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of Geographical And Environmental Studies

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December - 2016

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Founder/President

Uma Himalayan Research Institute

11, Rest Camp West, DehraDun

Uttarakhand

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INTRODUCTION OF UHRI

Uma Himalayan Research Institute (UMA Himalayan Shodh Sansthan), a no-loss, no-profit voluntary organization, founded under society Act. 21, 1860, dated 2003, by Dr. Kishore S. Chauhan. It works for the welfare of all living organisms, flora and fauna on the earth. Its main motive is to conserve soil, water, air and environment as well as to study climate, natural calamities, agriculture, eco-system and ecology. The voluntary organization works for the environment and society, keeping in view their sustainable development in mind. Its aims is to arise awareness among the common people about environment, and it is working like an awareness campaign along with the help of other voluntary organizations in schools, colleges and institutions of urban and rural area. It is inching new scales in the field of Natural Resources Management and Preservance for future.

UHRI is running many programmes on environment conservation time to time. 'National Forest Student' is one of such programme in which thousands of students are working for the conservation of environment through planting and caring up of ten trees for regular five years. It has drafted the work plan for natural calamity for the ninety villages of the Bhagirathi valley. The UHRI makes groups of volunteers and prepares them for natural disaster through giving them training of rescue to face and help the people at the time of disaster. It also establishes the 'Farmer Club' to encourage them for organic farming as well as giving them training of organic farming with scientific techniques.



President of UHRI
11, Rest Camp West
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EDITORIAL

We are glad to publish the volume-06, Issue-06, of 'The UHRI Research Journal of Geographical and Environmental Studies'.

There are many problems in editing and publication of research journal such as unavailability of quality papers, respected members are not supporting financially, to subscribe the copies of journal in colleges and universities is hard nut to crack. These are the reasons why the life of research journal publication is short in India. Hence it is the cause behind the lines of tension on the forehead of India in the field of research, this is again the reason why India is still not awarded with any nobel prize in the field of research and research journal publication.

Thus, Indian government should be serious in this field and will effort in encouraging scientists, professors and scholars in the field of research and its publication.

We know that the condition of quality research work in colleges and universities of India is not good, which is in urgent need of improvement and flourishing. The research papers published in this journal are going to be improving day-by-day. We hope that the publication of this journal will prove helpful in the development of our country.

We are grateful for all the people who are working continuously in the publication of this journal. This journal is thankful to Dr. D.S. Negi, Dr. Lata Kaira, Dr. R.S. Chauhan for their co-operation and support.

The main aim behind the publication of this journal is to conserve environment for the welfare of human being and to assess the cause of disasters on the earth, which will help the government and policy-makers in making policies for the development which should be sustainable.

We hope that our researchers and academician will do research on serious subject matters with proper methods. The environment problems on the earth are uprising day-by-day. Thus the earth is crying for to make her out from these problems and our research journal is a small step in this field.

The papers published in this issue focused on the theme of environment conservation, disaster management, environment education, roots of environment in hindu mythology. The team of this journal is thankful to all the researchers.

Your suggestions and feedback are always welcomed.

With this we are Wishing Happy New Year 2016 to all of you.

Editor-in-Chief



Dr. Kishore S. Chauhan

MANUFACTURING SECTOR IN INDIA

(Prospects and challenges)

Dr. Bharat Singh

ABSTRACT:

In the recent years Structural Changes have occurred in Indian manufacturing sector. However, it is not fast enough to change the trajectory of development. Manufacturing is an export driver and creates productive employment and business opportunities, but has not taken place adequately in Indian economy. The contribution of the manufacturing sector is low, around 14 to 16 per cent of GDP and witnessing near stagnation. Technology in manufacturing is stuck at the basic or intermediate level. R&D expenditure is too low to galvanize industries. Growth in manufacturing sector has been declining since the early 2007 due to lack of investment both from the private and public sectors. Lack of demand and slow growth of GDP adversely affected fresh investment in consumer and capital goods industries. High interest rates, too, have contributed to the depressed investment climate. The shrinkage in manufacturing employment is on account of increased capital intensity in all manufacturing firms. The path to revive manufacturing growth requires development of infrastructure, better access to land, and application of new technology, education, skill development and fostering innovation in frontier technologies.

