

Proposal to Encode Chisoi in the Universal Character Set

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1. Introduction

This is a proposal to encode Chisoi in the Universal Character Set. Chisoi is used to in West Bengal, Odisha and Jharkhand for writing the Kurmali /Kudmali language. This document provides a description of the writing system, implementation details, a code chart and names list, and a few specimens.

2. Backgrounds

Chisoi (ଚିଶୌଟ) is a script used for writing Kurmali (Devanagari:कुड़मालि, Bengali:কুড়মালি, Odia:କୁଡ଼ମାଲି, Chisoi:ଚଢ଼ମାଲି)(ISO 639-3:kyw)[12], is an Indo-Aryan language of 556,089 people (census 2011) primarily spoken in Saraikela Kharswan District, East Singhbhum District, West Singhbhum District, Ranchi District of Jharkhand; Mayurbhanj District, Kendujhar District, Jajpur District and Sunargarh District of Odisha; Purulia District, Bankura District, Jhargram District and Paschim Medinipur District of West Bengal. It is also mother tongue of some people of Chhattisgarh, Assam and other parts of India even in Bangladesh and Nepal. Kurmali language is spoken by Kurmi people, mainly. It also spoken by many other people of Jungle Mahal area i.e, Bagal, Kamar, Kamhar, Tanti, Harhi, Muchi, Napit, Dhopa, Dhai, etc. It was recognized as an additional official language of Jharkhand and West Bengal.[12]

Kurmali Language written in four scripts i.e. Chisoi, Devanagari, Bengali and Odia. Devanagari and Bengali are commonly used in official purposes in Jharkhand and West Bengal, but Chisoi is the own script of Kurmali Language. Many peoples and Kurmali linguists created their own Kurmali script in last few decades, but unfortunately those are not accepted by the people and not implemented later. Jayanta Kumar Mahata of Bamundiha village, Medinipur district had invented Chisoi scripts in 1986. He gets inspiration to create a new writing system from his grandfather. His grandfather was one of the famous Kurmali folklore singer of his time. He started to collect various ancient symbols, Rangolis, Alpanas, ritual signs of Kurmali communities from his school time [see fig.1]. After completing his graduation, he created Chisoi script in 1986. Most of the letters derived from 卐, reflects their deity *Burhābābā* ଚଢ଼ମାଲିଚଢ଼ମାଲି .

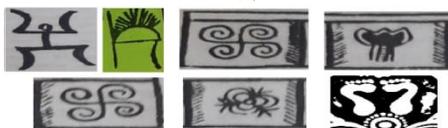


Figure 1: Showing various Kurmali traditional symbols as well as Rangoli and Alpanas.

Jayanta Kumar Mahata published '*Kurmali Chisoi Chinhap*' in 1994. He composed Kurmali Grammer in 2007. He established '*All India Kurmali Chisoi-A Society*' ଚନ ଚମ୍ପୁଟିଆ ଚଢ଼ମାଲିଚଢ଼ମାଲି ଚିଶୌଟ-ଟି ଶଠଶାଳିଚଢ଼ମାଲି in 1994 and '*Kurmali Chisoi-A writers and Artist Association*' in 2009. In 2016, Jayanta Kumar Mahata, Narayan Mahata along with 3 more people established '*Kurmali Chisoi Chari Foundation*' trustee-board. Later he established '*Kurmali Chisoi-A Teachers' Association*' ଚଢ଼ମାଲିଚଢ଼ମାଲି ଚିଶୌଟ-ଟି ଚଢ଼ମାଲିଚଢ଼ମାଲି in 2019.

All India Kurmali Chisoi-A Society opened first Kurmali private elementary schools and adult education center in 2009. Now, more than 100 schools are running in all over the Jungle Mahal region. These schools are specifically for Kurmali mother tongue and Chisoi learning. In 2009, some schools got formal recognition from state Govt. Nowadays, 10 Kurmali elementary schools are running under Govt. of India's *Sarva Shiksha Abhiyan* सर्व शिक्षा अभियान and *Samagra Shiksha Abhiyan* समग्र शिक्षा अभियान schemes, like Gadra, Sonakhuli, Joypur, Barsole, Dwarkanath, etc. [see fig.10][see fig.16]

One digitized font “*KurmaliChisoy*” (True Type) available for Chisoi, was designed by Pankaj Mahato in the year 2000. All the Kurmali books, magazines, banners, pamphlets, etc used this font. Another True Type font “*Chisoi*” designed by Nurul Alam Ador and Biswajit Mandal in the year of 2021, specifically for this proposal. “*Chisoi*” True Type Font is used in the proposed code chart and names list. This font is accepted by various Kurmali associations. [see table no.1]

2.1 Usage

Chisoi is currently used in writing and print for various purposes:

- **Educational Materials**

Primary level educational materials for Kurmali in Chisoi published by All India Kurmali Chisoi-A Society, Raghunathpur, Jhargram District (W.B.). Examples of primers are ‘*Kurṃāli Cisoī Cinhāp*’ ଚଢ଼ଫାଟନଟ ଡଟକଡ଼ ଡଟମ୍ପାଟନ୍ for class-I [1]and ‘*Kurṃāli Cisoī Cinhāp Dôṛi Khôṛā*’ ଚଢ଼ଫାଟନଟ ଡଟକଡ଼ ଡଟମ୍ପାଟନ୍ ଇଫଟ ଡଃଟଫାଟ for class-2, etc in 2009.[see fig.7][2]

- **Newspaper**

A weekly newspaper of Kurmali ‘*Addās*’ ଡଃଢ଼ାଢ଼ା in Chisoi first time published in 1st Dec 2016, edited by Narayan Mahata[see fig.5][10]. Now it is not publishing from 2 years due to COVID pandemic. New edition will be published in new font so soon. Another monthly magazine ‘*Pôrom*’ ପଠଠମ (2017) published in Bengali, sometime it carries Kurmali articles.[see fig.20][11]

- **Ephemera**

‘*Kurmali Chisoi-A Teachers’ Association*’ ଚଢ଼ଫାଟନଟ ଡଟକଡ଼-ଫ ଡଟକଡ଼ଫଫ୍ ଲକଠକଡ଼ଫାଢ଼ାଢ଼ା produces and distributed various posters, banners and pamphlets.[see fig.8]

- **Linguistic works**

The Kurmali-to-English dictionary in Chisoi ‘*Kurṃāli Sārā bôṛār*’ ଚଢ଼ଫାଟନଟ କାଢ଼ଫାଟ ଡ଼ାଢ଼ଫାଟଢ଼ା edited by Narayan Mahata in 2014. [see fig.14][8]

- **Literary Works**

Kurmali poetry book ‘*Kurṃāli Cāri Disā*’ ଚଢ଼ଫାଟନଟ କାଢ଼ଫାଟ ଇଢ଼କାଢ଼ା by poet Mangal Mahata written in both Chisoi and Bengali scripts in 2016 [see fig.22][7]. Another Kurmali poetry book ‘*Cāricethā*’ କାଢ଼ଫାଟକାଢ଼ଫାଟ written by linguist Narayan Mahata in 2014 [see fig.23][6]. The Kurmali prose in Chisoi ‘*Bulān*’ ଡଢ଼ଫାଟନଟ written by Maniklal Mahata in 2018 [see fig.21][9].

- **Workshops**

'All India Kurmali Chisoi-A Society' ତନ ଟିମ୍ପୁଟିଆଟ ଚଢ଼ଫାଟନଟ ଚଟକଟ-ଟ କଠକାଟଟଟଟ conducts Half Yearly Chisoi Teaching-Learning Workshop every year.

3. Script

The script is assigned the name '*Chisoi*'. The proposed characters are intended for presenting current forms of Chisoi. The set consists of 41 characters: 28 letters, 2 signs, 1 punctuation and 10 digits.

3.1 Structure

Chisoi (also called as *Kurṃāli Cisoī ଚଢ଼ଫାଟନଟ ଚଟକଟ*, *Cisôī lipi ଚଟକଟ ନଟକଟ* or *Cisoī lipi ଚଟକଟ ନଟକଟ*) is written from left-to-right. It has a feature of an alphabet: vowels are written as full letters, with no vowel-modifiers. However consonants may have an inherent vowels; it typically is pronounced [ɔ] or [ə], normally never occurs in final position but some cases it can occur during to pronounce '*Tadbhav* तद्भव' words. It means Sanskrit words with some variations. For examples: କାନ୍ତା 'sāntô' Peaceful, ମଠା 'môstô' Big in size, ଚଢ଼ଫାଟନଟ 'ôbgônôô' Known, etc[see fig.18].

The script has no regular system of conjuncts but it has virama to mute the inherent vowel[see fig.2,3,4 &5].The letter ୠ JARAH [ʰ] is used after consonants to indicate aspirations: ୠ khô [kʰɔ], ୡ ghô [gʰɔ], ୢ chô [çʰɔ], ୣ jhô [dʒʰɔ], etc.

Chisoi is an alphabetical script that is written from left-to-right. There are no attested ligatures. The typical didactic presentation of Chisoi is shown with one major section; signs are included in this section. The section is a chart with ten rows and three columns, where first to fourth, sixth and seventh row's first letter is a vowel, and the letter names are based on Brahmic style.

