

Evaluating the Implementation of the Local Regulations (Qanun) to Control Productive Female Cattle and Buffaloes in Aceh Besar

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Abstract. The purpose of this study was to evaluate the implementation of Qanuns (local regulations) for controlling productive cattle and buffalo in Aceh Besar District. This study conducted a census of abattoir officers to 10 respondents and 10 *muge* (intermediaries) to collect data on the population in this study involving all groups of cattle and buffalo farmers in Aceh Besar district, namely 627. The number of samples was determined based on the Slovin formula, i.e., 93 farmers with a 5% error rate. Also, a survey was conducted on six sub-districts in Aceh Regency based on a cluster sampling system. Data processing was done by calculating the percentage of measured parameters and presented in tabular form. The results of the study indicated that the implementation of Qanun decreased the slaughter of productive female cattle and buffalo in Aceh Besar District. However, public understanding of the control of productive female cows/buffalo Qanun remained low because only 30.98% of the public were aware of the Qanun. The lack of knowledge was indicated by the high slaughter and sales of productive female cattle and buffalo at the farmer level that only decreased by around 5.84% (from 70.88% to 65.04% after the implementation of Qanun. Economic needs were the reason for the high sales of productive female cows/buffaloes (73.13%). The weak implementation of Qanun on productive cattle and buffalo was probably due to poor socialization of Qanun for controlling productive cattle and buffaloes. 79.65% of the respondent group answered that they had never received socialization on controlling productive female cattle and buffalo. However, the contributing factors to the declining slaughter and sales of productive female cattle and buffalo since the introduction of Qanun were the strict regulations at the abattoir and the level of knowledge of the abattoir staff regarding Qanun to maintain productive cattle and buffaloes.

Keywords: cattle, buffaloes, productive female, qanun, controlling

Abstrak. Tujuan dari penelitian ini adalah mengevaluasi penerapan Qanun (peraturan daerah) pengendalian ternak sapi dan kerbau betina produktif di Kabupaten Aceh Besar. Metode yang digunakan dalam penelitian ini adalah sensus dan survei. Data yang dikumpulkan dengan cara sensus dari petugas rumah potong hewan sebanyak 10 orang responden dan muge (perantara) 10 orang responden. Populasi dalam penelitian ini adalah seluruh kelompok ternak sapi dan kerbau yang ada di kabupaten Aceh Besar sebanyak 627 kelompok tani/ternak. Jumlah sampel yang ditentukan berdasarkan rumus Slovin adalah sebesar 93 peternak dengan tingkat kesalahan 5%. Pengumpulan data dari peternak dilaksanakan dengan cara survei dengan mengambil enam kecamatan di Kabupaten Aceh berdasarkan sistem cluster sampling. Pengolahan data dilakukan dengan cara menghitung persentase dan disajikan dalam bentuk tabel. Hasil penelitian menunjukkan bahwa pemotongan sapi dan kerbau betina produktif di Kabupaten Aceh Besar terjadi penurunan dengan diterapkan Qanun ternak sapi dan kerbau betina produktif. Namun, tingkat pemahaman masyarakat tentang adanya pengendalian Qanun sapi/kerbau betina produktif masih rendah, dimana 69,02% belum mengetahui adanya Qanun dan 30,98% yang mengetahui adanya Qanun. Rendahnya tingkat pengetahuan ditandai dengan masih tingginya penjualan dan pemotongan sapi dan kerbau betina produktif di tingkat peternak hanya turun sekitar 5,84% dari 70,88% sebelum diterapkan penerapan Qanun sapi dan kerbau produktif menjadi 65,04% setelah diterapkan penerapan Qanun pengendalian sapi dan kerbau betina produktif. Kebutuhan ekonomi merupakan alasan masih tingginya penjualan sapi/kerbau betina produktif 73,13%. Rendahnya efektivitas penerapan Qanun sapi dan kerbau betina produktif kemungkinan disebabkan rendahnya sosialisasi Qanun pengendalian sapi dan kerbau betina produktif oleh pemerintah. 79,65% kelompok responden menjawab belum pernah mendapat sosialisasi pengendalian sapi dan kerbau betina produktif. Namun dari data terjadinya penurunan pemotongan sapi dan kerbau betina produktif sejak diterbitkan Qanun pengendalian sapi dan kerbau betina produktif lebih disebabkan peraturan yang ketat di RPH dan tingkat pengetahuan petugas rumah potong hewan berkaitan dengan Qanun pengendalian sapi dan kerbau betina produktif yang baik.

