

Full-Length Research Paper

Evaluating Livestock Entrepreneurs on the Utilization of Windmill Watering Points System as a Means for Conflict Resolution in Birnin Kudu Zone Jigawa State

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ABSTRACT: This study was carried out to evaluate the livestock entrepreneurs on the utilization of windmill watering points system as a means of conflict resolution in Birninkudu zone, Jigawa State. Four specific objectives were Stated. The respondents are drawn from Birninkudu zone using purposive sampling techniques, in which (18) respondents were selected each from Buji, Birninkudu, Dutse, Kiyawa and Gwaram Local Government Areas this gives the total (90) respondents for this study. Data were analyzed using simple descriptive statistics. The result of the study showed that majority (91.1%) of the respondents were male, also (44. 4%) fell within the age bracket of 30- 39, the result further shows that (53.3%) were married. However, (60.0%) of the respondents had experience of 11- 20 years of livestock herding enterprise, most (64.4%) had Qur'anic education. The result also indicates that (42.2%) of the livestock entrepreneurs kept cattle only. (56.7%) of the respondents perceived that windmill watering point is for the watering of livestock only in which (7.7%) perceived windmill watering point reduces conflict between agronomist and livestock entrepreneurs in the study area (5.6%) indicates that windmill watering point is for domestic source of water. The result further reveals that (37.8%) windmill watering point was inadequate in the zone. Increase in extension contact with livestock entrepreneurs, establishment and expansion of grazing reserve, formation of cooperative society by the livestock entrepreneurs and proper management of the existing windmill watering point were recommended.

Keywords: Evaluating, livestock, entrepreneurs, windmill and watering point

INTRODUCTION

The livestock industry as an important component of general agriculture is expected to be a key contributor to national development. It's a form of animal husbandry which involves the care, tending, domestication and use of animals such as camels, goats, cattle and sheep. It may have a mobile aspect, moving the animals from place to place in search of fresh pasture and water. Livestock entrepreneurs constitute the major breeders of cattle, the main source of meat, the most available and cheap source of animal proteins consumed by Nigerians (Garba *et al.*, 2011). The livestock enterprise accounts for one – third of agricultural GDP and 3.2% of the nation's

GDP (Isah, 2011). Furthermore, the contribution of livestock enterprise to the local food chain and national food security cannot be overstressed.

Empirical studies revealed that the phenomenon of conflict between farmers and pastoralist has been in existence for a long time largely due to herder's movement across the State from place to place looking for grazing pastures and watering point. In most of the reported cases of the conflicts that occurred in Jigawa State and the sequence of the participating events which leads to these violence clashes seem to be similar. The tensions explode into violence when the livestock

entrepreneurs and the nomads direct their herds to watering point through farmlands and at the same time the animals are directly grazing the available crops and as farmers attempted to drive them away from the farm. Caring for the livestock has become harder and involves longer seasonal movement by the livestock entrepreneurs in a bid to provide feed and water for the animals.

However, most of the grazing reserves that were formally gazzeted by the government were not in existence due to farmers' encroachment in the grazing space. Similarly, cattle routes were seriously blocked, no access to watering point and then farmers are not treated equally examples agronomist were called land owners, livestock entrepreneurs were the landless (Daily Trust, 2012). Wind energy is an abundant source of renewable energy that can be exploited for pumping water in remote locations, and windmills are one of the oldest methods of harnessing the energy of the wind to pump water (Shittu, 2015). Therefore, secured and constant availability of clean water is crucial for sustaining all life, people, livestock and plant. In many communities of the world, water has to be lifted from a source using some kind of reliable inexpensive pumping system. For example, the use of renewable energy technology such as windmill pumps to be established in the available grazing reserve or areas for the benefit of both farmers and the pastoralist.