ୠ	ୡ	ୢ
A	BA	AAI
ୣ	୤	୦
AA	GA	TA
ୠ	ୡ	ୢ
E	SA	NA
ୣ	୤	୦
I	KA	RA
୤	୦	ୠ
MA	HA	RRA
ୠ	ୡ	ୢ
U	DA	LA

୐	ଠ	ୡ
O	NYA	NGA
◌̣	ଘ	ଞ
ANUSVARA	YA	DDA
ୢ	ଝ	ଞ
CA	JA	PA
ୣ	ଝ	ଞ
TTA	JARAH	VIRAMA

3.2 Chisoi Sign ANUSVARA <◌̣>

The sign (◌̣) is written on the top of the vowels and consonants in question except JARAH. It is a nasalization mark of Chisoi. It corresponds to the Candrabindu in Devanagari, Bengali and Odia. Its IPA is [̃]. For examples: ଡି [ḍi], ଢି [ḍhi], ଶି [ḥi], ଣି [ṇi], ଙି [ŋi], etc. To represent the nasalized aspirated consonants, the position of sign (◌̣) will on the top of the consonant letter, not on the top of JARAH. For examples: ଡିଃ [kʰĩ], ଙିଃ [gʰĩ], ଢିଃ [tʰĩ], ଞିଃ [pʰĩ], ଟିଃ [tʰĩ], ଣିଃ [dʰĩ], etc.[see fig.13]

In the attached specimens SIGN ANUSVARA shown as (o), it is due to lack of Unicode standard font. The actual sign of ANUSVARA is (◌̣). It has similarity in glyph with ‘COMBINING RING ABOVE’ U+030A (°), but this proposal for separate encoding of CHISOI SIGN ANUSVARA.

3.2.1 Position of Chisoi Sign ANUSVARA <◌̣>

The position of sign (◌̣) will on the top of the both vowels and consonants. But in the old font “KurmaliChisoy” shows different positions for different letters. It occurs due lack of Unicode standardization. Actually the correct position of sign (◌̣) is the top middle of the letters. For example:



Figure 2: Comparison between original font (first line) and new font (bottom line). Old font is showing non similarities in position of Anusvara but the new font showing accurate top middle position of Anusvara.

3.3 Chisoi letter JARAH <ঃ>

The letter (ঃ) JARAH 'Jôṛô'hô' যযয means 'to add'. It is used after consonants to **indicate aspirations** [ʰ]. JARAH never place in the initial position of any Kurmali words, always used after consonants. It never carry SIGN ANUSVARA <◌̃> and VIRAMA <◌̣>.

In Kurmali writing system there is no use of visarga. JARAH is the unique character which is not available in Devanagari, Bengali and Odia scripts because it used to make aspirated consonants. For examples:

ক[kɔ]+ঃ[ʰ]=কঃ[kʰɔ], গ[gɔ]+ঃ[ʰ]=গঃ [gʰɔ], ত[tɔ]+ঃ[ʰ]=তঃ[tʰɔ], প[pɔ]+ঃ[ʰ]=পঃ[pʰɔ], ফ[ʃɔ]+ঃ[ʰ]=ফঃ[ʃʰɔ] ,etc.

It has similarity in glyph with 'BENGALI SIGN VISARGA' U+0983 (ঃ), but this proposal for separate encoding of CHISOI LETTER JARAH [see fig.12].

3.4 Chisoi Sign VIRAMA <◌̣>

It is also known as 'Sis'ô' সিস'ও. The sign (◌̣) is written in the beneath of the letters in question. Chisoi has no regular system of conjuncts, VIRAMA functions as like to mute the inherent vowel either [ɔ] or [ə] of the consonants. For examples: ক[kɔ]+◌̣=ক̣[k], গ[gɔ]+◌̣=গ̣[g], প[pɔ]+◌̣=প̣[p], ফ[ʃɔ]+◌̣=ফ̣[ʃ], etc.

To represent the inherent vowel less aspirated consonants, the position of sign (◌̣) will beneath of the consonant letter, not beneath of JARAH. For examples: কঃ[kʰɔ]+◌̣=ক̣ঃ [kʰ], গঃ[gʰɔ]+◌̣= গ̣ঃ[gʰ], ফঃ[ʃʰɔ]+◌̣=ফ̣ঃ[ʃʰ], পঃ[pʰɔ]+◌̣=প̣ঃ[pʰ], তঃ[tʰɔ]+◌̣=ত̣ঃ[tʰ], ফঃ[dʰɔ]+◌̣=ফ̣ঃ[dʰ], etc.[see fig.12]

3.4.1 Other uses of Chisoi Sign VIRAMA <◌̣>

Glottalizational mark: if last consonant of any word contains VIRAMA <◌̣> and a letter before LETTER A <অ> contains VIRAMA <◌̣>, it reflects glottal stop phoneme. For examples: অক্ষয় [ɔnhɔʃ] 'inexpert', অগম [ɔgɔm] 'not moving', অত্যাধ [ɔbdʒaʃ] 'dirty' সিস'ও [sisʔɔ] 'stop', etc.

Virama with LETTER I: if vowel LETTER I <ই> contains VIRAMA <◌̣>, so left sided consonant as well vowel letter will pronounce with [o] sound. For examples: অষ্টম [aoinɔʃ] 'Eight', অর্জুন [dʒoidʰa] 'warrior' and অসি [ʃisoi] 'Chisoi'[see fig.12].

3.5 Chisoi letter AAI <ঐ>

It is a diphthong vowel letter with combination of LETTER AA and LETTER I. Its glyph is a combination of two letters ঐ+ঐ=ঐ. Its IPA is [ai]. To represent this sound we use आइ (in Devanagari), আই (in Bengali) and ଐ (in odia). For examples: ঐনা 'Āinā'/আইনা/আইনা/ঐনা, Mirror and ঐসা 'Āīsā'/আইসা/আইসা/ঐসা, name of a month, etc.

3.6 Chisoi letter RRA<ঔ>

It is the voiced retroflex flap r[ɽ] of Chisoi. To represent this sound we use 𑂣 (in Devanagari), 𑂣 (in Bengali) and 𑂣 (in odia). For examples: 𑂣𑂣𑂣𑂣 (ôbgôr)অভাঙ/অব্গড়/ଅବ୍ଗଡ଼, 'Stupid', 𑂣𑂣𑂣-𑂣𑂣𑂣 (ôgôr-bôgôr)অগড়-বগড়/ଅଗଡ଼-ବଗଡ଼/ଅଗଡ଼-ବଗଡ଼, 'Meaningless', etc.

3.5 Digits

There is full set of decimal digits: 0 ZERO, ୧ ONE, ୨ TWO, ୩ THREE, ୪ FOUR, ୫ FIVE, ୬ SIX, ୭ SEVEN, ୮ EIGHT, ୯ NINE [see fig.25].

3.6 Punctuations

Chisoi uses DANDA (|) in place of full stop. It has similarity in glyphs with DEVANAGARI DANDA U+0964. But this proposal is for separate encoding of DANDA. There are no script-specific punctuation marks. Latin marks, such as : ; " () ? / - and ! are used [see fig.24].

4. Character names

The name of the script is Chisoi 'Cisoi' ଚିଶୌଟ 'Symbol'. The name Chisoi first time found in the literature of Kurmali 'Kurmāli Cisoi Cinhāp'. Proposed character names for this proposal are given below [see table no.1].

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
𑂣	A	ô	[ɑ]	𑂣	KA	kô	[kɑ]	𑂣	NGA	ôñ	[ŋɑ]
𑂣	BA	bô	[bɑ]	𑂣	RA	rô	[rɑ]	𑂣	CA	cô	[tʃɑ]
𑂣	AAI	ā'i	[ai]	𑂣	MA	mô	[mɑ]	𑂣	JA	jô	[dʒɑ]
𑂣	AA	ā	[a]	𑂣	HA	hô	[hɑ]	𑂣	PA	pô	[pɑ]
𑂣	GA	gô	[gɑ]	𑂣	RRA	rô	[rɑ]	◌̣	ANUSVARA	ḍ	[~]
𑂣	TA	tô	[tɑ]	𑂣	U	u	[u]	𑂣	YA	ôy	[jɑ]
𑂣	E	e	[e]	𑂣	DA	dô	[dɑ]	𑂣	DDA	ô'd	[dɑ]
𑂣	SA	sô	[sɑ]	𑂣	LA	lô	[lɑ]	𑂣	TTA	tô	[tɑ]
𑂣	NA	nô	[nɑ]	𑂣	O	o	[o]	𑂣	JARAH	jôrô'hô	[ʰ]
𑂣	I	i	[i]	𑂣	NYA	'iñ	[ŋɑ]	𑂣	VIRAMA	sis'ô	

Table 1: column A is showing letters and signs, column B is proposed character names, column C is showing original or indigenous name of letters and column D is showing IPA.

5. Character Shapes

The Chisoi proposed here for encoding in the UCS in the Standard Chisoi, the font “CHISOI” for the proposed was drawn by Nurul Alam Ador and Biswajit Mandal in the year 2021 [see fig.9]. The original font “KURMALICHISOY” was drawn by Pankaj Mahato in the year 2009. All the Kurmali books, documents, specimens, etc those attached here are in original font. The new “CHISOI” font used here because original font having lots of imperfections ,that is lack of standard qualities in glyphs, problems in positioning of signs, non collinearity in letters and perfect spacing problems in letters. The comparison table no. 1 includes Pankaj Mahato’s original font “KURMALICHISOY” and new “CHISOI” font [see table no.2].

5.1 Shapes and collinearities

In the original font having the problem of standard quality in glyphs of letters as well as having problem in coaxial of letters. Some letters heights and sizes are different from others. Attached specimens are showing this problem. The new font is perfectly collinear and good looking.



Figure 3: Comparison between original font (first line) and new font (bottom line). Old font is showing non collinearities of letters but the new font showing perfect collinearities as well as beautiful sorts.

