

Proposal to Encode the Nag Mundari Script in the Universal Character Set

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April 23, 2021

1 Introduction

This is a proposal to include the Nag Mundari script in the Universal Character Set (UCS). It supercedes the following document:

- L2/21-031 “Proposal to Encode the Mundari Bani Script” [17]

Apart from editorial improvements, the major changes from the preliminary proposal include:

- Renaming of the block and character names to refer to “Nag Mundari”, after script creator Rohidas Singh Nag, rather than “Mundari Bani”. Note that the document’s prose itself continues to reference “Mundari Bani” which is the most common name for the script.

2 Background

The Mundari Bani script (Mundari Bani: ମୁନ୍ଡାରୀ ବାନି; Devanagari: मुंडारी बानी; Bengali: মুণ্ডারী বানী; Oriya: ମୁଣ୍ଡାରୀ ବାନି) is used for writing Mundari (ISO 639-3: unr; Mundari Bani: ମୁନ୍ଡାରୀ; Devanagari: मुंडारी; Bengali: মুণ্ডারী; Odiya: ମୁଣ୍ଡାରୀ), an Austroasiatic language spoken by 1.1 million people in India, primarily in the states of Jharkhand, West Bengal, and Odisha [4]. Mundari has been written in Devanagari, Bengali script, Odiya script, and Latin script, as well as the script in question here, Mundari Bani, which was invented by Rohidas Singh Nag (1934 - 2012) in the latter half of the 20th century. While for the technical purposes of this proposal, we will refer to the script as ‘Nag Mundari’, most institutions and people using the script refer to it as ‘Mundari Bani’, along with less common names such as ‘Mundari Lipi’ and ‘Hodo Jagar’.

Following the precedent set by the encoding of other relatively new scripts with a known creator, such as Hanifi Rohingya [5], we suggest referring to the script as “Nag Mundari” within the Unicode Standard itself and character names, if

accepted. We note though that most institutions and people using the script refer to it as ‘Mundari Bani’, along with less common names such as ‘Mundari Lipi’ and ‘Hodo Jagar’.

There has been a huge surge of interest in recent years in the script. There are schools teaching Mundari Bani as well as workshops throughout nearly all Munda-inhabited districts of Odisha, the districts of Jhargam, Purulia, and Medinipur in West Bengal, and the districts Ranchi, East Singhbhum, West Singhbhum, Saraikela-Kharsawan, and Kunti in Jharkhand. It is estimated that approximately 10% of Mundari speakers can read Mundari Bani.

There is limited information available on Mundari Bani in English. Most of the materials on the script are written in Mundari, Hindi, and Oriya. A number of different organizations and individuals have published primers for the script [8, 10, 11, 13–15] (see Fig. 14). Anthologies of stories and poems have also been published [2, 9]. There are also instructional videos by schools and individuals available on YouTube and Mundari advocacy Facebook groups with content released in Mundari Bani. Five Mundari Bani typefaces were developed by Baidyanath Singh [7] (see Fig. 6 for a comparison between the typefaces).

2.1 Timeline

Rohidas Singh Nag, a writer, poet and community advocate, originally began working on the earliest iteration of the Mundari Bani script in the early 1950s while in grade school. Later, Nag simplified the Mundari Bani script and by the early 1980s began sharing it with others in the Munda community [6]. By 1994 Mundari Bani had spread further throughout Odisha state and in 2004 ten different Mundari Bani schools opened in Odisha. In 2004, the first book written in Mundari Bani, Mundari Bani Hisir, was published under the auspices of Bharat Munda Samaj [14], and was handwritten as there was no typeface available at the time. In 2008, Bharat Munda Samaj and Mundari Samaj Sanwar Jamda, with the collaboration of original script inventor Rohidas Nag, reformed the script, altering some letterforms deemed confusing or hard to read or write, as well as inventing one new basic letter and one new ‘Tong’ (see §3.10). Additionally, the first Mundari Bani fonts were developed at this time. Since 2008, all (attested) books have been under this new standard, which is the one presented in this proposal.

3 Script Details

3.1 Structure

Mundari Bani is an alphabetic script that is written from left to right. There are no attested ligatures.

ጀ	ጀ	ጀ	-	ጀ	ጀ
MUHOR	IKIR	TOYOR	ECED	OJOD	SUTUH

The typical didactic presentation of Mundari Bani (see Figs. 1 and 2) is shown with two major sections. The first section is a chart with five rows, where each row’s first letter is a vowel, and the letter names for the row match the vowel of the first letter [8, 11, 13, 15]. Note the similarity in this traditional organization and structure to that of the Santali language’s Ol Chiki script [1] (see Fig. 5a).

ጀ O	ጀ OP	ጀ OL	ጀ OY	ጀ ONG
ጀ A	ጀ AJ	ጀ AB	ጀ ANY	ጀ AH
ጀ I	ጀ IS	ጀ IDD	ጀ IT	ጀ IH
ጀ U	ጀ UC	ጀ UD	ጀ UK	ጀ UR
ጀ E	ጀ ENN	ጀ EG	ጀ EM	ጀ EN
			ጀ ETT	ጀ ELL

The second section is a collection of “Tong” (ጀጀጀጀጀ) which are a collection of symbols and diacritics who play a secondary role in the script. Depending on the orthographic tradition of the writer, they may use none, some, or all of the “Tong”. Note again the similarity to Ol Chiki’s modifier letters both in name and in function (see Fig. 5b).

3.2 Basic Alphabet

The basic letters of Mundari Bani are enumerated below. In addition, for phonetic clarity, they are compared to Devanagari, Bengali, and Oriya scripts in Fig. 3 and to its phonemic inventory in Fig. 4.

Mundari Bani	Character Name
ጀ	NAG MUNDARI LETTER O
ጀ	NAG MUNDARI LETTER OP
ጀ	NAG MUNDARI LETTER OL
ጀ	NAG MUNDARI LETTER OY
ጀ	NAG MUNDARI LETTER ONG
ጀ	NAG MUNDARI LETTER A
ጀ	NAG MUNDARI LETTER AJ
ጀ	NAG MUNDARI LETTER AB
ጀ	NAG MUNDARI LETTER ANY
ጀ	NAG MUNDARI LETTER AH

ং	NAG MUNDARI LETTER I
ঃ	NAG MUNDARI LETTER IS
ঁ	NAG MUNDARI LETTER IDD
ই	NAG MUNDARI LETTER IT
ঈ	NAG MUNDARI LETTER IH
<hr/>	
উ	NAG MUNDARI LETTER U
খ	NAG MUNDARI LETTER UC
চ	NAG MUNDARI LETTER UD
঄	NAG MUNDARI LETTER UK
ঙ	NAG MUNDARI LETTER UR
<hr/>	
ঢ	NAG MUNDARI LETTER E
ণ	NAG MUNDARI LETTER ENN
ঘ	NAG MUNDARI LETTER EG
খ	NAG MUNDARI LETTER EM
ঞ	NAG MUNDARI LETTER EN
প	NAG MUNDARI LETTER ETT
জ	NAG MUNDARI LETTER ELL
<hr/>	

3.3 Muhor

Vowel nasalization is indicated by ○ MUHOR (ଠୋରାଙ୍କ). The sign is written in the top-right corner of the vowel in question. For example, the word ମୁଁ /mū:/ *nose*. We note that unifying this with COMBINING DOT ABOVE RIGHT would not be appropriate as 2004-style ○ MUHOR takes on an open circle shape rather than a dot (see §3.10).

Mundari Bani	Character Name
○	NAG MUNDARI SIGN MUHOR

3.4 Toyor

The ○ TOYOR (ଠୋରାଙ୍କ) indicates a long vowel. For example, ○ /u/ vs ○ /u:/. Use of TOYOR depends on the orthographic tradition of the writer and the lack of TOYOR does not necessarily imply a short vowel. The word ‘Mundari’ for example, can be seen both as ମନ୍ଦାରୀ and as ମନ୍ଦାରୀ depending on the text in question.

Mundari Bani	Character Name
ଓ	NAG MUNDARI SIGN TOYOR

3.5 Ikir

The ୭ IKIR (ଯାହା) is used to represent that a vowel is preceded by the /w/ sound [11, Pg. 15]. For example, ା /a/ versus ା /wa/.

Mundari Bani	Character Name
୭	NAG MUNDARI SIGN IKIR

3.6 Ojod

The ୮ OJOD (ତ୍ୟାତ୍ମକ) has different uses depending on author, or may not be used at all. In Mundari phonology, word-final /b/ and /d/ take on their so-called ‘checked’ forms [4], which can be indicated in writing using OJOD. It generally immediately precedes the ୱ AB or ୮ UD that it is to affect. For example, Singh [13] has the word ପାତ୍ରାତ୍ମକ scissors (see Fig. 14), which in Singh [8] is spelled without OJOD as ପାତ୍ରାତ୍ମକ.

Some sources also use OJOD to indicate consonant gemination in close-transcription of neighboring Indo-Aryan languages such as Hindi or Oriya, giving examples such as ବୁଦ୍ଧି bbo, ଦୁଃଖଦୁଃଖଦୁଃଖ ddho, and ଜ୍ଞାନଜ୍ଞଜ୍ଞଜ୍ଞଜ୍ଞ jjo [15] (see Fig. 13 for more such examples).

