

Proposal to Encode the Gurung Khema in Universal Character Set

Biswajit Mandal (biswajitmandal.bm90@gmail.com)

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1. Introduction

This is a proposal to encode the Gurung Khema in the Universal Character Set. It supersedes the following documents:

- ‘[N4019 L2/11-106](#)’ Introducing the Khema Script for Writing Gurung^[2]
- ‘[L2/11-047](#)’ Submission of Gurung Script^[1]
- ‘[L2/21-145](#)’ Proposal to Encode the Gurung Khema^[3]

It incorporates recommendations and comments made in:

- ‘[L2/21-130](#)’ Recommendations to UTC #168 July 2021 on Script proposals^[4]

2. Background

Gurung Khema^[8] (also called ‘*Khemā Phri*’ , ‘*Khemā lipi*’  or ‘*Tamū Khemā Phri*’ ) is an alphasyllabary based upon the Brahmi model. Gurung Khema () is a script used for writing Gurung (ISO 639:ggn) and (ISO 639:gvr)^[5], a Tibeto-Burman language of 325,622 people (census 2011) primarily spoken in Kaski, Syangja, Lamjung, Tanahu, Gorkha, Manang, Mustang and Parbat Districts of Nepal^[23] and in the South Sikkim, West Sikkim and East Sikkim Districts of Sikkim, India^[24]. The State Government of Sikkim has recognized official language status in 1995. A translator has been appointed in the Sikkim Assembly in 1998. The State government of Sikkim recognized Gurung Khema as Gurung script in year 1997 [see fig.4]. In the year 2052 BS (1995), ‘*The General Assembly of the Tamu Chhonj*’ (now, *Tamu Hyul Cōj Dhī Gurung Rāṣṭriya Pariṣad*) recognized Gurung Khema as their official writing system. It is the umbrella organization of all Gurung associations. First ever Gurung learning school started at Devadaha municipality, Rupandehi, Nepal in 2053 BS (1996). Through this proposal, I am requesting the Roadmap Committee to remove **Khe Prih** (U+1640-U+167F) from the [roadmap](#). Because Gurung Khema has been considered as the official script and there cannot be two different official scripts of the same Gurung language.

Gurung people also known as *Tamū*  / . The autonyms of Gurung are *Tamū Kyui* (/ ) , Tamu Qi, Tamu Kui, etc. Gurung Language written in six scripts i.e. Gurung Khema, Devanagari, Tibetan, Khe Prih, Shaman and Roman (Guruman). Devanagari is commonly used by Gurung people specifically in Nepal, but Gurung Khema, Khe Prih and Shaman are own script of Gurung Language [see fig. 2]. Shaman script does not exist today. There are very few people who use Khe Prih, which is not recognized by Gurung associations.

2.1 Timeline

Khe Prih ([L2/11-047](#)) created by Jagan Lal Gurung during World War II in 1944. When the war ended, Jagan Lal had acquired a newfound interest in his native tongue, an interest that led to him developing a script for the oral Gurung language. Combining various signs and symbols, Jagan Lal developed a rudimentary script, which today is known as Khe Prih. When Jagan Lal returned to Nepal, he began teaching Khe Prih to the children in his village of Hyanjakot. But Jagan Lal received a lot of threats from Kings of Nepal for teaching the children, but he did not budge. When he was about to be arrested, he ran away from Nepal, back to his duty in the Indian Army. Jagan Lal came back to Nepal in 1965, and immediately began lobbying for his beloved script. He taught many, but he made little progress in his lifetime.^[25] Despite Jagan Lal’s efforts, Khe Prih was **never fully adopted** by the Gurung community, which was largely unaware of its existence. *Gurung Khema* is the most widely used script, although *Khe Prih* is older than Khema. Gurung Khema is much more popular, used in Nepal, India and various countries.

In 1977, the committee decided to develop a script, and Bal Narsingh Gurung, secretary of *Gurung Samaj Sudhar Samiti* was tasked with the responsibility. At that time, the committee wasn’t aware about the *Khe Prih*, and Bal Narsingh, under the

supervision of Guru Pim Bahadur Gurung, developed the Gurung Khema. And presented in the first National General Convention of the *Tamu Chonj Dhin* was held in Kathmandu in 2052 BS (1995).

Gurung people call male ancestor as *KHE*, female ancestor as *MA* and they worship/pray *KHE-MA* from birth to till death. ‘Phri’ means ‘script’ or ‘to write’. So the script is given the name ‘*KHEMA PHRI*’. Since its development, the Gurung Khema has largely been adopted by the Gurung community. After that, Bhim Gurung, the founding chairman of The Central Committee of Nepal *Tamu Vidyarthi Chonj Dhi* and campaigner of Gurung language and Gurung Khema script, started teaching Gurung language and Gurung Khema by establishing *Devdaha Mother Tongues Academy (school)* in Devdaha, Nepal in 2053 BS (1996). In 1997, the *Akhil Sikkim Gurung (Tamu) Buddha Sangha* published the first textbook “*Tamu Khye Lule*” in Gurung Khema written by Gurung author Meghraj ‘Kon’ Tamu [see fig.5(a)]. For the first time in the year 2002, the teaching of Gurung and Khema was started in 2 government schools of Sikkim. A Gurung-Khema Educational Institution was also opened in Amale village, Gorkha, Nepal in 2018-19 but had to be closed after 6 months due to some reasons.

At present, 6 teachers in *Devdaha Mother Tongues Academy (school)*, Nepal are teaching Gurung Khema to 150 students on a regular basis. At present, Gurung subject is being taught in the Khema in 40 government schools of Sikkim [see fig. 21]. And around 1970-2000 children have learned to read and write Gurung Khema from these Sikkim schools. 9 teachers and 9,000 participants in Gurung Khema Lipi Learning workshop of United States, 3 teachers and 189 students engaged in Gurung Khema Lipi Learning Virtual Workshop of Israel, more than 500 teachers teaching Gurung Khema through Gurung Khema Lipi workshops in Nepal.

Only one digitized font “*KHEMA*” (both in True Type and Open Type) available for Gurung Khema, was designed by Mohan Lal Gurung and Bipesh Gurung in the year 2055 BS (1999 AD) and revised in the year 2019. That font is used in the proposed code chart and names list.

3. Scripts

3.1 1995 - Creation

The original script consisted of 8 vowels, 8 vowel signs, 29 consonants and 10 digits. In 1995, Pim Bahadur Gurung assigned to each letter a distinctive name in the Gurung language and arranged them in the following order (*later some letters and signs were reshaped and they are being highlighted with green*): [see fig.3]

VOWELS							
अ	आ	इ	उ	ए	ऐ	ओ	औ
<i>amā</i>	<i>āmā</i>	<i>imā</i>	<i>umā</i>	<i>emā</i>	<i>aimā</i>	<i>omā</i>	<i>aumā</i>
[a]	[a:]	[i],[i:]	[u],[u:]	[e],[e:]	[ai]	[o],[o:]	[au]

VOWEL SIGNS						
ā	ī	ū	ē	āi	ō	āu
<i>āmā</i>	<i>imā</i>	<i>umā</i>	<i>emā</i>	<i>aimā</i>	<i>omā</i>	<i>aumā</i>
[a:]	[i],[i:]	[u],[u:]	[e],[e:]	[ai]	[o],[o:]	[au]

CONSONANTS

क	का	ख	खा	ङ
<i>kakhe</i>	<i>khakhe</i>	<i>gakhe</i>	<i>ghakhe</i>	<i>ṅakhe</i>
[ka]	[kʰa]	[ga]	[gʱa]	[ŋa]
च	चा	झ	झा	ञ
<i>cakhe</i>	<i>chakhe</i>	<i>jakhe</i>	<i>jhakhe</i>	<i>hakhe</i>
[tʃa]	[tʃʰa]	[dʒa]	[dʒʱa]	[ha]
ट	टा	ढ	ढा	व
<i>ṭakhe</i>	<i>ṭhakhe</i>	<i>ḍakhe</i>	<i>ḍhakhe</i>	<i>wakhe</i>
[ta]	[tʰa]	[ɖa]	[ɖʱa]	[wa]
त	ता	ड	डा	न
<i>takhe</i>	<i>thakhe</i>	<i>dakhe</i>	<i>dhakhe</i>	<i>nakhe</i>
[ta]	[tʰa]	[da]	[dʱa]	[na],[ṇa]
प	पा	ब	बा	म
<i>pakhe</i>	<i>phakhe</i>	<i>bakhe</i>	<i>bhakhe</i>	<i>makhe</i>
[pa]	[pʰa]	[ba]	[bʱa]	[ma]
य	र	ल	श	
<i>yakhe</i>	<i>rakhe</i>	<i>lakhe</i>	<i>sakhe</i>	
[ja]	[ra]	[la]	[sa],[ʃa]	

DIGITS

०	१	२	३	४	५	६	७	८	९
0	1	2	3	4	5	6	7	8	9

- Pim Bahadur had placed the letters ण and व at the place of 'nya' and 'nna' according to the Brahmic order, which is still being taught in the same way today.
- Short and long form of vowels were expressed using single letter: अ /i,i:/, उ /u,u:/, ई /e,e:/, औ /o,o:/
- Vowel length was not distinguished orthographically
- The letter न was used for both /na/ and /ṇa/
- The letter ष /sa/ also used for /ʃa/

3.2 1997 - Expansion

In early 1997, Bal Narsingh Gurung added the following 6 various signs (*Lhomā*). 'Lhomā' means auxiliary letters. Using them is found in Megraj's book "Tamu Khye Lule" (1997):

SIGNS

<i>yalhomā</i>	<i>walhomā</i>	<i>halhomā</i>	<i>lāilhomā</i>	<i>ralhomā</i>	<i>tholhomā</i>
SIGN MEDIAL YA	SIGN MEDIAL VA	SIGN MEDIAL HA		sign medial ra	THOLHOMA

3.2.1 THOLHOMA: The ࿀ THOLHOMA used only to kill the inherent vowel sound /a/ of the consonant letters as like *halanta* e.g, ࿀ꠤꠟꠤꠞ ‘Tāngā’ Fish, ࿀ꠤꠟꠤꠞꠤꠞ ‘Lardida’ Fight, etc.

3.2.2 Lāīlhomā: The ࿀ *lāīlhomā* is used for indicating nasalization. It is placed to the top of a base letter or atop of vowel sign. But due to the lack of Unicode standard font, it comes with vowel signs on top of the consonants, which makes it complex to look at and hard to read. The form of ࿀ is similar to that of U+030C COMBINING CARON. So it should be unified with U+030C.

3.2.3 MEDIAL SIGNS: The Gurung Khema script has four medial signs whose details are given below. It is mainly pronounced after consonants. This eliminates the inherent sound of the consonants with which they will be written. All these three symbols are an integral part of Gurung Khema writing system and are used everywhere.

- **CONSONANT SIGN MEDIAL YA:** when ࿀ comes after a consonants, then this ࿀ sign is written on the left side of the consonant:

<i>kya</i> ࿀	ꠤ	<ꠤ KA, ࿀ CONSONANT SIGN MEDIAL YA >
<i>khya</i> ࿀	ꠤꠤ	<ꠤꠤ KHA, ࿀ CONSONANT SIGN MEDIAL YA >
<i>gya</i> ࿀	ꠤꠞ	<ꠤꠞ GA, ࿀ CONSONANT SIGN MEDIAL YA >
<i>cya</i> ࿀	ꠤꠟ	<ꠤꠟ CA, ࿀ CONSONANT SIGN MEDIAL YA >
<i>tya</i> ࿀	ꠤꠠ	<ꠤꠠ TA, ࿀ CONSONANT SIGN MEDIAL YA >
<i>mya</i> ࿀	ꠤꠡ	<ꠤꠡ MA, ࿀ CONSONANT SIGN MEDIAL YA >

- **CONSONANT SIGN MEDIAL VA:** when ࿀ comes after a consonants, then this ࿀ sign is written on the left side of the consonant:

<i>kva</i> ࿀	ꠤ	<ꠤ KA, ࿀ CONSONANT SIGN MEDIAL VA>
<i>khva</i> ࿀	ꠤꠤ	<ꠤꠤ KHA, ࿀ CONSONANT SIGN MEDIAL VA >
<i>gva</i> ࿀	ꠤꠞ	<ꠤꠞ GA, ࿀ CONSONANT SIGN MEDIAL VA >
<i>cva</i> ࿀	ꠤꠟ	<ꠤꠟ CA, ࿀ CONSONANT SIGN MEDIAL VA >
<i>tva</i> ࿀	ꠤꠠ	<ꠤꠠ TA, ࿀ CONSONANT SIGN MEDIAL VA >
<i>mva</i> ࿀	ꠤꠡ	<ꠤꠡ MA, ࿀ CONSONANT SIGN MEDIAL VA >

- **CONSONANT SIGN MEDIAL HA:** This ࿀ sign is written in Gurung words after vowels, consonants and medial signs e.g, ࿀ꠤꠟꠤꠞ ‘Ahdhā’ Half, ࿀ꠤꠟꠤꠞꠤꠞ ‘Tinhora’ Inside, etc.

