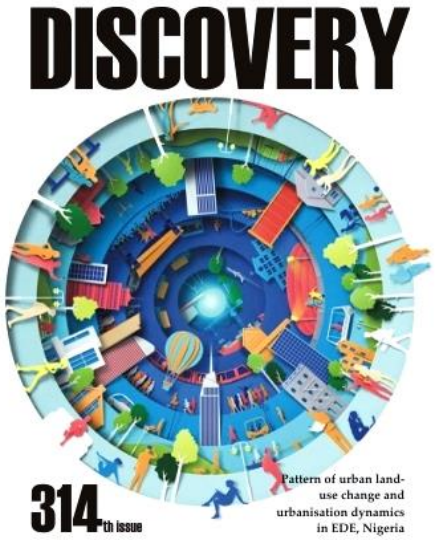
Volume 58, Number 314, Pages 76-162 February, 2022

DISCOVERY

About the Cover



This study analysed the growth and development of Ede, Nigeria between 1966 and 2020. The study assessed the spatial and temporal patterns of urban expansion; and identified the major drivers of urban expansion in the study area. The study utilised data collected through the use of inventory data sheets and handheld Global Positioning System (GPS) for ground truthing. Also, data were obtained from topographical map and satellite imageries. Data were analysed using Remote Sensing and Geographical Information System (RS/GIS) tools and Analysis of Variance (ANOVA). Results showed that Ede has greatly grown and developed since 1966 at an annual growth rate of %. Moreover, results indicated that the growth patterns identified in the study area did not conform to any of the single known theories of urban growth but, rather a combination of both concentric and sectorial patterns. Furthermore, the study found that improved socio-economic activities, expansion of the residential areas, and establishment of higher educational institutions were the major drivers of growth in Ede. While the study appraises the practicality of growth centre strategy to urban development, it harangued the unrestricted nature of urban expansion in the study area. Nevertheless, the study underscores the relevance of top-down approach to the growth and development of the study area. The study recommended the implementation of planning controls to aid well-defined land uses in the study area (Ref: OLAYIWOLA Adewale Mukhtar, OYINLOYE O. Raphael. Pattern of urban land-use change and urbanisation dynamics in Ede, Nigeria. *Discovery*, 2022, 58(314), 76-88).

Pattern of urban land-use change and urbanisation dynamics in Ede, Nigeria

OLAYIWOLA Adewale Mukhtar, OYINLOYE O Raphael

This study analysed the growth and development of Ede, Nigeria between 1966 and 2020. The study assessed the spatial and temporal patterns of urban expansion; and identified the major drivers of urban expansion in the study area. The study utilised data collected through the use of inventory data sheets and handheld Global Positioning System (GPS) for ground truthing. Also, data were obtained from topographical map and satellite imageries. Data were analysed using Remote Sensing and Geographical Information System (RS/GIS) tools and Analysis of Variance (ANOVA). Results showed that Ede has greatly grown and developed since 1966 at an annual growth rate of %. Moreover, results indicated that the growth patterns identified in the study area did not conform to any of the single known theories of urban growth but, rather a combination of both concentric and sectorial patterns. Furthermore, the study found that improved socio-economic activities, expansion of the residential areas, and establishment of higher educational institutions were the major drivers of growth in Ede. While the study appraises the practicality of growth centre strategy to urban development, it harangued the unrestricted nature of urban expansion in the study area. Nevertheless, the study underscores the relevance of top-down approach to the growth and development of the study area. The study recommended the implementation of planning controls to aid well-defined land uses in the study area.

