

EVALUATION OF EXISTING SLAUGHTER ACT AND WAY FORWARD TO ITS DEVELOPMENT IN BANGLADESH

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ABSTRACT

This study was undertaken for the evaluation of existing animal slaughter and meat quality control act 2011 and way forward to its development in Bangladesh. Published data, SWOT analyses, structured questionnaires survey, Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were carried out for critical analyses and explore the different stakeholder's views. The study was carried out in seven divisions of Bangladesh namely Dhaka, Chittagong, Rajshahi, Khulna, Sylhet, Barisal and Rangpur. Total 285 representative samples (covering all stakeholders like farmers, butchers, meat processors, ULO/VS/PDO) were interviewed. Four FGDs and 50 KIIs were administered with different stakeholders. Descriptive statistics like percentage, mean, ranks and Binary logistic regression and Z test were used for data analyses. Findings show that the authority is not functioning properly due to lack of action plan and monitoring cell. Lack of certification authority, sanitary and meat inspector visit, restricted day, pre-slaughter and post-slaughter examination is visible. Act should be updated time to time to address the field based need. The study reveals that to implement the slaughter act Department of Livestock Services (DLS) as authority should have action plan and monitoring cell.

Keywords: Slaughter act, quality, safe meat, action plan, implementation

INTRODUCTION

According to the estimate of the Department of Livestock Services, the present population of cattle, goat, buffalo and poultry is about 23.44 million, 25.61 million, 1.45 million and 307.47 million, respectively in 2012-13 (DLS, 2014). There is a huge gap between the demand and supply of nutritious foods for the human population. An adult people require at least 250 ml milk, 120 g meat daily, but supply

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is about 44 ml milk and 20.6 g meat per day (DLS, 2009) which indicates that we are in serious shortage of milk and meat. According to DLS report (2010), annual deficiency of milk, meat and egg is 82.28%, 80.22%, and 62.20%, respectively.

The livestock sub-sector in Bangladesh is currently governed by the following legislation: Bengal Cruelty to Animals Act, 1920, Prevention of Cruelty to Animals Ordinance, 1962, Bangladesh Veterinary Practitioners Ordinance, 1982, Animal Disease Act, 2005, Bangladesh Animal and Animal Product Quarantine Act, 2005, National Livestock Development Policy, 2007, National Poultry Development Policy, 2008, Avian Influenza Compensation Strategy and Guidelines, 2008, Bangladesh Zoo Act, 2009 (Draft), Animals Slaughter and Meat Control Act, 2011, Fish Feed and Animal Feed Act, 2010, National Livestock extension policy, 2012 (<http://www.dls.gov.bd/livestockdevpolicy.php>). These pieces of legislation will continue to be updated from time to time in accordance with the policy changes and production trends. In any given country, it is the role of a Government Ministry to develop appropriate policy guidelines for development of the sector the Ministry is involved in. However, development of such policies must involve all the key stakeholders for the guidelines to adequately address real problems and gaps that hinder the development of a sector.

All the attempts in livestock sector development are running to increase production in respect of milk, meat and egg. No activity has yet been taken giving special emphasis for producing safe and healthy food in relation to Hazards Analysis and Critical Control Point (HACCP), Good Management Practices (GMP) and Sanitary and Phytosanitary (SPS). In spite of having increased production of animal protein the consumers are not getting safe food as well as the animal industrialists can not export their products as per World Trade Organization (WTO) regulations. The dynamic potential of this emerging sub-sector thus requires critical policy attention. Although gains have been achieved in the sector to some extent, several gaps still exist that have not been addressed in the previous policies. There is need to give direction to the industry by putting in place a policy that will guide the development of the livestock sub-sector in Bangladesh. The policy needs to be reviewed from time to time, taking into account the dynamics of the domestic, regional and global socio-political and economic environment.

With above facts and circumstances to gain new explanatory insight a holistic survey analysis was carried out having different stakeholders on existing animal slaughter act, with the following objectives:

- (i) Critical analysis of the existing slaughter act in Bangladesh.
- (ii) To explore the implementation status of slaughter act with different stakeholders.
- (iii) To identify the gaps between existing slaughter act and expectations from the perspective of stakeholders on the implementation.

- (iv) To recommend the output of the study to the concerned policy makers of the Government of Bangladesh.

