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The Impact of the Use of Agricultural Technology on Lexical Innovation in Rice Field Agriculture

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***Abstract*—This study explores the dynamic nature of lexical innovation and the impact of agricultural technology developments that occur in agriculture in the Bekasi Regency. The influx of modern agricultural equipment has shifted the traditional farming system. The linguistic landscape of Bekasi Regency has also been adjusted to the occurrence of lexical innovations in the rice field agricultural sector. This study used an ethnolinguistic approach. Data are obtained through observation and interviews and then presented descriptively based on field conditions and relevant lexical innovation theories. The results obtained in this study are that the use of modern agricultural technology contributes to lexical innovation in agriculture in the Bekasi Regency. The lexical innovations found are not only internal but also external. The lexicon which is a category of internal innovation undergoes a process of forming new words, namely: affixation, blending, and onomatopoeia. External innovation occurs by borrowing, as well as the expansion of meaning. The next finding is that lexical innovation due to the development of agricultural technology in the Bekasi Regency turned out to be threatened by the loss of several words in agriculture. They are lexicons related to traditional agricultural equipment and processes.**

***Index Terms*—lexical innovations, lexicons, morphological processes, new vocabulary, lost vocabulary**

I. Introduction

Technology and innovation are always able to make changes in various fields, including the field of language in agriculture. The emergence of agricultural equipment with increasingly sophisticated technology resulted in lexical innovation. These new lexicons appear to add, or shift, lexicons that are no longer used as the field of agricultural technology emerges. According to Umiyati (2023, p. 1067), a lexicon is a list of words found in a language. In line with Umiyati, Takwa et al. (2022, p. 980) call the lexicon a language component containing information about the meaning and usage of words, and the richness of words a language has. Lexical innovation in question refers to changes in terms, words, and language used in rice field farming. Wahya (2005, p. 49) argues that innovation or renewal occurs due to changes in lingual units from the original unit. More specifically, Wahya et al. (2017, p. 220) added, that lexical innovation is an update related to changes in the structure and replacement of the lexicon. Its embodiment can be both full lexical innovation and partial lexical innovation or phonological innovation. This difference occurs due to the addition, subtraction, or replacement of some of the sounds that make up the new lexicon.

The field of agriculture can be said to have a unique distinctive lexicon. This is all because based on these lexicons, we can see the characteristics of the culture of the user community. This is in line with Wierzbicka's (1997) statement which states that words reflect and tell the characteristics of the way of life and the way of thinking of its speakers to provide very valuable clues in understanding the culture of its speakers. However, technological developments also contribute to changes in the lexicon of agriculture. The lexicon of *arit*, *ani-ani*, and *etem* (tools for cutting rice), for example, is in danger of being lost, because many farmers in Bekasi Regency no longer use these three tools to harvest their rice crops. Instead, people use *komben* in the harvesting process. *Komben* is a machine with advanced technology that can cut rice plants, threshing rice grains, as well as putting the rice grains into sacks.

The lexicons mentioned above, are lexicons that appear in agriculture in Bekasi Regency. This area is located directly adjacent to Jakarta the capital of Indonesia, even though it is within the territory of West Java Province. As a

result, the majority of the language used by the people of Bekasi Regency is Betawi with little influence from Sundanese and Javanese. So the characteristics of the Bekasi Betawi language are slightly different from the Jakarta Betawi language. The difference between Betawi Bekasi and Betawi Jakarta can be seen in the table below.

TABLE 1
COMPARISON OF BETAWI BEKASI LANGUAGE WITH BETAWI JAKARTA LANGUAGE

Betawi Bekasi (BB)	Betawi Jakarta (BJ)	Meaning
Biluk	*Biluk*	Turn
Encing	*Encing*	Aunt, mother/father's sister
Encang	*Encang*	Uncle, brother, mother/father (BJ) Children of grandparents (BB)
Mamang	*Encang*	Uncle, brother, mother/father
Cebrik	*Dekil, kumel*	Not neat, dirty, rundown
Kita, gua	*Gua*	Me, I

In addition to the differences in the characteristics of the two languages, Bekasi Regency is interesting to be used as a place for research on lexicon related to agriculture, because this area is industrial. Although this area has shifted its status from an agricultural area to an industrial area, the Bekasi Regency government still pays attention to agriculture in its area. This is reflected in the Bekasi Regency Regional Government Regulation No. 33 of 2001, taking into account the Vision of National Development and the Vision of West Java Province. The vision of Bekasi Regency is "Superior Human Beings who are religious based on agribusiness and sustainable industry'. This vision is then supported by the fifth point of the District Mission, namely: "Improving the quality of farmers and the quality and quantity of agricultural products".

