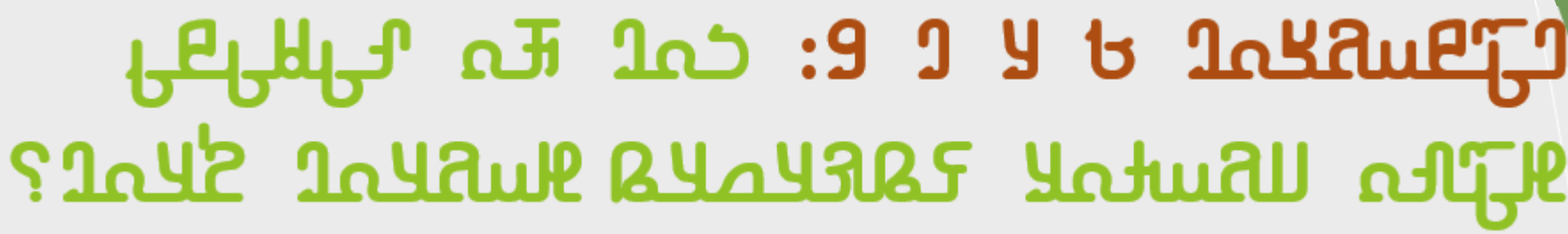


Implementing ADLaM: What Happens After Unicode Adds the Script?

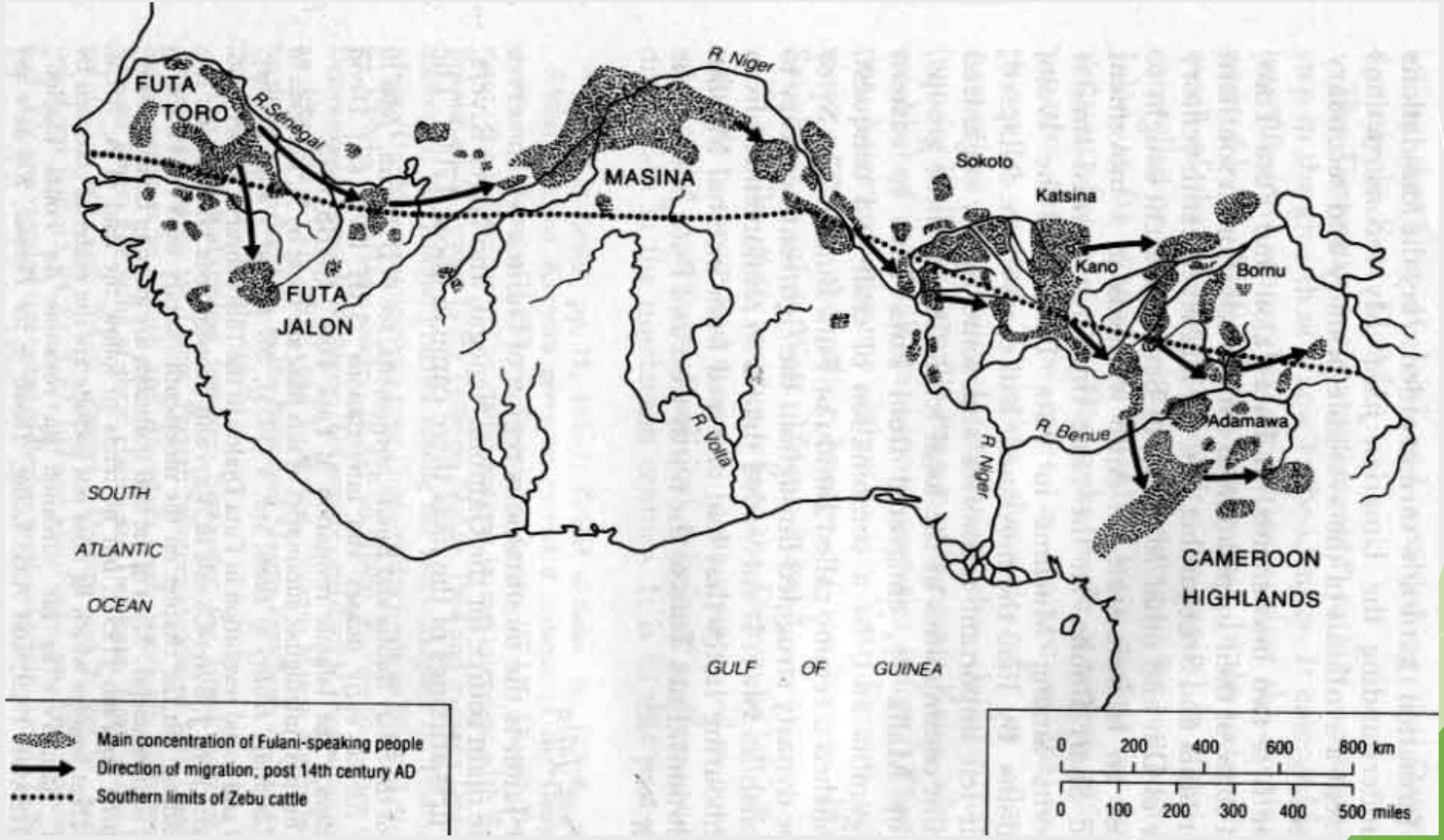
Presented by: Abdoulaye Barry, Ibrahima Barry - Winden Jangen Organization

Craig Cornelius - Google

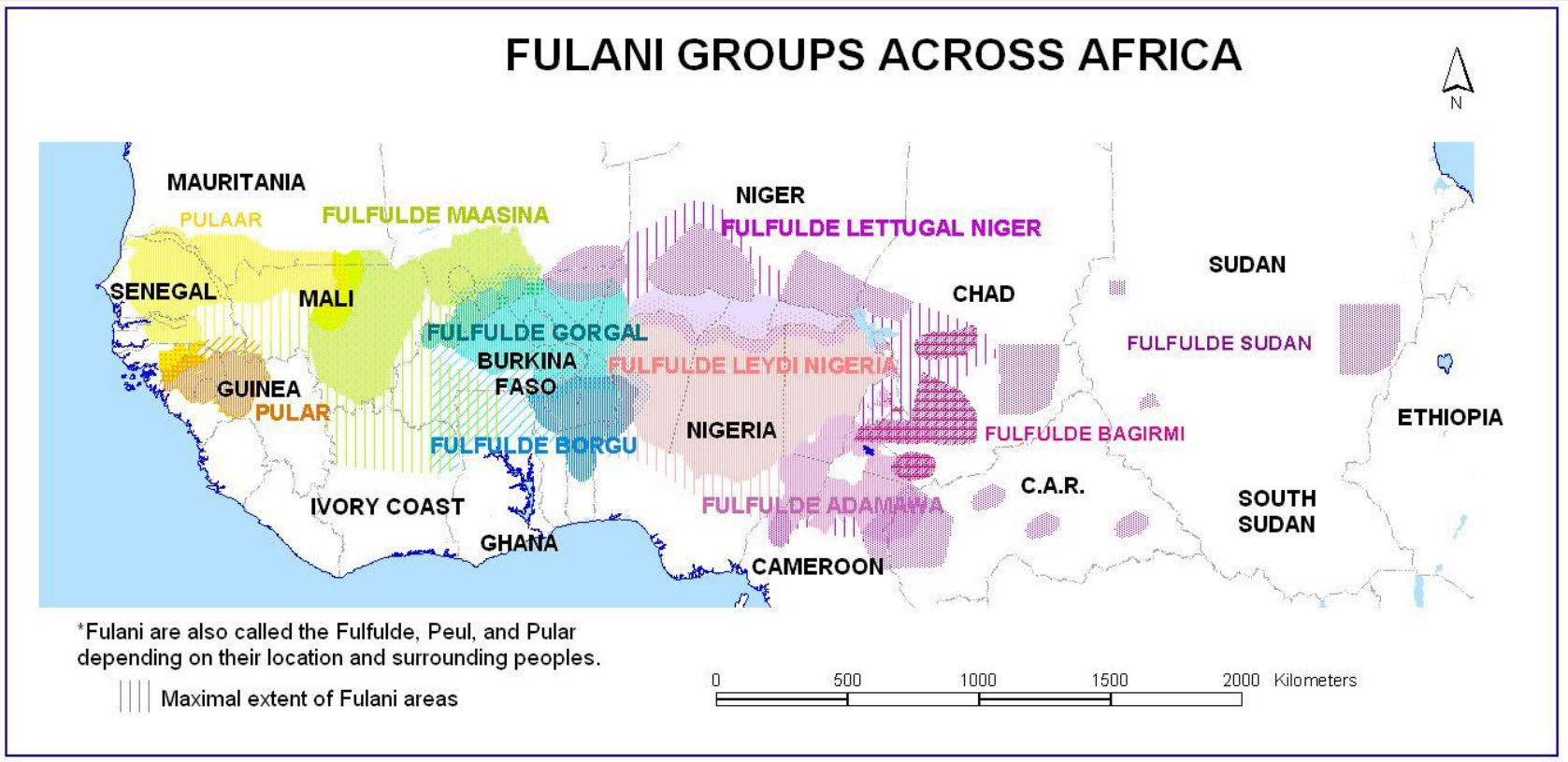
FULANI - PULLO/FULBHE: The People

- One of the largest ethnic groups and numbering more than 50 millions
- From the Senegal river delta on the Atlantic coast to the banks of the Nile River in Sudan
- Present in 23 countries and in many large cities in Africa and around the world
- Called Fulani, Fula, Peulh, Fulbhe, Fellata, etc
  - FULANI by English speakers, a word borrowed from the Hausa language in Nigeria
  - PEULH by French speakers who borrowed it from the Wolof in Senegal
  - They refer to themselves as PULLO in Singular and FULBHE in the plural form
- They include other subgroups: Wodaabhe, Bororo, Wassulu, Khasonke, Kurte, etc
- They are historically a nomadic people known primarily for cattle herding
- They created many kingdoms in Africa