Note that while ୮ OJOD and ୮ UD may have shapes reminiscent of each other to someone unfamiliar with the script, they are entirely distinct graphemes. Note also that the glyptic variant of ୮ OJOD present in Fig. 2, ୯, is also well attested in recent (post-2008) texts.

Mundari Bani	Character Name
୮	NAG MUNDARI SIGN OJOD

3.7 Sutuh

The ō SUTUH (ଓୟୁତୁହ) is applied to existing letters of the alphabet to derive new sounds. It can be applied to both vowels and consonants and is used most often for close transcription of neighboring Indo-Aryan languages (see Fig. 12). For example, ā (is, SUTUH) can be used to transliterate Devanagari ା, Bengali ା, and Oriya ା. Note that unifying this with COMBINING TILDE would not be appropriate as 2004-style ō SUTUH takes on a “seagull” shape¹ rather than a tilde (see §3.10).

Mundari Bani	Character Name
ō	NAG MUNDARI SIGN SUTUH

3.8 Digits

There is a full set of decimal digits (ନେନ୍ଦରାକ୍ଷଣ): ୦ ZERO, ୧ ONE, ୨ TWO, ୩ THREE, ୪ FOUR, ୫ FIVE, ୬ SIX, ୭ SEVEN, ୮ EIGHT, ୯ NINE. While some publications and people use the native digits, others may use digits from Latin, Devanagari, Bengali, or Oriya depending upon author preference (Note Mundari Bani verse numbers in Fig. 9 and Mundari Bani page numbers in Fig. 8, but European-style page numbers in Figs. 7, 12 and 17). The following table compares against Devanagari, Bengali, and Oriya digits:

Mundari Bani	Character Name	Deva	Beng	Orya
୦	NAG MUNDARI DIGIT ZERO	୦	୦	୦
୧	NAG MUNDARI DIGIT ONE	୧	୧	୧
୨	NAG MUNDARI DIGIT TWO	୨	୨	୨
୩	NAG MUNDARI DIGIT THREE	୩	୩	୩
୪	NAG MUNDARI DIGIT FOUR	୪	୪	୪
୫	NAG MUNDARI DIGIT FIVE	୫	୫	୫
୬	NAG MUNDARI DIGIT SIX	୬	୬	୬
୭	NAG MUNDARI DIGIT SEVEN	୭	୭	୭
୮	NAG MUNDARI DIGIT EIGHT	୮	୮	୮
୯	NAG MUNDARI DIGIT NINE	୯	୯	୯

¹The shape of ō SUTUH in 2004-style is similar to ୧ U+033C COMBINING SEAGULL BELOW except located above the base rather than below.

3.9 Punctuation

European-style punctuation is used, as in English including FULL STOP, COMMA, EXCLAMATION MARK, QUESTION MARK, HYPHEN-MINUS and “quotes above”.

3.9.1 Eced

The - ECED (ୟେତେବ) is used for marking compound verbs [4, Pg. 74], reduplicative expressives [4, Pg. 103], and other such constructions. Examples include ମତ୍ତିତ-କାନ୍ତିତ mother-father, the compound verb constructions ପାତା-ଚାପାତା to eat and drink and ଜୀବ-କାହାବୁବୁ to be able to write, and the reduplicative expressive ପାତା-ପାତା ପାତା-ପାତା glittering in the sun [14, Pg. 32]. ECED can be represented by either U+002D HYPHEN-MINUS or U+2010 HYPHEN.

3.10 Historical Forms

Mundari Bani possesses some glyptic variants that are resultant of a script reform in 2008. Prior to the reform, neither letter ନ ENN nor କ IKIR existed. The reform also fundamentally changed the basic shapes of ପ OP, ଲ OL, କ I, and କ UK to unrecognizably different forms. Additionally, the glyphs of ମ MUHOR and ସ SUTUH were modified, and many other letters were relatively minorly adjusted typographically. See Figs. 17 to 19 for examples and further details. We *do not* recommend disunifying the pre- and post-reform letters, and consider them mere variants. Modern users are unlikely to want to type in this pre-reform style, but if they wish to, a pre-reform font would be the appropriate way to achieve this.

For each letter or mark in modern Mundari Bani, the below chart gives an example word from the first Mundari Bani book, Mundari Bani Hisir [14], published in 2004, as well as a rendering in modern print (see §2.1 for history of the script). The letter or mark being analyzed is highlighted in *red* if the glyph has changed to a very significant degree, in *violet* if the glyph has changed in a minor way, and in *blue* if the glyph hasn't meaningfully changed since 2004. If the letter or mark did not exist in 2004, it is marked as such.

Letter	2004-Style Example	Modern Print
ଢ O	ଢା	ଢା
ଣ OP	ଣାର	ଣାର
ନ OL	ନାର	ନାର
ସ OY	ସାରସ	ସାରସ
ଏ ONG	ଏଲେ	ଏଲେ

Letter	2004-Style Example	Modern Print
ଅ A	ଅୟେ	ଅୟେ
ୟ AJ	ୟୀଜ୍ୟ	ୟୀଜ୍ୟ
୬ AB	୬୭	୬୭
୧ ANY	୧୨୨	୧୨୨
୭ AH	୭୨୭	୭୨୭
୫ I	୫୨୨	୫୨୨
୯ IS	୯୨୩	୯୨୩
୪ IDD	୪୨୧୧	୪୨୧୧
୮ IT	୮୨୧୧	୮୨୧୧
୪ IH	୪୨୧୨	୪୨୧୨
୭ U	୭୨୨	୭୨୨
୮ UC	୮୨୧୨୭	୮୨୧୨୭
୫ UD	୫୨୧୨	୫୨୧୨
୯ UK	୯୨୧୧	୯୨୧୧
୪ UR	୪୨୧୨	୪୨୧୨
୩ E	୩୨୨୨୨	୩୨୨୨୨
୩ ENN	N/A	
୫ EG	୫୨୨୨	୫୨୨୨
୫ EM	୫୨୧୨	୫୨୧୨
୫ EN	୫୨୨	୫୨୨
୫ ETT	୫୨୨୨	୫୨୨୨
୩ ELL	୩୨୨୨୨୨	୩୨୨୨୨୨
୦ MUHOR	୦୨୨୨	୦୨୨୨
୦ TOYOR	୦୨୨	୦୨୨
୦ IKIR	N/A	
- ECED	୨୨୧୧-୦୨୨	୨୨୧୧-୦୨୨
୧ OJOD	୧୨୧୧	୧୨୧୧

Letter	2004-Style Example	Modern Print
ଓ SUTUH	ଓ, উঘ	ও, উঘ

3.11 Character Names

The characters are named in accordance with their traditional names, and are romanized so that the vowels ଓ, া, ়, ঁ, ঃ are romanized O, A, I, U, E respectively. All the consonants are romanized to match the customary name, while matching UCS conventions. For example, ঠ has the name ENN since it has the sound of ॥ DEVANAGARI LETTER NNA. The exception to this is া AH which has a glottal stop sound and is generally transliterated into Devanagari using visarga.

3.12 Collation

Mundari Bani does not seem to have a consensus collation order, but native readers would likely expect a lexicographic order which matches with the typical didactic order (which is emulated in the code charts). This would require that the letters (basic alphabet and ৱ OJOD) have primary weight and the combining characters have secondary weight.

3.13 Unicode Data

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1E4D0;NAG MUNDARI LETTER O;Lo;O;L;;;;;N;;;;;
1E4D1;NAG MUNDARI LETTER OP;Lo;O;L;;;;;N;;;;;
1E4D2;NAG MUNDARI LETTER OL;Lo;O;L;;;;;N;;;;;
1E4D3;NAG MUNDARI LETTER OY;Lo;O;L;;;;;N;;;;;
1E4D4;NAG MUNDARI LETTER ONG;Lo;O;L;;;;;N;;;;;
1E4D5;NAG MUNDARI LETTER A;Lo;O;L;;;;;N;;;;;
1E4D6;NAG MUNDARI LETTER AJ;Lo;O;L;;;;;N;;;;;
1E4D7;NAG MUNDARI LETTER AB;Lo;O;L;;;;;N;;;;;
1E4D8;NAG MUNDARI LETTER ANY;Lo;O;L;;;;;N;;;;;
1E4D9;NAG MUNDARI LETTER AH;Lo;O;L;;;;;N;;;;;
1E4DA;NAG MUNDARI LETTER I;Lo;O;L;;;;;N;;;;;
1E4DB;NAG MUNDARI LETTER IS;Lo;O;L;;;;;N;;;;;
1E4DC;NAG MUNDARI LETTER IDD;Lo;O;L;;;;;N;;;;;
1E4DD;NAG MUNDARI LETTER IT;Lo;O;L;;;;;N;;;;;
1E4DE;NAG MUNDARI LETTER IH;Lo;O;L;;;;;N;;;;;
1E4DF;NAG MUNDARI LETTER U;Lo;O;L;;;;;N;;;;;
1E4EO;NAG MUNDARI LETTER UC;Lo;O;L;;;;;N;;;;;
1E4E1;NAG MUNDARI LETTER UD;Lo;O;L;;;;;N;;;;;