Jigawa State government in 2008, enact a policy by providing windmills watering points in some selected grazing reserves in the State with the aim of providing watering facilities to livestock entrepreneurs. Therefore, it's against these backgrounds that prompted the researcher in evaluating the livestock entrepreneurs on the utilization of windmills watering points as a means of conflict resolution between farmers and livestock entrepreneurs in Birnin – kudu zone. However, the following are the purpose of this study:

- i. To identify the socioeconomic characteristics of livestock entrepreneurs.
- ii. To identify the type of livestock kept by the respondent
- iii. Find out the use of windmills by the livestock entrepreneurs as watering points.
- iv. Identify the constrain to the use of windmill watering point by the respondent

METHODOLOGY

The study was conducted in Jigawa State. The State lies between latitudes 11.00° N to 13.00° N and Longitudes 8.00° E to 10.15° E. Kano and Katsina State border Jigawa to the west, Bauchi State to the east and Yobe State to the north east. To the north, Jigawa shares an

international border with Zinder in the Republic of Niger, (JARDA, 2005). The State has a population of 4,348,649 persons (NPC, 2006). With a projected population of 5,064,777.1 in 2013 using 3% annual growth rate. 96% of the population is Hausa/Fulani. It has a land area of approximately 22,210 km² or about 2.2 million hectares. Most part of the State lies within the Sudan vegetation zone. On some parts of the southern boundaries some traces of guinea savannah exist. Jigawa has an average annual rainfall of 700mm, (JARDA, 2005). The rainy season periods last between May to October in the south while in north it last from June to September, (Garba *et al.*, 2011). The major occupation of the people is farming, fishing and livestock rearing. Major crops grown are maize, sorghum, millet, rice, cassava, cotton. Sugar cane and vegetables. Respondents are drawn from Birninkudu zone using purposive sampling technique, in which (18) respondents were selected each from Buji, Birninkudu, Dutse, Kiyawa and Gwaram local government areas this gives a total of (90) respondents for this study. However, the questionnaires were the major tools used for the data collection. Interview methods was also employed especially where non-literate and/or respondents who cannot understand or complete the questionnaire by themselves. Data were analyzed using descriptive statistics.

RESULTS AND DISCUSSION

Socio-economic characteristics of the respondents in the study area

The result in (Table 1) shows that majority (91.1%) of the respondents were males this indicate that livestock enterprise is dominated by males in the study area. This is in agreement with the result of Ado (2012) on the assessment of the activities of Jigawa State agricultural and rural development authority (JARDA) on promoting agriculture in Jigawa State whose reported that majority of the respondents were males' farmers. The study also revealed that (44.4%) of the respondents were within the age bracket (30 - 39) years, this implies that they are at their active and most productive stage in life and has a high risk bearing ability, with about 11- 20 years of livestock herding experience, that is (60. 0%) this describe their higher level of livestock enterprise herding experience. This is in line with the result of Sabo (2010) reported that his respondents in Jigawa State were experience farmers. Also most (53.3%) of the respondents were married. The result also disclosed that (65.6%) of the respondents had less than 10 household members. Thus, household size consists of the wives, children and any other person that lives and share food with them (Garba *et al.*, 2011). Majority (64.4%) of the

Table 1: Distribution of respondents according to socio-economic characteristics.

Variables	Frequency	Percentage
Gender		
Male	82	91.1
Female	08	8.9
Age (years)		
20-29	14	15.6
30-39	40	44.4
40-49	27	30.0
50 and above	09	10.0
Marital Status		
Married	48	53.3
Single	29	32.3
Widowed	13	14.4
Household size		
>10	59	65.6
11-20	23	25.6
21 and above	08	8.8
Herding Experience (years)		
1-10	23	25.6
11-20	54	60.0
21 and above	13	14.4
Educational level		
Qur'anic School	58	64.4
Primary School	18	20.0
Secondary School	14	15.6
Total	90	100

Field survey, 2020

Table 2: Distribution of the respondents according to types of animals own and raised.

Animal own and raised	Frequency	Percentage
Sheep's only	6	6.7
Goat only	8	8.9
Sheep and Goat only	12	13.3
Cattle only	38	42.2
Cattle and other small ruminant	26	28.9
Total	90	100

Field survey, 2020

respondents had acquired Qur'anic education this implies that, they do not have formal education.

