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Farmer's Indigenous Agricultural Knowledge in Gamo Highlands, South Western Ethiopia: Characteristics and Sustainability

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As part of government policy to curve food insecurity and bring sustainable livelihood to smallholder agricultural communities, the contribution of indigenous agricultural technologies is undeniable. This research uncovers the indigenous agricultural technologies that need promotion and support, to achieve the intended food security in densely populated highlands of Ethiopia in general and the Gamo Highlands in particular. This study is, therefore, intended to assess the status and sustainability of indigenous agricultural knowledge in Gamo Highlands. The research depended on data collected from 193 sample farm households through intensive household survey, focus group discussion, participant observation and key informant interview. The results indicate that crop production and animal husbandry are the major occupations of the Gamo people in the Gamo Highland. Indigenous soil fertility management techniques such as organic manure, application of tree leaf (mulching), crop rotation and indigenous cultivation mechanisms were still utilized to improve production.

Keywords: Indigenous Agriculture, Indigenous Knowledge and Conservation.

Introduction

Moreover, farmers use indigenous stone bund, soil bund and drainage ditches as their major soil conservation mechanisms. Rapid population growth, declining number of livestock due to lack of open grazing land, lack of manure and heavy weather variability are the threats for the sustainability of indigenous agricultural knowledge in Gamo Highlands. Agricultural experts and rural development agents should give attention to this problem side by side to the introduction of modern agricultural technologies.

In Ethiopia, agricultural policies are largely focus on increasing food production by introducing modern inputs such as improved seeds, chemical fertilizer, pesticides and related inputs. It is testified that there have been improvements achieved in areas of good soil and favourable climatic condition (Dasalegne, 2009). These modern agricultural inputs are purchased and need some money to invest (Abera, 2014). On the other pole, there is little or no attention has been given to local agricultural practices, which can easily be improved without large investment. Although improved agricultural technologies are essential to enhance production in order to satisfy the needs of rapidly increasing population with the annual growth rate of 2.6 (CSA, 2007), it is wise to conduct extensive research at such instances to improve the indigenous agricultural knowledge side by side to the expanding modern agricultural technologies. This in general will help to recognize and/or incorporate the indigenous knowledge with the introduced scientific agricultural technologies.

Static agricultural systems with declining landholdings due to land transfer from father to sons created indigenous agricultural practices unsatisfactory. Moreover, the number of domestic animals whose waste product is significant to organically fertilize the farmland is also declined to the point that some poor farmers are none of them. As a result, not only average output per unit of input is very low but also the farming practices applied contribute to the soil degradation that seriously affects sustainability. Although traditional technologies may have, their values under subsistence conditions, most of the indigenous practices applied on very small plots of land are definitely not adequate for increased production to meet the food needs of the rapidly growing population. Therefore, it is not too late to improve the indigenous agricultural technologies to enhance productivity.

Like most other rural areas of Ethiopia, the prevailing farming system in Gamo Highlands is dominantly traditional small scale with no significant change over times. The rapid population growth added on to the already existing small landholding made life challenging for the rural households. They found it difficult to feed themselves and their families depending on indigenous agricultural practices. Mixed farming, crop production using livestock manure and homemade compost and livestock rearing, is the major livelihood strategy of the Gamo people to sustain their families. The two sub-systems support each other in order to supplement the livelihood of the rural household. Therefore, this research assesses the status and sustainability of indigenous agricultural knowledge in Gamo Highlands, South Western Ethiopia.

Materials and Methods

This study was conducted in Southern Nations Nationalities and Peoples Region (SNNPR), South-western Ethiopia. Similar to that of the federal division, the SNNPR is divided into 14 administrative zones and three special districts (*woredas*) based on ethnic and language identities. Gamo Highland is located in GamoGoffa administrative zone, which is the third largest zone in the region in terms of area, with its administrative centre at Arba Minch Town. The Gamo Highland lies within eight districts, namely Chencha, Dita, Doroda, Mirab Abaya, Daramalo, Bonke, Arba Minch Zuriya and Gerese. Specifically, this study was conducted in Chencha, Dita and Bonke.

(Figure 1).
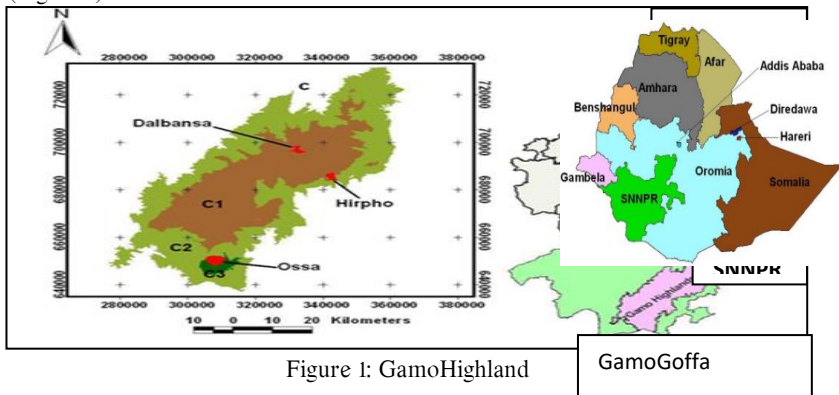
Figure 1: GamoHighland

Methods of Data Collection

All rural Peasant Administrations (PAs) that fall within the defined territory of Gamo Highlands were identified and stratified into three agro-climatic zones based on their previously recorded climatic data. These are, *Dega* (highland) constitutes an area above 2200 meters above sea level, *woynadega* (midland), areas between 1500-2200 meters above sea level and *qolla* (lowland) areas below 1500 meters above sea level (Woldeamlak, 2007; Alemneh, 2003; Shiferaw and Holden, 1998). Selection of sample PAs considered basic criteria: homogeneity of economic activities, geographic location, and distance from urban centres and placement of almost all boundary of the PA at the same agro-climate. Accordingly, one PA was selected from each agro-climate. Therefore, three PAs were purposely selected for this study.

List of all household head names of each category was obtained and alphabetically arranged. 20% of the total household heads were taken by using random numbers table, which according to Creswell (2009) is the most rigorous method for selecting the sample. The research depended on data collected through intensive household survey, focus group discussion, participant observation and key informant interview.

Data Analysis

Qualitative data generation of this study involved ethnographic approach through the understanding of everyday life of the respondents establishing a genuine trusting relationship (Kitchin and Tate, 2000). Firstly, all interviews and points in the group discussion that were tape-recorded were transcribed and documented in a notebook to link with the observation and household surveys. Specific focus was given to the observation by jotting down issues that are related to the day-to-day life setting of the community. Secondly, verbal responses, discussion results and observation memos, which were gathered during daytime, were carefully transcribed. The data were annotated immediately while both the interview and observations are still fresh in mind, which helped to categorise and connect to similar ideas. Sketches by participants and photographs were coded and categorized based on the issues they represented. Depending on the relationship, the sorted and categorized data were linked and connected to the contents they belonged to. Quantitative data gathered through structured household surveys were coded, sorted, classified into themes and analysed.

Results and Discussion

The type of crops produced in Gamo Highlands varied from cereals and root crops specifically, barley, *enset (enseteventricosum)* and potato as the major food crop in the upper limit of the high land to Maize and *tef* in relatively lower agro-climatic zone. The temperate agro-climatic zone locally known as *dega* produces additional crops such as wheat, beans, pea, lentils, and oats in smaller amounts. The entire crops produced in this agro-climate were annual crops except *enset.* There was crop rotation in order to produce twice a year. For example, after harvesting barley, farmers prepared the land for potato. A bit different seasonal crop that grew as weedy in all over the *dega*agro-climate was *Qoltso (Arisaemaschimperianum).* It is a root crop that grows and used as a food only in Gamo Highland. It grows as a weedy root crop where the land is often cultivated. The root is cut-off and purposely buried while plowing the land for barley, wheat or other cereals. It stays dormant for several months and starts to grow in mid-February and it is harvested from the beginning of July to the end of September. Very recently, the amount of *Qoltso* production has been observed remarkably declining. According to observations, *Qoltso* was very sparse in the farm plots.

Photo, 2016

Another important crop produced in the Gamo Highlands is *enset,* a perennial crop which supports the survival of all households during food shortage. *Enset* could be harvested and consumed at any stage of 4-6 years of its maturity stage. Farm households at *dega* saw *enset* as backbone of their life though it occupies land for several years. Farmer's attitude toward *enset* was twofold. Primarily, *enset* was a crop to rely on in times of food crises. The availability of *enset* at a reasonable number and in a good stage (at least more than 4 years of age) indicates that the household might not face serious food

shortage although it was difficult to confidently say such household might be food secure.

Figure 3. *Chadhe* (chopped *enset)* at Dalbansa was spread-out on sun to dry to decrease water   holding during cooking: photo, 2016

The very importance of *enset* was its availability as food item at any season and at any stage of development. At its very smaller stage, *enset* was simply chopped and cooked with cabbage to appear as a delicious food, which is locally called *chadhe*. However, it was considered as the food of the poor when it was consumed during harvest season of other crops such as barley. This indicates that *chadhe enset* was reserved to be consumed during the time` of scarcity of other food items, particularly from April to November. Most of the time, *Chadhe enset* was cultivated at a separate plot of land either along the house next to the main *enset* plantation or in a specific land far away from home. Cabbage was usually planted along with *chadhe enset,* perhaps to use the land for dual purpose.

The major constraint of *enset* production was bacterial infestation that caused wilt and root rotting of the plant. The problem was very serious at Hirpho where almost about 17% of the farm households reported that they lost their plantation. This was raised as one issue of a group discussion, which concluded that the life of any farm household was at risk at any time with the limited availability of *enset* around his/her house. Several measures that have been taken by farmers to solve the problem such as uprooting the attacked *enset* including its root and burying it including the instrument used to uproot

it, was fruitless. What one can argue in this case is that although farmers' knowledge can be appreciated and acknowledged, it could not have prevented the distribution of the bacteria all over the locality and still needs scientific solution and political attention as the crop has considerable value in tackling food insecurity. Furthermore, the severity of the problem needs not only further study but also screening of promising tolerant clones.

Considering the amount of land covered, maize and *tef* were the main annual crops at Ossa. In this specific area, maize is cultivated in *belg* (short rainy season, late February to end of May) season and harvested in the summer to leave the land for *tef*, which was cultivated from mid-July to the start of September. This was also the time to sow *sila* (crops cultivate duringthe main cropping season (July – September) maize immediately after the harvest of the *gaba* (crops crop cultivation between   March- April) maize. However, farmers learned that the erratic nature of rainfall affected the effectiveness of the production of this season. According to the interview results, the main objective of *sila* maize was not to collect good harvest but simply to collect feed for the oxen and cows for the coming dry season. One of the challenges of Ossa farmers was the animal fodder during the time of dry season from November to February. Farmers with reasonable landholding had the chance to do this but the poor households could not misuse the land and/or the maize seed for such purposes. After maize the next important was *tef* which occupied the peripheral and relatively sloppy farm grounds due to the fact that the soil in the flat grounds log water during excessive rains. According to the survey data, *tef* was produced not for home consumption but for market purpose to fulfill household needs such as children's clothes, pay land tax, cover schooling costs, pay fertilizer debt and other home consumption needs such as salt, oil, gas etc.
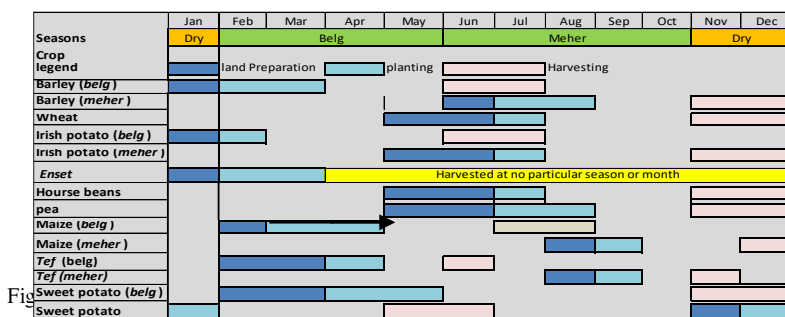
Fig

Indigenous Soil Fertility Management Practices

Most of the cultivated soils in Gamo Highlands experience high degradation, which resulted in loss of primary micronutrients: nitrogen, phosphorus and potassium (Abren and Abera, 2010). Limited crop diversification combined with low or non-fallow period contributed to the decline of organic matter contents. Farmers of the highlands sustained permanent crop cultivation on these soils because there has been an effective indigenous soil fertility management practice in maintaining a reasonable level of organic matter and primary nutrients (Belay, 1998b). The physical set up of the farmland at Gamo Highland is characterized by ups-and-downs with steep slopes in its northeast direction. About 88% of the sample households had at least one plot of farmland in this step slope. Soil erosion happened to be common phenomena in this part of the study area, where there were few scattered transhumance houses constructed for two purposes primarily, to feed livestock on the upper part of the mountain that is a communal grazing land and secondly to store manure to apply on the nearby plots. The main indigenous soil fertility management practices applied in Gamo highlands are discussed as follows.

Organic manure

This is a kind of fertilizer applied on cultivated fields to improve both physical and chemical fertility of the soils. There are two types of organic manures: fresh manure and compost manure. According to the farmers' accounts, fresh manure *(Ho'opitho* or in some localities called *Igisa*) is prepared by mixture of dung, urine and straw or leaf litter that was purposely strewn to feed animals during night time as a dinner and/or to prepare a good and safety sleeping place. After several weeks or few months of storage, the hot manure directly put in a large basket from its original place to be transported by human power (usually women) or in rare cases by horses and directly applied on the field. Such application was mostly practiced on potato fields.