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1E4E2;NAG MUNDARI LETTER UK;Lo;0;L;;;;;N;;;;;
 1E4E3;NAG MUNDARI LETTER UR;Lo;0;L;;;;;N;;;;;
 1E4E4;NAG MUNDARI LETTER E;Lo;0;L;;;;;N;;;;;
 1E4E5;NAG MUNDARI LETTER ENN;Lo;0;L;;;;;N;;;;;
 1E4E6;NAG MUNDARI LETTER EG;Lo;0;L;;;;;N;;;;;
 1E4E7;NAG MUNDARI LETTER EM;Lo;0;L;;;;;N;;;;;
 1E4E8;NAG MUNDARI LETTER EN;Lo;0;L;;;;;N;;;;;
 1E4E9;NAG MUNDARI LETTER ETT;Lo;0;L;;;;;N;;;;;
 1E4EA;NAG MUNDARI LETTER ELL;Lo;0;L;;;;;N;;;;;
 1E4EB;NAG MUNDARI SIGN OJOD;Lm;0;L;;;;;N;;;;;
 1E4EC;NAG MUNDARI SIGN MUHOR;Mn;232;NSM;;;;;N;;;;;
 1E4ED;NAG MUNDARI SIGN TOYOR;Mn;232;NSM;;;;;N;;;;;
 1E4EE;NAG MUNDARI SIGN IKIR;Mn;220;NSM;;;;;N;;;;;
 1E4EF;NAG MUNDARI SIGN SUTUH;Mn;230;NSM;;;;;N;;;;;
 1E4F0;NAG MUNDARI DIGIT ZERO;Nd;0;L;;0;0;0;N;;;;;
 1E4F1;NAG MUNDARI DIGIT ONE;Nd;0;L;;1;1;1;N;;;;;
 1E4F2;NAG MUNDARI DIGIT TWO;Nd;0;L;;2;2;2;N;;;;;
 1E4F3;NAG MUNDARI DIGIT THREE;Nd;0;L;;3;3;3;N;;;;;
 1E4F4;NAG MUNDARI DIGIT FOUR;Nd;0;L;;4;4;4;N;;;;;
 1E4F5;NAG MUNDARI DIGIT FIVE;Nd;0;L;;5;5;5;N;;;;;
 1E4F6;NAG MUNDARI DIGIT SIX;Nd;0;L;;6;6;6;N;;;;;
 1E4F7;NAG MUNDARI DIGIT SEVEN;Nd;0;L;;7;7;7;N;;;;;
 1E4F8;NAG MUNDARI DIGIT EIGHT;Nd;0;L;;8;8;8;N;;;;;
 1E4F9;NAG MUNDARI DIGIT NINE;Nd;0;L;;9;9;9;N;;;;;

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	1E4D	1E4E	1E4F
0	၃ 1E4D0	၈ 1E4E0	၀ 1E4F0
1	၄ 1E4D1	၅ 1E4E1	၁ 1E4F1
2	၆ 1E4D2	၇ 1E4E2	၂ 1E4F2
3	၉ 1E4D3	၈ 1E4E3	၃ 1E4F3
4	၅ 1E4D4	။ 1E4E4	၄ 1E4F4
5	၁ 1E4D5	၂ 1E4E5	၂ 1E4F5
6	၄ 1E4D6	၃ 1E4E6	၅ 1E4F6
7	၈ 1E4D7	၉ 1E4E7	၇ 1E4F7
8	၏ 1E4D8	၏ 1E4E8	၏ 1E4F8
9	၉ 1E4D9	၏ 1E4E9	၇ 1E4F9
A	ၔ 1E4DA	ၔ 1E4EA	
B	၌ 1E4DB	၌ 1E4EB	
C	၎ 1E4DC	၎ 1E4EC	
D	ၐ 1E4DD	ၐ 1E4ED	
E	၏ 1E4DE	၏ 1E4EE	
F	၏ 1E4DF	၏ 1E4EF	

Letters

- 1E4D0 ၃ NAG MUNDARI LETTER O
 1E4D1 ၄ NAG MUNDARI LETTER OP
 1E4D2 ၅ NAG MUNDARI LETTER OL
 1E4D3 ၉ NAG MUNDARI LETTER OY
 1E4D4 ၅ NAG MUNDARI LETTER ONG
 1E4D5 ၁ NAG MUNDARI LETTER A
 1E4D6 ၄ NAG MUNDARI LETTER AJ
 1E4D7 ၂ NAG MUNDARI LETTER AB
 1E4D8 ၉ NAG MUNDARI LETTER ANY
 1E4D9 ၃ NAG MUNDARI LETTER AH
 1E4DA ၂ NAG MUNDARI LETTER I
 1E4DB ၄ NAG MUNDARI LETTER IS
 1E4DC ၁ NAG MUNDARI LETTER IDD
 1E4DD ၆ NAG MUNDARI LETTER IT
 1E4DE ၈ NAG MUNDARI LETTER IH
 1E4DF ၂ NAG MUNDARI LETTER U
 1E4E0 ၈ NAG MUNDARI LETTER UC
 1E4E1 ၁ NAG MUNDARI LETTER UD
 1E4E2 ၄ NAG MUNDARI LETTER UK
 1E4E3 ၂ NAG MUNDARI LETTER UR
 1E4E4 ၅ NAG MUNDARI LETTER E
 1E4E5 ၆ NAG MUNDARI LETTER ENN
 1E4E6 ၄ NAG MUNDARI LETTER EG
 1E4E7 ၂ NAG MUNDARI LETTER EM
 1E4E8 ၅ NAG MUNDARI LETTER EN
 1E4E9 ၄ NAG MUNDARI LETTER ETT
 1E4EA ၂ NAG MUNDARI LETTER ELL

Tong

- 1E4EB ၊ NAG MUNDARI SIGN OJOD
 1E4EC ၎ NAG MUNDARI SIGN MUHOR
 1E4ED ၎ NAG MUNDARI SIGN TOYOR
 1E4EE ၎ NAG MUNDARI SIGN IKIR
 1E4EF ၎ NAG MUNDARI SIGN SUTUH

Digits

- 1E4F0 ၀ NAG MUNDARI DIGIT ZERO
 1E4F1 ၁ NAG MUNDARI DIGIT ONE
 1E4F2 ၂ NAG MUNDARI DIGIT TWO
 1E4F3 ၃ NAG MUNDARI DIGIT THREE
 1E4F4 ၄ NAG MUNDARI DIGIT FOUR
 1E4F5 ၅ NAG MUNDARI DIGIT FIVE
 1E4F6 ၆ NAG MUNDARI DIGIT SIX
 1E4F7 ၇ NAG MUNDARI DIGIT SEVEN
 1E4F8 ၈ NAG MUNDARI DIGIT EIGHT
 1E4F9 ၉ NAG MUNDARI DIGIT NINE

ମୁନ୍ଡାରି ବାନି MUNDARI BANI

ଢ (ଅ) O	ମ (ଅପ୍ର) OP	ନ (ଅଳ୍ପ) OL	ଙ (ଅୟ) OY	େ (ଅଂ) ONG
ଝ (ଆ) AA	ୱ (ଆଜ୍ଞ) AAJ	ଛ (ଆବ୍) AAB	ୱୀ (ଆୟ) AAY	ୱି (ଆଃ) AAH
ଶ (ଇ) II	୧ (ଇସ) IIS	ତ୍ର (ଇଡ୍) IID	ତ୍ରୀ (ଇତ୍) IIT	ତ୍ରି (ଇହ୍) IIH
ଚ (ଓ) U	ତ୍ରୁ (ଓଚ୍) UCH	କୁ (ଓଦ୍) UD	କୁକୁ (ଓକ୍) UK	କୁରୁ (ଓର୍) UR
ୱ (ଏୟା) E	ଏନ୍ (ଏୟାଣ) EN	ଏଗ୍ (ଏୟାଗ୍) EG	ଏମ୍ (ଏୟାମ୍) EM	ଏନ୍ (ଏୟାନ୍) EN
				ଏ (ଏୟାଟ୍) ET
				ଏର୍ (ଏୟାଡ୍) ERR

ଠୁରେ (ତଂ) Tong

.	.	.	ତୁ
ମୁହର	ତୋର	ଇକିର	ଅଜଦ
Muhor	Toyor	Ikir	Ojod

ଲେନେକା (ଲେନେକା) Leneka

୦	I	L	Z	M	ଏ	ର	ର୍	ଲ୍	ର୍ଲ	ର୍ଲ୍	ର୍ଲ୍ଲ	I O
ଶୁନ୍	ମଦ୍	ବାର୍	ଆପି	ଉପୁନ	ମନେ	ତୁରି	ଏୟା	ଇରାଲ	ଆରେ	ଗେଲ୍		
Sun	Mod	Bar	Api	Upun	Mone	Turi	Eya	Iral	Aare	Gel		

Figure 1: Mundari Bani–Bengali Alphabet Correspondence, provided by Bharat Munda Samaj

મનુષીય લિપિ				
ા	ભ	ન	ટ	એ
અ	અપ્	અલ	અથ	અં
આ	આજ	આવ	આજ	આ :
ઇ	ઇસ	ઇડ	ઇત્	ઇહ
ઉ	ઉચ્	ઉદ	ઉક્	ઉર્
એ	એણ	એળ	એમ	એન્
				પ
				એટ્
				એછ્