Discovery, 2022, 58(314), 76-88

Predictive analysis of future rainforest cover depletion in Oghara, Delta state, Nigeria

Jomata Lucky Igben, Efeturi Fortune Eregare

This study utilizes remotely-sensed data and GIS techniques to predict future spatial changes in rainforest vegetation in Oghara, Nigeria. It aimed at determining the changes in size of rainforest cover from 1991 to 2019 as a basis for predicting its future size in 2050. Data were obtained from Landsat 5 TM images for 1991 and Landsat 7 ETM+ images for 2002 and 2019. The IDIRISI Selva 17.0 software which integrates the cellular automaton filter and Markov processes was used to analyse the data. The software packages used for land use/cover change detection are ENVI software version 5.3 for image pre-processing, image classification, accuracy assessment, post-classification process, thematic change detection and statistical results, and ArcGIS desktop version 10.3 (ESRI) for editing boundary of the study area, post-classification processes, map layout and visualization. The study revealed that the size of forest cover decreased from 142.49km^2 or 53.94% of the total area in 1991 to 81.30km^2 or 30.78% in 2019 and predicted to further decrease to 60.52km^2 or 22.91 percent in 2050. Thus, indicating a high rate of deforestation in the study area. The study recommends the establishment of forest reserves, enactment and enforcement of laws on forest protection and education of population on the importance and sustainable use of forest resources.

Discovery, 2022, 58(314), 89-96

Identification and Utilization of Potential Indigenous Fodder Trees and Shrubs as Dry Period Ruminant Feed in Bako-Tibe district, West Shewa Zone, Ethiopia

Dereje Keba, Taye Tolemariam, Solomon Demeke, Demissu Hundie

Indigenous fodder trees and shrubs are important feed resources in Ethiopia during the dry season. This study was conducted to assess and provide comprehensive information on the availability, utilization, farmers' perception and chemical composition of these trees. Ten potential Indigenous fodder trees and shrubs (5 trees and 5 shrubs) in the lowland and eight (5 trees and 3 shrubs) in mid-altitude were identified and selected. The scores credited and preferences by farmers to the selected traits varied significantly ($P<0.001$) among different species. The mean CP content of IFTS was 17.9% within a range between 8.6-26.9% for Carissa edulis and Acanthus polystachyus respectively, indicating that these browse species were of high potential in feeding value as measured by CP content. There was significant variation ($P<0.001$) between the browse species in mean CP, NDF, ADF, ADL, EE and TT (Total tannin) contents. Moreover, there was significant ($P<0.01$) difference between the browse species attributed to altitudes in average NDF, ADF, and ADL contents. Shrubs contained significantly higher ($P<0.01$) CP and EE content than browse trees; whereas trees contained significantly ($P<0.05$) higher mean NDF. The correlation between farmers perception of feed value scores of Indigenous fodder trees and shrubs and the laboratory result of CP content was positive and significantly ($P<0.05$) strong ($r =0.60$). However, there was no positive and strongly significant ($P>0.05$) correlation between farmers perception of feed value scores of IFTS and the analytic result of ADF, ADL and TT content in both studied agro-ecologies. The results obtained indicated that about 96.8 and 94. 3% of the lowland and mid-land respondents respectively, feed the leaves and twigs/pods of the IFTS species fresh. In conclusion, most of the fodder species identified in the study area are potential feed resources for ruminant animal feeding during the dry period in Ethiopia. Further animal evaluation for the promising and widely available indigenous fodder trees and shrubs aimed at including into dry period ruminant animal feeding system seems to be the future direction of research.

Discovery, 2022, 58(314), 97-110

High nuclease activity shown by sorghum tissue *in vitro*

Sunitha EM, Rajani A, Ulaganathan K

Lack of suitable genetic transformation protocol is the major bottleneck for application of transgenic approach for sorghum improvement. Available evidence from the literature and our work shows that tissue culture methodology for plant regeneration is not a limitation for the development of transgenics in sorghum. However, the block lies in the transformation process itself. In this paper we report the presence of very high levels of extra cellular and intra cellular nuclease activities which may be responsible for the poor transformation competence of the sorghum tissue. Further we report treatments that can mitigate the nuclease activity without affecting the tissue culture competence of the tissue.