Kata kunci: sapi, kerbau, betina produktif, qanun, pengendalian

Introduction

The increasing human population in Indonesia results in the increased consumption of animal protein, especially beef and buffalo. According to Ditjennak (2018), national beef consumption per capita in 2017 was 0.469 kg, indicating a 12.50% increase from 0.417 kg in 2016. The increased consumption of meat means more livestock are slaughtered. In 2017, the total slaughtered cattle and buffalo in Aceh reached 48,512 and 16,867 heads, respectively (BPS, 2018). Meanwhile, daily meat consumption in 2017 for urban and rural areas of Aceh Province was 3.17 grams and 1.91 grams per capita.

Most of the slaughtered animals are productive females, accounting for 40% cows and 35% female buffaloes (Ditjenak, 2014). The high and uncontrolled slaughter of female cattle and buffalo certainly makes it difficult for the government, breeders, and stakeholders to supervise the increase of population, production, and productivity while maintaining the availability of cattle and buffalo breeds. Some factors to the high slaughter of productive female cattle and buffalo include the lower price than the bulls and lack of public knowledge (Borghese and Mazzi, 2005; Atien and Halim, 2017). Aceh government, in this case, through the Veterinary and Animal Husbandry Department in collaboration with the Department of Animal Husbandry, Faculty of Agriculture, Unsyiah, issued Qanun Number 3 of 2016 "Control of Productive Female Cattle and Buffaloes" which was stipulated by the Governor of Aceh on July 28, 2016. The basis consideration of the issuance of the Qanun is to balance and conserve the number of cattle and buffalo in Aceh because there is a high rate of slaughter among productive cattle and buffalo in Aceh, so it must be controlled. Based on the attachment of Law 23 of 2014 concerning regional and provincial governments, they are authorized to manage sources of livestock breeds or strains of livestock. The Qanun consists of 14 chapters and

32 paragraphs containing general provisions, selection, screening, breeding, slaughter control, to punishment for those who violate the Qanun.

After several years of implementing the Qanun to control productive female cattle and buffalo in Aceh Province, the effectiveness of reducing slaughter and increasing the cattle population has not been evaluated. Therefore, the significance of this research is to obtain information on the effectiveness of the implementation of the "Qanun on Controlling Productive Female Cattle and Buffaloes" to preserve the population of cattle and buffalo in Aceh with the location of study in Aceh Besar district.

Materials and Methods

The Location of Study

This study involved several stakeholders including the abattoir officers, *muge* (intermediaries), and breeders. Data collection for slaughterhouse officers and *muge* were carried out at Slaughterhouses (RPH) and Animal Markets in Aceh Besar District and Banda Aceh City. Data collection on farmers was carried out in six sub-districts of Aceh Besar District, namely Lembah Seulawah, Seulimum, Lepung, Lhong Montasik, and Indrapuri Districts.

Research Methods and Sampling

This research was conducted by the census to abattoir officer respondent group and the *muge* (intermediary). There were a total of 10 respondents in Banda Aceh City Slaughterhouse and Lambaro Slaughterhouse and 10 intermediaries respondents in Aceh Besar District and Banda Aceh City.

In addition, a survey was conducted on farmer groups based on geographical considerations of six sub-districts in Aceh Besar District. Each cluster sampling consisted of two sub-districts in the eastern part of Aceh Besar District (Lembah Seulawah and Seulimum), two central sub-districts of Aceh Besar District (Montasik and Indrapuri), and two sub-districts

in the western part of Aceh Besar (Lhong and Leupung). Clusters of sub-district locations in Aceh Besar District for Sampling for Research on Control of Productive Female Cattle and Buffaloes are presented in Figure 1. The sub-district representing the sampling site in each cluster has the highest number of cattle and buffalo in Aceh Besar District based on regional clusters. The largest population of cattle and buffalo based on regional division is shown in Table 1.

