ISSN 1799-2591 (print); ISSN 2053-0692 (online)
Theory and Practice in Language Studies, Vol. 16, No. 2, pp. 617-628, February 2026
DOI: https://doi.org/10.17507/tpls.1602.27

# Phonological Reconstruction of the Air Matoa Language: A Contribution to the Documentation and Preservation of a Dormant Papuan Language

Wati Kurniawati
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Deni Karsana*
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Ryen Maerina
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Siti Fatinah
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Fairul Zabadi
Research Centre for Language, Literature, and Community, BRIN, Jakarta, Indonesia

Joni Endardi
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Yenni Febtaria Wijayatiningsih
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Aditya Wardhani
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Roveneldo
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

Sumadi
Research Centre for Preservation of Language and Literature, BRIN, Jakarta, Indonesia

***Abstract*—The Air Matoa language, formerly spoken in the Etna Bay region of Kaimana, West Papua, has been classified as extinct since the death of its last speaker in 2017. The extinction represents a significant loss of linguistic diversity and highlights the urgent need to document endangered languages before they disappear. As such, the phonological system of the Air Matoa Language needs to be documented so that it is recorded as a form of linguistic wealth. This study aims to identify and reconstruct the vowels, consonants, and phonotactics of the Air Matoa language based on data collected in 2008 through interviews with the last three native speakers. Using a qualitative approach, which places the researcher as the primary instrument, the study found that not all concepts in the Swadesh list have lexical equivalents in the Air Matoa language due to cultural differences. Overall, ths work identified five vowel phonemes, including: /i/, /u/, /e/, /o/, and /a/, and fifteen consonant phonemes, including: /b/, /d/, /f/, /g/, /j/, /k/, /m/, /n/, /p/, /r/, /s/, /t/, /w/, /y/, and /ŋ/; syllable forms in the Air Matoa language follow the patterns of V, VC, CV, CVC, and CCV. The results of this study are essential for preserving linguistic and cultural heritage, especially for endangered or extinct languages.**

***Index Terms*—Air Matoa language, consonants, extinct language, phonotactic, vowels**

## I. Introduction

The Indonesian archipelago is home to various ethnic groups with distinctive languages and cultures. This diversity forms part of an important cultural heritage that needs to be preserved. However, several languages have been abandoned

* Corresponding Author. Email: deni018@brin.go.id; https://orcid.org/0000-0002-7578-7333

by their native speakers. Specifically, it has been observed that individuals tend to transition to other languages that are regarded as more prestigious or advantageous to their lives. These individuals tend to transition to the dominant language in their home region, which functions as the lingua franca within their community.

Additionally, there is an absence of language inheritance between the older and younger generations. Parents are no longer the primary pedagogues responsible for teaching these languages to their children at home. Overall, these shifts in language use and lack of linguistic preservation can pose serious risks to the survival of a language, even causing languages to become extinct, as in the case of the Air Matoa language.

The process of language extinction is usually characterised by a series of stages that can be observed through the analysis of related data, including the number and age of its speakers (Grimes, 2002). Crystal (2003) argues that the survival of a language does not depend solely on the number of speakers. However, the number of speakers of a language is a key factor in determining its significance and stability, as in the Pacific Islands.

While communities of speakers of specific languages in most parts of Europe are often overlooked due to the relatively large and dominant language groups in the region, languages spoken by as few as 500 individuals in the Pacific Islands are considered both significant and relatively stable (Crystal, 2003). Therefore, in the Pacific Islands, the number of speakers of a language must always be identified in the communities in which they are located.

Wurm (2001) identified five levels of language endangerment versus vitality. (1) The first level, unsafe or potentially endangered, refers to languages spoken by groups of children across all domains or by certain groups of children in specific domains. (2) The second level, endangered, describes languages still in use by younger generations, middle-aged adults, and older adults. (3) In terms of the third level, severely endangered languages are those only spoken by older generations, such as grandparents and great-grandparents. (4) The fourth level, critically endangered or nearly extinct, refers to languages spoken only by a small number of older speakers, typically grandparents and great-grandparents. Finally, the fifth level is extinct, which refers to languages that are no longer spoken and have no remaining speakers.

West Papua is home to a diverse range of ethnic groups, each possessing a distinct cultural heritage and a wide array of languages, traditional practices, and indigenous knowledge systems. As asserted by Sawaki (2018), West Papua is currently facing the threat of cultural asset loss as some of the regional languages spoken in West Papua are endangered. Specifically, it is estimated that at least 5 of the approximately 60 languages spoken in West Papua are at risk of extinction. One of the languages in West Papua, namely Air Matoa, which is spoken by the residents of Air Matoa Village, located in the Etna Bay District, Kaimana Regency, West Papua Province, is also at risk of extinction.

The Air Matoa community was initially located in the mountainous area of Air Matoa Village. In 1976, the residents decided to relocate to Rurumo Village, a coastal settlement, to improve their mobility. Rurumo Village is situated in the Teluk Etna District, as illustrated in Figure 1. The map in Figure 1 illustrates the geographical distribution of the Air Matoa languages as spoken in Rurumo village since 1976. In this new area, Yeresiam became the language of communication over several generations, resulting in the retention of only one remaining speaker of Air Matoa in 2008. The term "dead language" can be used to refer to a language that no longer has any speakers and that is not being passed on to younger generations (Crystal, 2003; Isa et al., 2014; UNESCO Ad Hoc Expert Group, 2003). It is evident from the information provided by the residents of Ruromo Village that the last Air Matoa speaker passed away in 2017. As discussed by Campbell (1994), the demise of linguistic variety is characterised by the gradual replacement of diverse languages by the more prevalent language in the area through linguistic contact. The Air Matoa is clearly extinct. Collins (2022) suggested that in the post-colonial period, the phenomenon of language extinction continued and even increased as a result of socioeconomic factors. The phenomenon of linguistic shift, as well as that of linguistic extinction, carries with it implications for all languages.

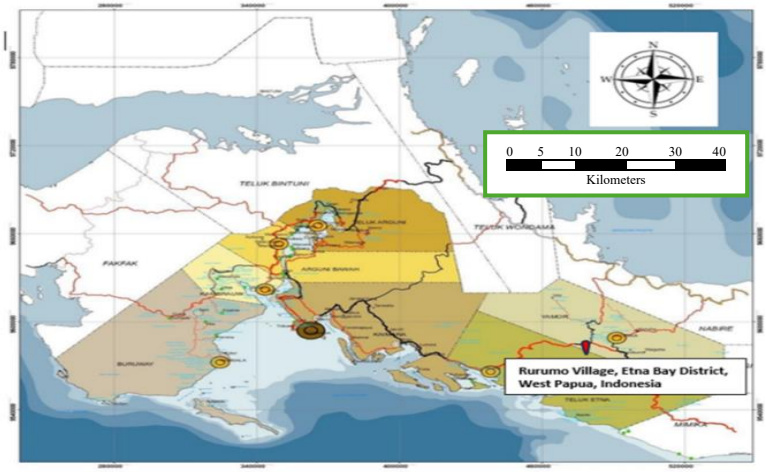


Figure 1. Map of the Distribution of the Air Matoa Language Previously Spoken in Rurumo Village (Etna Bay District, Kaimana Regency, West Papua), https://kaimanakab.go.id/kondisi-geografis

To ensure the sustainability of a language, it is crucial to document it before it becomes extinct. One way to preserve and promote the Air Matoa language is to document existing linguistic data. Linguistic documentation of extinct languages involves recording and analysing various aspects of the language, such as its phonetics, phonology, morphology, syntax, semantics, and pragmatics. This comprehensive approach ensures that the sound system, grammatical structure, meaning, and contextual use of a language are fully captured. However, due to the limited data available on the Air Matoa language, analyses can only be conducted on its lexicon and phonology. The objective of this study was to support the sustainability and preservation of the Air Matoa language through a language study based on the Swadesh basic vocabulary lexicon. Furthermore, the study identified the vowels and consonants of Air Matoa, as well as their distribution.