MATERIALS AND METHODS

Selection of the study area

The study was carried out in seven divisions namely Dhaka, Chittagong, Rajshahi, Khulna, Sylhet, Barisal and Rangpur. These seven divisions were chosen as these locations are contributing significantly in livestock and poultry sector of Bangladesh.

Selection of sample and sampling technique

Table 1 shows the sampling technique of the study. Total 285 representative samples (covering all stakeholders) were interviewed from selected seven divisions consisting 116 farmers, 64 butchers, 66 Meat processors, 39 Government officials of livestock sector (Table 1). In addition, four FGDs (Focus Group Discussions) at BAU, DLS, BLRI, field level and 50 Key Informant Interviews (KII) were administered with different stakeholders.

Table 1. Population, Sample Size and Sampling Techniques

Objectives	Data Source	Divisions	Population	Sample
One	Secondary sources: desk review, BBS, DLS, BER, Scientific articles, Internet, Compendium, SWOT analyses	-	-	Animal slaughter act
Two	FGDs (Four), KIIs (50), Questionnaire survey	Seven divisions, BAU, DLS, BLRI	Livestock owners, meat processors, butchers, DLS personnel, academicians, researchers & consumers	10-12 persons in each FGD, 50 KIIs
Three	Questionnaire survey, KIIs, FGD	Seven divisions	Livestock owners, meat processors, butchers, DLS personnel, academicians, researchers & consumers	285
Four	Previous sources	-	-	-

SWOT Analysis

A SWOT analysis was carried out to critically analyze the existing animal slaughter act. This tool was used for policy-review approach aiming at Strengths,

Weaknesses, Opportunities and Threats (SWOT) analysis of the existing slaughter act in Bangladesh (Pearce et al., 2012).

Preparation of survey instruments and pre-testing

To collect the required data, four types of questionnaires were prepared in accordance with the objectives set for the study. Questionnaires then pre-tested in the field among some stakeholders before final data collection. After pre-testing, the final questionnaires were prepared after making necessary corrections, modifications and adjustment.

Data collection and processing

The research relies on both primary and secondary data. Secondary information were sought from various publications, DLS reports, previous survey reports, compendium and the strategic plan documents of the Ministry of Livestock and Fisheries. Primary data were collected by the trained enumerator including the researcher himself through face to face interview.

Data analyses

Descriptive statistics like percentage, mean and ranks were used for different variables to describe the present status of different stakeholders. Binary logistic regression was used to identify the variables influencing the slaughter act. Most of these analyses were conducted by using the statistical package named SPSS 20.

RESULTS AND DISCUSSION

Study on SWOT analyses of animal slaughter act, 2011

Animal slaughter and meat quality control act, 2011 enacted with effect from 20 September 2011. The strength, weakness, opportunities and threats of the animal slaughter act are summarized in table 2.

Table 2. Result of SWOT analysis of the animal slaughter act 2011

No.	Strength	Weakness	Opportunities	Threats
1	Restriction of slaughtering outside slaughterhouse defined in section 3 (1-2).	Butchers are slaughtering animal outside the slaughterhouse.	To verify whether animal is being slaughter outside or not.	Non-cooperation from butchers and meat inspectors.
2	Slaughtering restricted animal is prohibited prescribed in section 4 (1-2).	Pregnant, lactating and under aged animal may be slaughtered.	Govt may add provision to ban the slaughtering of restricted animals. Identified.	Threats from animal supplier, butchers etc.
3	Examination of health of pre-slaughter and post-slaughter of animal and carcass is well defined in section 5 (1-2).	Lack of pre-slaughter and post-slaughter of animal and carcass.	Defect of provision can be found out	Non-cooperation from corrupt vet. and from other stakeholders.
4	Environment of slaughterhouse in section 6.	Lack of hygienic environment and	To find out the defect slaughterhouse.	Pressure may create unlawfully from traders.