On the other instance, compost manure was prepared outside the house to provide enough time for the mixture of cattle dung, urine, and strew together with some ash, kitchen waste and household rubbish. As it was stored outside the house, it was exposed to sunlight and rainfall, which altogether

helped to ferment and made it ready to use during *belg* cropping. This type of manure is applied on barley and sometimes on wheat fields. All of the surveyed farm households prepared this manure to apply on the cereal fields. In both cases, the transported manure is dropped at a considerable distance, throughout the field and manually spread on the field as evenly as possible.

From their long experience, farmers knew that there are differences among the livestock manure. According to farmers account, sheep dung is the best manure for a good yield of barely, potato, and for other few crops produced in the area. This is scientifically supported, as phosphorous requirement level of cereals, including barely is low; but the optimum amount of phosphorous needed for better growth and productivity of potato is higher (FAO, 1990).

However, the number of sheep was significantly declined due to lack of grazing land. On the other hand, cattle or dairy dung was perceived less

important for barley because of its lower content of primary nutrients compared to that of sheep and horse. Farmers, therefore, mostly used dairy manure at *enset* fields. As a result, *enset* crop was usually planted around the house where there is cow or horse manure to help *enset* mature timely with a considerable thickness and height. That is one of the reasons why all the houses were observed surrounded by *enset* plantation almost throughout Gamo Highland. Farmers were well aware of the longtime effect of organic manure and hence used two crops; barley followed by potato or vice versa continuously using manure applied once.

Crop production in Gamo Highlands has also been depended on fertilizing the soil by leaf litter (green manure of mulching). Trees are purposely left to grow around or at the boarder of farm field for their branches to be cut and thrown on the newly cultivated wheat, barely or any other cereal crop. Until the crop will have two or three leaves, the tree leaf starts to decompose as intensive rain facilitates the process more quickly. This is the way how to keep the soil fertile in this part of the Gamo highland.

Another major organic fertilizer that has been used to restore soil fertility in Gamo Highlands is traditional compost. The preparation of this type of fertilizer is similar in all sample PAs leaves and grass are raw materials added up on the livestock dung and urine to be combined with other household wastes. Farmers applied this fertilizer to wheat and barley fields near and around the house whilst they adapted the application of artificial fertilizers on relatively far fields. Moreover, weeds and other plant remnants were widely used at the time of pre-preparation (*shalame*) period by which the land is thoroughly tilled at a considerable depth to bury what are found on the ground. After two weeks, the buried material is changed into humus and the land would be ready for final preparation. Minimum amount of animal manure is added if available on such a plot of land while preparing land to complete the soil fertility management process.

From farmers' point of view, indigenous soil fertility management has two strong positions. Firstly, if organic manure is applied in a specific plot of land, it would serve for two-term cultivation. For example, if potato is cultivated by applying manure then there is no need of adding manure for the next barley cultivation. This gave more time to store organic manure for further application. Secondly, the preparation of organic compost requires no financial expense because the raw materials needed for its preparation were obtained from domestic animal wastes, grass and leaf from surrounding environment and all unnecessary but decomposable trash of the house. Finally, applying manure helps to enhance the productivity of Qoltso, which depends on the manure applied for other cereal crops.

Crop Rotation

This is a mechanism by which nitrogen can be restored by crop types on the same cultivated field (Belay, 1998). Farmers' knew that including leguminous plants would recharge fertility to the soil. Having this knowledge in mind, therefore, farm household throughout Gamo Highlands cultivated barely,

potato and horse bean sequentially. With regard to using the land twice a year, farmers regularly cultivate potato and barely interchangeably in a year which results in soil fertility depletion in terms of primary nutrients. Crop rotations were practiced only on annual crops, while *enset* fields most of the time did not have any of these activities.

Moreover, at Hirpho where the altitude is lower than that of Dalbansa, crop rotation was a common phenomenon. According to farmers report their small landholding and shortage of water during dry seasons not only forced them to rotate crops and vegetables but also mixing, that is cultivating different crops and vegetables and spices on one field at a time or continuously at different time. Harvesting a type of vegetable, for example green pepper, would not affect the life of cabbage or onion; and also planting garlic and potato at the same field would not affect the life of cabbage or onion. Hence, the entire homestead farm fields in this *PA* were occupied all the year round providing a diversified production at different time. Such type of agricultural activity was believed to be a good mechanism to avoid the risk of complete crop failure and to guarantee food and household income through purchase of varieties of agricultural products. However, the production of single food item was very small and results in earning of very small amount of money.

Soil fertility management practice undertaken in Gamo Highland showed a slight variation in different agro-ecological zone. It is important to note here that the types of crops produced have their impact on soil fertility management. At Ossa where maize and *tef* were the major crops that interchangeably cover the land, manuring by animal waste had low importance. According to farmers' explanation and our observation, in order to restore soil fertility, farmers depended on the residue and remnants of previous harvest. Normally, crop rotation at Ossa was in between maize and *tef*. As a staple food, maize was cultivated during *belg* seasons of March, April and May (Figure 4.). Majority of the farm households at this PA (62%) cultivate *tef* immediately after harvesting maize while some farmers (18%) reserved *tef* field and cultivate only *tef* that result in relatively better yield. Farmers in this case stressed the fact that their soil has exhausted due to over cultivation because of small landholding. Inspite of this, farmers were inclined towards the use of chemical fertilizer to restore fertility of their soil.

The survey result indicates that fallowing had become a history at Dalbansa where land scarcity was at its peak. All sample household heads responded that they never fallowed any piece of land in any season. On the other hand, we observed some pieces of land have been left uncultivated in different parts of Hirpho. According to informants and development agents,

such land belongs to migrants to Addis Ababa for weaving because of very small landholding.

One-season fallow was a common activity at Ossa. After harvesting the *belg* maize on July and August, the land is kept free until the next *belg* cropping period comes. Farmers thought that during that time gap the land became free enough for the soil to restore itself back to its fertility. Of course, excessive temperature due to high solar radiation at one season and excessive rainfall at the other season might have facilitated the decomposition of materials on the surface to change into humus while the top soil was turned during tillage. However, such practices were restricted to those households who have relatively larger holdings.

Cultivation Procedure

Indigenous cultivation mechanisms that have been practiced through centuries creating production adaptive to local environment and apply ecological approaches to enhance agricultural production (UNEP-UNCTAD, 2008) are still important along the holdings at the Gamo Highlands. The preparation and use of organic manure and the practices of rotational cropping depended on indigenous knowledge rather than training and imports. Such practices, which were not guided by external experts, were cost effective, simple, easily implemented by farmers; and could be applied and suitable for any type of soil.

Farmers' Knowledge of Soil Conservation

In Gamo Highlands, in general, different land management practices that were well adapted to local ecological conditions have been developed through generations. Individual farm households practiced suitable measures that fit a specific plot of land at different locations with different biophysical characteristics such as soil type, slope and agro-climate. In light of this, indigenous land management practices that have been practiced in this highland can be seen within the framework of indigenous soil conservation (mechanical/ biological) methods.

Indigenous Soil Conservation Methods

Farmers in Game Highlands have been practicing combinations of mechanical strategies of soil conservation. This method has gained primary

attention by farmers of all sample households. This was due to the fact that these methods basically protect the washing away of the upper soils including agricultural inputs such as seeds, manure and chemical fertilizers. It is also critical to note that these strategies created a better opportunity for the soil to hold moisture as the rainwater is prevented to run; and it is made widely practical structural soil conservation method in Gamo Highlands.

Stone Terracing (*Keela*)

Farm households throughout the Gamo Highlands where the raw material (stone) is available, practice stone terracing. Farmers' perception of *Keela* reveals that it had two purposes. Firstly, it protects the top soil from being washed away and secondly, it restores soil fertility by conserving water and hence creating soil moisture ability. However, its construction as well as maintenance requires physical strength, much input of family labor and construction and maintenance skills.

As observed during survey, lack of raw material (stone) was taken as a problem of *Keela* by about 18% and 4% of the households at Dalbansa and Hirpho, respectively. Farm households explained that sometimes in case of serious degradation they collect stones from river ways and carry it to the affected site to construct or maintain the structure. It appears important to add that *Keela* has to be weeded and maintained every two to three years to control the proliferation of dangerous running weeds such as *phedha* that may creep into the soil particles stored in the form of silt.

Soil Bunds

Soil bunds are structures constructed at higher altitudes and more steep slopes. According to owners of farmland with soil bunds, lack of stone was the main reason to construct soil bunds. At steeper slopes, permanent soil bunds were constructed because of the fear of landslide, while at relatively gentile slopes soil bunds were changed annually to use the fertile soil stored at the structures. All steeper slopes in the study area are structured by soil bunds; especially at Dalbansa soil bunds supported much soil at very steep slopes from degradation.

Contour Plowing

Plowing the land horizontally was a common practice at all sample PAs. At steep slopes, farmers were forced to plough horizontally to avoid small landslide and gullies. However, farmers complained that cultivating horizontally using hoe results in back pain.

Farmers' perception on the Causes of Soil Erosion

In Ethiopia, under conditions of peasant subsistence agriculture in densely populated highlands, survival in the rural areas is solely linked to the exploitation of land-based resources resulting in the over exploitation beyond their capacity to regenerate (Belay, 2003). In the present study area, the levels of erosion whether it is very severe, sever or minor is determined by farmers' experience and perceptions and is therefore a relative term. The underlying issue in posing these questions is to ascertain the farmers' awareness of soil erosion. During the interviews, the farmers' view on the level of erosion was first raised and subsequently verified by observation of the farming plots.

Farmers were also asked to express their views about environmental degradation and the level of erosion on their main cropland. It was easier for farmers to remember the conditions on the cropland and other areas such as grazing areas, bare land and other small plots. It was also easier for us to verify the status of soil erosion through other indicators of degradation, such as soil depth and the level of stoniness, which were more easily observed on cropland. Therefore, farmers at the three sites seemed to be frank in expressing the incidence of erosion.

Accordingly, soil erosion was observed to be the problem with more than half of the respondents suffered severe soil erosion. At Dalbansa, more than 80% of the studied households found soil erosion out of their control as the indigenous soil conservation structures at steep slopes always damaged due to heavy rain. Farmers at Hirpho had similar problems although their traditional soil conservation stricture (*Keela*) was far better and stronger than that of soil bunds of steep slopes of Dalbansa. On the other hand, only 5.5% and 32.9% of the respondents at Ossa expressed that soil erosion is severe and minor on their farm plots, respectively.

The soil erosion problem was perceived by the majority of the respondents in terms of decrease in the capacity of soil to grow a variety of crops, decrease in the depth of topsoil, decline in yield and decline in the water holding capacity of soils. About 51.8% of the respondents reported during survey that soil erosion is increasing on the farm plots either due to heavy rains, overgrazing or heavy sunshine that made the soil of the farm plot fracture and susceptible to erosion. Therefore, the major causes of erosion perceived by farmers were topography, high rainfall rates, and overgrazing. The rugged topography with steep slope farm plots facilitated high erosion rates at the seasons of torrential rains in the Gamo Highlands.

Moreover, scarcity of grazing area forced farmers to graze their livestock on the farm plot immediately after harvest. The land was open for grazing for the long dry season until land preparation period (start of the rainfall). Livestock roam everywhere feeding on crop residues creating enormous stress on most fertile agricultural lands. This grazing results in soil breaking, which reduces infiltration and the ability of the soil to absorb moisture that ends up in soil erosion. According to the group discussion, this was one of the major causes of soil erosion in Gamo Highland though massive soil conservation practices have been taking place by the government.

As an additional experience, farmers evaluated soil fertility of each parcel before deciding to start conservation measures. Primarily, individual households categorized each plot of land into three fertility levels; *tolso* (very fertile), *modho* (fertile) and *tsalla* in some place also called *mela* (less fertile). Obviously, farmers expressed soil fertility in association with soil type. For example, if the soil type is *gobo* and the fertility level is *tolso*, then it is expressed as *tolso gobo*, *modho gobo,* etc.

Conclusion

Crop production and animal husbandry are the major occupations of the Gamo people in the Gamo Highland. Barley, potato, wheat and *enset* are the major crops produced at *dega* and *woynadega* agro-climate while maize and *tef* are the staple foods produced at *qolla*. As far as livestock is concerned, cattle and sheep are the dominant at *dega* and *woynadega* while only cattle dominate at *qolla* areas. Farmers developed their own strategies to respond to the production constraints.

To maximize crop production by reversing soil fertility, farm households in Gamo Highlands use indigenous soil fertility management techniques such as organic manure, application of tree leaves (mulching), crop rotation and different cultivation mechanisms. All of these strategies are under pressure due to observable constraints to achieve: small number of livestock, deforestation and the use of tree branches and leaves for fuel, weather variability, lack of labor and encouragement of government development agents to use introduced agricultural inputs were the confronting ones.

Indigenous soil conservation strategies are also the most appreciable mechanisms used by the Gamo community to enhance production. Some of the effective strictures that have been used mostly to protect soil erosion were stone bund (*Keela*), soil bund *(pore)* and drainage ditches *(Zara).* Stone bunds were the most effective structures applied by all households at Dalbansa and Hirpho PAs (dega and woynadega agro-climate) while drainage ditches were common at Ossa PA (lowland) due to the influence of physical landscape and the availability of raw materials for the construction of structures. However, massive introduction of experimental soil conservation structures swallowed the indigenous soil conservation practices, which were affordable, simple and effective. Therefore, rural development agents as well as district agricultural experts who are the key player can reverse the limited use of indigenous agricultural technologies in Gamo highlands.