The result of this study have several importance outcomes, as follows: understanding the vocabulary and phonology of the Air Matoa language that has been lost; providing support to the Kaimana Regency Government in drafting and implementing regional regulations to protect, develop, and empower traditions, cultural values, and language; encouraging the Air Matoa ethnic community, which is now part of the Yeresiam ethnic group, to be proud to use the Yeresiam language, to continue to use it in society, and to promote the inheritance of the Yeresiam language to future generations; and supporting the teaching of the Air Matoa language at the elementary and junior high school levels. Overall, the purpose of this study is to protect and save the language from extinction.

## II. Literature Review

Fautngil (2013) stated that the Ai'aowe variety of the Kamoro language has more vowels than consonants, including 10 vowels (/i/, /ii/, /e/, /ee/, /a/, /aa/, /u/, /uu/, /o/, /oo/) and eight consonants (/p/, /m/, /t/, /n/, /r/, /w/, /y/, /ʔ/). The distribution of Mor language phonemes was discussed by Iribaram (2017). The people of the Moora Islands District, Nabire Regency, speak the Mor language. The results of their study indicated that Mor comprises 23 segmental phonemes, including 16 consonants and seven vowels. These phonemes are as follows: /p/, /b/, /t/, /d/, /k/, /g/, /j/, /m/, /n/, /s/, /r/, /h/, /ŋ/, /ʔ/, /y/, /w/, /a/, /i/, /u/, /e/, /ə/, /ɔ/, and /ɛ/. Phonemes such as /p/, /t/, /m/, /n/, /i/, /u/, /e/, /ɔ/, /ɛ/, and /a/ show that fully distributed consonants can occupy any position in a word, indicating their universal application. In contrast, the phonemes /b/, /k/, /g/, /j/, /s/, /r/, /h/, and /w/ are found only at the beginning or middle of words. Finally, the phonemes /d/ and /ʔ/ are limited to the middle of words.

Hujairin et al. (2017) stated that the large Arfak tribe in West Papua consists of the following sub-tribes: Meyakh, Hatam, Sougb, and Moile. This tribe possesses a form of local wisdom, called Igya Ser Hanjob, which has been passed down through generations and is manifested in various behavioural practices and customs within the community. One agricultural behavioural practice is the use of shifting cultivation, agroforestry, and polyculture, which support food diversification. The findings of the study by Hujairin et al. (2017) indicate that further efforts are needed to improve the implementation of government policies aimed at revitalising local wisdom.

According to Warami (2020), the Biak language has a phonological system involving a set of vowel and consonant phonemes. Biak vowels, based on their place and manner of articulation, contain five vowel phonemes: /i/, /u/, /e/, /a/, and /o/. According to the articulation area chart and articulation method, Biak consonant phonemes consist of 13 phonemes: /p/, /b/, /t/, /d/, /k/, /j/, /m/, /n/, /f/, /s/, /r/, /w/, and /y/. This phonemic ability can be demonstrated by using minimal pairs, which are pairs of sounds that are close in articulation in the same environment, and different sound pairs. For example, *bur* means 'go home', *bang* means 'mary', *boom* means 'hit', *pur* means 'return', *pear* means 'release', and *par* means 'wound'.

Arman (2020) described the phonological system of the Nambla language spoken in Nambla Village, Senggi District, Keerom Regency. This system includes vowels, consonants, diphthongs, the distribution of vowels and consonants, and syllable forms. The data for Arman's (2020) study were collected through tapping, listening, and conversation techniques. The results indicated that the Nambla language has 24 phonemes including six vowels: (/a/, /i/, /u/, /e/, /ə/, and /ɔ/) and 18 consonants: (/p/, /b/, /t/, /d/, /m/, /k/, /g/, /f/, /h/, /j/, /r/, /n/, /ɲ/, /ŋ/, /s/, /l/, /y/, and /w/). In addition, Nambla has 11 groups of vowel series and 10 groups of consonant clusters.

Mukhamdanah and Inayatusshalihah (2021) discussed the Awban language from a linguistic perspective before its speakers were completely "lost". Using a comparative method, the authors found that Awban is not closely related to surrounding languages, such as Momuna, Tokuni, and Samboga. Phonologically, Awban has the following phonemes: [i], [ə], [e], [ɛ], [a], [o], [u], and [ɔ]. The consonant sounds of Awban are almost the same as those in Indonesian. Awban has a uvular consonant [χ], but the sounds [c], [q], [v], and [z] are absent. Some parts of the vocabulary are loanwords from Indonesian or Papuan Malay, resulting from language contact. Some of these words have been adopted in their entirety, whereas others have been adapted, such as *ayam hu,* meaning 'chick', and *pusi,* meaning 'cat'. There are also words with sound adaptations, such as '[cincin]' and '[sinsin]'.

Zaidi et al. (2023) restructured the consonant protophonemes in subdialects in the middle reaches of the Pahang River. The research site was visited twice to ensure the authenticity of the collected data, and the data were filtered using Crowley's framework to extract cognates. The protophonemes were evaluated and extracted using Crowley's sound correspondence set (SCS), and the reconstructed protophonemes from Adelaar were then used for comparison. Proto Centre Pahang River (PCPr) contains 18 archaic consonant phonemes: *p, *b, *t, *d, *k, *g, *m, *n, *ɲ, *ŋ, *l, *s, *ɣ, *h, *c, *ɟ, *w, and *j. The distribution of these consonants varies depending on their type. Further discussion is required

regarding vowels and diphthongs to reach a definitive conclusion about the phonological changes between PCPr and Proto-Malay (PM).

Paradida et al. (2024) stated that the East Seram language spoken in Manokwari consists of 23 segmental phonemes, consisting of 18 consonants and five monophthong vowels. These include /p/, /b/, /t/, /d/, /c/, /j/, /k/, /g/, /f/, /s/, /h/, /m/, /n/, /ŋ/, /r/, /l/, /w/, /y/, /a/, /i/, /u/, /e/ and /o/.

According to Satban and Tulalessy (2024), the younger generation's level of knowledge regarding the coconut tree lexicon among the Maumere community living in Manokwari was relatively low. In contrast, the younger generation living in Wairklau Village demonstrated a reasonably good level of knowledge. Additionally, older groups in Wairklau and Manokwari had higher and more stable levels of lexical knowledge. Overall, the younger generation's understanding of the regional language lexicon has declined, and variations in the use of this lexicon are closely related to social and cultural changes occurring in society.