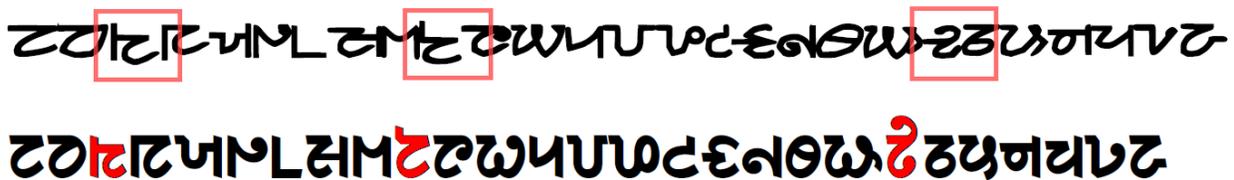


Figure 4: Comparison between original font (first line) and new font (bottom line). Old font is showing the wrong position and size of letter AAI, I and NGA but the new font showing the perfectness.

5.2 Space between two letters

We are having the proper spacing and gap problem between two letters in the original font. Letters are not perfectly set in the position that is why some letters become stuck with each other and looking like a conjunction.[see fig.13]



Figure 5: Comparison between original font (first line) and new font (bottom line). Old font is showing the spacing problems between two letters but the new font showing accurate gap between two letters.

6. Tentative Characters Properties

xxxx00;CHISOI LETTER A;Lo;0;L;;;;N;;;;;
xxxx01;CHISOI LETTER BA;Lo;0;L;;;;N;;;;;
xxxx02;CHISOI LETTER AI;Lo;0;L;;;;N;;;;;
xxxx03;CHISOI LETTER AA;Lo;0;L;;;;N;;;;;
xxxx04;CHISOI LETTER GA;Lo;0;L;;;;N;;;;;
xxxx05;CHISOI LETTER TA;Lo;0;L;;;;N;;;;;
xxxx06;CHISOI LETTER E;Lo;0;L;;;;N;;;;;
xxxx07;CHISOI LETTER SA;Lo;0;L;;;;N;;;;;
xxxx08;CHISOI LETTER NA;Lo;0;L;;;;N;;;;;
xxxx09;CHISOI LETTER I;Lo;0;L;;;;N;;;;;
xxxx0A;CHISOI LETTER KA;Lo;0;L;;;;N;;;;;
xxxx0B;CHISOI LETTER RA;Lo;0;L;;;;N;;;;;
xxxx0C;CHISOI LETTER MA;Lo;0;L;;;;N;;;;;
xxxx0D;CHISOI LETTER HA;Lo;0;L;;;;N;;;;;
xxxx0E;CHISOI LETTER RRA;Lo;0;L;;;;N;;;;;
xxxx0F;CHISOI LETTER U;Lo;0;L;;;;N;;;;;
xxxx10;CHISOI LETTER DA;Lo;0;L;;;;N;;;;;
xxxx11;CHISOI LETTER LA;Lo;0;L;;;;N;;;;;
xxxx12;CHISOI LETTER O;Lo;0;L;;;;N;;;;;
xxxx13;CHISOI LETTER NYA;Lo;0;L;;;;N;;;;;
xxxx14;CHISOI LETTER NGA;Lo;0;L;;;;N;;;;;
xxxx15;CHISOI LETTER CA;Lo;0;L;;;;N;;;;;
xxxx16;CHISOI LETTER JA;Lo;0;L;;;;N;;;;;
xxxx17;CHISOI LETTER PA;Lo;0;L;;;;N;;;;;
xxxx18;CHISOI SIGN ANUSVARA;Mn;0;NSM;;;;;N;;;;;
xxxx19;CHISOI LETTER YA;Lo;0;L;;;;N;;;;;
xxxx1A;CHISOI LETTER DDA;Lo;0;L;;;;N;;;;;
xxxx1B;CHISOI LETTER TTA;Lo;0;L;;;;N;;;;;
xxxx1C;CHISOI LETTER JARAH;Lo;0;L;;;;N;;;;;
xxxx1D;CHISOI SIGN VIRAMA;Mc;9;NSM;;;;;N;;;;;
xxxx1E;<reserved>
xxxx1F;CHISOI DANDA;Po;0;L;;;;N;;;;;
xxxx20;CHISOI DIGIT ZERO;Nd;0;L;0;0;0;N;;;;;
xxxx21;CHISOI DIGIT ONE;Nd;0;L;1;1;1;N;;;;;
xxxx22;CHISOI DIGIT TWO;Nd;0;L;2;2;2;N;;;;;
xxxx23;CHISOI DIGIT THREE;Nd;0;L;3;3;3;N;;;;;
xxxx24;CHISOI DIGIT FOUR;Nd;0;L;4;4;4;N;;;;;
xxxx25;CHISOI DIGIT FIVE;Nd;0;L;5;5;5;N;;;;;
xxxx26;CHISOI DIGIT SIX;Nd;0;L;6;6;6;N;;;;;
xxxx27;CHISOI DIGIT SEVEN;Nd;0;L;7;7;7;N;;;;;
xxxx28;CHISOI DIGIT EIGHT;Nd;0;L;8;8;8;N;;;;;
xxxx29;CHISOI DIGIT NINE;Nd;0;L;9;9;9;N;;;;;

7. Collations

The collation order is as follows:

ᱠ A < ᱡ BA < ᱢ AAI < ᱣ AA < ᱤ GA < ᱥ TA < ᱦ LE < ᱧ SA < ᱨ NA < ᱩ I < ᱪ KA < ᱫ RA < ᱬ MA < ᱭ HA < ᱮ RRA < ᱯ U < ᱰ DA < ᱱ LA < ᱲ O < ᱳ NYA < ᱴ NGA < ᱵ CA < ᱶ JA < ᱷ PA < ᱸ SIGN ANUSVARA < ᱹ YA < ᱺ ADD < ᱻ TTA < ᱼ JARAH < ᱽ SIGN VIRAMA < ᱾ DANDA < ᱿ DIGIT ZERO < ॐ DIGIT ONE < ॐ DIGIT TWO < ॐ DIGIT THREE < ॐ DIGIT FOUR < ॐ DIGIT FIVE < ॐ DIGIT SIX < ॐ DIGIT SEVEN < ॐ DIGIT EIGHT < ॐ DIGIT NINE

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xxxx00

CHISOI

xxxx2F

	xxxx0	xxxx1	xxxx2
0	ᄀ	ᄁ	ᄂ
1	ᄃ	ᄄ	ᄅ
2	ᄆ	ᄇ	ᄈ
3	ᄉ	ᄊ	ᄋ
4	ᄌ	ᄍ	ᄎ
5	ᄏ	ᄐ	ᄑ
6	ᄒ	ᄓ	ᄔ
7	ᄕ	ᄖ	ᄗ
8	ᄘ	ᄙ	ᄚ
9	ᄛ	ᄜ	ᄝ
A	ᄞ	ᄟ	
B	ᄠ	ᄡ	
C	ᄢ	ᄣ	
D	ᄤ	ᄥ	
E	ᄦ		
F	ᄧ	ᄨ	

Letters and signs

xxxx00 ꞑ CHISOI LETTER A
xxxx01 Ꞓ CHISOI LETTER BA
xxxx02 ꞓ CHISOI LETTER AAI
xxxx03 ꞔ CHISOI LETTER AA
xxxx04 ꞕ CHISOI LETTER GA
xxxx05 Ꞗ CHISOI LETTER TA
xxxx06 ꞗ CHISOI LETTER E
xxxx07 Ꞙ CHISOI LETTER SA
xxxx08 ꞙ CHISOI LETTER NA
xxxx09 Ꞛ CHISOI LETTER I
xxxx0A ꞛ CHISOI LETTER KA
xxxx0B Ꞝ CHISOI LETTER RA
xxxx0C ꞝ CHISOI LETTER MA
xxxx0D Ꞟ CHISOI LETTER HA
xxxx0E ꞟ CHISOI LETTER RRA
xxxx0F Ꞡ CHISOI LETTER U
xxxx10 ꞡ CHISOI LETTER DA
xxxx11 Ꞣ CHISOI LETTER LA
xxxx12 ꞣ CHISOI LETTER O
xxxx13 Ꞥ CHISOI LETTER NYA
xxxx14 ꞥ CHISOI LETTER NGA
xxxx15 Ꞧ CHISOI LETTER CA
xxxx16 ꞧ CHISOI LETTER JA
xxxx17 Ꞩ CHISOI LETTER PA
xxxx18 ꞩ CHISOI SIGN ANUSVARA
xxxx19 Ɦ CHISOI LETTER YA
xxxx1A Ɜ CHISOI LETTER DDA
xxxx1B Ɡ CHISOI LETTER TTA
xxxx1C Ɬ CHISOI LETTER JARAH
xxxx1D Ɪ CHISOI SIGN VIRAMA

Punctuation

xxxx1F ꞯ CHISOI DANDA

Digits

xxxx20 Ʞ CHISOI DIGIT ZERO
xxxx21 Ʇ CHISOI DIGIT ONE
xxxx22 Ʝ CHISOI DIGIT TWO
xxxx23 Ꭓ CHISOI DIGIT THREE
xxxx24 Ꞵ CHISOI DIGIT FOUR
xxxx25 ꞵ CHISOI DIGIT FIVE
xxxx26 Ꞷ CHISOI DIGIT SIX
xxxx27 ꞷ CHISOI DIGIT SEVEN
xxxx28 Ꞹ CHISOI DIGIT EIGHT
xxxx29 ꞹ CHISOI DIGIT NINE