Reference

Abren Gelaw and Abera Uncha (2010). The status of soil quality and indigenous management practices towards the sustenance of soil resource in Gamo Highlands, *South Western Ethiopia, Arba Minch University research report.*

Alemneh Dejene (2003). Integrated natural resource management to enhance food security: The case for community-based approach in Ethiopia. Environment and   *Natural Resources Service Research, Extension and Training Division Food and Agriculture Organization of the UN, Rome, Italy.*

Belay Tegene (2003). Combining land capability evaluation, geographic information systems, and indigenous practices for soil conservation in North Ethiopia. *Eastern Africa Social Science Research Review, Vol.19(2),* 23-53.

Belay Tegene (1998), Indigenous soil knowledge and fertility management practices of South Wollo Highlands, Northern Ethiopia, *Ethiopian Journal of Development Research 14,* 31-58.

Booker Tropical Soil Manual (1991). A handbook for soil survey and agricultural land evaluation in the topics and sub tropics. In: J.R. London (Eds.). Booker Tate Limited Corbeels, M. Abebe, S. & Mitiku, H. (2000). *Farmers knowledge of soil fertility and local management strategies in Tigray, Ethiopia. Managing Africa's Soils No.10.*

Creswell, J. W. (2009). *Research design qualitative, quantitative, and mixed methods approach.* (3rd ed.), Sage Publications Ltd, London.

CSA (2007). Summary and statistical report of the 2007 population and housing census; *Federal Democratic republic of Ethiopia population census commission, Addis Ababa Ethiopia.*

Desalegn Rahmato (2009). *The peasant and the state: Studies in agrarian change in Ethiopia 1950s-2000s.* Addis Ababa University Press.

Ellis, F & Tasew, W. (2004). Ethiopian participatory poverty assessment (2004-2005) PPA Manual, Addis Ababa.

FAO (1990). Guidelines for soil description: Soil resources, management and conservation; *Food and Agricultural Organization of the UN, Rome, Italy.*

Kitchin, R & Tate, J. N. (2000). *Conducting research in human geography: Theory, methodology and practice.* Pearson Education Ltd, United Kingdom.

Shiferaw, Bekele. and Holden, S. (1998). Resource degradation and adoption of land conservation technologies in the Ethiopian Highlands. *Agricultural Economics 18*,233-247.

Woldeamlak Bewket (2007). Soil and water conservation intervention with conventional technologies in North Western Highlands of Ethiopia: Acceptance and adoption by Farmers. *Land Use Policy 24, 404-416.*

Service Quality and Customer Satisfaction in Online Banking

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Service quality is considered very important because it leads to higher customer satisfaction, profitability, reduced cost, customer loyalty and retention. The main purpose of this study theoretically is finding out how applicable the SERVQUAL model in the context of banks and empirically, describe how customers perceive service quality and whether they are satisfied with services offered by public sector banks.

Keywords: Service Quality, Online Banking, Tangibility, Customers and Banks.

Service Quality and Customer Satisfaction in Online Banking

In our nation's economy, banking system plays a pivotal role. It's a well-known fact that no business can exist without customers. Banks have to deal with many customers' every day and render various types of services to its customers. Customer oriented market empowered the customers with more choice to choose a bank. As the banks started to offer convenience followed by more services to their customers, a competition established within the banks operating in India. A Banking business with high service quality may increase economic competitiveness. This aim may be achieved by understanding and improving operational processes; identifying problems quickly and systematically; measuring customer satisfaction and other performance outcomes. Service quality and customer satisfaction are important concepts that banks must understand in order to remain competitive in business and hence grow. It is very important for banks to know how to measure these constructs from the consumers' perspective in order to better understand their needs and hence satisfy them.

Service quality is considered very important because it leads to higher customer satisfaction, profitability, reduced cost, customer loyalty and retention. The main purpose of this study theoretically is finding out how applicable the SERVQUAL model in the context of banks and empirically, describe how customers perceive service quality and whether they are satisfied with services offered by public sector banks.

Service quality is an achievement in customer service. It reflects at each service encounter customers service expectations from past experiences, word of mouth and advertisement. In general customers compare perceived service with expected service in which the former falls short of the latter the customers are disappointed.

Tremendous progress in the field of information technology has reduced the world to a global village and it has caused unprecedented change in the banking industry. Huge developments in the technology of telecommunications and electronic data processing have further stimulated these changes. Automation has revolutionized financial and banking sectors globally. Apart from branch banking in the brick and mortar mode, click and order channels like internet banking, ATMs, internet banking and mobile banking are now in vogue.

Internet banking is the term that signifies and encompasses the entire sphere of technology initiatives that have taken place in the banking industry. Internet banking is a generic term making use of electronic channels through telephone, mobile phones, internet etc. for delivery of banking services and products.

The concept and scope of internet banking is still in the transitional stage. It increases efficiency in the sphere of effective payment and accounting system thereby enhancing the pace of delivery of banking services considerably. It allows customers to access banking services electronically such as to pay bills, transfer funds, view accounts or to obtain any banking information and advice. Internet banking also facilitates new relationships with customers, regulatory authorities, suppliers and banking partners with digital-age tools. For example, customers and bank relationships will become more personalized, resulting in new modes of transaction processing and service delivery. Now, banks are faced with a number of important issues, for example how to take full advantage of new technology, how internet banking change the ways customers relate with the service provider, etc. The banking industry has been considerably influenced by expansion of technology.

Statement of the Problem

Internet banking calls for elimination of paper-based transactions and radical change in the banking operations. Internet banking will operate through internet, extranet and intranet. Internet banking is therefore banking on the information superhighways on the frontier of the internet. Banking products and services such as deposits, remittances, credit cards etc as well as all important banking information can be made available with easy access to customers on Internet.

The operational costs have come down due to technology adoption. The cost of transactions through internet banking is much less than any other traditional mode. Banks can have access to a greater number of potential customers without the commitment costs of physically opening branches. Hence, there is much saving on the cost of infrastructure. Moreover, requirements of staff at the banks get reduced to a great extent.

Thus, Internet Banking opens new vistas for providing efficient and economic quality service to the customers. Though the services provided by Internet banking are numerous, the quality of the service and the satisfaction derived by the customers from it is a matter of question. One of the key challenges of the internet as a service delivery channel is how they manage service quality, which holds significant importance to customer satisfaction. Customer satisfaction is a feeling of pleasure or disappointment resulting from comparing a product's/service's perceived performance or outcome in relation to his or her expectations.

So, satisfaction is a function of perceived performance and expectations. If the performance falls short of expectation, the customer is dissatisfied. If the performance matches the expectation, the customer is satisfied. If the performance exceeds expectation, the customer is highly satisfied or delighted. Although there are other factors other than service quality that determine customer satisfaction my interest on service quality alone for this study is because service quality has been proven to be the best determinant of customer satisfaction when it comes to service sectors. Also, providing quality services is one of the main targets when it comes to management with respect of customer satisfaction in the business environment of today, meaning it is a very vital topic.

Significance of the Study

Online banking has become an accepted norm of monetary transactions for millions in India over the past decade. The ease with which a customer can check his account, make payments online and transfer money between accounts has made this mode of banking hugely popular among Indians who are perpetually short of time to visit the bank physically. Online banking also provides a host of non-transactional features which are quite handy to the customer. Making transactions and payments right from the comfort of home or office at the click of a button without even having to step out is a facility none would like to forego. Keeping a track of accounts through the internet is much faster and convenient as compared to going to the bank for the same. Even non transactional facilities like ordering check books online, updating accounts, enquiring about interest rates of various financial products etc become much simpler on the internet. Most banks also provide the facility of online tax forms and tax preparation. Internet banking has a step further in the last few years in the form of mobile internet banking which accords unlimited mobility to the customer who can now handle financial transactions even while on the move. Online banking is definitely a significant move in the right direction as far as the convenience of the customer as well as the banker is concerned. Information

Technology has emerged to be a strategic resource for attaining efficiency, controls productivity and profitability and this has caused banks to utilize technology to meet the ever-increasing customer expectations.

The rapid technological advancements have led to internet as the best channel for provision of banking services and products to its customers and fundamental changes in how companies interact with their customers and supply internet banking services so as to establish and extend their customer relationship. One of the key challenges of the internet as a service delivery channel is how they manage service quality, which holds a significant importance to customer satisfaction. The success of internet banking is determined not only by banks or government support, but also by customers' acceptance of it.

Customer Satisfaction and Service Quality

Customer satisfaction is a crucial topic to success in any business either traditional or online. Customer satisfaction is more critical in banking service because customers demand a high-quality products or services and if they are

unsatisfied, it is easy for them to move away to another site and leave those companies forever.

Thus, the internet companies need to know the customer's requirements for satisfactory level. Some parameters of customer's satisfaction include numbers of clicks needed to find what they want, amount of information they need, response time and speed of webpage. Service quality has found as one of the significant factors in distinguishing services and products. Service quality is an important tool to measure customer satisfaction. In this study an attempt has been made to see whether there exists a close relationship between service quality and customer satisfaction. Customer satisfaction can be protected by providing products or services with high quality. One of the famous tools to assess service quality is SERVQUAL model and customer satisfaction has been assessed using a separate questionnaire.

Objectives of the Study

The objectives of the study are:

- To ascertain the fairness of services rendered by various banks in terms of
- Tangibility
- Reliability
- To find out the relationship between Customer Satisfaction and service fairness of online banking services

Methodology

The entire study was conducted on the basis of both primary data and secondary data. The method of study adopted was survey method. The population for the study consists of customers using online service facilities offered by various public sector banks in Kollam. A sample of 100 respondents using online banking services, 50 each from State Bank of India and Canara Bank in Kollam district of Kerala was selected for the study. Primary data for the study was collected through questionnaires and secondary data from books, journals and magazines.

Survey method is most common and economical way to conduct the data of large number of respondents. Survey design involves deductive research and most commonly adopted by business researchers. To collect the

data for research, purpose a structured questionnaire technique is used by the researcher to support her findings.

Sample Selection: Tools for Analysis

The objective of the current research is investigating the effects of service quality dimensions and self-service technologies on customer satisfaction of selected public sector banking industry of Kerala. Applied method has been used for this research in which the questionnaire method has been utilized in order to gather the required data for describing the research variables and interpreting the relations between them. The Analysis unit in this research is the banking services customers for which 100 people have answered the questionnaires. In order to describe the data, the frequency distribution tables have been used. In doing so, SPSS 18.0 software has utilized the explanatory z analysis and path analysis.

Sampling Technique

Considering the features of the current research, the sampling method applied for this research has been the non-probable type, conducted in two phases. In the first phase, the judgment sampling has been used to choose the banks and in phase two the single- stage convenient sampling has been used and, accordingly Canara bank and SBI are selected as sample banking units and 50 respondents from each bank were identified as target sample

Sampling means by selecting some of the area from the population, researcher can draw the possible results about the entire population. Sampling is also done to reduce cost, to get accurate results and faster collection of data (Cooper and Schindler 2003). Convenience sampling is used by the researcher to collect the data. It involves selecting the members who can easily provide the required information. Convenience samples enable the researcher to cover large number of populations at a very lesser cost and speedily.

Data Collection

Based on broader aspect of research, primary data collection approach is used. Primary data are collected through survey questionnaire. Quantitative survey was conducted among 100 customers using internet banking, who are having at least 3 year of experience in internet banking. Well-structured questionnaire was used to collect the data. Primary data were collected by approaching the people using internet banking services.

Most of the respondents are the professionals who do not have enough time to go to banks for manual transactions. Individual background information such as Gender, Age, Profession, their duration of using internet banking and the name of the bank which they are using for online transaction is also collected for demographics. Two Questionnaires, one for measuring service quality and another for measuring customer satisfaction was developed according to the variables identified through literature review. 5-point Likert-scale (1 = strongly disagree, 5 = strongly agree) is used to record the responses of the respondents.

Data Analysis

Tangibility

Among different service quality dimensions, Tangible aspect of banking services play pivotal role in satisfying all kind of customers of any bank. But banking is basically intangible in nature and bankers are converting it into tangible with the help of physical facilities, equipment, personnel, communication materials and etc. The banker who converts theses tangible factors well, reaching successfully every customer, results customer's satisfaction. But at the same time, several banking is experiencing increasing customer dissatisfaction and resulted the customers' switching behavior. This dissatisfaction could be the cause of missing tangible options of the banks. Because, the toll gate of customer retention and satisfaction highly depends on various tangible factors like bank providing data, information, the modern looking equipment, staff appearances, bank providing materials associated with services and visual appealing part of banks.

This excellent tangible service quality is major optional competitive strategy which may, or may not, be adopted to differentiate one bank from

another: today it is essential to customers satisfaction, profitability and
survival. In online banking also some tangible factors play a pivotal role.