The population in this study were all groups of cattle and buffalo in Aceh Besar district as many as 627 livestock groups with a total number of 6995 people. The grouping of

farmers/livestock can be seen in Table 2.

The number of samples in this study was determined with random sampling using the Slovin formula with an error rate of 5%. We collected 93 farmers of livestock groups in six sub-districts of Aceh Besar Regency, namely 15 from Lembah Seulawah, 32 from Seulimeum, 15 from Indrapuri, 16 from Montasik, 11 from Lhong, and four from Leupung District.

$$n = \frac{N}{1 + N(e)^2}$$

Note:

n = sample number; N = population number; e = error level

Table 1. Cluster distribution of sample areas based on the most cattle and buffalo populations in Aceh Besar District

Sub-district	Cattle			Buffalo			Total
	Male	Female	Total	Male	Female	Total	
Western Region							
Simpang Tiga	2,638	3,347	5,985	662	876	1,538	7,523
Darul Kamal	2,011	4,321	6,332	267	170	437	6,769
Lhong	487	1,902	2,389	225	372	597	2,986
Leupung	798	1,154	1,952	321	456	777	2,729
Lhoknga	853	1,461	2,314	176	211	387	2,701
Eastern Region							
Lembah Seulawah	4,385	7,516	11,901	992	3,144	4,136	16,037
Seulimeum	2,228	9,217	11,445	981	987	1,967	13,412
Blang Bintang	2,040	2,480	4,520	814	665	1,479	5,999
Central Region							
Kuta Baro	4,449	3,871	8,320	990	1,058	2,048	10,368
Darussalam	4,602	4,753	9,355	889	949	1,291	10,646
Indrapuri	4,457	4,134	8,591	765	995	1,760	10,351
Kuta Cot Glie	2,746	5,280	8,025	995	883	1,878	9,901
Mesjid Raya	2,745	4,024	6,769	387	402	789	7,558
Kota Jantho	840	4,057	4,897	552	1,531	2,083	6,980
Kuta Malaka	1,882	2,453	4,335	489	687	1,176	5,511
Baitusalam	2,895	1,430	4,325	615	668	1,283	5,608
Sukamakmur	1,744	2,316	4,060	364	539	903	4,963
Ingin Jaya	3,186	1,132	4,318	179	166	345	4,663
Krung Barona	2,246	1,321	3,567	463	411	874	4,491
Darul Imarah	2,305	1,652	3,957	211	240	451	4,408
Montasik	1,639	1,496	3,135	345	432	1,010	4,145
Peukan Bada	1,296	1,858	3,154	431	423	854	4,008
Pulau Aceh	512	1,388	1,900	192	261	453	2,353
TOTAL			125,547			28,861	154,110

Source: Department of Agriculture Aceh Besar District (2019)

Table 2. Development of livestock groups and members at the region of Aceh Besar District in 2019

Sub-district	Number of Livestock Groups	Member Number
Lhong	27	388
Lhoknga	25	543
Leupung	11	109
Indrapuri	39	361
Kuta Cot Glie	46	584
Seulimeum	83	1,042
Kota Jantho	40	385
Lembah Seulawah	38	408
Mesjid Raya	15	178
Darussalam	22	169
Baitussalam	21	181
Kuta Baro	38	614
Montasik	40	536
Blang Bintang	19	198
Ingin Jaya	22	258
Krueng Barona Jaya	19	123
Sukamakmur	23	292
Kuta Malaka	33	186
Simpang Tiga	11	105
Darul Imarah	13	89
Darul Kamal	15	56
Peukan Bada	15	35
Pulau Aceh	12	155
Total	627	6,995

Source: Department of Agriculture in Aceh Besar (2019)

Table 3. Number of livestock groups in Aceh Besar District and percentage of number of samples per district based on the slovin formula