Keywords: Manufacturing Industries, Opportunities, Growth, Exports, Technology, GDP, Employment.

INTRODUCTION:

The term 'structural change' commonly refers to long term changes in the composition of an aggregate which may attributable to changes in the relative significance of sectors of the economy, to changes in the location of economic activity and to other concomitant aspects of industrialization, which are jointly referred to as structural change¹. Over the years, the progress in manufacturing is linked to rising per capita income. A country's optimal industrial structure will differ according to its stage of development and its given characteristics (Lin 2010). Countries at different stages have comparative advantages in different industries. This phenomenon indicates changes in structure of the industry. Ever since the Industrial Revolution in the 18th century, the manufacturing activity has been considered to be the main engine of economic growth. In the development theory the structural changes was associated with shift of resources from primary sector to the manufacturing sector. However, in the recent years, the role of manufacturing sector has been questioned. First, now the advanced economies are mainly service economies. Secondly, the importance of the service sector is recognized, particularly trade, transport and financial services that have contributed to industrialization. Lastly, the recent experiences of India and some of the developing countries raises the question of whether services have become key sector in economic growth in the 21st century. This paper makes an effort to

examine the proposition that manufacturing has acted as the main engine of growth in India in the period 1991-92 to 2010-11. It may be noted that the industrial policy has been drastically altered and modified from inward looking import substitution to outward looking export policy to a large extent. The changes brought about were not swift and fast, it was slow and calibrated. The “License and Permit Raj” earlier three decades failed to bring about satisfactory rate of growth in the manufacturing or for that matter industrial growth. Further, emphasis on manufacturing did create discrimination against the agricultural sector and which in turn harmed industrial development. In effect, it failed to keep balance of inter sectoral linkages between manufacturing and service sector. Indian manufacturing was by and large labour rich and capital poor. But the industry was using little labour and using capital relatively inefficiently. The industry was trapped by perverse policy. Prior to 1980’s there was a considerable diversification of Indian manufacturing as consequences of policy distortions. The import substitution strategy and encouragement of public sector investment created the industries which were not acceptable at the comparative income levels. The mid 60s and mid 70s witnessed stagnation in industrial growth, particularly the manufacturing sector. There has been significant slow down in the growth of heavy industries and slow and indifferent growth in other industries. The main factors that contributed this industrial stagnation were: 1) slow growth of agricultural incomes and their impact on constraining demand for industrial goods; 2) the slow down in public investment after mid 60s with its impact on infrastructural investment; 3) poor management of infrastructural sectors, leading to severe infrastructural constraints; and 4) industrial framework, including both domestic industrial policies and trade policies and their effect in creating a high cost industrial structure in the economy². There has been a slow down in public investment after the mid 60s. There were several factors responsible for this state of affairs. Mainly two reasons stand out. There were two severe agricultural droughts in succession and large decline in foreign aid. The public savings too declined. More importantly, the conservative attitude of the government deficit financing resulted in a marked slow down in public investment. As public investment slowed down, this led to direct setback in the demand for certain heavy industry goods for example, railway wagon producing industries. More significant than the demand side impact of slow down in public investment was on its supply side impact. The cuts in the public investment were distributed across sectors and it led to basic supply bottle necks in the economy³. The under investment in the infrastructure was coupled with growing inefficiencies in these sectors. Time and cost overruns were the common features. The management of the critical input supply sector power was highly inefficient and defective. There was a marked deterioration in electricity generation and freight traffic moved by the railways. The supply side constraints generated by the infrastructure was compounded by an industrial policy framework which was directed towards regulation rather than development of the manufacturing sector. The import substitution industrial policy led to export pessimism. The process of import substitution was performed inefficiently. There was no phasing out of import substitution for any specific industries, the process of granting import substitution was not systematic. The setting up of indigenous capacity was considered as a sufficient condition for import substitution irrespective of cost and quality considerations. This resulted in high cost industrial structure incapable of surviving without high protection. This totally discouraged foreign as well as domestic competition. The system did not provide any incentive for improving efficiency, bringing down the costs and improving quality. The government administration was bias towards regulation rather than promotion of private industry which was assigned the task of providing consumer goods. The business environment was non too friendly but more hostile to private enterprises. Contribution of total factor productivity was negligible for industry groups. Add to it, the rise in the prices of international oil made deep dent on the budget in 1970s. Under investment in infrastructure led to shortage of coal, power and rail transport. Under utilization of installed industrial capacity in a wide range of industries which slow down the rate of growth in manufacturing. Increased concern on regional dispersion led to uneconomic choice of location and often led to fragmentation of production and uneconomic scale of production at a single location. The licensing procedure made project implementation time consuming and cost overrun. To sum it up, the industrial policy till 1980 failed to meet its set objectives. The structural changes were limited and agriculture remained a dominant sector.