Table1
Opinion of Customers on the Service Quality Factor Tangibility

Factor	Mean		Number		variance		Z value
	Canara	SBT	Canara	SBT	Canara	SBT	
The bank has visually appealing web page.	3.67	3.90	50	50	.679	.876	1.29
They modify the page occasionally	3.36	3.95	50	50	.835	.697	0.98
The website of the bank is easy to use and navigate	4.05	3.97	50	50	.698	.590	2.67
The bank uses advanced technology in Online banking.	3.91	4.45	50	50	0.76	0.65	1.23

Source: Survey Data Z value at 5% level of significance-1.65

The existence of such tangible factors will lead to the creation of
immense satisfaction and the absence will lead to dissatisfaction. In this
analysis the tangible factors like high appealing web page, constant
modification of site, easiness in usage and usage of advanced technology in site
creation and maintenance are the factors which are identified as key elements
which paves quality service. The opinion of customers on the service quality
factor tangibility is shown in Table 1

While analyzing the factor appealing webpage it revealed that the
customers of SBT have more agreeable attitude as the mean value is higher in
SBT (3.90>3.67). But while analyzing the variation in opinion it revealed that
customers in Canara bank have more consistency in opinion as their variation
in responses is less (0.679<0.876). while analyzing the difference in opinion

through Z test, it revealed that the difference opinion is significant as the z value (1,29) is less than the table value (1.65). From the analysis it can be inferred that customers of SBT have more favorable opinion as regards to the pleasant appealing of web page and there is significant difference in opinion with regard to the visually blossomed appearance of web page.

The mean indices indicating the level of service quality in respect to modify the page occasionally in canara bank and SBT are 3.36 and 3.96. The mean index of SBT is greater than that canara bank. It is an indication that the service quality of SBT is better than that of canara bank. The difference in opinion of customers in the matter of modify the page occasionally is statistically significant. This is an indication that the service quality of SBT is better than canara bank in respect of modify the page occasionally.

The mean index representing service quality in respect of website of the bank is easy to use and navigate is 4.05 and 3.97 respectively in canara bank and SBT. The mean value for the same reveals that the canara bank stands better position than that of SBT in respect of the website of the bank is easy to use and navigate. It is an indication that the service quality of canara bank is better than that of SBT as regards the website of the bank is easy to use and navigate. The table results show that the difference observed in the mean indices representing the level of service quality relating to tangibility factor the website of the bank is easy to use and navigate is not significant statistically.

The result presented in the above Table ----revealed that the mean indices of canara bank and SBT representing the level of service quality as regards the bank uses advanced technology in online banking are 3.91 and 4.45. This is an indication that the customers are more positive attitude towards SBT than canara banks in the matter of the bank uses advanced technology in online banking. It is clear from the above Table that the difference observed in the mean index representing the level of service quality is statistically significant.

Reliability

Reliability is an important criterion used to evaluate service quality of a bank. Reliability refers to ability to perform the promised service dependably and accurately. Reliability depends on handling customer's service problems; performing the services in right way the first time; provide services at the promised time and maintaining error frees record.

Table2

Opinion of Customers on the Service Quality Factor Reliability

Source: Survey Data value at 5% level of significance-1.65

Factor	Mean		Number		variance		Z value
	Canara	SBT	Canara	SBT	Canara	SBT	
Information provided in web page is accurate.	3.70	3.93	50	50	.78	.76	2.55
Getting of service beyond banking Hour.	3.78	3.77	50	50	.85	.67	1.56
The Bank keeps my records accurately.	3.56	3.94	50	50	.98	.90	1.76
Links are problem-free, accurate and the pages are downloaded quickly.	3.87	3.67	50	50	0.66	0.45	0.56
Bank performs the service perfectly the first time.	2.97	2.99	50	50	0.67	0.87	1.36

The customers opinion regarding the service quality on factor reliability is shown in Table2

Reliability also consists of accurate order fulfillment; accurate record; accurate quote; accurate in billing; accurate calculation of commissions; keep services promise. Hence, reliability is the most important factor in banking service which determines the service quality.

The mean index indicating the level of service quality with regard to information provided in web page is accurate reveals that in canara bank the mean index is 3.70and in SBT the same is 3.93. The mean index of SBT is greater than that canara bank. It is seen from the results that in providing enough information to the web page SBT provide more qualitative touch than

that of canara bank. The difference in opinion of customers in the matter of providing enough information in web page is statistically not significant.

It is seen from Table 2 that there is a slight difference is observed in getting banking services beyond banking hours in the canara bank and SBT. The mean indices indicating the level of service quality in respect of getting banking services beyond banking hours in canara bank and SBT are 3.78 and 3.77 respectively. It shows that canara bank is better than SBT in rendering better service quality in respect of getting banking services beyond banking hours. The difference in opinion of customers in respect of getting banking service beyond banking hours is statistically significant.

The results revealed from Table 2 shows that the mean index of service quality in respect of bank keeps records accurately is 3.56 and 3. 94 respectively for canara bank and SBT. It is an indication that SBT is more qualitative attitude towards customers in the matter of keeping record accurately. The statistical test reveals that the difference in opinion of customers in respect of maintaining records accurately is not significant.

It is evident from Table 2 that the customers of canara banks are the great admires of service quality in respect of links are problem-free, accurate and the pages are downloaded quickly. The mean index for service quality in respect of links is problem-free, accurate and the pages are downloaded quickly is 3.87 in canara bank and 3.67 in SBT. The difference in opinion of customers in respect of links are problem-free, accurate and the pages are downloaded quickly is statistically significant at 5 per cent level.

The mean indices representing the level of service quality in respect of the bank performs the service perfectly the first time are 2.97 and 2.99 for canara bank and SBT respectively. This is an indication that the customer of SBT more venerates the quality of service provided by them in respect of bank performs the service perfectly the first time. The difference in opinion of customers in respect of the bank performs the service perfectly the first time is statistically significant at 5 per cent level.

Main Findings

The Following are the major findings of the Study

Tangibility

- The mean indices showing the level of service quality in respect of pleasant appealing of web page in canara bank and SBT are 3.67 and 3.90. The Z value shows that the difference in opinion of customers between canara bank and SBT are statistically significant. It was thus observed that SBT achieve better service than canara bank as regard pleasant appealing of web page.
- It was found that SBT is having more qualitative touch in their service with regard to modify the page occasionally. The mean index representing the same is 3.36 and 3.96 for canara bank and SBT. The difference in opinion of customers as regards modify the page occasionally between the canara bank and SBT is statistically significant.
- The website of the bank is easy to use and navigate wise mean indices indicating the level of service quality revealed that the canara bank and SBT have mean indices of 3.91 and 4.45 respectively. The statistical test revealed that the difference observed in the opinion of customers between canara bank and SBT in the factor of the website of the bank is easy to use and navigate is not significant.
- An analysis of level of service quality in respect of the bank uses advanced technology in online banking reveals that the mean index representing service quality in canara bank and SBT are 3.91 and 4.45 respectively. The difference in opinion of customers observed in the mean index representing the level of service quality is statistically significant.

Reliability

- The level of service quality as reflected in the mean indices of the factor information provided in web page is accurate of the selected branches of canara bank and SBT are 3.70 and 3.93 respectively. The difference in opinion of customers between the banks in the matter of providing enough information in web page is statistically not significant.
- The mean indices showing the level of customer service quality in respect of getting banking services beyond banking hours in canara bank is 3.78 and in SBT is 3.77. The difference in opinion of customers between banks in respect of getting banking service beyond banking hours is statistically significant. It is an indication that canara bank is providing qualitative service to customers in this area.

Service Quality and Customer Satisfaction

- An analysis of level of service quality in respect of bank keeps records accurately reveals that in canara bank the mean index representing service quality is 3.56 and in SBT the same is 3.94. The statistical test reveals that the difference in opinion of customers between banks in respect of maintaining records accurately is not significant.

- The mean indices indicating the level of customer service quality in respect of links are problem-free, accurate and the pages are downloaded quickly in canara bank and SBT reveals that the customers of canara bank is more satisfied with the provision of such online facility. The difference in opinion of customers between canara bank and SBT in respect of links are problem-free, accurate and the pages are downloaded quickly is statistically significant.

- It was found that SBT is having more qualitative touch as regards the bank performs the service perfectly the first time. The mean index representing the same is 2.97 and 2.99 for canara bank and SBT. The difference in opinion of customers as regards the bank performs the service perfectly the first time between the canara bank and SBT is statistically significant.

Reference

Bhaskar, P.V. (2004). Customer Service in Banks. *IBA Bulletin, Vol. XXVI, No. 8* (August), pp.9-13

Brodeur, M. (1998). Satisfaction, dissatisfaction and complaining behaviour with consumer services and intangible products. *Indiana University Graduate School of Business, DBA dissertation.* Customer Satisfaction a Key Growth to Banks: An Article from 'The Hindu', 7 August, 2006.

Customer Satisfaction in Indian Banking: A case study of Yamuna Nagar District in Haryana. *Political Economy Journal of India, Jan-June*, 2008.

Desai, V. (1991). Indian Banking, Nature and Problems, *Himalaya Publishing House, Bombay.*

Hasan Banu, S. (2004). Customer Service in Rural Banks: *An Analytical Study of Attitude of Different types of Customers towards Banking Services.* IBA Bulletin, Vol. XXVI, No. 8 (August), pp. 21-25

Environmental Pollution Concerning to the Production of Plastic Goods

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Pollution in the environment is one of the most horrible ecological crises. Environmental pollution is the un favourable alteration of our surroundings which occurs mainly because of man's action. Our new generation affected severely due to environmental pollution. One of the environment pollutants is caused due to the usage of non-recyclable use and throws plastic goods; the usage of plastic is an avoidable one, if the human being has alertness and awareness about the danger of using plastic things. In modern days, plastic becomes part and parcel of human life and it becomes a raw material for several articles use in different field. The production of plastic carry bag, water bottles and any single use disposable plastic products accumulate as waste and create bad effect to our society. Environment refers to everything remaining around human being. This paper concentrates about the environmental pollution concerning to the production of plastic goods.

Keywords: Environmental Pollution, Production, Recyclable, Plastic goods, Human life.

Introduction

Environmental pollution is the result of urban-industrial technological revolution and speedy exploitation of every bit of natural resources. Environment pollution affects the health of man, animals and other living organisms. Rapid industrialization has left with us polluted rivers. For the healthy living of a human being, there is need of good contaminated soil, depleted wildlife and exhausted natural resources. Plastic is one of the pollutants it affects our environment severely. Plastics are inexpensive, less

weight and durable materials, use in a wide range of applications. On average of 300 million tons of plastic are produced around the globe each year, of this 50 percent is for disposable application. However current levels of their usage and disposal generate several environmental problems. A major portion of plastics produced each year is used to make disposable item of packaging or other short-lived products that are discarded within a year of manufacture. It creates an environmental pollution.

Objectives of the Study

- To study the production and usage of plastic goods.
- To analyze the harmful effect of plastic pollution to the society.
- To make SWOT Analysis.
- To make suggestions based on the findings of this study.

Statement of the Problem

In the last few decades, the environmental pollution due to the plastics wastage is severely affecting the life of human being. Plastic consumption in India has to rise much more. It is to be noted that the plastic waste estimation is based on an assumption that 70 percent of the plastic consumed as wasted. The usages of plastic disposable water bottles, plastic carry bag, many uses and throw plastic article pollute our soil. It blocks the natural supply of air and water to the soil and restricts the growth of plants. In 2010, around 8 million tons of plastic waste made its way into the ocean nearly the total amount of plastic produced across the world in 1961. Even though the people know the ill-effect of plastics, they are not recovered from the usage of plastics, because of easy handling. Now I feel that the study about the plastic pollution is very important. It is a need of an hour to study about the environmental pollution due to plastic and create awareness about the ill-effects of plastics.

Production and Usage of Plastic Articles

Indian plastic industries give lot of employment opportunities to large number of people. The precipitate consumption of plastic products in India is growing and is moving towards 8 percent GDP growth. Plastic plays a significant role in the key sectors of the economy including agriculture, water management, automobiles, transportation, construction, telecommunication and

electronics, besides it is used in defense, aerospace, computers and power transmissions. The scope for the use of plastics is bound to increase manifold and make the production double in the coming years. Today in India there are about 30000 plastic processing units and 150 plastic processing machinery manufactures. The machinery units supply over 2500 machineries per annum. The contribution of the plastic industry in the economic growth of countries in the world has been great. On the basis of value-added share, the Indian plastic industry is about 0.5 percent of India's GDP.

The export of plastic products also yields about one percent of the country's exports. The sector has a large presence of small-scale companies in the industry, which account for more than 50 percent turnover of the industry and provide employment to an estimated 0.4 million people in the country. Now a day's plastic articles become an inevitable item and it plays an important role in human life. Plastics are very popular because of its durability. Some of the article made in plastics are pen, comb, bucket, jug, milk packet cover, soap box, biscuit cover, chocolate cover, bangles, hairpins, polyester cloths, water bottles, pencil box, remote, TV cabinet, computer cabinet, note cover, nylon wire, telephone cables, chairs bags, toys, surgical instruments, drip irrigation items, carry bag, rain coat, telephone, switches, wire insulation, chapels, packing material of food items, shoes, cell phone etc. Plastic pipes can carry water over long distances for more than 50 years and also prevent bacterial contamination.

Ill Effects of plastic pollution

Millions of mammals, birds, reptiles and fish are killed every year by the ingestion of plastic bags. A caretaker of cows in Lock now reported that there were 4 deaths every day because of the ingestion of plastics. About 30 kg of plastics bags were recovered from the intestine of a cow. When animals consume plastic bags, alimentary canals get blocked and the stomach becomes bloated. The animal stops eating and dies of starvation. Plastics dumped into the sea kills millions of marine animals and birds. Turtles often mistake plastic bags as jelly fish and consume them. The plastic bags block the alimentary canal, the turtles starve and die. One turtle of Hawaii had more than 1000 pieces of plastic in its stomach. The plastic pieces include carry bags, comb, toy, truck wheel, nylon rope, etc. The cape fur seal (marine mammal) gets entangled in the plastic and die. Several species of birds are known to swallow plastic. About 5 kg of plastic wastes are recovered from the intestine of an elephant in Sabarimalai in Kerala.