FULANI REGIONS



FULFULDE/PULAAR: The Language

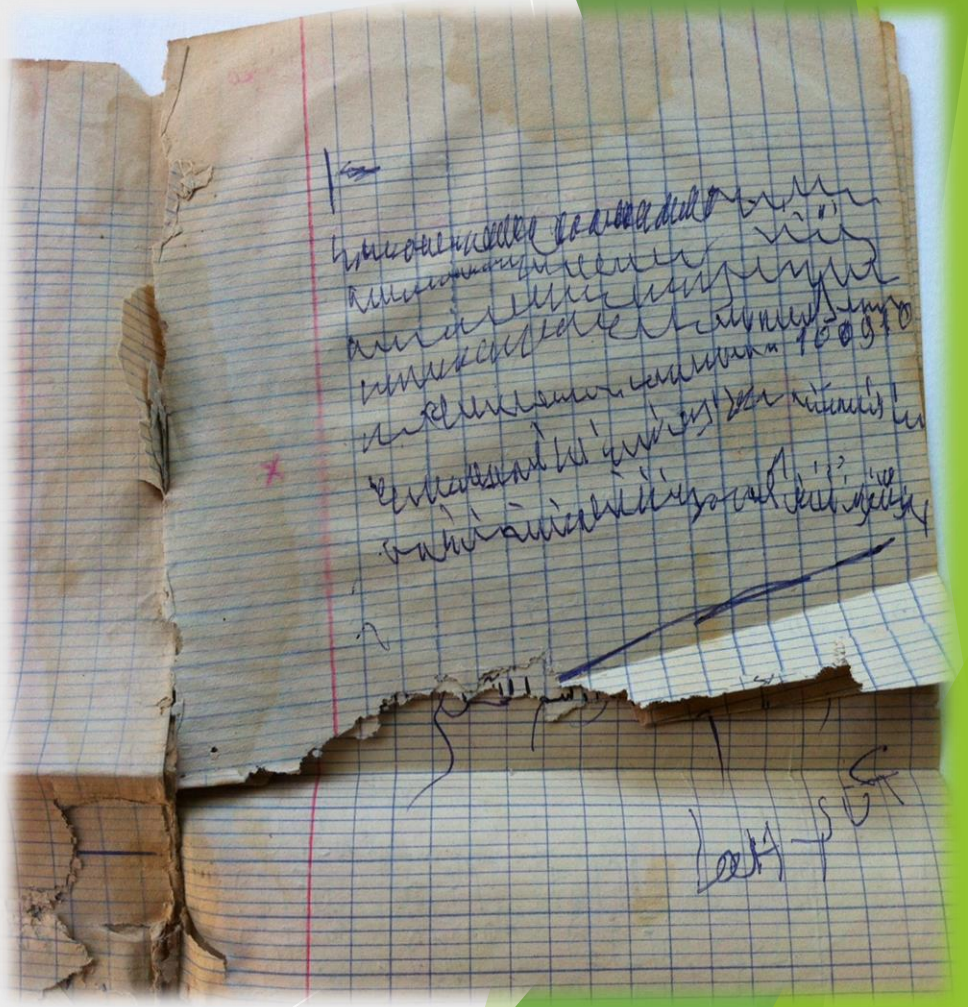


FULFULDE/PULAAR: The Language

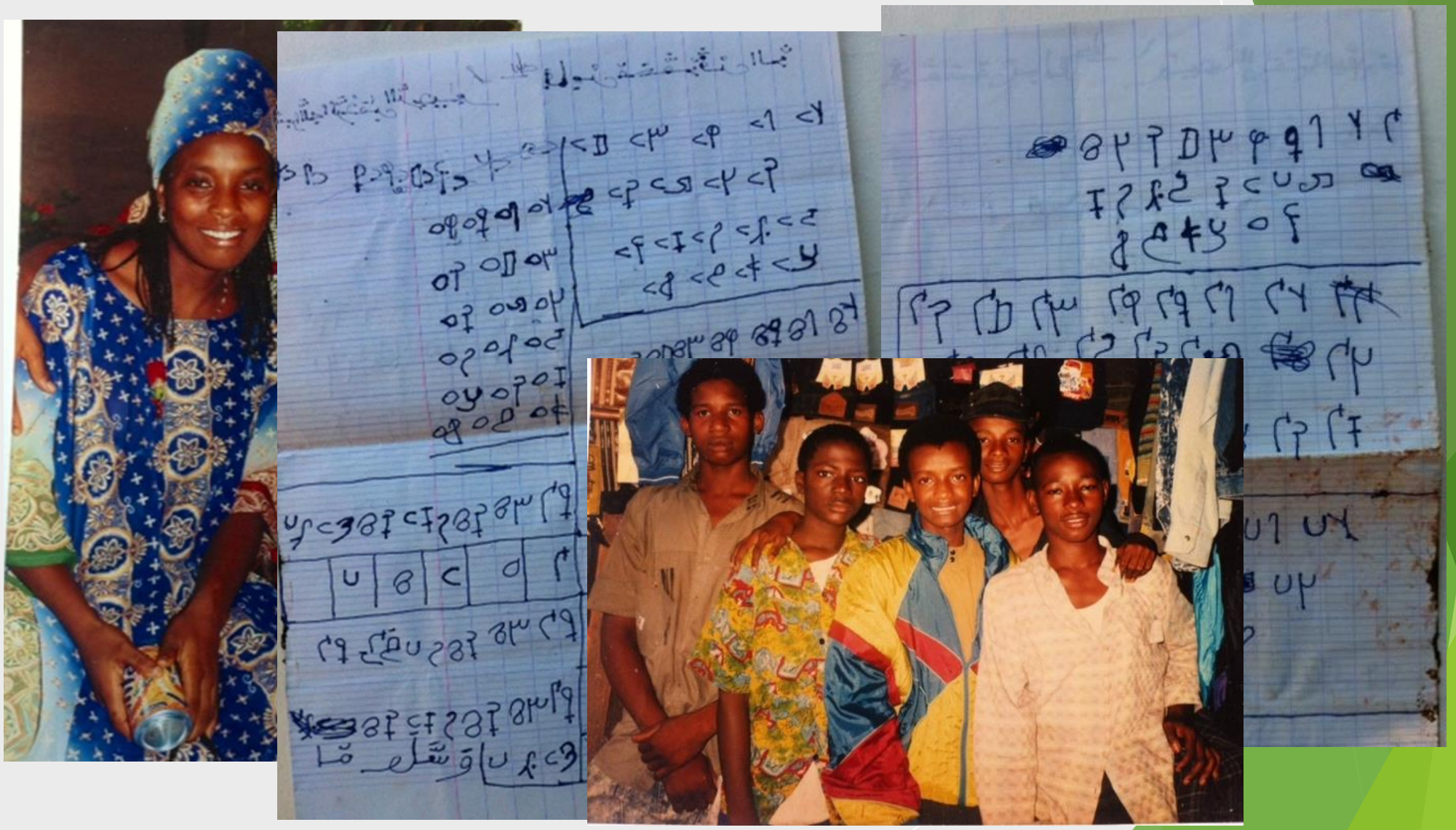
- Belong to the North Atlantic branch of the Niger Congo Family of languages
- Known as Pular or Pulaar in countries West of Mali and Fulfulde on the East
- Spoken in at least two dozen countries and is recognized as a national language in many of them including: Guinea, Senegal, Mauritania, Burkina Faso, Mali, Cameroon, etc.
- It is one of the recognized languages of the **African Union** and the **ECOWAS**
- Originally written using the Arabic alphabet (Ajami) without standardization: there are many manuscripts in Guinea, Senegal, Nigeria, Mali
- Latin Alphabet has been used but in different forms since 1970's
  - In Guinea it was taught during the first regime using a different set of latin characters

THE BEGINNING OF BINDI PULAR

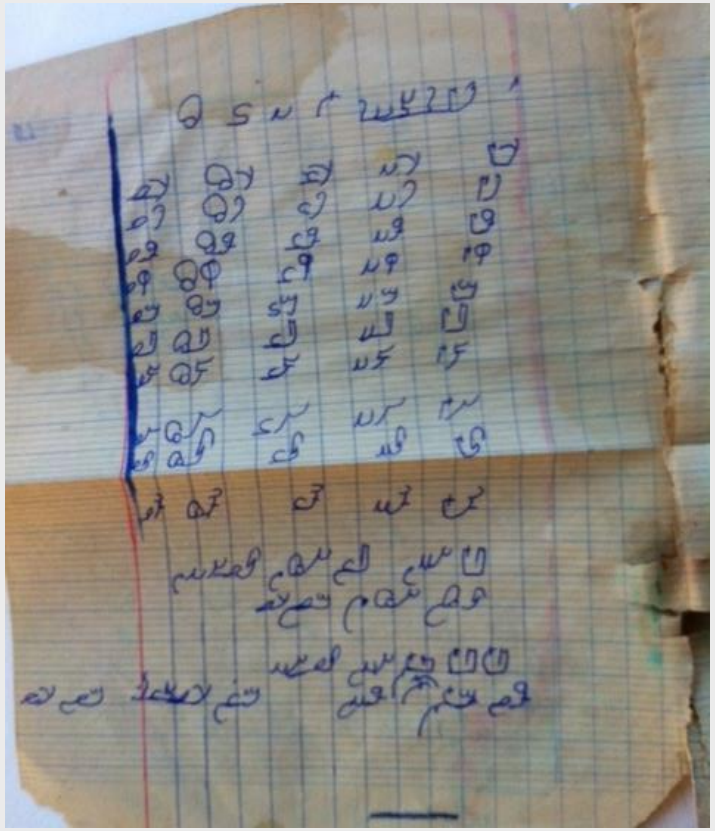
- Existing Alphabets: Ajami and Latin
  - Lack of standardization
  - Lack of enthusiasm
- Idea: Born from challenges with the existing alphabets and the promise
  - To our dad
  - To a friend of the family at our mom's restaurant
- Techniques
  - Randomly drawing
  - Imagining what a letter should look like and drawing it based on that image
- Bindi Pular (Fulani Script) was the name of Alphabet
- Our sister was the first to learn the new alphabet.
- Taught the new alphabet at the local market

