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Entrepreneurship Training Module in Rangeland Management for Lecturers in Colleges Of Agriculture in North Central Nigeria

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Abstract: *This study investigates and packaged entrepreneurship training module in rangeland management for lecturers of Colleges of Agriculture in North Central Nigeria. Five research objectives and five questions guided the study with five corresponding null hypotheses formulated and tested at 0.05 level of significance. The study adopted a Survey Research Design with a population of 1,313 made up of three groups: Lecturers of Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs. The sample size for the study was 308 respondents estimated by Multistage Sampling Procedure. A structured questionnaire for the study titled: Questionnaire for Entrepreneur Training Module in Rangeland Management (QETMIRM) containing 72 items was designed by the researcher from the available literature with the help of experts through validation. The coefficient of reliability for the questionnaire was .92 determined by Cronbach Alpha Reliability Method. The research questions were answered using means and standard deviation while Analysis of Variance (ANOVA) was used for test of hypotheses. The study revealed 5 relevant objectives, 16 suitable content, 12 instructional methods, 24 instructional materials and 14 evaluation techniques required for the entrepreneurship training module. Thus, the study recommended: Adherence to activities that could lead to the attainment of the relevant objectives of the module, re-training programme for updating lecturers towards mastery of content of the module and evaluation of entrepreneurship competence based on practical performance of the trainee learning outcome rather than paper and pen conventional technique among other recommendations.*

Key word: *Rangeland management; Entrepreneurship Training; Modules for Lecturers*

1.0 INTRODUCTION

1.1 Background to the Study

Rangeland is managed for improvement, in providing proper feed and general hospitality of livestock. The feed scarcity experienced in North Central Nigeria in the milieu of abundant productive rangelands resources is devastating. This could be probably because the people are ignorant, incompetent, structurally unemployed, engages in crises and are consequently, economically poor. This required entrepreneurship intervention, identification and packaging of entrepreneurship training modules in rangeland management to quit the effects of the devastation of feed scarcity and to achieve the desired socio-economic liberty in North Central Nigeria is sacrosanct. Rangeland has been described as a wide area of land covered with extensive

natural pasture. Rangelands are vast natural landscapes in the form of bushy lands, woodlands, wetlands, and deserts. Thus, types of rangelands include tall grass and short grass prairies, desert grasslands and shrub lands, woodlands, savannas, chaparrals, steppes, and tundras (Deepak, 2018). It is perhaps easier to define rangelands by clearly describing what they are not. Rangelands are not: barren desert, farmland, closed canopy forests, or land covered by solid rock, concrete and/or glaciers. Generally, the vegetation is characterized by high quality grasses and legumes grown in adequate proportion, containing no weed except some plants for shades. In a statement, Deepak (2018), deposed that rangelands are physically characterized by low and/or erratic precipitation, poor drainage, rough topography, and often have low soil fertility with shallow soils and slow nutrient cycling. A mixture of grasses and legumes provide better balanced ration. Rangelands have a high regenerative ability after being fed on by animals and can withstand trampling by farm animals. They are usually dominated by grasses, forbs and shrubs efficient at water and nutrient utilization, so practices that are appropriate to temperate pastures, such as fertilization and plowing, are often inappropriate on rangelands.

Rangelands are increasingly used as vast recreational resources by visitors. Whether publicly or privately owned, rangelands produce tangible products such as forage, wildlife habitat, water, minerals, energy, plant and animal gene pools, and some wood products. Utilization of rangelands varies from nomadic pastoralism through subsistence farming to commercial ranching. Rangeland allow animals to exercise their body, thus, afford animals the opportunity for mating without the supervision of the attendant. According to Rinehart (2008) rangeland serves as source of nutrients to the soil through legumes which fix nitrogen into the soil by the bacteria in their root nodules together with the dead plant materials and livestock dung which build up the fertility of the soil. Rangeland reduces runoff and soil erosion by increasing infiltration and percolation of water in the soil. Rangeland serves as a source of feed for animals, especially ruminants; grasses and legumes in the rangeland when cut at early flowering stages of growth can be preserved in the form of hay or silage as feed for livestock. The animals have access to varieties of forage, thus eating balanced feed. Rangelands could serve as a source of sustainable income for ranch communities while protecting valuable natural resources through appropriate grazing strategies. Rangeland improvement is based on the ecological principles of competition/succession. Thus, Deepak (2018), ousted that the objectives of rangeland management is to:

1. Increase productivity of both livestock and wildlife dependent on range
2. Balance the type of livestock to be grazed suite the vegetation of the area, while the number of livestock suite the carrying capacity of the range area
3. Promote soil conservation measures that encourage improvement of grassland: by application of manure and fertilizer and keeping the area weed- free
4. Adopt grazing management principles that encourages stall feeding and storage of grasses.
5. Effectively utilize forage product.

Lamenting on the nature of grazing lands, Shiawoya and Tsado, (2011), described as composed of indigenous species which are of low yield and quality, hence there is need to develop or adopt strategies that will assist species to cope with and overcome most of the factors which militate against high productivity. Range management involves; fertilization, irrigation and rotational

grazing. Assessment of rangeland quality is required in assisting farmers on grazing management plan; benchmarking between seasons and years (Pullanagari, Kereszturi, and Yule, 2018). Ferat and Nuh (2019) posited that to investigate long-term consequences of grazing on vegetation structure of a rangeland is important to deal with the primary factors that can threaten livestock productivity and not only to understand range forage species. Studies by Herdge (2018) revealed that livestock are farm animals that are raised either for food, sale or pleasure, the term livestock as used does not include poultry or farmed fish; however, the inclusion of these within the meaning of livestock is common. Livestock could produce labour and commodities such as meat, milk, fur, leather and wool. In the context of this study the term livestock is used to represent conventionally farmed animals that despite their importance constitutes crises to the public regarding their nature of feeding. Such livestock in North Central Nigeria include cattle, sheep, goat and pig others are horses, asses and mules among others.