Analysis No.1

A simple random survey was conducted from 60 respondents of different age group towards their opinion regarding environmental pollution through plastics.
Null Hypothesis

There is no significant difference of opinion between the age group of respondents towards plastic pollution.

Table No.1 Classification of Respondent on the basis of Age Limit

Plastic Pollution	Age limit of Respondents					Total
	15-25	25-35	35-45	45-55	Above 55	
Yes	8	10	17	12	5	52
No	3	2	1	1	1	8
Total	11	12	18	13	6	60

Source: Primary Data

Chi-square test is used to verify the null hypothesis

(O-E)²/E=3.3087   O= Observed Frequencies   E= Expected Frequencies

$$x^2 = \epsilon \frac{(O-E)2}{E} = 3.3087 \quad v=(r-1)(c-1) =4 \qquad \text{For v=4 } x^2_{0.05} =9.47$$

Inference: The calculated value (3.3087) of x^2 is less than the table value (9.47). Hence the null hypothesis is accepted at 5% level of significance and it is concluded that there is no significant difference of opinion between the age group of respondents towards plastic pollution. All age group of respondents were felt that they were affected from plastic pollution Analysis No. 2

Findings of the Study

- By applying chi-square test, all age group of people were affected from plastic pollution.
- Plastic industry gives more employment opportunities.
- There is a danger of extinction of all living organism due to plastic pollution.
- When plastics are burned, they release toxic fumes containing fluoro-carbons. They induce carcinoma (cancer) and when plastics are

buried, they block the natural supply of air and water to the soil affects plant life. It affected a chain of life is affect   ed   and landslide occurs.

- Plastic bags clog the sewage pipes and cause stagnation of sewage. This breeds disease producing germs. Plastic carry bags remain scattered on the land and given awkward look.
- Plastics prevent the percolation of water in the soil and this lowers the water table.

The Production of Plastic Goods Cause Environmental Pollution– A SWOT Analysis

Strength	Weakness
- Plastic industries give employment opportunity to both skilled and unskilled labours. - It increases our GDP. - Increase in the usage of plastic goods lead to the introduction of more small and medium sized industries. - Quality plastic goods are exported to foreign countries also. - It increases our foreign exchange. - Plastic goods are very easy to handle. - It is possible to produce all types of needed goods at low cost.	- It causes soil pollution, air pollution and water pollution. - It creates unnecessary storage of garbage. - Cause stagnation of sewage. - Affect our plant life. - Its lower underground water level. - Kills millions of marine animals. - The government refused to prohibit the production of plastics even though it creates more harmful effect. - All species of turtles are threatened by plastic pollution.

	When plastics are burned, they release toxic fumes containing fluoro-carbon. They induce carcinoma (cancer)
• It is very comfortable because of its less weight • Plastic goods are handled by both poor and rich and also by the rural and urban people.	
Opportunity	Threat
• Opportunity to give employment to a greater number of people. • Scope of this industry expanded to all over India. • Usage of plastic is more because of its less weight. • Most of the medical instruments used in the hospital are made of plastics. • Plastics are needed for all types of business for several purposes like packing material for all products. Opportunity to increase the standard of living of the people	• The usage of plastic will affect the health of human being and danger of extinction to all living things. • Millions of mammals, birds, reptiles and fish are killed every year by the ingestion of plastic bags. • One of the dangerous pollutants, it causes crop. • Losses, lowers our water table, cause severe disease like respiratory disorders, cancer, jaundice, cardiac diseases etc. • Plastics never decompose. They remain for a long time in the environment. This leads to ecological degradation and ill effects.

Suggestion to Control Plastic Pollution

- Departmental Stores charging extra money for plastic carry bags in order to encourage customers to bring their own shopping bags.
- Use plastics at minimal level. Used plastics should not be thrown in the garbage. It should be stored separately for disposal. The used

plastics should be collected and reused by making some modifications.

- Use paper carry bags instead of plastic carry bags. Eco-friendly items should be used.
- Proper awareness should be created among the public about the ill-effects of plastics
- Some unavoidable circumstances, photodegradable items should be encouraged. (Photodegradable   rs are used to hold fruits, vegetables, etc.
- The real change can only be brought about when consumers are made aware of the amount of plastic entering the environment every day and they refuse to buy or use plastic products is the ultimate solution.
- Now the wisdom lies on the part of Government to stop the production or restricted only for a specific use.
- The 5 'R's (Reduce, Recycle, Reuse, Recover and Residual Management) have been considered to be a base of waste management and should be strictly followed, in order to promote ecological balance through conscious human behavior and choices.

- It is a need of an hour; the Government take necessary steps to take over all plastic waste and it is used for the construction of road and bridges.
- The Government should take necessary steps to prohibit the production of plastic goods and encourage the industries those who produce a substitute product instead of plastics. The Government should give proper incentives, subsidy, concession and loan facilities to those substitute eco-friendly industries.
- The central Government should take necessary steps to restrict the import of plastic goods from foreign countries.

Conclusion

In the year 2013, Central Pollution Control Board (CPCB), estimated that Indians throw out 15,342 tons of plastic waste every day, of which about 60 percent recycles, most of it in the informal sector. In 2014, one kg of plastic in the ocean for every 5 kg fish and by 2050 there will be more plastics than fish. The Government has notified the Plastic Management Rules in 18th March 2016, in suppression of the earlier Plastic Waste (Management and Handling) Rule 2011. The Minister of State for Environment, Shri Prakash Javadekar said that the minimum thickness of plastic carry bags has been increased from 40 microns to 50 microns.

Use of carry bags made of plastic has been banned in states of Himachal Pradesh, Haryana and recently in Maharashtra. Sabarimala is the sacred place in Kerala where the use of carry bags was banned in 1998. But Tamil Nadu government is not strictly prohibiting the use of plastics carry bags. The Government of India enacted the law of Recycled Plastics Usage Rules (1998) to ban the use of carry bags and plastic containers to store, carry and pack food items and the Government also banned plastic carry bag below 50 microns. It was successfully implemented in Kerala, Delhi Zoo, Jammu and Kashmir, Meghalaya, Rajasthan, Goa and Rameswaram Island in Tamil Nadu. Proper take-back mechanism should be followed by the plastic producers and it will reduce the waste considerably. We give pollution less earth to our next generation, because the plastic pollution affects the life of human being to a great extent.

Reference

Dr. N. Arumugam, Prof. V. Kumaresan, (2014), *"Environmental Studies"*, Saras Publication, PP.256-259.

Ganta Venkata Siva Laxmi, G.l. Subbaiah, and Digumarti Baskara Roa (2006) *"Methods of Teaching Environmental Science"*, Discovery Publishing House, New Delhi.P.27.

N. Manivasakam, (2006) "*Environmental Pollution*", National Book Trust, New Delhi

Y.S. Rajan, (2013) Living with Nature in Modern Forms: Mission for Twenty first Century PLASTIC: BOON OR BOMB? Kisan World, June, Vol.40, No.6. PP. 10-11.

https;//journalistsresource.org/ and https;//www.mapsofindia.com

www.plasticpollutioncoalition.org/pt/2016/8/9/plastic-pollution-is-kiiling-india-sacred-cows and www.plasticpollutioncoalition.org/

www.wealthywaste.com/and   www.indianmirror.com/indian-industries/   plastic. html

rstb.royalsocietypublishing.org/content/ and pib.nic.in/newsite/prinrelease/

https;//economictimes.indiatimes.com/ and www.thehinds.com/

An Innovation in Education: Virtual Learning Environment

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Teachers play a vital role in our society. They add to the cultural and the economic aspects of the knowledge society. No one method of instruction can prepare teachers to work effectively for the knowledge society. Instead, approaches must be comprehensive, integrated and varied. Virtual learning environment is an innovative in higher education for world class standards. A virtual learning environment refers to the technology which supports teaching and learning. VL takes learning outside the four walls of the classroom aiming at universal learning. It is live, two-way, interactive mode supported by multimedia lessons providing links to the knowledge repositories across the globe. It removes all barriers in knowledge transfer and dissemination. VL enables a society to move. The components of a VLE include e-mail facility, assessments, student home pages, calendar, file upload area, multimedia resources, conferencing tools and course outline. Perspectives of VLE are administrators, technicians, Course developers /Teachers, Learners.

Keywords: Innovation, Education, Learning, Environment.

Introduction

Good learning helps a person to grow as a human being. The process is natural and positive. Instructing should be defined as the process of helping learning to occur. The information age and a networked world are forcing educators to rethink the educational experience. It has become very clear that the value-add

in a 'knowledge-based future' will be a learning environment that develops and encourages the ability to think and learn both independently and collaboratively. The demands of an evolving knowledge society create expectations for individuals to be independent thinkers, and at the same time, interdependent, collaborative learners.

E-learning

E-learning Strategy Task Force (2002) U.K. has defined 'e-learning' as follows:

'E-learning is a relatively new tool with the potential to radically improve participation and achievement rates in education. Benefits include: the ability to customize learning to the needs of an individual and the flexibility to allow the individual to learn at their own pace, in their own time and from a physical location that suits them best'.

Virtual Learning (VL)

The concept of Virtual Learning (VL), described by various ways such as e-learning, computer assisted learning, technology enhanced learning or online learning is flexible mode of learning with learner at the centre. It provides resources to the learner in digital format, 24*7, enabling him or her to study at his /her convenience. Virtual learning (VL) takes place owing to developments in ICT.VL takes learning outside the four walls of the classroom aiming at universal learning. It is live, two-way, interactive mode supported by multimedia lessons providing links to the knowledge repositories across the globe. It removes all barriers in knowledge transfer and dissemination. VL enables a society to move towards knowledge society by making knowledge freely available to all.

Virtual Learning Environment (VLE)

A virtual learning environment is a term that refers to technology which supports teaching and learning. A virtual; it involves collaboration, communication and content tools, as well as providing students with an online personal learning space. VLEs do not decrease the importance of the

classroom or the teacher - they enhance the learning and teaching experience. Their features vary depending on the specific VLE, but usually teacher/ lectures can upload lecture notes, create quizzes for students, to complete online, and set student's assignments, which the students can then submit online via the VLE and the teacher can usually mark and return work online too. Often there is an attached email feature and a chat feature where students can discuss work. Usually students can keep track of their grades, on the VLE, and the teacher can keep track of their student's grades. Some VLEs, are commercial software packages which are uploaded onto servers, and others are open source (free) and web based. Anyone with a computer, web browser and network connection can access the VLE both in and out of college/university. It enables teaching and learning to take place take place at any time – a college /university with no physical boundaries.

Dillenbourg Vle

According to Dillenbourg et al. (2002) a virtual learning environment:

- It is a designed information space.
- It overlaps with the physical learning environment.
- It integrates multiple tools, heterogeneous technologies, and multiple pedagogical approaches;
- It is not restricted to distance education; they also enrich classroom activities;
- It is a social space : educational interactions occur in the environment, turning spaces into places;
- It is a virtual space that is explicitly represented: the representation of this information / social space can vary from text to 3D immersive worlds; where students are not only active but also actors; they co-construct the virtual space;

Content Management System (CMS)

It stores, loads and replays content. It may also enable teachers to organize and sequence this content for delivery to students. Such systems might have the facility to communicate these sequence to other teachers, allowing lesson structures to be used by more than one person. CMSs do not

keep track of students' progress. Ideally, a CMS should allow users to import content from a range of different sources.

Management Information system (MIS)

It performs the functions of a CMS but also keep track of students' progress as they work through the learning resources it stores. A VLE can be considered a part of a managed learning environment MLE if the date it records on students' progress are passed to the college or school management information system (MIS).

Components of VLE

The components of a VLE include the following (BECTA, 2003):

- e-mail facility
- assessments
- student home pages
- calendar
- file upload area
- multimedia resources
- conferencing tools course outline
- metadata
- assignments
- notice board/bulletin board
- synchronous collaboration tools

Principal Functions of VLE

The principal functions that complete VLE needs to deliver are links to other administrative systems, both in house and externally.

The typical learning of VLE

The typical learning that any VLE system facilitates are (Wellewr, 2007):

- Peer learning
- Collaborative learning
- Instructor-led learning
- Content-led/ Instructivist learning
- Resource-based learning
- Community of practice/socio-cultural learning

Perspectives of VLE

- administrators
- technicians
- Course developers /Teachers
- Learners

Features of VLE

- Personalized
- Continual updating
- Students as co-creators
- Based around services
- Reusable content and components
- open architecture
- Social software
- Harnessing collective intelligence
- Lightweight programming
- Reusable content and components

Stage process for choosing a VLE

Weller (2007) has suggested a six stage process for choosing a VLE system are:

- Draw up a feature list
- Map to strategic objectives
- Devise a set of general principles
- Devise scenarios appropriate for(your) organization / institution
- Engage in stakeholder consultation

- perform an external and internal review

Major tips with VLE

There are some major tips for getting started with VLEs are (Trinick, 2007):

- Investigate the usability and flexibility of different VLEs, as well as costs.
- Manage staff expectations- all of the benefits of VLEs won't be realized overnight – one step at a time.
- Consult with your teachers and pupils- they are the ones who will be using it and it is vital that the system you deliver is appropriate to their needs.
- Involve parents in the consultation process too- moving to a VLE is a culture change for all involved and it's important to get 'buy-in' from everyone right from the outset.