ઠેર્
તોડ્

મુંહર તોડ્	તોયોર્ તોડ્	ઇકીર્ તોડ્	ઓજોડ્ તોડ્
------------	-------------	------------	------------

૦	૧	૨	૩	૪	૫	૬	૭	૮	૯	૧૦
શૂન	મોદ	બાર	આપી	ઉપુન	મોણ	તુરી	એયા	ઇરાલ	આરે	ગેલ

Figure 2: Mundari Bani–Devanagari Alphabet Correspondence [10]

		Deva	Beng	Orya
ଢ	O	ଓ	অ	ଅ
ମ	OP	ଓପ্	অপ্	ଅପ୍
ଲ	OL	ଓଲ্	অল্	ଅଲ୍
ୟ	OY	ଓୟ୍	অয୍	ଅୟ୍
େ	ONG	ওଂ	অং	ଅଂ
ା	A	ଆ	আ	ଆ
ୱ	AJ	ଆଜ୍	আজ্	ଆଜ୍
୲	AB	ଆବ୍	আব্	ଆବ୍
ୣ	ANY	ଆନ୍	আନ୍	ଆନ୍
୩	AH	ଆ:	আঃ	ଆঃ
ଇ	I	ଇ	ই	ଇ
ଈ	IS	ଇସ୍	ইସ্	ଇସ୍
ଈଡ୍	IDD	ଇଡ୍	ইଡ୍	ଇଡ୍
ଇତ୍	IT	ଇତ୍	ইତ୍	ଇତ୍
ଇହ୍	IH	ଇହ୍	ইହ୍	ଇହ୍
ଉ	U	ଉ	উ	ଉ
ଉଚ୍	UC	ଉଚ୍	উଚ୍	ଉଚ୍
ଉଦ୍	UD	ଉଦ୍	উଦ୍	ଉଦ୍
ଉକ୍	UK	ଉକ୍	উକ୍	ଉକ୍
ଉର୍	UR	ଉର୍	উର୍	ଉର୍
ୟ	E	ୟ	ଏ	ଏ
ୟଣ୍	ENN	ୟଣ୍	ଏଣ୍	ଏଣ୍
ୟଗ୍	EG	ୟଗ୍	ଏଗ୍	ଏଗ୍
ୟମ୍	EM	ୟମ୍	ଏମ୍	ଏମ୍
ୟନ୍	EN	ୟନ୍	ଏନ୍	ଏନ୍
ୟଟ୍	ETT	ୟଟ୍	ଏଟ୍	ଏଟ୍
ୟଳ୍	ELL	ୟଳ୍	ଏଲ୍	ଏଲ୍

Figure 3: Transliteration of the basic Mundari Bani letter names into the other common scripts used in the writing of Mundari: Devanagari, Bengali, and Oriya.

Ӡ /o/	Ҥ /p/	Ӯ /l/	Ԇ /y/	Ҽ /ŋ/
Ԇ /a/	Ԉ /j/	Ԉ /b/	Ԉ /ñ/	Ԉ /?/
Ԉ /i/	Ԉ /s/	Ԉ /d/	Ԉ /t/	Ԉ /h/
Ԃ /u/	Ԉ /c/	Ԉ /d/	Ԉ /k/	Ԉ /r/
Ԉ /e/	Ԉ /ŋ/	Ԉ /g/	Ԉ /m/	Ԉ /n/
			Ԉ /t/	Ԉ /l/

Figure 4: A (nearly) one-to-one mapping between Osada [3]’s analysis of the Mundari phonemic inventory and the basic Mundari Bani alphabet. Only the phoneme /w/ is missing, which is represented in Mundari Bani as ܂ IKIR. Note that Osada [3] does not consider vowel nasalization, vowel length, or word-final ‘checking’ of /b/ and /d/ to be phonemic distinctions.

3 O	H OP	U OL	Z OY	E ONG
3 A	W AJ	8 AB	9 ANY	9 AH
2 I	Y IS	W IDD	8 IT	8 IH
C U	2 UC	2 UD	2 UK	8 UR
E E	U ENN	8 EG	8 EM	V EN
				U ETT
				2 ELL

2 LA	O AT	G AG	8 ANG	p AL
2 LAA	b AAK	W AAJ	u AAM	9 AAW
2 LI	2 IS	W IH	q INY	2 IR
2 LU	8 UC	8 UD	2 UNN	6 UY
2 LE	2 EP	8 EDD	2 EN	2 ERR
2 LO	W OTT	8 OB	9 OV	8 OH

(a) Both Ol Chiki and Mundari Bani are organized in similar, grid-style charts where each row begins with a vowel letter and all consonant members of a row have a name starting on a matching vowel. Though past this organizational resemblance, there is little graphical similarity in the basic alphabet of each. The primarily apparent parallels are the very similar glyphs for 9 ANY and 9 INY as well as the way that letters 3 A / 2 LAA are graphically derived from 3 O / 2 LA through the addition of a rightward-then-downward stroke.

ጀ MUHOR	.	MU TTUDDAG
ጀ IKIR	.	GAAHLAA TTUDDAAG
ጀ TOYOR	:	MU-GAAHLAA TTUDDAAG
- ECED	~	RELAA
ጀ OJOD	-	PHAARKAA
ጀ SUTUH	ጀ	AHAD

(b) The extended marks (called ‘Tong’ in Mundari Bani) have a very significant number of parallels in form and function between the two scripts. ጀ MUHOR and ዓ MU TTUDDAG have a very similar name and form, and an identical function (nasalization). Both ዓ OJOD and ዓ AHAD have very similar names, letter-like shapes, and nearly identical function (marking glottalization / ‘checking’ of certain stop consonants). We note that while the Ol Chiki block encodes - PHAARKAA, we propose Mundari Bani’s - ECED to instead be represented with existing encoded characters (see §3.9.1). We note that the remaining similar marks between these scripts differ in being combining marks versus modifier letters respectively.

Figure 5: A side-by-side comparing Ol Chiki to Mundari Bani. Both are unicameral scripts for related Munda family languages with a very reminiscent organizational style.

	(a)	(b)	(c)	(d)	(e)
O	ଢ	ଢ	ଢ	ଢ	ଢ
OP	ଅ	ଅ	ଅ	ଅ	ଅ
OL	୦	୦	୦	୦	୦
OY	ୟ	ୟ	ୟ	ୟ	ୟ
ONG	୚	୚	୚	୚	୚
A	ା	ା	ା	ା	ା
AJ	ୟ	ୟ	ୟ	ୟ	ୟ
AB	ବ	ବ	ବ	ବ	ବ
ANY	୧	୧	୧	୧	୧
AH	ା	ା	ା	ା	ା
I	ୟ	ୟ	ୟ	ୟ	ୟ
IS	୧	୧	୧	୧	୧
IDD	୭	୭	୭	୭	୭
IT	୨	୨	୨	୨	୨
IH	୪	୪	୪	୪	୪
U	୭	୭	୭	୭	୭
UC	୫	୫	୫	୫	୫
UD	୮	୮	୮	୮	୮
UK	୯	୯	୯	୯	୯
UR	୪	୪	୪	୪	୪
E	୧	୧	୧	୧	୧
ENN	୩	୩	୩	୩	୩
EG	୩	୩	୩	୩	୩
EM	୩	୩	୩	୩	୩
EN	୩	୩	୩	୩	୩
ETT	୧	୧	୧	୧	୧
ELL	୧	୧	୧	୧	୧
MUHOR	୦	୦	୦	୦	୦
IKIR	୦	୦	୦	୦	୦
TOYOR	୦	୦	୦	୦	୦
ECED	-	-	-	-	-
OJOD	୧	୧	୧	୧	୧

Figure 6: Side-by-side comparison of all five Mundari Bani typefaces released by Baidyanath Singh in 2008 [7]. (a) Mundari Lipi Arial (b) Mundari Lipi (c) Mundari Lipi Standard (d) Mundari Lipi JagaMohan (e) Mundari Lipi Stoneage. We note that the omission of ଶ SUTUH is intentional, as these fonts *do not* currently contain it.