Sub-district	Number of Livestock Groups	Percentage (%)	Number of Sample based on Slovin Formula
Lhong	27	4.31	10.52
Lhoknga	25	3.99	9.74
Leupung	11	1.75	4.28
Indrapuri	39	6.22	15.19
Kuta Cot Glie	46	7.34	17.92
Seulimeum	83	13.24	32.33
Kota Jantho	40	6.38	15.58
Lembah Seulawah	38	6.06	14.80
Mesjid Raya	15	2.39	5.84
Darussalam	22	3.51	8.57
Baitussalam	21	3.35	8.18
Kuta Baro	38	6.06	14.80
Montasik	40	6.38	15.58
Blang Bintang	19	3.03	7.40
Ingin Jaya	22	3.51	8.57
Krueng Barona Jaya	19	3.03	7.40
Sukamakmur	23	3.67	8.96
Kuta Malaka	33	5.26	12.85
Simpang Tiga	11	1.75	4.28
Darul Imarah	13	2.07	5.06
Darul Kamal	15	2.39	5.84
Peukan Bada	15	2.39	5.84
Pulau Aceh	12	1.91	4.67
Total	627	100	244.20



Figure 1. Clusters of sub-district locations in Aceh Besar District for Sampling for Research on Control of Productive Female Cattle and Buffaloes. (Source: Central Bureau of Statistics of Aceh Besar Regency, 2019)

Research Data and Parameters

The data collected in the study consisted of two sources, namely primary data and secondary data. The primary data were obtained through direct observations in the field during the study and interviews with livestock groups at the research site. The instruments used for primary data collection were questionnaires, observation sheets, and interviews to gather information about the number of productive female cattle and buffalo slaughtered in two abattoirs as well as the understanding of the breeders, muge, and abattoir officers regarding the Qanun to manage productive female cattle and buffalo.

The secondary data was obtained from relevant sources and can be used as research supporting data. The secondary data is obtained from village profile books, data from the Central Statistics Agency, or other reports and studies in accordance with the research. Secondary data collected in this study were the number of farmer/livestock groups in Aceh Besar District,

the amount of meat production in Aceh Besar District, and the development of cattle and buffalo populations in Aceh Besar District. The parameters observed in this study were the characteristics of the farmer group, namely education level, age, main occupation, the number of cattle slaughtered from both primary and secondary data, the respondent's understanding of the Qanun for controlling productive cows/buffalo, sales of productive female cattle before and after the enactment of the Qanun, the contributing factors to the sale of livestock in the respondent group, the intensity of socialization of the Qanun on controlling productive female cattle and buffalo given by the government to the respondent group and the opinion of respondents about the prohibition of slaughtering productive female cattle and buffalo.

Data Analysis

The research data, both primary and secondary data, were tabulated. According to its

purpose. The data analysis used is descriptive statistics, namely to describe indicators of understanding of breeders/breeder groups regarding the implementation of the evaluation of the implementation of the Qanun on the control of productive female cattle and buffalo towards farmers and farmers groups in Aceh Besar district. Socialization and evaluation were processed using a Likert scale, as well as indicators of slaughtering productive female cattle and buffalo at the Animal Market and Slaughterhouse (RPH) in Banda Aceh City and Aceh Besar District.

Scoring:

Very often / Agree 3; Often / Agree 2; Seldom / Agree 1.

Data processing is done by calculating the percentage and presented in the form of tables or graphs. Conclusions were drawn based on the percentage of processed data from primary data in accordance with the research objectives and described descriptively.

Results and Discussion

Characteristics of Respondent Group

The characteristics of the respondents are the general descriptions or conditions of part of the population affected by the activities carried out at the research location. According to

Banerjee and Chaudhury (2010) and Mulyatiningsih (2011), population is a group of people who have certain characteristics in the generalization area. The characteristics of 113 respondents (livestock farmers, muge or intermediaries, and abattoir officers included education, age, and occupation. Based on the results of the study, it is known that 30.08% of respondents have high school education (SMA), and 5.30% of respondents hold Diploma/Bachelor/Post-Graduate education. Around 28.31% of the respondents are 51-60 years old, and 7.07% were 61-70 years. Table 4 shows the level of education, age, and main occupation of the respondent group.