If a consonant is accompanied by a ࿀ CONSONANT SIGN MEDIAL HA and is followed by ࿀ THOLHOMA and ࿀ *lāīlhomā*, then ࿀ THOLHOMA and ࿀ *lāīlhomā* sign will sit beneath and top of that consonant. e.g,

<i>kh</i> ࿀	ꠤ	<ꠤ KA, ࿀ CONSONANT SIGN MEDIAL HA, ࿀ THOLHOMA >
<i>khā</i> ࿀	ꠤꠤ	<ꠤꠤ KA, ࿀ CONSONANT SIGN MEDIAL HA, ࿀ <i>lāīlhomā</i> >

Three Signs like ࿀, ࿀, ࿀ do not come together in the same consonant. But the sign ࿀ can be written with any other Medial. Due to which the orthography of two different phonemes is the same, but native Gurung speakers can easily understand which phoneme is while reading it. *Vowel signs, Tholhoma and lāīlhomā may also accompany these (given below).*

<i>khya</i> ࿀	< ꠤꠤ >	<i>kyha</i> ࿀
<i>khva</i> ࿀	< ꠤꠤꠤ >	<i>kvha</i> ࿀
<i>khra</i> ࿀	< ꠤꠤꠤꠤ >	<i>krha</i> ࿀

- **Consonant Sign Medial Ra:** when ీ comes after a consonant, then this ీ sign is written on the left side of the consonant. The form of ీ is similar to that of U+032D COMBINING CIRCUMFLEX ACCENT BELOW. So it should be unified with U+032D:

<i>kra</i> ీ	ꣳ	<ꣳ KA, ీ Consonant Sign Medial Ra >
<i>khra</i> ీ	ꣴ	<ꣴ KHA, ీ Consonant Sign Medial Ra >
<i>gra</i> ీ	ꣵ	<ꣵ GA, ీ Consonant Sign Medial Ra >
<i>cra</i> ీ	ꣶ	<ꣶ CA, ీ Consonant Sign Medial Ra >
<i>tra</i> ీ	ꣷ	<ꣷ TA, ీ Consonant Sign Medial Ra >
<i>mra</i> ీ	꣸	<꣸ MA, ీ Consonant Sign Medial Ra >

3.3 2000 – Reshaped Old forms

By the turn of the 2000, 3 vowels, 9 consonants and 3 vowel signs were revamped from the old forms by Bal Narsingh Gurung. All of them are being used in this form till now:

VOWELS	ꣳ ꣴ ꣵ		
	ꣶ ꣷ ꣸		
VOWEL SIGNS	ꣳ ꣴ ꣵ		
	ꣶ ꣷ ꣸	ꣶ ꣷ ꣸	ꣶ ꣷ ꣸
	umā	omā	aumā
	U	O	AU

CONSONANTS	ꣳ	ꣴ	ꣵ	ꣶ	ꣷ	꣸	꣹	꣺	ꣻ
	hakhe	wakhe	nakhe	pakhe	phakhe	makhe	yakhe	lakhe	sakhe
	HA	VA	NA	PA	PHA	MA	YA	LA	SA

3.4 Variant forms of characters

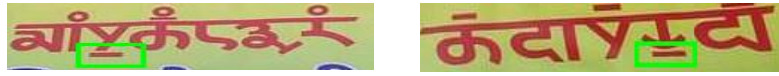
- Sikkim Herald used some alternative letters and signs in its Gurung edition. The letters and symbols used in the Sikkim Herald are no longer used; it was only seen on this newspaper. All these letters and symbols were last seen in its final version dated 24 July 2009 and have not been used anywhere else since then. These are not proposed because they have not been used anymore in the new edition of Sikkim Herald which has been published recently, dated 26 Jan 2022. [see fig 1 & 19]

ꣳ	ꣴ	ꣵ	ꣶ	ꣷ	꣸	꣹
cakhe	chakhe	umā	aimā	omā	aumā	lāilhomā



Fig 1: all photos taken from various portion of a Sikkim Herald

- Another form of *virama* འ we found only on the banner of ‘Tanahun Bandipur Chhimkeswori Tamu Society Kathmandu’, which is not used anywhere else. This is not proposed in this proposal and will not be proposed in future.



- In the Sikkim Herald, we found **glyphic variations** in some letters due to different font. These letters also not accepted by the users:

ཨ < ཨ, ཀ < ཀ, ཁ < ཁ, ག < ག, ཅ < ཅ, ཆ < ཆ, ཇ < ཇ, ཉ < ཉ, ཊ < ཊ, ཋ < ཋ, ཌ < ཌ

3.5 2019 - Revision

In 2019, 4 vowels and 4 vowel signs were included in the Gurung Khema for writing long sounds, suggested by ‘The International Tamu Conference 2019’. And this was the last time the Gurung Khema was revised. That conference was organized by The National Council House of Tamu held in Kathmandu. [see fig.8]

VOWELS	ཨ	ཀ	ཁ	ག
VOWEL SIGNS	ཨ	ཀ	ཁ	ག
	imā	ūmā	ēmā	ōmā
	[i:]	[u:]	[e:]	[o:]

- ཨ vowel sign *imā* having similarity in shape with Sikkim Herald’s ཨ *ūmā* sign
- Separate letters for long vowels: ཨ /i:/, ཀ /u:/, ཁ /e:/, ག /o:/
- Short vowels can also used to indicate long sounds: ཨ /i,i:/, ཀ /u,u:/, ཁ /e,e:/, ག /o,o:/

4 Vowel Length Mark

The Vowel Length mark doubles the sound of vowels. It does not exist in the script on its own, but it is needed for decomposition of VOWEL SIGN UU ཨ, VOWEL SIGN EE ཁ and VOWEL SIGN OO ག.

VOWEL SIGNS	ཨ
	VOWEL LENGTH MARK

5 Usage

Gurung has been one of the official local languages of Sikkim, since 1995. Government records were mentioned and newspapers were published in the script. *Central Board of Secondary Education* of India, which conducts 10th and 12th examinations in all schools across India. In the academic session 2015-16, Gurung language was included in the curriculum and given a code of 132 (*Jagranjosh*, February 11, 2015)^[19]. Since the Gurung subject examination is being conducted every year which is written in the Gurung Khema all over the India. In January 2021, the Sikkim government mandated that state-run schools provide education to students in the state’s primary language and in 11 local languages (*The Economic Times*, January 29, 2021)^[18], Gurung being one of them.

Gurung Khema is currently used in writing and print for various purposes, as described below:

- **Educational Materials:** Elementary and upper primary educational material for learning Gurung and Gurung Khema is published by the Government of Sikkim. Examples of two school books are *Tamu Khayui Lule vol.I'* (2006), *Khayui Talokye vol.I'* (2013)^[9]. '*Ngoyi Tamu Kyuhi*' *हैअं सऱ कुरंग* is the first Gurung primer written in this script by Bhim Gurung which was originally taught in *Devdaha Mother Tongues Academy (school), Nepal*.^[13] Central Board of Secondary Education (CBSE) of India conducting Gurung Board Examination for class 10th since 2015. Sample paper of Gurung (session 2021-22)^[21] [see fig.16]and set-4 question paper of session 2016-17 of Class 10th attached in this proposal.[see fig.16]^[20]
- **Newspaper:** A Gurung edition of the *Sikkim Herald* (*सिक्किम हेराल्ड*) was produced in Gurung Khema. The newspaper was first published in July 16, 2001 edited by Pradeep Gurung. He was later promoted from his editorial position and stepped down. And with no successor to continue the edition, no more was published since July 24, 2019. But Bidur Gurung appointed as the new editor in early 2022. And Sikkim Herald republished on January 26, 2022. That is written in same font which is used in this proposal. [see fig.18(a), 18(b)] [see fig.19]^[22]
- **Ephemera:** *Tamu Hyul Cōj Dhĩ Guruṅ Rāṣṭriya Pariṣad (The National Council House of Tamu)* produces and distributes calendars using Gurung Khema.[see fig.25]
- **Linguistic works:** '*Sigre Cō Ṭhō Pe Chogi*' *सिग्रे चो ठो पे चोगी* written in both Gurung and Nepali for to learn Gurung Khema.
- **Other usage:** People are using the Gurung Khema in their rituals, entrance gate, movie poster, tombstone, etc. [see fig.20]
- **Literary Works:** Anthologies of Gurung poetry and songs are printed in the book of '*Ādhī Layā*' *अधी लया* by Lokbahādur Gurung. [see fig.14]^[27]
- **Digital Resources:** A digitized font for the script named 'Khema' was developed by Mohanlal Gurung and Bipesh Gurung. It is based upon a non-Unicode encoding and is mapped to Latin letters. The font is used in this proposal. An Android Application '*Khema Lipi कुरंग लिपि -Type Tamu*' is available in Google Playstore. It is based upon a non-Unicode encoding. [see fig.15]^[6]
- **Workshops:** Many workshops still conducting by the various Gurung associations throughout the years in Nepal, in India and in other countries also. *Khemālipi Tālim* *कुरंग लिपि तालिम* is the yearly workshop, conducted in several parts of all over the Nepal and Sikkim. [see fig.23]

6 Proposed Unicode Repertoire

The proposed Unicode repertoire for 'Gurung Khema' contains of 56 characters: 1 vowel, 29 consonants, 11 vowel signs, 5 various signs and 10 digits.

5.1 Vowel

Glyph	Unicode Character name	Name
अ	GURUNG KHEMA VOWEL A	amā

VOWEL LETTER A अ functions as a vowel carrier. Other vowels are represented as dependent signs. Independent forms of other vowels are produced by writing dependent vowel signs with this letter.