To realize this vision and mission, the local government of Bekasi Regency encourages farmers to use equipment that is considered more effective and efficient. This technologically advanced equipment can cut farmers' rice planting cycles. On the other hand, the use of technology in agriculture has a considerable impact on the vocabulary of agriculture in Bekasi Regency. In the explanation above, it can be seen that lexicons such as *arit*, *ani-ani*, and *etem* are in danger of being lost and are very likely to be replaced by new vocabulary according to technological developments. *arit*, *ani-ani*, and *etem* are equipment used by farmers to harvest rice crops. These three types of tools are increasingly rarely used by farmers to cut rice plants in the harvesting process. Instead, there is now a technologically advanced machine combo capable of doing several things at once; Cutting the rice, threshing the grain, and separating the grain from the rice stem. Therefore, recording and data collection of new agricultural lexicons that emerged in the Bekasi Regency due to the use of technology in agriculture is considered necessary.

In this study, the lexical innovations that will be discussed are lexical innovations that occur in the field of rice field agriculture in the Bekasi district. More specifically, the focus of this research is on lexical innovations that occurred in rice cultivation in rice fields after Bekasi Regency farmers switched to using modern agricultural technology and the impact of using these technologies on the lexicon of rice field agriculture in Bekasi Regency. Thus, this study is expected to provide a view of how rice field farming technology has added and removed several lexicons. And how this lexical innovation can provide consideration for related parties to be able to increase the productivity of farmers while still being able to preserve traditional rice farming culture.

II. THEORETICAL FRAMEWORK

The dynamic nature of language makes language change a natural thing that constantly happens. All of this is of course also the influence of human creativity in producing and understanding language. Sibarani (2004, p. 211) states that language changes caused by cultural changes are more prominent in aspects of the lexicon (vocabulary) than other linguistic aspects, both regarding form and the meaning of the lexicon. Lexicon language changes can be seen from several aspects, namely: (1) omissions, (2) additions, (3) expansions, (4) narrowing, and (5) exchanges. This is in line with the opinion of Fromkin (2003), that lexicon changes can occur in several ways: (1) the emergence of new lexicons, (2) *borrowing*, and (3) semantic changes, such as expansion, narrowing, and change of meaning.

Pura et al. (2022, p. 81) state, that thanks to the property of human language—language creativity; we can produce and understand new forms of language. Language productivity and creativity seem very related and difficult to distinguish from each other; Lyons (1977) argues that creativity and productivity are complementary terms, indicating different ways of creating new terms and using new terms. He goes further and proposes to understand creativity and productivity as hyponyms of innovation, distinguishing whether regulation is foreseen. This position is indirectly held by Dal and Namer (2018). Because they state that creativity should be viewed as a subcase of productivity. That is, it corresponds to the low pole of the productivity continuum. And, as Munat (2007) confirms, there is no apparent reason to advocate a theoretical distinction between productivity and creativity. Hockett (1958) in Bauer 2001 give the label ‘productivity’ to that property of language that allows us to say things that have never been said before, the design feature that Chomsky (1965) calls ‘creativity’.

However, Maledo (2021) states that productivity and creativity are two different things. There is a distinction between morphological productivity and creativity related to lexical innovation and nonce formation. This distinction is

related to the conflict between intentionality and unintentionality (Dal & Namer, 2016). Morphological productivity is understood as the potential for language users to unintentionally create a multiple of new morphologically complex words (Dal & Namer, 2016). Bauer (2001) defines morphological creativity as the ability of native speakers to extend the language system in a motivated but unpredictable (non-rule-governed) way, contrasting it with productivity, which is, instead, defined as rule-driven innovation. In his research, Maledo (2021) found that there are several lexical innovations in the process of forming new words contained in the poems by Joe Ushie he studied. These processes are compounding, affixation, blending, lexical hyphenation, and lexical bracketing.

Research that is also related to lexical innovation is research from Pura in 2022. Pura researches lexical innovations related to the COVID-19 pandemic such as self-isolation, social distancing, pandemic, and so on. Of the 590 words taken from *News on the Web (NOW)* from January 2020 to October 2021, it was found that the process of forming new words was: compounding, blends, affixation, acronyms, and back-formation; with the highest percentage of occurrence is *compounding*.

Further research, research from Takwa et al. (2022) on the shift in meaning in the lexicon of traditional technology in Tolaki, South Sulawesi states that there is an extinction of the majority of the lexicon of the traditional agricultural system. Data was obtained from a book entitled "Tolaki Culture" by Abdurrauf Tarimana. In addition, Takwa also provided a questionnaire containing 115 lexicons to 7 informants from the Tolaki community. Of the 115 traditional technology lexicons in Tolaki, about 50 lexicons (44%) experienced extinction, 29 lexicons (25%) experienced a shift, and 36 (31%) did not experience a shift. The lexicon's shifting meanings include: (1) the lexicons for farming tools, (2) the lexicons for sago-smoking tools, (3) the lexicons for containers, (4) the lexicons for tools of making and lightning fires, (5) the lexicons for eating and drinking utensil, (6) the lexicon for clothing and jewelry tools, and (7) the lexicon for means of transportation