In Table 4, respondents with a higher education have less contribution to the development of livestock business in Aceh Besar District which eventually affects the outcome of livestock production. Suyono and Hermawan (2013) and Hidayat et al. (2021) stated that people with a broader insight and knowledge are due to the level of education that affects their work productivity. Based on the human capital theory, education has an influence on economic growth because education plays a role in increasing labor productivity; therefore, if people have a higher income because of higher education, they can support the community's economic growth.

Table 4. Education level, age and main occupation of respondents

	Education Level of Respondents					Total
	No Education	Primary School	Junior High School	Senior High School	D3/S1/S1	
Number (n)	24	30	29	34	6	113
Percentage (%)	21.23	26.54	25.66	30.08	5.30	100
	Age of Respondens (year)					Total
	20-30	31-40	41-50	51-60	61-70	
Number (n)	13	29	31	32	8	113
Percentage (%)	11.50	25.66	27.43	28.31	7.07	100
	Occupation of Respondents					Total
	Farmer	Civil Servant	Entrepreneur	Housewife	Others	
Number (n)	48	9	31	15	10	113
Percentage (%)	42.47	7.96	27.43	13.27	8.84	100

Development of Cattle and Buffalo Slaughter in Slaughterhouses (RPH)

Decree of the Minister of Agriculture No.13/Permentan/OT.140/1/2010 concerning the requirements for slaughtering animal states that the slaughterhouse is a community service unit/facility in the provision of safe, healthy, whole and halal (custodial) meat. Based on the results of research at two abattoir locations, 50% of the slaughtered cattle were obtained from companies outside Aceh province and 20% came from muge (agents) outside of Aceh Besar District in Aceh Province. Every day the slaughter of cattle and buffalo is carried out based on market demand.

The law Number 41 Year 2014 Article 18 Paragraph 1 in order to meet the availability of productive female ruminant livestock are selected for breeding while unproductive female ruminant livestock are removed as beef cattle, productive female cattle and buffalo are prohibited from slaughtering because female livestock are productive as a good livestock producer, except for the purposes of research, breeding, or control and control of animal diseases. Based on Aceh Qanun Number 3 of 2016 in Article 2 Paragraph 1 the control of productive female cattle and buffalo is intended to strengthen livestock through the availability

of quality calves independently, sustainably and improve the quality of local resources. Slaughter of productive female cattle and buffalo should be reduced because it causes the population of cattle and buffalo to decrease so that farmers will sell cattle and buffalo without regard to the sex of the livestock being sold, causing the sustainability of cattle and buffalo to be threatened extinct (Rasminati et al., 2009; Patriani, 2019). The number of cattle and buffalo slaughtered per day by sex at a slaughterhouse in Banda City for a year and a period of 5 years can be observed in Tables 6 and 7.

In this study, data on the development of livestock slaughter was carried out at a slaughterhouse in the city of Banda Aceh. Based on Tables 6 and 7, cattle slaughter was higher than buffalo slaughter. The reason for the high number of cattle slaughters is the demand for beef which is greater than buffalo meat. According to Setiadi (2010), everyone who views an object or situation subjectively is called perception and consumer perceptions of the consumption of beef compared to buffalo meat are influenced by the community environment around where they live and are influenced by easier access to beef availability in the market compared to buffalo meat available at a certain time.