5.2 Consonants

There are 29 consonants letters:

<i>Glyph</i>	<i>Unicode Character name</i>	<i>Name</i>
क	GURUNG KHEMA CONSONANT KA	<i>kakhe</i>
का	GURUNG KHEMA CONSONANT KHA	<i>khakhe</i>
ख	GURUNG KHEMA CONSONANT GA	<i>gakhe</i>
खा	GURUNG KHEMA CONSONANT GHA	<i>ghakhe</i>
ङ	GURUNG KHEMA CONSONANT NGA	<i>ṅakhe</i>
च	GURUNG KHEMA CONSONANT CA	<i>cakhe</i>
चा	GURUNG KHEMA CONSONANT CHA	<i>chakhe</i>
ज	GURUNG KHEMA CONSONANT JA	<i>jakhe</i>
जा	GURUNG KHEMA CONSONANT JHA	<i>jhakhe</i>
ह	GURUNG KHEMA CONSONANT HA	<i>hakhe</i>
ट	GURUNG KHEMA CONSONANT TTA	<i>ṭakhe</i>
ठा	GURUNG KHEMA CONSONANT TTHA	<i>ṭhakhe</i>
ड	GURUNG KHEMA CONSONANT DDA	<i>ḍakhe</i>
ढा	GURUNG KHEMA CONSONANT DDHA	<i>ḍhakhe</i>
व	GURUNG KHEMA CONSONANT VA	<i>wakhe</i>
त	GURUNG KHEMA CONSONANT TA	<i>takhe</i>
ठा	GURUNG KHEMA CONSONANT THA	<i>thakhe</i>
द	GURUNG KHEMA CONSONANT DA	<i>dakhe</i>
ढा	GURUNG KHEMA CONSONANT DHA	<i>dhakhe</i>
न	GURUNG KHEMA CONSONANT NA	<i>nakhe</i>
प	GURUNG KHEMA CONSONANT PA	<i>pakhe</i>
फा	GURUNG KHEMA CONSONANT PHA	<i>phakhe</i>
ब	GURUNG KHEMA CONSONANT BA	<i>bakhe</i>
भा	GURUNG KHEMA CONSONANT BHA	<i>bhakhe</i>
म	GURUNG KHEMA CONSONANT MA	<i>makhe</i>
य	GURUNG KHEMA CONSONANT YA	<i>yakhe</i>
र	GURUNG KHEMA CONSONANT RA	<i>rakhe</i>
ल	GURUNG KHEMA CONSONANT LA	<i>lakhe</i>
स	GURUNG KHEMA CONSONANT SA	<i>sakhe</i>

5.3 Vowel Signs

There are 11 dependent vowel signs:

<i>Glyph</i>	<i>Unicode Character name</i>	<i>name</i>
	GURUNG KHEMA VOWEL SIGN AA	<i>āmā</i>
	GURUNG KHEMA VOWEL SIGN I	<i>imā</i>
	GURUNG KHEMA VOWEL SIGN II	<i>īmā</i>
	GURUNG KHEMA VOWEL SIGN U	<i>umā</i>
	GURUNG KHEMA VOWEL SIGN UU	<i>ūmā</i>
	GURUNG KHEMA VOWEL SIGN E	<i>emā</i>
	GURUNG KHEMA VOWEL SIGN EE	<i>ēmā</i>
	GURUNG KHEMA VOWEL SIGN AI	<i>aimā</i>
	GURUNG KHEMA VOWEL SIGN O	<i>omā</i>
	GURUNG KHEMA VOWEL SIGN OO	<i>ōmā</i>
	GURUNG KHEMA VOWEL SIGN AU	<i>aumā</i>

These vowel signs are used with VOWEL LETTER A अ or with consonants. These should all be encoded atomically. This is because linguistically these vowels are not composed of two separate characters; they are single vowels in their own right.

5.4 Various Signs

<i>Glyph</i>	<i>Unicode Character name</i>	<i>name</i>
	GURUNG KHEMA CONSONANT SIGN MEDIAL YA	<i>yalhomā</i>
	GURUNG KHEMA CONSONANT SIGN MEDIAL VA	<i>walhomā</i>
	GURUNG KHEMA CONSONANT SIGN MEDIAL HA	<i>halfhomā</i>
	GURUNG KHEMA SIGN THOLHOMA	<i>tholhomā</i>
	GURUNG KHEMA VOWEL LENGTH MARK	

5.5 Digits

There is full set of decimal digits: O ZERO, ௑ ONE, ௒ TWO, ௓ THREE, U FOUR, ௔ FIVE, S SIX, ௕ SEVEN, ௖ EIGHT, ௗ NINE. [see fig.11(a) & 12]

5.6 Punctuation

Gurung Khema uses *double danda* (||) for punctuation. This should be unified with the corresponding Devanagari character U+0965. There are no script-specific punctuation marks. Latin marks, such as : , < > ; _ " () ? \ / - and ! are used. [see fig.13]

6. Decompositions

To avoid confusion, a single code point which appears after the base consonant and vowel carrier should be assigned to this combination of code points that form a single two part vowel sign. The canonical decomposition information for the rendering engines is as follows:

character	glyph								
SIGN UU	ᱦᱮ	ᱦ	SIGN AA	+	ᱮ	LENGTH MARK			
SIGN E	ᱦᱤ	ᱦ	SIGN AA	+	ᱤ	SIGN I			
SIGN EE	ᱦᱥ	ᱦ	SIGN I	+	ᱮ	LENGTH MARK			
SIGN AI	ᱦᱡ	ᱦ	SIGN AA	+	ᱡ	SIGN II			
SIGN O	ᱦᱢ	ᱦ	SIGN U	+	ᱢ	SIGN I			
SIGN OO	ᱦᱣ	ᱦ	SIGN AA	+	ᱢ	SIGN I	+	ᱮ	LENGTH MARK
SIGN AU	ᱦᱣᱤ	ᱦ	SIGN U	+	ᱣ	SIGN II			

7. Collation

The collation order is as follows:

< ᱠ A < ᱡ KA < ᱢ KHA < ᱣ GA < ᱤ GHA < ᱥ NGA < ᱦ CA < ᱧ CHA < ᱨ JA < ᱩ JHA < ᱪ HA
 < ᱫ TTA < ᱬ TTHA < ᱭ DDA < ᱮ DDHA < ᱯ VA < ᱰ TA < ᱱ THA < ᱲ DA < ᱳ DHA < ᱴ NA <
 ᱵ PA < ᱶ PHA < ᱷ BA < ᱸ BHA < ᱹ MA < ᱺ YA < ᱻ RA < ᱼ LA < ᱽ SA < ᱾ SIGN AA < ᱿ SIGN I <
 ᱰ SIGN II < ᱱ SIGN U < ᱲ SIGN UU < ᱳ SIGN E < ᱴ SIGN EE < ᱵ SIGN AI < ᱶ SIGN O < ᱷ SIGN OO < ᱸ SIGN AU <
 ᱹ CONSONANT SIGN MEDIAL YA < ᱺ CONSONANT SIGN MEDIAL VA < ᱻ CONSONANT SIGN MEDIAL HA < ᱼ THOLHOMA <
 ᱽ VOWEL LENGTH MARK < ᱾ DIGIT ZERO < ᱿ DIGIT ONE < ᱰ DIGIT TWO < ᱱ DIGIT THREE < ᱲ DIGIT FOUR < ᱳ DIGIT
 FIVE < ᱴ DIGIT SIX < ᱵ DIGIT SEVEN < ᱶ DIGIT EIGHT < ᱷ DIGIT NINE

8. Acknowledgements

I would like to thank Resham Gurung, Bhim Gurung, Dhan man Gurung and all the members associated with The National Council House of Tamu who helped in drafting this proposal. And at the same time I would also like to thank Tilak Gurung for giving me all the Gurung school books. I would like to thank Pradeep Gurung (Sikkim) for describing the Gurung edition of the Sikkim Herald. I also thank Rupraj Gurung (Sikkim) for informing about the current use of Khema in Sikkim.

I would especially like to thank Dev Kumar Sunuwar who got me in touch with The National Council House of Tamu. I would like to thank Anshuman Pandey for allowing me to take this project forward.

I would like to thank Debbie Anderson, Jan Kučera and Anshuman Pandey for their guidance and valuable suggestions for this proposal.

9. Character Data

9.1 Character Properties

In the format of UnicodeData.txt:

```
16100;GURUNG KHEMA LETTER A;Lo;0;L;;;;N;;;;;
16101;GURUNG KHEMA LETTER KA;Lo;0;L;;;;N;;;;;
16102;GURUNG KHEMA LETTER KHA;Lo;0;L;;;;N;;;;;
16103;GURUNG KHEMA LETTER GA;Lo;0;L;;;;N;;;;;
16104;GURUNG KHEMA LETTER GHA;Lo;0;L;;;;N;;;;;
16105;GURUNG KHEMA LETTER NGA;Lo;0;L;;;;N;;;;;
16106;GURUNG KHEMA LETTER CA;Lo;0;L;;;;N;;;;;
16107;GURUNG KHEMA LETTER CHA;Lo;0;L;;;;N;;;;;
16108;GURUNG KHEMA LETTER JA;Lo;0;L;;;;N;;;;;
16109;GURUNG KHEMA LETTER JHA;Lo;0;L;;;;N;;;;;
1610A;GURUNG KHEMA LETTER HA;Lo;0;L;;;;N;;;;;
1610B;GURUNG KHEMA LETTER TTA;Lo;0;L;;;;N;;;;;
1610C;GURUNG KHEMA LETTER TTHA;Lo;0;L;;;;N;;;;;
1610D;GURUNG KHEMA LETTER DDA;Lo;0;L;;;;N;;;;;
1610E;GURUNG KHEMA LETTER DDHA;Lo;0;L;;;;N;;;;;
1610F;GURUNG KHEMA LETTER VA;Lo;0;L;;;;N;;;;;
16110;GURUNG KHEMA LETTER TA;Lo;0;L;;;;N;;;;;
16111;GURUNG KHEMA LETTER THA;Lo;0;L;;;;N;;;;;
16112;GURUNG KHEMA LETTER DA;Lo;0;L;;;;N;;;;;
16113;GURUNG KHEMA LETTER DHA;Lo;0;L;;;;N;;;;;
16114;GURUNG KHEMA LETTER NA;Lo;0;L;;;;N;;;;;
16115;GURUNG KHEMA LETTER PA;Lo;0;L;;;;N;;;;;
16116;GURUNG KHEMA LETTER PHA;Lo;0;L;;;;N;;;;;
16117;GURUNG KHEMA LETTER BA;Lo;0;L;;;;N;;;;;
16118;GURUNG KHEMA LETTER BHA;Lo;0;L;;;;N;;;;;
16119;GURUNG KHEMA LETTER MA;Lo;0;L;;;;N;;;;;
1611A;GURUNG KHEMA LETTER YA;Lo;0;L;;;;N;;;;;
1611B;GURUNG KHEMA LETTER RA;Lo;0;L;;;;N;;;;;
1611C;GURUNG KHEMA LETTER LA;Lo;0;L;;;;N;;;;;
1611D;GURUNG KHEMA LETTER SA;Lo;0;L;;;;N;;;;;
1611E;GURUNG KHEMA VOWEL SIGN AA;Mn;0;NSM;;;;N;;;;;
1611F;GURUNG KHEMA VOWEL SIGN I;Mn;0;NSM;;;;N;;;;;
16120;GURUNG KHEMA VOWEL SIGN II;Mn;0;NSM;;;;N;;;;;
16121;GURUNG KHEMA VOWEL SIGN U;Mn;0;NSM;;;;N;;;;;
16122;GURUNG KHEMA VOWEL SIGN UU;Mn;0;NSM;1611E 1612D;;;;N;;;;;
16123;GURUNG KHEMA VOWEL SIGN E;Mn;0;NSM;1611E 1611F;;;;N;;;;;
16124;GURUNG KHEMA VOWEL SIGN EE;Mn;0;NSM;1611F 1612D;;;;N;;;;;
16125;GURUNG KHEMA VOWEL SIGN AI;Mn;0;NSM;1611E 16120;;;;N;;;;;
16126;GURUNG KHEMA VOWEL SIGN O;Mn;0;NSM;16121 1611F;;;;N;;;;;
16127;GURUNG KHEMA VOWEL SIGN OO;Mn;0;NSM;1611E 1611F 1612D;;;;N;;;;;
16128;GURUNG KHEMA VOWEL SIGN AU;Mn;0;NSM;16121 16120;;;;N;;;;;
16129;GURUNG KHEMA CONSONANT SIGN MEDIAL YA;Mc;0;L;;;;N;;;;;
1612A;GURUNG KHEMA CONSONANT SIGN MEDIAL VA;Mc;0;L;;;;N;;;;;
1612B;GURUNG KHEMA CONSONANT SIGN MEDIAL HA;Mc;0;L;;;;N;;;;;
1612C;GURUNG KHEMA SIGN THOLHOMA;Mn;9;NSM;;;;N;;;;;
1612D;GURUNG KHEMA VOWEL LENGTH MARK;Mn;0;NSM;;;;N;;;;;
1612E;<RESERVE>
1612F;<RESERVE>
16130;GURUNG KHEMA DIGIT ZERO;Nd;0;L;;0;0;0;N;;;;;
16131;GURUNG KHEMA DIGIT ONE;Nd;0;L;;1;1;1;N;;;;;
16132;GURUNG KHEMA DIGIT TWO;Nd;0;L;;2;2;2;N;;;;;
16133;GURUNG KHEMA DIGIT THREE;Nd;0;L;;3;3;3;N;;;;;
16134;GURUNG KHEMA DIGIT FOUR;Nd;0;L;;4;4;4;N;;;;;
16135;GURUNG KHEMA DIGIT FIVE;Nd;0;L;;5;5;5;N;;;;;
16136;GURUNG KHEMA DIGIT SIX;Nd;0;L;;6;6;6;N;;;;;
16137;GURUNG KHEMA DIGIT SEVEN;Nd;0;L;;7;7;7;N;;;;;
16138;GURUNG KHEMA DIGIT EIGHT;Nd;0;L;;8;8;8;N;;;;;
16139;GURUNG KHEMA DIGIT NINE;Nd;0;L;;9;9;9;N;;;;;
```