Discovery, 2022, 58(314), 111-118

Potentiality of plant extract against *Colletotrichum gloeosporioides* causing anthracnose of Mango

Ashraful Alam, Parag Mistry

Botanicals were applied in *in vitro* against *Colletotrichum gloeosporioides* isolated from anthracnose affected mango. The study investigates to appropriate natural management. Five botanicals *viz*. korola fruit, amloki fruit, marigold leaves, neem leaves and mikania leaves extract were used and extracted 100 ml of each. By using Poison food technique 2 ml plant extract and 20 ml PDA medium containing petri plates were inoculated with 5 mm mycelial block of 3 days old pure culture of *C. gloeosporioides.* After7 days of inoculation (DAI), significantly the highest percent inhibition 58.49% was found from mikania followed by neem (46.25%), amloki (41.03%), korola (39.24%) and marigold (36.31 %) over control. Three higher concentrations (15, 20 and 25 ml) were prepared from highly performed extract was also tested. Among the concentrations 25 ml was gave significantly highest 72.33% inhibition followed by 68.15% and 64.56% at 20ml and 15ml respectively. In conclusion, with the increases concentrations percent inhibition also increases.

Discovery, 2022, 58(314), 119-124

Status of timber productivity in exotic and indigenous tree plots in Sakhipur areas of Tangail district in Bangladesh

Md. Mijanur Rahman, Saleh Ahammad Khan, Md. Enamul Kabir

Increasing timber production is vital for growing people to meet their demand for different purposes. Exotic *Acacia auriculiformis* A. Cunn. ex Benth., and *Eucalyptus camaldulensis* Dehnh., were planted instead of indigenous *Shorea robusta* Gaertn., in Sakhipur area for increased timber production. Sakhipur is a pioneer area where huge exotic species, especially *A. auriculiformis*, are planted with the expectation of better and rapid financial benefits. This study was carried out to compare the timber productivity between exotic monoculture of *A. auriculiformis* and *E. camaldulensis* and naturally growing indigenous *S. robusta* and planted *Mangifera indica* L. in order to suggest the type of species suitable among the tree growers to grow. Indigenous *S. robusta* plots showed higher average stem density (2482 per ha), stem volume (321 m^3/ha), and basal area (23 m^2/ha) than that of exotic species plots. But the tree height (10 m) and DBH (13 cm) of *A. auriculiformis* were highest in the area. Stem density across *Acacia*, *Shorea*, *Eucalyptus* and *Mangifera* plots were significantly different. Gross timber production was significantly higher in *Acacia* and *Shorea* plots than *Eucalyptus* and *Mangifera* plots. Local peoples were more interested in planting fast growing exotic species instead of indigenous as it offers quicker financial return. Monoculture of exotic tree species on agricultural land should be discouraged. However, monoculture of exotic tree species can be practiced on degraded, fallow, marginal or specified lands for quicker financial benefits.

Discovery, 2022, 58(314), 125-133

***Prosopis africana* (African mesquite) oil as an alternative to antibiotic feed additives on broiler chickens diets: performance and nutrient retention**

Alagbe JO

The study aimed to examine the use of *Prosopis africana (African mesquite)* oil as an alternative to antibiotic feed additives on broiler chickens diets: performance and nutrient retention. Five hundred and forty 1-day old broiler chicks of mixed sex (Ross 308) were used for the experiment. Birds were divided into 6 treatments each of the groups had 6 replicates with 15 birds in a completely randomized design experimental model. The experiment lasted for 56 days, clean feed and water was provided *ad libitum*. Birds in treatment 1 (T1) were fed basal diet with no *Prosopis* oil (PRO), T2 (basal diet + 1.5 g/kg feed), T3, T4, T5 and T6 were fed PRO at 100 mg, 200 mg, 300 mg and 400 mg /kg feed respectively. Feeding PRO significantly ($P<0.05$) affected the final body weight, average daily weight gain (ADWG), feed conversion ratio and mortality. ADWG values increased as the level of *Prosopis* oil increased across the treatments. Similarly, PRO significantly influenced the nutrient retention of crude protein, ether extract, crude fibre and nitrogen free extract among the treatments. Average daily feed intake of birds were not significantly ($P<0.05$) different among the treatments. It was concluded that PRO is rich in several phytochemicals and its inclusion up to 400 mg/kg of feed had no negative effect on the performance of broiler chicks.

Discovery, 2022, 58(314), 134-142

SOCIAL SCIENCE

Kashmiri women in the reflections of Mahjoor's Poetry

Muzaffar Ahmad Rather, Javid Ahmad Ahanger

Mahjoor is considered among others as the ace and quintessential poet of Kashmir. It is because of his nationalistic poetry that he attained the title of *Shair- e –Kashmir* (National poet of Kashmir). His poetry besides being Romantic also reflects the pain, trauma and pathetic situation of women of his era. Unlike his other Romantic predecessor poets like Rusl Mir and Mahmood Gami, who left no stone unturned to praise the beauty of the women folk. But contrary to these poets, Mahjoor's poetry is full of gloom and predicament while dealing with women. He has touched the heartbreaking condition of women in his poetry which tarnishes the emotional sentiments of readers while reading. He not only adored the beauty like John Keats and John Donne but also praises their contribution in building the social structure and society despite being the victims of inequality and oppression**.** The women in the poetry of Mahjoor are frightened and wounded because of the patriarchal dominance and he wants to put balm on their wounds. When the Whole India was fighting against the Britishers for freedom, the people of Kashmir couldn't that influence? At that time, Mahjoor's poetry revolutionized the Nationalist movement in Kashmir too and also incited and encouraged the local populace to rise against the full *dirigisme* of the rulers. This paper unfolds the ache and gloom of Kashmiri women in the poetry of Mahjoor during the heyday of Kashmir's freedom struggle against Dogra rule. The paper explores the difference of the approach towards women by Mahjoor's predecessor Rusl Mir and Mahmood Gami in their poetry.

Discovery, 2022, 58(314), 143-147

A Study of effectiveness of educational packages on children's creativity and learning (A case study of children 2 to 7 years old in the district of Zahedan in Iran)

Jafarian M, Sadeghinia S

Today children play a more dominant role in determining the buying list of families. On the other hand, companies' activities in motivating and rising families purchasing power have been increased in such a way that, the core of most of advertisements, particularly T.V ads, are children. These activities have led to an increase in studies and researches in the fields on consuming skills in children are acquired. Studies on how these consuming skills are acquired have motivated some institutes to prepare some packages for children of 2-7 years old with the purpose of increasing their creativity and abilities with games and entertainments. These ads motivate both parents and children to obtain these packages in order to increase their children's creativity. The aim of this study is to focus on the efficiency of the educational packs on 2-7 years old children's creativity and learns ability of Zahedan city. The statistical population of this research includes 100 parents of 2-7 years old children in one of the educational centers of Zahedan during the educational year of 2014-15 who have been chosen by accessible sampling method. Research tool includes a handmade questionnaire. For analyzing the data the Xido, Freidman and Sample T test were used. The results showed that most of these parents were in favor of using the educational packages for the learning process, increasing their children's creativity and skills and evaluate its effect as positive.

Discovery, 2022, 58(314), 148-155

Functional business education: antidote for social vices and insecurity in Nigeria

Folaranmi Lateef Gbemiga, Akinkuolie Akeem Akinlolu

Nigeria, a nation that is blessed and endowed by oil, is presently engulfed in series of contemporary challenges ranging from unemployment, civil unrest to insecurity of lives and properties with their attendant implication of unprecedented rise in social vices that have heated up the polity, thereby tarnishing the international image of the nation. It is on this premise that this paper focus on the need for checkmating and overcoming the rising spate of current challenges and heinous acts through Functional Business Education – a subject of living. It essentially x-rays the concept and roles of Functional Vocational Education in addressing the contemporary challenges of social vices in Nigeria, constraints and necessary antidotes to effective functionality of Business Education in the nation.

Discovery, 2022, 58(314), 156-162