Kuswoyo (2023, p. 957) mentions the rules for making a new terminology from a piece of news or information in society are called the word formation process, and the process of forming words is called the morphological process. Filatkina in Arndt-Lappe et al. (2018, p. 3) argues that as word formations, formulaic patterns are considered an important means of lexical expansion and innovation. Filatkina found substantial differences and characteristics in the way formulaic patterns contribute to expanding the lexicon. There are several ways in the word formation process, ranging from affixation, coinage, borrowing, backformation, conversion, derivation, compounding, blending, acronyms, and so on. However, Ayto (1990) and Steinmetz and Kipfer (2006) in Fandrych (2008) stated that non-morphemic processes in acronyms, blending, and clipping are as important as morphemic processes. They added that this is due to the increasing popularity of these three non-morphemic processes in the 20th century as the use of computers and electronic communications increased.

Compounding is the process of forming a new word by combining two or more words. O'Grady (1996) argues, that compounding is the combination of lexical categories (Noun, Verb, Adjective, or Preposition) to form a larger word. Plag (2002) states similarly, that compound, or compounding, or compositions may consist of more than two member words. In line with O'Grady and Plag's statement, Hacken (2017) says compounding is a word formation process based on the combination of lexical elements (words or stems). This process of word formation is one of the most productive processes in recent years. Moehkardi (2016, p. 325), mentions compounding has vast growing potential, especially those found in internet-based media.

Affixation is the process of forming a new word by adding an affix (it can be a prefix, infix, or suffix). Affixing is a word-forming process in which an affix is attached to the root or base of a word to form a new word. The process of affixing in English can be divided into prefixes, suffixes, and infixes, depending on whether the affix is added before, after, or at a particular place within the base. Thus, the affix itself can be a prefix, a suffix, or an infix (Mathews, 1991). Affixes themselves, are morphemes that must be attached to a root word because they cannot stand alone (Haspelmath & Sims, 2010). However, not all types of affixes and root words can be combined to obtain affixations; Haspelmath and Sim (2010) call it the combinatory potential of the affix. For example, -un and intelligent can be combined using affixes to produce the new word unintelligent. But not -able and intelligent, the two morphemes cannot be combined to form a new word, because the suffix -able can only be attached to verbs and intelligent is an adjective.

Lieber (2009) calls blending a process of word formation in which parts of words that are not themselves morphemes are combined to form a new word. Blending is a process of forming new words by combining parts of the root word (Haspelmath & Sim, 2010). Both statements are in line with O'Grady's (1996) opinion many years earlier; blend is a word that is created from parts of two already existing items. Thus, it can be concluded that blending is the process of forming a new word by combining certain parts of the words that make it up. Based on the formula given by Plag (2003) in Beliaeva, AB + CD = AD, the beginning of the first source word and the ending of the second source word are combined. The constituent words usually consist of two pre-existing words, for example, breakfast and lunch can be turned into brunch by combining br- from the first word and -unch from the second word. In meaning, the new word that undergoes this process is a combination of the meanings of the two words that make it up. In this case, brunch which is a combination of breakfast - breakfast and lunch - lunch, means eating activities that are in the time between breakfast time and lunch time.

All languages have words that represent something based on their sound (O'Grady, 1996; Yamamoto, 1993). Onomatopoeia is a word formation process in which the new word is taken directly from the sounds around it.

Onomatopoeia is the process of forming new words by imitating/imitating the sound of an object or other sounds from nature. Carstairs-McCarthy (2002, p. 6) states it is true that there are some words whose sound seems to reflect their meaning fairly directly. O'Grady (1996) himself called onomatopoeic words as words that have been created to sound like the thing they name.

O'Grady (1996) refers to borrowing as a source of language change that involves adopting aspects of one language into another. Borrowing is the process of borrowing words derived from other languages and then borrowing with or without modification from the local language. Ulfah (2019, p. 116) stated that borrowing is usually used in terms of new technical or unknown concepts, to overcome a gap. Hadithya (2014) in Ulfah (2019, p. 116) mentions two types of borrowing, pure borrowing and naturalized borrowing. Furthermore, Hadithya explained that naturalized borrowing is a case where a word or an expression is taken from the source language and used in the target language, but it is in a naturalized form, that is, it is made to conform the rules of grammar or pronunciation of the target language. Conversely, when a word is borrowed directly without changing or adjusting to the target language, then the word undergoes a process of pure borrowing.

III. Methodology

This research is ethnographic research, where the author describes and interprets the language of a community group. Based on Harris' explanation, in Creswell (2007, p. 68), "ethnography is a qualitative design in which the researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs, and language of a culture sharing group". Agar (1980) in Creswell (2007, p. 68) added,

> ethnography is a way of studying a culture-sharing group as well as the final, written product of research. As a process, ethnography involves extended observations of a group, most often through participant observation, in which the researcher is immersed in the day-to-day lives of the people and observes and interviews the group participants.