9.2 Linebreaking

In the format of LineBreak.txt:

```
16100..1611D ; AL # [30] GURUNG KHEMA LETTER A .. GURUNG KHEMA LETTER SA
1611E..16128 ; CM # [11] GURUNG KHEMA VOWEL SIGN AA .. GURUNG KHEMA VOWEL SIGN AU
16129..1612B ; SA # [03] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL HA
1612C ; CM # GURUNG KHEMA SIGN THOLHOMA
1612D ; CM # GURUNG KHEMA VOWEL LENGTH MARK
16130..16139 ; NU # [10] GURUNG KHEMA DIGIT ZERO .. GURUNG KHEMA DIGIT NINE
```

9.3 Syllabic Categories

In the format of IndicSyllabicCategory.txt:

```
# Indic_Syllabic_Category=Pure_Killer
1612C ; Pure_Killer # Mn GURUNG KHEMA SIGN THOLHOMA
# Indic_Syllabic_Category=Vowel_Dependent
1611E..16128 ; Vowel_Dependent # Mn [11] GURUNG KHEMA VOWEL SIGN AA .. GURUNG KHEMA VOWEL SIGN AU
1612D ; Vowel_Dependent # Mn GURUNG KHEMA VOWEL LENGTH MARK
# Indic_Syllabic_Category=Consonant_Placeholder
16100 ; Consonant_Placeholder # Lo GURUNG KHEMA VOWEL A
# Indic_Syllabic_Category=Consonant
16101..1611D ; Consonant # Lo [29] GURUNG KHEMA LETTER KA .. GURUNG KHEMA LETTER SA
# Indic_Syllabic_Category=Consonant_Medial
16129..1612B ; Consonant_Medial # Mc [03] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL HA
# Indic_Syllabic_Category=Number
16130..16139 ; Number # Nd [10] GURUNG KHEMA DIGIT ZERO .. GURUNG KHEMA DIGIT NINE
```

9.4 Positional Categories

In the format of IndicPositionalCategory.txt:

```
# Indic_Positional_Category=Left
16129..1612A ; Left # Mc [02] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL VA
# Indic_Positional_Category=Right
1612B ; Right # Mc GURUNG KHEMA CONSONANT SIGN MEDIAL YA
# Indic_Positional_Category=Top
1611E..16128 ; Top # Mc [11] GURUNG KHEMA VOWEL SIGN AA .. GURUNG KHEMA VOWEL SIGN AU
# Indic_Positional_Category=Top
1612D ; Top # Mc GURUNG KHEMA VOWEL LENGTH MARK
# Indic_Positional_Category=Bottom
1612C ; Bottom # Mn GURUNG KHEMA SIGN THOLHOMA
```

U+16100

GURUNG KHEMA

U+1613F

	1610	1611	1612	1613
0	ᱠ	ᱡ	ᱢ	ᱣ
1	ᱤ	ᱥ	ᱦ	ᱧ
2	ᱨ	ᱩ	ᱪ	ᱫ
3	ᱬ	ᱭ	ᱮ	ᱯ
4	ᱰ	ᱱ	ᱲ	ᱳ
5	ᱴ	ᱵ	ᱶ	ᱷ
6	ᱸ	ᱹ	ᱺ	ᱻ
7	ᱼ	ᱽ	᱾	᱿
8	ᱠ	ᱡ	ᱢ	ᱣ
9	ᱤ	ᱥ	ᱦ	ᱧ
A	ᱨ	ᱩ	ᱪ	
B	ᱬ	ᱭ	ᱮ	
C	ᱰ	ᱱ	ᱲ	
D	ᱴ	ᱵ	ᱶ	
E	ᱸ	ᱹ		
F	ᱼ	ᱽ		

Independent Vowel

16100	अ	GURUNG KHEMA LETTER A
		• Also used as a vowel carrier

Consonants

16101	क	GURUNG KHEMA LETTER KA
16102	ख	GURUNG KHEMA LETTER KHA
16103	ग	GURUNG KHEMA LETTER GA
16104	घ	GURUNG KHEMA LETTER GHA
16105	ङ	GURUNG KHEMA LETTER NGA
16106	च	GURUNG KHEMA LETTER CA
16107	छ	GURUNG KHEMA LETTER CHA
16108	ज	GURUNG KHEMA LETTER JA
16109	झ	GURUNG KHEMA LETTER JHA
1610A	ह	GURUNG KHEMA LETTER HA
1610B	ट	GURUNG KHEMA LETTER TTA
1610C	ठ	GURUNG KHEMA LETTER TTHA
1610D	ड	GURUNG KHEMA LETTER DDA
1610E	ढ	GURUNG KHEMA LETTER DDHA
1610F	व	GURUNG KHEMA LETTER VA
16110	र	GURUNG KHEMA LETTER TA
16111	ल	GURUNG KHEMA LETTER THA
16112	ळ	GURUNG KHEMA LETTER DA
16113	ळ	GURUNG KHEMA LETTER DHA
16114	न	GURUNG KHEMA LETTER NA
16115	प	GURUNG KHEMA LETTER PA
16116	फ	GURUNG KHEMA LETTER PHA
16117	ब	GURUNG KHEMA LETTER BA
16118	भ	GURUNG KHEMA LETTER BHA
16119	म	GURUNG KHEMA LETTER MA
1611A	य	GURUNG KHEMA LETTER YA
1611B	र	GURUNG KHEMA LETTER RA
1611C	ल	GURUNG KHEMA LETTER LA
1611D	ळ	GURUNG KHEMA LETTER SA

Dependent Vowel Signs

1611E	◌ा	GURUNG KHEMA VOWEL SIGN AA
1611F	◌ि	GURUNG KHEMA VOWEL SIGN I
16120	◌ी	GURUNG KHEMA VOWEL SIGN II
16121	◌ु	GURUNG KHEMA VOWEL SIGN U
16122	◌ू	GURUNG KHEMA VOWEL SIGN UU
		≡ 1611E ◌ा 1612D ◌े
16123	◌े	GURUNG KHEMA VOWEL SIGN E
		≡ 1611E ◌ा 1611F ◌ि
16124	◌ी	GURUNG KHEMA VOWEL SIGN EE
		≡ 1611F ◌ि 1612D ◌े
16125	◌ो	GURUNG KHEMA VOWEL SIGN AI
		≡ 1611E ◌ा 16120 ◌ी
16126	◌ौ	GURUNG KHEMA VOWEL SIGN O
		≡ 16121 ◌ु 1611F ◌ि
16127	◌ौ	GURUNG KHEMA VOWEL SIGN OO
		≡ 1611E ◌ा 1611F ◌ि 1612D ◌े

16128  GURUNG KHEMA VOWEL SIGN AU
 ≡ 16121  16120 

Various Signs

16129  GURUNG KHEMA CONSONANT SIGN MEDIAL YA
 1612A  GURUNG KHEMA CONSONANT SIGN MEDIAL VA
 1612B  GURUNG KHEMA CONSONANT SIGN MEDIAL HA
 1612C  GURUNG KHEMA SIGN THOLHOMA
 = virama
 1612D  GURUNG KHEMA VOWEL LENGTH MARK

Digits

16130 0 GURUNG KHEMA DIGIT ZERO
 16131 1 GURUNG KHEMA DIGIT ONE
 16132 2 GURUNG KHEMA DIGIT TWO
 16133 3 GURUNG KHEMA DIGIT THREE
 16134 4 GURUNG KHEMA DIGIT FOUR
 16135 5 GURUNG KHEMA DIGIT FIVE
 16136 6 GURUNG KHEMA DIGIT SIX
 16137 7 GURUNG KHEMA DIGIT SEVEN
 16138 8 GURUNG KHEMA DIGIT EIGHT
 16139 9 GURUNG KHEMA DIGIT NINE

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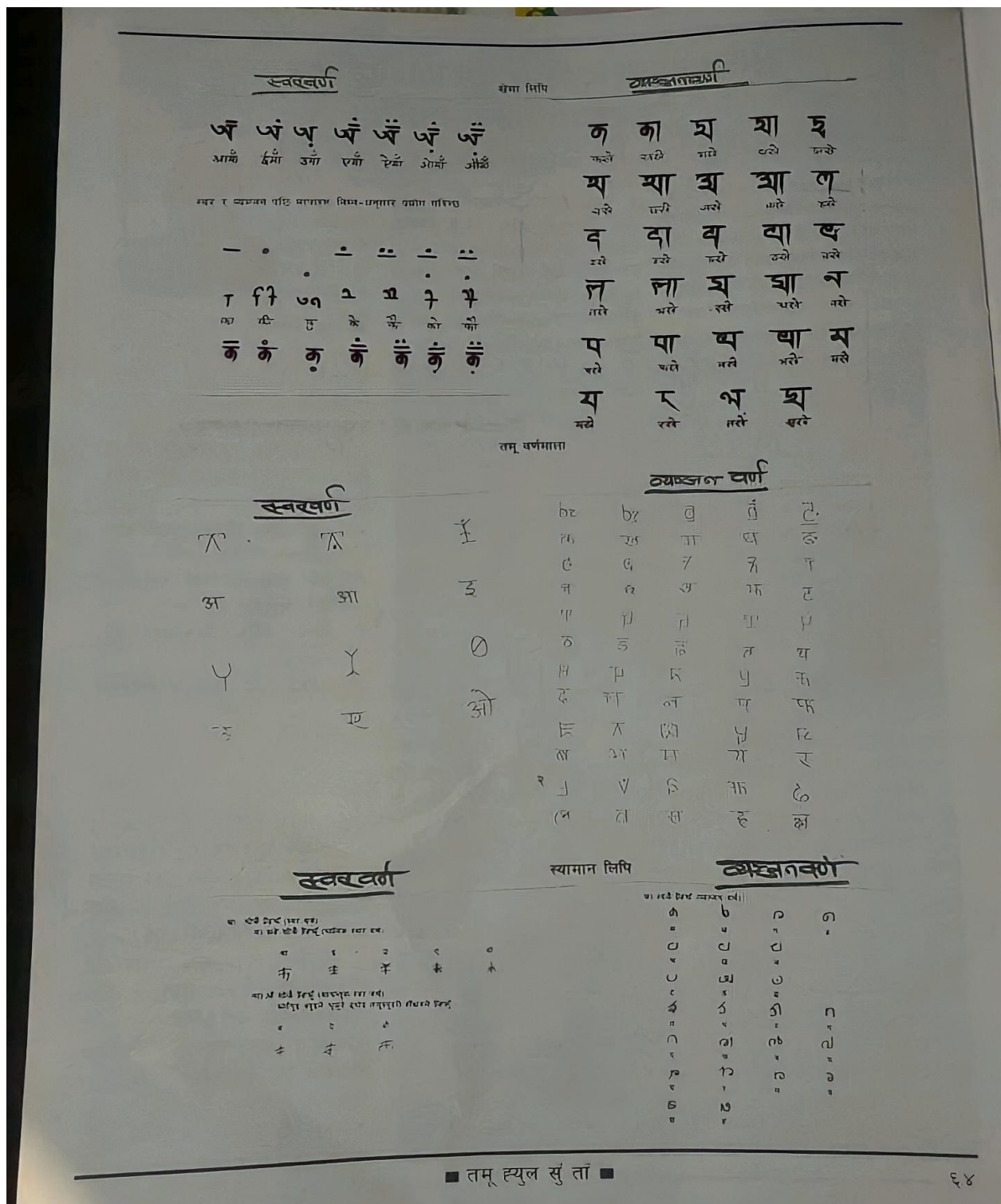