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<u>CHISOI</u>	<u>DEV</u>	<u>BEN</u>	<u>ODIA</u>	<u>CHISOI</u>	<u>DEV</u>	<u>BEN</u>	<u>ODIA</u>
ଟ	अ	অ	ଅ	ଠ	ओ, ो	ও, ো	ଓ, ଓ
ଠ	ब	ব	ବ	ଝ	अ	ঐ	ଝ
ଠ	आइ, ाइ	আই, ই	ଆଇ, ଇ	ଟି	इ	ঐ	ଟି
ଠ	आ, ा	আ, া	ଆ, ା	ଠ	च	ଚ	ଠ
ଧ	ग	গ	ଗ	ଥ	ज	ଜ	ଧ
ଧ	त	ত	ତ	ଦ	प	ପ	ଧ
ଠ	ए, े	এ, ে	ଏ, େ	ଠ	ँ	ঁ	ଠ
ଠ	स	স	ସ	ଧ	य	ୟ	ଧ
ଠ	न	ন	ନ	ଧ	ड	ଡ	ଧ
ଟ	इ, ि	ই, ি	ଇ, ି	ଟ	ट	ট	ଟ
ଠ	क	ক	କ	ଃ	N/A	N/A	N/A
ଝ	र	র	ର	଼	्र	র্	଼
ଧ	म	ম	ମ				
ଧ	ह	হ	ହ				
ଧ	ड	ড	ଡ				
ଠ	उ, ु	উ, ু	ଉ, ୁ				
ଠ	द	দ	ଦ				
ଧ	ल	ল	ଲ				

Table 3: Comparison of basic letters of Chisoi with Devanagari, Bengali and Odia. In Chisoi letter Jarah is used to make aspirated letters but it is absent in Devanagari, Bengali and Odia.

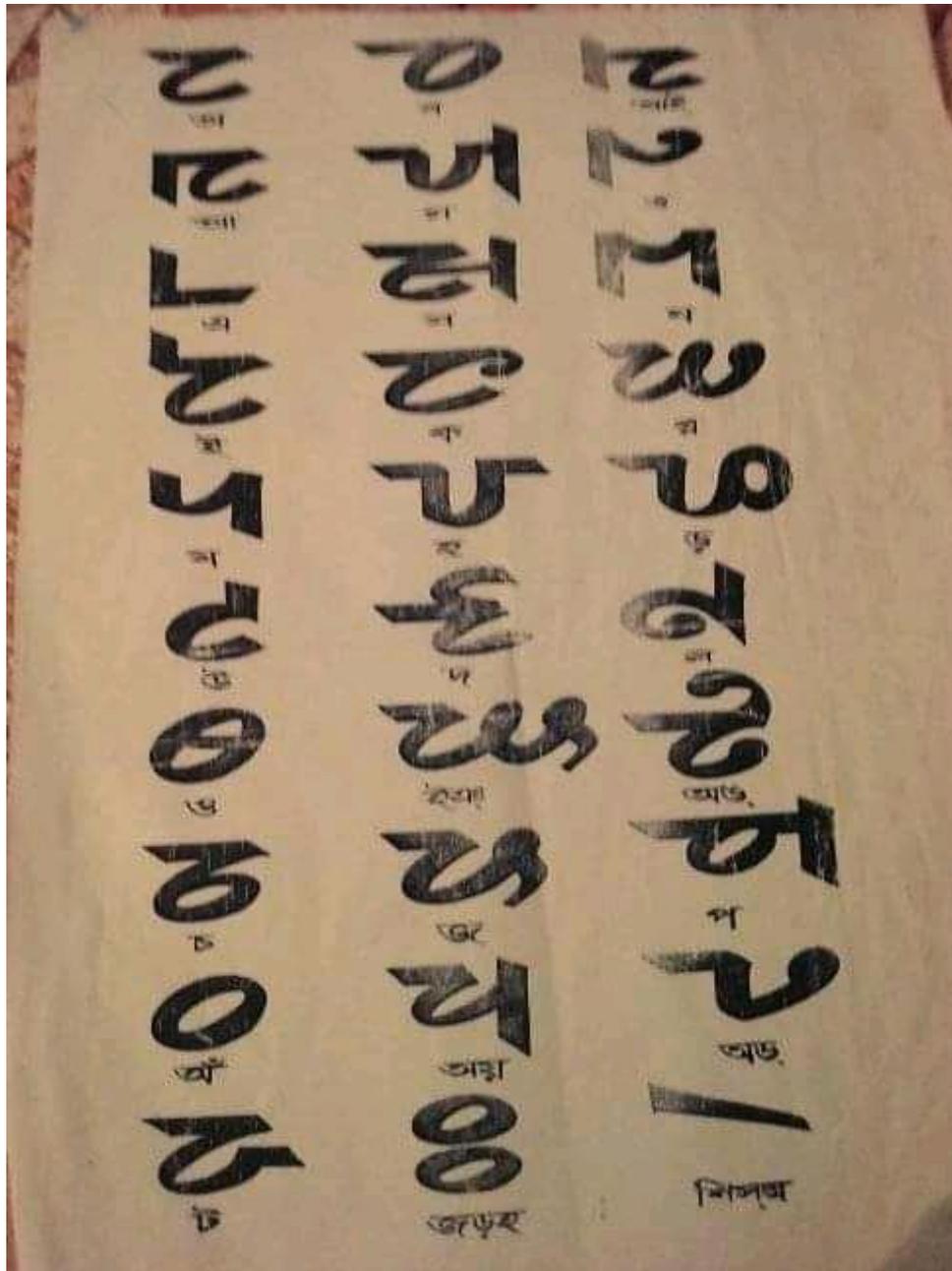


Figure 6: A chart showing letters of Chisoi with Bengali pronunciation from firstever draft of 'Kuṛmāli Cisoī Cinhāp' (1986).

ন আ A	ব B	ই I
র আ AA	য গ G'	ঈ TA'
ল এ A	ঝ স s	ঊ ন N
ঋ E	ঞ ক K	ঋ R
ঌ ই	ঠ ক ক	ঠ র র
ম M	হ H	ড RH
ন M	ঙ H	ণ RH
উ U	দ D	ল L
ও O	ঞ IN	ঞ NG
ঙ O	ইঞ ইঞ	অঙ অঙ
চ CH	জ J	প P
চ CH	জ জ	প প
ঠ on	য Ay	ড D
ঠ অঁ	অয় অয়	অড অড
ট T	ঃ HH	অড A"
ট ট	জড়হ জড়হ	শিস্অ শিস্অ

১১

Figure 7: A chart showing letters of Chisoï with Bengali pronunciation from book 'Kuṛmāli Cisoï Cinhāp' কুর্মালি চিসৌ চিন্হাপ (for class-I) (page no. 15)(2009).[1]

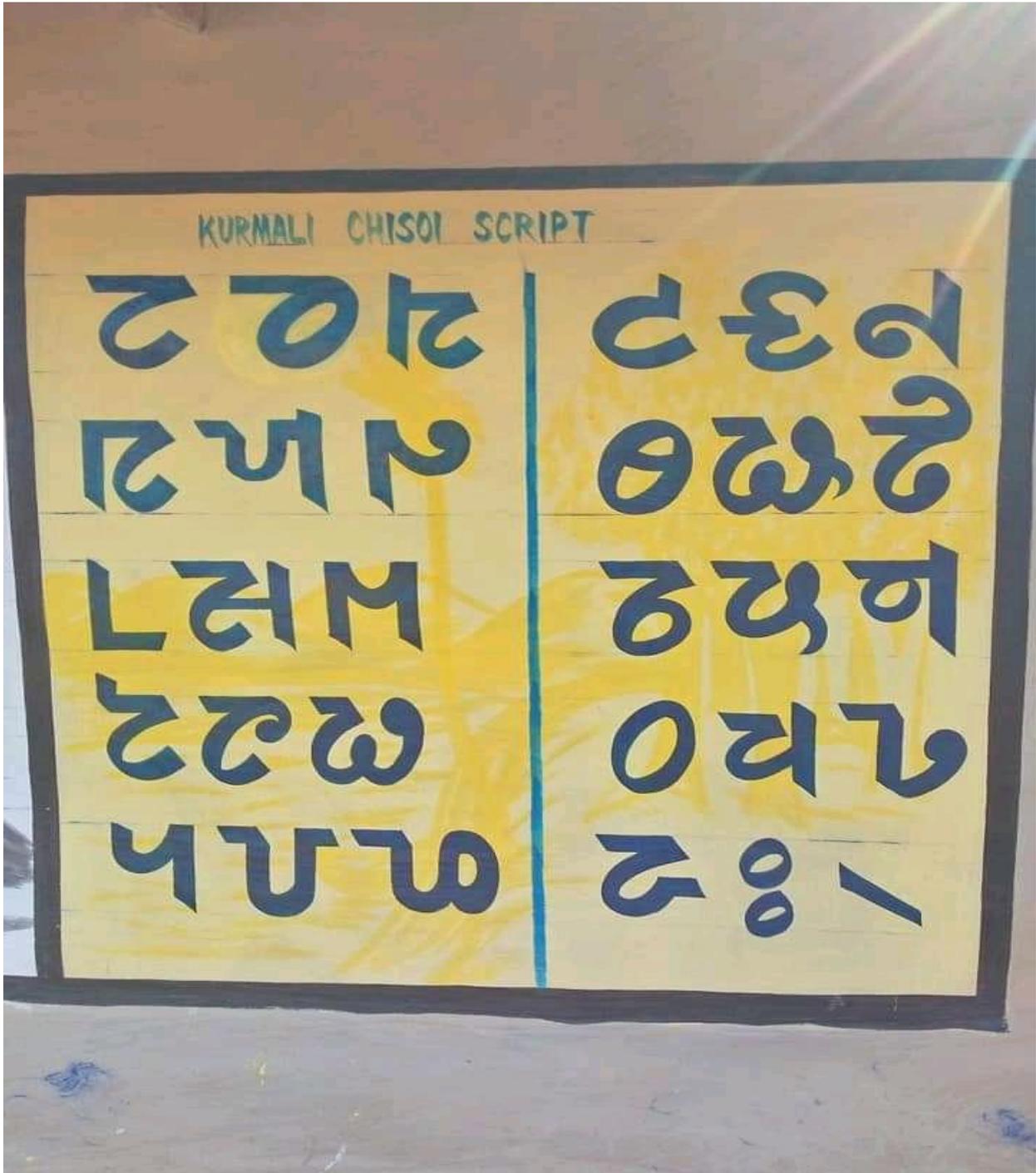


Figure 8: A school wall showing letters of Chisoi (2019).