Table 6. Number of cattle and buffalo slaughtered in Banda Aceh City Slaughterhouse January – November 2019

Month /2019	Types of Animals						Total	Reproduction Condition
	Aceh Cattle		BX Cattle		Buffalo			
	Male	Female	Male	Female	Male	Female		
January	10	20	151	-	-	14	195	NP
February	7	21	121	15	2	2	168	NP
March	-	28	88	72	-	5	193	NP
April	1	19	112	81	-	-	213	NP
May	-	21	301	53	5	5	385	NP
June	-	24	249	44	6	3	326	NP
July	-	18	192	1	1	10	222	NP
August	-	23	259	1	5	5	288	NP
September	-	24	118	22	-	8	172	NP
October	1	21	126	51	-	3	202	NP
November	1	23	146	29	-	4	203	NP
Total	20	242	1,863	384	19	59	2,563	

Note: NP: No Productive; Source: UPTD's Slaughterhouse of Banda Aceh (2020)

Table 7. Number of slaughtered cattle and buffaloes before and after qanun control of cattle and productive females enacted by the aceh government at slaughterhouses in Banda Aceh City 2014-2019

Year	Types of animals						Total
	Aceh Cattle		BX Cattle		Buffalo		
	Female	Male	Female	Female	Male	Female	
2014	1,155	665	879	85	180	144	3,108
2015	411	682	1,721	13	141	319	3,287
2016	217	728	1,978	0	84	384	3,391
2017	182	591	2,414	-	29	344	3,560
2018	80	281	2,103	-	7	94	2,565
2019	20	242	1,863	384	19	59	2,563
Total	2,065	3,189	10,958	482	460	1,344	18,474

Source: UPTD's Slaughterhouse of Banda Aceh (2020)

Table 7 shows that most of the cattle slaughtered at slaughterhouses obtained from outside the province of Aceh with 87.08% BX cattle (beef cattle) while 10.22% Aceh cattle and 3.04% buffalo. Table 6 shows that in May and June, cattle slaughter has increased. The increase in cattle slaughter in certain months is due to the fact that in two months (May-June), the people of Aceh hold fasting and Eid meugang (traditional celebrations before fasting and Eid).

There was a declining number of slaughtered cattle and buffalo every year before and after the issuance of the Qanun on controlling productive female cattle and buffalo in the slaughterhouses of the city of Banda Aceh. Aceh Qanun Number 3 Article 8 Paragraph 1 Selection of productive female cattle and buffalo is carried out to obtain productive female cattle and buffalo according to calves' criteria. The reduction in the slaughter of livestock is because the slaughterhouses have implemented regulations regarding the slaughter of cattle and buffalo, and the abattoir staff has increased knowledge of Qanun for good control of productive cattle and buffaloes.

Respondent Group's Understanding of the Qanun on Productive Cattle and Buffalo Control

There was a low level of understanding among the respondent group regarding Aceh Government's policies in drafting regulations on the sustainability of cattle and buffalo in Aceh

Province, especially Aceh Besar District. According to Dunn (2015), policy is a provision that applies to both the individual who creates it and the person who obeys it. Policy is classified as an analytical tool in problem formulation. Also, the farmer group had low understanding of Qanun No. 3 policy on the control of productive female cattle and buffalo in Aceh Province, especially Aceh Besar district.

The group of respondents who answered that they knew the Qanun for controlling productive female cattle and buffalo were 30.98% or 35 people, and the opposite were 69.02% or 78 people (Table 8). The poor understanding may be due to the uneven distribution of information and the level of socialization carried out by the relevant agencies/agencies regarding the Qanun.

In Table 8 there are three groups of respondents: breeders, muge (agents), and abattoir officers with a total of 113 respondents. A total of 30.90% of respondents who knew the Qanun for the control of productive cattle and buffaloes consisted of 24.74% of farmers, 20% of agents, and 100% of abattoir officers. Meanwhile, the rest 69.02% of the total respondents were unaware of Qanun.

Around 40.36% of breeders who were not aware of Qanun argued that the local officers did not inform them about Qanun, while 7.54% were not motivated to seek information that is regarded as unimportant. Based on the results of the research,

Table 8. Percentage of respondents' group understanding of the qanun on control of productive female cattle and buffaloes

Questions	Answers	Number (n)	Percentage (%)
Knowledge of the Qanun for controlling productive females	Yes, I understand	35	30.98
	No, I do not understand	78	69.02
Total		113	100

the knowledge of the three groups of respondents affects the rate of productive female cattle and buffalo being slaughtered in Aceh, especially in Aceh Besar District and Banda Aceh City. Knowledge is one determining aspect of the success of the livestock business as an economic activity. High or low knowledge of a person can have a small or large impact on the scale of the business he does. Farmers who have knowledge will try hard to develop their business through changes in behavior, for example adopting science and technology to increase their business productivity (Lamalarang et al., 2017; Gunawan et al., 2019).