Fig 2: In this, Khema, Khe Prih (Tamu) and Shaman all three scripts are shown together. (Tamū Hyul Sū Tā : 65)

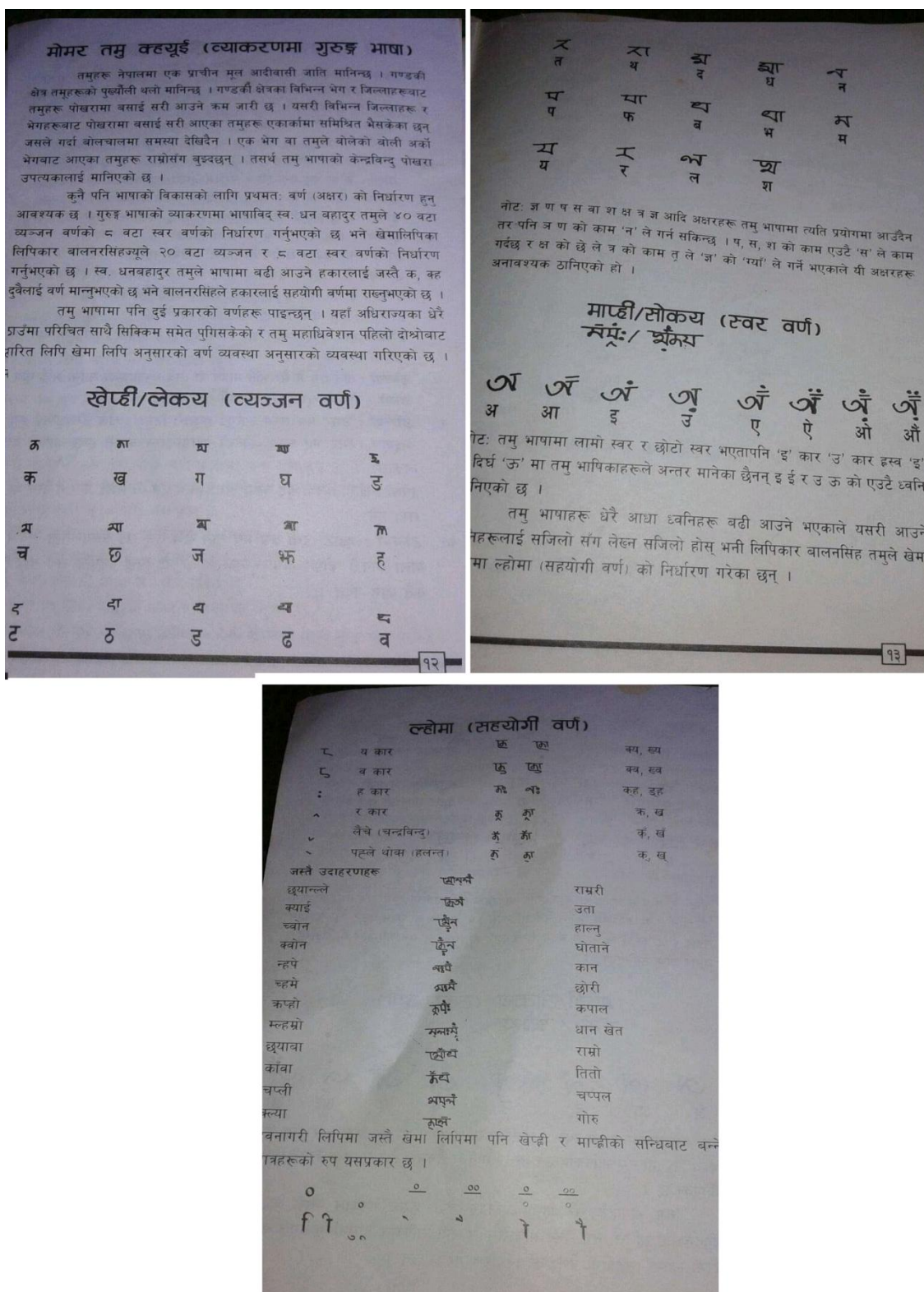
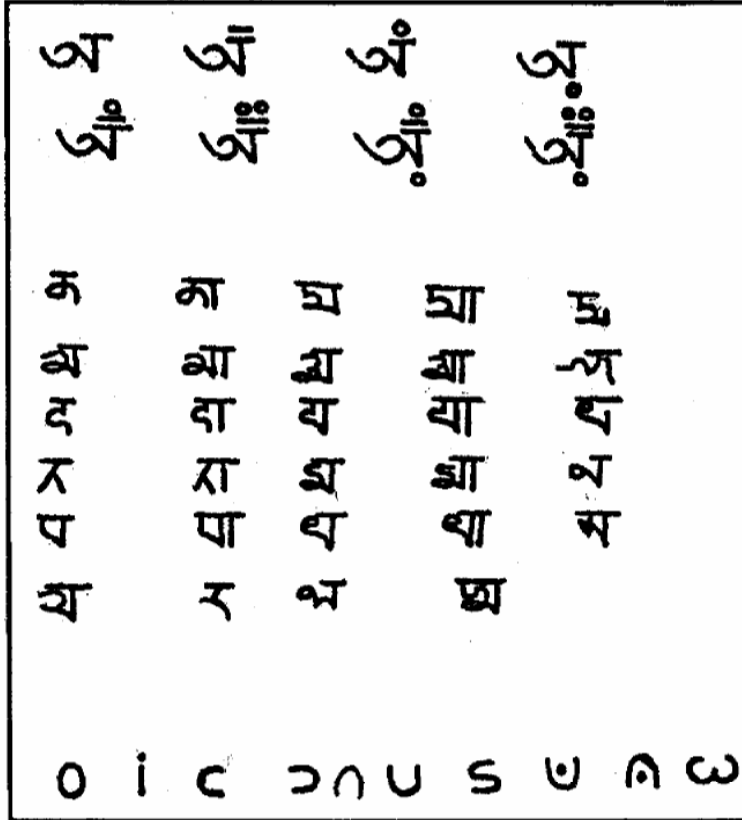


Fig 3: It featured the Khema script prepared by Pim Bahadur Gurung in its initial phase (1995). (Courtesy: Facebook)

7.8 Khema Script of Gurungs:

The Gurung language is written in Khema script and taught in the schools up to the primary level of education since the recognition



of Gurung language as one of the official languages of Sikkim in 1997. It is yet to be ascertained who, where and when the Khema script was developed. A majority of Gurung experts suggest that the script was developed in Nepal from the Sambhota Tibetan script, but looking at the form of the letters, the script has strong influences of both, the

Devnagari and Sambhota Tibetan scripts. In any case, the script was perhaps developed based on Brahmi script after the development of Sambhota and Devnagari scripts. The Khema script has the characters of both Sambhota and Devnagari scripts.

The Khema script of Gurungs has 7 vowels (a, e, u, i, ii, o, au), 7 vowel signs (aa, e, u, i, ii, o, au) and 29 consonants (same as Devnagari post-fixed with “khe”). The alphabets are the same as those of Devnagari but the vowels are read with post-fixed “ma” while the consonants post-fixed with “khe” (Gurung, Meghraj in Lipi Sangalo (ed) by Limboo, R.B.1998: 63-68).

Fig 4: It shows the Khema script used in early times (1997). (from Subba 2008:97)

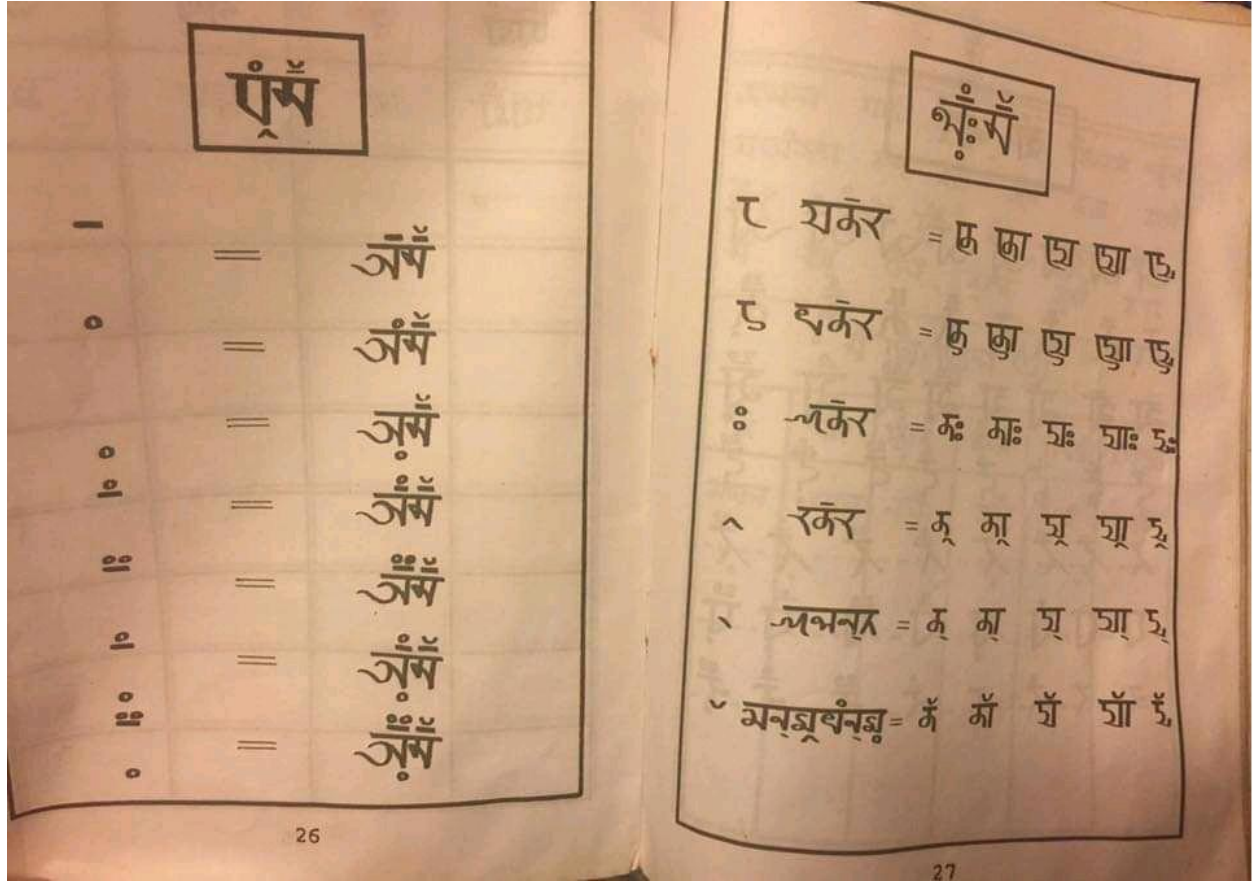


Fig 5(a): It shows to the first handwritten textbook “Tamu Khye Lule” (1997) by Megraj ‘Kon’ Tamu in which Lhomă was included in a book for the first time after Bal Narsingh Gurung included them in Khema.

नैः मंझश

नैः नैः तौल्लो (बाघ का) (Tiger)

लौ नैः ह्य ल्लो (विरल्लो का) (Cat)

मुप्रै नैः मुप्रि ल्लो (गरुड का) (Eagle)

शप्रै नैः सप्रि ल्लो (सर्प का) (Snake)

र नैः त ल्लो (घोडा का) (Horse)

नः नैः लु ल्लो (भेडा का) (Sheep)

प्र नैः प्र ल्लो (वांढा का) (Monkey)

ह्य नैः ह्य ल्लो (चरा का) (Bird)

का नैः खी ल्लो (कुकुर का) (Dog)

पा नैः फौ ल्लो (मृग का) (Deer)

ह्य नैः च्यु ल्लो (मुसा का) (Rat)

ल्यु नैः ल्यौ ल्लो (गाई का) (Cow)

Fig 5(b): It shows the use of Lhomă added by Bal Narsingh Gurung, which was included in the early 1997.