In this study, data were obtained from observations, interviews, photo shoots, document analysis, and field notes. Data is divided into two types; primary data and secondary data. Primary data is data obtained or collected by researchers directly from their data sources. In this study, the data is in the form of a lexicon in agriculture in Sukakarya District, Bekasi Regency obtained from observations and interviews in the field. Secondary data is data obtained and collected from various existing sources such as books, research reports, and journals, as well as the Internet.

The informants selected in this study are natives of Bekasi Regency who still use their mother tongue. In this study, 4 (four) informants were selected, these informants were representatives of residents of Sukakarya and Sukamanah sub-districts who were active in agriculture and still used their mother tongue actively so that they were considered able to provide information about the lexicon in agriculture accurately and accurately. The selection of informants is under what Patton (1990) stated that there are two informant selection techniques (sampling strategies) in qualitative research as data sources. The first is a way of randomly retrieving informants from the population by taking into account the number of informants with the aim that informants can be generalized to the population. The second is that informants are selected depending on the purpose of the study without regard to their generalization ability.

Stages of analysis:

1. The vocabulary obtained is grouped by its word class.
2. After being grouped by word class, word meanings were searched based on the KBBI dictionary, Betawi dictionary, and Sundanese dictionary.
3. Grouping new vocabulary as a result of the use of new agricultural technologies.
4. Looking for vocabulary formation processes based on lexical innovations in agriculture in Bekasi district.
5. In the last step, the author grouped vocabulary that was threatened with loss due to no longer being used in the planting process until harvesting rice plants.

IV. Result and Analysis

57 lexicons of rice field agriculture used by farmers in Bekasi Regency were obtained after conducting interviews and observations. Once the data is obtained, the author then groups the vocabulary based on the word class. At this stage, the 5 vocabulary consists of 28 verb classes and 29 noun word classes (see Appendix A). In the next stage, the author grouped the vocabulary that emerged due to the use of technology in agriculture. Then 8 new lexicons were obtained with details of 4 lexicons with noun word classes and 4 lexicons with verb word classes. Findings in the field show that several lexicon innovations produce new lexicons due to the use of rice field agricultural technology. Meanwhile, the impact of the use of modern agricultural technology is threatened by the loss of 11 lexicons, especially those related to traditional agricultural tools and processes. The new lexicon and lexicon that are threatened with loss in rice field farming in Bekasi Regency are:

TABLE 2
NEW LEXICON OF RICE FIELD FARMING IN BEKASI REGENCY

No.	New Lexicon	Word Class
1.	*Nraktor*	Verb
2.	*Nyempret*	Verb
3.	*Ngorea*	Verb
4.	*Nyintok*	Verb
5.	*Sintok*	Noun
6.	*Grabag*	Noun
7.	*Komben*	Noun
8.	*Ojeg Onlen*	Noun

TABLE 3
LEXICON OF AGRICULTURE IN BEKASI REGENCY WHAT'S IN DANGER OF BEING LOST

No.	Lexicon in danger of loss	Meaning
1.	*Arit*	Tools for cutting rice plants
2.	*Ngarit*	Conducting a bumper harvest using *arit*
3.	*Etem*	Tools for cutting rice plants
4.	*Ngetem*	Conducting a bumper harvest using *etem*
5.	*Ani-ani*	Tools for cutting rice plants
6.	*Papan gebot*	Board used for threshing rice grains
7.	*Ngegebot*	Threshing rice grains using a *papan gebot*
8.	*Pedang*	A type of cleaver with a longer size
9.	*Babad*	Mowing or eradicating plants
10.	*Cacag*	Cut into small pieces, chopped
11.	*Agon*	Soaking the *damen* that has been soaked and whipped before using the feet

Wahya (2017, p. 220) divides innovation into two types, internal innovation and external innovation. Internal innovation is an update triggered by the internal system of an isolect. External innovation is renewal triggered by other isolects due to contact between isolects. The new lexicon that falls into the category of internal innovation is *nraktor, nyempret, ngorea, nyintok, sintok,* and *grabag.* The lexicons undergo the following word formation process:

A. Afiksasi

Nraktor is the process of cultivating the land using a tractor engine. A tractor is a tool used by farmers to plow their land, this tool uses a machine as a drive. The soil is made looser by turning the soil. *Nraktor* is carried out at the preparatory stage of rice planting. Farmers prepare their arable land so that the land is ready for replanting.

Tractor engines are very helpful for farmers because they can cut the length and duration of the process of plowing the land. The *word nraktor* comes from the root word tractor (a machine used to plow fields) which has the addition of the -n sound and removes the -t sound at the beginning of the word. This process changes the class of words as well as the meaning of the root word; the process of word formation that occurs in the word *nraktor* is affixation. The process of word formation can be seen in the following chart.