According to Fitzgerald (2010) and Gaznur et al. (2017), a slaughterhouse (RPH) is a public service unit that has technical, economic, and social functions and slaughtering animals as a service provider in supporting the assurance of regular and adequate supply of beef cattle. As well as trying to be able to provide meat needs for the community in addition to meeting good quality standards at prices that are acceptable to consumers. Prior to the implementation of the Qanun for the control of productive female cattle and buffalo by the Aceh government, the sale and slaughter of productive female cattle

and buffalo were carried out both at the abattoir and outside the slaughterhouse.

Based on the results of the study, it can be seen in Table 8 that the understanding of two groups of respondents (breeders and muge) regarding the Qanun for controlling productive female cattle and buffalo applied by the Aceh Government affects the level of sales and slaughter of productive female cattle and buffalo. During the last six years, 2014-2019 the slaughter and sale of productive female livestock decreased by 5.84%. The percentage of sales and slaughter of livestock and the factors of the group of respondents who still sell and slaughter productive female cattle and buffalo after the Qanun can be seen in Tables 9 and 10 below.

Based on Table 9, the sale and slaughter of productive female cattle and buffalo in the two groups of respondents experienced a decline from 70.88% to 65.04% after the ratification of Qanun to control the slaughter.

Table 10 shows that 73.13% of the reasons for the two groups of respondents selling productive female cattle and buffalo are due to an urgent economy and 4.49% of respondents selling livestock because productive female cattle and buffalo are sick and disabled.

Table 9. Percentage of livestock sales and slaughter in the respondent group before and after the qanun on control of productive female cattle and buffalo was passed

Question	Answer	Number (n)	Percentage
Before knowing the existence of a Qanun to control productive cattle and buffaloes, have you ever sold cattle/female buffalo that are still productive before?	Yes	73	70.88
	No	30	29.12
Total		103	100
After knowing that there is a Qanun controlling productive females, do you still sell cattle/buffalo that are still productive?	Yes	67	65.04
	No	36	34.96
Total		103	100

Table 10. Factors affecting the group of respondents slaughtering and not slaughtering cattle and buffaloes for productive females after the qanun on control of productive females cattle and buffaloes was issued

Respondents Reasons	Respondents (n)	Percentage (%)
Urgent economy	49	73.13
Family need and others	8	11.94
Easy to market	7	10.44
Animals in sick or disable conditions	3	4.49
Total	67	100
Violating Qanun	17	4,723
Feeling guilty because the cow/buffalo has a calf in its womb	11	30.55
Others	8	22.22
Total	36	100

The decline in slaughter and sale of productive female cattle and buffalo was due to three reasons: the strict regulations in abattoirs, the increased level of knowledge of abattoir staff regarding the Qanun, and the increased understanding of the respondents regarding the importance of maintaining and conserving productive female cattle.

Evaluation of Aceh Qanun No. 3 Control of Productive Female Cattle and Buffaloes

Qanun Number 3 of 2016 is a regional regulation of Aceh Province which was initiated and ratified by the Aceh government considering the high rate of slaughter of productive cattle and buffalo in Aceh province; therefore, it is necessary to control the balance and preserve the population. Based on the attachment of Law Number 23 of 2014 concerning regional government, the province has the authority to manage the source area of livestock breeds and clumps/lines of livestock whose territory is more than one district/city in one provincial area. Before the regional regulation regarding the Qanun on controlling productive female cattle and buffalo, slaughter of female cattle and buffalo was widespread in slaughterhouses and outside slaughterhouses, it was feared that productive female cattle and buffalo would also be slaughtered. According to Sutarno and Setyawan (2016) and Rianto and Demmallino

(2020), the slaughter of productive female cattle in slaughterhouses and trade of productive female cattle between islands and animal markets in production centers are still ongoing and even difficult to control.