## III. Theoretical Framework

Language is defined as a system of signs used to express thoughts, ideas, feelings, and other information. The lexicon is an integral component of language use. Specifically, the lexicon is the collection of words that collectively represent knowledge possessed by both speakers and listeners about the basic lexical expressions in a particular language (Pustejovsky & Batiukova, 2019). A lexicon can be defined as a list of words in a given language, together with the knowledge of how each word is used (Hirst, 2009; Kridalaksana, 2009; Murphy, 2010; Verhaar, 2012). It can be concluded that the lexicon is a collection of vocabulary and how this vocabulary is used, as defined by the speech community.

Additionally, the term 'lexicon' can also be defined as an appendix to grammar, comprising a list of basic irregularities (Bloomfield, 1979). This lexicon delineates the functions of words that cannot be expressed through general grammatical categories. As such, the lexicon is not solely concerned with meaning and reference (Robins, 1992) and instead involves the set of terms that comprise linguistic information, i.e., the lexical meaning of a word or phrase (Budasi & Satyawati, 2021; Pesina & Yusupova, 2015; Ren et al., 2021; Solonchak & Pesina, 2015). This opinion is consistent with the prevailing one (Editorial team of the Kamus Besar Bahasa Indonesia, 2017), whereby the term 'lexicon' is defined in several different ways. In particular, the word 'lexicon' can be understood to mean the vocabulary or wealth of words owned by a language; a dictionary; a list of terms in a field arranged alphabetically and equipped with explanations; or a language component that contains all information. A term is defined as a word or a combination of words that expresses ideas, processes, conditions, or characteristics that are typical in a particular field. According to the consensus of experts in the field of linguistics, the word 'lexicon' in this study refers to the language vocabulary.

Phonology is the branch of linguistics concerned with the description of a language's phonetic system (Dik & Kooij, 1994; Kentjono, 2009; Moeliono et al., 2017; Verhaar, 2012). Phonological analysis encompasses the identification of Phonemes, their arrangement, phonemic differences, and the relationship between allophones. Speech sounds characterized by unobstructed airflow in the oral cavity, exemplified by [a], [i], and [u], are designated as vowel sounds. Vowels can be categorized into three distinct groups: high, mid, and low vowels. This classification is determined by the position of the tongue in the oral cavity during vocalisation.

Vowels are categorized into three distinct types: front, mid, and back. This classification is determined by the position of the tongue during articulation, with front vowels characterized by a raised tongue, mid vowels by a lowered tongue, and back vowels by a neutral position of the tongue. Vowels can also be categorised as rounded or unrounded based on the unique shape of the lips during vocalization. Overall, the characteristics or quality of vowels are determined by three factors: the height of the tongue in the oral cavity, changes in tongue position, and the shape of the lips when the vowel is issued. Conversely, the term "consonants" refers to sounds in which air circulation is obstructed in the oral cavity. The classification of consonants is based on the condition of the vocal cords, resulting in their division into voiced and voiceless consonants. The phonological discussion in this study covers vowels, consonants, and their distributions.

It is imperative that the Air Matoa language, and in particular its lexicon and phonology, be identified to facilitate further research in the West Papua region. This research on the Air Matoa language is significant in ensuring the preservation of the culture, way of life, and knowledge in this area. Moreover, this work is undertaken for the purpose of safeguarding a nation's identity. Indeed, the Air Matoa language, as a regional language, constitutes an element of the national culture that is subject to state protection and serves as a symbol of local pride and identity. Historically, this language was used as a medium of communication among families and within the local community.

## IV. Methods

This study employed a descriptive qualitative approach to document and analyse the phonological features of the extinct Air Matoa language. This approach was selected because it aligns with the characteristics of linguistic research, which emphasises the interpretation of meaning within its natural context. In qualitative research, the researcher serves as the primary instrument, and the data analysis is conducted inductively, beginning with empirical observations and progressing towards the development of thematic conclusions (Moleong, 2018; Sugiyono, 2017).

The data collection was conducted by triangulating several complementary techniques, including direct observation of the research site and its sociolinguistic context, in-depth interviews with informants, guided by structured questionnaires, and audio recordings of oral data for transcription and phonological analysis.

All documentation activities were carried out with the verbal consent of the informants, who also participated in cultural consultations to ensure the contextual accuracy and cultural sensitivity of the data. The data for this study were collected in 2008 in Rurumo Village, Teluk Etna District, Kaimana Regency, from three informants. The informants were purposively selected according to the criteria set by the Language Mapping Team (2019). Specifically, the inclusion criteria were as follows: local Indigenous people; men or women aged around 40 years; normal speaking and hearing abilities; a maximum education level of elementary school; working a flexible job such as farming; willingness to participate in an interview with 1,191questions; and demonstrating an open, friendly, and communicative attitude. After 2017, all native speakers of the Air Matoa language were reported to have passed away. Therefore, the data collected in 2008 are considered sufficient and serve as the primary source for this study.

Before collecting the data, the research team conducted a preliminary visit to the Etna Bay District to establish initial communication with the local community and identify key stakeholders, including district officials, traditional authorities, religious figures, and community leaders. The researchers presented the objectives and scope of the study to foster mutual understanding and build cooperative relationships in support of the fieldwork. During the interviews, the informants expressed their willingness to participate in the work verbally and without coercion. The entire recording process was carried out face-to-face, and the informants were fully informed about the purpose and the scope of the documentation taken. In this publication, the identities of the informants are not disclosed to maintain their privacy, dignity, and integrity.

This study employed a structured questionnaire to collect both linguistic and cultural data. The questionnaire, consisting of 1,191 items, included sections on informant demographics and the local linguistic context, as well as questions on basic and culturally specific vocabulary organised by semantic fields.

This study documents the lexicon of the Air Matoa language using the Indonesian Language Research and Kinship Mapping instrument. The instrument includes 200 basic Swadesh vocabularies and several basic cultural vocabularies divided into various categories: body parts; pronouns and greetings; reference words; kinship systems; community and rural life; houses and their parts; tools and equipment; food and drink; plants and trees around the house; animals; seasons, natural conditions, natural objects, and cardinal directions; diseases and treatments; nature and temperament; linguistic elements; colours; livelihoods; clothing and jewellery; games; movements and activities; numbers; word formation; phrase structure; and simple sentences.

The research data, including informant responses to the structured questionnaire, were transcribed and entered into a Microsoft Excel worksheet for classification, analysis, and organisation based on identified phonological variations. This study did not include data on intergenerational language transmission. The primary data source was the documentation conducted by Kurniawati et al. (2008) as part of the Language Mapping Program by the Language Centre, Ministry of National Education, under reference number 1101/A.10/H.5/2008.

The researchers analysed the data through the following steps: coding the data, including marking keywords or essential themes that emerged from the interviews and observations; categorizing the data, including grouping the data into categories related to basic vocabulary and culture; and interpreting the results, including concluding the pronunciation, vowel and consonant structures, and use of vocabulary in the Air Matoa language To ensure the validity of the data, researchers used triangulation techniques (Denzin, 2009), which involved comparing information obtained from various sources (i.e. interview with multiple participants, direct observation, and documentation). In addition, the researchers checked the validity of the data by asking the participants for confirmation regarding the initial findings of the study.

## V. Findings and Discussion

In a 2009 study, the Air Matoa language was classified as critically endangered or endangered because it was only spoken by a few older individuals. This classification was in line with the opinions of Wurm (2001) and Ibrahim (2011), who linked language extinction to a lack of intergenerational transmission. In 2017 (8 years later), there were no more speakers of Air Matoa, and the language was considered extinct. Indeed, a language is considered extinct when it is no longer spoken or when there are no living speakers.