शैवी (व्याज्जन वर्ण)

क	का	श	शा	इ	या	आ	अ	आ	ल
क	ख	ज	घ	ङ	च	छ	ज	झ	ल
द	दा	व	वा	ब	र	रा	इ	आ	र
ट	ठ	ड	ढ	व	त	थ	द	ध	न
ठ	ठा	ड	डा	ड	र	र	ल	इ	
प	फ	ब	भ	म	य	र	ल	स	

मांछी (स्वर वर्ण)

अ आ इ ई उ ऊ ए औ

वहोमं फ्री (सद्योपनी-वर्ण)

८ थ ल्होमां, कुणं = क्यार्इः उता	८ थ ल्होमां, कुण = क्वान = भिल्लु	८ थ ल्होमां, शः = च = होरा	८ थ ल्होमां, कुणं = क्वान = भिल्लु	८ थ ल्होमां, शः = च = होरा	८ थ ल्होमां, कुणं = क्वान = भिल्लु	८ थ ल्होमां, शः = च = होरा
-------------------------------------	--------------------------------------	-------------------------------	---------------------------------------	-------------------------------	---------------------------------------	-------------------------------

प्रीमां (मात्रादरु)

प्रीमां (मात्रादरु)

	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ
ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ
ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ
ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ

रघोपदी (अंक ६)

0	i	c	o	u	u	u	u	u	u	u	u
0	9	2	3	4	5	6	7	8	9	10	11
खा	की	दि	रा	ली	ना	ता	की	स	की	ना	2

Fig 6: It features some of the letters and symbols reshaped by Bal Narsingh Gurung in the late 2000s, which is still being used.

**खेमा प्ही लुब
(सिक्ने तरिका)**

अमाँ-ज	आमाँ- जै	इमाँ- जं	उमाँ- जै
एमाँ- जँ	ऐमाँ- जँ	ओमाँ- जँ	औमाँ- जँ

क	का	ख	खा	ङ
कखे	खखे	गखे	घखे	ङखे
च	चा	झ	झा	ण
चखे	छखे	जखे	भखे	हखे
ट	टा	ड	डा	ण
टखे	ठखे	डखे	ढखे	वखे
त	ता	ड	डा	ऽ
तखे	थखे	दखे	धखे	नखे
प	पा	ब	बा	य
पखे	फखे	बखे	भखे	मखे
र	रा	ल	ला	
यखे	रखे	लखे	सखे	

Fig 7: The entire Khema letters are shown along with their pronunciation. Later in 2019 some more characters were added.
(from Tamu, Gurung 2003:76)

ॐ माह्मी (स्वरवर्ण)

ज	जै	जं	जँ	जै	जै	जँ	जँ	जँ	जँ	जँ	जँ
अमाँ	आमाँ	इमाँ	ईमाँ	उमाँ	ऊमाँ	एमाँ	ए:माँ	ऐमाँ	ओमाँ	ओ:माँ	औमा

खेमालिपि अन्तराष्ट्रिय गोष्ठी २०७६ वाट थपिएका स्वरवर्णहरु

जं - ईमाँ, हेंगो 'ई' । जै - ऊमा, हेंगो 'ऊ'

जै - ए:माँ, हेंगो 'ए' । जै - ओ:मा, हेंगो 'ओ'

ॐ प्रीमा (मात्रा)

ज	जै	जं	जँ	ज़ै	ज़ै	जं	जँ	जं	जँ	जं	जँ
	-	०	००	=	==	०	०	०	०	०	०
क	कै	कं	कँ	क़ै	क़ै	कं	कँ	कं	कँ	कं	कँ
क	का	कि	की	कु	कु	के	केए	कै	को	कोओ	कौ
का	कौ	कां	काँ	कौ	कौ	कां	काँ	कां	काँ	कां	काँ
ख	खा	खि	खी	खु	खू	खे	खेए	खै	खो	खोओ	खौ

Fig 8: In 2019, 4 long vowels and 4 long vowel signs were officially included in the Gurung Khema. (source: Tilak Gurung)

ꠄꠤ ꠘꠤꠞ ꠄꠤꠞ तमु क्युइ फ़ि (Tamu Language Font)

ꠄꠤꠞꠤ खे फ़ि (व्यञ्जनवर्ण) (Consonants)

ꠄ कखे	ꠄꠤ खखे	ꠄꠤ गखे	ꠄꠤ घखे	ꠄꠤ ङखे
ꠄꠤ चखे	ꠄꠤꠤ छखे	ꠄꠤꠤ जखे	ꠄꠤꠤ झखे	ꠄꠤꠤ हखे
ꠄꠤ टखे	ꠄꠤꠤ ठखे	ꠄꠤꠤ डखे	ꠄꠤꠤ ढखे	ꠄꠤꠤ वखे
ꠄꠤ तखे	ꠄꠤꠤ थखे	ꠄꠤꠤ दखे	ꠄꠤꠤ धखे	ꠄꠤꠤ नखे
ꠄꠤ पखे	ꠄꠤꠤ फखे	ꠄꠤꠤ बखे	ꠄꠤꠤ भखे	ꠄꠤꠤ मखे
ꠄꠤ यखे	ꠄꠤꠤ रखे	ꠄꠤꠤ लखे	ꠄꠤꠤ सखे	

ꠄꠤꠞꠤ माँफ़ी (स्वरवर्ण) (Vowels)

ꠄ अमाँ	ꠄꠤ आमाँ	ꠄꠤ इमाँ	ꠄꠤꠤ ईमाँ	ꠄꠤꠤ उमाँ	ꠄꠤꠤ ऊमाँ	ꠄꠤꠤ एमाँ	ꠄꠤꠤ ए:माँ	ꠄꠤꠤ ऐमाँ	ꠄꠤꠤ ओमाँ	ꠄꠤꠤ ओ:माँ	ꠄꠤꠤ औमाँ
	-	०	००	=	=	०	०	००	०	०	००

ꠄꠤ ꠘꠤꠞ ꠄꠤꠞ

तमु क्युइ फ़ि

Fig 10(a): Chart of the Gurung Khema with pronunciation. (Gurung 7:2021) ^[27]

खैः कौः ङैः तमु खेमा लिपि सिकौ
कौः खेमा (व्यञ्जन वर्ण)

क	का	ख	खा	ङ	तमु खेमा
कखे	खखे	गखे	घखे	ङखे	नेपाली
च	चा	झ	झा	ण	तमु खेमा
चखे	छखे	जखे	भखे	हखे	नेपाली
ट	टा	ड	डा	ण	तमु खेमा
टखे	ठखे	डखे	ढखे	वखे	नेपाली
त	ता	झ	झा	ड	तमु खेमा
तखे	थखे	दखे	धखे	नखे	नेपाली
प	पा	ब	बा	य	तमु खेमा
पखे	फखे	बखे	भखे	मखे	नेपाली
र	रा	ल	ला		तमु खेमा
रखे	रखे	लखे	सखे		नेपाली

ङैः माँही

ज	जै	जं	जँ	जै	जै	जं	जँ	जै	जै	जै	जै
अमाँ	आमाँ	इमाँ	ईमाँ	उमाँ	ऊमाँ	ए	एमाँ	ऐमाँ	ओमाँ	आमाँ	औमाँ
क	कै	कं	कँ	कै	कै	कं	कँ	कै	कै	कै	कै

ङैः लोमा

८ = य लोमा	क = क्य	का = ख्य	कौं = क्याई = उता
९ = व लोमा	कु = ख्य	का = ख्व	कौं = क्वोन = मिसाउनु
१० = ह लोमा	कः = कह	यः = मह	कः = फना = भोली
११ = लै लोमा	कँ = कँ	३ = नँ	कँ = काँबा = तितो
१२ = र लोमा	कू = क	कू = प्र	कूकः = कपहो = कपाल
१३ = थो लोमा	कू = क	कू = ख	कूकः = नप्ली = थेचो

कौः खेमा बःकः खैः तमु

Fig 10(b): Chart of the entire Gurung Khema, after the 2019 revision. (source: Bhim Gurung)

बंकारं गिखरि (बाह्खरी)

क	क	कं	कं	क	क	कं	कं	कं	क	क	कं
क	का	कि	की	कु	कु	के	केः	कै	को	कोः	कौ
का	का	कां	कां	का	का	कां	कां	कां	का	का	कां
ख	खा	खि	खी	खु	खु	खे	खेः	खै	खो	खोः	खौ
ख	ख	खं	खं	ख	ख	खं	खं	खं	ख	ख	खं
ग	गा	गि	गी	गु	गु	गे	गेः	गै	गो	गोः	गौ
गा	गा	गां	गां	गा	गा	गां	गां	गां	गा	गा	गां
घ	घा	घि	घी	घु	घु	घे	घेः	घै	घो	घोः	घौ
घ	घ	घं	घं	घ	घ	घं	घं	घं	घ	घ	घं
ङ	ङा	ङि	ङी	ङु	ङु	ङे	ङेः	ङै	ङो	ङोः	ङौ
ङ	ङ	ङं	ङं	ङ	ङ	ङं	ङं	ङं	ङ	ङ	ङं
च	चा	चि	ची	चु	चु	चे	चेः	चै	चो	चोः	चौ
चा	चा	चां	चां	चा	चा	चां	चां	चां	चा	चा	चां
छ	छा	छि	छी	छु	छु	छे	छेः	छै	छो	छोः	छौ
छ	छ	छं	छं	छ	छ	छं	छं	छं	छ	छ	छं
ज	जा	जि	जी	जु	जु	जे	जेः	जै	जो	जोः	जौ
जा	जा	जां	जां	जा	जा	जां	जां	जां	जा	जा	जां
झ	झा	झि	झी	झु	झु	झे	झेः	झै	झो	झोः	झौ
झ	झ	झं	झं	झ	झ	झं	झं	झं	झ	झ	झं
ढ	ढा	ढि	ढी	ढु	ढु	ढे	ढेः	ढै	ढो	ढोः	ढौ
ढ	ढ	ढं	ढं	ढ	ढ	ढं	ढं	ढं	ढ	ढ	ढं
ह	हा	हि	ही	हु	हु	हे	हेः	है	हो	होः	हौ
ह	ह	हं	हं	ह	ह	हं	हं	हं	ह	ह	हं
ट	टा	टि	टी	टु	टु	टे	टेः	टै	टो	टोः	टौ
टा	टा	टां	टां	टा	टा	टां	टां	टां	टा	टा	टां
ठ	ठा	ठि	ठी	ठु	ठु	ठे	ठेः	ठै	ठो	ठोः	ठौ
ठ	ठ	ठं	ठं	ठ	ठ	ठं	ठं	ठं	ठ	ठ	ठं
ड	डा	डि	डी	डु	डु	डे	डेः	डै	डो	डोः	डौ
डा	डा	डां	डां	डा	डा	डां	डां	डां	डा	डा	डां
ढ	ढा	ढि	ढी	ढु	ढु	ढे	ढेः	ढै	ढो	ढोः	ढौ

११ सँ कँ ङँ

तमु क्यइ फी

Fig 10(c): shows the position of vowel signs. (Gurung 15:2021)

འཁྲུག་ VOWELS

ཨ	ཨྀ	ཨྐ	ཨྑ	ཨྒ	ཨྒྷ
ཨྔ	ཨྕ	ཨྖ	ཨྗ	ཨ྘	ཨྙ

ཀླུ་ CONSONANTS

ཀ	ཀྱ	ཁ	ཁྱ	ཀྲ
ཁླ	ཁྱྱ	ཁླ	ཁྱྱ	ཀྲྱ
ཀླ	ཀྱྱ	ཀླ	ཀྱྱ	ཀྲྱ
ཀླ	ཀྱྱ	ཀླ	ཀྱྱ	ཀྲྱ
ཀླ	ཀྱྱ	ཀླ	ཀྱྱ	ཀྲྱ
ཀླ	ཀྱྱ	ཀླ	ཀྱྱ	ཀྲྱ