Frameworks for VLE use

A useful framework for considering different ways of using VLEs to support or deliver courses is one developed by Mason (1998), which identifies three models:

Content and Support Model
Where pre-prepared content is delivered in print or online, and support is provided online. Content and support are not integral to one another, i.e. online support is an optional extra and is not integrated into learning activities. Relatively easy to establish but does not fully exploit the benefits of online learning.

Wrap-around Model
Where there is a mixture of pre-prepared content and online learning activities. The learning activities involve online discussion and collaborative activities.

Integrated Model

Where most of the learning takes place via collaborative online activities and content is largely determined by the learners, either individually or as a group. Learning is very much student-centred and highly collaborative. Other useful models for evaluating virtual learning environments and developing online activities include: Britain and Liber adapted from Laurillard's Conversational Learning and Beer's Viable System Model, and Gilly Salmon's e-moderating Five Step Model.

Advantages of VLE

- Easy to use for both students and teachers
- easy online delivery of materials
- promotes better student –teacher interactivity
- assessment and monitoring of students
- electronic publication is cheaper and faster
- facilitated self-learning at the learner's convenient time and space
- general class administration and organization
- discussion and support with students on line

Disadvantages of VLE

- Lack of student motivation.
- Many people find it daunting, especially at first.
- Training is required for both tutor and student.
- Online tutoring can be more time consuming than face-to-face tutoring.
- Learning is a social process and many people enjoy face-to-face interactions.
- Need to plan online support carefully to avoid overload.
- The student and tutor need basic information technology skills.
- The student and tutor need reliable access to computer and internet.

Conclusion

The VLE, if used effectively, changes the entire teaching and learning experience by making learning very invigorating, vibrant and real. VLE support is dedicated to improving and enhancing the teaching and learning experience not only for the student but for the teachers as well. An appropriate and intelligent use of VLE system can bring a positive change in the scenario

teaching-learning and learning outcomes in the field of education in India, and will be a march towards world class standards.

Reference

Dillenbourg. Pierre,Schneider, Danielabdsynteta, Paraskevi(2002). Virtual learning environments. http://www.dil.iitb.ac.in/docs/IETC-Turkey. pdf retrieved on Oct.02.2011.

O'Leary, Ros. Virtual learning Environments. http://www.bioscience.heacademy.ac.uk/ftp/resources/gc/clearn2.pdfretrived on Oct.25,2011.

Weller, Martin (2007). Virtual Learning environments. Routledge: Taylor and Francis Group, London, p.44.

Ibid.p.01.

Ibid.p.15.

Ibid.p.537.Ibid.p.106.

www.du.ac.in

www.ignou.ac.

Strategies for Effective Classroom Management

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A good teacher must be good at classroom management the teacher should guide the students towards self-direction. Rhythm in the classroom is also important. Class culture makes the students feel secure. The teacher's smile, words of encouragement, praise and good attention affect students' behavior Soft reprimand is very effective. Self-learning and self-evaluation are useful for students. Kounin, one of the early writers on classroom management, identified several effective classroom management techniques. He emphasized cultivating wittiness, coping with overlapping activities, maintaining the momentum of a lesson, keeping the whole class involved in a lesson, using a variety of instructional techniques enthusiastically, being aware that the ripple effect can be used to a teacher's advantage by focusing on the misbehavior of students rather than on their personalities, and suggesting alternative constructive behaviors. Further, needs of the students in the classroom, general techniques of classroom management are suggested for a classroom teacher at the end of this article.

Keywords: Classroom Management, Rhythm, Wittiness, Reprimand, Ripple Effect, Class Culture and Techniques.

Introduction

A classroom is not merely a room where students attend classes or move from one room to another in order to attend classes as per the timetable.

It can be considered as a sacred place of learning where a teacher teaches and students learn. In other words, a classroom is a teaching-learning interactive place where two personalities namely the teacher and the taught interact every day. A child is like a plant. A child's mind is more sensitive to treatment. Since the child's mind is a great source of potential, natural but controlled conditions can nurture magnificent growth. It all depends upon how the parents at home and teachers in the classroom manage the development of the potentialities of children. "Education must foster in students the essential leap from I know *to I care.* Therefore, the classroom must be the place where the student can explore himself. The teacher must regard the child as an active, thinking, feeling human being, who needs to be stimulated, directed and guided towards the realization of all his inherent potentialities thereby becoming a worthy member of a society.

Classroom Management

Classroom management is one of the two main functions of a teacher, the other being teaching and instruction. This approach is based on the human organization of modern theory of relationship centered. The basic assumption of this approach is that a teacher has the ability to take decisions and solve classroom problems. Though a difficult job, a teacher has to direct and control the classroom activities. The main focus of classroom management is to generate an atmosphere that is conductive for learning. In fact, the quality of teaching and learning depends upon the quality of classroom management. Classroom management is a very dynamic process and at the same time it is the most difficult job of a teacher.

Areas for which Concern to be shown by the Teacher in the Classroom

Conduct Problems

This included such responses as aggressive behavior, disruptive behavior, lacks self-control, uncooperative, foul mouthed, that is those responses referring to behaviors which reflect an outward going, acting out attitude.

Neurotic Problems

This included responses such as withdrawn, insecure, miserable and timid, that is, behaviors which reflect an inward looking, passive attitude.

Mixed Conduct

This included those responses which embodied elements of both the conduct and neurotic problem categories. It was included because other researchers have concluded that a substantial percentage of behavior disordered pupils show elements of both behavioral patterns, and a School Council Project, found that teachers in special classes and units for disturbed pupils rated 25 per cent of their pupils to be in this group.

Non-Attendance

This included those responses referring to any aspect of non-attendance and also included two responses which referred to extremely bad timekeeping.

Delinquent Behavior

This includes all of those responses which at an appropriate age, could constitute a criminal act, this is to say that children below the age of criminal responsibility could be, and were, included.

Learning Problems

This included responses such as poor attainment in basic subjects, low ability, poor concentration, lazy and son on.

Home Problems

This included response referring to poor home situations, parental neglect, parental instability, parental imprisonment, absence, etc.

Physical Problems

This included those responses referring to a directly physical problem and also to those in which a physical problem and also to those in which a physical problem and also to those in which a physical problem might be inferred.

Emotional Difficulties

This category was found necessary if the quality of certain responses was not to be lost. It included references to odd, strange or bizarre behavior. For example, lives in a fantasy world, high evil resource, maladjusted, has attempted suicide, unstable, no sense of right or wrong, never laughs.

Attention Seeking

This was included because a number of responses were expressed simply as attention seeking with no indication of how this was manifested.

Others

This took in all those responses which could not reasonably fit into the other categories, for examples victim of a sexual assault, unsettled, unpopular and general welfare.

Needs, Teaching Structures and Techniques of Motivation

The various needs, teaching structures and techniques of motivation to be used are summarized below:

Needs	Techniques of motivation
Lower Needs Physiological Safety Belonging	Reward and punishment Praise and Proof Success and failure
Higher needs Esteem Self-actualization	Competition and Cooperation Knowledge of result Self-motivation Novelty

In the daily classroom teaching, the teacher must be careful about monotony and boredom. He should always provide the students with activities. The teaching methods should capitalize on the students' needs for stimulation and their propensities to be curious and explore. The teacher should reward students' performance in such a way as to encourage further effect on the part of the learners. The disciplinary functions require the teacher to control undesirable behavior by the use of punishment but it should be rarely used. The teacher should use a combination of reward and punishment in controlling and regulation students' behavior.

Strategies for Classroom Management

The teacher as management expert of the class adopts different strategies to manage it. In addition to authority and leadership, he has a repertoire of approaches which he applies depending on the behavior patterns exhibited by the students and the situation on hand. The teacher is successful in classroom management if he brings *rhythm*in everything he works with, develops a *class* culture to make the members of the class feel secure. The teacher's *attention* is one of the most basic of all influences on student's behavior. The teacher's smile, words of encouragement, praise, evaluation and silence powerfully affect student behavior. *Teacher's verbal control* is the most common form of a teacher on a classroom. Verbal reprimand is quite understandable when teaching is viewed as giving direction and redirection.

The most effective classroom management techniques in Kounin, one of the early writer's perspective are as follows:

- The teacher must show his students that he is "with it". An expert at classroom management will nip trouble in the bud by commenting on potentially disruptive behavior before it gains momentum. Teachers who show they are "with it" head off discipline problems.
- The teacher should learn to cope with overlapping situations. Being able to handle overlapping activities helps to maintain classroom control.
- The teacher should be able to strive to maintain smoothness and momentum in class activities. When a teacher failed to take into account the degree of student's inattention and restlessness, commenting on an unrelated aspect of classroom functioning such as someone left a lunch bag while reading a lesson, wasting time dwelling on a trivial incident such as making a big fuss of a lost

pencil, all these types of teacher behavior tended to interfere with the flow of learning activities.

- The teacher must try to keep the whole class involved, even when he is dealing with individual students. Some teachers, for example, call on students by going around a circle, or going up and down rows or following alphabetical order. Other call on a student then asks a question. All of these techniques tend to spotlight one child in predictable order. If a teacher does so, the other students become bored and may be tempted to engage in trouble-making activities.
- The teacher needs to introduce variety and be enthusiastic, particularly with younger students. Students will be less inclined to sleep, daydream or engage in disruptive activities if they are exposed to an enthusiastic teacher who varies the pace and type of classroom activities.
- The teacher must be aware of the ripple effect When criticizing student behavior, be clear and firm, focus on behavior rather than on personalities, and try to avoid angry outbursts. If a teacher follows this suggestion, the amount of misbehavior may be reduced.

Techniques of Classroom Management

In a well-managed classroom, students know what they are expected to do and do it successfully, are kept busy with teacher-assigned activities, and exhibit little confusion or disruptive behavior. Such classrooms are marked by a work-oriented yet relaxed and enjoy pleasant atmosphere. Classroom management can be made easier by using technology tools to carry out such tasks as test construction, record keeping, developing seating arrangements, analyzing space utilization, and monitoring student work. Some of the techniques of classroom management are as follows:

- The teacher must be confident and prepared for the first day of class
- The teacher must think ahead about how he plans to handle classroom routine, and explain basic procedures the first few minutes of the first day.
- The teacher is needed to establish class rules, call attention to them and explain why they are necessary.
- Instructional activity of the first day be clearly stated and be completed quickly and successfully by the efficient teacher.
- During the first few weeks with a new group of students, have them spend most of their time engaging in whole-class activities under teacher's direction.

- The teacher should give clear instructions, hold students accountable for carrying them out, and provide frequent feedback.
- The teacher needs to demonstrate continually that he is competent, well prepared and in charge.
- The teacher must be professional best pleasant, and try to establish a business-like but supportive classroom atmosphere.

Conclusion

The mastery of classroom management skills should note regarded as an end in itself but these techniques are necessary tools. The mastery of techniques makes choices possible. The possession of classroom management skills allows the teacher to accomplish his teaching goals, whereas the absence of managerial skills acts as a barrier. It is needed for a teacher to develop managerial skills to understand the needs of the students in his classroom, identify the problems which his students face every day in the classroom and how can it be rectified using the techniques. If the teacher ENJOYED teaching, students would ENJOY learning; If the teacher ENDURED teaching, students would ENDURE learning. What is enjoyed ENDURES. What is endured does not ENDURE. The ENJOYED teacher can make a good classroom

Reference

Classroom dynamics by V. Krishnamacharyulu – Neelamal publications pvt. Ltd.

Sharma R A *Managing Teaching Activities*, *Classroom management,* R Lall Book Depot, Meerut.

Global Education Series: 16 Classroom Administration by B. M. Sharma.

Authoritarian, permissive and Authoritative approaches to classroom management by Prof. H.M. Kasinath, Karnatak University, Karnataka, - *Article in Edutrack.*

Aggarwal J C Educational Administration, School Organization and Supervision, Arya Book Depot, New Delhi 2000.

Role of Integrated Child Development Services (ICDS) Scheme in India

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Investing in children is a decision a nation makes for improving the quality of life of its future citizens, and embarking on a path of planned development. Keeping this is view, the Government of India launched ICDS (Integrated Child Development Services) in 33 projects on 2nd October 1975. ICDS has expanded over the years and now is one of the world's largest programs working for the holistic development of young children. It is instrumental in enabling mothers to care for their young children, by providing those services and appropriate information support and guidance. The services provided under ICDS have had a positive impact on the health and nutritional status of children, helped in reducing infant mortality, and created awareness in the community on many issues. The first six years of a child's life are most crucial as the foundations for cognitive, social, emotional, physical, motor and psychological development are laid at this stage. As per Census of India 2001, there are 157.86 million children below six years of age, and many of them have inadequate access to health care, nutrition, sanitation, child care, early stimulation, etc.

Keywords: Child Development Services, Women, Malnutrition.

Introduction

Children below the age of 18 years' account for nearly 40 per cent of India's population. This gives India a comparative advantage of a younger work force compared with countries with ageing populations. But with the largest number of malnourished children in the world - over half the children in the country are moderately or severely malnourished and 30 per cent of new-born are underweight - India faces a challenge in terms of investing in its large and growing young population. While infant mortality rates have declined to 50 deaths per 1000 live births, those who survive have nearly a 1 in 10 odds of dying before they reach their fifth birthday.

Effectiveness ICDS scheme in India

The ICDS is the largest programme of its kind in the world, with over 1.2 million centres nationwide – Launched in 1975, the Integrated Child Development Services (ICDS) is the only major national programme that addresses the needs of children under the age of six years. The main objectives of the programme are to improve the health, nutrition and development of children. It offers health, nutrition and hygiene education to mothers, non-formal pre-school education to children aged 3 to 6, supplementary feeding for all children and pregnant and nursing mothers, growth monitoring and promotion services, and links to primary healthcare services such as immunisation and vitamin A supplementation. These services are delivered in an integrated manner at an Anganwadi or childcare centre.