Salman, El-Shargi, Al-Habsi and Al-Sadairi (2017), pointed that the main factors limiting ruminants' productivity is the shortage of feed resources resulting from the declining natural pasture; the major source of feeds in the traditional feeding system. Shortage of feed could have negative effects on livestock productivity and performance; low birth and growth, loss in milk, meat and fur as well as high sustainability of flock to diseases and death. The traditional feeding practice can no longer sustain livestock production, for instance, the free-range grazing system known as open grazing has been facing prohibition in most parts of Nigeria due to associated crises, and can no longer sustain livestock production (Tanko, 2021). This justifies the need for rangeland management for sustainability of livestock feed.

Despite the justifications of rangeland management to humanity, observation has shown that the adoption of rangeland management in North Central Nigeria is not satisfactory, this could be probably, because the people are ignorant, incompetent, structurally unemployed and socio-economically poor. Ukonze, Odo and Ogu (2017), asserted that to overcome socio-economic crises, people should engage themselves in entrepreneurship. Entrepreneurship as described by Uzuagulu and Uzuagulu (2013), is taking a bold heart and hand to enter a business, bear the business risk until progress and profits are achieved. Mohammed (2018), convinced that an entrepreneur is a person while entrepreneurship is the process; entrepreneurship is a process under taken by an entrepreneur to create incremental value and wealth by discovering investment opportunities, organizing enterprises, undertaking risks and economic uncertainty and there by contributing to economic growth. As pointed the four key elements of entrepreneurs are; visioning opportunities, innovation of new business, risk bearing in facing uncertainty and organization of the necessary resources. Egbule (2018), generally viewed the objectives of entrepreneurship education to include: To offer functional education that will enable students to be self-employed and self-reliance; to apply creative and innovation that is move from idea to action in business activities; to help students acquire vocational skills and develop linkages with business, industry and the community; to think strategically, in initiating, planning and managing projects among others. Entrepreneurship in the context of this study, is a training process involving the use of a guided document called module intended to produce entrepreneurs with bold heart and hands to venture in to a rangeland management business; bear the business risk until progress and profits are achieved. The Training module is, therefore, important as a propeller

of entrepreneurial competence in livestock feed processing business.

Training in the view of Ekele (2019), is a process and usually involves a certified expert working with a trainee or learner; in the course of training the expert transfer skills to the learner to enable the trainee to improve and master the job at hand. As it relates to this study, training could mean the use of a self-guided module by expert in the process of imparting competence required by students for expertise, to enable them gain confidence in their chosen livestock feed management career for self-employment and economic emancipation. In training, competencies are designated in form of modules as units of educational and training curriculum programme. A module as explained by Ekele (2019), is a unit or units of study which if combined make a complete course which may be thought at college or tertiary institution level. Wever (2015), noted that in a module objective, content and methodologies, including facilities and evaluation are presented and carried out in a concise form to ensure that both the trainer and the trainee participate effectively in the training programme. Training programmes normally makes use of different modules towards achieving specific target hence, socio-economic emancipation of students upon graduation. Akande and Alabi (2016), noted that for a nation to achieve meaningful and sustainable economic development adequate attention must be given to wide spread of economic activities through entrepreneurship education in our tertiary institutions. This statement justifies the establishment of College of Agriculture with lecturers employed towards achieving the target. Sijibomi and Miller (2014), noted that the course content of tertiary education curriculum in Nigeria, lacks practical entrepreneurial experience. Consequently, with low level of entrepreneurial skill acquisition, these institutions cannot produce graduates to be self-employed and employers of labour. Mani (2015), viewed that students are highly interested in starting their own business thus, require decision making skills, risk taking capacity, creativity, communication skills and ability to prepare business plan; the most important skills for a successful entrepreneur. It is therefore the capacity of lecturers ensuring the appropriate use of instructional strategies in motivating students for satisfactory learning outcome.

Yakubu, Adeyemi, Oyeniyi, and Salawu (2021), pointed that simulation, case study, business plan creation, problem-solving and team working instruction strategies were among instruction strategies for effective teaching of entrepreneurship education. **Kaizer (2018),** lamented **that secondary schools in Delta State required 20 instructional materials for the teaching of entrepreneurship in business studies for employment skills development but were not available,** hence, it requires that teachers of agricultural science should improvise. Shirandula (2021), examined that there is evidence of a positive relationship between evaluation methods of Entrepreneurship Education and acquisition of entrepreneurial skills, the use of end-term sit-in exams; participation in class by answering questions and, sit-in tests methods were found to be theoretical-based and examination-oriented and thus inadequate to evaluate a high level of entrepreneurial skills. A module in the context of this study is a unit of instruction, a unit of study, and a guided course of study packaged to offer learning experiences inform of occupational knowledge, good characters and productive skills, intended to improve the general entrepreneurship competence of students in rangeland management through their lecturers for achieving socio-economic liberty in North Central Nigeria. It is an instructional material in which competency needs of course requirements is inscribed; an oracle of instructional information for

the school, teachers and learner's as well as instructional medium through which rangeland resources can be transformed from waste to wealth through management. With the establishment of Colleges of Agriculture in Nigeria since 1970, it is believed that entrepreneurship Training in rangeland management is domiciled.

The Federal Government of Nigeria, in her National Policy on Education (2013), recognized agriculture as an entrepreneurial vocational discipline. The National Board for Technical Education (NBTE) regulates the Colleges of Agriculture including curriculum activities. The programme operates mono-technic for award of National Diploma ND and High National Diploma HND in a minimum of two and four academic years respectively. A full list of NBTE revealed that there are thirty-three (33) Colleges of Agriculture in Nigeria owned government. Out of these, ten (10) are located in North Central Nigeria, though, only seven (7); made up of three federal and four State Colleges of Agriculture are fully accredited and approved to offer Animal Production Technology and Animal Nutrition programmes under which entrepreneurship training in livestock feed processing could have a place to be offered. These seven Colleges of Agriculture include: Akperan Orshi College of Agriculture (about switching to Akperan Orshi polytechnic) Yandev, Gboko, Benue State; College of Agriculture DAC- ABU, Kabba, Kogi State; College of Agriculture Lafia, Nassarawa State; Federal College of Animal Health and Production Technology Vom, Plateau State; Plateau State College of Agriculture Garkawa; Niger State College of Agriculture Mokwa and Federal College of Wildlife Management New Bussa, Niger State. In Colleges of Agriculture, lecturers are concerned with formal training, while Agricultural Extension Agents and Livestock Feed Entrepreneurs do complementary aspects of the training in a non-formal school setting during Student's Industrial Works Experience Scheme (SIWES). The purpose of improving competence among prospective students is to empower them, overcome socio-economic challenges upon completion of the training program. On the contrary, the real situation is different, a mirage and much pathetic, as in recent times graduates of the Colleges of Agriculture from Animal Nutrition and Animal Production programmes are often seen roaming the streets in search of employment opportunities in areas other than entrepreneurship in rangeland management. This situation led the researcher to embark on Entrepreneurship Training Modules in rangeland management for Lecturers in Colleges of Agriculture in North Central Nigeria". This is an attempt to fill the gap supposedly caused by lack of entrepreneurship competence in rangeland management for lecturers in Colleges of Agriculture in North Central Nigeria.