ཐྱི་ NUMERALS

༠ ཨྀ ཀ ཁ ག ན ང ཅ ཆ ཇ ཉ

Fig 11(a): It shows current full Gurung Khema table. (from scriptsource.org :2021)

सुरै कौश्र ङ्कं : तमु खेमा लिपि

ॐः : माँही - स्वर वर्ण

मिथुन बहादुर राईकुल्ले सुरै हुम बहादुर च्हाक्ली तमु

अ  अँर	आ  अँ	इ  अँर	ई  अँर	उ  अँका	ऊ  अँ
ए  अँरँ	एः	ऐ  अँ	औ  अँकार	औः	औ  अँड्वाँ

कौंः : खेही - व्यञ्जन वर्ण

क  कयल्ल	का  कारँ	ख  खयल्ल	खा  खार	ख  ख
च  चर	चा  चाँ	ज  जरँ	जा  जाय	ह  हँ
ट  टरँ	टा  टाँ	ड  डयँ	दा  दाक	व  वकल्ल
त  तरँ	ता  तारयड	द  दयकल्ल	धा  धाँड	न  नरँयल्ल
प  परँ	पा  पाळ्ठाँल्ल	ब  बड	बा  बाकँरुँ	म  मकाँ
य  यल्ल	र  ररा	ल  लड्डी	स  सरु	

ङ्कैः : ल्होमाँ - सहयोगी वर्ण

॥ = य ल्होमा	कू = क्य	का = ख्य	कुँ = क्यार्ई = उता
॥ = व ल्होमा	कु = क्व	का = ख्व	कुँ = कोन = मिसाउनु
॥ = ह ल्होमा	कू = कह	यः = म्ह	कूँ = फ्हा = भोली
॥ = लौ ल्होमा	कँ = कँ	ऊँ = नँ	कँ = काँबा = तितो
॥ = र ल्होमा	कू = क	रू = प्र	कूँ = क्रफ्हा = कपाल
॥ = थो ल्होमा	कू = क	का = ख	कूँ = नल्ली = थेच्यो

ङ्कैः : च्योही - अंक गणना

०	१	२	३	४	५	६	७	८	९	१०	११
खा	क्री	इही	सों	प्ली	ड	ट	डी	प्रे	कू	च्यु	

Fig 11(b): It shows full Gurung Khema chart. (GeDesign Prints: 2021)

ꠘꠞꠟ

o ʼ c ɔ u n s ʊ
n w ʼo ʼʼ ʼc ʼɔ ʼu ʼn
ʼs ʼʊ ʼn ʼw co cʼ cc cɔ
cu cn cs cʊ cñ cw ɔo ɔʼ
ɔc ɔɔ ɔu ɔn ɔs ɔʊ ɔñ ɔw
uo uʼ uc uɔ uu un us uʊ
uñ uw no ʌ

Fig 12: It shows numerals (0-50) of Gurung Khema. (from Gurung 2013:35)

[illegible]

Fig 13: It shows various punctuation marks of Gurung orthography. (from Gurung 'Kon', Gurung 2013:24)

[illegible]

৩২ অষ্টা দ্য

लोकबहादुर गुरुङ

Fig 14: It shows a Gurung poem written in Gurung Khema. (from Gurung 2021:72)

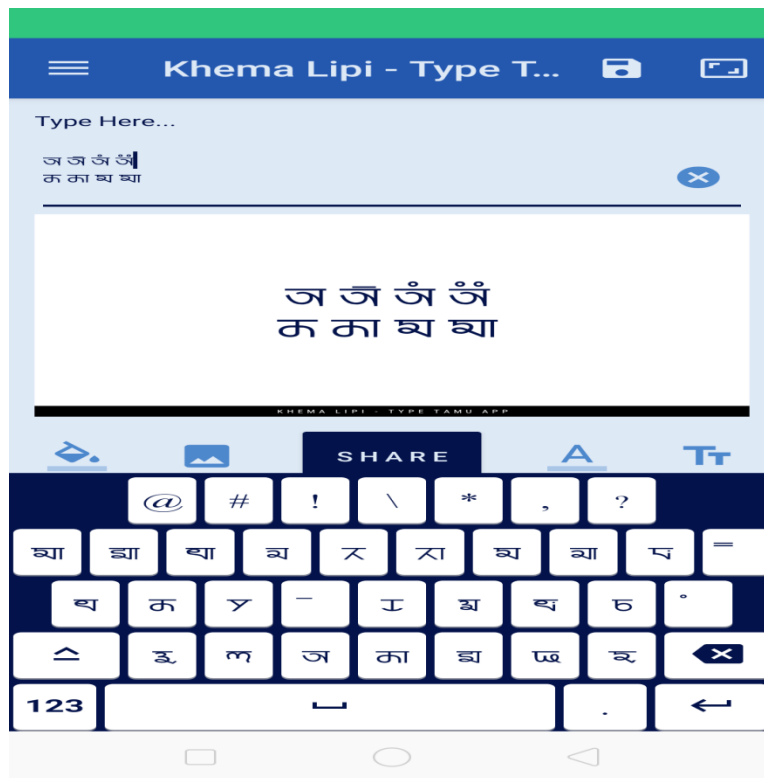
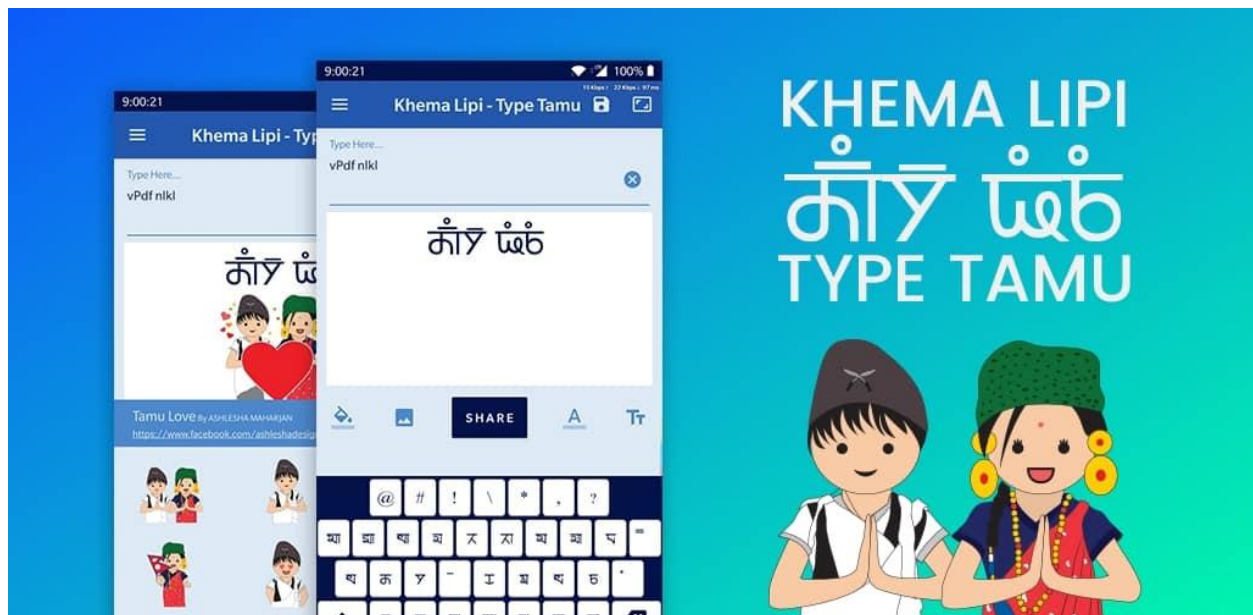


Fig 15: The 'Khema Lipi Type Tamu' application was launched in October 2019, with this Gurung Khema can be written in mobile easily.

अ

(5)

(5)

(5)

(3)

(c)

(C)

(C)

(n)

(30)

Fig 16: It shows the set-4 of question paper of class 10th Gurung subject which is conducted by CBSE in 2017.

TERM - I

Max. Marks = 40

- There are total 50 questions in the question paper, out of which 40 questions have to be answered.

Marks: 10

 $5 \times 1 = 5$

આ) સુ કુંડ, I અવસ્થા ॥

35 | Proposal to Encode the Gurung Khema in Universal Character Set



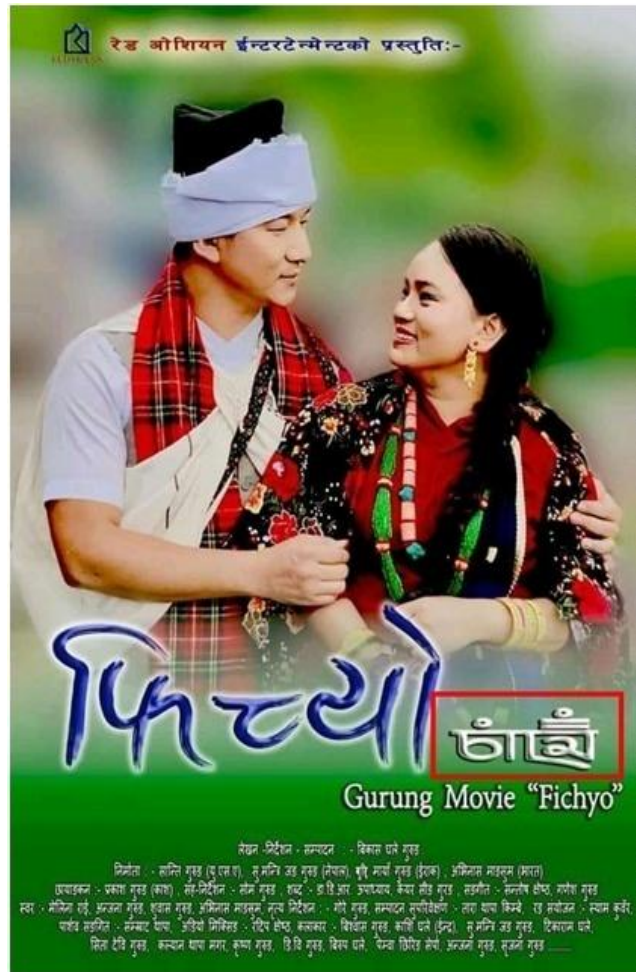


Fig 20: It shows the various uses of the Gurung Khema: first on the entrance gate, second in the movie banner and third on the tombstone.

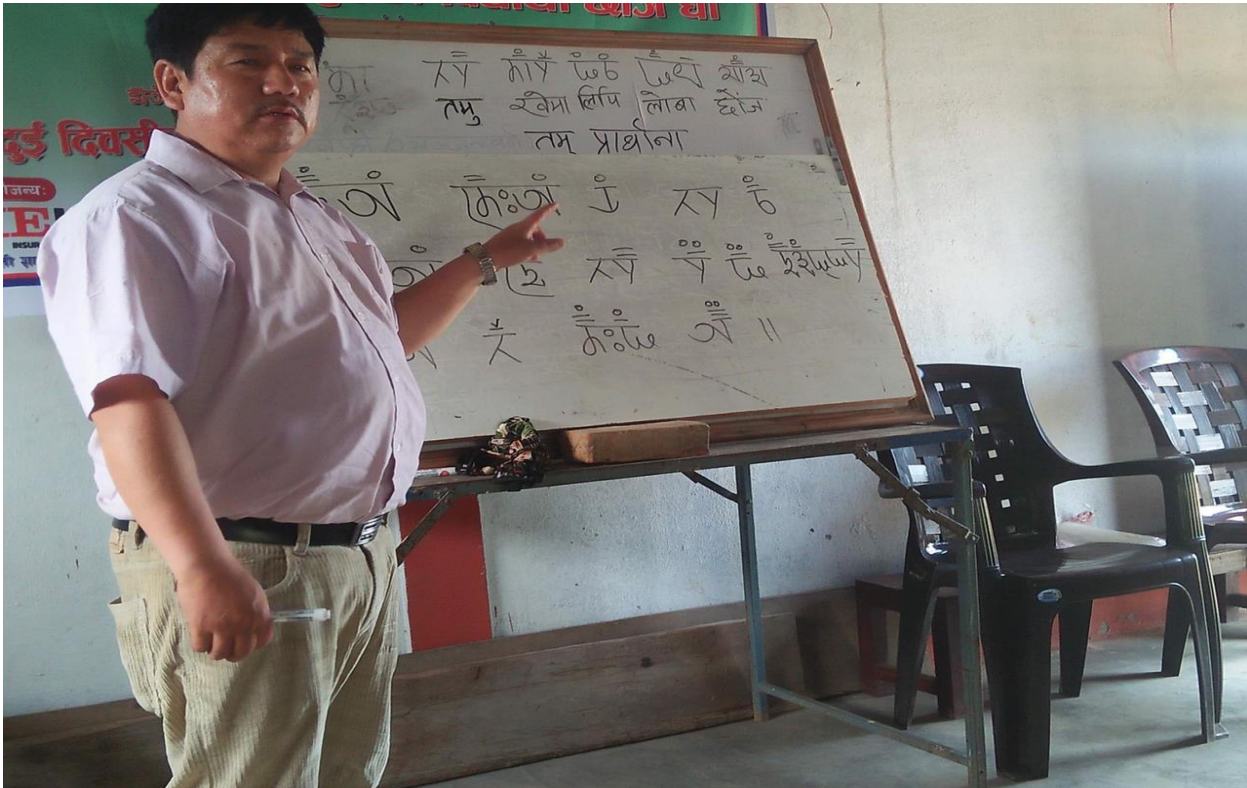


Fig 21: First picture shows Gurung class running in the Govt. school of Sikkim and second picture shows Khema teaching going on in Devdaha School in Nepal.