The development of the slaughter of productive female cattle and buffalo, abattoir officers began to tighten up the slaughtering of productive female cattle and buffalo in slaughterhouses as a factor in the decline in the number of productive female cattle slaughter. Increased knowledge of abattoir respondent groups through socialization is provided by the relevant agencies so that the Qanun on the control of productive cattle and buffaloes can be implemented. Based on the results of the study, it is known that the level of socialization intensity regarding the Qanun for controlling productive female cattle and buffalo from 3 sectors of information sources, namely breeders, muge (agents) and abattoir officers (Table 11).

In Table 11, from 113 respondents, 20.35% of respondents had received socialization and 79.65% of respondents had never received socialization of the Qanun on controlling productive cattle and buffaloes from related service officials. It is apparent that the level of socialization intensity to the research respondent group is still low because only 23 people reported receiving socialization very often (17.40%) and not often (56.52%).

Table 11. Intensity of socialization provided by the government to respondent groups (breeders, muge and slaughterhouse officers)

Questions	Answers	Total (n)	Percentage (%)
Have you ever received socialization of the Qanun for the control of productive female cattle and buffalo?	Yes	23	20.35
	No	90	79.65
Total		113	100
How often is socialization of productive female cattle and buffalo delivered?	Seldom (1x 1 year)	13	56.52
	Often (2x1 year)	6	26.08
	Very Often (>2x1 year)	4	17.40
Total		23	100

The poor knowledge of the respondent group regarding the Qanun for controlling productive cattle and buffalo is due to the role of the government through the relevant agencies in the field. If the Aceh Government does not seriously implement the Qanun that has been ratified, it will have a negative impact on livestock business actors, especially in Aceh Besar District.

Aceh Qanun No. 3 of 2016 on controlling productive cattle and buffalo in Chapter 10 Article 30 regarding criminal sanctions for slaughtering productive female cattle and buffalo can be subject to criminal sanctions and imprisonment. Based on the results of the study, 53.09% of respondents disagreed if the perpetrators of slaughtering productive female cattle and buffalo were sanctioned although reasonably because they did not feel guilty for their actions. Meanwhile, 39.82% of respondents agreed with reasonable grounds. Based on the research results, the slaughter of productive female cattle and buffalo is still carried out outside of the abattoir by the respondent group, especially the breeder and muge (agent) group. The legal instruments for controlling productive female cattle and buffalo are still difficult to implement. According to BALITBANGTAN (2011) and Van Kleef et al. (2019) policy socialization can be implemented if it involves the community, religious leaders, scientists, and politicians through a socio-cultural approach, not only through technical,

economic, and legal approaches. The slaughter of productive female cattle and buffalo can be hampered given there is a raised awareness of all stakeholders from breeders, traders, butchers, consumers to slaughterhouse officers.

Conclusions

Based on the results of the research, it can be concluded that there has been a decrease in the slaughter of productive female cattle and buffalo with the implementation of Qanun to control productive female cattle and buffalo in Aceh Besar District. However, the level of public understanding of the Qanun control of productive female cattle and buffalo from 113 respondents (abattoir officers, *muge*/agents, and livestock groups) was still not optimal because 69.02% (mostly farmers) did not know about the Qanun. The low level of knowledge was indicated by the high sales of productive female cattle and buffalo at the breeder and muge (agent) level only decreased by 5.84% from 70.88% to 65.04% after the implementation of the Qanun. Economic needs were the reason for the high sales of productive female cows/buffaloes that reached 73.13%. The weak implementation of the Qanun on productive cattle and buffalo was probably due to the government's low socialization of the Qanun for controlling productive cattle and buffaloes. Around 79.65% of respondents answered that they had never received socialization on controlling productive female

cattle and buffalo. The decline in the slaughter of productive female cattle and buffalo since the issuance of the Qanun on controlling productive female cattle and buffalo was more likely due to strict regulations at the abattoir and the level of knowledge of the abattoir staff regarding the Qanun.

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