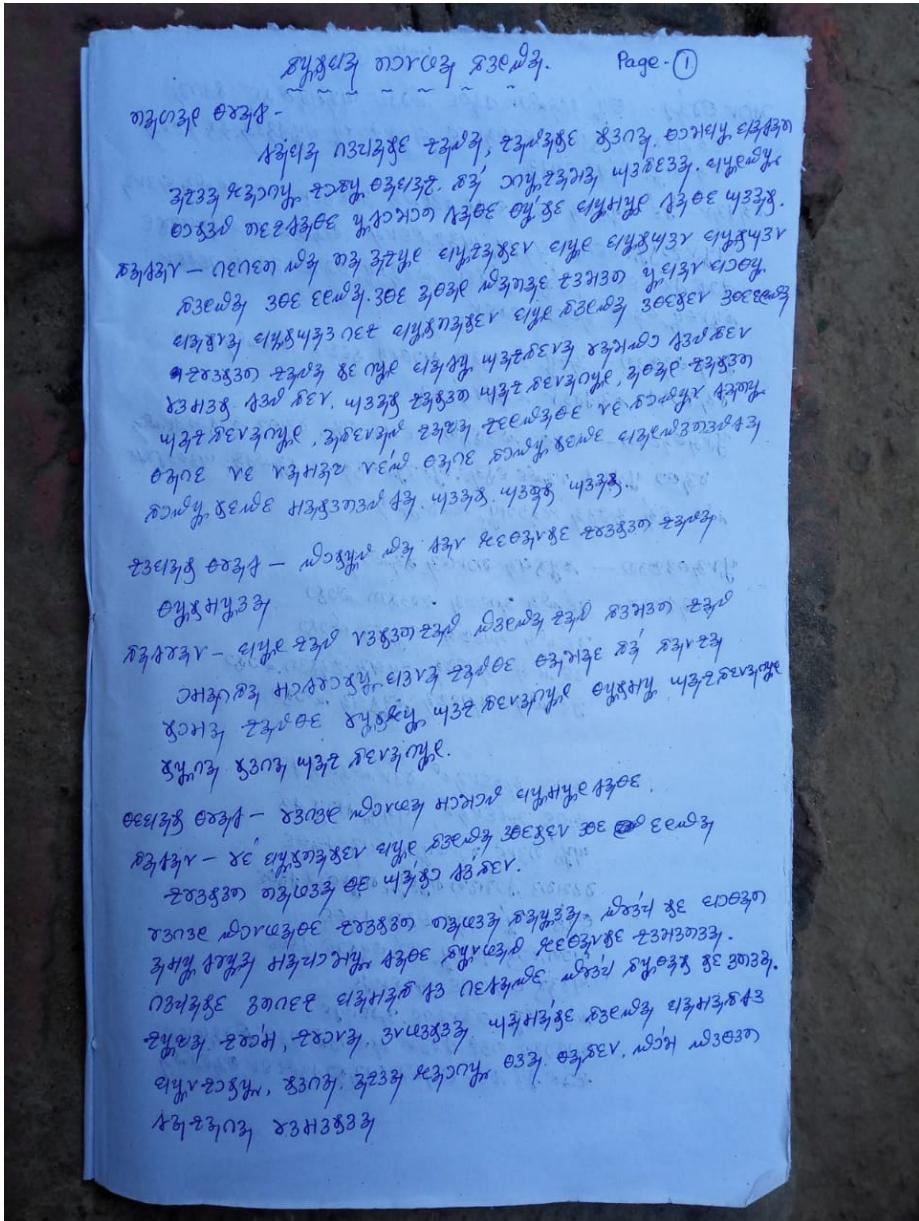


Figure 7: Excerpt from student's notes, titled ਬਿਰਸਾ ਮੁਨਦਾ ਦੀ ਜੀਵਨਿਕਾ, about Indian tribal freedom fighter Birsa Munda. Provided by Nandalal Singh, president of Mundari Samaj Sanwar Jamda.

“ଇକିର ତୀ”ର ବ୍ୟବହାର

“ତୁ” ପଳା ପାଇଁ (.) “ଇକିର ତୀ” କୁ ବ୍ୟବହାର କରାଯାଏ । ଏହାକୁ ୩,
ଅ, ଖ, ଚ, ଙ ଆଦି ସ୍ଵରବର୍ଣ୍ଣ ସହିତ ବ୍ୟବହାର କରାଯାଏ ।

ସେପରିକି :-

ତୀ	ଅନ୍ତିମ	ଶୁଣ୍ଡ	ଦୁଇତିମଧ୍ୟ	ତୁ
ତୁତୀ	ତୁଅନ୍ତିମ	ତୁଶୁଣ୍ଡ	ତୁଦୁଇତିମଧ୍ୟ	ତୁତୁ

୧ “ଅଜଦ ତୀ”ର ବ୍ୟବହାର

ଗୋଟିଏଟିଥାକୁ କାହାରେ ଦୁଇତିମଧ୍ୟ (ମୁଣ୍ଡାରୀ ବର୍ଣ୍ଣମାଳା) ରେ ଦୁଇତି ଅର୍ଦ୍ଦ ଉଚ୍ଚାରଣ ଅନ୍ତର ରହିଛି । ସେ ଦୁଇତି ହେଉଛି :- ତି ଏବଂ ଟି ।

ତି - ଏହା ସମ୍ପୂର୍ଣ୍ଣ ‘ତ’ ନୁହେଁ ।

ଟି - ଏହା ସମ୍ପୂର୍ଣ୍ଣ ‘ଦ’ ନୁହେଁ ।

ଏମାନଙ୍କୁ ସମ୍ପୂର୍ଣ୍ଣ ‘ତ’ ଏବଂ ‘ଦ’ କରିବା ପାଇଁ ୧ କୁ ବ୍ୟବହାର କରାଯାଏ ।

ତିେ - ଏହା ସମ୍ପୂର୍ଣ୍ଣ ‘ତ’ ଅଟେ ।

ଟିେ - ଏହା ସମ୍ପୂର୍ଣ୍ଣ ‘ଦ’ ଅଟେ ।

୧୨

Figure 8: Excerpt from ନେତ୍ରବିନ୍ଦୁ ପଦାର୍ଥ ପରିଚୟ ମାତ୍ରାବିନ୍ଦୁ ପଦାର୍ଥ ପରିଚୟ ମାତ୍ରାବିନ୍ଦୁ [11, Pg. 15] showing another common glyptic variation of ତ OJOD, ତି. Note that in this presentation, ତ OJOD is said to follow rather than precede the letter it is to affect. Additionally, this contains a Mundari Bani page number: ୧୨ (15).

ଦର୍ଶାନୀ କିମ୍ବା ଗେତୁଳାଙ୍କିମ୍ବା.....(L)
 ପାଇବାରୁ କିମ୍ବା କିମ୍ବା
 ପାଇବାରୁ କିମ୍ବା କିମ୍ବା
 ୩୫୩୧ ହୃଦୟରୁ
 ପାଇବାରୁ କିମ୍ବା କିମ୍ବା.....(Z)
 କିମ୍ବା କିମ୍ବା
 ପାଇବାରୁ କିମ୍ବା କିମ୍ବା,
 କିମ୍ବା କିମ୍ବା
 ଦର୍ଶାନୀ କିମ୍ବା କିମ୍ବା.....(M)
 ପାଇବାରୁ କିମ୍ବା କିମ୍ବା
 ଦର୍ଶାନୀ କିମ୍ବା କିମ୍ବା
 ୩୦୩ ହୃଦୟରୁ ପାଇବାରୁ
 ନେବା କିମ୍ବା କିମ୍ବା.....(R)

Figure 9: Excerpt from Mundari Gaumudi Hamar (ମୁନ୍ଡାରୀ ଶବ୍ଦାଳ୍ପିକ ରକ୍ଷଣାବିଧି) [9, Pg. 4]. Circled in red is an instance of \diamond IKIR, and in blue are instances of \circ TOYOR.

ଶବ୍ଦପରିକଟିକା
ଶବ୍ଦପରିକଟିକା, ଶବ୍ଦପରିକଟିକା, ଶବ୍ଦପରିକଟିକା

ଶବ୍ଦପରିକଟିକା	ତ	ମ	ନ	ଙ	ଏ
ଓଡ଼ିଆ	ଅ	ପ	ଲ	ଯ	ଭ
ହିନ୍ଦୀ	ଅ	ପ	ଲ	ଯ	ଭ
ବାଂଲା	ଅ	ପ	ଲ	ଯ	ଭ

ଶବ୍ଦପରିକଟିକା	ଯ	ନ	ବ	ଏ
ଆ	ଜ	ବ	ଓ	ଆ
ଆ	ଜ	ବ	ଅ	ଆ
ଆ	ଜ	ବ	ଏ	ଆ

ଶବ୍ଦପରିକଟିକା	ପ	ତ	ତ	ତ
ଇ	ପ	ତ	ତ	ତ
ଇ	ପ	ତ	ତ	ତ
ଇ	ପ	ତ	ତ	ତ

[6]

Figure 11: Excerpt from Bani Upurum (ଶବ୍ଦପରିକଟିକା) [13, Pg. 6], titled ଶବ୍ଦପରିକଟିକା ଶବ୍ଦପରିକଟିକା ଶବ୍ଦପରିକଟିକା, ଶବ୍ଦପରିକଟିକା, ଶବ୍ଦପରିକଟିକା. Circled in green are instances of ତ SUTUH.

The image shows a page from a book titled 'Bani Upurum' (బాని ఉపరుము) [13, Pg. 10]. The page contains several tables illustrating phonetic correspondences between different languages.

Top Left: A vertical column of five circles, each containing a symbol: త, థ, ద, ధ, న.

Top Right: A vertical column of five circles, each containing a symbol: త్, థ్, ద్, ధ్, న్.

Middle Left: A vertical column of five circles, each containing a symbol: ప, ఫ, బ, భ, మ.

Middle Right: A vertical column of five circles, each containing a symbol: ప్, ఫ్, బ్, భ్, మ్.

Bottom Left: A grid of phonetic symbols:

య	ర	ల	వ	శ	ష	స	హ	క్ష
Y	R	L	V	SH	SH	S	H	KSH
య	ర	ల	వ	శ	ష	స	హ	క్ష

Bottom Right: A grid of phonetic symbols:

త్	త్య	శ్	ష్	e	ఔ	.	
త	త్య	శ	ష	°	४	३	
త్	త్య	శ్	ష్	:	४	३	
త్	త్య	శ్	ష్	१	०	३	

[10]

Figure 12: Excerpt from Bani Upurum (బాని ఉపరుము) [13, Pg. 10], showing examples of ō SUTUH being used to closely represent sounds from neighboring Indo-Aryan languages.