-n	+	*Traktor* =>	***nraktor***
prefix		nomina	verba

Before knowing the tractor machine, traditional people generally cultivated the land in the rice fields by hoeing or plowing (turning the land) using cow or buffalo power. In the Sukakarya and Sukamanah sub-districts themselves, farmers do not use buffaloes or cows but *pedang* (a type of cleaver with a longer size). This is because the types of rice fields in both areas are deep rice fields and not land fields, so it is not possible to use cows or buffaloes to plow their fields.

In the early stages, *damen* (the remaining rice plants that have been harvested and harvested for rice) are then babad (cut) using *a pedang.* After that, *the damen* is soaked in water for ten days. After the *damen* rots, the farmer then cuts it into small pieces (*cacag*). While waiting for the seedlings that have been sown to be ready for planting, *the damen* is then *diagonin* (buried into the soil using feet). *Diagonin* is the last stage in plowing the land, after which the land is ready for replanting.

The *nraktor* process has eliminated some processes in plowing the land. Peasants no longer needed *pedang*, no longer needed to do *babad*, *cacag*, and *agon damen.* As the process is not needed, the use of the four vocabularies above is also no longer used in agriculture in the Bekasi Regency.

Nyempret is the process of spraying rice using a special tool for spraying plants. The liquid sprayed on rice plants is a pesticide to overcome rice plant pests. Based on the pertanian.go.id page (http://cybex.pertanian.go.id/mobile/artikel/58883/9-Teknik-Menyemprot-Tanaman-Padi-Yang-Baik-Dan-Benar/), spraying is an activity in plant cultivation that aims to control pests and diseases that disturb plants. The process is done by mixing pesticides and water with a certain dose, then the solution is put into the spraying tank and the last step is to spray the mixture of pesticides and water on the plants. Spraying is usually carried out in the morning on a sunny day. This is because it takes about an hour for plants to absorb fertilizers and pesticides. So spraying can not be done on rainy days.

The word *nyempret* comes from the word *sempret* which means spray. So the process of forming the word *nyempret is* included in the affixation where the word sempret gets the prefix *-ny* and removes the -s sound at the beginning of the word. This results in changes in meaning as well as word class. The process of forming a *nyempret word* can be seen in the following chart.

-Ny	+	*Sempret*	=>	***Nyempret***
prefix		nomina		verba

Ngorea is an activity to provide fertilizer to rice plants during seeding and planting. The word *ngorea* is formed by adding the *prefix -ng* to the word *orea*. *Orea (*urea) is an artificial fertilizer that is included in the class of nitrogen fertilizers in farming (https://kbbi.kemdikbud.go.id/entri/urea). Urea fertilizer contains 45% Nitrogen and is hygroscopic, does not acidify the soil, is easily soluble in water, flammable by sunlight and easily absorbed (Subarijanti in Fitriana, 2011) in addition to urea fertilizer, farmers also use TSP fertilizer. This type of fertilizer contains elements of phosphorus (Fitriana, 2011). In the process of applying fertilizer, farmers still use the word *ngorea* regardless of the type of fertilizer they use. The process of forming the word *ngorea* can be seen in the following chart.

-ng	+	*Orea*	=>	***Ngorea***
prefix		nomina		Verba

Before chemical fertilizers were used, traditional farmers of Bekasi Regency used manure and compost to fertilize their rice plants. The manure used comes from goat, cow, and buffalo manure, while compost is obtained from leaves. Based on practical information sheet no.1 released by the Office of the State Minister of Environment on Environment Day, June 5, 2000, compost is an organic fertilizer sourced from household waste, plant waste, market waste, and others and is made through a composting process.

Still based on the circular, compost is made through several stages: (1) waste sorting; Composted materials should come from fresh garbage, so it will avoid the emergence of flies, and odors, and to maintain the quality of compost. (2) garbage accumulation; Arrange piles of selected garbage into air tunnels made of bamboo. Water evenly on the pile. Furthermore, the tiny body will work on the weathering process. This process takes approximately three days. (3) temperature monitoring; Monitoring the temperature for 2-4 days is very important. If the temperature is too high, then it is necessary to carry out a reversal. (4) weathering; The weathering process usually lasts for approximately 35 days until the color of the compost turns dark brown or blackish. (5) maturation; After the compost is shaped like soil, it is necessary to carry out ripening for 14 days. This ripening is necessary to ensure that compost is safe to use as a fertilizer for planting. (6) harvesting; Mature compost is separated using a sieving device to separate fine grains and coarse grains. Fine granules are used for pots or medium seedbeds of large granules for plantations.

Nyintok is the process of threshing rice grains using a threshing machine (*sintok*). Farmers will install tarpaulins as a base before the *nyintok* process is carried out. In the *nyintok* process, rice plants that have been harvested are included in *the sintok* that is operating. *The sintok* will separate the *grain* (rice grain) from *the damen* (rice stem). Rice stalks will fly and pile up while *the grain* will be accommodated on a tarp that has been installed as a base.

