to a big streaming water body, *Mangkhow* 'community water' or *Chuk khow* 'Chug water'. The altitude of the valley varies between around 1,650m in the south till 4,848m in the north, with the permanently inhabited part of the valley in the 1,650-2,150m altitudinal range. Figure MAP9999b (courtesy Debby Patterson) shows the location of the Chug valley within western Arunachal Pradesh.

The northern border of the Chug valley is formed by the watershed between the tributaries of the Chug river and a tributary of the Mago river, roughly at 27°33'N, and generally located above 4,000m. On the north bank of the latter tributary we find the Brokpa village of Lungthang. This alpine, high-altitude area above the treeline is marked with a few glacial lakes, including the famous Dawa Photsang Motsang lakes. The vegetation is marked by various alpine scrub species, including *cukpucij* 'juniper' *Juniperus recurva* and *Rhododendron* spp. Towering above and around the glacial valleys are four great peaks: from west to east Jomo Using Buthri, Phu Dumba, Phu Phrangley and Phu Tsorgan (Figure 1). If one crosses between Phu Dumba and Phu Phrangley and passes *Dawa Photsang Motsang* lakes, one arrives at Lungthang village. The glacial valleys, feeding the streams with melting water in spring, rapidly and steeply descend, and as soon as the treeline is reached they are marked by thick forests.



*Figure 1: The main peaks of the Chug valley.*

*From left to right Jomo Using Butri, Phu Dumba, Phu Phrangley, and Phu Tsorgan*

The western border of the Chug valley is formed by a ridge running north to south, roughly around  $92^{\circ}11'E$ . This ridge, with an altitude between 2,500 and 4,500m, forms the traditional border between the Chug valley and the next valley, which falls under the Brokpa village of Nyukmadung. On this ridge are the hills of Phu Kopiri in the south, Phu Goncung Norbu to its north, and the triplet Phu Hreka Hrekcung, Phu Takalang and Phu Yangri from northwest to southeast.

The eastern border of the Chug valley is formed by a ridge with an altitude between 2,500 and 3,500m, approximately at  $92^{\circ}25'E$ , directly running due south from Phu Tsorgan (called Atha Namba in Sangthi, cf. §2.4.2 and §2.4.3). Beyond this ridge lies the Sangthi valley, now inhabited by Tshangla speakers. Traditionally, there is no border between these two valleys, as the inhabitants are considered the descendants of two brothers. The names of the streams flowing down from either side of this watershed, one feeding the Sangthi Gongri and the other the Chug Mangkhaw, are also homonymous, such as, for example, the Tsangparong

stream. From north to south, the rounded hill tops of this ridge are called Phu Nangphu, Phu Laphek, Phu Namsri and Phu Pharchu.

In the north, the forests are characterised by coniferous species. In the fir-dominated forest between 2,700 to 3,800m the main tree species are fir *Abies densa*, sometimes mixed with hemlock and birch *Betula alnoides*. Below that, and on the northern fringes of the western and eastern ridges between 2,000 to 2,700m, there are a few pockets with mixed coniferous forest dominated by spruce *Picea spinulosa*, hemlock *Tsuga dumosa* and larch *Larix griffithiana*. In the north, and on the eastern ridge, we also find a blue pine-dominated forest between 1,800 to 3,000m with *Pinus wallichiana*, *Quercus* spp. and *Rhododendron* spp. Most of the lower slopes in the north and east of the valley, between 2,000 and 2,900m, are covered by thick cool moist broadleaf forest consisting of mixed deciduous and evergreen species, such as *Quercus semecarpifolia*, *Quercus griffithii*, *Rhododendron* spp., *Castanopsis* spp., *Schima walichii*, *Daphniphyllum chartaceum*, *Symplocos* spp., *Exbucklandia populnea*, *Acer* spp., *Persea* spp., *Alnus nepalensis* and their associates. The forests on the western slopes and those closest to the settlements in the valley from 1,800 to 2,600m consist of evergreen oak characterised by dense undergrowth of shrubs, ferns, climbers, bamboos and epiphytes. In this forest, *Quercus lamellosa* and *Quercus lanata* dominate alongside *Acer campbellii* and *Castanopsis hystrix*.

In the south, the traditional border between the Chug valley and Lish village used to be formed by the Gongri river at around 27°23'N and an altitude of around 1,650m. All the land to the north of the Gongri, to the west of the ridge separating Chug valley from Sangthi valley, and to east of the ridge separating the Chug valley from the next valley to the west used to be the Duhumbi's land. This southern border has for long been contested (cf. **Error! Reference source not found.**) and there has been a continuous encroachment by the people of Lish northwards into the Chug valley. The border now officially runs at 27°40'N, at least half a kilometre northward into the valley. The dry subtropical river valley at the confluence of the Gongri and Chug rivers at around 1,600 till 1,800m consists of chir pine *Pinus roxburghii* with undergrowth shrubs and associates.