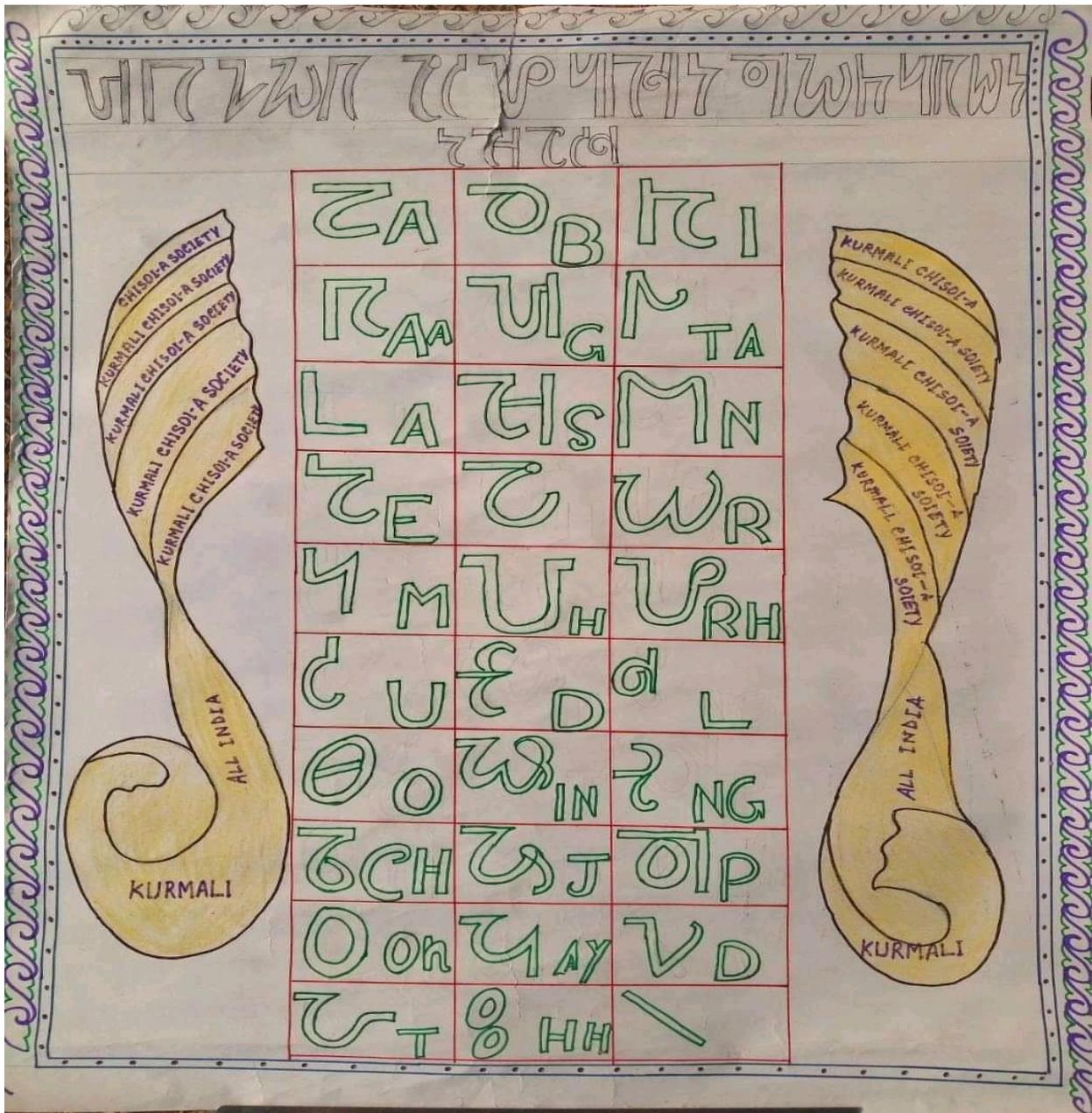


Figure 9: showing chart of Chisoi drawn by a school student.

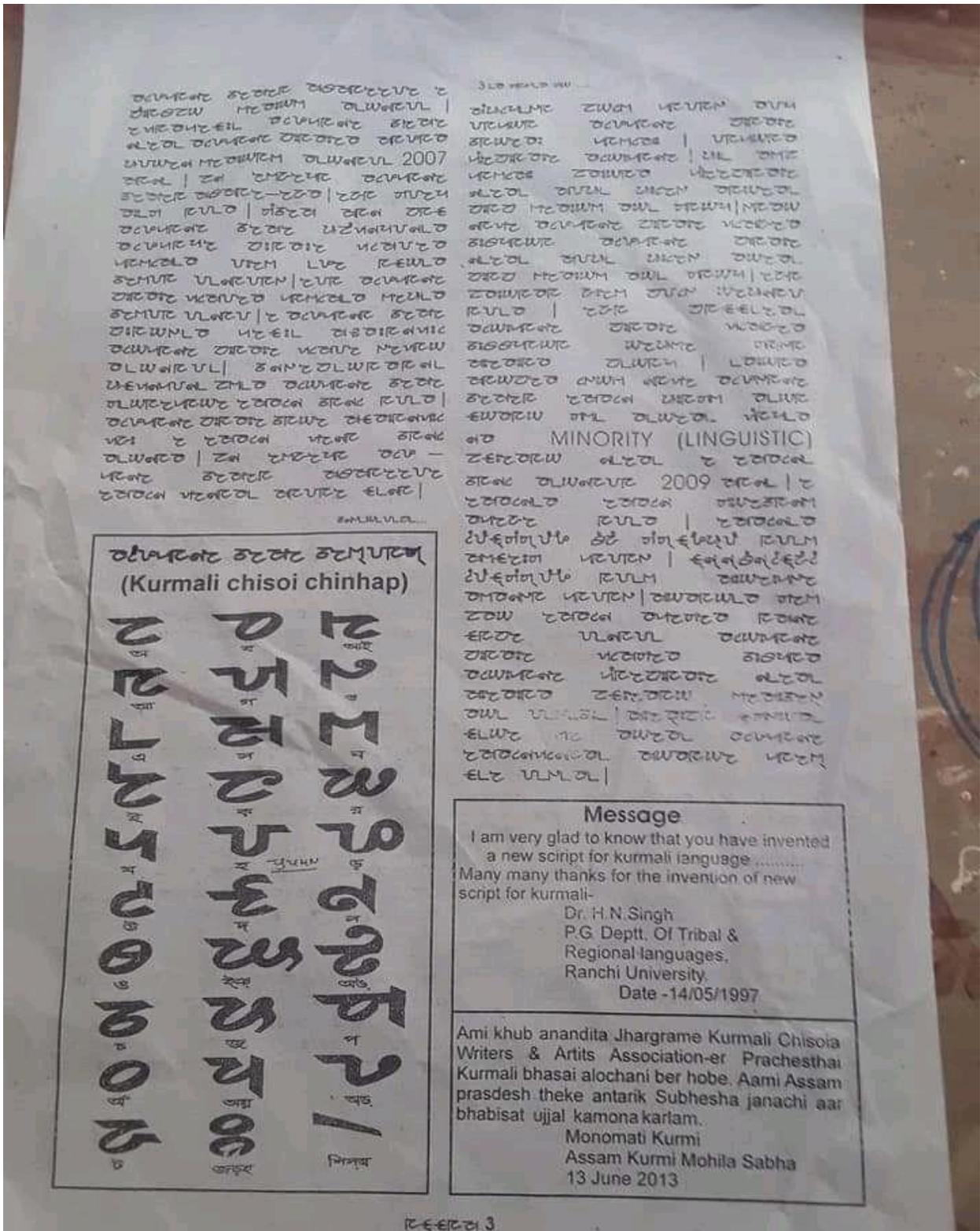


Figure 11: Showing the back page of Kurmali newspaper 'Āddās' ৰূদ্ধাস with Chisoi chart (2017).[10]