A total of 1,191 lexical items were presented to the informants in the form of single words, compound words, or phrases, but not all of them could be found in the Air Matoa language. Specifically, 451 items were culturally relevant, but some did not have an equivalent in the Air Matoa language because the specific vocabulary for the concept did not exist. Examples of such words include 'stingray', 'baby goat', and 'peanut. Vocabulary related to plants and animals that are endemic to Papua was limited. The vocabulary included in this study was basic Swadesh vocabulary and cultural vocabulary, including the words' edge', 'diligent', 'clever', 'angry', 'good', 'down', 'throat', and 'crate'. The basic Swadesh vocabulary of the Air Matoa language is provided in Table 1.

TABLE 1
BASIC SWADESH VOCABULARY OF THE AIR MATOA LANGUAGE

| No | Vocabulary | Air Matoa | No | Vocabulary | Air Matoa |
|---|---|---|---|---|---|
| 1 | ash | *ki:ba* | 101 | far | *u:si* |
| 2 | water | *mɔkate* | 102 | fog | *suafɔ* |
| 3 | root | *bidɔ:me* | 103 | foot | *nogora* |
| 4 | flow | *Merere* | 104 | if | *To* |
| 5 | child | *Rabunahisa* | 105 | we, us | *nunu; mono* |
| 6 | wind | *Kimiri* | 106 | you | *i:no* |
| 7 | dog | *ka:ri* | 107 | right | *kɪ:ri* |
| 8 | what | *Abarae* | 108 | because | *meranire* |
| 9 | fire | *mU:du* | 109 | word | *kakarokandafe* |
| 10 | float | - | 110 | small | *kisakofe* |
| 11 | smoke | *Wafua* | 111 | fight | *natarafe* |
| 12 | cloud | *suafɔ* | 112 | head | *tɔmbosiŋgu* |
| 13 | father | *a:ɪta* | 113 | dry | *kaseyruwa* |
| 14 | how | *a:barae* | 114 | left | *waŋgaja* |
| 15 | good | *ja:fari* | 115 | dirty | - |
| 16 | burn | *rɔtere* | 116 | nail | *ɔ:ku* |
| 17 | flip | *Nanakiri* | 117 | skin | *mɔadigu* |
| 18 | many | *Kubu* | 118 | yellow | *mɔkawerɛ:bu* |
| 19 | lie down | *Nanakiri* | 119 | lice | *buri* |
| 20 | new | *Wafariane* | 120 | other | *waratɔa* |
| 21 | wet | *bU:sa* | 121 | sky | *sakara* |
| 22 | stone | *ki:jo* | 122 | sea | *wateba* |
| 23 | some | *Berani* | 123 | wide | *okɔa* |
| 24 | to split | *Farani* | 124 | neck | *rabenago* |
| 25 | True | *bafɔfɔ* | 125 | man | *dumadere* |
| 26 | swollen | *Baŋka* | 126 | throw | *Katera* |
| 27 | seed | *ka:fisi* | 127 | slippery | *rɪ:da* |
| 28 | heavy | *mɔfata* | 128 | tongue | *kasire* |
| 29 | swim | *Wayway* | 129 | look | *irato* |
| 30 | give | *sɪ:ado* | 130 | five | *dokɔ:niyadokɔ:niya* |
| 31 | walk | *Yuwa* | 131 | saliva | *tuafe* |
| 32 | Big | *ganefe* | 132 | straight | *rɔ:ro* |
| 33 | when | - | 133 | knee | *rU:tu* |
| 34 | animal | *Waramasiamo* | 134 | play | *bayeni* |
| 35 | Star | *mafɔgo* | 135 | eat | *mU:ruri* |
| 36 | fruit | *mOduga* | 136 | evening | *tO:ta* |
| 37 | month | *ka:bu* | 137 | eye | *moŋgomambu* |
| 38 | hair | *Warini* | 138 | sun | *faitu* |
| 39 | flower | - | 139 | dead | *samutumo* |
| 40 | kill | *waɔmo* | 140 | red | *ma:tere* |
| 41 | hurry | *Karikari* | 141 | they | *mɔ:no* |
| 42 | bad | *Masiamo* | 142 | drink | *makara* |
| 43 | bird | *mafɔ* | 143 | mouth | *mɔborɔ:ga* |
| 44 | rotten | *ma:rɔ* | 144 | vomit | *ka:bu* |
| 45 | worm | *Makima* | 145 | name | *mɔkɔa* |
| 46 | kiss | *siɔ* | 146 | breath | *manene* |
| 47 | wash | *mɔtori* | 147 | sing | *ka:sau* |
| 48 | meat | *Rito* | 148 | person | *ramia* |
| 49 | and | *Yane* | 149 | hot | *marina* |
| 50 | lake | *Rauri* | 150 | long | *utabi* |
| 51 | blood | *mɔ:da* | 151 | sand | *firi* |
| 52 | come | *Uro* | 152 | hold | *ɔsere* |
| 53 | leaf | *Mijo* | 153 | short | *kuwatebe* |
| 54 | dust | *kɪ:ba* | 154 | squeeze | *fɔrome* |
| 55 | near | *u:ro* | 155 | woman | *nuŋgu* |
| 56 | with | *Kusikofe* | 156 | stomach | *mU:ku* |
| 57 | hear | *mɪ:jo* | 157 | think | *nobutaro* |
| 58 | in the | *mU:ara* | 158 | tree | *bɛ:ni* |
| 59 | where | *metefɔabura* | 159 | cut | *dokore* |
| 60 | here | *Abu* | 160 | back | *sɛ:sa* |
| 61 | there | *a:na* | 161 | navel | *Nandomo* |
| 62 | on | *abara:ne* | 162 | white | *modokada* |
| 63 | cold | *i:riri* | 163 | hair | *na:kiri* |
| 64 | to stand | *tU:ru* | 164 | grass | *re:gere* |
| 65 | push | *Nonokue* | 165 | one | *irato* |
| 66 | two | *dokɔ:niya* | 166 | i am | *i:do* |
| 67 | sit down | *Tita* | 167 | wing | *naera* |
| 68 | tail | *rU:fɔ* | 168 | a little | *kisakɔ:fe* |
| 69 | four | *dokɔ:niyadokɔ:niya* | 169 | narrow | *marora* |