No.	Strength	Weakness	Opportunities	Threats
		quality of slaughterhouse.		
5	Setting up of slaughterhouse, meat selling and processing plant is shown in section 7.	Does not follow the provision under the act. Lack of monitoring.	To find out the provision duly applied in setting up.	Non-cooperation and discourage to implement the provision from DLS.
6.	License for slaughterhouse, meat selling and processing plant is given in section 8 (1-2).	Without license holders it may be practiced.	To check whether meat stakeholders are licensed holders or not.	Humiliation and physical assaults.
7.	Process of licensing shown in section in 9 (1).	Might have fraudulence.	To find out defect in the process of application of licensing.	Non-cooperation from the authority.
8.	Period and renewal of license stipulated in section 10 (1-3).	Period of license is very minimal.	To find out application filed after termination of license or 60 days before termination.	Non-cooperation and demand for bribe.
9.	License held up and cancellation defined in section 11.	Defective condition in the processing of licensing.	To check of whether license holders are convicted for any offense or violating any condition.	Offender may attack on authority.
10.	Power of entry and inspection stated in section 12 (1-2).	Provision or act not formulated in applying judicial mind.	To verify irrelevance in the provision of act in setting up slaughterhouse related plant.	Obstacle and confinement.
11.	Health status of employees working in slaughterhouse, meat processing and selling centre is shown in section 13.	Infected employee without medical treatment may practice.	Whether employee is infected or free from contagious disease.	Contagious disease may be spread.
12.	Transport of animal, meat and meat products stipulated in section 14 (1-2).	Lack of appropriate provision.	To find out whether provision is being followed in transporting.	Threats may come from stakeholders in confiscating, disposing and destructing.
13.	Restriction day for slaughtering and selling mentioned in section 15.	Not issuance of gazette notification in time.	To find out the restriction day followed by butchers.	Physical assaults or injury may come from butchers.
14.	Emergency slaughtering stated in section 16.	Sick animal can be slaughtered.	To examine the health of animals before slaughtering.	Authority can be corrupted.
15.	Declaration to non-edible meat stated in section 17.	May have non-edible meat for eating whole or part of carcass.	To examine the whole or part of carcass as edible or non-edible.	Without examination of carcass non-edible meat may enter to food chain.
16.	Direction of destruction or disposal of non-edible part of whole or part of carcass and offal explained in section 18.	Non-edible part of whole or part of carcass and offal may be edible.	Whether non-edible part of whole or part of carcass and offal is disposed of or destructed.	Diseases can be spread.
17.	Direction to send the sample at the laboratory stated in section 19.	Laboratory test may not be performed.	To verify whether sample may be tested or not in proper way.	Test might be done in fake laboratory.

No.	Strength	Weakness	Opportunities	Threats
18.	Disposal of slaughter wastes mentioned in section 20.	Irrelevant provision might be formulated.	Whether wastes are disposed of according to provision.	Environment may be polluted.
19.	Standardization mentioned in section 24 (1-2).	Might have residual affect of hormones, antibiotics, preservatives, poisonous metals, harmful organism in meat.	Whether safe meat is being sold or not..	Hides, skin and meat export may be difficult and questionable..
20.	Seizure and disposal of meat and meat products mention in section 22.	Might not practice.	To explore about seizure and disposal of meat and meat products accordingly.	Authorities will get scared execute the power.
21.	Offence and trial stated in section 23 (1-2).	Lack of soundness of mobile court practice.	Mobile court act 2009 whether being honestly practiced or not.	Executive magistrate can work for Govt.
22.	Punishment stated in section 24 (1-2).	Criminals may escape.	Punishment should be increased.	Criminal may commit offense repeatedly.
23.	Appeal stated in section 25.	Criminals may be acquitted.	To increase punishment as well as fine.	Slaughter act may not be effective due to lack of punishment.
24.	Delivery of power explained in section 26.	Animal production professionals avoided in this act.	To bring back AH graduate for the purpose of meat quality and control.	Veterinary council and vet are dead against to recruit the AH graduates.
25.	Power of formulation of provision mentioned in 27.	Dictator non elected and non-participatory Govt. may promulgate gazette notification.	Pro-people Govt can promulgate provision.	Repression, oppression, death threat come from constitutionally illegitimate Govt.
26.	Banning and sustaining the act mentioned in section 28 (1-2).	Lapse and gaps of the existing act.	Latest animal slaughter act is well up-to-date or not.	Govt. might not be interested.

Farmers' knowledge about animal slaughter act

Different variables in relation to farmer's knowledge about slaughter act are mentioned in table 3. There is a positive relationship between release of blood and bleeding time. Islam (2015) stated that time required for complete bleeding ranged from 9.13 to 16.35 minutes. Mobile court not conducted as per law. Adzitey et al. (2011) described that poor animal handling has adverse effects on the animal, carcass and meat quality.