Each centre is run by an Anganwadi Worker and a helper. The Anganwadi Worker undergoes a one-time induction training of 8 days, job orientation training of 32 days and refresher training of 7 days, while the Helpers undergo a one-time job orientation training of 8 days and a refresher training that lasts 5 days. Three of these services, namely, immunisation, health check-up and referral services, are delivered through the public health infrastructure i.e. the Health Sub Centre and Primary and Community Health Centre under the Department of Health and Family Welfare. The remaining three services are delivered through the Anganwadi Centres (AWCs). According to this report the ICDS which was launched in 1975 has been working diligently to eliminate hazards to child health and development.

Objectives of ICDS

- To advance the nutritional and health standing of children in the age-group 0-6 years.
- To create a system that tackles the proper psychological, physical and social development of the child.
- To fight the rate of mortality, morbidity, malnutrition and school dropout.
- To have all the various ministries and departments work in a coordinated fashion to achieve policy implementation and create an effective ECCE system.
- To support the mother and help her become capable of providing of the necessary nutritional and development needs of the child and aware of her own needs during pregnancy.

The scheme aims at providing an integrated package of services. These services include supplementary nutrition, immunization, medical check-ups, recommendation services, pre-school non-formal education and nutrition & health awareness. The purpose of providing these services as a package is because each of these issues is dependent on the other.

By providing supplementary feeding, the Anganwadi attempts to bridge the protein energy gap between the recommended dietary allowance and average dietary intake of children and women. Children below the age of three are weighed once a month and children in the age group of 3 to 6 are weighed every quarter. Weight-for-age growth cards are maintained for all children below six years. This helps to detect growth faltering and helps in assessing nutritional status. Besides, severely malnourished children are given special supplementary feeding and referred to health sub-centers, primary health centers as and when required.

Pre-school Education

Under ICDS scheme, children are provided pre-school education, besides supplementary nutrition, health-checkup and immunization. Around 3.39 crore children are at Anganwadis. Innovative methods are used to provide pre-school education to the children in the age group of 3 to 6 at Anganwadis. Moreover, children feel comfortable as their mothers accompany them. This component for the children is directed towards providing and ensuring a natural joyful and stimulating environment with the emphasis on necessary inputs for optimal growth and development. The early learning component of

the ICDS is a significant input for providing a sound foundation for cumulative lifelong learning and development. It also contributes to the universalization of primary education by providing to the child the necessary preparation for primary schooling and offering substitute care to younger siblings, thus freeing the older ones, especially girls to attend school.

Social Security

The government has introduced Anganwadi Karyakartri Bima Yojana to Anganwadi workers and Anganwadi helpers with effect from April 2004 under the Life Insurance Corporation's Social Security Scheme. In order to motivate Anganwadi workers and give recognition to good voluntary work, a scheme of award has been introduced both at the national and state levels. The award comprises of Rs 25,000 cash and a Citation at Central level and Rs 5,000 cash and a Citation at state level. The remuneration of Anganwadi workers has been increased to Rs 1500/- from the existing Rs 700/- and that of the Anganwadi workers to Rs 750 from the existing Rs 500/- with effect from April 2008.The government has also decided to provide uniform to the Anganwadi staff. This will benefit over 18 lakh staff.

ICDS Services

- Services Target Group   Provided in AWC through
- Supplementary Nutrition   Children below 6 years; pregnant and lactating mothers, Adolescent girls Anganwadi Workers (AWW) & Helpers
- Immunization   Children below 6 years; pregnant women ANM Health Check-up Children below 6 years; pregnant and lactating mothers Doctors/ANM/ AWW
- Referral Children below 6 years; pregnant and lactating mothers, adolescent girls   Doctors/ANM/ AWW
- Pre-School Education   Children 3-6 years AWW
- Nutrition & Health Education Women (15-45yrs), adolescent girls AWW/ Health /   FNB personnel

Challenges

- The reduction in the proportion of undernourished children in India over the past decade has been modest and slower than what has been achieved in other countries with comparable socioeconomic indicators. While aggregate levels of under nutrition are shockingly high, the picture is further exacerbated by the significant inequalities across states and socioeconomic groups – girls, rural areas, the poorest and scheduled tribes and castes are the worst affected - and these inequalities appear to be increasing.
- Child malnutrition is mostly the result of high levels of exposure to infection and inappropriate infant and young child feeding and caring practices, and has its origins almost entirely during the first two to three years of life.
- The ICDS program, while successful in many ways, has not made a significant dent in child malnutrition. This is mostly due to the priority that the program has placed on food supplementation, targeting mostly children after the age of three when malnutrition has already set in.

Way Forward

The ICDS program should be redirected towards the younger children (0-3 years) and the most vulnerable population segments in those states and districts where the prevalence of under nutrition is higher.

The ICDS program should aim at:

- Improving mothers' feeding and caring behaviour with emphasis on infant and young child feeding and maternal nutrition during pregnancy and lactation.
- Improving household water and sanitation. Strengthening the referral to the health system with emphasis on prevention and control of common child diseases including acute malnutrition.
- Providing micronutrients.
- Urgent changes are needed to bridge the gap between the policy intentions of ICDS and its actual implementation.
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Role of Integrated Child Development Services

ICDS is a Unique Public Health Program in India. ICDS is currently the most significant government intervention program for reducing the maternal and childhood nutrition. Despite the considerable expansion and additional investment made after 2005. Children are the first call on agenda of development – not only because young children are the most vulnerable, but because the foundation for lifelong learning and human development is laid in the crucial early years. It is now globally acknowledged that investment in human resources development is a per-requisite for economic development of any nation.

Reference

Three Decades of ICDS-An Appraisal. National Institute of Public Cooperation and Child Development (NIPCCD), 2006. Available from: http://nipccd.nic.in/ reports/icdsvol3.pdf. Accessed January 15, 2014.

Agarwal KN, Agarwal DK, Agarwal A, Rai S, Prasad R, Agarwal S, et al. Impact of integrated child development services (ICDS) on internal nutrition & birth weight in rural Varanasi. Indian Pediatr. 2000; 37:1321

Saiyed F, Seshadri S. Impact of the integrated package nutrition & health services. Indian J Pediatr. 2000; 67:322-8.

Bhasin S K, Bhatia V, Kumar P, Aggarwal OP. Long term nutritional effects of ICDS. Indian J Pediatr. 2001; 63:211-6.

Michael Lokshin; Monica Das Gupta; Michele Gragnolati and Oleksiy Ivaschenko (2005). "Improving Child Nutrition? The Integrated Child Development Services in India" (PDF). Development and Change. 36 (4): 613–640. Retrieved 11 February 2015.

"India's infant mortality rate drops". The Times of India.

"UNICEF - Respecting the rights of the Indian child". UNICEF. Retrieved 22 March 2011.

Kapil, U. (July 2002). "Integrated Child

Development Services (ICDS) scheme: a program for holistic development of children in India". Indian J Pediatr. Indian Journal of Pediatrics. 69 (7): 597–601. Doi: 10.1007/bf02722688. PMID 12173700.

"Infant mortality rate shows decline". The Hindu.

"The Integrated Child Development Services (ICDS)". UNICEF. Retrieved 22 March 2011.

"Supreme Court Commissioners". Sccommissioners.org. Retrieved 22 March 2011.

"The WHO Child Growth Standards". World Health Organization. Retrieved 22 March 2011.

Dhar, Aarti (1 March 2013). "11.7 % increase in funds for Integrated Child Development Services". The Hindu. Retrieved 11 February 2015.

"Has the ICDS helped reduce stunting in India?" www.ideasforindia.in. Retrieved 2015-10-09.

Curriculum Expectations and Teacher Competences – An Empirical Study (Based on Kerala TTC)

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Teacher Educators are key players in the endeavour to improve the quality of teacher Education and teaching. Those who are behind the curriculum designing envisage that the major components of the curriculum should be easily transacted or transmitted to the teacher trainees through Teacher Educators. However the competency level or performance of the Primary teacher who comes out of the TTC courses and join service were found to be quite unsatisfactory. This prompted the researcher to find out where and how this lacuna appears between curriculum designing and transaction. On a close study regarding the functioning of Teacher Training Institutes, it was found that the language English is the most neglected subject in TTC classroom transaction. The great paradox in the system is that there are no specialized English teachers to teach English for a professional course like TTC. Many of the TTC teachers met were bold enough to say that they were forced to take English for TTC which is not their subject.

Keywords: English teachers, Training Institute, Teachers and Curriculum.

Introduction

On an attempt to talk to the said English teachers in English language, majority of them bluntly rejected or opposed the idea and a few who dared went ahead with some great grammatical errors. The researcher was able to narrow down some of the reasons for this problem. Based on the analysis of these problems, several remedial measures have been suggested.

Teacher Educators are key players in the endeavor to improve the quality of Teacher Education and teaching. Teacher Educators are role models. From them many teachers acquire the competences that they later display in classrooms.

Knowledge, skills and values are often imbibed from the Teacher Educators by the Teacher Trainees. Teacher Educators have a dual role to be producers of Knowledge about education, Wherever the researcher went it was found that the TTC students were much engrossed in busily copying materials into their record Books. One close study of the gathered information it was found that the children were busy completing their writing assignments.

On a query raised about the copying of the assignments it was told that they had no time to refer and write things on their own. So an easy method is being adopted by collecting a well written record book or assignment book from seniors or some talented students and get it copied mechanically into their books. The students were even bold to tell that even their handwriting is not being improved by this process as they are racing against time in scribbling these words. Of course, there will be some exceptional children who are capable of doing these works on their own. However not much monitoring is happening in this regard by the Teacher Educators. Here only the ends are taken care and not the means.

The confusion among the Teacher Educators in the Teacher Training Institutes is mainly about who will have to bear the burden of teaching English to the students. Ina few institutes the so called hapless English teachers asked a favour from the researcher to do something to get them freed from the clutches of English teaching. It is indeed disheartening to note that some Teacher Educators are forced and compelled to handle English classes.

With much reluctance and without a choice they are somehow trying to manage the situation. Maybe this is the only place where Teacher Educators openly expressed their inabilities and inadequacies in teaching English. The teachers who take English classes are not getting effective training in teaching

the language. In the High Schools in Kerala from the year 2002, specially qualified and trained English teachers were appointed. But the TTC professional course which is much higher than the high school level is still being neglected with such arrangements, compromising mainly in the matter of English language teaching. Some students have even pointed out the disparities between the BRC trainer's version and their teacher's version especially in the matter of narration.

The confidence level appears to be quite low among the Teacher Educators in English. The researcher was able to talk to around 40 Teacher Educators. Simple English was used in initiating the conversation with them. Among the forty teacher educators, except one, all others responded in the mother tongue. Some tactful persuasion was given to them for assessing their speaking skills. However some of them obliged later with much difficulty and to the utter shock used the language with lot of grammatical errors. They were found realizing their mistakes and once that becomes obvious they were immediately resorting to the mother tongue.

This was the case among the Trainees also. It was found that they were quite rhetoric in pointing the drawbacks of the system in the mother tongue. Several teachers talked about the good old days of the wonderful standards of English teaching. But ironically none among those teachers were able to speak the language and also failed to perform in the proficiency test.

Proficiency Test

When the proficiency test paper was given to them their mood got completely changed. The questions were quite easy in the sense that it was aimed to find out some basic writing skills and some basic theoretical knowledge. Most of them were hesitant to do the task. Some out rightly refused to do it. Some said they need at least a day to answer those 8 questions. Around 10 teacher Educators brought it back home and returned it in the following day and also by post. In several tests, which was taken home it was found that the very handwriting was also different from theirs. This peculiar response and standards clearly denotes that these teacher Educators are not equipped enough to handle such English classes. In one Institute the teacher Educator in English completely failed to grasp the meaning of the word 'implication'.

In the proficiency test it was asked to write about the implications of grading system in Kerala. Here the teacher wrote the grade points only on

the answer column. To substantiate that when the test was administered in the TTC 2nd year classroom, the researcher found that the students were waiting without writing the answer for the first question. There were 24 students in the class. None among them knew the meaning of the word' implication'. This word is very much there in their curriculum in repeated contexts. Another deplorable condition in the system is that some of the teacher

Educators are hiring some English graduates to come and take class for certain topics like phonetics, stress and intonation. But the Teacher Trainees are not at all happy with these kinds of adjustments. In Every Institute, the trainees were complaining about the difficult theoretical terms and the condition in which their teachers fail to explain it clearly to them. The mechanical copying and writing of the assignments is the major task going on in the Institutes.

In classrooms, English is not being used. All the explanations are given in mother tongue. Effective communication in English is not happening in classrooms. Dynamic questioning is an unfulfilled envisaged thing. Most of the Teacher trainees feel that the teaching practice sessions allotted to them are insufficient. They have raised the general complaint that the regular teachers from the respective schools are compelling the trainees to conduct classes according to their suggestion. Majority of the students are not liking he way in which English is being handled in the class. They feel they need a prescribed text book for the proper grasping of English. They have complaints that demo model classes are not taken by the Teacher Educators before they are sent to the schools for teaching practice.

Appointment of Teacher Educators

Teacher Educators in the teacher training Institutes are appointed from High School teachers barring the DIETS. But even in DIETS there are no special English Lecturer post. Normally seniority becomes the criterion in the selection of Teacher Educators. In this system there are no English teachers to conduct class for the Trainees. Any other teacher needs to take this challenge of venturing into the world of English. English has gained this much prominence in the present world and still a professional course like the Teachers training course is left unattended in this matter. Even the High schools are having specially trained qualified English teachers now.