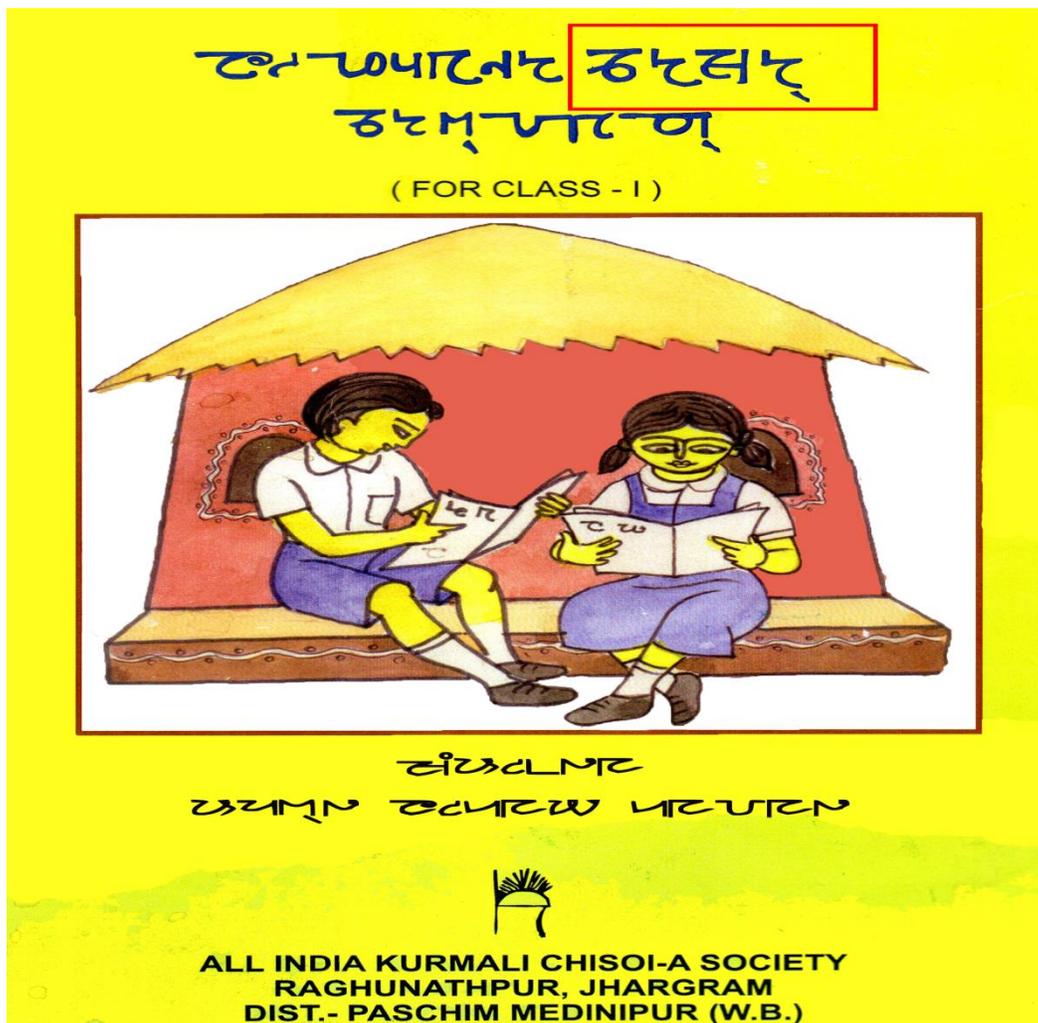


Figure 12: handwritten form of heading showing the spelling of Chisoi ଚିସୌ having LETTER I with VIRAMA from the cover of Kurmali primer 'Kurmalı Cisoí Cinhāp' ଉତ୍ତମାଲକ ଚିସୌ ଚିମ୍ପାଲକ୍ (for class-I)(2009).[1]



Figure 13: Showing the banner of Kurmali Chisoi-A Teachers' Association' ଚକ୍ରମାଳି ଚିସୌ-ଆ ଟିଚାର୍ସ ଏସୋସିଏସନ Lକୂର୍ମାଳି ଚିସୌ-ଆ ଟିଚାର୍ସ ଏସୋସିଏସନ having spacing problems between two letters.



Figure 14: Showing the keyboard layout of new 'Chisoi' font (2021).

સોનાકુલી કુર્મલી શાળાના બાલકો માટે

ESTD-2009

Class - IV

(FINAL EXAMINATION 2018-19)

F.M-50

Subject- Kurmali

Time - 2 hour Date-4/12/2019

Name -

Roll No -

1. ટીકાંટીકાં નીચે ટીકાં ટીકાં ? 2
 2. ઓઠાંઠાં ઓઠાં ઓઠાં ટીકાં ટીકાં ? 2
 3. ટીકાં ટીકાં ઓઠાં ઓઠાં ટીકાં ટીકાં ? 3
 4. ટીકાં ટીકાં ટીકાં ટીકાં ટીકાં ટીકાં ? 3
 5. ટીકાં ટીકાં ટીકાં ટીકાં ? 5
 6. ટીકાં ટીકાં ટીકાં ટીકાં ? 5
 7. ઓઠાં ટીકાં ટીકાં - 5
- | | |
|----------|-------------|
| લો ટીકાં | ટીકાં ટીકાં |
| ટીકાં | |
| | ટીકાં ટીકાં |
| ટીકાં | |
| | ટીકાં ટીકાં |
| ટીકાં | |
8. ટીકાં ટીકાં - ટીકાં ટીકાં 10
 9. ટીકાં ટીકાં - ટીકાં ટીકાં 10
 10. ટીકાં ટીકાં ટીકાં ટીકાં, ટીકાં ટીકાં ટીકાં ટીકાં 5

Figure 15: Showing the class 4th annual examination question paper of Kurmali subject from Sonakhuli Kurmali Primary School ESTD-2009 (2019).



Figure 16: Showing the Chisoi teaching is going on in 'Ānganwāḍī' Courtyard Shelter school.

କର୍ମାଳୀ ଶାହା ଭନ୍ନାରହ
(Kurmali Sarha Bhnarhar)

ଅ [a]—କର୍ମାଳୀ ଶାହା ଭନ୍ନାରହର ପ୍ରଥମ ଅକ୍ଷର । ଅକ୍ଷର ଚିତ୍ରଣ The first letter of the Kurmali chisoi alphabet.	ଅଗାର୍ହ (abgarh)—ନି. Stupid, Worthless ମୂଢ଼ତା ଅକ୍ଷୟ ।
ଅ [a]—ଅ. ଶିକ୍ଷା ଚଳାଇବା memorisation	ଅଗାୟା (abgarh)—ନି. ill shaped; ugly ଖରାପ ଗଠନ ମୂଢ଼ତା ।
ଅ [a]—ଅ. ଚିତ୍କାର ଚଳାଇବା exclamation, —ହାଁ ଚଳାଇବା ।	ଅଗାର୍ (abgar)—ଫି. harm; disservice ଅକ୍ଷୟ ।
ଅ [a]—ନି. ମୂଢ଼ତା ଅକ୍ଷୟ nega- tion. ମୂଢ଼ ।	ଅଗା (abas)—ନି. unruly; ଅକ୍ଷୟ ଚଳାଇବା ମୂଢ଼ତା ଅକ୍ଷୟ uncontroellabla ଅକ୍ଷୟ ।
ଅ [ah]—ନି. ହାଁ. yes	ଅଗାୟା (abais)—ନି. certainly; ଅକ୍ଷୟ ମୂଢ଼ତା ।
ଅ [ah ba]—ନି. ଅଗା ଅକ୍ଷୟ ନି. ଅଗାୟା ଶିକ୍ଷା ଚଳାଇବା ଅକ୍ଷୟ ଅକ୍ଷୟ ନି. ଅଗା ଅକ୍ଷୟ ଅକ୍ଷୟ. ନି. ad- dressed between uncle and nephew; ଅକ୍ଷୟ ଅକ୍ଷୟ ଅକ୍ଷୟ ।	ଅଗାର୍ (absar)—ଫି. leisure, respite, ଅକ୍ଷୟ ଚଳାଇବା ।
ଅଗାନାତା (abganata)—ଫି. known ଅକ୍ଷୟ ।	ଅଗା (abka)—ଅ. noisy playing or frisking in sport; ଅକ୍ଷୟ ଚଳାଇବା ଅକ୍ଷୟ ଅକ୍ଷୟ ମୂଢ଼ତା ଅକ୍ଷୟ ଅକ୍ଷୟ (ଅକ୍ଷୟ) ଅକ୍ଷୟ ଅକ୍ଷୟ ଶିକ୍ଷା ଚଳାଇବା ।
ଅଗାର୍ (abgar)—ଅ. ଫି. harm ଅକ୍ଷୟ ।	ଅଗା (abra)—ଅ. inactive; im- proper sittine position; ଅକ୍ଷୟ ଚଳାଇବା ଅକ୍ଷୟ ଚଳାଇବା ।
ଅଗୁଆ (abguina)—ନି. having no qualities; ଅକ୍ଷୟ ନି. ମୂଢ଼ତା ।	

Figure 19: Showing the front page of Kurmali-English Dictionary 'Kuṛmāli Sāṛā bḥāṛār' କର୍ମାଳୀ ଶାହା ଭନ୍ନାରହ (page no. 01)(2014).[8]



Figure 20: Showing the logo of 'Sarva Śikṣā Abhiyān' Education for All written in Chisoi from (2019).