ଶ୍ରୀ	ଧ୍ରୀ	ନ୍ତ୍ରୀ	ତ୍ରୀ
ଭ୍ରୀ	ଷ୍ଟୀ	ଙ୍କୀ	ଳୀ
ହ୍ରୀ	ସ୍ତୀ	କ୍ତୀ	ଲୀ
ଫ୍ରୀ	ଷ୍ଣୀ	ଙ୍ଗୀ	ଳୁ

ମ୍ରୀ	ବ୍ରୀ	ର୍ମୀ	ଲ୍ରୀ
ପ୍ରୀ	ପ୍ଲୀ	ଦ୍ରୀ	ଡୀ
ଦ୍ରୀ	ତ୍ଯୀ	ତ୍ମୀ	ତ୍ଲୀ
ଫ୍ରୀ	ତ୍ପୀ	ଅ୍ମୀ	ଅ୍ଲୀ

ଶ୍ରୀ	ଶ୍ରୀ	ଶ୍ୟୀ	ଶ୍ୟୀ
ଭ୍ରୀ	ଷ୍ଟୀ	ଙ୍କୀ	ଙ୍ଗୀ
ହ୍ରୀ	ସ୍ତୀ	କ୍ତୀ	ଲୀ
ଫ୍ରୀ	ଷ୍ଣୀ	ଙ୍ଗୀ	ଳୀ

ଶ୍ରୀ	ଶ୍ରୀ
ଭ୍ରୀ	ଷ୍ଟୀ
ହ୍ରୀ	ସ୍ତୀ
ଫ୍ରୀ	ଷ୍ଣୀ

[15]

Figure 13: Excerpt from Bani Upurum (ବାନି ଉପରୁମ) [13, Pg. 15], showing examples of ଏ OJOD being used to express consonant gemination.



Figure 14: Excerpt from Bani Upurum (ଶକ୍ତିକା ଚମ୍ପଚନ୍ଦ୍ର) [13, Pg. 19] on the letter ନ OL. Circled in pink are instances of ନ OJOD.

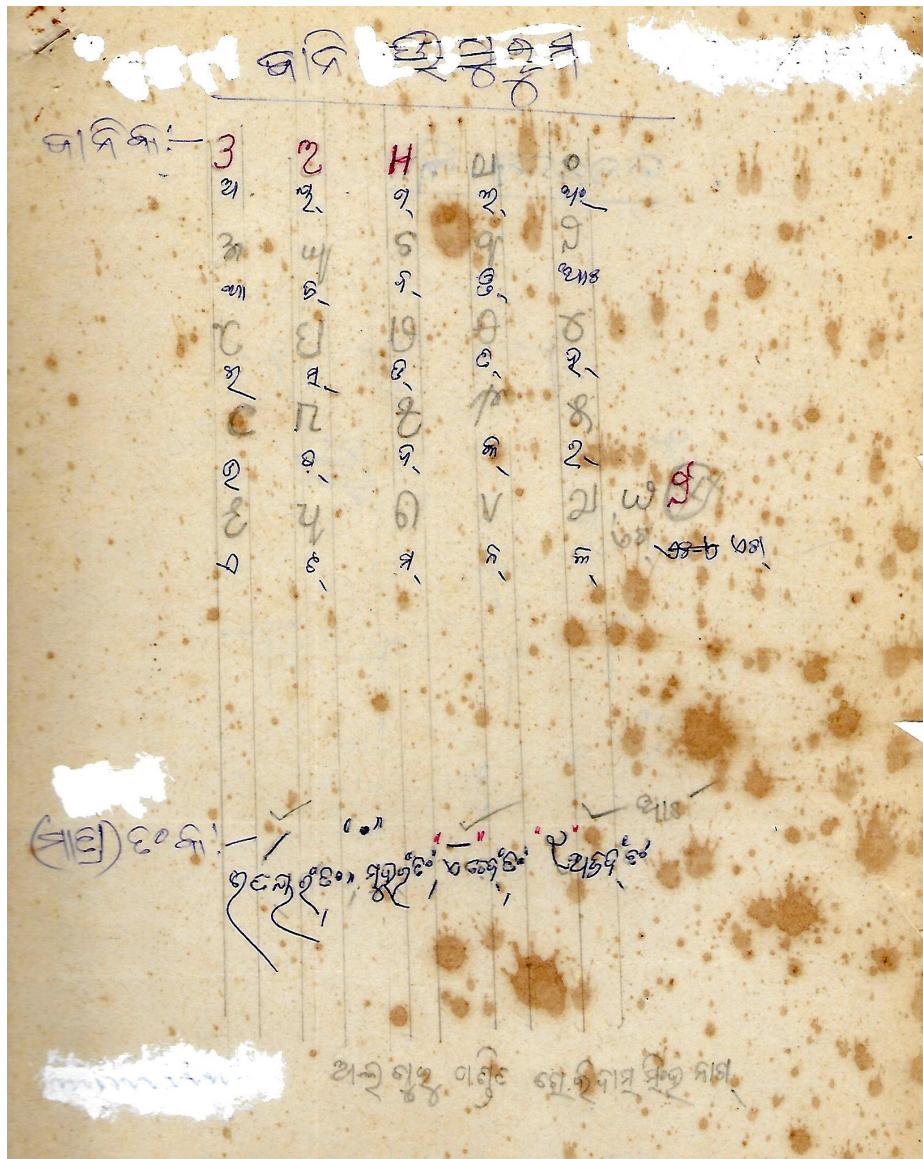


Figure 15: Original manuscript, dated July 10th 1982, by script creator, Ol Guru Rohidas Singh Nag, showing an earlier iteration of Mundari Bani, a predecessor to the pre-reform style shown in Figs. 17 to 19 and §3.10.

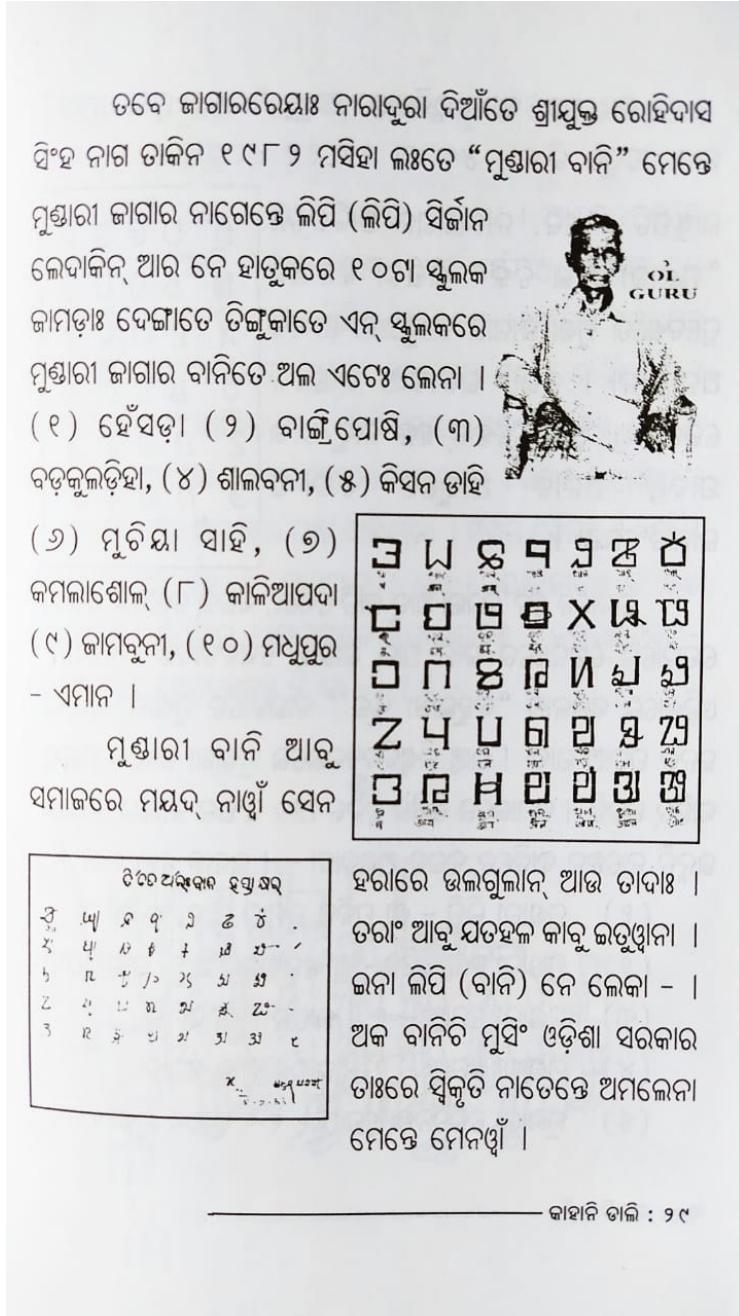


Figure 16: Excerpt showing an older version of Rohidas Nag's version of Mundari Bani script [12]. Note that this proposal does not attempt to cover encoding of these original manuscripts with which, to our knowledge, no books were published.