The word *nyintok* is a combination of the prefix **-ny** with the word *sintok.* In principle, this word is a new word that undergoes 2 (two) times the process of word formation. The first process is called *blending* and the second process is affixation. The process of forming the word *nyintok* can be seen in the following chart.

-Ny	+	*Sintok*	=>	***Nyintok***
Prefix		Noun		Verb

Based on the affixation process that occurs in the new words above, it can be seen the pattern of formation of the new word, namely:

Prefix + Noun => Verb

The prefixes that appear in Betawi Bekasi are ***-n, -ng, -ny***. The three prefixes give the same properties to the formed word, which is to change the class of base words (nouns) into verb classes. In addition, in the process, new words also undergo a process of completion or removal of the first sound in each root word. The process of dissolution occurs when the prefix meets a root word that has a consonant initial letter (sound) as in the word:

traktor => *nraktor*, sound /t/ undergoes dissipation;
sempret = > *nyempret*, the sound /s/ is dissipated; and
sintok = > *nyintok*, the sound /s/ is sed.

The process mentioned above is similar to nasal substitution in Indonesian where the -t, -k, -p, and -s sounds are melted and replaced by the nasal sound -ng. This process can be seen in the following examples.

Meng + urus => *mengurus* (take care)
Meng + tulis => *menulis* (write)
Meng + kirim => *mengirim* (send)
Meng + pakai => *memakai* (wear)
Meng + sewa => *menyewa* (renting)

Haspelmath et al. (2010) call this Indonesian nasal substitution a productive morphonological alternation. Specifically, they explain in this alternation, that the initial voiceless stop of a verb root is replaced by a nasal stop at the same place of articulation when the active-voice prefix meng- is attached to the root.

B. Blending

Sintok is short for rice grain threshing machine. This word formation process is included in the blending criteria, where two morphemes are freely combined and partially removed from the morphemes. The process of forming such words can be seen in the following chart:

Mes**in**	+	Peron**tok**	=>	**Sintok**
machine		thresher		Threshing machine

Based on Plag's (2003) statement in Beliaeva, the blending process can use a formula, where the first syllable of the first word is combined with the second syllable of the second word (AB + CD = AD). However, he added, there are many ways to implement this process. In this case, the word *sintok* is a combination of the first syllable of the word "*mesin*-machine" and the third syllable of the word "*perontok*-thresher". Beliaeva (2019) mentions it is not surprising, that blends are often used as expressive means in various domains including slang, popular media, political terms professional vernacular, company names, names of musical bands, and other cultural groups.

In this case, the people of Bekasi regency use two different lexicons with two different morphological processes for the same object. Some people call it *gerabag*, while others call it *sintok*. The process of threshing rice grains using *sintok* or *grabag*, is referred to as *nyintok*. *Sintok* is a rice grain threshing machine with diesel fuel. In a day, farmers can produce at least 25 quintals of grain using this tool.

Before the *nyintok* process begins, the harvested rice plants are collected at a point in the rice field. Farmers will then install tarpaulins near the pile of rice plants. Tarpaulins are used as a base to hold *gabah*. *Sintok* will separate the *damen* from *gabah. The gabah* is then collected and put into sacks. After the sack is full enough, it will be closed by sewing using a special needle and raffia rope. After sewing, the sacks containing the grain are ready to be moved to the rice field owner's warehouse.

Traditional farmers of Bekasi Regency use *papan gebotan* to threshing rice grains. Farmers beat harvested rice plants on *papan gebotan*; this process is referred to as *gebot*. In addition to draining a relatively lot of time and energy, the traditional threshing process also requires more people to do it. Therefore, farmers now no longer use *papan gebot* in the rice harvesting process.

C. Onomatopoeia

Gerabag is a machine used to threshing rice grains. *Gerabag* is another name for *sintok*. People call it that, because of the sound and vibration produced by the device when operating (*gerabagan)*. In morphology, the process of the formation of this word is included in the onomatopoeia criteria. This process is also called sound symbolism, where sounds that come from nature, animals, humans, or objects, are imitated and symbolized as a word. *Gerabagan* itself has the meaning of not being calm and tends to produce something untidy. In the Betawi language, there is a term *gerabag-gerubug* which means looking for something in a hurry and untidy. This seems to be an additional cause of *sintok* also known as *gerabag.* The fast but noisy way of working, excessive engine vibration, and the flying stems of rice plants after being separated from the rice stems make it look rushed and untidy.

The new lexicons that constitute the category of external lexical innovations are: *komben, and ojeg onlen.* The following will be presented as an explanation of the two lexicons.

D. Borrowing

The word *komben,* comes from the English combine which means combination. *Komben* is a combination of a rice plant mower, a rice grain thresher, and a rice grain reservoir. So that by using only one machine, farmers can save time and energy in the process of harvesting their rice. The size of the *komben* is much larger than *sintok*. *Komben* requires three operators, each of whom is tasked with operating the *komben*, accommodating rice grains that have fallen out using sacks, and tidying up sacks that have been filled with rice grains.