Table 3. Farmers knowledge about animal slaughter act, 2011

Farmers knowledge	Yes (%)	No (%)	Ranks
Knowledge about the irregular shape and flay-cuts	53	47	1
Proper bleeding of animal done by the butcher	47	53	2
Knowledge about the slaughter act	42	58	3
Butcher follow the age, sex, pregnancy and lactating considering during slaughtering the animal	40	60	4
Knowledge about the restricted day of slaughtering animal	38	62	5
Live animal and carcass examined to know healthy status at pre slaughter and post slaughter time	30	70	6
Mobile court conduct for prohibiting the crime related to slaughter act or not	25	75	7
The butcher follow hang and pull system of flaying or not	25	75	8
Know without slaughterhouse no animal can be slaughtered except for holly greatest festival and family feast	23	77	9
Whether the existing slaughterhouse is environment friendly or not	23	77	10
Sanitary inspector visit the slaughterhouse or not	14	85	11

Knowledge and perception of butcher about animal slaughter act, 2011

Table 4 reveals that more than 80% butchers sell their by-products like blood, bone, kidney, liver, stomach; have proper bleeding knowledge; slaughter should be done in slaughter house except festival. These all sorts of positive answer is a good which aligned to good management practices for Halal and safe meat production. During beef cattle fattening there is a report (Islam et al., 2012) wherein stated farmers having 2-5 heads of cattle are highly fattened using growth promoters like Oradexon (Glucocorticoid steroid), Decason (Glucocorticoid steroid), Dexavet (Synthetic Steroid), Tredexanol (Synthetic Steroid), Pednivet (Steroids). Sixty nine per cent butchers are license holders. It is mandatory to have license in slaughter act. Slaughterhouse and meat processing centre are not set up scientifically as per rules and provisions of the act. Most meat is handled in unhygienic sanitary conditions in both rural and urban areas in Bangladesh. Enforcement of legislation relating to slaughtering or meat inspection is weak (Murshed, 2014). Mobile court should be consisted of livestock expertise along with executive magistrate who is well versed in slaughter act. Food animals such as cattle, buffalo, sheep, and goats are brought to these slaughterhouses from long distances usually by driving or on the hoof. Since there is no lairage, animals generally do not receive *ante mortem* care (Rahman, 2001).

Table 4. Knowledge and perception of butcher about slaughter act

Particulars	Yes (%)	No (%)	Rank
Selling of by-products	91	9	1
Requirement of proper bleeding knowledge	88	12	2
Slaughter should be done in slaughter house except festival	86	14	3
The license must be renewed after one year is known to	84	16	4
Know 4-5 minutes is needed to have <i>halal</i> meat for proper bleeding	80	20	5
Heard about the restricted day of slaughtering animal or not	75	25	6
Visit by meat inspector to give seal on carcass or not	70	30	7
Taken licenses to set up slaughterhouse, meat processing and sale center from licensing authority or not	69	31	8
Slaughterhouse, meat processing center and plant set up as per prescribed size and available facilities or not	67	31	9
Visit slaughter house by sanitary inspector	64	36	10
Any irregular shape and flay-cuts or not	58	42	11
Introduce hang and pull system of flaying or not	58	42	12
Cut on hides and skin during flaying or not	55	45	13
Care environmental safety (air, water) during slaughtering the animal or not	50	50	14
The live animal and carcass has been examined to know healthy status at pre slaughter and post slaughter time	47	53	15
Follow binding age for animal for slaughter or not	47	53	16
Follow flaying and preservation of hides and skin as per provision or not	39	61	17
Mobile court conducted for prohibiting the crime related to slaughter act or not	37	63	18
Animal has been kept at stockyard before slaughtering or not	34	66	19
Follow the provision of animal slaughter and waste disposal as per Act or not	23	77	20
Has the meat contained the tolerable level of antibiotic, preservative, hormone, poisons substance, heavy metal and micro-organism	19	81	21
Whether your slaughterhouse is environment friendly or not	17	83	22
The carcass, meat, consumable meat offal, used water and ice collected for sample testing is examined by the veterinary public health and microbiology laboratory or not	11	89	23

Knowledge and perception of meat processor about slaughter act

Table 5 shows that 74% meat processors used clean water in processing plant. Islam (2015) cited that 71.43% butchers clean their slaughter house/meat selling centre which is in agreement with the present findings. It reveals that 30% selling center are not certified by the authority which is the violation of the slaughter act. In many developing countries, regulations concerning meat inspection and/or control are inadequate or non-existent allowing consumers to be exposed to pathogens including zoonotic parasites (Adzitey and Huda, 2012). Perez et al. (2002) observed that a lairage period of two to three hours is necessary to recover from transport stress, because of reduced meat quality with shorter lairage times.