| | | | | | |
|---|---|---|---|---|---|
| 70 | you | *i:no* | 170 | all | *kumbuay* |
| 71 | dig | *waUmo* | 171 | afternoon | *manabay* |
| 72 | salt | *amefa* | 172 | who | *inomerae* |
| 73 | scratch | *garugaru* | 173 | husband | *nuŋgunado* |
| 74 | fat, fat | *mɔrare* | 174 | river | *mɔkate* |
| 75 | tooth | *tɔ:bo* | 175 | know | *nofaruna* |
| 76 | bite | *noruri* | 176 | year | *u:wa* |
| 77 | rub | *mɔrorogiya* | 177 | sharp | *maŋga* |
| 78 | mountain | *sa:fɔ* | 178 | scared | *sU:bu* |
| 79 | hit | *rUɔ* | 179 | rope | *ɔ:nda* |
| 80 | wipe | - | 180 | land | *makoro* |
| 81 | heart | *ukumuara* | 181 | hand | *okɔa* |
| 82 | nose | *matare* | 182 | pull | *osere* |
| 83 | life | *ma:go* | 183 | thick | *wateba* |
| 84 | green | *da:o* | 184 | ears | *muari* |
| 85 | suck | *nana:ki* | 185 | eggs | *wafɔ* |
| 86 | black | *busiara* | 186 | fly | *samojo* |
| 87 | count | *mututuru* | 187 | laugh | - |
| 88 | rain | *Kemo* | 188 | breast | *a:fu* |
| 89 | forest | *kamuru* | 189 | no | *a:ki* |
| 90 | he | *i:do* | 190 | sleep | *nusunu* |
| 91 | mother | *i:na* | 191 | three | *irato dokɔ:niya* |
| 92 | fish | *ɔroru* | 192 | to stab | *wa:nuŋgo* |
| 93 | tie | *nakiri* | 193 | thin | *kwatebe* |
| 94 | this | *aU:ne* | 194 | blow | *naburi* |
| 95 | wife | *nU:ri* | 195 | stick | *kukU:ya* |
| 96 | that | *Yani* | 196 | old | *kabare* |
| 97 | sew | *kambare* | 197 | bone | *sigu* |
| 98 | to walk | *Yua* | 198 | dull | *sufu* |
| 99 | heart | *nanabi* | 199 | snake | *waramasiamo* |
| 100 | fall | *monobuae* | 200 | intestine | - |

Source: Air Matoa Language Mapping Data (Language Mapping Team, 2008)

Seven words could not be compared between Air Matoa and Swadesh's 200 basic vocabulary items. The words' flip' and 'lie down' have the exact equivalent in the Air Matoa language, namely *nanakiri*. The seven words that could not be compared were 'floating', 'whenever', 'flower', 'delete', 'dirty', 'laugh', and 'gut'. The concepts of the seven words were absent from the culture of the Air Matoa people. As shown in Table 1, the vowels in the Air Matoa language exhibit allophones, or phonetic variations. The vowel /i/ has two allophones: [i] and [I], as in the words *nakiri* ('tie') and *a: Ita* ('father'). The vowel /e/ has two allophones: [e] and [ɛ]. Examples of these are found in the words *bayeni* ('to eat') and *bɛ: ni* ('tree'). The vowel /o/ has two allophones: [o] and [ɔ]. Examples of this vowel are the words *uro* ('coming') and *okɔa* ('neck'). The vowel /u/ has two allophones: [u] and [ʊ], as in *sufu* ('blunt') and *mʊ: du* ('fire'). The Air Matoa language has long vowels with diacritical marks (:), including [i:], [I:], [e:], [ɛ:], [a:], [ɔ:], [u:], and [ʊ:]. Examples of words with these vowels include: *ki:ba* ('ash'), *ki:jo* ('stone), *sI:ado* ('give), *mI:jo* ('hear'), *re:gere* ('grass'), *rɛ:bu* ('lice'), *bɛ:ni* ('tree'), *ka:ri* ('dog'), *a:barae* ('how'), *bidɔ:me* ('root'), *mɔ:da* ('blood'), *u:si* ('far'), *u:ro* ('near'), *mʊ:du* ('fire'), and *bʊ:sa* ('wet').

Phonetics refers to the production and physical properties of speech sounds. At the same time, phonemics focuses on the abstract, functional aspects of sounds—specifically phonemes, which are the smallest units of sound that can distinguish meaning in a language and include both vowels and consonants. The Air Matoa language contains five vowel phonemes: /i/ is an unrounded, high-front vowel; /e/ is a mid-front vowel with a neutral lip shape; /a/ is a central, low vowel; /o/ is a rounded, mid-back vowel; and /u/ is a rounded, high-back vowel. The five vowel phonemes are shown in Table 2.

TABLE 2
VOWELS OF THE AIR MATOA LANGUAGE

| | Front | Central | Back |
|---|---|---|---|
| High | i | | u |
| Middle | e | | o |
| Low | | a | |

Table 2 shows the five Air Matoa vowels: [i], [e], [a], [u], and [o]. Their positions are presented in Table 3. These vowels can take initial, middle, and final positions in the Air Matoa language (except for the phoneme [e]). Examples of the phoneme [i] in the initial, middle, and final positions of words include *irato* ('one'), *waramasiamo* ('snake'), and *muari* ('ear'), respectively. Examples of the phoneme [e] in the middle and final positions include *re:gere* ('grass') and *narare* ('angry person'), respectively. Examples of the phoneme [a] in the initial, middle, and final positions are *amefa* ('salt), *maŋga* ('sharp'), and *naera* ('wings'), respectively. Examples of the phoneme [o] in the initial, middle, and final positions are *osere* ('pull'), *moŋgomambu* ('eye'), and *makoro* ('land'), respectively. Finally, examples of the phoneme [u] are *uro* ('come'), *nuŋgu* ('woman'), and *kubu* ('many').

TABLE 3
VOWEL POSITIONS IN THE AIR MATOA LANGUAGE

| Phoneme | Initial Position | Middle Position | Final Position |
|---|---|---|---|
| [i] | *irato* 'one' | *waramasiamo* 'snake' | *muari* 'ear' |
| [e] | - | *re:gere* 'grass' | *narare* 'angry person' |
| [a] | *amɐfa* 'salt' | *maŋga* 'sharp' | *naera* 'wings' |
| [o] | *osere* 'pull' | *moŋgomambu* 'eye' | *makoro* 'land' |
| [u] | *uro* 'come' | *muŋgu* 'woman' | *kubu* 'a lot' |

Source: Air Matoa Language Mapping Data (Language Mapping Team, 2008)

The Air Matoa languages have 15 consonant phonemes, as follows:
speechles ([p], [t], and [k]);
speech impediments ([b], [d], [j], and [g]);
voiceless fricative ([f] and [s]);
voiceless nasals ([m], [n], [ŋ]);
voice vibrations ([r]);
and semi-vowels and glides ([w] and [y]).

TABLE 4
CONSONANTS OF THE AIR MATOA LANGUAGE

| Place of articulation / Manner of articulation | Bilabial | Labiodental | Dental/Alveolar | Palatal | Velar |
|---|---|---|---|---|---|
| Plosive | b p | | d t | j | g k |
| Fricative | f | | s | | |
| Nasal | m | n | | | ᵑ |
| Trill | | | r | | |
| Semivowels and glides | w | | | y | |

Source: Adapted from Indonesian consonants (Moeliono et al., 2017)

Table 4 shows the consonants of the Air Matoa language. The consonant /b/ is a voiced bilabial plosive, whereas /p/ is a voiceless bilabial plosive. The consonant /d/ is produced by air currents from the lungs that vibrate the vocal cords, while /t/ is produced by air currents from the lungs that do not vibrate the vocal cords. The palatal plosive consonant /j/ is produced by touching the tip of the tongue to the border of the gum and hard palate and releasing it quickly. While the vocal cords vibrate. The consonants /g/ and /k/ are produced by placing the tip of the tongue against the soft palate and blocking and then releasing the air. The consonant /g/ is produced when the air current from the lungs vibrates the vocal cords. The consonant /k/ is produced if the air current does not vibrate the vocal cords.