Vinay and Darbelnet (2000) categorize borrowing into two types; pure and naturalized. Pure borrowing occurs when there is no change in either the form or meaning of the word in its native language. Naturalized borrowing occurs when there is a change in the form of a word even though it does not change the meaning of the word from the original language. In this case, the word *komben* falls into the category of naturalized borrowing. The sounds in the initial language /k∂ mbain/ are naturalized by adjusting the sound characteristics of the local language. There are two naturalized sounds, /∂/ becomes /o/ and /ai/ becomes /e/. Therefore, in form, this word has changed, while for its meaning, there is no change.

The word *komben* undergoes a change in the borrowing lexicon, where the language of origin of the word is a foreign language (English) which is then absorbed into *komben.* Borrowing is the process of borrowing foreign language words. There is a change in the form of the word as in the description below.

Combine /k∂mbain/ => *komben* /komben/

Due to the use of *komben*, farmers no longer use *sickles, etems*, or *ani-ani* to harvest their rice crops. Therefore, the process of *crying, ngetem*, and *ani-ani* is also lost. In addition, for threshing rice grains also no longer use *papan gebot.* So the process *of ngegebot* was also lost. *Komben,* on the other hand, is the answer to the difficulty of finding agricultural workers due to the industrialization of the Bekasi Regency. Besides of course accelerating the process of harvesting rice plants so that farmers can sell their crops faster.

It can be seen that one tool using agricultural technology that can grind several things at once results in the threat of the existence of traditional harvesting tools and processes. Thus, the lexicon threatened by its existence is not one, but seven lexicons at once. *Komben* created a lexicon such as:

Arit => *ngarit*
Etem => *ngetem*
Ani-ani => *ani-ani*
Papan gebot => *ngegebot*

It is no longer used by farmers.

E. Expansion of Meaning

Ojeg onlen is a term used for the carrier (person who transports) rice using a motor to transport harvested rice. In the Betawi language, *ojek* or *ojeg* means rent, ride services for motorcycles, bicycles, boats, and so on. *Ojeg onlen* is a new phrase in agriculture inspired by the type of work that offers shuttle services using cars or motorbikes by utilizing certain applications on devices. This service uses an online platform to make it easier for service users to access anywhere and anytime.

In the people of Bekasi Regency, the use of the term *ojeg onlen* began when fewer and fewer people wanted to transport rice from the rice fields to the place of the rice owner by placing rice sacks on the shoulders or shoulders. For rice field owners themselves, the use of *ojeg onlen* helps speed up rice field owners selling their crops. This is because if you use the services of a *tukang panggul* (a person who moves rice manually) takes more than one day to collect the harvested rice to the rice field owner, then with the help of *ojeg onlen*, the rice transfer process can be completed in just one day. In addition, *ojeg onlen* is also able to reach parts of rice fields that are difficult to access due to rain. When rain makes *the galengan* wet and slippery, *tukang panggul* will find it difficult to carry sacks of grain from the fields. Therefore, the existence of *ojeg onlen* is currently considered very important and very helpful for rice field owners.

Linguistically, *ojeg onlen* undergoes semantic changes, that is, expansion of meaning. From being limited to a shuttle service that uses an online platform, it now has additional meaning, to a rice pick-up service that has been harvested (without an online platform). Sibarani (2004) mentions lexicon language changes can be seen from several aspects, namely: elimination, naming, expansion, narrowing, and exchange. Fromkin (2003) argues lexicon changes can occur in several ways: the emergence of new lexicons, borrowing, and semantic changes such as expansion, narrowing, and change of meaning.

V. Conclusion

From the explanation above, it can be concluded that lexical innovation is also present in agriculture in Bekasi Regency. This lexical innovation occurred due to technological developments in agriculture. The process of planting rice, from preparation to harvesting which is increasingly dominated by machines produces a new lexicon in each process. The word formation process that seemed most productive in the study, was affixation. However, there is also a process of forming words *blending,* onomatopoeia, and *borrowing.* There is also an expansion of meaning in lexical innovation in agriculture in Bekasi Regency. In addition to causing lexical innovation, technological developments in agriculture also have an impact on the threat of losing the lexicon of agriculture when farmers still use traditional equipment. This is because traditional agricultural equipment is no longer used so the lexicon related to traditional agricultural equipment and processes is also no longer used. The lexicon includes: *pedang, agon, gebotan, ngegebot* and so on. Therefore, it is important to make certain efforts to preserve these lexicons without compromising the productivity of farmers.