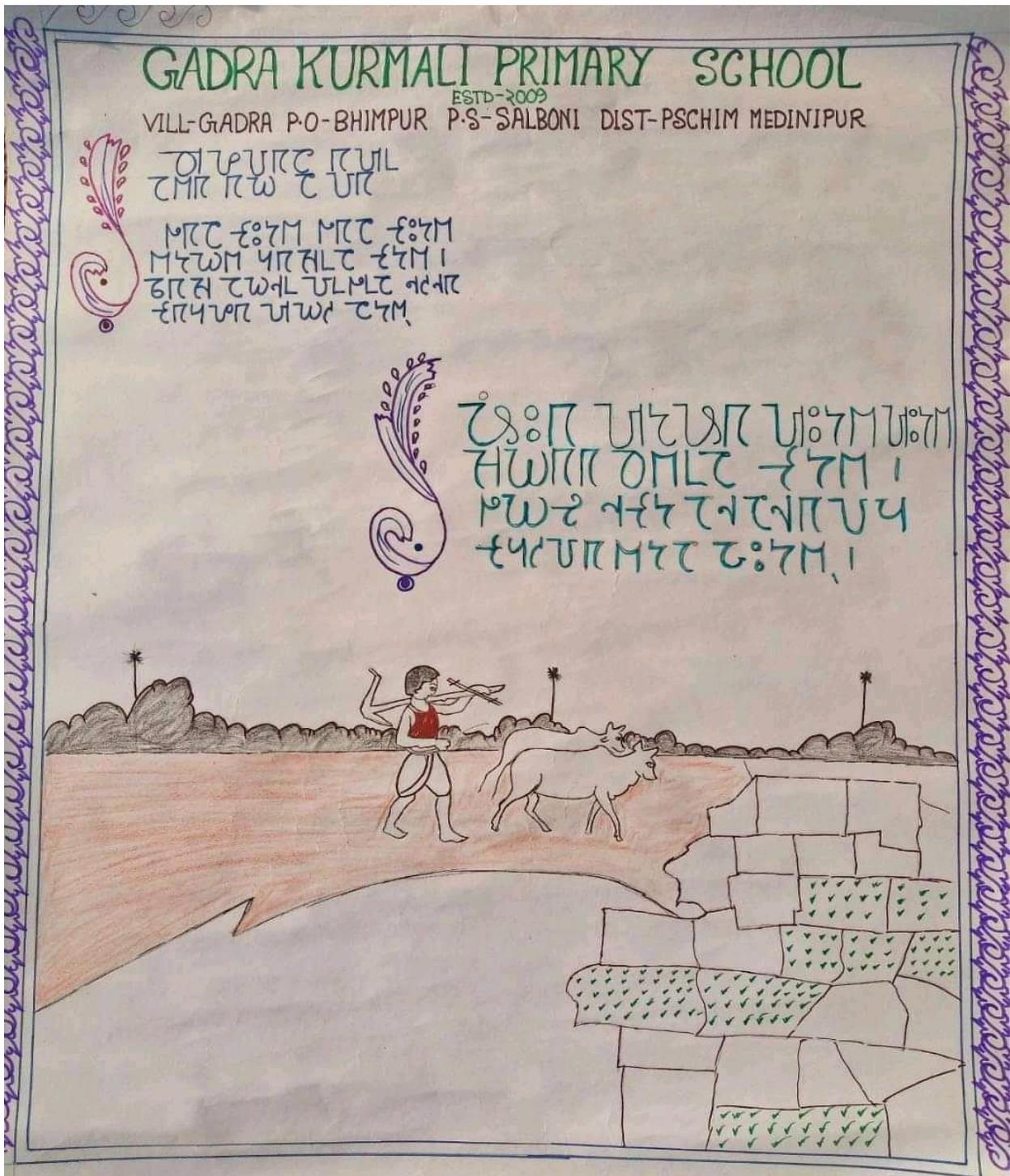


Figure 21: Showing the Kurmali poem chart drawn by a student from Gadra Kurmali primary school.

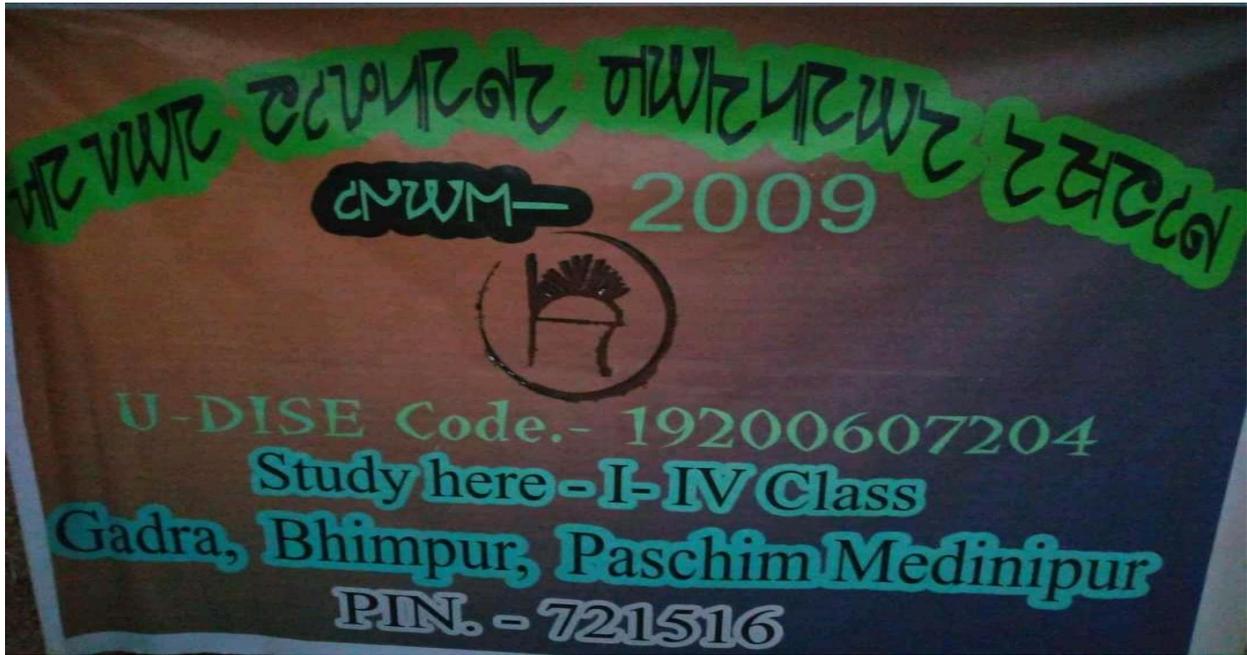


Figure 22: Showing the school banner and classroom of 'Gādrā Kuṛmāli Pəraimāri Iskul' গাড্ৰা কুৰ্মালি পৰাইমীৰী ইশ্কুল (2009)

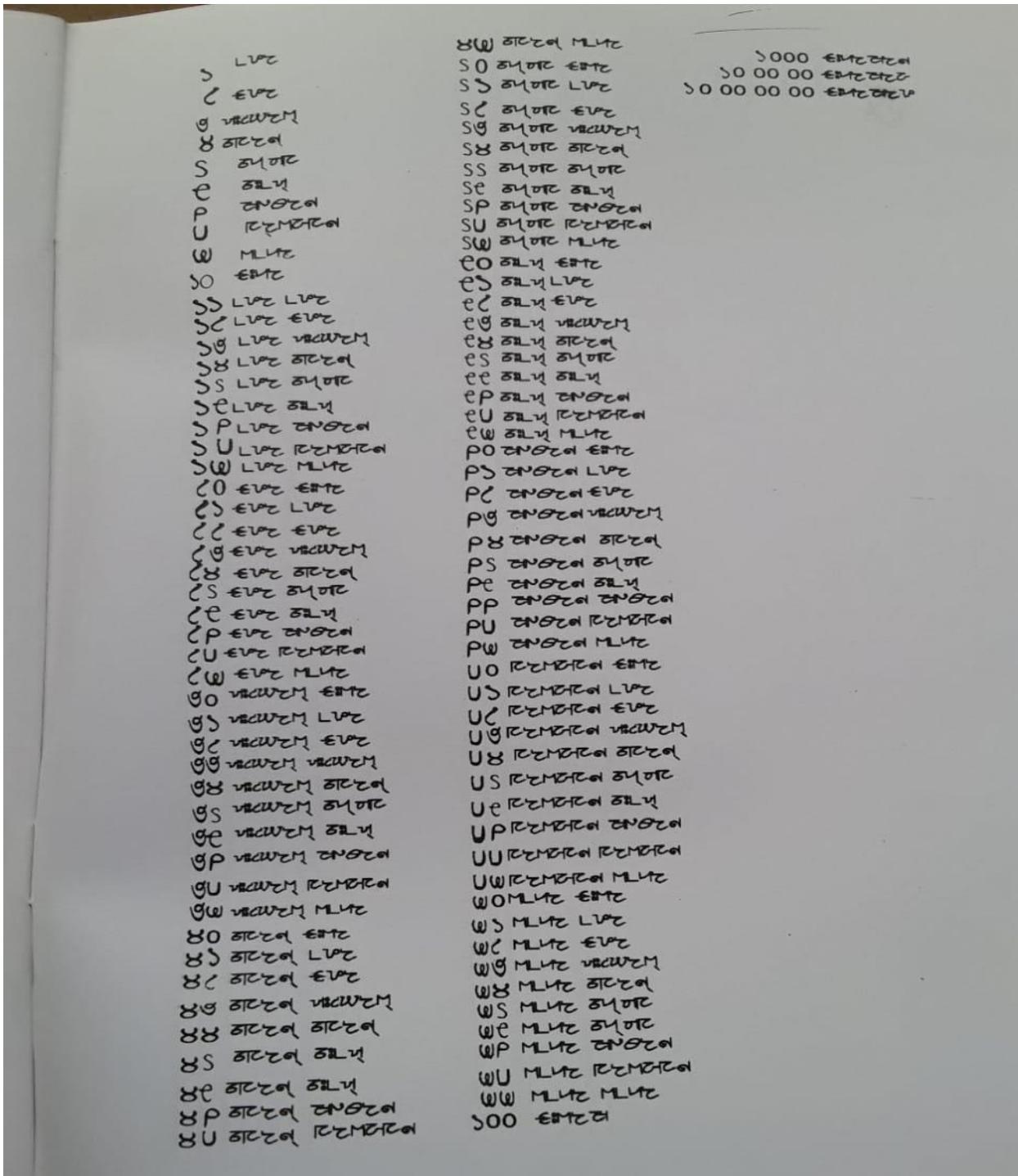


Figure 25: Showing the Chisoi digits from book 'Kuṟmāli Cisoī Cinhāp' கருமாலை சசை சசைமலை class-I, last page (2009).[1]