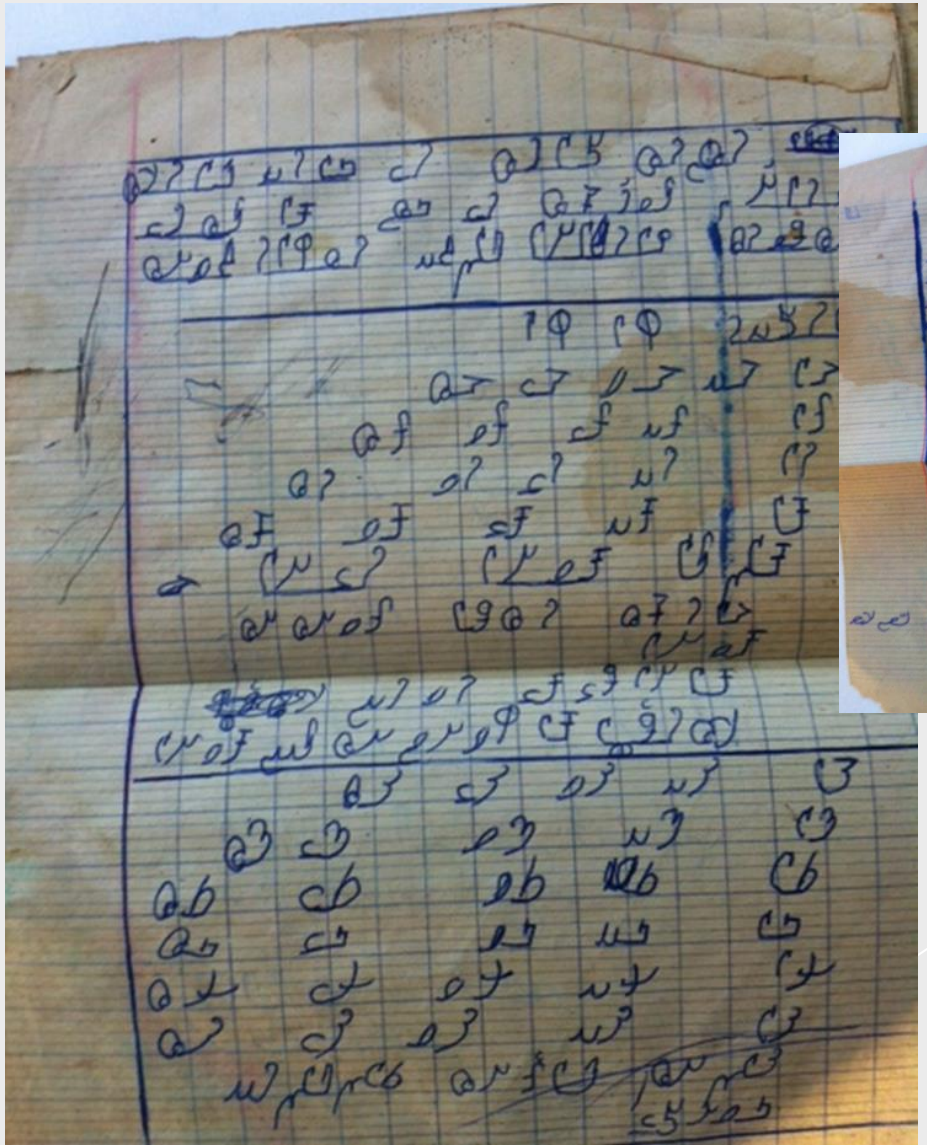


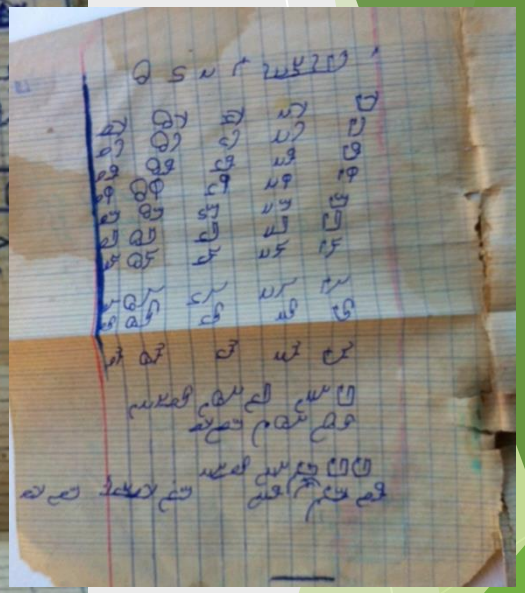
FIRST STUDENT: Aissata



THE 1ST GENERATION (1990-1994) : EARLY MANUSCRIPTS

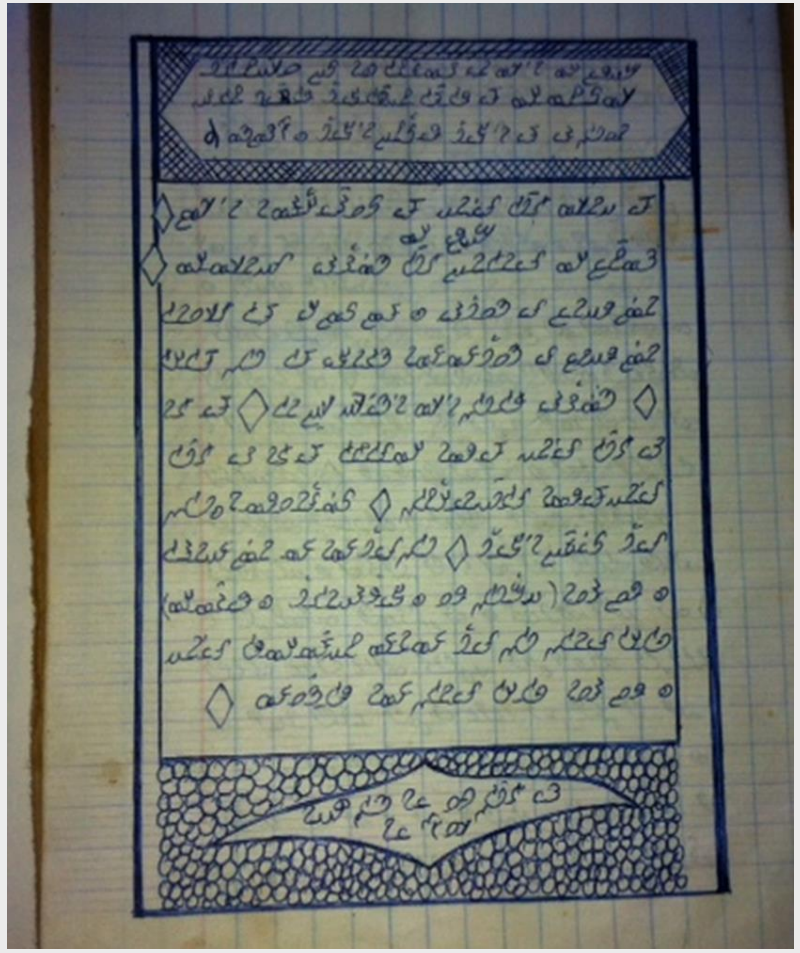


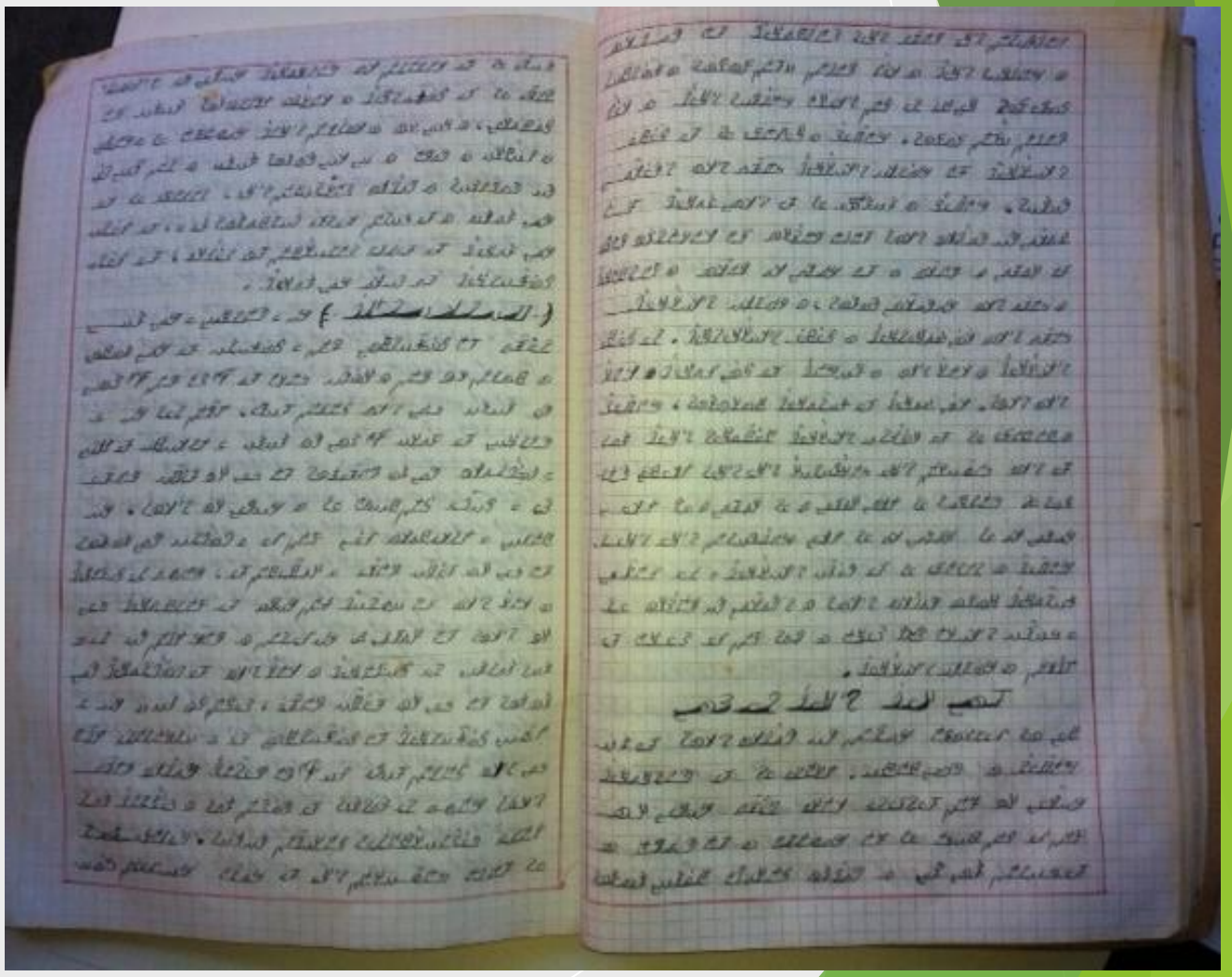




FIRST BOOKS (1990-1994)

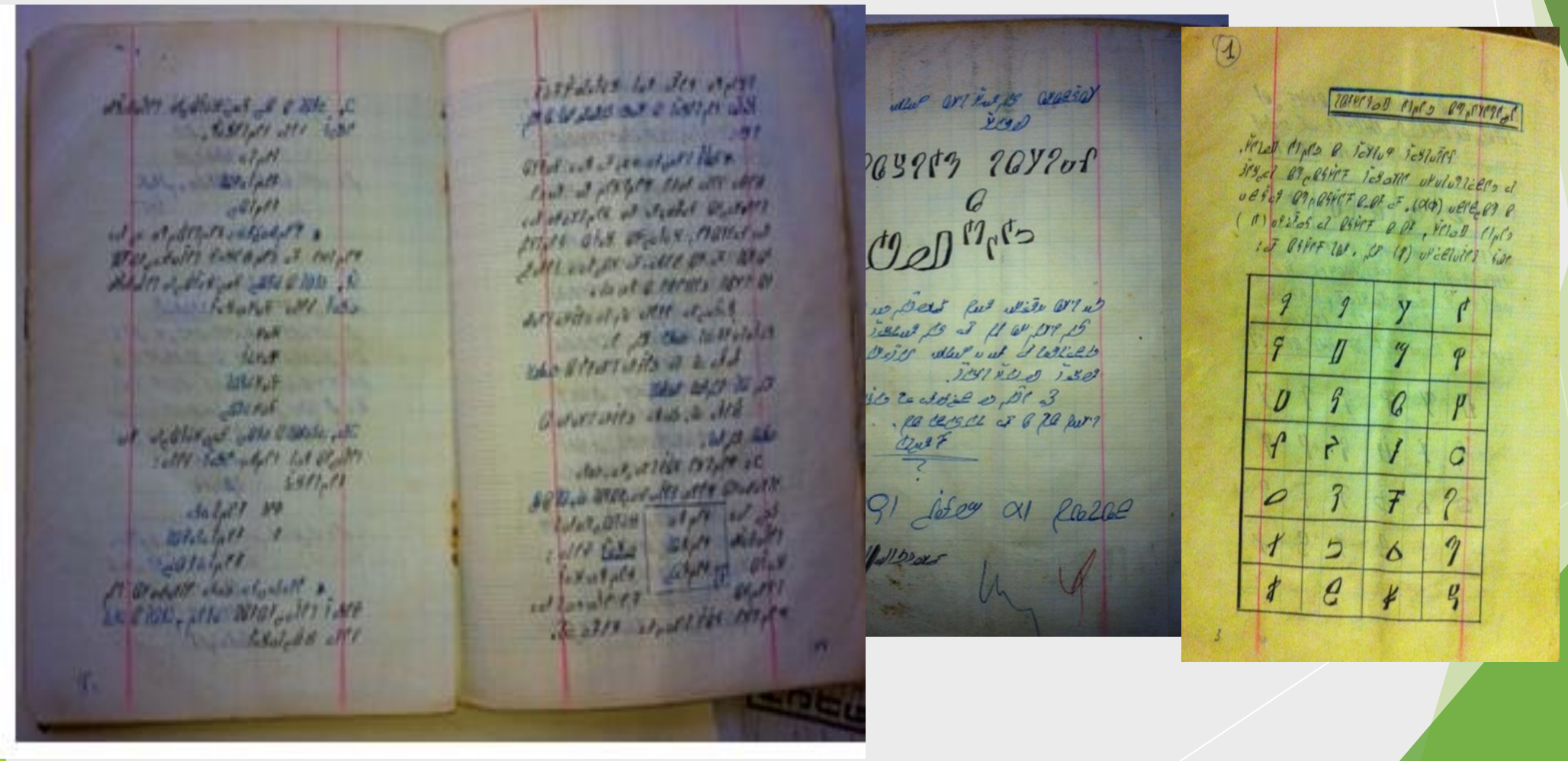
- Main characteristic: joined letters.
- Handwritten



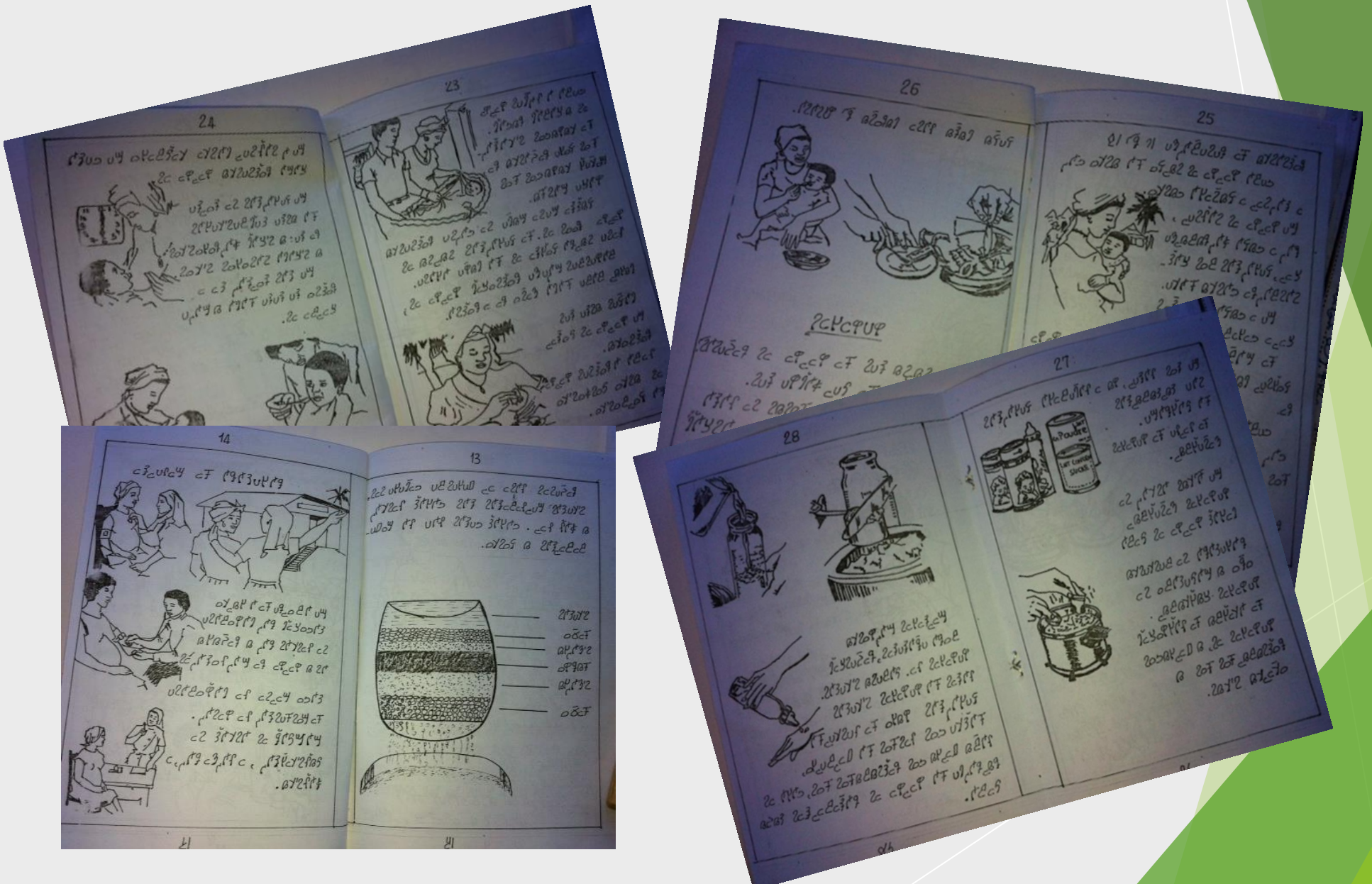


THE 2ND GENERATION (1994-1998)

- Main characteristic: Letters were unjoined
- Easy to learn and to read for new students



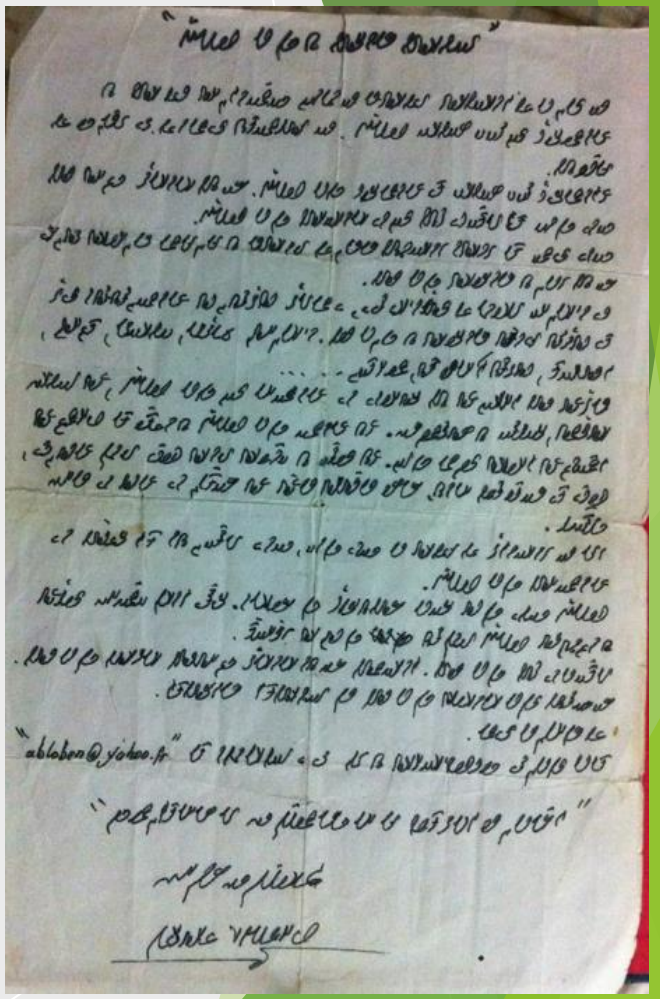
3RD GENERATION: 2000s



EARLY CHALLENGES AND OPPORTUNITIES

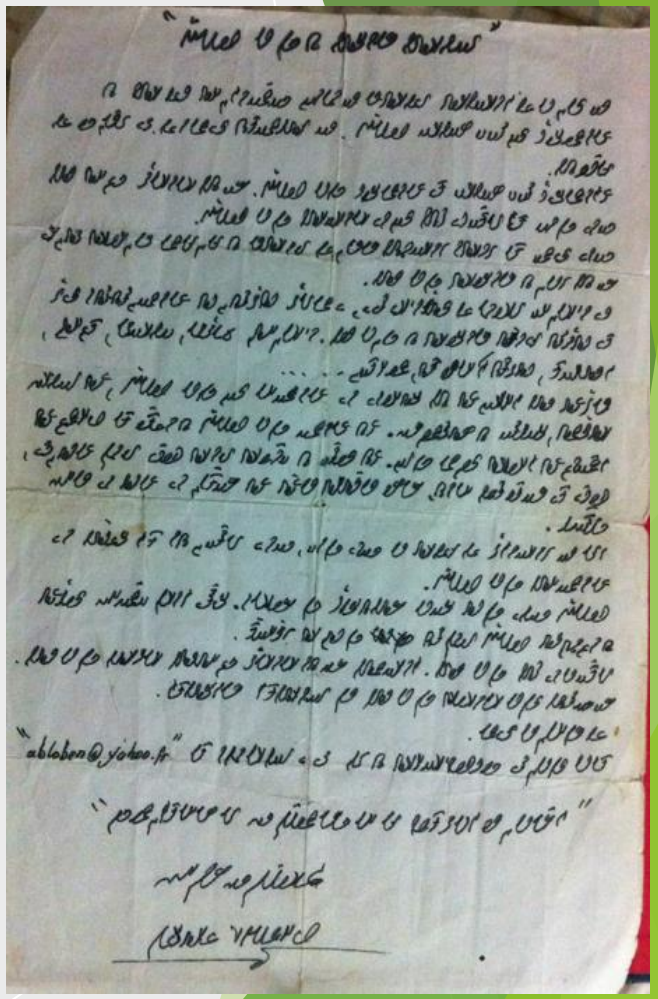
- Challenges: Until 2007, books and learning materials were all written by hands
  - Writing books took more time
  - Multiplying books was a challenge
  - Doubt from users and criticism from others for the lack of computerization
  - Misinformation about its origin and adoption by technology companies
  - Lack of support from the establishment

- BINDI PULAR opportunities
  - High rate of illiteracy in French
  - Attachment to national languages
  - Accuracy in reproducing all the sounds of the Pular language



4TH GENERATION: BINDI PULAR IN COMPUTERS

- March 2007: Ibrahima moved to the US. He spent 3 weeks teaching the ADLaM and informing people about the need to develop a keyboard
- August 2007: Worked with a company in Seattle to create fonts for the alphabet and create a keyboard for it. Three fonts were made
  - Pulaar
  - Fuuta
  - Aissata (in the memory of our late sister who was the first student of the Alphabet)



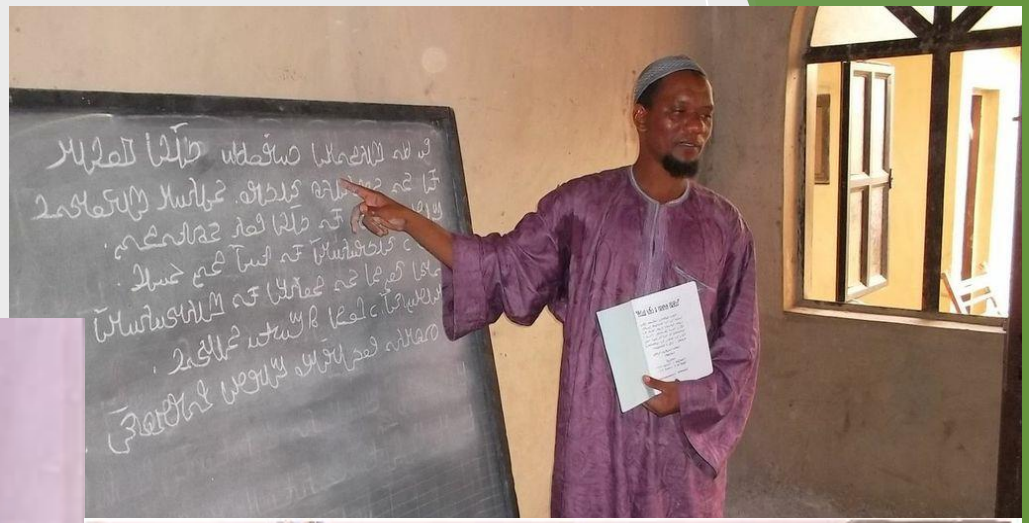
12/23/2008

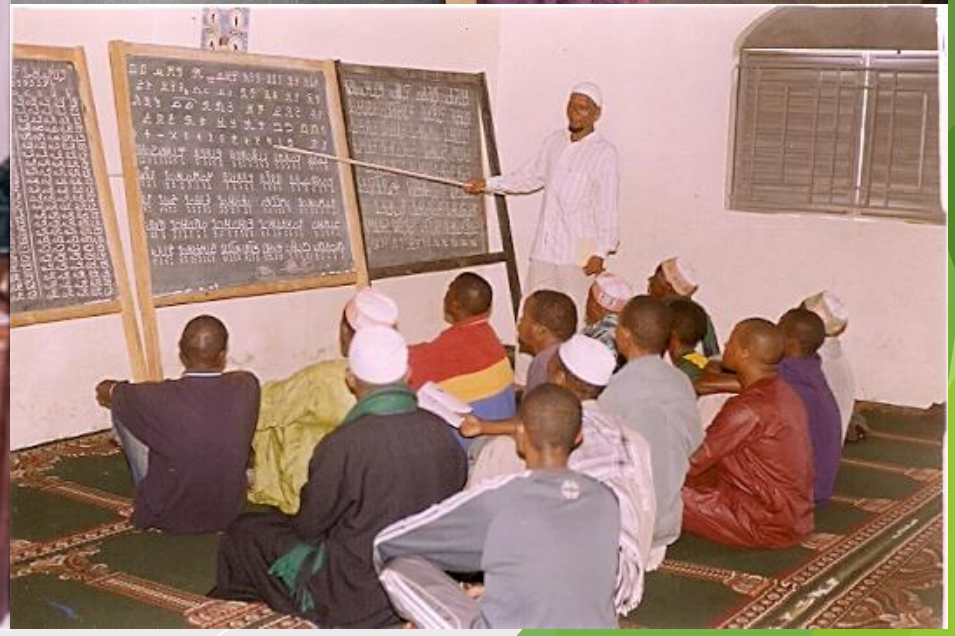
12/23/2008

12/23/2008

SPREADING BINDI PULAR IN AFRICA

- Two trips across West Africa
  - Thierno Boubacar Barry went to 9 countries in 2011
  - Jinde Niasse in 2010, 2015 visited Nigeria, Cameroon

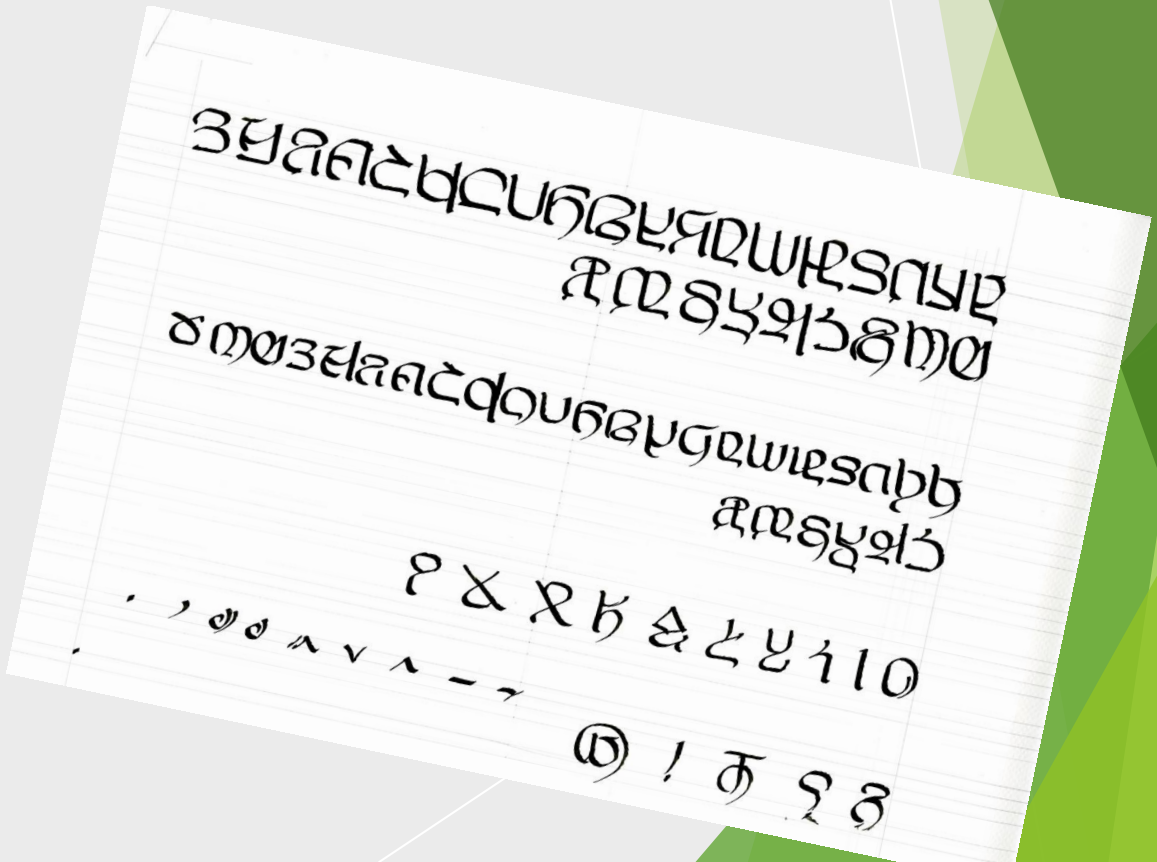




ADLAM IMPACT: Books and Newspapers

THE 5TH GENERATION 2010s: ADLaM, CALLIGRAPHY AND NEW DESIGNS

- 2012: The instructors of the alphabet in Guinea gave a more appropriate name to the writing system: ADALAMA → ADLaM from the first four letters of the Alphabet
- Class with Rebecca (discovering the world of Calligraphy)



ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
ĂÂÊÔƠƯĐăâêôơưđ
0123456789
.,:;?!()&'"-/

Съешь ещё этих мягких французских булок да выпей чаю.

Широкая электрификация южных губерний даст мощный толчок подъёму сельского хозяйства.

Экземпляр № 1, «Бумажный», форматом 60×90/8, печатный лист 12 усл. печ. л., тираж 100 экз., заказ № 1.

ADLaM & THE PATH TO UNICODE

How do we make ADLaM available in computers and other electronic devices?

Unicode

- Long process
- 2004 & 2007: Contacts University of Berkley
- 2012: Contacted SIL and Berkley
- 2013: Calligraphy conference in Colorado Springs, Colorado: Randy Hasson and Stephen Rapp helped reestablish contact with Unicode

PATH TO UNICODE

- September 2013: Met with Michael Everson in Vancouver
- November 2013: Preliminary Proposal was submitted
- May 2014: Meeting in NY
- May 2014: First ADLaM code chart

ADLaM ENCODED

- Unicode Technical Committee Meeting in October 2014
- Started working with MTI for making the ADLaM Noto font
- After the long wait, finally:

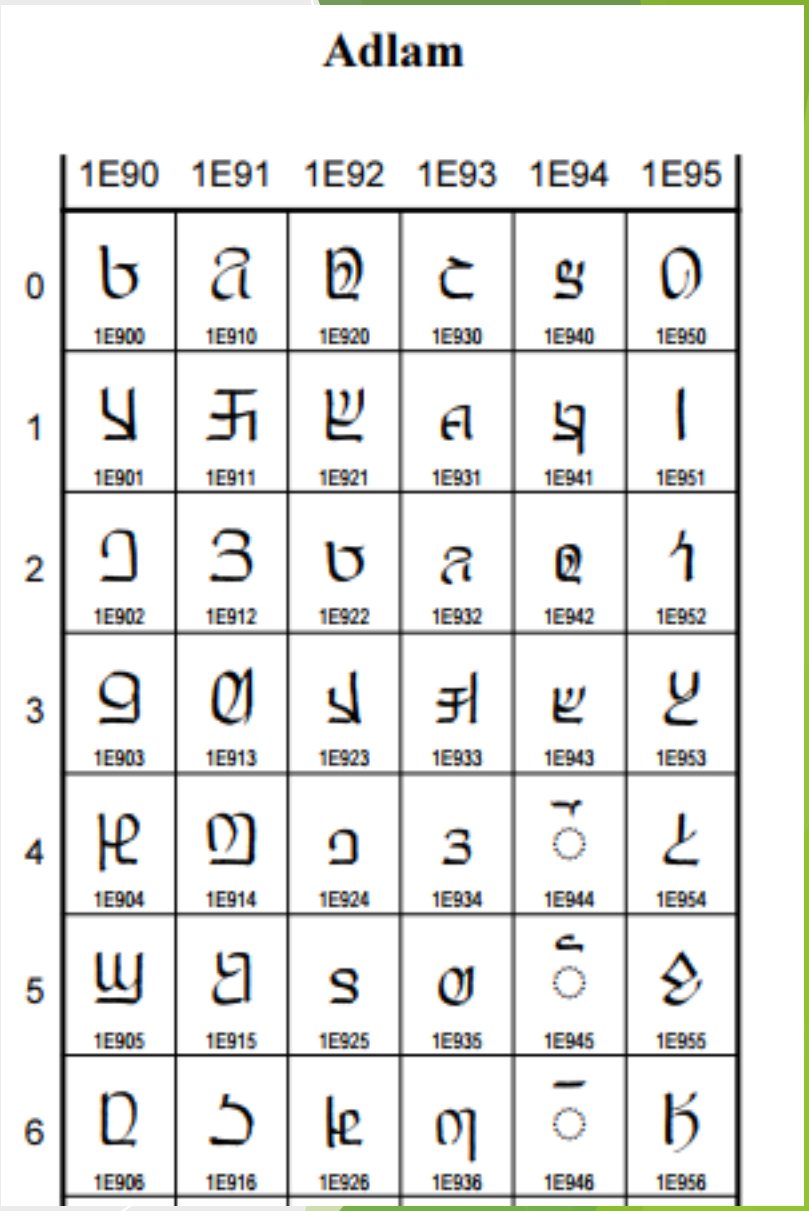
Dear Abdoulaye and Ibramhima,
I am very happy to report that on Friday, 13 May, the Unicode Technical Committee approved the release in June (or possibly early July) of Unicode 9.0, which will include Adlam. Congratulations!
May 16, 2016

Adding Adlam

Unicode is just the start

Adlam Unicode at a glance

- 34 letters + 7 modifiers+ 10 digits + 2 punctuation
- vowels, consonants, modifiers, punctuation
- bicameral: upper and lower case
- right-to-left direction for text
- numbers are RTL - most significant on right
- characters may be joined in rendering



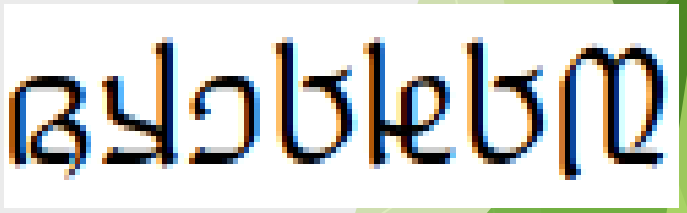
From Unicode to Usable

The following are generally needed for actual use of the language / script:

- Fonts
- Keyboard
- Browser support
- Text support in applications
- Mobile device support

Font challenges

1. Rendering systems: need to know that the script is RTL
2. Display text in “joining” mode
3. New fonts need to be developed
4. Combining characters need to display correctly in all combinations
5. Font should include other characters including punctuation, ASCII, numerals

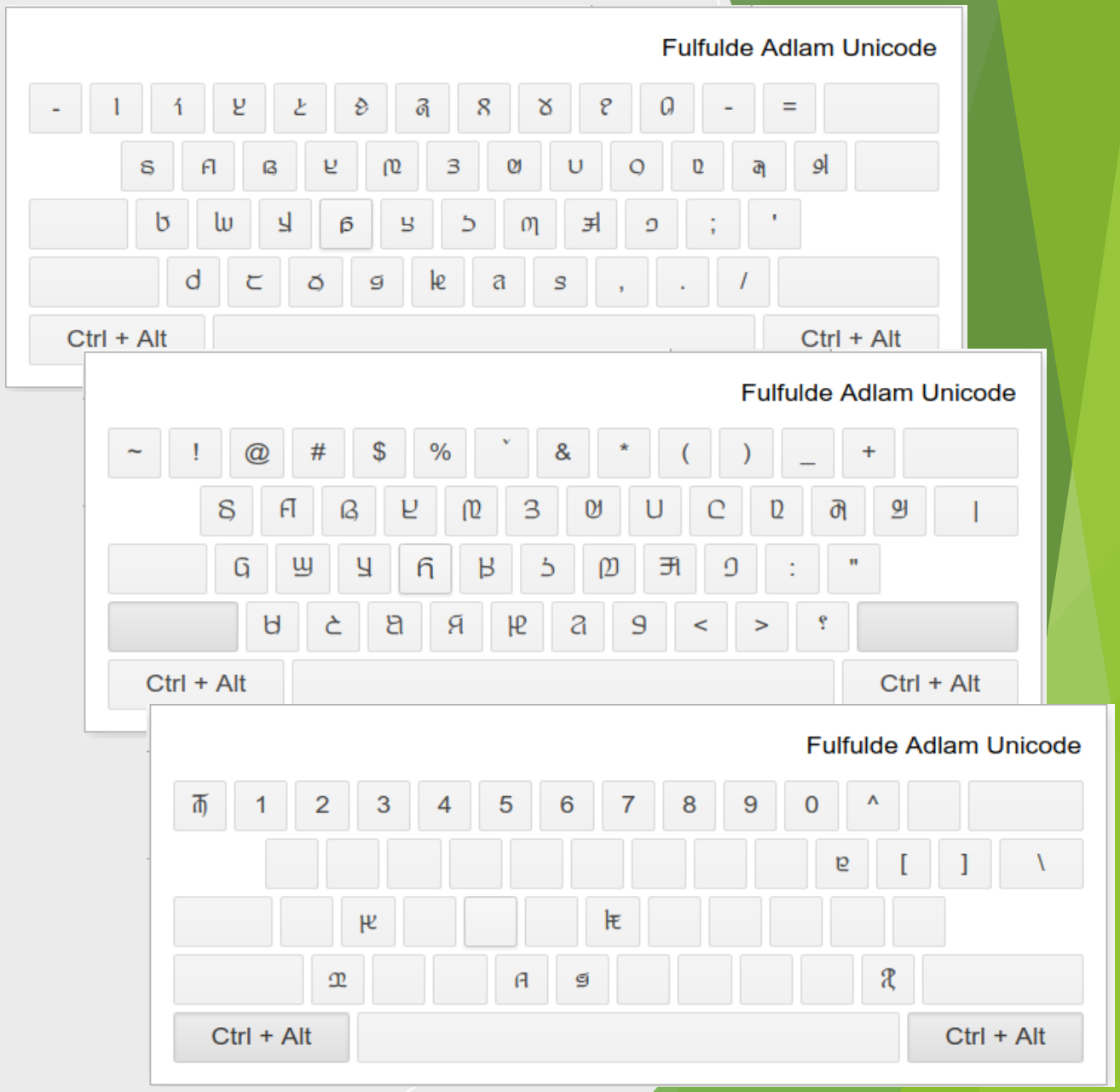


Text processing challenges

1. Displaying / rendering characters in applications
2. Upper and lower case conversions - not implemented on all platforms, e.g., JavaScript
3. Existing text in font encoding form needs conversion
1. Arabic-based text
2. Latin-based
4. Spell check and suggestions?