The labiodental fricative consonant /f/ is produced by bringing the lower lip close to the lower teeth. This movement creates a narrow opening through which air from the lungs can pass, making a hissing sound. The alveolar fricative consonant /s/ is produced by bringing the tip of the tongue close to the upper gum while releasing air through the narrow gap between the tongue and the gums. This movement creates a hissing sound without the vocal cords vibrating.

The consonants /m/, /n/, and /ŋ/ are voiced bilabial, alveolar, and velar nasal consonants, respectively. The consonant /r/ is an alveolar trill, whereas the bilabial semivowel /w/ is produced by rounding the lips without obstructing airflow from the lungs, meaning this resembles a vowel. The voiced palatal semivowel /y/ is created with almost no obstruction to airflow from the lungs.

Table 5 presents an example of the 15 consonant positions in the Air Matoa language.

TABLE 5
CONSONANT POSITIONS IN THE AIR MATOA LANGUAGE

| Phoneme | Initial Position | Middle Position | Final Position |
|---|---|---|---|
| [b] | *berani'* some' | - | - |
| [d] | *dokore* 'cut' | - | - |
| [f] | *farani* 'split' | - | - |
| [g] | *ganefe* 'big' | - | - |
| [j] | *jafari* 'good' | - | - |
| [k] | *kimiri'* wind' | - | - |
| [m] | *matare* 'nose' | *kambare* 'sewing' | - |
| [n] | *nanabi* 'heart' | *randa* 'down' | - |
| [ŋ] | - | *waŋgaja* 'left' | - |
| [p] | *pekaro'* wood crate' | - | - |
| [r] | *rauri* 'lake' | - | - |
| [s] | *samojo* 'fly' | - | - |
| [t] | *tuafe* 'saliva' | - | - |
| [w] | *wafiua* 'smoke' | *kwatebe* 'thin' | - |
| [y] | *yuwa* 'walk' | - | *manabay* 'afternoon' |

Source: Air Matoa Language Mapping Data (Language Mapping Team, 2008)

The consonants [b], [d], [f], [g], [j], [k], [p], [r], [s], and [t] from the Air Matoa language data are shown in Table 5. Examples of words with these consonants are as follows: *berani* ('some'), *dokore* ('cut'), *farani* ('split'), *ganefe* ('big'), *jafari* ('good'), *kimiri* ('wind'), *pekaro* ('wooden crate'), *rauri* ('lake'), *samojo* ('fly'), and *tuafe* ('saliva'). These consonants take the initial position of the word. The consonants [m], [n], and [w] occupy initial and medial positions within words. Examples of words with these consonants include *matare* ('nose'), *kambare* ('sewing'), *nanabi* ('heart'), *randa* ('down'), *wafua* ('smoke'), and *kwatebe* ('thin). The consonant [ŋ] occurs in the middle of words, such as *waŋgaja* ('left'). Finally, the consonant [y] occupies initial and final positions in words such as *yuwa* ('walk') and *manabay* ('afternoon).

From this study, it appears that each regional language generally exhibits a comparable number and articulation of vowels and consonants. However, the Air Matoa language can be distinguished from other regional languages by the presence of a unique phonological feature: a long vowel sound. Consonant sounds tend to occur more frequently at the beginning of words, while vowel sounds are more dominant in medial positions.

Each language has unique phonotactic characteristics, which refer to the arrangement of phonemes to form larger phonological units such as syllables. The Air Matoa language has syllable patterns including V, VC, CV, CVC, and CCV (V = vowel, C = consonant). Presented below is an example of such syllable patterns:

1) V *o*-se-re, su-*a*-fɔ, wa-fu-*a*
2) VC *ɔ:n*-da, kum-bu-*ay*
3) CV *ku*-bu, ma-*ta*-re, ke-*mo*
4) CVC *kam*-ba-re, ka-ka-ro-*kan*-da-fe, ma-na-*bay*
5) CCV *kwa*-te-be

In the Air Matoa language, syllable patterns such as CCVC, CVCC, CCCV, CCCVC, CCVCC, and CVCCC were not found, as the language favours open syllables and simple syllable structures.

## VI. Conclusion

The Air Matoa language is considered extinct, as it is no longer used in daily communication in the Etna Bay area, Kaimana, and West Papua. Indeed, Wurm (2001) suggested that the extinction of a language occurs due to a lack of language transmission and teaching between generations. In Rurumo Village, successive generations of Air Matoa speakers have switched to Yeresiam as the primary language for communication, replacing their ancestral language. Therefore, the documentation of the phonological aspects of the Air Matoa language is crucial for its preservation.

This study concludes that the Air Matoa language has five vowel phonemes and 15 consonant phonemes. The vowels /i/, /e/, /o/, and /u/ each have two allophones, while /a/ only has one allophone. This language does not recognize the vowel /ə/, and all vowels in Air Matoa can undergo elongation except the vowel [o]. Additionally, the majority of consonants in the Air Matoa language are found in one phonological position, except /m/, /n/, /w/, and /y/, which can appear in two positions. The Air Matoa language does not have the consonants /c/, /h/, /l/, /q/, /v/, /x/, or /z/, and its syllable patterns tend to be simple. This study also shows that the vocabulary of the Air Matoa language cannot be directly compared with the list of 200 Swadesh basic words in Indonesian due to certain lexical concepts not being found in the culture of the Air Matoa community.

Currently, the study of the lexicon and phonology of the Air Matoa language is still ongoing. In this context, additional detailed studies are needed on the Air Matoa language, especially in terms of documenting this and other extinct languages from a phonological perspective, including aspects such as minimal pairs and phonotactics. Additionally, research on aspects of morphology, syntax, semantics, and grammar as a whole is also necessary. The results of this study are expected to provide a significant contribution to the development of the linguistic literature, especially in relation to efforts to preserve endangered languages.

## References

[1] Arman. (2020). The phonology of the Nambla language in Keerom, Papua. *Kibas Cenderawasih*, *17*(1). https://doi.org/https://doi.org/10.26499/kc.v17i1.241 accessed on January 4, 2023.
[2] Bloomfield, L. (1979). *Language*. Henry Holt and Co.
[3] Budasi, I. G., & Satyawati, M. S. (2021). An ethnolinguistic perspective on the lexicons of a traditional house in Menyali village, North Bali. *Jurnal Kajian Bali*, *11*(01), 115–130. https://garuda.kemdikbud.go.id/documents/detail/1976402 accessed on January 4, 2023.
[4] Campbell, L. (1994). Language death 1960-1968. *Asher & Simpson*, *4*.
[5] Collins, J. T. (2022). Language death in Indonesia: A sociocultural pandemic. *Linguistik Indonesia*, *40*(2), 141–164. https://doi.org/10.26499/li.v40i2.347 accessed on January 4, 2023.
[6] Crystal, D. (2003). *Language death*. Cambridge University Press.
[7] Denzin, N. K. (2009). *The research act: a theoretical introduction to sociological methods* (1st ed.). Routledge. https://doi.org/10.4324/9781315134543 accessed on January 4, 2023.
[8] Dik, S. C., & Kooij, J. G. (1994). *Ilmu bahasa umum* [General linguistics] (W. A. L. Stokhof, Ed.). RUL. http://repositori.kemdikbud.go.id/id/eprint/16134%0A accessed on January 4, 2023.
[9] Editorial team of the Kamus Besar Bahasa Indonesia. (2017). *Kamus besar bahasa Indonesia* [A big Indonesian dictionary]. Badan Pengembangan dan Pembinaan Bahasa.
[10] Fautngil, C. (2013). Beberapa catatan tentang fonologi bahasa Kamoro ragam Ai'aowe [Notes on the phonology of the Ai'aowe