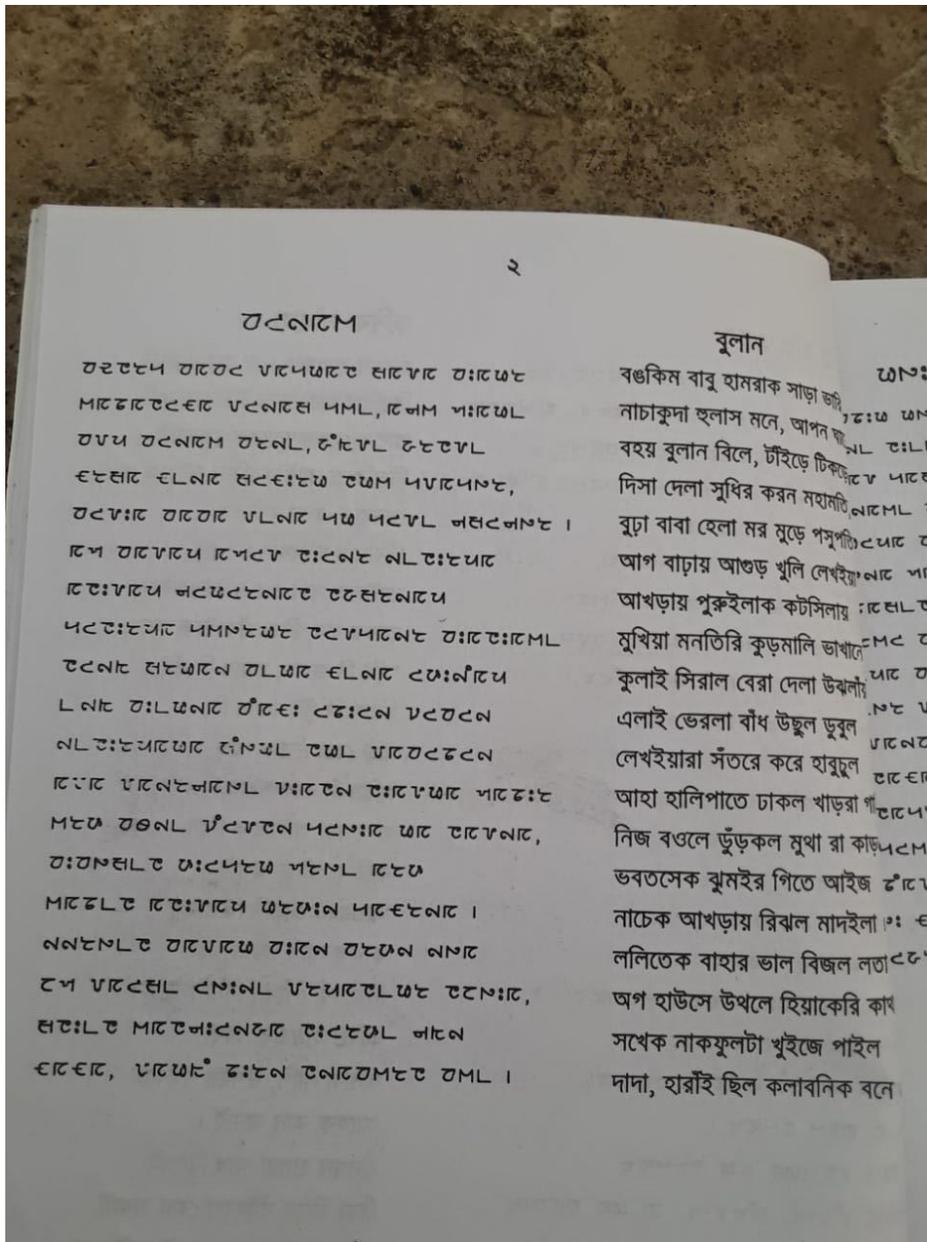


Figure 27: Showing the first poem of Kurmali book *ବୃକ୍ଷମ* 'Bulān' written in both Chisoi and Bengali script (page no. 02)(2018).[9]

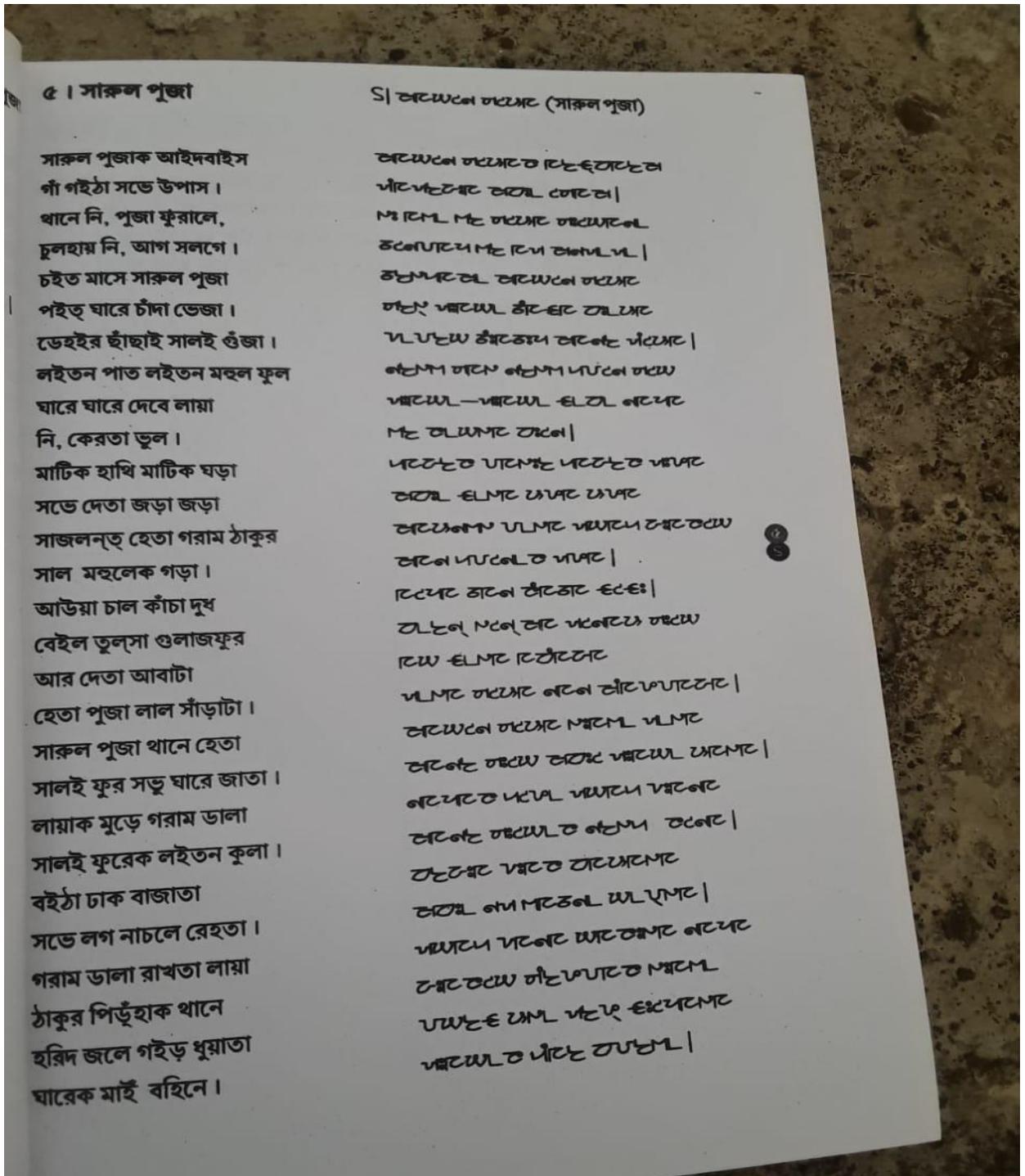


Figure 29: Showing the 5th poem ‘Sārul Pujā’ written in both Chisoi and Bengali scripts from book ‘Cāricēṭhā’ (page no. 05)(2014).[6]

A. Administrative

1. Title:

Proposal to Encode the Chisoi in Universal Character Set

2. Requester's name:

Biswajit Mandal (biswajitmandal.bm90@gmail.com)

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

Individual Contribution

4. Submission date: **29/05/2021**

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:

No

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:

Chisoi

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

Name of the existing block:

2. Number of characters in proposal:

41

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

A-Contemporary **X** B.1-Specialized (small collection) B.2-Specialized (large collection)

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

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 (biswajitmandal.bm90@gmail.com)

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

Nurul Alom Ador(nurulalomador@gmail.com) and 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:

Yes

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)?

See proposal for additional details

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.

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?

Jayanta kumar Mahata, Narayan Mahata

If YES, available relevant documents:

See citations in 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:

See text of proposal

4. The context of use for the proposed characters (type of use; common or rare)

common

Reference:

See text of proposal

5. Are the proposed characters in current use by the user community?

Yes

If YES, where? Reference:

See text of proposal

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?

No

If YES, is a rationale for its inclusion provided?

If YES, reference:

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

No

If YES, is a rationale for such use provided?

control function or similar semantics?

If YES, reference:

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: