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**Rural Development Academy (RDA), Bogura  
Bangladesh**

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**Article 01**

## **Comparative Analysis of Training Needs of CCDB Beneficiaries and Non-Beneficiaries for Biochar Promotion**

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### **ABSTRACT**

*The main purpose of the study was to determine training needs of CCDB beneficiaries and Non-beneficiaries for biochar promotion. Data were collected from the CCDB beneficiaries and non-beneficiaries at Daudpur and Mahmudpur union of Nawabganj Upazila under Dinajpur district through personal interview. A pretested and structured interview schedule was used to collect data from the respondents during 16 August to 17 September 2017. Descriptive statistics are performed to explain the selected characteristics of the respondents. Student t-test (Independent Sample t-test) for difference of means was computed regarding any selected characteristics and focus issue in order to measure the difference between the CCDB and non-CCDB beneficiaries. Results indicated that majority (65.4%) CCDB beneficiaries needed low training on biochar promotion followed by 34.6% needed medium training, but in case of non-CCDB beneficiaries, majority (53.8%) of them needed high training on biochar promotion activities, while 44.2% needed medium training and only 1.9 % needed low training. There were significant differences between the selected characteristics of the two groups of beneficiaries such as annual income, extension media contact and knowledge on biochar. In addition,*

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significant difference also observed between the two groups of beneficiaries in terms of training needs. Co-efficient of correlation ( $r$ ) was computed to explore the relationship between the seven selected characteristics including age, education, family size, farm size, annual income, extension media contact, knowledge on biochar and their training needs for biochar promotion. Among seven selected characteristics, there were significant relationship between the selected characteristics of the CCDB beneficiaries and their training needs in terms of farm size and knowledge on biochar. On the other hand, there were significant relationship between the selected characteristics of the non-CCDB beneficiaries and their training needs in term of education, farm size, annual income and knowledge on biochar. The 1<sup>st</sup> ranked training needs on biochar production and utilization for biochar promotion was 'balanced use of biochar in crop field' followed by 'methods of using biochar in crop field' was ranked 2<sup>nd</sup> for both CCDB-beneficiaries and non-beneficiaries.

**Key Words:** Training needs, CCDB beneficiaries, non-beneficiaies and biochar promotion

## 1. INTRODUCTION

### 1.1 General background

Bangladesh is one of the most vulnerable countries in the world in terms of global climate change (Karim, 2015; Rahman, 2010; Huq and Ayers, 2007; Rahman and Alam, 2003). The country has been suffering frequent natural disaster because of global climatic fluctuation (Karim and Thiel, 2017). Around 84% households use fuel wood and crop residues for traditional cooking stove locally known as *Chula*, while fuel wood constitutes 41% of total biomass energy (BCAP, 2013). Heavy reliance on fuel wood and crop residues is highly responsible for the reduction of forest and organic matter, respectively (Miah *et al.*, 2009). Natural disaster and crop diversification through modern farming systems are subsequently interlinked (Karim and Muhammad, 2018). The benefits of organic farming seemed to be environmentally friendly and helpful for climate change mitigation (Karim, 2018).

Biochar is charcoal made from organic residues that are carbonized at temperatures between 450-750 degree centigrade in the absence of oxygen (pyrolysis) or with restricted oxygen (gasification). People have known for millennia that the ash and charcoal are good for plant growth (BBI, 2015). Biochar is produced in an environmentally friendly manner by recycling plant waste into fertilizer (Cui, 2015, McLaughlin *et al.*, 2009 and Lehmann, 2009). There are various types of biochar based on the raw materials (woody fuel, agricultural wastes, forest residues, organic wastes materials) from which it is made. There is evidence that the Amazonian basin farmers in Latin America used a soil amendment similar to what is today we called as biochar, and thus created the renowned *Terra Preta* to improve their agricultural production, as far back as 6000 years ago (Barrow, 2012). The existence of these 'dark earths' with high levels of soil fertility is often used to support modern research on biochar as a soil amendment (Leach *et al.*, 2010). Moreover, the development of biochar producing stoves, which provides efficient energy and healthy cooking resulting biochar used for soil improvement and Green House Gas (GHG) reduction (Barrow, 2012).

**Article 02**

## **Effectiveness of Web-Internet Information System for Achieving e-Governance in Bangladesh**

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Sheikh Saeem Ferdous<sup>2</sup>

### **ABSTRACT**

*The web internet information of e-governance provides greater access to government information promotes civil officials and makes government more accountable by making its operations transparent. Hence, an attempt has been made to find out the utilization of various websites hosted by Govt. and Non-Govt. organizations, their service delivery and problems. In the study it was found that Govt. and Non-Govt. professionals mostly use Yahoo, Google, Face book in Educational and Organizational events. It is interesting that many of the users which is around 32 percent of total users were found not practicing internets as they did not know how to operate internet, although they were graduate and above by education and within the age group of 31 to 35 years. Users used internets for different purposes. Of them, communicating, reading papers and books, and collecting information were major. However, all users were satisfied with the services provided to them. They also encountered a number of problems. Those were low speed of the internet and unavailability or frequent power cut off. With the above findings it reveals that there are sample scope to orient people about internet and its use, to increase its services and to adopt corrective measures vice-versa some steps to be taken for its smooth operation.*

**Key Words:** Internet, website, e-governance, users.

### **1. INTRODUCTION**

Web internet information of e-Governance has been employed by many developed and developing countries as an enabler towards accelerating processes, delivering speedy service to citizens, increasing transparency and accountability while lowering costs (Anon, 2013). Additionally, in developing countries it has been recognized as an enabler towards catapulting

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**Article 03**

## **Women Empowerment through Entrepreneurship: A study in Jashore District**

Maruf Ahmad<sup>1</sup>

### **ABSTRACT**

*The study was conducted to investigate the socio-economic profile of women entrepreneurs, to assess the empowerment of women entrepreneurs and the challenges faced by the women entrepreneurs in two upazilla (Jashore sadar and Kashobpur) of Jashore district. Data were collected from 50 women entrepreneurs who were the beneficiaries of two local NGOs Jagorani Chakra Foundation (JKF) and Banchte Shekha through direct interviews using questionnaires. The findings of the study indicate that the majority (54.00 %) of women entrepreneurs belonged to the age group of 30-35 years having secondary education (58 %), married (64%), having nuclear (76%) and medium family size (70%), non-office bearer (68%) and family occupation were business (38%). Maximum enterprises (44 %) were 5-10 years old. Seventy-eight per cent entrepreneurs were employing 1 to 4 workers and 62 per cent entrepreneurs were generating income from the enterprise between 4000-8000 taka per month. The majority entrepreneurs (68%) have no training and (72%) have no experience before the establishment of the enterprise. The highest of women entrepreneurs (64%) have the highest indices of control over resources, participation in social activities (56%), political participation (60%), participation in household decisions (74%), seventy percent have high knowledge about women's rights with medium social mobility (62%). Most of the women entrepreneurs faced some challenges such as problem in getting money to start up a business, inadequate capital, getting permission to start-up a business, facing gender discrimination, illiteracy and lack of knowledge among women, non-availability of training program, lack of managerial skill branding and marketing of their products etc. Developing entrepreneurial skills among women will be a good approach for women empowerment and this would elevate social status of women.*

**Key Words:** Women entrepreneurship, Women empowerment, Women in Development

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**Article 04**

## **Management Practices Responsible for Yield Gap of Boro Rice at Farmers Field Level**

Shahriar Mursalin Mehedi<sup>1</sup>

Farhana Yeasmin<sup>2</sup>

Md Rafiqul Islam PhD<sup>3</sup>

### **ABSTRACT**

*The purpose of the research was to identify the management practices responsible for yield gap of Boro rice. The management practices included in this study were: soil type and land preparation, variety, seeding, fertilization, irrigation and intercultural operation. The study was conducted in two villages of Sadar Upazila of Mymensingh district. Ninety farmers were selected as sample following proportionate random sampling technique. Data were collected during mid-March to mid-May 2014. Collected data were compiled, coded, analyzed and interpreted as per objectives of the study. Yield gap of crops depends upon a series of factors including farmers' characteristics and management practices hold by the farmers. An understanding of these factors influencing the yield gap is necessary to minimize through suitable interventions for Boro rice yield. It was found that majority of the respondents were middle-aged having a secondary level of education, medium farm size, small family size with low agricultural knowledge but the favorable attitude towards the existing agricultural systems. Farmers' characteristics like age, farming experience, agricultural training, knowledge about agriculture and attitude towards agricultural practices found negatively related to the yield gap of the major crops. Results showed that yield gap of Boro rice had significant relationship with variety, seed source, chemical fertilizer used and method of weeding.*

**Keywords:** Practice, yield gap, farmer

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**Article 05**

## **Information Needs of Rural Women in Agricultural Activities**

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### **ABSTRACT**

*The purposes of this study was to determine the selected characteristics of the rural women, to determine the information needs of the rural women in practicing agriculture and to explore the relationship between information need and selected characteristics of the rural women. Data were collected using interview schedule from a sample of 50 rural women out of 100 rural women of target group and 50 women out of 100 women of control group selected random sampling procedure from the beneficiaries of PROTIC project of Dimala upazila under Nilphamari district. It was revealed that the highest information needs was observed on 'pesticides name' in target groups. Lowest information needs was observed on 'pond preparation'. In case of control groups the highest information needs was observed on 'pesticides name' while lowest information needs was observed on 'water quality management' among the selected information of practicing agricultural activities. In target groups majority of the respondents (74 percent) mentioned medium information needs while 14 percent low and 12 percent high information needs. Among the control groups 62 percent women opined medium information needs while 16 percent mentioned about low information needs and 22 percent showed high information needs for practicing agricultural activities. In response to target groups it was observed that extension media contact and agricultural knowledge, annual income and aspiration while in response to control group women' agricultural knowledge and aspiration are positively and age was negatively correlated with information needs of rural women in practicing agriculture.*

**Keywords:** Information; agricultural activities; rural women.

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**Article 06**

## **Factors Affecting Safe Food Production: A Study in Bogura District**

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Rebeka Sultana<sup>2</sup>

NoorMuhammad<sup>3\*</sup>

Atindra Nath Roy<sup>4</sup>

Sathi Khatun<sup>4</sup>

### **ABSTRACT**

*The main purpose of this study was to determine the factors affecting safe food production, to determine the present socio-economic condition of the safe food producer farmers and to find out problems faced by the farmers in safe food production and its probable solutions. Data were collected using interview schedule from a sample of 120 farmers selected by random sampling procedure from Sherpurupazila under Bogura district during 01 February to 15 February, 2018. The usual descriptive statistical parameter was used for the statistical analysis. There are several factors affecting in safe food production. Market price of safe food played the highest role in producing safe food followed by knowledge about residual effect of pesticides, knowledge about safe food, consumer awareness and so on. The highest reason is that interest of customers to buy fresh looking foods which is the main barriers of safe food production and marketing.*

**Keywords:** Factors and safe food

### **1. INTRODUCTION**

#### **1.1 Background information**

Bangladesh is predominantly an agricultural country and about 48% of her population is engaged in agriculture for their livelihoods (BBS, 2014). The population density of Bangladesh is 1078 persons per square kilometer and per capita income is about US dollar 1610 (BBS, 2016).

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**Article 07**

## **Participation of Rural Women in Homestead Agricultural Activities in Sadar Upazila of Thakurgaon District of Bangladesh**

Md. Sadekur Rahman<sup>1\*</sup>

Mst. Afsana Haque<sup>2</sup>

Md. Faruq Hasan<sup>3</sup>

### **ABSTRACT**

*The purpose of the study was to determine the extent of participation of rural women in the homestead agricultural activities. The study was conducted on the rural women from two selected unions of Sadar upazila under Thakurgaon district of Bangladesh. Data were collected from randomly selected 97 women by using pre-tested interview schedule during the month of 1st February to 15 March, 2017. The focus issue consisted of around 14 activities under three different sub-headings such as homestead vegetable cultivation, homestead fruit cultivation and homestead birds and animal rearing. The nine selected characteristics of the rural women such as age, education, family size, farm size, annual income, organizational participation, cosmopolitanism, knowledge on agriculture, and decision making capacity were considered as the selected characteristics. Participation of women in homestead agricultural activities was measured by 4-point rating scale. It was found that the observed score of participation ranged from 4 to 35 against the possible range 0 to 42. From the findings, it is observed that 74.2% of women had medium participation in homestead agricultural activities; about 16.5% of the rural women had high participation, while only 9.3% of them had low participation in homestead agricultural activities. Pearson's product moment correlation coefficient ( $r$ ) was used in order to explore the relationships between the selected characteristics of the rural women and focus issue. 'Cattle rearing' under rearing homestead birds and animals with participation index (PI) value of 247.4 was found the first ranked participation in homestead agricultural activities whereas 'Goat rearing' was the last ranked homestead agricultural activities as opined by the rural women with PI value of 54.5. It was evident*

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*from the correlation analysis that, family size, cosmopoliteness, homestead agricultural knowledge and decision making capacity had significant and positive relationship with the extent of participation where educational qualification had significant and negative relationship with the extent of participation on homestead agricultural activities. On the other hand, age, farm size, annual income, organizational participation had no significant relationship with the extent of participation.*

**Keywords:** Factors and safe food

## 1. INTRODUCTION

### 1.1 Background of the study

Bangladesh is one of the densely populated countries in the world with approximately 80% (170 million) people depending on agriculture for subsistence. Out of them, about fifty % (104:100) are female. Gross Domestic Product (GDP) comes from agriculture sector 13.75% (BBS, 2017). Women contribute around half of the population in Bangladesh and majority of them live rural areas. Women contribute in agricultural production but it has hardly been recognized. Women first initiated agricultural practices and demonstrated the art of science of farming (Munmun et al., 2015). Women played a key role in the conservation of basic support system such as land, water, flora and fauna (Swaminathan, 1985). They are the key operator of the house. They play an important role in domestic duties such as washing utensils, cleaning house compounds, livestock and poultry management and feeding, as well as post-harvest activities, guest entertainment, decision making and technology adoption. In addition, rural women in Bangladesh are responsible for growing most of the family's fruits and vegetables they also care for poultry and livestock (Swaminathan, 1985).

Many activities performed by women are not considered as the productive ones and hence not reflected in national census. Rather they take care of both the children and elderly people of the family whenever they get time to take little rest. They involved in agricultural activities, cattle and poultry farming, handicrafts, cooking, fetching water, cleaning the house, taking care of family members and many more. Without women's participation household activities cannot be performed perfectly. But it is interesting to note that independent decision making by women on all home and family related practices is very marginal (6.9-13.1%) even though family and home is essentially a women's domain (Anonymous, 2005).

In Bangladesh out of 8.52 million hectare cultivated land, 0.03 million hectare land (about 5.0%) is under homestead while average individual homestead covers 0.04 hectare. Nearly 4.9 million household (30%) are non-farm out of total 18 million households (BBS, 2014).

### 1.2 Statement of the problem

Presently, due to improving the economic status and technological advancement social norms and traditions are changing. So, women are intimately involved in all phases of agricultural activities from seeds sowing to harvesting and processing of crops without any training provided to them (Muhammad et al, 2015). Even women from the poorest households sometimes work outside

**Article 08**

## **Production of earthworms (*Eisenia foetida*) as an alternative mud eel (*Monopterus cuchia*) feed**

Macksood Alam Khan<sup>1</sup>

Md. Ashraful Alam<sup>2\*</sup>

Ahmed Khairul Hasan<sup>3</sup>

Sabina Yeasmin<sup>4</sup>

### **ABSTRACT**

*The study was conducted to examine the production of earthworms (*Eisenia foetida*) as supplementary feed of mud eel (*Monopterus cuchia*). The growth pattern, mortality, cocoon production and total biomass were investigated during the experimental period. Three types of media such as cow dung with straw; cow dung only and fruits and vegetables wastes were used for earthworm's production. The raw cow dung was prepared through pre-composition before used as media. During 21 weeks of the experiment, the lowest mortality (about 29%) was found in cow dung media and the highest (about 74%) was found in vegetable and fruit wastes media. The cocoon production was started after 6 weeks in both cow dung with straw and cow dung only media whereas in fruit and vegetable wastes it started after 9 weeks. The highest individual earthworm biomass (811.9 mg) was found in the cow dung with straw and the lowest individual biomass (378.9 mg) was in the fruits and vegetables wastes.*

**Keywords:** Earthworm, *Eisenia foetida*, Alternative feed

## **1. INTRODUCTION**

### **1.1 General background**

Nowadays aquaculture is supplying more than half of the total fish for human consumption worldwide. It is also increasing rapidly in Bangladesh. The contribution of aquaculture in total fisheries production of Bangladesh was 23, 33,352 MT with the average growth rate was 5% in

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