MUNDARI BANI HISIR

ମୁଣ୍ଡାରୀ ବାନି

ଢ (ଅ)	ଙ (ଆୟ)	ଖ (ଆୟ)	ପ (ଆଳ)	୧ (ଆୟ)
ତ୍ତ (ଆ)	ୟ (ଆଇ)	ଚ (ଆବ)	ବ୍ର (ଆଙ୍ଗ)	ର୍ବ (ଆଂ)
ଛ (ଇ)	ଫ (ଇସ)	ଲ୍ପ (ଇତ୍ତ)	ଠ୍ଠ (ଇତ୍ତ)	ଶ୍ର (ଇହି)
କ (ଉ)	ର୍ବ (ଉବ)	ତ୍ତ୍ତ (ଉଦ)	ତ୍ତ୍ତ୍ବ (ଉକ)	ତ୍ତ୍ତ୍ବ (ଉର)
ଶ୍ର୍ବ (ଏ)	ବ୍ର୍ବ (ଏବ)	ତ୍ତ୍ବ (ଏମ)	ତ୍ତ୍ବ (ଏଳ)	ତ୍ତ୍ବି (ଏନ) (ଏଗ)
ଥ୍ର୍ବ୍ବ ତ୍ତ୍ବ୍ବ ତ୍ତ୍ବ କ				
' (ତେବ)	' (ମୁହିର)	' (ଚେଦ)	' (ଜହ)	' (ସୁତ୍ତିଂ)

Figure 17: Pre-reform alphabet chart from Mundari Bani Hisir [14]. For discussion on these forms, see §3.10.

MUNDARI BANI HISIR						
ମୁନ୍ଦାରୀ ବନୀ ହିସିର କବିତା ମାଲା ପଞ୍ଜାବୀ ଶାସନ ଗ୍ରହଣ						
ଢ	ଢ'	ଫ	ଫ'	ଚ	ଚ'	ଚ
ଅ	ଅ-	ଆ	ଆ-	ଇ	ଇ-	
ଚ	ଚ'	ଫୋ/ଫ୍ଯୁ	ଫୋ/ଫ୍ଯୁ	ଖ	ଖ'	ଖ
ତ	ତ-	କ୍ର/କ୍ର-	କ୍ର/କ୍ର-	ଲୁ	ଏ	ଏ-
ଢଃ	ଢ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ
ଏ	ଏ	କ	କ	କ	କ	ଖ
ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ
ଖ-	ଗ	ଗ-	ଘ	ଘ-	ଙ୍ଗ	
ଚ	ଚ	ଛ	ଛ	ଜ	ଜ	
ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	
ଝ	ଝ	ଜ	ଟ	ଟ	ଟ	
ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	
ଠ	ଠ	ଡ	ଡ	ଢ	ଢ	
ତ	ତ	ଥ	ଥ	ଦ	ଦ	
ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	
ଧ	ଧ	ନ	ପ	ପ	ଫ	
ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	ଫୋ	
ମ	ମ	ବ	ବ	ଭ	ଭ	
ଫୋ	ଫୋ	ବ	ବ	ଭ	ଭ	
ମ	ମ	ଯ	ଯ	ର	ର	
ଫୋ	ଫୋ	ଯ	ଯ	ର	ର	
ଲ	ଲ	ଶ	ଶ	ସ	ସ	
ଫୋ	ଫୋ	ଶ	ଶ	ସ	ସ	
ହ	ହ	କ୍ଷ	କ୍ଷ	ସ	ସ	
				ଯ	ହ	
					ଲ	
						ଲ

Figure 18: Excerpt from Mundari Bani Hisir [14] aligning Mundari Bani to Devanagari. This shows that the post-reform letter ମ ENN (parallel to Devanagari ଏ) was previously represented as ଫ.

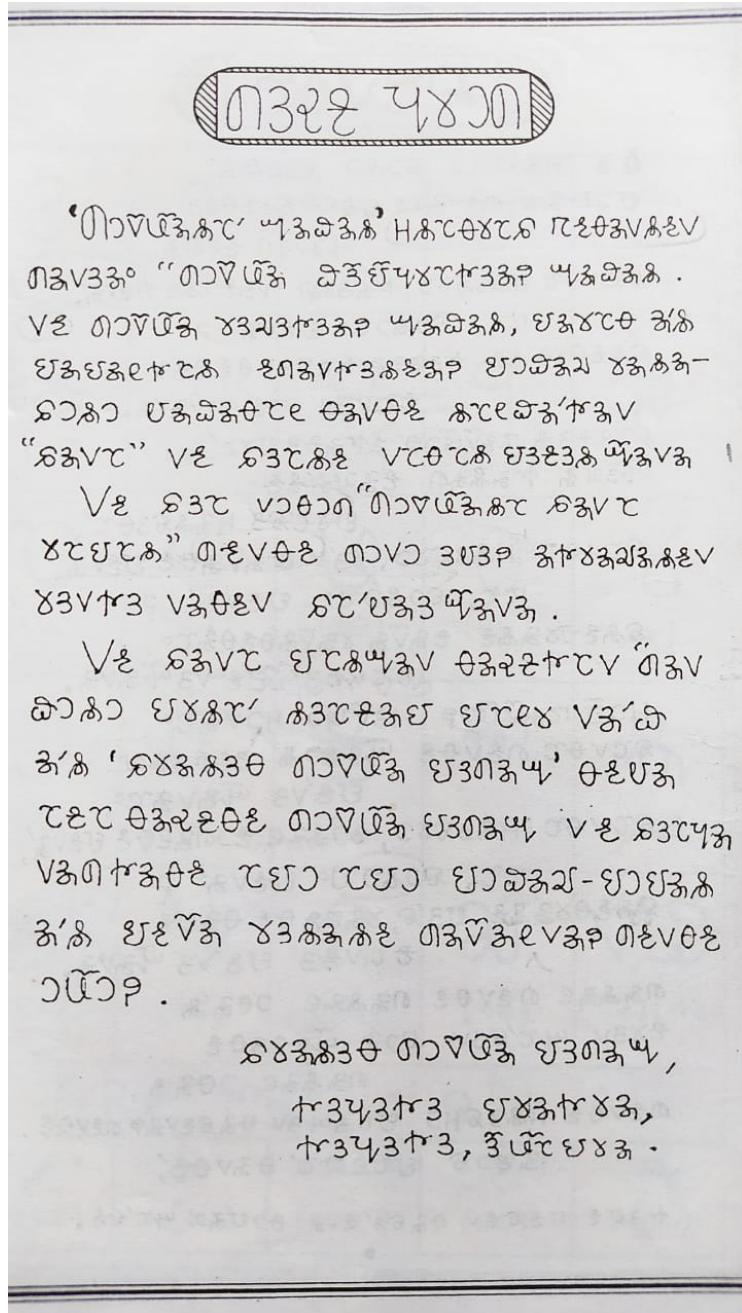


Figure 19: Excerpt from the introduction of Mundari Bani Hisir [14]. Note that the larger letters at the beginning of the paragraphs seem to be stylistic dropcaps rather than any evidence of capital letters.

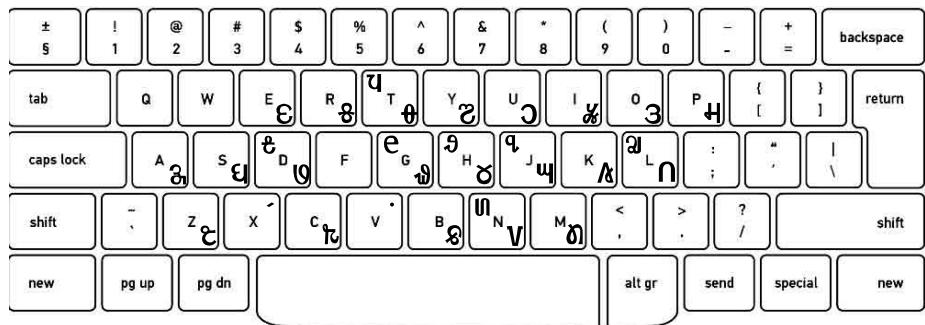
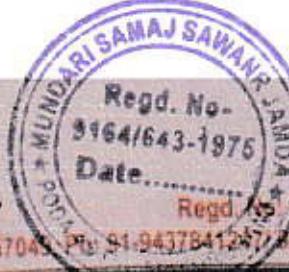


Figure 20: De-facto Mundari Bani keyboard layout, for those that use the current ASCII-encoded fonts [16].