Thus, the teachers who are destined to take English are struggling hard with the English curriculum and its requirements. They themselves feel that when the final evaluation was streamlined a bit there were quite a lot of failures for the TTC examination. If the evaluation process is standardized then the rate of failures in English will be very high. The teachers who are handling English for TTC students were found committing such a lot of pronunciation errors. This modeling is sure to affect adversely the students.

Use of other materials in teaching and learning English

Libraries are seen much underutilized. Each and every student gets worried about the time restraints in completing the assignments. In several institutes it was found that the students in the class were left alone by the teacher for the students to complete their writing tasks. In the survey it was found that hardly 2% of the teacher Educators read English dailies. They are not even in the habit of watching any English programme in the visual media. Computers and net facilities were seen underutilized.

Suggestions

It is found that only few teachers are handling English properly in classrooms. When teachers do their English, it is found to be marred by grammatical errors, pidginization and incomplete utterances. In a language situation like this, where the teachers have very little to offer to their learners, what is feasible and likely to produce results is a methodology that makes the best use of the language of the text. Or else the teacher needs special training in using the language with proper stress intonation and pauses. An effective training that helps the teacher Educators to pick some good English for themselves as they teach. Teacher Educators need to be well versed in theories also. Let me quote Wardhough (1969) "we can never ignore theory in talking about classroom practices, because good practices must necessarily be built in good theory. Every classroom practice that we have, derives from an underlying theory of some kind." Hence some measures need to be taken to train the present teacher Educators in the various facets of the theories and its implementation level. Language acquisition is so varied and so complex a psychological function that no single theory has ever been successful in explaining it fully. In the peculiar context here the learners as well as the teacher educators are just beginners Recent Researchers Light brown and Spada (1993) have re-established the significance of corrective feedback in ESL

teaching. Hence there should be some regular monitoring, support activities and corrective feedback need to be given to the Teacher Educators very frequently.

Role of a Teacher in a Communicative Language Teaching Method

In this method the role of Educator is more demanding. The roles range from controller of the class to a participant, an organizer a resource person and an assessor. The teacher educator has to be multifaceted. Teacher Educator becomes a language facilitator.

Curriculum and language learning impacts. Before we introduce any change in the learner's curriculum the teachers need to oriented towards the curriculum. Further, the ability of our Teacher Educator's conversational ability in English which is vital for translating the curriculum into classroom activities needs to be developed. Equipping the learners to use a language for communication is the primary aim of learning it. Only a communicative oriented curriculum can make the learning of the language relevant and purposeful.

General Suggestions

- New teaching learning centers need to be established and they should act as laboratories for the theory and practice of the teacher training.
- Pre-service and In-service teacher training need to be made inseparable. Continuing professional development strategies need to be envisaged and implemented.
- The status of Teacher Educator needs to be uplifted in the ways of better wages and better title designation.
- Teacher Educators should be given a clear chance in framing the curriculum.
- DIET faculty members and Teacher Educators may be appointed based on their academic performance
- The course should also be extended for three years leaving much scope for teaching practice.
- After the completion of TTC course a bond period can be fixed for the teachers willing, to carry on with the strategies learned.

- English language teachers with English Bachelor degree and master's degree along with training qualifications need only be appointed as teacher Educators in English in TTI's.
- Absence of professional preparation is visible among Teacher Educators.
- Periodical professional enhancement programmes need to be conducted.
- Teacher Educators need to be trained to be reflective practitioners. They should also teach the students to be critical observers.

Reference

Bartram, D. (2005) "The Great Eight competencies: A criterion-centric approach to validation". *Journal of Applied Psychology*, 90, 1185-1203

Catano, V., Darr, M., & Campbell, C. (2007). "Performance appraisal of behaviour-based competencies: A reliable and valid procedure". *Personnel Psychology*, 60, 201-230

Cheng, M. I.& Dainty, R. I. J. (2005). "Toward a multidimensional competency-based managerial performance framework: A hybrid approach". *Journal of Managerial Psychology*, 20, 380-396

Draganidis, F., & Mentzas, G. (2006). "Competency-based management: A review of systems and approaches". *Information Management & Computer Security*, 14, 51-

Dubois, D., & Rothwell, W. (2004). "Competency-Based Human Resource Management". *Davies-Black Publishing*

Dubois, D., & Rothwell, W. (2000). "The Competency Toolkit" (Volumes 1 & 2). *HRD Press*

Homer, M. (2001). "Skills and competency management". *Industrial and Commercial training*, 33/2, 59-62

Horton, S. (2000). "Introduction- the competency-based movement: Its origins and impact on the public sector". *The International Journal of Public Sector Management*, 13, 306-318

The Concept of Eminent Domain under the Indian Constitution

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India is the largest democratic country in the world. In a democratic system of administration equality forms an essential factor. India is declared to be a Sovereign, Socialist, Democratic, Republic. The philosophy of socialism in the Constitution aims at the elimination of inequality in income and status and standards of life. The Indian Constitution aims at the establishment of a social order, in which social justice is ensured and where there is no concentration of wealth. The Directive Principles impose an obligation on the State to take positive action for creating a socio-economic condition in which there will be an egalitarian social order with social and economic justice to all. The State is under an obligation to ensure fair distribution of material resources of the country. Through the Directive Principles of State Policy, the framers of the Indian Constitution visualized the establishment of India as a Welfare State.

Keywords: Eminent Domain, Case Laws, Concept and Constitution of India.

Introduction

A government in a Welfare State has so many functions to perform to meet the various needs of its subjects. So, it is the duty of the government to mitigate the obstacles on the way which act as restrictions in the

achievement of various ends to materialize the object of Welfare State. In the pre-independence and also in the initial stages of post-independence period, there existed Zamindari system. Under this system the ownership of the whole land was vested with the landlords. So, the farmers were remained, as landless people. till the Constitutional Amendment Act 1978,

The motto of the Government was land to the tillers. So, in order to materialize this object various types of land laws were enacted by the Parliament as well as the State Legislatures. But right to property was a fundamental right. However reasonable restriction was there under Article 19(5). Article 31 dealt with compensation for acquisition of land. Under such a circumstance the Government has faced many problems in the face of the enactment of land laws. So, in order to overcome this, several amendments were made to the Constitution.

In a modern State, Government has to introduce many developmental activities to promote the economic and social welfare of the State. Land forms an important factor for the implementation of developmental activities. It was for this purpose the doctrine of Eminent Domain was introduced. The doctrine was strengthened after the deletion of Articles 19(1) (f) and 31 and the introduction of the former. The individual is enabled to desire the common interest in addition to his own interest. Law is a means to secure the good of the society not of the individual. ix

Property exists not solely for the owners but also for society Law must try to reconcile the interest of the owner with that of the society. In this way, it justifies expropriation or legal restriction imposed upon the exercise of individual property rights. Expropriation solves the problem of harmonizing the interests of society with those of the owner. There must be a balance of purposes or interests.

Eminent Domain and Decided Case Law

Eminent Domain is the inherent right of the State to take private property for public use. It is for public benefit irrespective of the wishes of the owner. But the condition is that it shall not be taken for public use without just compensation. It was so held in State of Bihar V. Kameshwar Singh. Xi In Bhimsingh v. Union of India xii, Krishna Iyer J remarked ".... peripheral inequality is inevitable when large scale equalization processes are put into action....". He again said that when property was taken by the State, then ceiling on maximum amount payable would be reasonable. The concept of eminent

domain is good but at the same time, it should not result on discrimination while taking the private property for public purpose. Individual interest should be protected while taking into account of the social interest. He should be given equivalent to what he has lost.

In Bihar Land Reform Case, xiii Mahajan J said that agrarian laws enacted by the legislature and protected by Article 31(3) & (4) provided compensation which might appear to the court unjust and inequitable. In S. P. Gupta & Others v. Union of India & others, xiv Bhagavath. J said that judiciary to become an arm of the socio-economic revolution and perform an active role calculated to bring social justice within the reach of common man. In Lachman Dass v. Jagat Ram xv the court held that to hold property is a human right and the right cannot be taken away except in accordance with the provisions of a statute.

The power of eminent domain is so often necessary for the proper performance of governmental function to take property for public use. It is the offspring of political necessity. Thus, property may be needed and acquired under this power for government offices, libraries, slum clearance projects, railways, parks, water system and many other projects of public interest, convenience and welfare. xvi This power of the State is causing mass displacement and also raising the problem of rehabilitation. The compulsory acquisition may lead to many social problems. It may sometimes affect the livelihood of the people whose property is taken. Where the authority fails to implement proper measures for rehabilitation and compensation, it would cause injustice to the affected people.

Acquisition of property is done through the authority of law. That law must contain the measures for rehabilitation and compensation. Justice must be viewed as a creative process, which seeks to realize what is right for a particular time and place. xvii Justice changes in accordance to the dynamic processes in any society which take place in time, it is dominated by forces struggling within the general framework of political order. Justice means fair and equal treatment of all xviii So here it is a necessary to do justice to those who are affected by the acquisition of property.

The Land Acquisition Act 1894 did not contain sufficient measures for rehabilitation. The Land Acquisition, Rehabilitation and Resettlement Act 2013 contains provisions for rehabilitation. Thus, the Act has institutionalized the problem of rehabilitation. But it is not known how far it could be possible, because the thing is that everything remains only in the statute book. In many

situations the judiciary has given directions to the government to implement rehabilitation measures properly x.

The doctrine of eminent domain empowers the government to take over the private property for public purpose for compensation. In 1984 'public purpose' was redefined to include the acquisition of land for residential purposes ".... to persons displaced or affected by reason of the implementation of any scheme undertaken by the government...." x So this increases the power of the State to acquire private property in an easy manner under the pretension of public purpose. Where the acquisition is not for public purpose then the concerned person can challenge the acquisition x. Nevertheless, the concept of eminent domain confers the State an unbridled power to take over the private property for public purpose.

The power of eminent domain is an essential attribute of sovereignty. By using this power, the government acquires the private land for public use. The process of acquisition leads to the mass displacement of people who were evicted from the land so acquired. Since the era of independence this process is going on and the millions of people in India are becoming landless and homeless. This is a serious problem to the security of the country. The government has to make an effective planning for providing rehabilitation facilities before the acquisition is affected. 'Rehabilitation' was not explained in the 1894 Land Acquisition Act. But in the 2013 Act the word is included. But it is not known how far it would be effective. Government should take effective measures for the effective implementation of the provisions relating to rehabilitation in order to protect the displaced people.

Conclusion

The discussion reveals that the power of eminent domain is an essential requisite of State's Sovereignty. In a welfare State the government has many functions to perform for the purpose of promoting socio-economic justice, a noble aim envisaged under the Indian Constitution. For almost all the developmental projects land is an essential requirement. So, it is necessary with regard to the State, having a power to take the land without any opposition. Till 1978 right to property was a fundamental right under Articles 19(1)(f) and 31. This has created many problems to the Government for the implementation of laws and projects.

The attitude of Judiciary of that time was also intended to promote the interests of the land owners. As a result, during that period the power of

eminent domain has only a limited application. According to this concept the whole land belongs to the sovereign. So, it is possible to take over the private property by the State for public purpose. It is to be done only with the authority of law. State is obliged to promote the social interest at the expense of the individual interest. Legislation is based on the promotion of greatest happiness to the greatest number of members on the society. Where there is a conflict between individual interest and social interest the latter will prev

Reference

Equality embodied in the concept of Rule of Law: *Prof: Diecy, Article 14 of the Indian Constitution* – equality before law and equal protection of laws Preamble to the Indian Constitution.

The term socialism is incorporated *into the Preamble under the 42nd Amendment 1976.*

Part IV of the Constitution Directive Principles of State policy, *which are in the form of instructions to the State* Articles 36-51.

Zamindari abolition laws, Ceiling Acts, Land Reforms Acts etc.

44th Amendment –*Articles 19(1)(f) and 31 were deleted changes were made in Article 31. First Constitutional Amendment Act 1951, fourth Constitutional Amendment Act 1955, Seventh Constitutional Amendment Act 1964, twenty-fifth Constitutional Amendment Act 1971, Twenty-ninth Constitutional Amendment* Act-1972, Thirty-Ninth Constitutional Amendment act-1975, Forty-Second Constitutional Amendment Act-1976, etc.

Land Acquisition Act 1894, Article 300A.

Rudolf Von Ihering, Sociological school of Jurisprudence.

Dr. V. D. Mahajan, Jurisprudence& Legal Theory, 5th ed., (1981), P.621.
AIR 1952 SC 252.
AIR 1981 SC 234.
AIR 1952 SC 252.
AIR 1982 SC 149.
(2007) 10 SCC 448.

V. N. Sukla's Constitution of India, *Mahendra Singh* (eds), tenth ed., (2001), P.240.

Ann Van Wynen Thomas and A. J. Thomas Jr. A World Rule of Law: *A Prospects and Problems* (1975), P. 5.

Noshirvan. H. Jhabala, *The Elements of Jurisprudence*, 19th ed. (1988), P.42.

Rehabilitation is not only about providing first food, *clothes or shelter, it is also about extending support to rebuild livelihood by ensuring necessary amenities of life. The ousters should be in a better position to lead a decent life and earn livelihood in the rehabilitated locations* – N. D. Jayal v. Union of India, AIR 2004 SC 867.

Narmada Bachavo Andolan .V. Union of India, AIR 2000 SC 3751.