APPENDIX A LEXICON OF AGRICULTURE IN BEKASI REGENCY BASED ON WORD CLASS

NO	Leksikon Noun Word Class	Meaning
1.	*Arit*	Tools for cutting rice plants
2.	*Etem*	Tools for cutting rice plants
3.	*Gerabag*	Tools (machines) for threshing rice grains
4.	*Sewa*	The system of agricultural cooperation in the distribution of crops with certain conditions
5.	*Maro*	The system of agricultural cooperation with the distribution of crops is divided in half between cultivators and rice field owners
6.	*Ngegade*	The system of lending money with rice field guarantees from rice field owners to money owners, with the consequence that crop yields are regulated according to agreement.
7.	*Gundukan*	Piles of rice stalks after cutting
8.	*Gabah*	Grains of rice
9.	*Singgang*	Rice plants that grow again after the bumper harvest
10.	*Padi gabug*	Rice plants that do not have rice grains due to leafhoppers or caterpillars
11.	*Galengan*	Rice paddy ripens
12.	*Wereng*	Pests of rice plants in the form of small insects
13.	*Walang sangit*	Pests of rice plants in the form of small locusts
14.	*Kiong mas*	Pests of rice plants of the type of gold snails
15.	*Lembing*	Pests of rice plants of the insect type
16.	*Uler*	Pests of rice plants of the caterpillar type
17.	*Kupu-kupu*	Pests of rice plants of the small butterfly type
18.	*Lompat pucuk*	Rice plants affected by leafhopper pests
19.	*Okeman*	Sprinkling rows of rice plants during planting
20.	*Galengan*	Path in rice fields
21.	*Petakan*	Rice fields
22.	*Sintok*	Grain threshing machine
23.	*Papan gebot*	Board used for threshing rice grains
24.	*Damen*	The rest of the rice plants that have been harvested and taken rice
25.	*Pedang*	A type of cleaver with a longer size
26.	*Komben*	A combination machine that can be used to cut rice plants while threshing rice grains
27.	*Ojeg onlen*	People who transport rice grains from rice fields to the place of rice field owners using a motorcycle
28.	*Tukang panggul*	People who transport rice grains from rice fields to the place of the owner of the rice field by means of pelvis

No.	Lexicon of verb word classes	Meaning
1.	*Namping*	Tidying up rice paddies using a hoe
2.	*Mopok*	Fertilizing the paddy fields by adding mud to the paddy fields to the paddy fields
3.	*Nraktor*	Cultivate (plow) the land using tractor machines
4.	*Sebar bibit*	Sowing rice plant seeds by spreading
5.	*Ngratain*	Leveling rice fields manually using boards
6.	*Nyempret*	Provide nutrients or drugs to overcome diseases in rice plants by spraying them on rice plants
7.	*Ngorea*	Fertilizing rice plants during seedling or planting
8.	*Ngoyos*	Cleaning rice plants that have been planted from grass
9.	*Nandur*	Performing seed embedding from the nursery
10.	*Nanjangin*	Adding rice plants that are depleted due to planthoppers or gold snails
11.	*Ngedederin*	Prepare rice plant reserves to anticipate if there are rice plants that have been eaten by leafhoppers or gold snails
12.	*Nandur op*	Planting rice plants from seedlings together with 30-40 people
13.	*Ngewatun*	Cleaning rice plants from mapped grass
14.	*Ngebabad*	Cleaning grass on rice paddy fields, to avoid nesting rodents
15.	*galengan*	Rice paddy ripens
16.	*Nyilakin*	Arranging rice plants that are ready to harvest so that they are not scattered in the rice fields
17.	*Motong*	Harvest using manual tools or mowers
18.	*Ngarit*	Conducting a bumper harvest using sickles
19.	*Ngegebot*	Threshing rice grains from the trunk using *papan gebot* made of wood and bamboo
20.	*Nyintok*	Threshing rice grains from the stem using a *sintok* machine
21.	*Ngetem*	Harvesting rice plants by cutting them using *etem*
22.	*Ani-ani*	Harvesting rice plants by cutting them using *ani-ani*
23.	*Nimbangin*	Weighing the weight of rice that is already in sacks after the rice plants are harvested
24.	*Naker*	Dividing the harvest, from the owner of the rice field to the farm laborer
25.	*Ngangkut*	Bringing the harvest from the middle of the rice field map to the place where the owner of the rice field
26.	*Manggulin*	Bringing the harvest from the middle of the rice field map to the place of the rice field owner by carrying it on the shoulders
27.	*Cacag*	Cut into small pieces, chopped
28.	*Agon*	Soaking *damen* after being chopped
29.	*Babad*	Mowing or eradicating plants

APPENDIX B OVERVIEW OF FARMER ACTIVITIES

Figure 1. The *Narktor Process*

Figure 2. *Nyempret* Process (Source: Tabloid Sinartani.com)

Figure 3. *Ngorea* Process (Source: mertani.co.id)

Figure 4. *Nyintok Process*

Figure 5. *Grabag/Sintok*

Figure 6. *Komben*

Figure 7. *Ojeg Onlen*

Figure 8. The Process of Transporting Rice From the Rice Field to the Place Where the Owner of the Rice Field Is by *Tukang Panggul*

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