MUNDARI SAMAJ SANWAR JAMDA

ଓଡ଼ିଆ ଲେଖଣି ଓ ପ୍ରକାଶନ କେନ୍ଦ୍ର

Regd. No. 3164/643-1975
Date 06/12/1975 At PO-Poda Astia, Baripada, Odisha.
Phone: 91-9437841247/ 91-7064683929, Email: mss.jamda@gmail.com / birlal.77@gmail.com

L.No. 3/2021 Dt. 18/01/2021

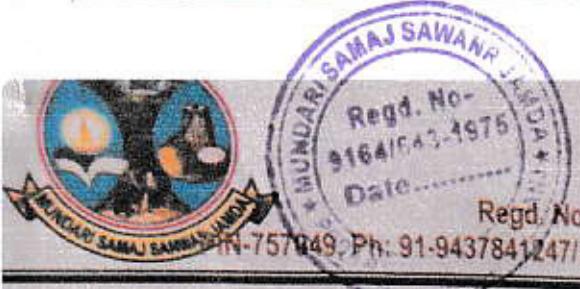
To
Dr Deborah Anderson, Unicode Technical Director,
Unicode Technical Committee
USA

From
Nandalal Singh, President, Mundari Samaj Sanwar Jamda
And
Birbal Singh, Secretary, Mundari Samaj Sanwar Jamda

Dear Dr. Deborah and other members of Unicode Committee
Ref. Mundan Bani Unicode L2/L2021/21031

We, on behalf of Mundari Samaj Sanwar Jamda Organisation, would like to thank you and your team for extending continuous support for Mundari language and its script, the Mundari Bani. For favour of your information I would like to mention here that MSS Jamda Social organization is working in Odisha State for the Munda tribe focusing on the preservation and development of Mundari language, cultural values and education that can make people discover their potential for action and change since the year 1976-77. Today in this point of time we see many languages die out gradually as successive generations of speakers become bilingual and then begin to lose proficiency in their traditional languages. We experience that the Mundari speakers seek to learn more-prestigious language in order to gain social and economic advantages or to avoid discrimination. Mundari is categorized as a vulnerable language. For the preservation of Mundari language though a good number of books has been written in English, Hindi and other regional scripts, but there is a problem of accurate pronunciation of Mundari and that is leading to poor acceptance of these literary works by the Mundari speakers.

Necessity of a script for the preservation and development of Mundari language was deeply felt by Rohidas Singh Nag who worked about 30 years on it and invented the Mundari bani (script). During 1960s he along with some like-minded social workers formed this organisation, Mundari Samaj Sanwar Jamda. Since then this organization is running dedicatedly to give shape of its aim and objectives. The Mundari bani has gone through several verifications and simplified to its



MUNDARI SAMAJ SANWAR JAMDA

ଓଡ଼ିଆ ପ୍ରକାଶ ପାତା ମାଟେ

Regd. No: 9164/643 - 1975-76 Dt. 06/12/1975, At/PO-Poda Astia, Baripada, Odisha
IN-757949, Ph: 91-9437841247 / 91-7064683929, Email: mss.jamda@gmail.com/ birbal.77@rediffmail.com

optimum level. This script was accepted not only by Mundari Samaj Sanwar Jamda and Bharat Munda Samaj (a National level organisation) but also by other local organizations and scholars. Later Baidyanath Singh developed software for computerized use of Mundari bani. The software is easily installable in any computer and laptop. The software was widely distributed which led to wide use of the script. After this a number of books in Mundari bani have been published. More than 65 schools are running where students learn Mundari bani. A board namely, Central Board of Mundari Education is formed which controls the Mundari education in Mundari bani in India. As this script full filled all aspects of the language it is popularised among the Mundari speaking people. Because of this script we see a ray of hope not only to keep Mundari language alive but also for its development. All possible ways for the development of Mundari language with its script is being adopted.

Fortunately the state governments of Odisha and Jharkhand states have extended support considering our demand for inclusion of Muindari in Eighth schedule of Indian Constitution. Both the state governments have sent proposals to the Central government to include Mundari in the Eighth Schedule of Indian Constitution.

Munda community is struggling for survival of its language and script in such a point of time we request you to consider our Proposal to Encode the Mundari Bani Script in the Universal Character Set.

It is our humble Request to you and your team to release Mundari Bani Unicode set in **version 14.0** at an early date. Your support will definitely influence that sustains our mission and makes all the difference.

Sincerely yours, **President**
Mundari Samaj Sanwar Jamda
Poda Astia, Mayurbhanj
Nandalal Singh
(Nandalal Singh)
President
Mundari Samaj Sanwar Jamda

(*Birbal Singh*)
Secretary
Mundari Samaj Sanwar Jamda



ਗੁਰਿਆ ਸਾਵਨ ਜਮੀਤ ਪੰਜਾਬ ਮੋਹਾਲੀ ਪਟਿਆਲਾ ਪੰਜਾਬ ਅਤੇ ਲੁਧਿਆਣਾ ਪੰਜਾਬ ਵਿਖੇ ਦੇਸ਼ ਦੀ ਸੁਧਾਰ ਦੀ ਯਤਨ ਕਰਨ ਵਾਲੇ ਸਾਂਝੇ ਸੱਭਾਵ ਵਿੱਚ ਕੰਪਨੀ ਦਾ ਗੁਰੂ ਰਾਮਦਾਨ ਸਾਹਿਬ ਦੀ ਸੰਭਾਵਨਾਵਾਂ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

ਇਹ ਸੱਭਾਵ ਪੰਜਾਬ ਵਿੱਚ ਸਾਡਾ ਅਤੇ ਬੇਚੀਦਾ ਪ੍ਰਕਾਰ ਹੈ ਜਿਸ ਵਿੱਚ ਬੋਲੀ ਅਤੇ ਲਿਖੀ ਵਿੱਚ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਅੰਦਰੋਂ ਉਤੇ ਆਪਣੀ ਜੋ ਸੱਭਾਵ ਹੈ ਵੱਡਾ ਵੱਡਾ ਪ੍ਰਤਿ ਪੈਂਦਾ ਹੈ। ਜੇ ਕਿ ਸੱਭਾਵ ਵਿੱਚ ਦੇਸ਼ ਦੀ ਸੁਧਾਰ ਦੀ ਯਤਨ ਕਰਨ ਵਾਲੇ ਸਾਂਝੇ ਸੱਭਾਵ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

ਇਸ ਸੱਭਾਵ ਵਿੱਚ ਸਾਡਾ ਅਤੇ ਬੇਚੀਦਾ ਪ੍ਰਕਾਰ ਹੈ ਜਿਸ ਵਿੱਚ ਬੋਲੀ ਅਤੇ ਲਿਖੀ ਵਿੱਚ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਅੰਦਰੋਂ ਉਤੇ ਆਪਣੀ ਜੋ ਸੱਭਾਵ ਹੈ ਵੱਡਾ ਵੱਡਾ ਪ੍ਰਤਿ ਪੈਂਦਾ ਹੈ। ਜੇ ਕਿ ਸੱਭਾਵ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

ਇਹ ਸੱਭਾਵ ਪੰਜਾਬ ਵਿੱਚ ਸਾਡਾ ਅਤੇ ਬੇਚੀਦਾ ਪ੍ਰਕਾਰ ਹੈ ਜਿਸ ਵਿੱਚ ਬੋਲੀ ਅਤੇ ਲਿਖੀ ਵਿੱਚ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਅੰਦਰੋਂ ਉਤੇ ਆਪਣੀ ਜੋ ਸੱਭਾਵ ਹੈ ਵੱਡਾ ਵੱਡਾ ਪ੍ਰਤਿ ਪੈਂਦਾ ਹੈ। ਜੇ ਕਿ ਸੱਭਾਵ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

President
V.Nandlal Singh
Poddar Astha Mayurbhanj
V.Nandlal Singh

ਗੁਰੂ ਰਾਮਦਾਨ ਸਾਹਿਬ ਦੀ ਸੰਭਾਵਨਾਵਾਂ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ। ਜੇ ਕਿ ਸੱਭਾਵ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

ਅੰਤ ਦੀ ਸੱਭਾਵ ਵਿੱਚ ਲਿਖੇ ਗਏ ਸੇਵਾ ਕੰਪਨੀ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਗਈ ਹੈ।

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 Nag Mundari Script in the Universal Character Set**
2. Requester's name: **Lawrence Wolf-Sonkin (lawrencewolfsonkin@gmail.com) and Biswajit Mandal (biswajitmandal.bm90@gmail.com)**
3. Requester type (Member body/Liaison/Individual contribution): **Individual Contribution**
4. Submission date: **2021-04-23**
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):
Proposed name of script: **Nag Mundari** **Yes**
 - b. The proposal is for addition of character(s) to an existing block:
Name of the existing block:

2. Number of characters in proposal: **42**

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

A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>	

4. Is a repertoire including character names provided?

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

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.

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)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	<input checked="" type="checkbox"/> 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.)?	<input checked="" type="checkbox"/> Yes
If YES, with whom?	<i>Mundari Samaj Sanwar Jamda and Bharat Munda Samaj</i>
If YES, available relevant documents:	
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	<input checked="" type="checkbox"/> Yes
Reference:	<i>This document</i>
4. The context of use for the proposed characters (type of use; common or rare)	<i>Mild, and developing</i>
Reference:	
5. Are the proposed characters in current use by the user community?	<input checked="" type="checkbox"/> Yes
If YES, where? Reference:	<i>The Indian states of Jharkhand, Orissa, and West Bengal</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	<input checked="" type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes
If YES, is a rationale for its inclusion provided?	<input checked="" type="checkbox"/> Yes
If YES, reference:	<i>This document</i>
11. Does the proposal include use of combining characters and/or use of composite sequences?	<input checked="" type="checkbox"/> Yes
If YES, is a rationale for such use provided?	<input checked="" type="checkbox"/> Yes
If YES, reference:	<i>This document</i>
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	<input checked="" type="checkbox"/> No
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	<input checked="" type="checkbox"/> No
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility characters?	<input checked="" type="checkbox"/> No
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	