variety of the Kamoro language]. *Litera*, *12*(2), 197–208. https://doi.org/https://doi.org/10.21831/ltr.v12i02.1580 accessed on January 4, 2023.
[11] Grimes, B. F. (2002). Kecenderungan bahasa untuk hidup atau mati secara global (global language viability): Sebab, gejala, dan pemulihan untuk bahasa-bahasa yang punah [The tendency of languages to survive or become extinct (global language viability): Causes, symptoms and recovery of extinct languages]. In B. K. Purwo (Ed.), *PELBBA 15* (pp. 1–40). Kanisius-Unika Atma Jaya.
[12] Hirst, G. (2009). Ontology and the lexicon. In S. Staab & R. Studer (Eds.), *Handbook on Ontologies* (pp. 269–292). Springer. https://doi.org/https://doi.org/10.1007/978-3-540-92673-3_12 accessed on January 5, 2023.
[13] Hujairin, M., Ismadi, A., & Kustana, T. (2017). Revitalisasi kearifan lokal suku Arfak di Papua Barat dalam rangka mendukung ketahanan pangan wilayah [Revitalising the local wisdom of the Arfak tribe in West Papua to support regional food security]. *Jurnal Manajemen Pertahanan*, *3*(1), 53–77. https://jurnalprodi.idu.ac.id/index.php/MP/article/view/59 accessed on January 5, 2023.
[14] Ibrahim, G. A. (2011). Bahasa terancam punah: Fakta, sebab-musabab, gejala, dan strategi perawatannya [Endangered languages: Facts, causes, symptoms and treatment strategies]. *Linguistik Indonesia*, *29*(1), 35–52.
[15] Iribaram, S. M. (2017). Distribusi fonem bahasa Mor [Phoneme distribution of the Mor language]. *Kibas Cenderawasih*, *14*, 71–102). https://kibascenderawasih.kemdikbud.go.id/index.php/kibas/article/view/119 accessed on January 5, 2023.
[16] Isa, B. Z., Ahmed, H., & Yagana Grema. (2014). Language death and endangered languages. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, *19*(10 Version VI), 46–48. https://doi.org/10.9790/0837-191064648 accessed on January 5, 2023.
[17] Kentjono, D. (2009). Fonologi [Phonology]. In M. R. Lauder, U. Yuwono, & Kushartanti (Eds.), *Pesona Bahasa Indonesia: Langkah Awal Memahami Linguistik* [The Charm of Indonesian: The First Step to Understanding Linguistics]. Gramedia Pustaka Utama.
[18] Kridalaksana, H. (2009). Leksikon [Lexicon]. In M. R. Lauder, U. Yuwono, & Kushartanti (Eds.), *Pesona Bahasa Indonesia: Langkah Awal Memahami Linguistik* [The Charm of Indonesian: The First Step to Understanding Linguistics]. Gramedia Pustaka Utama.
[19] Language Mapping Team. (2008). *Penelitian kekerabatan dan pemetaan bahasa di Indonesia: Kuesioner kosakata dasar dan kata budaya dasar* [Kinship research and language mapping in Indonesia: Basic vocabulary questionnaire and basic cultural words]. Kementerian Pendidikan Nasional.
[20] Language Mapping Team. (2019). *Bahasa dan peta bahasa di Indonesia* [Languages and language maps in Indonesia]. Badan Pengembangan Bahasa dan Perbukuan.
[21] Moeliono, A. M., Lapoliwa, H., Alwi, H., Sasangka, S. S. T. W., & Sugiyono. (2017). *Tata bahasa baku bahasa Indonesia* [Standard Indonesian grammar] (Edisi Keem). Badan Pengembangan dan Pembinaan Bahasa.
[22] Moleong, L. J. (2018). *Metodologi penelitian kualitatif* [Qualitative Research Methodology]. Remaja Rosdakarya.
[23] Mukhamdanah, & Inayatusshalihah. (2021). Bahasa Awban di Yahukimo, Papua: Kajian awal terhadap bahasa minoritas pada tataran fonologi dan leksikonnya [Awban Language in Yahukimo, Papua: A preliminary study on phonology and lexicon aspect toward a minority language]. *Sawerigading*, *27*(2), 219–229. https://doi.org/https://doi.org/https://doi.org/10.26499/sawer.v27i2.931 accessed on January 5, 2023.
[24] Murphy, M. L. (2010). *Lexical meaning*. Cambridge University Press.
[25] Paradida, Y. P., Warami, H., & Ansiska, P. (2024). Inventarisasi fonem bahasa Seram Timur di Manokwari, Papua Barat (East Seram language phoneme inventory in Manokwari, West Papua). *Medan Makna: Jurnal Ilmu Kebahasaan Dan Kesastraan*, *21*(2), 166–180. https://doi.org/https://doi.org/doi:10.26499/mm.v22i2.6654 accessed on January 5, 2023.
[26] Pesina, S., & Yusupova, L. G. (2015). Words functioning in the lexicon. *Procedia - Social and Behavioral Sciences*, *192*, 38–43. https://doi.org/10.1016/j.sbspro.2015.06.006 accessed on January 5, 2023.
[27] Pustejovsky, J., & Batiukova, O. (2019). *The lexicon*. Cambridge University Press.
[28] Ren, X., Sun, X., Wang, H., & Liu, Q. (2021). Towards semantics-enhanced pre-training: Can lexicon definitions help learning sentence meanings? *Proceedings of the AAAI Conference on Artificial Intelligence*, 13736–13744. https://doi.org/10.1609/aaai.v35i15.17619 accessed on February 5, 2023.
[29] Robins, R. H. (1992). *Linguistik umum: Sebuah pengantar* [General linguistics: An introduction]. Penerbit Kanisius.
[30] Satban, V., & Tulalessy, Q. (2024). Tingkat pengetahuan khazanah leksikon pohon kelapa bahasa Sikka masyarakat Maumere antargenerasi di kampung Wairklau dan kota Manokwari: Kajian ekolinguistik [Level of knowledge of the coconut tree lexicon of the Sikka language of the Maumere community intergeneration]. *BISAI: Jurnal Bahasa, Sastra, dan Pengajaran*, *3*(1), 141–149. https://jurnal.unipa.ac.id/index.php/bisai/article/view/369 accessed on 5 February 2023.
[31] Sawaki, Y. (2018). *Papua Barat: 5 bahasa daerah dan 1 suku terancam punah* [West Papua: Five regional languages and one tribe are threatened with extinction]. Cahayapapua.Com.
[32] Solonchak, T., & Pesina, S. (2015). Lexicon core and its functioning. *Procedia - Social and Behavioral Sciences*, 481–485. https://doi.org/10.1016/j.sbspro.2015.06.074 accessed on February 5, 2023.
[33] Sugiyono. (2017). *Metode penelitian pendekatan kuantitatif, kualitatif, R dan D* [Research methods: quantitative, qualitative, R & D approaches]. Alfabeta.
[34] UNESCO Ad Hoc Expert Group. (2003). Language vitality and endangerment. *International Expert Meeting on UNESCO Programme Safeguarding of Endangered Languages*. https://ich.unesco.org/doc/src/00120-EN.pdf
[35] Verhaar, J. W. M. (2012). *Asas-asas linguistik umum* [General linguistic principles]. Gadjah Mada University Press.
[36] Warami, H. (2020). Identitas guyub tutur Biak Numfor Papua: Perspektif studi antropolinguistik [The identity of the Biak Numfor Papuan language community: An anthropolinguistic study perspective]. *ETNOSIA: Jurnal Etnografi Indonesia*, *5*(2), 284–303. https://doi.org/10.31947/etnosia.v5i2.11195 accessed on January 5, 2023.
[37] Wurm, S. A. (2001). *Atlas of the world's languages in danger of disappearing* (S. A. Wurm, Ed.). UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000123609 accessed on January 5, 2023.
[38] Zaidi, M. N., Aman, R., & Hamid, S. A. (2023). Reconstruction of the proto-central of the Pahang River phoneme. *Pertanika Journal of Social Science and Humanities*, *31*(1), 361–382. https://doi.org/10.47836/pjssh.31.1.19 accessed on January 6, 2024.