Table 5. Knowledge and perception of meat processor about slaughter act

Particulars	Yes (%)	No (%)	Rank
Clean water is used in your processing plant or not	74	26	1
Whether the selling center is certified by the designated authority or not	70	30	2
Whether the persons involved in meat processing are free from infectious and contagious diseases or not	62	38	3
Certified by registered physician in getting cured from aforesaid diseases or not	39	61	4
The DG or authorized officer inspects your meat processing center/plant or not	36	64	5
Follow the provision of transport and marketing of meat and meat products as per Act or not	35	65	6
Whether your slaughterhouse is environment friendly or not	30	70	7
Manager or owner or responsible person keep the medical certificate of employees of processing plant/center, slaughterhouse or not	27	73	8
Show the health certificate while veterinary surgeon inspect or not	23	77	9
There are modern facilities in your processing plant/center or not	18	82	10
Importing meat based on animal and animal products quarantine act-2005 or not	10	90	11

Knowledge and perception of ULO/DLO about slaughter act

Table 6 shows that 82% Govt. officials does not follow the animal slaughter act. Farmers are in loss in livestock business due to lack of proper marketing and value of the product.

Table 6. Knowledge and perception of ULO/DLO about slaughter act

Particulars	Yes (%)	No (%)	Rank
Follow the animal slaughter act or not	18	82	1
Working for entrepreneurship development or exporting livestock products or not	46	54	2
In case of animal importing quarantine facilities is created or not	56	44	3
Advise farmer for maintaining cool chain method in selling dressed poultry	56	44	4
Get encourage and assist to set up disease diagnostic lab at private level	69	31	5
Maintain withdrawal period of drugs in prescription or not	74	26	6
Live bird marketing, bio-security in city corporation and Pouroshava are mentioned in policy is known to it or not	77	23	7
Residual effect of medicine must not have in the poultry product are maintaining or not	77	13	8
Long term planning in preventing and controlling diseases such as bird flu and other infectious disease	77	23	10
Following international standard in case of using probiotic and antibiotic	77	23	11
Registered veterinary surgeon or not	80	20	12
Bio-security protocol reached to the farmer or not	82	18	13
Taking initiative on epidemiology, disease reporting and recording system	85	15	14
Taking any initiative on disease control extension program	85	15	15
Giving advice to the farmer not to sell live birds in case of	85	15	16
Getting encourage the farmer to sell dressed broiler and poultry meat	87	13	17
While setting up farm, registration, control of food value, disease control and others follow the act/provision/ordinance or not	90	10	18
Followed the veterinary practitioner act or not	92	8	19
Non-registered veterinary surgeon not allowed to practice is known or not	92	8	20
The veterinary practitioner act is known or not	95	5	21
Any involvement in poultry disease surveillance at Govt. and private level farm or not	95	5	22
The animal slaughter act is known or not	97	3	23

Binary logistic regression for butchers about slaughter act

From binary logistic regression it reveals that none of the endogenous variables have significant effect on the knowledge of farmers about slaughter act. From proportion test (Z test) it reveals that less than 50% of farmers have knowledge about the slaughter act and less than 40% of processors are known about the slaughter act.

Qualitative results on Focus Group Discussion (FGD) and KIIs

We had four FGDs and KIIs with DLS personnel, University teachers and BLRI scientist. From the study it revealed that authority should have appropriate implementation strategy. Scientific slaughter house, chilling facility of fresh meat, important role of academician and researcher, health status of workers of slaughter house and processing plant, consumer's exploitation by butchers should be maintained. Policy should be implemented on step by step basis targeting a period. There should have sophisticated and accredited laboratories to carry out chemical analysis of feeds (de Jonge & Jackson, 2013).

During illegal cross border traffic there is a possibility of transmission of trans-boundary diseases, loss of foreign currencies and threatens of livestock breeding policies and border killings (The Daily Star, August 10, 2015). If this illegal entry is blocked there will be an opportunity to increase own livestock resources through small scale and large scale livestock farming resulting in poverty reduction in the country (Ali and Hossain, 2014).

CONCLUSION

The study reveals that to implement the slaughter act authority should have action plan and monitoring cell in order to implement the slaughter act; establishment of modern scientific slaughterhouse; slaughtering license process should be transparent; cattle smuggling from neighboring countries should be controlled; act should be updated time to time to address the field based need.

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