Keyboards

- Layout of characters:
  - decide what characters where
  - what layers to use
  - alternate alphabet(s)?
- Rules:
  - key combinations
  - short cuts
- Soft keyboards:
  - long press options
  - word lists to display for suggestions



All platforms: desktop, web and mobile devices

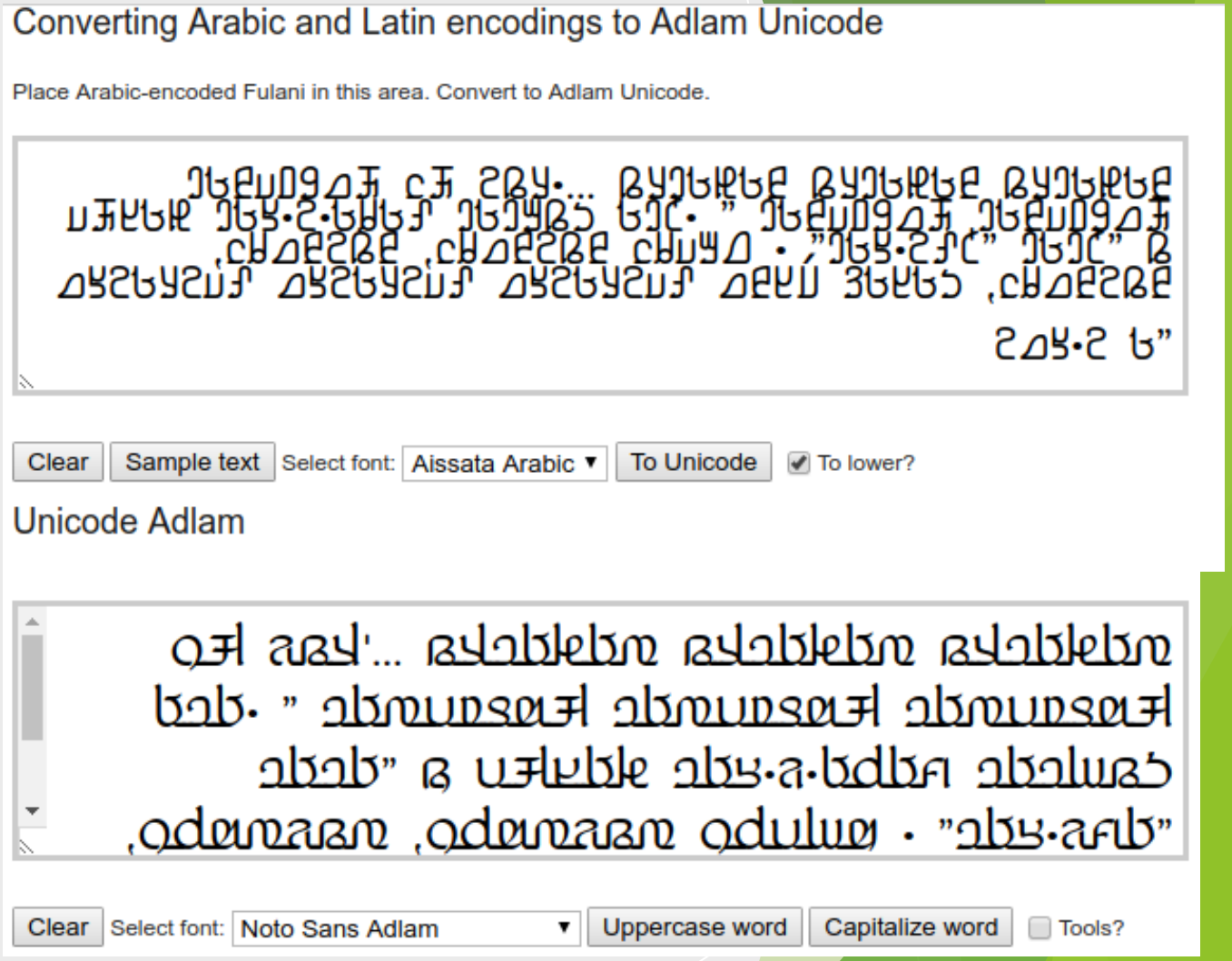
- Support for Unicode characters beyond the BMP
- Older phones and new fonts
  - Can we use Adlam on phones that are not the latest version?
- Keyboards:
  - mobile
  - web
  - desktop
- Apps:
  - text processing
  - example: calculator application
  - Other needs: SMS / Texting

Our testing website: adlamtesting.appspot.com

- Basics:
  - Prototype the keyboard
    - Layout of characters
    - Which keys to include
    - Rules for converting input or shortcuts
  - Check font rendering options
    - Character shape
    - Check interactions with combining and base characters

Advanced features

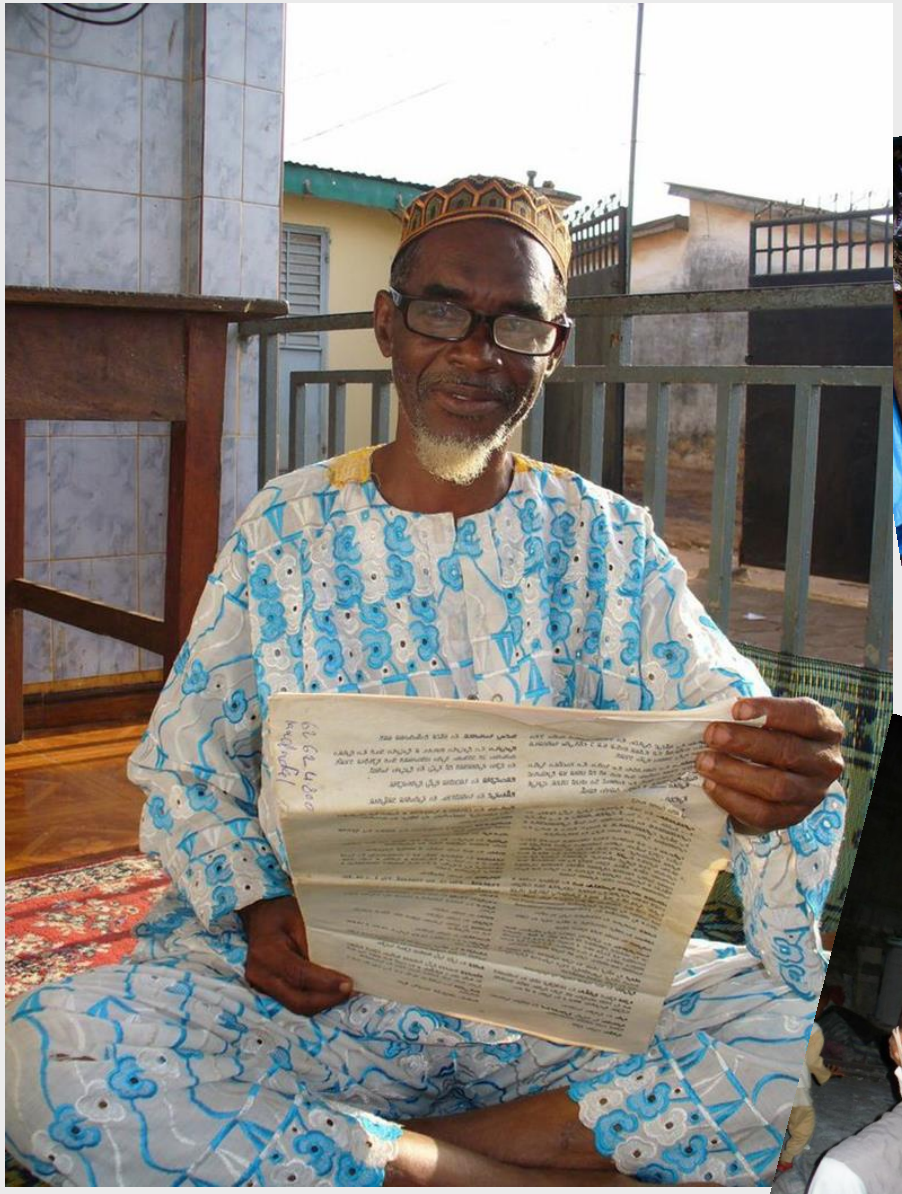
- Debug converting old font encodings to Unicode
- Collect word and phrase lists in Fulani and another languages
- Promote online learning
- Support audio phrases upload and playing

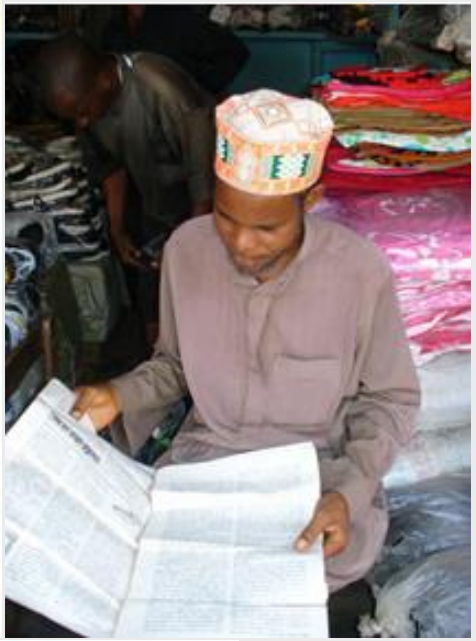


ADLAM'S IMPACT

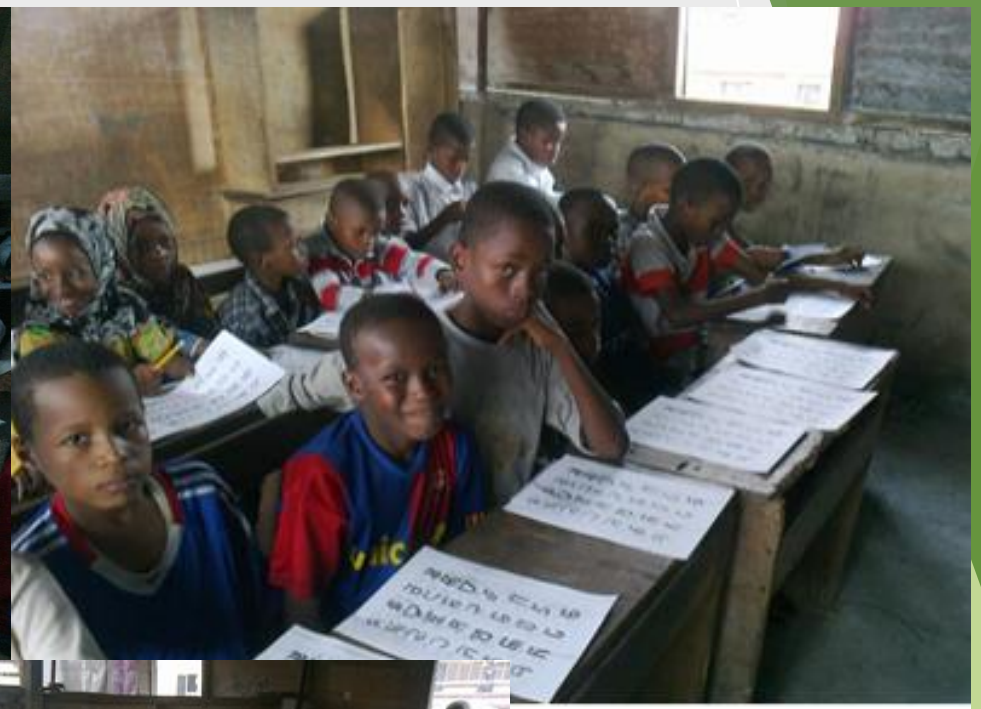
- ADLaM is a great leveler
- Opportunities for women and young girls to get educated
- People who were discounted as illiterates can now read and write and even author books.
- Access to information and to knowledge
- Increase enthusiasm for the language
- Unification of the language: With other writing systems, each group is writing in their own dialect
- More integration between the people