**Wati Kurniawati** is a researcher at the Centre for Language and Literature Preservation Research, National Research and Innovation Agency of Indonesia. She has a doctorate in language education from the State University of Jakarta. Her research focuses on linguistics, sociolinguistics, geolinguistics, comparative historical linguistics, and landscape linguistics. The results of her research were published in Vitalitas Bahasa Retta di Pulau Ternate, Kabupaten Alor (Vitality of the Retta Language on Ternate Island, Alor Regency) and *Vitalitas Beberapa Bahasa di Indonesia Bagian Timur* (Vitality of Several Languages in Eastern Indonesia) in 2019; *Fonetik dan Fonologi Bahasa Hitu Dialek Hitu* (The Phonetics and Phonology of the Hitu Dialect) in 2021; and in Indirect Speech Acts in Javanese in *Theory and Practice in Language Studies* in 2024. Email: wati004@brin.go.id; ORCID iD: https://orcid.org/0000-0003-2145-8881

**Deni Karsana** is a researcher at the Centre for Language and Literature Preservation Research, National Research and Innovation Agency. He holds a bachelor's degree in the Indonesian language programme. He also has a master's degree in linguistics. He is a doctoral candidate at Hasanuddin University, Makassar, Indonesia. His research focuses on interdisciplinary linguistics, sociolinguistics, and anthropolinguistic studies. Email: deni018@brin.go.id; ORCID iD: https://orcid.org/0000-0002-7578-7333

**Ryen Maerina** is a researcher at the National Research and Innovation Agency. She earned a bachelor's degree in Indonesian language and literature education in 2004. She also earned a master's degree in Indonesian language education from the State University of Jakarta in 2022. Her research interests are language documentation, dialectology, and comparative historical linguistics. Her writings on language in documentation, dialectology, and comparative historical linguistics studies have been published in national and international journals and in national and international proceedings. Email: ryen001@brin.go.id; ORCID iD: https://orcid.org/0000-0002-3174-6951

**Siti Fatinah** was a researcher working for the Agency for Language Development and Cultivation from 2001 to 2021. From 2022 until the present, she has been a member of the National Research and Innovation Agency (known as BRIN). Her research interests are sociolinguistics, dialectology, comparative historical linguistics, ethnolinguistics, and landscape linguistics. Email: siti085@brin.go.id; ORCID iD: https://orcid.org/0000-0002-6564-9893

**Fairul Zabadi** was born on February 17, 1965, in Payakumbuh, West Sumatra. He graduated with his doctorate in 2009 from Jakarta State University. He is a researcher at the Research Centre for Language, Literature, and Community, National Research and Innovation Agency (BRIN), Indonesia. His research interests are in language, literature, and culture, particularly in relation to learning and education. He is conducting research relating to local wisdom in forest cultural traditions in the Tobelo ethnic group in Halmahera, North Maluku, and the culture of the Tidung tribe in North Kalimantan. Email: fair002@brin.go.id; ORCID iD: https://orcid.org/0000-0002-8521-2277

**Joni Endardi**'s undergraduate education was completed at UNS Surakarta in 1994, followed by his S2 at UGM Yogyakarta in 2004, and his S3 at UGM Yogyakarta in 2013. He has been a researcher working for the National Research and Innovation Agency (BRIN) since 2022. His research experience from 2004 to 2015 included working on a research team for Regional Language Mapping and Kinship in Indonesia. He conducted collaborative research between linguistics and genomics, known as genolinguistic research, from 2014 to 2015. Additionally, he worked as the head of the Austronesian Triangle research team on the North Coast of Java, specifically in Sampang, Bawean, and Rembang, in 2022. Email: joni005@brin.go.id; ORCID iD: https://orcid.org/0000-0003-2762-852X

**Yenni Febtaria Wijayatiningsih** completed her S-1 degree in 2019 at the Faculty of Teacher Training and Education, Mataram University, NTB. From 2010 to 2021, she worked at the Language Office of West Nusa Tenggara Province as a civil servant. Since 2002, she has worked at the National Research and Innovation Agency (BRIN) as a researcher. She completed her master's degree between 2010 and 2012 at the Faculty of Cultural Sciences, Gadjah Mada University, Yogyakarta. Studying linguistics and humanities, her expertise is in disciplinary linguistics, and some of her works have been published in national and international journals and proceedings. Email: yenn009@brin.go.id; ORCID iD: https://orcid.org/0000-0001-5687-4813

**Aditya Wardhani** was born in Surabaya on October 20, 1977. She is a researcher at the Archaeological, Language, and Literary Research Organization of the BRIN. Graduated with a Bachelor's degree from Airlangga University in 2002. I am currently studying at the Postgraduate Master's Study Program at Udayana University. Email: adit028@brin.go.id; ORCID iD: https://orcid.org/my-orcid?orcid=0009-0000-8548-1277

**Roveneldo** is a junior expert researcher at the National Research and Innovation Agency. He holds a bachelor's degree in Indonesian language and literature education, and an S-2 in the same field from the College of Teacher Training and Education. His areas of expertise and research include: linguistic anthropology and interdisciplinary linguistics, the relationship between language and culture, semantics, language education, and the vulnerability study of extinct ethnic languages. Email: roveneldo@brin.go.id; ORCID iD: https://orcid.org/0000-0002-7169-0024

**Sumadi** is a researcher at Indonesia's National Research and Innovation Agency. His research interest is in linguistics. Together with other researchers, he has published articles, including "Cultural and Philosophical Meaning of Javanese Traditional Houses: A Case Study in Yogyakarta and Surakarta, Indonesia" in the Eurasian Journal of Applied Linguistics (EJAL) (2023), "Language Maintenance and Identity: A Case of Bangka Malay" in the International Journal of Society, Culture & Language (IJSCL) (2023), and "Javanese Flowers Concoction Lexicon and Their Functions for Healing in Javanese Language: An Ethnolinguistic Study" in the Eurasian Journal of Applied Linguistics (EJAL) (2023). Email: suma023@brin.go.id; ORCID iD: https://orcid.org/0009-0002-9716-904X