1.2 Statement of the Problem

Rangeland management is aimed at providing general hospitality including proper feed for animal performance and productivity. However, the feed scarcity experienced in North Central Nigeria in the milieu of abundant rangelands resources devastation. Government had established Colleges of Agriculture with Lecturers employed and charged with the responsibilities of imparting the relevant competence to students in different areas including that of rangeland improvement for self-reliance upon graduation. On the contrary, graduates in Animal Health and Production Technology, where rangeland management programmes training is acquired in Colleges of Agriculture, are often seen roaming about in search for employment in areas other than to venture into business establishment in rangeland management. This perhaps, could be a

curriculum problem. Observation has shown that, there is slow integration of practical entrepreneurial education activities into the curricula of higher institutions in Nigeria to be self-employed and employers of labour. This has rendered the graduate ignorant, incompetent, structurally unemployed, sometimes engages in crises and consequently, are economically poor which required entrepreneurship intervention. Hence, identification and packaging of entrepreneurship training modules in rangeland management for lecturers of colleges of agriculture to quit the effects of the devastation of feed scarcity and to achieve the desired socio-economic liberty in North Central Nigeria is sacrosanct.

1.3 Objectives of the Study

The study specifically sought to:

1. identify relevant objectives required for entrepreneurship training module in rangeland management.
2. investigate suitable contents required for entrepreneurship training modules in rangeland management.
3. find out instructional methods required for entrepreneurship training modules in rangeland management
4. find out instructional materials required for entrepreneurship training modules in rangeland management
5. examined evaluation techniques required for entrepreneurship training modules rangeland management

1.4 Research Questions

The following research questions were raised to guide the study.

1. What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on relevant objectives required for entrepreneurship training modules in rangeland management?
2. What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on suitable contents required for entrepreneurship training modules in rangeland management?
3. What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on instructional methods required for entrepreneurship training modules in rangeland management?
4. What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on instructional materials required for entrepreneurship training modules in rangeland management?
5. What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on evaluation techniques required for entrepreneurship training modules in rangeland management?

1.5 Research Hypotheses

The following null hypotheses were formulated for the study and tested at .05 level of significance.

H_{O1}. There is no significant difference in the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the relevance of objectives required for entrepreneurship training modules in rangeland management.

H_{O2}. There is no significant difference in the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the suitability of contents required for entrepreneurship training modules in rangeland management.

H_{O3}. There is no significant difference in the mean ratings of the responses of Lecturers of Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the instructional methods required for entrepreneurship training modules in rangeland management.

H_{O4}. There is no significant difference in the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the instructional materials required for entrepreneurship training modules in rangeland management.

H_{O5}. There is no significant difference in the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the evaluation techniques required for entrepreneurship training modules in rangeland management.

2.0 METHODOLOGY

The study adopted a survey research design, carried out in North Central Nigeria which covers six States and Federal Capital Territory Abuja. The area has been experiencing animal pastoral crises due to scarcity of livestock feeds. The population for the study was one thousand three hundred and thirteen (1,313) subjects with a sample size estimate of three hundred and eight (308) respondents made-up of twenty-one (21) Lecturers of Colleges of Agriculture who are specialized in different areas of animal production, one hundred and seventy-nine (179) Agricultural Extension Agents and one hundred and eight (108) Livestock Feed Entrepreneurs. The study adopted Multi-stage Sampling Procedure and the sample size was proportionately determined using Taro-Yamen's formula thus, n= N/1+N (e) ^{2} Where n= sample size, N= population, E= trovied error (5%), 1= constant. A 72-item structured questionnaire titled Questionnaire for Entrepreneurship Training Module in Rangeland Management (QETMIRM) was used for the study. The questionnaire was developed by the researcher from available literature with the assistance of experts. The questionnaire was divided into two parts: Part I was meant to collect demographic

information on the respondents while part II consisted of sections A-E, with each of these sections provided with an adjusted Likert Rating Scale of four optioned response categories of Highly Required (HR) 4, Moderately Required (MR) 3, Not Required (NR) 2 and Highly Not Required (HNR) 1. This was to elicit information for data required for answering research question I-V.

The questionnaire "QETMIRM" was validated by five experts; one from Animal Nutrition Department, one from Animal Production Department, two from Measurement and Evaluation under department of Education Foundations and General Studies, and another one from Agricultural Education Department all of Joseph Sarwuan Tarkar University Makurdi. Reliability of the questionnaire was established by trial-test on thirty (30) respondents in Taraba state North Eastern Nigeria, for the purpose of determining the internal consistency of the items. Taraba State was chosen for trial-test because of its proximity in the context of the problem under study. The respondents to the trial-test were not the real parts of the study sample but had the same characteristics of the population of the study. Data collected from trial-test were analyzed using Cronbach Alpha reliability method. A Cronbach Alpha Coefficient (α) of .92 was obtained representing a high internal consistency of the questionnaire items with indication that the instrument was reliable for the purpose of data collection for the study. Data collection was carried out by the researcher with the help of seven (7) research assistants. A total of three hundred and eight (308) copies of the questionnaire were distributed and 307 copies were retrieved, as one got missed from the Livestock Feed Entrepreneurs.

Questionnaires were distributed and retrieved at the place of work of the respondents on a spot, in any case where questionnaires were not possibly completed on the spot, a compromised time was spared. Mean and standard deviation were used for data analysis in providing answers to research questions. The decision rule for acceptance or rejection of an item based on the mean value was 2.50. By using real number limit value, any item with a mean value of between 3.50-4.00 was regarded as Highly Required (HR), while a mean of between 2.50-3.49 was regarded as Moderately Required (MR). Also mean values between 1.50-2.49 were regarded as Not Required (NR) and mean values btween 1.00-1.49 were regarded as Highly Not Required (HNR). Analysis of Variance ANOVA was used for test of null hypotheses at 0.05% level of significance using Statistical Package for Science and Social Sciences (SPSS) 2021 version. The decision rule on ANOVA was that where the Sig. value (equal P-value) is greater than the alpha value of 0.05%, the null hypothesis is accepted otherwise rejected. The result of the analysis was used for final selection of item required for entrepreneurship training module in rangeland management for capacity building of lecturers in Colleges of Agriculture in North Central Nigeria.

3.0 RESULTS AND DISCUSSION

This section presents results of data analysis for the purposes of answering research questions and test of hypotheses.

3.1 Research Questions and Test of Hypotheses

Research Questions 1

What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on relevant objectives required for entrepreneurship training modules in rangeland management?

Table 1. Mean Ratings and Standard Deviation of Respondents on the Relevant Objectives Required for Entrepreneurship Training Modules in Rangeland Management (N=307)

S/ no	Item Description	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	SD_1	SD_2	SD_3	$\bar{X}_G$	SD_G	Decision
1	To increase productivity of useful plants and animal on range area	3.38	3.54	3.52	.97	.79	.80	3.48	.81	Required
2	To balance the livestock to be grazed suite the vegetation and carrying capacity of the range area	3.00	3.51	3.55	1.22	.92	.86	3.35	.93	Required
3	To promote soil conservation measures that encourage improvement of grassland	3.67	3.64	3.58	.80	.67	.71	3.63	.69	Required
4	To adopt grazing management principles that encourages stall feeding and storage of grasses.	3.90	3.64	3.58	.44	.67	.74	3.70	.68	Required
5	To effectively utilize forage product	3.71	3.67	3.59	.46	.55	.55	3.65	.54	Required

Key: where N = Number of respondents; $\bar{X}_1$ = Mean response of Lecturers; $\bar{X}_2$ = Mean response of Agricultural Extension Agents; $\bar{X}_3$ = Mean response Livestock Feeds Entrepreneurs; SD_1 = Standard Deviation of Lecturers; SD_2 = Standard Deviation of Agricultural Extension Agents; SD_3= Standard Deviation of Livestock Feeds Entrepreneurs;

$\bar{X}_G$ = Grand mean response; SD_G = Grand Standard Deviation

Result in Table 1 revealed 5 items with their grand mean values ranged from 3.50 to 3.65 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the 5 items were required and thus, identified as relevant objectives for entrepreneurship training modules in livestock feed processing. The Table also showed Grand standard deviation values of .54 to .93 for the items which indicates that the respondents were not far from the mean and one another in their opinion in a range of different items.

Hypothesis 1

There is no significant difference in the mean ratings of the responses of Lecturers of Colleges of Agriculture, Agricultural Extension Agents and Livestock Feeds Entrepreneurs on relevant objectives required for entrepreneurship training modules in rangeland management.

Table 2. ANOVA for Testing Difference in the Mean Rating of Respondents on Relevance of Objectives required for Entrepreneurship Training Modules in Rangeland Management

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	.154	2	.077	.475	.62	Accepted
Within Groups	49.291	304	.162			
Total	49.445	306				

Key: Where Sig = significant value (P-value); Df = Degree of Freedom; F= Fisher value

The data in Table 2 showed the p-value of .62 compared to be greater than the alpha value of 0.05. This implies that there was no significant difference in the mean ratings of the responses of lecturers, agricultural extension agents and livestock feeds entrepreneurs on the relevant objectives required for entrepreneurship training module in rangeland management. Therefore, the null hypothesis of no significant difference was accepted.

Research question 2

What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on suitability of contents required for entrepreneurship training modules in rangeland management?

Table 3. Mean Ratings and Standard Deviation of Respondents on Suitability of Contents required for Entrepreneurship Training Modules in Rangeland Management (N=307)

S/No	Item Description	$\overline{X}_1$	$\overline{X}_2$	$\overline{X}_3$	SD1	SD2	SD3	X_G	SD_G	Decision
1	Meaning of rangeland	3.19	3.19	3.20	.75	.84	.72	3.19	.79	Required
2	Importance of rangeland	3.52	3.74	3.65	.51	.44	.50	3.63	.47	Required
3	Characteristics of rangeland	3.14	3.16	3.17	.85	.89	.83	3.15	.86	Required
4	Common grasses and legumes of livestock	3.86	3.64	3.63	.48	.64	.58	3.71	.61	Required
5	Factors affecting the level of production of herbage.	3.29	3.36	3.29	1.01	.97	.96	3.31	.97	Required
6	Methods of rangeland improvement	3.24	3.31	3.60	1.04	1.16	.85	3.38	1.06	Required
7	Rangeland feeding practices in North Central Nigeria	2.95	3.39	3.30	.97	.86	.87	3.21	.87	Required
8	The nature and implication of rangeland feeding practice in North Central Nigeria	3.76	3.74	3.71	.44	.51	.58	3.73	.53	Required
9	Open grazing	3.19	3.20	3.32	.81	.82	.73	3.23	.79	Required
10	Causes of crises due to open grazing	3.38	3.54	3.39	.60	.72	.84	3.43	.67	Required
13	Strategy for mitigating crises due to open Grazing	3.20	2.44	3.02	.86	.86	1.2	2.88	.97	Required

14	Characteristics and traits of entrepreneurs for rangeland management	2.82	2.86	2.68	1.2	.96	.98	2.79	104	Required
15	Planning for rangeland management enterprise establishment	3.20	2.42	3.04	1.0	.82	.76	2.88	.86	Required
16	Management of rangeland enterprise for improvement	2.34	3.68	2.10	1.4	1.2	.78	2.70	1.1	Required

Result in Table 3 revealed 16 items with their Grand Mean values ranged from 2.70 to 3.73 on a four-point rating scale which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the 16 items were required and thus, identified as suitable contents for entrepreneurship training modules in rangeland management. The Table also showed standard deviation values of the items ranged from .53 to 1.01 which indicates heterogeneous responses from the mean in a range of different items.

Hypothesis 2

There is no significant difference in the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on suitability of content required for entrepreneurship training modules in rangeland management.

Table 4. ANOVA for Testing Difference in the Mean Rating of Respondents on Suitability of Content required for Entrepreneurship Training Modules in Rangeland Management

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	.278	2	.139	4.006	.02	Rejected
Within Groups	10.556	304	.035			
Total	10.834	306				

The data in Table 4 showed the p-value of .02 compared to be less than the alpha value of 0.05. This implies that there was a significant difference in the mean ratings of the responses of lecturers, agricultural extension agents and livestock feeds entrepreneurs on the suitability of content required for entrepreneurship training module in rangeland management. Therefore, the null hypothesis of no significant difference was rejected.

Research Question 3

What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the instructional methods required for entrepreneurship training modules in rangeland management?

Table 5. Mean Ratings and Standard Deviation of Respondents on Instructional Methods Required for Entrepreneurship Training Modules in Rangeland Management (N=307)

S/No	Item Description	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	SD_1	SD_2	SD_3	$\bar{X}_G$	SD_G	Decision
1	Questioning method	3.61	3.64	3.28	.97	.89	1.16	3.51	1.01	Required
2	Discussion method	3.33	3.63	3.42	1.15	.80	.96	3.46	.89	Required
3	Lecture method	3.14	3.69	3.50	1.28	.78	.96	3.44	.89	Required
4	Brain storming method	3.19	3.55	3.12	1.33	.96	1.23	3.26	1.10	Required
5	Demonstration method	3.71	3.59	3.43	.64	.81	.85	3.57	.82	Required
6	Laboratory method	3.95	3.64	3.64	.22	.61	.53	3.74	.82	Required
7	Field trip method	3.67	3.26	3.18	.58	.86	1.00	3.37	.57	Required
8	Project method	3.57	3.59	3.41	.98	.65	.80	3.52	.90	Required
9	Problem solving method	3.62	3.73	3.47	.50	.51	.69	3.60	.73	Required
10	Collaborative method	3.62	3.72	3.68	.50	.45	.47	3.67	.59	Required
11	Concept mapping	3.48	3.62	3.43	.98	.77	.93	3.51	.46	Required
12	Guided discovery method	3.73	3.69	3.49	.43	.63	.73	3.63	.66	Required

Result in Table 5 revealed 12 items with their Grand Mean values ranged from 3.26 to 3.74 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were required and thus, identified as instructional methods for entrepreneurship training modules in rangeland management. The Table also showed standard deviation values of the items ranged from .46 to 1.10 which indicates heterogeneous responses from the mean in a range of different items.

Hypothesis 3

There is no significant difference in the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on instructional methods required for entrepreneurship training modules in livestock feed processing.

Table 6. ANOVA for Testing Difference in the Mean Rating of Respondents on Instructional Methods required for Entrepreneurship Training Modules in Rangeland Management.

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	2.455	2	1.228	8.528	.00	Rejected
Within Groups	43.758	304	.144			
Total	46.213	306				

The data in Table 6 showed the p-value of .00 compared to be less than the alpha value of 0.05. This implies that there was a significant difference in the mean ratings of the responses of lecturers, agricultural extension agents and livestock feeds entrepreneurs on instructional methods required for entrepreneurship training in rangeland management. Therefore, the null hypothesis of no significant difference was rejected.

Research Question 4

What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the instructional materials required for entrepreneurship training modules in rangeland management?

Table 7. Mean Ratings and Standard Deviation of Respondents on Instructional Materials Required for Entrepreneurship Training Modules in Rangeland Management (N=307)

S/No	Item	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	SD_1	SD_2	SD_3	$\bar{X}_G$	SD_G	Decision
1	Chalk and Chalk board	3.48	3.74	3.55	1.12	.67	.78	3.59	.75	Required
2	White Board and Marker	3.62	3.53	3.42	.50	.72	.89	3.52	.77	Required
3	Bulletin Board	3.86	3.54	3.58	.48	.74	.79	3.66	.75	Required
4	Trainers' guide	3.71	3.58	3.56	.46	.68	.82	3.61	.72	Required
5	Books and journals	3.43	3.55	3.56	.93	.62	.69	3.51	.67	Required
6	Charts and Diagrams	3.38	3.51	3.62	.67	.54	.56	3.50	.56	Required
7	Pictures, Photograph and Posters	3.67	3.43	3.62	.66	.81	.62	3.57	.75	Required
8	Cinemas and Films	3.61	3.69	3.62	.67	.51	.56	3.64	.54	Required
9	Audio tapes	3.76	3.82	3.79	.62	.44	.49	3.79	.47	Required
10	Television sets	3.14	3.62	3.57	.85	.61.	.69	3.44	.67	Required
11	Computers	2.76	3.37	3.40	1.22	.88	.85	3.17	.91	Required
12	Cameras	3.57	3.46	3.70	.87	.68	.55	3.57	.66	Required

13	Laboratories	3.43	3.47	3.55	.93	.81	.81	3.48	.81	Required
14	Demonstration plot	3.52	3.62	3.58	.87	.73	.74	3.57	.74	Required
15	Hoes	3.19	3.51	3.67	1.03	.84	.70	3.45	.81	Required
16	Shovels	2.62	3.06	3.37	1.07	.92	.83	3.01	.92	Required
17	Cutlass	3.33	3..55	3.53	1.15	.86	.78	3.47	.85	Required
18	Knives	3.19	3.80	3.70	1.29	.65	.82	3.56	.78	Required
19	Sickles	3.38	3.54	3.64	.86	.96	.75	3.52	.88	Required
20	Polythene sheets	3.52	3.68	3.58	.87	.65	.87	3.59	.75	Required
21	Wheelbarrows	3.81	3.51	3.36	.40	.94	1.04	3.56	.96	Required
22	Water source (bore holes and reservoir)	3.38	3.50	3.56	1.20	.88	.83	3.48	.88	Required
23	Water buckets	3.71	3.39	3.26	.56	1.12	1.11	3.45	1.09	Required
24	Freezers	3.67	3.66	3.58	.58	.59	.62	3.63	.60	Required
25	Weighing machines	3.90	3.36	3.29	.30	1.11	1.13	3.51	1.09	Required
26	Stores	3.67	3.51	3.27	.80	1.04	1.18	3.48	1.08	Required
27	Sacks	3.71	3.43	3.02	.72	1.05	1.26	3.38	1.13	Required

Result in Table 7 revealed 27 items with their Grand Mean values ranged from 3.01 to 3.79 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were required and thus, identified as instructional materials for entrepreneurship training modules in rangeland management. The Table also showed grand standard deviation values of the items ranged from .41 to 1.13 which indicates heterogeneous responses from the mean in a range of different items.

Hypothesis 4

There is no significant difference in the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on instructional materials required for entrepreneurship training modules in rangeland management.

Table 8. ANOVA for Testing Difference in the Mean Rating of Respondents on Instructional Materials required for Entrepreneurship Training Modules in Rangeland Management

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	.146	2	.073	1.553	.22	Accepted
Within Groups	14.365	303	.047			

Total	14.511	305	

The data in Table 8 showed the p-value of .22 compared to be greater than the alpha value of 0.05. This implies that there was no significant difference in the mean ratings of the responses of lecturers, agricultural extension agents and livestock feeds entrepreneurs on instructional materials required for entrepreneurship training in rangeland management. Therefore, the null hypothesis of no significant difference was accepted.

Research Question 5

What are the mean ratings of the responses of Lecturers in Colleges of Agriculture, Agricultural Extension Agents and Livestock Feed Entrepreneurs on the evaluation techniques required for entrepreneurship training modules in rangeland management?

Table 9. Mean Ratings and Standard Deviation of Respondents on Evaluation Techniques required for Entrepreneurship Training Modules in Rangeland Management (N=307)

S/No	Item Description	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	SD_1	SD_2	SD_3	$\bar{X}_G$	SD_G	Decision
1	Observation	3.62	3.53	3.35	.50	.50	.50	3.50	.50	Required
2	Questioning	3.86	3.62	3.61	.48	.74	.79	3.69	.74	Required
3	Discussion	4.00	3.55	3.07	.00	.95	1.23	3.54	1.07	Required
4	Assignment	3.57	3.79	3.38	.68	.50	.88	3.58	.69	Required
5	Test	3.90	3.68	3.36	.30	.68	.96	3.64	.79	Required
6	Examination	3.62	3.53	3.43	.50	.76	.79	3.52	.76	Required
7	Interview	3.86	3.63	3.36	.36	.76	.99	3.61	.84	Required
8	Expert review	3.86	3.71	3.53	.36	.56	.70	3.70	.61	Required
9	Survey	3.46	3.75	3.64	.36	.47	.69	3.61	.55	Required
10	Follow-up visit	3.95	3.63	3.63	.22	.70	.61	3.73	.65	Required
11	Dairy	3.76	3.66	3.47	.77	.75	.88	3.63	.80	Required
12	Logbook	3.81	3.68	3.71	.60	.47	.63	3.73	.54	Required
13	Practical	3.76	3.53	3.57	.70	.66	.72	3.62	.68	Required
14	Project	3.56	3.59	3.61	.68	.62	.59	3.58	.61	Required

Result in Table 9 revealed 14 items with their mean values ranged from 3.50 to 3.73 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were required and thus, identified as evaluation techniques for entrepreneurship training modules in rangeland management. The Table also showed standard deviation values of the items ranged from .50 to 1.07 which indicates heterogeneous responses from the mean in a range of different items.

Hypothesis 5

There is no significant difference in the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on evaluation techniques required for entrepreneurship training modules in rangeland management.

Table 10. ANOVA for Testing Difference in the Mean Rating of Respondents on Evaluation Techniques required for Entrepreneurship Training Modules in Rangeland Management

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	3.039	2	1.520	16.170	.00	Rejected
Within Groups	28.593	304	.094			
Total	31.632	306				

The data in Table 10 showed the p-value of .00 compared to be less than the alpha value of 0.05. This implies that there was a significant difference in the mean ratings of the responses of lecturers, agricultural extension agents and livestock feeds entrepreneurs on evaluation technique required for entrepreneurship training modules in rangeland management. Therefore, the null hypothesis of no significant difference was rejected.

3.2 Discussion of Findings

Findings of the study identified 5 relevant objectives of rangeland management required for entrepreneurship training module in rangeland management. The identified relevant objectives of rangeland management include: To increase productivity of useful plants and animal on range; to balance the livestock to be grazed suite the vegetation and carrying capacity of the range area; to promote soil conservation measures that encourage improvement of grassland; to adopt grazing management principles that encourages stall feeding and storage of grasses and to effectively utilize forage product. These findings agreed with Egbule (2018), who viewed the objectives of entrepreneurship education to include: to offer functional education that will enable students to be self-employed and self-reliance; to train students to recognize, create and be able to act on business opportunities; to apply creative and innovation that is move from idea to action in business activities; to develop self-awareness, interpersonal and social network skills; to think strategically, in initiating, planning and managing projects and to help students acquire vocational skills and develop linkages with business, industry and the community. These finding was supported by Akande and Alabi (2016), who discovered that for a nation to achieve meaningful and sustainable economic development adequate attention must be given to wide spread of economic activities through entrepreneurship education in our tertiary institutions. Therefore, entrepreneurship training in rangeland management with relevant intensions will go a long way

in harnessing the apparent opportunities in the sector for socio-economic sustenance of the students upon graduation.

Findings of the study also, identified 16 suitable contents required for entrepreneurship training module in rangeland management. The identified suitable contents include: Meaning of rangeland; importance of rangeland; characteristics of rangeland; common grasses and legumes of livestock; factors affecting the level of production of herbage; methods of rangeland improvement; rangeland feeding practices in North Central Nigeria; open grazing; causes of crises due to open grazing; strategy for mitigating crises due to open grazing; the nature and implication of rangeland feeding practice in North Central Nigeria; characteristics and traits of entrepreneurs for rangeland management; planning for rangeland management enterprise establishment; management of rangeland enterprise for improvement among others. The Result showed significant difference in the mean ratings of the responses of respondents. The finding above agreed with Egbe (2017), who speculated that skills identified to be used as skill training package were personal/psycho-social skills, critical and creative thinking skills, decision making skills, resource mobilization and organizing skills, leadership and sales skills. Mani (2015), also agreed with the outcome of the findings that students are highly interested in starting their own business thus, require decision making skills, risk taking capacity, creativity, communication skills and ability to prepare business plan are the most important skills for a successful entrepreneur.

Findings of the investigation further, revealed 12 instructional methods as required for entrepreneurship training module in rangeland management. The identified instructional methods include: Questioning method; discussion method; lecture method; brain storming method; demonstration method; laboratory method and field trip method others are project method; problem solving method; collaborative method; concept mapping and guided discovery method. The above finding agreed with Ukonze, et al. (2017), who confirmed that there should be 8 methods of instruction, apart from 8 objectives, 9 content, 14 resources and 6 evaluation methods for performance assessment in entrepreneurial Centre for economic empowerment in Enugu State. Yakubu, et al. (2021), in support of the findings pointed that simulation, case study, business plan creation, problem-solving and team working instruction strategies were among instruction strategies for teaching entrepreneurship education.

The result of the study, furthermore, found out that 27 instructional materials were required for entrepreneurship training module in rangeland management. The identified instructional materials include: Chalk and chalk board; white board and marker; bulletin board, training guides, books and journals; charts and diagrams; pictures, photographs and posters. Others are; cinemas and firms; audio tapes; television sets; computers; cameras; laboratories; demonstration plots; hoe; shovels, cutlass; knives; sickles; polythene sheet; wheelbarrows; water sources; water buckets; freezers; weighing machines; freezers; stores and bags. These finding agreed with **Kaizer (2018),** who **found out that 20 instructional materials were required for the teaching of entrepreneurship in business studies for employment skills development but were not available in secondary schools in Delta State.** Hence, it entails that teachers of agricultural science should improvise some of the instructional materials lacking in the school locally.

Findings of the study finally, revealed 14 evaluation techniques as required for entrepreneurship training module in rangeland management. The identified instructional evaluation techniques include: Observation; questioning; discussion; assignment; test; examinations; interview; expert review; survey; follow-up visit; dairy; logbook; practical and project. The finding agreed with Shirandula (2021), who examined that there is evidence of a positive relationship between evaluation methods of Entrepreneurship Education and acquisition of entrepreneurial skills, the use of end-term sit-in exams; participation in class by answering questions and, sit-in tests methods were found to be theoretical-based and examination-oriented and thus inadequate to evaluate a high level of entrepreneurial skills. Evaluation based on appraisal of practical performance such as techniques identified by this study will go a long way improving entrepreneurship training at the colleges of agriculture in rangeland management in North Central Nigeria.

4.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

There was a concern for investigation into entrepreneurship training module in rangeland management for Lecturers in colleges of agriculture in North Central Nigeria. Five research objectives, five relevant questions and five corresponding hypotheses guided the investigation with a survey research design in the area of North Central Nigeria. The study population was 1,313 subjects, using multi-stage sampling procedure, a sample size of 308 was estimate. A structured questionnaire for Entrepreneurship Training Module Rangeland Management (QETMIRIM) dully validated by five (5) experts with a Cronbach alpha reliability coefficient of.92 was used as instrument for the study. Mean and standard deviation were used to answer research questions raised while ANOVA was used for test of hypotheses. Findings of the study identified; relevant objectives, suitable contents. Instructional methods, instructional materials and evaluation techniques required for entrepreneurship training module in rangeland management for lecturers of Colleges of Agriculture in North Central Nigeria.

4.2 Conclusion

Based on the findings of the investigation, Entrepreneurship Training Modules in rangeland management for Lecturers of Colleges of Agriculture in North Central Nigeria has been identified and packaged. It is hoped that the package will benefit Lecturers as a guide in selection of objectives, mastery of content, selection of instructional methods and materials as well as adoption of appropriate evaluation techniques while training on rangeland management.

4.3 Recommendations

Based on the findings of this study the following recommendations were made:

1. Acceptance and funding of the module by the relevant curriculum stake holders for monumental implementation.
2. Adherence to activities that could lead to the attainment of the relevant objectives of the module by lecturers.
3. Organized re-training programmes in form of workshops, seminars, and conferences by the stake holders for updating lecturers towards mastery of content for the improvement of entrepreneurship education and training at the College of Agriculture level.

4. Adoption and combination of more practical oriented methods of instructions by Lecturers, since no one method is best to establish the foreseen positive relationship between methods of instruction and acquisition of practical entrepreneurship competence.
5. Adequate procurement of the identified instructional materials to be ensured by management of the Colleges of Agriculture while lecturers to strictly improvise where lacking.
6. Evaluation should remain an integral part of entrepreneurship training in rangeland management and evaluation of entrepreneurship competence should be based on practical performance of the trainee learning outcome rather than paper and pen conventional technique which are based on participation in class answering questions, sit-in-test and end-term sit-in-exams methods.

4.4 Contribution to Knowledge

1. By packaging, the study discovered, relevant entrepreneurship competences required for harnessing opportunities in rangeland management for professional capacity building of Lecturers which for long seem to have been undermined.
2. The result of the study provided relevant objectives and suitable content required to guide and be mastered by Lecturers that could lead to profitable entrepreneurship training in rangeland management.
3. More so, the study revealed instructional methods and materials required by lecturers of Colleges of Agriculture during entrepreneurship training in livestock feed in rangeland management.
4. The study finally, identified evaluation techniques required by lecturers in colleges of agriculture for entrepreneurship training in rangeland management.

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ENTREPRENEURSHIP TRAINING MODULE IN RANGELAND MANAGEMENT FOR LECTURERS IN COLLEGES OF AGRICULTURE IN NORTH CENTRAL NIGERIA

TOPIC	PERFORMANCE OBJECTIVE	CONTENT	METHOD		INSTRUCTIONAL MATERIAL	EVALUATION GUIDE
			TRAINER'S ACTIVITIES	TRAINEE'S ACTIVITIES		
A	B	C	D	E	F	G
Meaning and Importance of Rangeland Management	Explain the term Rangeland	Meaning of Rangeland	Assist students discover and explain the meaning of Rangeland	Participate and take written notes on class discussion to explain the meaning of Rangeland	Diagram showing a Rangeland Internet computers, text books and journals materials	Explain the term Rangeland
	List importance of Rangeland	Importance of Rangeland	Lead students list importance of Rangeland	Contribute to list importance of Rangeland	A chart showing importance of livestock	List five importance of Rangeland
Characteristics of Rangeland	State the characteristics of Rangeland	Characteristics of Rangeland	Guide students state characteristics of Rangeland	State characteristics of Rangeland and take notes	A chart showing different characteristics of rangeland	State five characteristics of Rangeland

TOPIC	PERFORMANCE OBJECTIVE	CONTENT	METHOD		INSTRUCTIONAL MATERIAL	EVALUATION GUIDE
			TRAINER'S ACTIVITIES	TRAINEE'S ACTIVITIES		
A	B	C	D	E	F	G
	Identify the common and botanical names of some grasses and legumes of livestock in Rangeland	Common grasses and legumes of livestock in Rangeland	Lead students on a field trip to a naturally established pasture; identify some grasses and legumes in a Rangeland; demonstrate on making an album of given their common and botanical names	Take a field trip to a natural pasture (rangeland), identify various grasses and legumes; practice the act of making an album of given their common and botanical names	-A chart showing some Grasses and Legumes - Realia; real-life or natural grass and legume materials	Mention four common grasses and four legumes of livestock in Rangeland
Rangeland Improvement	State factors affecting the level of production of herbage	Factors affecting the level of production of herbage	Guide students state factors affecting the level of production of herbage	Listen, participate and take written notes on class discussion	Chart showing Rangeland - animal/ human shelter -grassland -water source	State factors affecting the level of production of herbage

TOPIC	PERFORMANCE OBJECTIVE	CONTENT	METHOD		INSTRUCTIONAL MATERIAL	EVALUATION GUIDE
			TRAINER'S ACTIVITIES	TRAINEE'S ACTIVITIES		
A	B	C	D	E	F	G
	Explain method of Rangeland improvement	Method of Rangeland improvement	Lead students identify and explain method of Rangeland improvement	Identify and explain method of Rangeland improvement		List and discuss briefly five methods of rangeland improvement
	Identify the common rangeland feeding practices in North Central Nigeria	Rangeland feeding practices in North Central Nigeria	The lecturer introduced students to transhumance, sedentary and stall feeding	Listen, contribute, ask questions and take notes	A picture showing differences in transhumance, sedentary and stall feeding	Identify 3 commonest Rangeland feeding practices in North Central Nigeria
The nature and Implications of Rangeland Feeding System in North Central Nigeria	Discuss the nature and implication of rangeland feeding system in North Central Nigeria	The nature and implications of rangeland feeding system in North Central Nigeria	Discuss the nature and implication of rangeland feeding system in North Central Nigeria	Listen imaginary, contribute to the discussion and take necessary written notes	Diagram showing a herd of Cattle destroying farm crops	Discuss the nature and implications of rangeland feeding system in North Central Nigeria.
	Explain the term grazing	Open grazing	Assist students explain the term grazing	Listen, contribute where	A chart showing animal feeding on pasture.	Explain the term grazing.

				necessary and take written notes		
TOPIC	**PERFORMANCE OBJECTIVE**	**CONTENT**	**METHOD**		**INSTRUCTIONAL MATERIAL**	**EVALUATION GUIDE**
			TRAINER'S ACTIVITIES	**TRAINEE'S ACTIVITIES**		
A	**B**	**C**	**D**	**E**	**F**	**G**
	Explain the term open grazing	-	Lead students explain the term open grazing	Listen, contribute where necessary and take written notes	A photo chart showing refugee camp pastoral grazing	What is open grazing?
	State the primary causes of crises due to open grazing	Primary causes of crises due to open grazing	Hold class discuss on primary causes of crises due to open grazing with student. The teacher also use relevant Story telling method.	Listen, participate and take written notes on discussion about the primary causes of crises due to open grazing.	A chart showing a list of causes of crises due to open grazing	State the primary cause of crisis due to open grazing
Management Strategies in Mitigating Crises Due to Open Grazing	State strategies for mitigating crises due to open grazing.	Strategies for mitigating crises due to open grazing	Lead discussion on strategies for mitigating crises due to open grazing.	Listen, contribute and take notes	A chart showing Vocational agriculture and Sedentary practices for mitigating crises	State the strategies required for mitigating crises due to open grazing

					due to open grazing	

TOPIC	PERFORMANCE OBJECTIVE	CONTENT	METHOD		INSTRUCTIONAL MATERIAL	EVALUATION GUIDE
			TRAINER'S ACTIVITIES	TRAINEE'S ACTIVITIES		
A	B	C	D	E	F	G
Management of Rangeland Enterprise	Plan for a rangeland management enterprise	Planning for rangeland management	-Lead students on availability of rangeland resources and management for business purposes. -Discuss on price of grazing acre/unit of rage/hour/day/week /month/year.	Practice on how to make different business plans with a given rangeland resources.	Pictures showing rangeland resource including: -Range grasses -Rotational paddocks -Different stall feeds -Range water -Range houses	State plans on how to profitably manage a rangeland

	Identify characteristics and traits of entrepreneur for rangeland management	Characteristics and traits of entrepreneurs for Rangeland management	-Impart good characters and encourage good trait among students. -Point out relevant characters and traits required of a successful entrepreneur. .	-Submissive and listen to the Lecturer -Take important notes		Identify characteristics and traits required of entrepreneur for rangeland management

Activities on Rangeland management

1. Students should go out into the grassland (rage) and identify different grasses and legumes available.
2. Students should make album of (a) pasture grasses given their common and botanical names (b) pasture legumes given their common and botanical names.
3. On the school farm each student should be practically engaged to demonstrate on a given operation about rangeland improvement.
4. Students should take a field trip to a naturally established pasture (rangeland), identify noticeable challenges of the establishment and compile profitable solutions for its improvement.
5. Student should undertake a compulsory project on: (a) feasibility study (b) business plan. All in rangeland business establishment.