CURRENT STATE OF ADLaM - Guinea





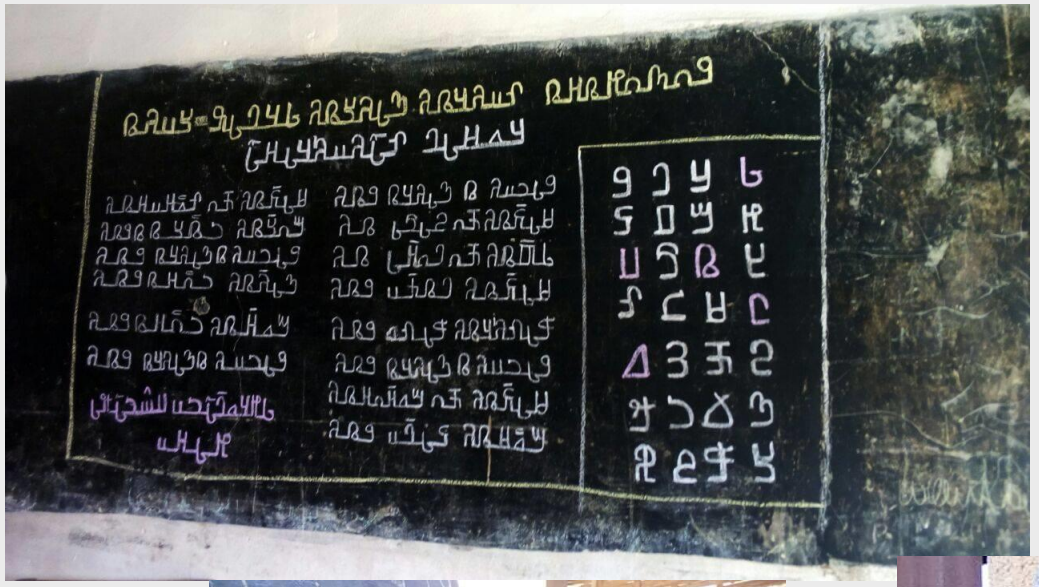
Learning centers in Nigeria & Niger



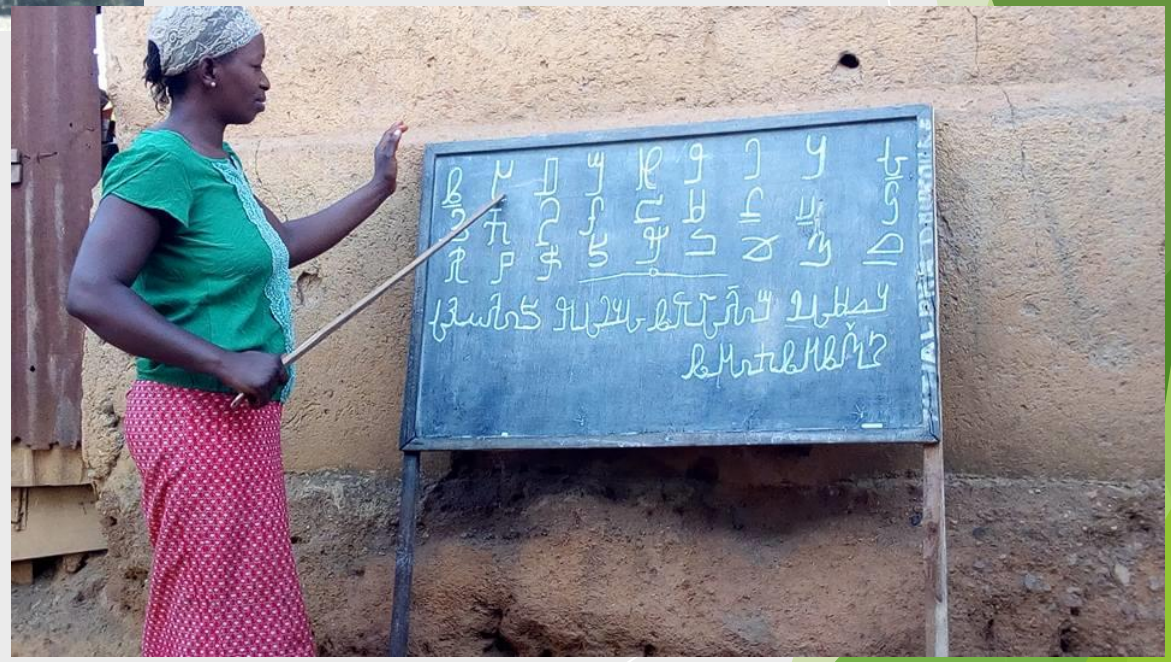
Learning Center in Benin and Togo

Learning Centers in Sierra Leone

Learning Centers in Guinea



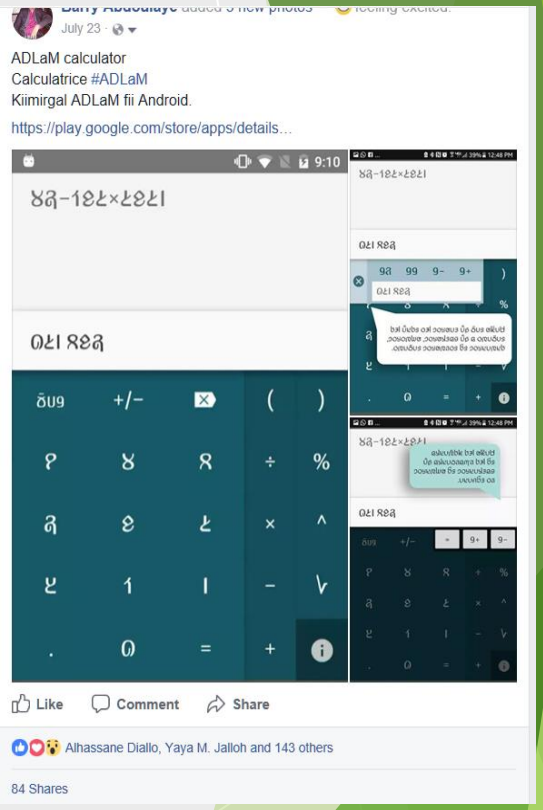
Association Winden Jangen ADLAM-Guinée
Doudhal ADLAM wanindara
Tel: 622-26-23-88/628-75-03-46



ADLaM in CAMEROON

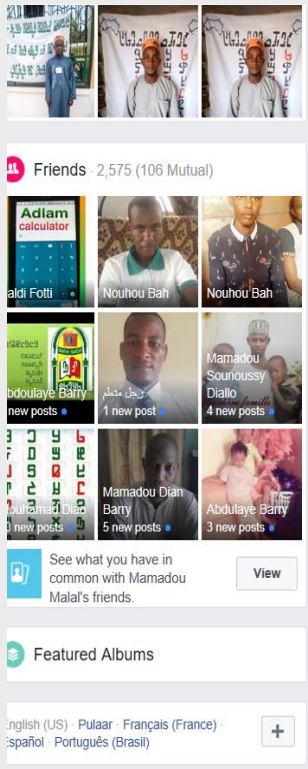
PROJECTS

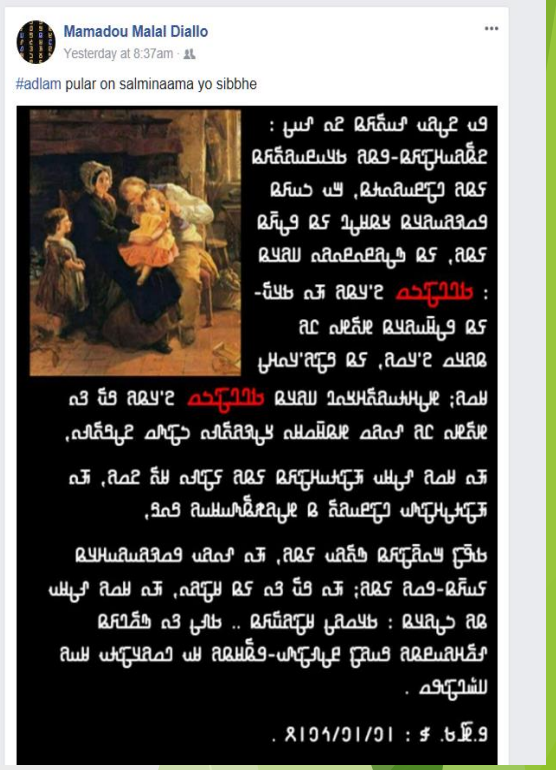
- Fonts for the encoded characters
  - Noto
  - Additional fonts and keyboards
  - Working with Craig Cornelius for online tools
- Addition of ADLaM to all platforms: (Windows, Android, iOS, Facebook, etc.)
- Websites using the new encoded fonts
- Creating an online ADLaM learning platform
- Create applications for learning and communicating
- Annual ADLaM conventions in Guinea and soon in other countries
- ADLaM for other African languages



CHALLENGES

- Technology
  - Smartphones and Computers
  - Fragmentation (Android, Windows, iOS, Facebook, etc.)
  - Direction: RTL Vs LTR
  - Backward Compatibility (Android…)
  - Missing punctuations
- Resources
  - Time
  - Materials and Publications
  - People





ADLaM PROSPECTS

- More than 50 million speakers of the Pular/Fulfulde in Africa and around the world
- Between 100 and 150 million potential speakers in West Africa alone.
- Potential for ADLaM to be used for Hausa in Nigeria.
- Big presence of Fulani on social media.
- Big interest in ADLaM smartphones and other devices
- Many Grassroots movements to support the promotion of ADLaM
- Schools and learning centers opening across West and Central Africa