Table 1 presents some prominent landmarks in and near the Chug valley with their approximate GPS coordinates and altitudes for reference. The landmarks circle the Chug valley clockwise, starting in the southwest.

TABLE 1. LANDMARKS IN AND AROUND THE CHUG VALLEY

<b>landmark</b>	<b>GPS coordinates</b>	<b>altitude (masl)</b>
<i>Chug valley</i>		
confluence Gongri - Chug river	27°23'37.18"N 92°12'16.49"E	1,643
Shartong Gonpa	27°23'40.36"N 92°12'07.75"E	1,646
Gonpa Nyamgoteng	27°24'10.13"N 92°11'12.48"E	2,313
old footbridge	27°24'09.27"N 92°12'18.94"E	1,658
Kakaling gate	27°24'13.50"N 92°12'18.92"E	1,664
Shader hamlet	27°24'49.11"N 92°12'19.11"E	1,727
new footbridge	27°24'44.88"N 92°12'29.09"E	1,675
Sangngakchöling Gonpa	27°25'06.62"N 92°12'19.19"E	1,787
Kapang hamlet	27°25'05.89"N 92°12'25.80"E	1,711
motorable bridge	27°25'14.84"N 92°12'31.42"E	1,699
Malekama village	27°25'16.39"N 92°12'19.72"E	1,750
Duhum village	27°25'29.71"N 92°12'22.18"E	1,752
Lekuring hamlet	27°25'46.32"N 92°12'26.28"E	1,751
Samtu village	27°26'18.32"N 92°12'24.20"E	1,828
Jomo Usin Buthri	27°34'29.94"N 92°11'26.02"E	4,848
Phu Dumba	27°33'25.75"N 92°12'32.25"E	4,573
Dawa Photsang Motsang	27°33'58.90"N 92°12'55.31"E	4,358
Phu Phrangley	27°34'00.26"N 92°13'26.57"E	4,780
Phu Tsorgan	27°32'29.71"N 92°13'53.80"E	4,576
Laphkek village	27°25'40.95"N 92°13'16.21"E	2,125
Bumpa	27°25'25.80"N 92°12'34.70"E	1,707
Chuskhor	27°25'14.54"N 92°12'40.88"E	1,721
Mani Dogorba	27°25'08.80"N 92°12'41.34"E	1,708
Tsangpa Thup	27°24'54.57"N 92°12'41.64"E	1,720
Pharchu (abandoned)	27°24'35.56"N 92°12'40.77"E	1,733
Donglok (abandoned)	27°24'30.84"N 92°12'48.99"E	1,807
Jagarbasti/government school	27°24'30.48"N 92°12'31.74"E	1,682
Nishithang	27°24'17.12"N 92°12'27.98"E	1,696
Namsir (abandoned)	27°24'15.31"N 92°12'42.41"E	1,828

mani	27°24'11.23"N 92°12'23.23"E	1,673
motorable bridge	27°23'33.67"N 92°12'18.90"E	1,652
<i>In the area</i>		
Lunghang village	27°35'41.69"N 92°11'09.11"E	4,154
Sangthi village	27°24'17.93"N 92°16'37.13"E	1,587
Dirang Dzong	27°20'37.09"N 92°16'23.49"E	1,529
Yewang village	27°21'14.69"N 92°14'03.63"E	1,741
Lish Thup village	27°22'41.45"N 92°13'23.64"E	1,778
Lish Gonpatse village	27°22'39.13"N 92°12'46.29"E	1,978
Khamkhar village	27°23'07.62"N 92°12'03.49"E	1,748
Lubrang village	27°21'54.47"N 92°10'47.22"E	2,835
Nyukmadung village	27°25'02.88"N 92°07'54.54"E	2,347
Senge village	27°27'04.84"N 92°07'04.15"E	2,903

### Accompanying zip files:

(For all files, the exact date on which the pictures/videos are taken can be found in the file details)

<i>file name</i>	<i>file size</i> (MB)	<i>file duration</i> (hh:mm:ss)	<i>file type</i>	<i>description</i>
VIDEOS.ZIP	689		.ZIP	VIDEOS
00005	104	00:00:53	.mts	view of Chug valley from Tsangparong in early October
00016A	73.6	00:00:37	.mts	view of ripening paddy fields and mountains in the North in third week of October
00017A	74.5	00:00:38	.mts	view of ripening paddy fields and mountains in the North in third week of October
00018A	20.0	00:00:10	.mts	view of ripening paddy fields in third week of October
ASAM_0844	93.8	00:01:21	.mp4	view from the northern part of the valley (road to Samtu) in end of April