KHEMA KEYBOARD



Fig 22: De-facto Gurung Khema keyboard layout, which is officially currently being used (2019).

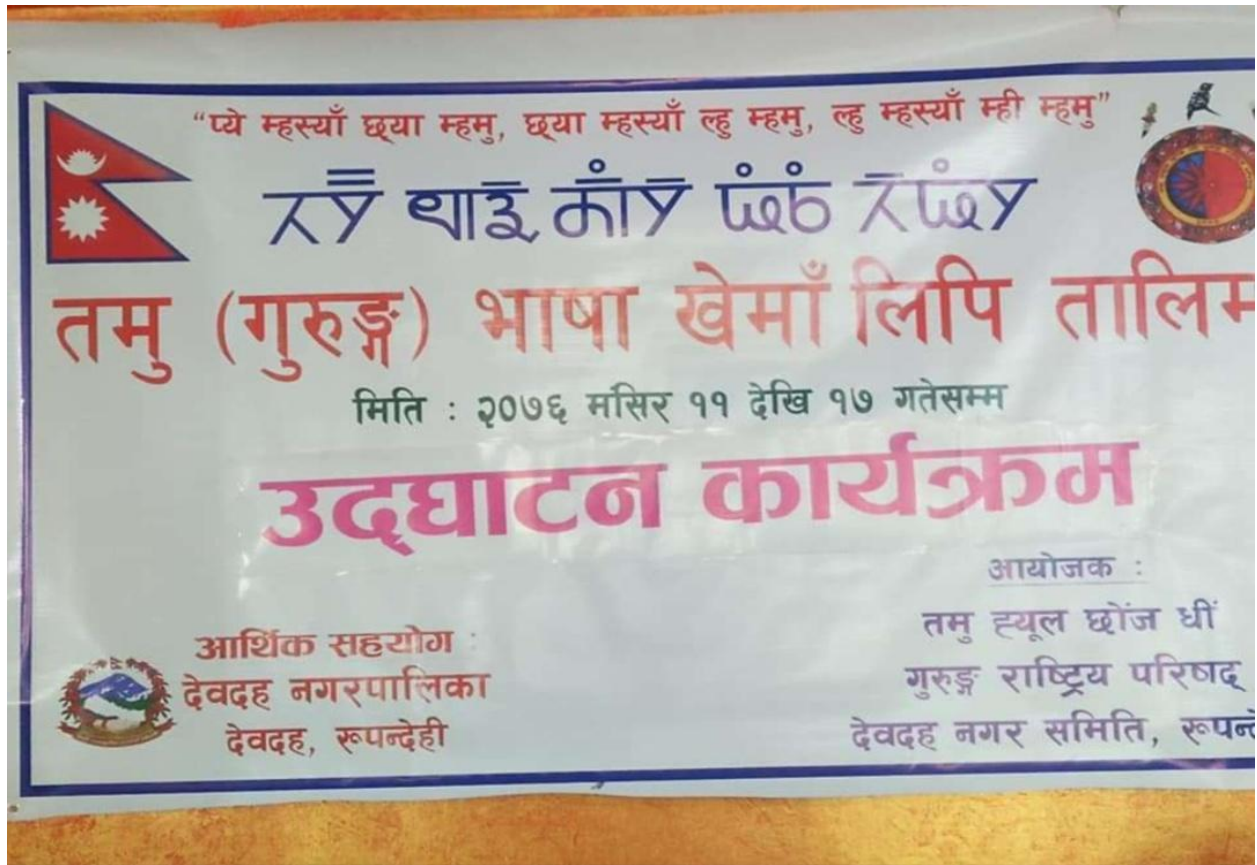


Fig 23: It is the banner of Gurung Khema workshop. (2076 BS)

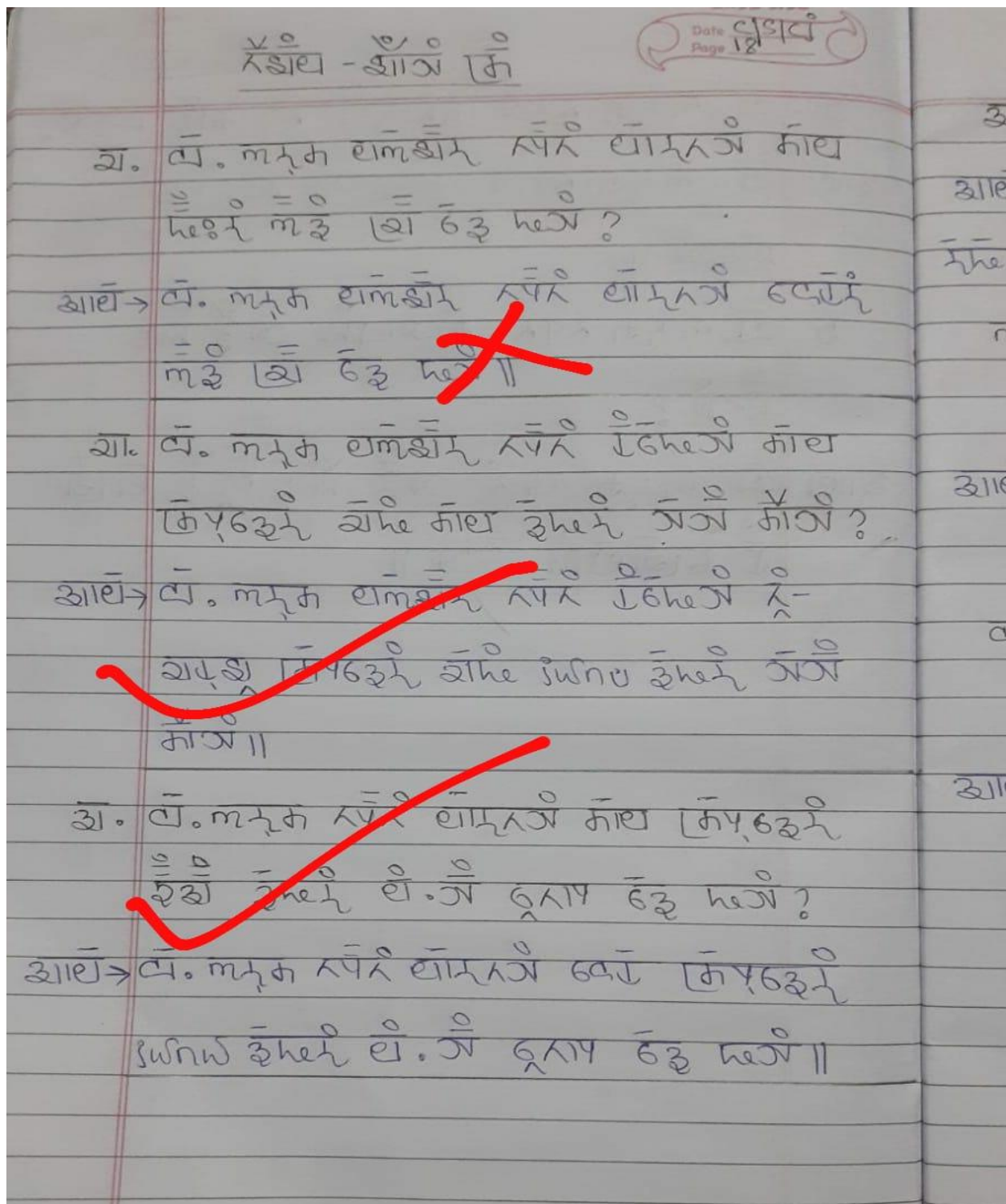


Fig 24: This is part of the notebook of class 10th student Premika Gurung. In this, with all the classes being in online mode due to COVID-19, the teacher has used a digital pen (dated: 02/06/2021). (source: Rupraj Gurung)

ISO/IEC JTC 1/SC 2/WG 2

PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS

FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest *Roadmaps*.

A. Administrative

1. Title: Proposal to Encode the Gurung Khema in Universal Character Set

2. Requester's name: Biswajit Mandal (biswajitmandal.bm90@gmail.com)

3. Requester type (Member body/Liaison/Individual contribution): Individual

4. Submission date: 11/03/2022

5. Requester's reference (if applicable):

6. Choose one of the following:

This is a complete proposal: Yes

(or) More information will be provided later:

B. Technical – General

1. Choose one of the following:

a. This proposal is for a new script (set of characters): Yes

Proposed name of script: Gurung Khema

b. The proposal is for addition of character(s) to an existing block:

Name of the existing block:

2. Number of characters in proposal: 56

3. Proposed category (select one from below - see section 2.2 of P&P document):

A-Contemporary ☒ B.1-Specialized (small collection) ☐ B.2-Specialized (large collection) ☐

C-Major extinct ☐ D-Attested extinct ☐ E-Minor extinct ☐

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

F-Archaic Hieroglyphic or Ideographic

G-Obscure or questionable usage symbols

4. Is a repertoire including character names provided?

Yes

a. If YES, are the names in accordance with the “character naming guidelines”

in Annex L of P&P document?

Yes

b. Are the character shapes attached in a legible form suitable for review?

Yes

5. Fonts related:

a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

Biswajit Mandal

b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

Biswajit Mandal (biswajitmandal.bm90@gmail.com)

6. References:

a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes

b. Are published examples of use (such as samples from newspapers, magazines, or other sources)

of proposed characters attached?

Yes

7. Special encoding issues:

Does the proposal address other aspects of character data processing (if applicable) such as input,

presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

Yes

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database (<http://www.unicode.org/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	No
If YES explain	
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?	Yes
If YES, with whom?	The National Council House of Tamu; Resham Gurung; Bhim Gurung
If YES, available relevant documents:	See text of proposal
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference:	Script is used for print and digital publications; see proposal for details
4. The context of use for the proposed characters (type of use; common or rare)	Common
Reference:	See proposal for details
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference:	Sikkim (India) and Nepal. See proposal for details
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	No
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	

10. Can any of the proposed character(s) be considered to be similar (in appearance or function)

to, or could be confused with, an existing character?

Yes

If YES, is a rationale for its inclusion provided?

Yes

If YES, reference:

See proposal for details

11. Does the proposal include use of combining characters and/or use of composite sequences?

Yes

If YES, is a rationale for such use provided?

Yes

If YES, reference:

Common combining signs

Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

If YES, reference:

12. Does the proposal contain characters with any special properties such as

control function or similar semantics?

No

If YES, describe in detail (include attachment if necessary)

13. Does the proposal contain any Ideographic compatibility characters?

No

If YES, are the equivalent corresponding unified ideographic characters identified?

If YES, reference: