ANALYSIS OF FRUIT AND VEGETABLE MARKET CHAINS IN ALAMATA, SOUTHERN ZONE OF TIGRAY: THE CASE OF ONION, TOMATO AND PAPAYA.

M.Sc. Thesis
By
ADUGNA GESSESSE TEKA

ABSTRACT
The study was initiated with the objectives of analyzing fruit and vegetable marketing chains in Alamata District, southern zone of Tigray. Specifically the study attempts to assess structure-conduct-performance of fruit and vegetable marketing, analyze market supply determinants, and analyze the institutional support services of extension, input supply and credit. The study also analyzes profitability of fruit and vegetable production and marketing and identifies problems and opportunities in fruit and vegetable production and marketing. Data came from 140 horticulture producing households, 9 horticulture wholesale and 30 retailers. Cobb Douglas (logarithmic function) econometric estimation procedure was employed to identify factors that determine onion, tomato and papaya market supply of the farm households in the area. The net profit obtained by the different market chain actors is indicated as follows. From simple calculation, on the average, a producer profited 11,293.09ETB from onion, 8,823.02ETB from tomato, and 11,432.93ETB from papaya per hectare production (assuming an average price of 1.79 ETB, 0.99 ETB and 2.19ETB per kg prices, respectively). On top of these assemblers, wholesalers and retailers profitability from the aforementioned crops were 35.49 ETB from onion, 24.24 ETB from tomato and 16.80 ETB from papaya per assembles per quintal. Wholesalers and retailers also obtain a profit of 47.80 ETB from onion, 34.30 ETB from tomato and 41.60 ETB from papaya per quintal (assuming an average price of 3.71 ETB for onion, 2.89 ETB for tomato and 3.56 ETB for papaya per kg at retail level). However, this potential benefit is under challenges of imperfect marketing. The market conduct is characterized by unethical practices of cheating and information collusion that led to uncompetitive market behavior even though the calculated concentration ratio did not indicate oligopoony market behavior (24.56%). Therefore some corrective measures are required by the government as well as institutions like cooperatives. Among the different variables that were hypothesized as determining factors for volume of marketable supply the econometric result showed that, number of oxen owned and age of household head for onion while only number of oxen owned for tomato and quantity produced for papaya were significant. All had the expected sign as prior expected. According to the survey result an estimated volume of annual production of 3,552.50 Qt of onion, 1,377 Qt of tomato and 255.33 Qt of papaya have been produced. The estimated marketed proportion according to the respondents was 98.99 percent of onion, 99.16 percent of tomato and 84.87 percent of papaya. The Alamata office of Agriculture and Rural Development is the main extension support giving institution. Three development agents are deployed in each Tabaias with the help of whom 1.42 percent of respondents got weekly extension service, 0.71 percent have got extension service in two weeks, 0.71 percent have got extension service any time required, 8.57 percent have got extension service with no regular program and the remaining 88.57 percent of respondents reported no extension contact at all. This weak extension support and limited seed supply system largely hinders production and productivity of the crops under study. On top of this, limited accessibility of chemicals, fertilizer and credit within the district are anther key constraints of production and marketing of the stud crops. Therefore it is essential to take some improvement measures by the government as well as private sectors.
This study examined the profitability and marketing chain of rice in Fogera Woreda, South Gondar zone of Amhara Regional State. From the woreda, 14 peasant associations (PAs) producing rice were selected purposively and it is stratified based on the existing rice production farming system (upland and lowland), from each farming system two PAs were selected randomly. Then samples of respondents were selected randomly proportional to its population size. A total of 165 sample farm households were selected from the four PAs for the interview. In addition, market related data were collected from 25 assemblers (20 rural and five urban marketers) and six wholesalers and 10 millers at Woreta market, 21 retailers and five urban distributors at Bahir Dar market and 29 retailers at Gondar market. Both econometrics and descriptive analyses consistency used in this study. Results from the descriptive analysis show that wholesalers and millers are the most important buyers of rice from producers, about 45% and 27%, respectively. Farmers travel, on average, 1.6hr to the woreda market to sell their rice produce. The market concentration ratio is 0.77, showing that the rice market is oligopsonistic. High initial capital and prior control of farmers is a barrier to entry in rice trading. Results from the Heckman’s two step selection model show that, market information access, quantity of paddy produced, total value of livestock unit and extension contact with farmers increase household’s probability of selling rice. Household head’s education level and total quantity rice produced were positively affecting the level of rice sale. However increase in family size decrease the volume of rice supply to the market per household. The Tobit result also revealed that quantity produced is jointly affected both the probability of market participation and volume of supply. The cost benefit analysis of rice production shows that rice production is a profitable business for farmers. The net income obtained from production per hectare of rice is Birr 5006.48. The cost margin indicate that producers obtain on average 35.97 Birr per qt, assemblers get 139 Birr per qt, millers a profit of 5.4 Birr per qt, wholesalers 9 Birr per qt, urban distributors birr 3.88 Birr per qt and retailers around 19 Birr per qt respectively. Though, assemblers get more profit, they also incur more marketing cost. The possible recommendations forwarded are strengthening market information and extension system, intervention to increase production and productivities by using improved agricultural inputs, promoting education and trainings about rice production and marketing and finally promoting family planning are the recommended policy implications.
EFFECTIVENESS OF FARMER FIELD SCHOOL IN PROMOTING COFFEE MANAGEMENT PRACTICES: THE CASE OF JIMMA AND SIDAMA ZONES

M. Sc. Thesis
By
BABUR DAMTIE ENDALEW

ABSTRACT

This study was conducted to determine the effectiveness of the Farmer Field School approach in terms of examining farmers’ selection criteria, their profile and FFS implementation. It was also sought to assess the knowledge, attitude and practice of FFS members and non-members regarding coffee management practices with reference to coffee wilt disease; and to identify factors influencing knowledge, attitude and practice on coffee management practices among FFS participants. A survey methodology was employed in to a sample of 70 FFS members and 70 non-FFS member farmers chosen proportionately with equal number of respondents from the study areas. Secondary data was collected from sources of reports and documents. In addition, supplementary data was collected from Jimma zone research center and agricultural development offices. The above mentioned institutions have been of vital importance, since they were the major facilitators of these FFS activities in both study areas. There was a significant difference in knowledge, attitude and practice level in coffee management practice particularly with reference to coffee wilt disease by FFS compared to non-FFS respondents. About 67% of the FFS respondents had acquired high level of knowledge while 8.6% and 57.1% of the non-FFS respondents had acquired high to moderate knowledge of coffee management practices respectively, especially with reference to the knowledge of coffee wilt disease. It can be observed from the data 81% and 18.6% of the FFS respondents were grouped under high and moderate attitude respectively, while nearly 55.7% and 38.6% of the non-FFS respondents were placed in high and moderate attitude towards promoting coffee management practices. Majority of FFS respondents 85.7% had high level of knowledge (adopted) regarding improved coffee management practices. However, almost 81.4% and 15.7% of non-FFS respondents were found in medium and high knowledge category of the same practice respectively. As far as influencing variables on knowledge, attitude and practice among FFS participants were concerned, farmer’s experience and interpersonal trust up on knowledge had significant influence on the effectiveness of FFS on coffee management practices. In this study of the analysis of pooled data, there is no as such significant explanatory variable observed, which had considerable effect on attitude of FFS members in promoting coffee management practices. However, creativity and intercropping on practice had significant influence on the effectiveness of FFS on coffee management practices. It was recommended that mainstreaming FFS, and for building it in to national budget streams and creating social networks for interdisciplinary exchange of knowledge and experience for relevant actors working with coffee FFS should be given priority for long term survival of farmer field schools.
THE IMPACT OF AGRICULTURAL POLICIES ON SMALLHOLDER INNOVATION CAPACITIES
The case of household level irrigation development in two communities of Kilte Awlaelo Woreda, Tigray regional state, Ethiopia

M.Sc. Thesis
By
BERHANE HAILU

ABSTRACT
Agricultural production in Ethiopia is characterised by subsistence orientation, low productivity, low level of technology and inputs, lack of infrastructures and market institutions, and extremely vulnerable to rainfall variability. It has a rapidly increasing population currently close to 74 million and yet about 39 percent of the population lives on absolute poverty of less than a $1 a day poverty line while close to 80 percent falls below US $2 a day poverty line. The government of Ethiopia has formulated policies and strategies to guide over all development with focus to rural and agricultural development. The agricultural strategy emphasizes commercializing subsistence agriculture through capacity building of various actors, development and adoption of high yielding technologies, diversification of high value commodities, and sustainable use of natural resources. Irrigation development is one of the major pillars of the rural development strategy. In more recent years, the priority of irrigation development has shifted from large-scale approaches to small-scale and household level interventions. This research was conducted in two communities of Kilte Awalelo district, in Tigray regional state where household level irrigation intervention has been introduced at a massive-scale aiming at achieving food security and poverty alleviation among the rural poor. The research has investigated the impact of agricultural policies on innovation capacities of smallholders in the case of household level irrigation. Data was collected using qualitative methods which incorporated semi-structured interviews, focus group discussions and opinions of key informants. The main findings of the research indicate that irrigation promotion has expanded in terms of area and number of beneficiaries after a change in strategy from large-scale to household level. However, the policy is dominated by top-down approaches reflected in highly centralised planning and blanket intervention processes. These approaches have highly affected the innovation capacity of smallholders which led to the failures of the household level irrigation interventions. The study findings indicate that attitudinal problems are the major factors for the top-down policy practices. Investigations on community responses to top-down policy interventions have shown that while majority community areas attempt to implement policy strategies without making significant adaptations, few communities respond in a creative way and attempt to develop local level innovations to address their demands. According to the research findings, the key factor for such differences is attributed to the competences and commitments of local level leadership. However, it was found that local level innovations are negatively affected by the top-down macro-policy hence innovation enabling environment both at local and macro-level is key to the success of innovation capacity.
The research suggests the need to introduce new way of policy intervention that takes into consideration the contemporary context for agriculture and innovation thinking approach.
PROBLEMS AND PROSPECTS OF FARMERS TRAINING CENTERS:
THE CASE OF ADA’A WOREDA, EAST SHEWA, OROMIA REGION
M.Sc THESIS
By
FISSEHA TESHOME MENGISTU

ABSTRACT

Ethiopian agriculture is characterized by traditional and subsistence peasant farming whose access to modern technology and basic education is very limited. It is also noted that low investment in developing agriculture labor force are one of the problems that hinder the transformation of the sector. Agricultural change and development require the mobilization and development of human resource through such means as education and technical training. Realizing the importance of educating and training the rural community the government has formulated rural development policies and strategies. The cornerstone of the government’s strategy is the establishment of FTCs in about 18, 000 kebeles and the recruitment, training and deployment of number of front line extension agents who teach farmers at FTCs. Starting 2004 upto 2008, 59, 348 extension agents have been graduated and 8500 FTCs have been constructed. However, the status of FTCs and the constraints that hamper them in implementing their mandatory roles are not systematically assessed through empirical studies to take proper action. The objectives of the study were to assess the present status of FTCs, to identify opportunities and constraints of FTCs and to know the opinion of farmers towards the mandatory roles of FTCs in Ada’a woreda, East shewa zone, Oromia region. For this study 160 house hold heads from 16 FTCs were selected through simple random sampling technique and personal and group interviews. Fourty (40 )extension agents from 16 FTCs were also included as source of information for the study. Data were collected from both primary and secondary sources. The method of data collection employed includes interview schedule, self-administered questionnaire, focus group discussions and personal observation. The data were analyzed by using simple descriptive statistics such as percentage, frequency, mean, standard deviation, rank correlation and z-test. Qualitative data were analyzed through interpretation and conceptual generalization. Moreover SWOT analysis was done to summarize the results of the research objectives. The findings revealed that the organizational and operational status of FTCs was poor. The woreda has ample opportunities and potential for the advancement of FTCs. The major constraints identified by the respondents were low community participation, high dropout rate, non-extension work load, lack of budget, lack of training materials and high expectations of benefit in the side of farmers. Therefore, the woreda should take into consideration the socio-cultural, institutional, economic, and general constraints that hinder the implementation of farmer training centers.
ANALYSIS OF AGRICULTURAL INPUT SUPPLY SYSTEM: THE CASE OF DALE WOREDA, SOUTHERN NATIONS, NATIONALITIES AND PEOPLES’ REGION

M.Sc. Thesis

By

KASSU KUBAYO SEKO

ABSTRACT

The farming sub-sector of Ethiopia is characterized by traditional rainfed and low techniques of production and thus, is prone to the recurrent natural calamity of drought, which leaves famine and death in its wake. Today, farmers in Ethiopia have difficulties in feeding their households on their increasingly fragmenting land, using traditional and backward techniques of production. Hence the drastic need to improve agricultural productivity and production through the adoption and adaptation of improved agricultural technologies and techniques is apparent. For modernize agriculture, a strong support system involving input supplies and other services like marketing, transport, storage, processing etc. are inevitable. This study is intended to analyze the agricultural input demand–supply system of the study area; to map the actors and their linkages, knowledge and information flows, to identify influential factors for the smooth functioning of the system and to explore the influence of policy in providing an enabling environment in relation to the input demand-supply system in Dale Woreda, Sidama Zone, SNNPR. Three stages sampling were used in which both nonrandom sampling and random sampling procedures were followed to select four Peasant Associations and 200 respondents. Structured interview schedule and questionnaires were used for collecting the essential quantitative and qualitative data from the sampled respondents and input suppliers respectively. To generate qualitative data, field observations; informal interview with key informants; and discussions with separate focus groups were conducted. The quantitative data were analyzed using descriptive statistical tools chi-square test, Cramer’s V, Pearson and Spearman’s rho Correlation coefficient, and Multiple Linear Regressions from inferential statistics. The major output of the study indicates that the system is highly characterized by relatively poor linkage and inefficient knowledge flow between actors and farmers in the study area. Moreover, input demand supply index was significantly influenced by household head age, active labor force of the family, access to market, extension contact and type of road used. In addition to this, from the supply sector factors like organizational mandatory clarity, sufficient and irrigable seed farm, skilled man power, delay of temporary loan settlement by users, policy environment, storage facilities at grass root level, efficient marketing system, timely demand claims from users, clearly defined role and responsibilities of each partner, availability of improved seeds in terms of their germination, viability and adaptability, research centers cooperation and willingness to share resources including knowledge, farmers willingness to take risks and demand for improved crop varieties were some of mentioned factors that influence the system positively and/or negatively. As to the enabling policy environment, pitfalls identified were; inflexibility of rules and regulations, lack of strong quarantine measures on imported seeds and prolonged time given for variety release and registration were amongst all. Therefore, it is recommended that, the existing extension service should be strengthened in a way that working in harmony with relevant actors to bring about change for efficient and effective delivery of agricultural inputs/services. Likewise, policy should account the flexibility of rules on credit provision and organization of small farmers groups in addressing resource poor farmers to ensure food self sufficiency of rural community in particular and the nation at large.
PARTCIPATORY VARIETAL EVALUATION AND FARMER BASED SEED PRODUCTION: A SUSTAINABLE APPROACH TO GARLIC SEED DELIVERY IN ATSBI WOMBERTA WOREDA, EASTERN TIGRAY.

Msc. Thesis

By

TADESE TEWELDEBRHAN

ABSTRACT

Garlic is a newly introduced but potential vegetable crop in the highlands of Tigray. However, there was no information on the agronomic performance of improved garlic varieties and approaches in garlic seed production. Thus, the research was initiated with the objectives to evaluate the performance of improved garlic varieties and to introduce farmer seed production. Ten volunteer garlic seed growers were participated in seed production. Four improved varieties viz Tsedey 92, Bisheftu Netch, G-99-2 and G-161-2 and one local variety Rie local were evaluated under participatory varietal evaluation trial. PVE was conducted on farmers’ field using the randomized complete block design with four replications, taking a farmer as replicate. Significant differences (p<0.05) among varieties were recorded for plant height, number of leaves per plant, leaf length, leaf diameter, total bulb weight, bulb yield per hectare, clove diameter, weight of clove, clove categories, marketable and unmarketable clove, emergence success and days to maturity. Bulb yield per hectare showed positive and significant correlation with most parameters except with medium and small clove categories. This suggested that increment in bulb yield was a result of increase in plant vigor expressed in plant height, number of leaves per plant and leaf diameter. Farmers’ overall evaluation indicated that the varieties Tsedey 92 and Bisheftu Netch were found promising under Atsbi Womberta wereda condition. Farmers, which are participated in the community based garlic seed production improved their availability and access to garlic seed and they also demonstrated and applied how garlic seed production monitored strictly throughout the entire crop growth period, from planting through to harvesting, and storage.
ASSESSMENT OF SMALL RUMINANT PRODUCTION SYSTEMS AND ON-FARM EVALUATION OF UREA TREATED WHEAT STRAW AND CONCENTRATE FEEDING ON SHEEP BODY WEIGHT CHANGE IN BURIE WOREDA, WEST GOJJAM

M.Sc. Thesis

By

YENESEW ABEBE

ABSTRACT

Assessment of the small ruminants production systems was conducted in four selected representative rural kebelés, namely, Woheni Durebetie, Woyenema Ambaye, Denbun and Boko Tabo in Burie Woreda to assess the farmers’ traditional small ruminants management practices, to identify and prioritize the constraints of the small ruminants production systems. The study was carried out through informal and formal surveys in the selected kebeles. The farmers interviewed in the informal survey were selected purposively and for the formal survey, by systematic random sampling method. In addition, sheep/ goat flocks in the grazing fields were selected randomly and body weight (BW) (using hanging scale), sex and age (by dentition) of the animals were measured and recorded. Farmers in the study area rear sheep for two main purposes, for cash income and home slaughter on festivals. On average, one household had 3.7±2.46 heads of sheep (n = 127). There were two sheep breeds in the study kebeles, Washera and Horro. The mean body weight of sheep in the flock was 21.6±9.34 kg (n = 1211). From the current survey result, it was evident that there were more Washera sheep (98%) in Woheni Durebetie Kebele and more Horro sheep (92%) in Boko Tabo Kebele in Burie Woreda. As farmers in the study area sell, castrate and slaughter males at a very young age, there is a possibility of inbreeding in the sheep flocks. The main feed resources for sheep in the area are natural pasture and stubble grazing. In addition, most farmers supplement salt and atella (a local beer (tela) residue) to their animals. There is feed shortage problem both during the dry and rainy seasons in the highland kebeles. Based on calculation of feed requirement for the existing livestock per household, there is a deficit of 0.7 ton DM feed per household per year in the highland kebeles. One household in the area sold on average 1.1±1.40 heads of sheep (n = 127) per year. Farmers mainly sell sheep during Easter, New Year and Christmas. Sheep from the woreda and neighbouring woredas and even neighbouring region enters into the woreda for marketing. Among the constraints identified in sheep production, sheep diseases, lack of adequate veterinary service and feed and nutrient shortage are the main ones. To bring improvements in sheep production in Burie Woreda, these constraints should be given more emphasis in research and development activities that are going to be undertaken in the area.

The goat production system in the study area is similar in several respects to the sheep production system. Two on-farm feeding trials were conducted in Arebesi, Tiya Tiya and Sertekez kebeles in Burie Woreda. The objectives of the trials were to evaluate the weight change performance of the lambs when they were fed urea treated wheat straw and concentrates, to estimate the economic feasibility and to assess farmers evaluation of these feeding practices. The lambs used in the trial were all local breeds (Washera, Horro and crossbreds) and of male sex. The animals used in the grazing and wheat straw feeding trial had an initial body weight of 20.8±3.88 kg (n = 18) and 23.3±4.37 kg (n = 32) and an initial age of 8.7±1.68 months (n = 18) and 10.2±1.84 months (n = 32), respectively. The wheat straw that was used for the trial was treated with 5% urea. The following treatments were used in the trials. In the grazing trial, farmers’ traditional fattening practices and grazing plus 200 g concentrate mix supplement. In the wheat straw feeding trial, untreated wheat straw plus 200 g concentrate mix and urea treated wheat straw plus 200 g concentrate mix supplement. The concentrate mix consisted of 75% groundnut cake (150 g) and 25% wheat bran (50 g). A completely randomized design was employed for the on-farm feeding trials. At the end of the feeding trials, farmers’ were interviewed individually and in a group to evaluate the results of the feeding trials. Economic analysis was done using partial budget analysis. The trials were conducted for 86 days. The experimental animals consumed almost all the concentrate feed mix offered to them during the trials. The animals’ consumption of urea treated and untreated wheat straw was very low, 52.8 g and 7.4 g per day, respectively. There was no difference (P>0.05) on final BW and daily BW gain between the treatments in the wheat straw feeding trial. But, in the grazing trial, there was a difference (P<0.05) on final BW and daily BW gain between the treatments. The animals in the concentrate supplemented treatment and the control group had a mean final BW of 24.6 kg and 21.9 kg and a mean daily BW gain of 43.6 g and 12.9 g per day, respectively. Supplementation of groundnut cake and wheat bran mix to grazing sheep was feasible based on partial budget analysis also. Furthermore, this treatment was selected to be the best by farmers’ evaluation and has a potential for adoption by farmers. Hence, this feeding practice can be scaled up to be widely used in the study area.
ACCESSIBILITY AND UTILITY OF AGRICULTURAL MARKET INFORMATION IN ALAMATA AND ATSBI-WEMBERTA PILOT LEARNING WEREDAS, TIGRAY, ETHIOPIA
With Emphasis on Radio

By TSEGAY OKUBAY

ABSTRACT

Introducing and promoting the production of marketable commodities require adequate, accurate, relevant and timely information. Noting the background of poor market information provision efforts in the country and the new regional initiative on the other hand, it was necessary to conduct this research aimed at studying the availability, accessibility, and utility of agricultural market information in Alamata and Atsbi-Wemberta pilot learning weredas. Assessing the sources of market information; investigating the process of market data collection up to broadcasting on radio; and studying accessibility the utility of market information are the specific objectives. Primary and secondary sources as well as quantitative and qualitative information were collected. Systematic random sampling method was used to select 141 households for interview. From the random sample, only 18 households were able to comment on the MI received from radio. Therefore, additional 10 radio listeners were interviewed to increase the sample size of radio listeners. Information was also collected from experts working at wereda and region levels as well as from DAs and cooperatives. Radio, information display boards, cooperatives (for marketing-in products) bulletin and website of TAMPA, are the formal media of MI. Out of these, MI broadcasted on local radio and MI placed on display boards are assumed to be accessed by farmers and other rural households. The results of the study showed, HHs with practical access (who actually were able to comment on the MI on radio) were only 12.8 percent of the randomly selected households though HHs having access to radio account for 47.5 percent. The functionality of MI service using display boards is very poor, so far. The role of extension agents as well as cooperatives in disseminating MI to the local farmers/traders is minimal and seasonal. The media of MI frequently used by farming households and farmer-traders are weekly market visits and information exchange among farmers/traders. Telephone is used by few farmers/farmer-traders while wholesalers and cooperatives use it widely. The overall access scale to MI, for the majority of randomly selected households, is below ‘medium’ scale whereas satisfaction on the usefulness of MI received from radio is ‘high’ scale for the majority of respondents (able to comment on the radio MI service). In sum, accessibility and utility of MI could be improved by ensuring better management and coordination of the available media and sources; by creating awareness on the availability of these resources and how to use them; by improving the quality of access to MI; by improving networks and coordination among the formal and non-formal medium of MI; and ensuring the continuity of the service by allocating regular budget. Monitoring MI quality dimensions and considering the use of ICT are also among the recommendations.
Butter is an important source of food, cosmetics and common marketable form of dairy product in the study areas. The total butter production in the survey year was 18,880 kg in both the woredas, out of which 87.6% was supplied to market. The objective of this study is to investigate the butter supply chain in Atsbi-wonberta and Alamata woredas of Tigray region. The specific objectives were to analyze production and marketing supporting services, to identify structure of production costs and determine profitability, to analyze determinants of butter supply, to analyze structure-conduct and performance of butter market and to identify major production and marketing constraints and opportunities. To accomplish these tasks formal and informal data collection tools of both primary and secondary data were used. A survey was conducted in the districts in which data was collected from randomly selected 200 butter producer households of Atsbi and Alamata woredas using a structured questionnaire and from 56 butter traders at different level of the chain from Alamata, Atsbi and the terminal market, Mekelle. The econometric result of market participation decision indicated quantity produced, number of extension visit, market information access, family size, distance to nearest market and distance to development center are the significant factors. Similarly, quantity produced, distance to nearest market and distance to development center are significant factors affecting level of supply. As to the probit model of determinants of access to crossbreed cows; number of extension visit, participation in extension demonstration, access to veterinary service and distance to the woreda town are significant factors. Likewise, dairying experience, labor availability, distance to feed market and access to formal credit are significant factors determining farmers’ access to feed in the probit model. Among the hypothesized determinants of access to cattle drug; number of extension visit, number of cows and distance to the nearest market found to be significant factors. The probit model of households’ credit constraint condition reveals herd size, distance to development center, off farm income and frequency of extension contact are the significant factors associated with credit constraint condition. The net returns, generated after deducting all economic cost of resources used for butter production, found to be 1623ETB per cow/year from crossbreed cows and 213ETB per cow/year from local breed cows with overall average net return of 918.3ETB per cow annually. Following the market structure criteria of concentration ratio, butter market shows competitive nature in Atsbi market with $C_4$ of 31%, and weak oligopolistic nature in Alamata and Mekelle markets as their concentration ratios are 39% and 44% respectively. Entry barriers were not observed in relation to licensing and working capital. However, considerable barrier was observed with respect to years of experience at the wholesale level and risk of seasonal variation in demand and price of butter. Based on the channel comparison and marketing margin analysis of butter market performance, the producer’s share of the consumer’s price was found to be the highest along producer-consumer channel followed by producer-woreda retailer-consumer and producer-rural assembler-wholesaler-consumer. The major constraints of butter production and marketing in the studied areas were inadequate availability and supply of feed, the low productivity of the endogenous cattle breeds, low supply of crossbreed cows, lower demand of butter during fasting periods, adulteration and seasonal fluctuation of butter price. Therefore, taking into account these factors in designing butter production and marketing improvement programme may help policy makers come up with policies aimed at ameliorating the butter supply chain in the districts.
This study was initiated to analyze poultry marketing chain in Alamata and Atsbi-Wonberta Woredas of Tigray region. The specific objectives of the study are, to analyze structure conduct and performance of poultry market, to analyze the structure of production cost and determine profitability, to identify the major constraints and opportunities of poultry production and supply, to analyze the production and marketing support service of extension, input supply, credit and marketing, and to identify the determinants of poultry supply in the study areas. The data were collected from individual interview using pre-tested questionnaire. Descriptive statistics such as t-test, chi-square, means and percentages were employed to analyze structure conduct and performance of poultry market, to analyze the structure of production cost and determine profitability, to identify the major constraints and opportunities of poultry production and supply and to analyze production and marketing support service of extension, input supply, credit and marketing. Heckman two stage econometric model was used to identify factors affecting market participation decision and value of poultry sales. The major marketing channels and main actors involving in the market were identified. Marketing channels of egg and chicken indicated shorter path as compared to other agricultural commodities. The market actors in the survey period were producers, rural assemblers, retailers, wholesalers and consumers. Significant amount of chicken and egg were channeled through the first channel, direct selling of the commodities from farmers to consumers. To evaluate poultry market performance cost, profit and marketing margins were calculated for the group of market players in different channels for egg and chicken markets.

Poultry production was constrained by diseases, health service and limited supply of exotic chicken. Some of the diseases identified by the sample households were New Castle, Salmonella and chicken flies. Traders were also constrained with permanent market place, trade license and existence diseases. Despite this, it had also opportunities such as high turnover earning, small feed requirement, lower initial cost requirement, employment opportunities for poor women, landless farmers and disadvantaged groups and being land a less limiting factor for its production. Results obtained from the first stage of the model indicated that sex of the household and distance to the woreda market; family size and education of the household head were the variables that influence the decision to participate in poultry market negatively. Results from second stage of the model shows that, value of poultry sales was influenced negatively by Alamata as compare to Atsbi woreda, and positively by poultry owned. Therefore, policy aimed to accelerate agricultural development in poultry production and marketing could be successful if the aforementioned factors are taken in to consideration.
A flock monitoring study on 60 households was undertaken from October 2008 to September 2009 to measure productive and reproductive performances; determine socio-economic benefits and husbandry practices; and identify production barriers & suggest intervention options in Alaba Special Woreda. The Woreda was stratified into flock density groups; sheep dominant, goat dominant and mixed flock, and the respective sites and households were selected using multi-stage (purposive and random) sampling techniques. Mean land holding per household was 1.5 ha. On average, a household owned 6.5 cattle, 6.1 sheep, 4.5 goats, 1.15 equines and 4.2 chickens. Hot pepper, teff and chat are the major cash sources for farmers. Small ruminant are mainly kept for income generation. Males were sold and or slaughtered before attaining puberty, which can reduce selection intensity for breeding. Production is stratified as lamb and kid rearing and selling for intensive finishing. ‘Afelama’, a local bylaw and punishment rule, restricts movement of sheep and goats during cropping period. Sale, death, home slaughter, share holding, gifts out and predator contributed for 60.5, 13.8, 11.0, 5.2, 1.4, and 5.7% exits, respectively, in sheep flocks while the corresponding values for goats were 41.5, 17.8, 16.1, 5.9, 11.9, and 2.54%. Sale to purchase agricultural inputs (fertilizer and improved seeds) is the major reason for the reported exits. Home born, purchase, shareholding, and gifts back constituted 87.1%, 10.1, 1.7 and 1.1% entries, respectively, for sheep while for goats the values were 94.4, 2.1, 2.8 and 0.7%, respectively. Most lambing and kidding occurred between March to June, the apparent peak being on May. Mean birth weight (BWT)(kg), weaning weight (WWT)(kg), Average daily gain (ADG), litter size, age at first parturition and parturition interval (months) of sheep were 2.30±0.03, 10.35±0.19, 89.24±1.98, 1.52±0.04, 12.43±0.1, and 9.19±0.08, respectively. The corresponding values for goats were 2.34±0.03, 9.97±0.29, 82.34±3.18, 1.47±0.04, 11.95±0.13, and 9.05±0.08 respectively. Sex, parity, litter size and season significantly (P<0.05) affected BWT in sheep whereas birth type (90 day, ADG and 120 day) and season (30 and 120 day) significantly (P<0.05) affected growth rate. Fixed factors significantly (P<0.05) affected BWT, WWT, ADG and growth at different ages of goats except site (30 & 120 day), sex (birth, ADG & 150 day), parity (90 day & ADG), birth type (120 & 150 day) and season (120 day), the trend being inconsistent. Pre-weaning mortality rate of 13.89% and 10.66% were found for sheep and goats, respectively, excluding still births and abortions. Mean milk yield of does was 150±56.03 ml. Offtake rates of sheep and goats were 41.18 and 30.37%, respectively. Small ruminant enterprise contributes 52.32% of the net total cash income obtained from livestock rearing and 24.23% of the net total agricultural cash income. The major problems for small ruminant production in the area are: poor veterinary services, water and feed shortage, seasonal market fluctuations and lack of overall extension supports. Higher rate of abortions and mortality could offset the higher prolificacy of kid and lamb crops obtained. To utilize the current increasing offtake and emerging market opportunities, attempts should be made on veterinary issues and forage development to alleviate the losses due to co-occurrence of high parturitions during critical feed shortage time; in line with intervening to improve the genetic makeup through selection and crossbreeding. Efforts should also be made to optimize female reproduction and increase lamb and kid output. To select outstanding males from the local genotypes, breeding strategy should be devised. Further study is needed to identify the milking potential of the does and cost-effective feeding strategy from locally available feeds for finishing animals in the area.
THE ROLE OF ICT ON AGRICULTURAL KNOWLEDGE MANAGEMENT IN ETHIOPIA

MBA Thesis Research
By
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Abstract
This Study analysed the perspective that information technology can play a central role in knowledge management processes and its challenges and opportunities in the context of Ethiopian infrastructure in the cases under study.

It was undertaken in four regions of Ethiopia taking one Woreda Knowledge Centre (WKC) from each region based on purposive sampling method. The study was aimed to assess the role of ICT in IPMSs’ projects of ICT-based Woreda Knowledge Centers (WKC) to investigate if such centers can exploit the opportunity of the ICT-based WKCs for the purpose of enhancing effectiveness of the users. The respondents are the staffs of WOoARD who are using the knowledge centers. Both qualitative and quantitative data were used to obtain reliable information from primary and secondary sources. Data is analysed more qualitatively and also done using descriptive statistics, Percentage and Ranking. The study indicated that the role of ICT in the WKCS is moderate. Due to lack of computer basic skills, shortage of ICT tools and others, there are many challenges that have to be given solutions. The study recommended the way these challenges can be solved. The study also revealed that, the inefficiency of Ethiopian Telecommunication is becoming the obstacle for the process of Knowledge Management (KM) by hindering that there is very poor network connection in all regions so that it is difficult to get and/or disseminate the agricultural information and knowledge by the agricultural service providers.