ASAM_0861	21.6	00:00:18	.mp4	view from the northern part of the valley (road to Samtu) in end of April
ASAM_0872	32.0	00:00:28	.mp4	view from the gonpa on the other side of the river in end of April
ASAM_2937	81.1	00:01:10	.mp4	view on Tsangpa village and ripening paddy fields in early November
ASAM_3065	46.5	00:00:45	.mp4	view on the mountains in the north from the base of Phu Tsorgen in late November
ASAM_3066	57.5	00:00:50	.mp4	view on the mountains in the north from the base of Phu Tsorgen in late November
ASAM_3945	30.8	00:00:29	.mp4	view on Chug valley in late June
ASAM_3950	57.7	00:00:50	.mp4	view of the swollen Chug river in late June

<i>file name</i>	<i>file type</i>	<i>description</i>
INHABITATION.ZIP (140 MB)	.ZIP	PICTURES OF VILLAGES AND HAMLETS
0001; 0002; 0003; 0004	.jpg	view of Chuskor (Tib. chuskor 'water mill') and Bumtsho (Tib. ḥbum-tsho 'thousand households') hamlets from the opposite side of the river
0020; 0021; 0022; 0023; 0024; DSC_0353; 00207; 00211; 00270; 00272; 04368; 04369; 04370; 04371; 04372; 04373; 04374; SAM_3948	.jpg	views of Tsangpa village in different seasons
0011; 0012; DSC_00673; 00674; 00675; 00676; 00677;	.jpg	view of Rama camp and Khamkhar
0017; DSC_01159; 01160; 01161;	.jpg	view of Malekama hamlet
0005; DSC_01162	.jpg	view of Duhum village

DSC_04912; 04913;	.jpg	land cutting underway opposite Jagarbasti for construction of new school
0006; 0007	.jpg	agricultural fields at Dungsumba
0008; 0009; 0010; SAM_3949	.jpg	views of Jagarbasti village
0013	.jpg	Kakani at Khardung
0014	.jpg	Khardung
0015	.jpg	Lekuring hamlet
0016	.jpg	Lungzapzerbrok pasture area
0018	.jpg	Namkang pasture area
0019	.jpg	Phamdung deserted village and Dungsamba fields
SAM_0871	.jpg	Phamdung deserted village
SCENES.ZIP (378 MB)	.ZIP	PICTURES OF VALLEY SCENES
DSC01249; 01250; 01251; 01252; 01253; 01254; 01258	.jpg	<i>timba</i> or red clouds forming at sunset in the west of the valley
DSC01255; 01256; 01257; 01259;	.jpg	rain clouds in the north of the valley
DSC_0394; 0397; DSC00329; 00330; 00331; 00332; 00333; 00334; 00335; 00341; 00342; 00343; 00345; 00353; 00357; 00359; 00360; 01270; 01271; 01272; 01273; 01274; 01275; 01276; SAM_0826; 0827; 0829; 0830; 0831; 0832; 0833; 0834; 0846; 0847; 0857; 0858; 0859;	.jpg	view towards the mountain range in the north of the valley in various seasons
DSC_0393; DSC00264; 00265; 00347; 00350; 00362; 00363; 00364; 00365; 01163; 01228; SAM_0143; 0536; 0860; 3058; 3059;	.jpg	view towards the south of the valley
DSC_0354; 0390; 0391; 0392; 0394; DSC00212; 00215; 00240; 00241; 00242; 00243; 00261; 00262; 00263; 00273; 00284; 00285; 00336; 00337; 00338; 00339; 00340; 00351; 00352; 00354; 00356; 00366; 01158; 01165; 01174; 01225; 01226; 01227; 01229;	.jpg	various valley scenes in various seasons

01278; 04909; 04909; 04910; 04911; SAM_0835; 0840; 0841; 0845; 0848; 0862; 0863; 3246; 3247; 3248; 3253; 3254; 3258; 3260; 3261; 3262; 3263; 3267; 3268; 3946; 3947;		
DSC00671; 00672; 00689; 00691; 00692; 00693;	.jpg	view of Chugkhaw-Gongri confluence
SAM_3951; 3952; 3953; 3954;	.jpg	view of swollen Chugkhaw river in summer
SAM_3050; 3051; 3055	.jpg	view of the mountains in the north close up

**Accompanying other files:**

<i>file name</i>	<i>file size (MB)</i>	<i>file type</i>	<i>description</i>
MAP9999b	510kb	.pdf	map of the Western Arunachal Pradesh
chuk2	8.45	.bmp	map of Chug valley