Types of Animals own and raised by the Respondents in the Study Area

The result in (Table 2) showed that (42.2%) of the livestock entrepreneurs kept cattle only, also (28.9%) kept cattle and other small ruminants while 13.3%, 8.9% and 6.7% kept only sheep and goats, goat and sheep respectively. Previous studies, (Ado, 2012, Garba and Haruna, 2015, Makama *et al.*, 2011; Sabo, 2010) had shown that both large and small ruminants were the

major livestock found in Jigawa State. This reveals that predominantly cattle rearing predominates other forms of livestock production enterprise in the study area.

Utilization of windmill watering point in the study area

The result in (Table 3) revealed that majority (56.7%) of the respondents reported to be using the windmill watering point for their livestock while (20.0%) Windmill watering point is for the livestock entrepreneurs and the neighboring communities. The result also shows that about (10.0%) of the livestock entrepreneurs perceive

Table 3: Level of utilization of windmill watering point (Wmwp) in the study area.

Perception	Frequency	Percentage	Ranking
Wwp for livestock entrepreneurs only	48	53.33	1 st
Wwp for domestic use	04	4.44	5 th
Wwp for livestock entrepreneur and the neighboring communities	16	17.78	2 nd
Reduces cattle encroachment to farm lands	07	7.78	4 th
Reduces conflict between farmers and livestock entrepreneurs	15	16.67	3 rd
Total	90	100	

Field survey, 2020

Table 4: Constraints to the use of windmill watering points by the respondents.

Constraints	Frequency	Percentage	Ranking
Inadequate Wwp	34	37.8	1 st
Blockage of the cattle route	16	17.8	3 rd
Competition on the utilization of Wwp from nearby villages/communities	21	23.3	2 nd
Poor management of Wwp	13	14.4	4 th
Low literacy level	06	6.7	5 th
Total	90	100	

Field survey, 2020

that the windmill watering point reduces cattle encroachment to farm land. Also most of the respondents (7.7%) are of the opinions that windmill watering point reduces conflict between farmers and pastoralist in the area. While (5.6%) perceived that the windmill watering point was provided for them for domestic uses. This result corresponded with the result of Umar (2017) and Wolf (2001), indicated that rainwater harvesting at household level is most commonly used for domestic purpose only. This therefore shows cultural, traditions and social norms influenced the adoption of technologies in the study area.

Constraints to the use of windmill watering points by the livestock entrepreneurs in the study area

The result in (Table 4) reveals that (37.8%) of the respondents reported that the windmill watering points provided were not adequately to provide water for the livestock, competition on the utilization of windmill watering point (23.3%) in the sense that the livestock entrepreneurs almost come for watering at the same time from nearby villages/communities. Therefore, congestion and struggle by the animals to get the water becomes a serious problem. Farmers encroachment of cattle routes affect livestock entrepreneur on the utilization of windmill watering point with (17.8%). While (14.4%) was on the opinion that poor management of the windmill is among the constraint affecting the use of windmill watering point.

Illiteracy among the livestock entrepreneurs (6.7%) refused to use the windmill watering point believing that the project has political interest and manipulations.

Conclusion and Recommendations

The efforts by the Jigawa State policy for establishing windmill watering points in all the grazing reserves is commendable in the study area. In the past, government policies on agriculture, especially the all – year round Fadama farming is a threat to animals' herders/entrepreneurs in trying to access water for their livestock. Hence they have to move from place to place in search of Fadama areas for water and in that process the animals destroy crops and farmlands which results to conflict. However, additional farms acquired and encroachment of traditional cattle routes has drastically reduced the grazing space for the livestock to access pasture areas and watering points. It is therefore, recommended that, the extension workers should strengthen their efforts to bring better technologies to livestock herders/entrepreneurs, therefore, more sensitization and awareness need to be provided, also the agency for nomadic education should as a matter of urgency include adult education among herders in Jigawa State, hence at the present the nomadic education system laid emphasis on their children only. However, more windmill watering points need to be provided to avoid overcrowding of animals during watering.

Formation of cooperative societies by the livestock entrepreneurs and also proper management of the existing windmill watering point is needed as this will help to reduce the occurrences of conflict between agronomist and livestock entrepreneurs.

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