OBJECTIVES AND RESEARCH METHODOLOGY OF THE STUDY:

The main objective of the study is to analyse the future prospects and challenges of manufacturing sector in India. And other objectives are the impact of Manufacturing sector on GDP and employment.

The study used the secondary data for the period 2000-2001 to 2011-2012. Data was collected from the SEBI, Planning commission report 2013, Economic survey of India and Reserve bank of India bulletins. GDP is measured by a number of components but in this study only manufacturing, industry were selected as major components for the period selected for the study.

BROAD TRENDS IN MANUFACTURING POLICY AND ITS IMPACT:

The key features of reforms in the 1980s were-

1) import liberalization, particularly of capital goods and intermediate inputs through the expansion of the range and number of goods on the open general licensing list and through a reduction canalization; 2) The extension of export incentives through the tax system and liberal access to credit and foreign exchange; 3) the significant relaxation of industrial licensing requirements through direct 'delicensing' of some industries and through 'broad banding' which permitted firms in some industries to switch production between similar product lines; 4) decontrol of administered prices of key intermediate inputs. Notably Kohli (2006) and Rodrik and Subramanian (2004) characterise the reforms of the 1980s as having been "pro business" in orientation. The reforms of the 1990s as considered to be "pro market" in orientation. It included: 1) The abolition of industrial licensing and limiting the scope of public sector monopolies to a small number of industries; 2) the liberalization of inward foreign direct and portfolio investment; 3) sweeping trade liberalization including the elimination of import licensing and the progressive dismantling of non tariff barriers; 4) major financial sector liberalization, including the removal of capital controls on capital issues, free entry for domestic and foreign private banks and the opening up of the insurance sector; and 5) liberalization of investment and trade in important services, such as telecommunications. However, there are some areas remained untouched by reforms in the 1990s were the labour market, small scale reservations and agricultural reforms. Some these sectoral reforms were undertaken in a gradual manner at the latter stage. However, the labour reforms were remained untouched to a large extent. There has been a positive effects of these reform measures, example, annual average rate of growth of GDP per worker increased from 0.7 per cent in 1970s to 3.9 and 3.3 per cent respectively in 1980s and 1990s, and it was estimated to be around 4.3 per cent in 2000s. While total factor productivity (TFP) growth increased from 0.5 per cent to 2.5 and 1.6 per cent over the same period (Ahluwalia 1991). There has been shift in the growth pattern. This has been carried forward in 2000 to 2011, with some aberrations in 2008 and 2009. The development in the growth pattern has been slow and sluggish. The sectoral share have changed over the reform period and also there are changes in the factor intensities and diversification. The agricultural sector value added to GDP declined from 35 per cent in 1980 to 17 per cent in 2012. Over the 32 years the share of agriculture in has shrunk by 18 percentage points. In the same period the share of industrial sector in GDP increased from 24 per cent to 26 per cent and that of manufacturing declined from 16 per cent to 14 per cent. For that matter, the share of manufacturing never went over 17 per cent of GDP ((1995 and 1996 it was 17 per cent). Industries share in the GDP went up to the maximum of 29 per cent of GDP in the years 2006 and 2007. This clearly indicates there has been stagnation in both industrial as well as manufacturing sector. only sector which grew at a faster rate was the services sector. In 1980 the share of services sector in GDP was 40 per cent and in 2012 it increased to 57 per cent and a net increase of 17 percentage points over the years (see table 1). Fall in the share of agriculture sector in GDP has been adequately compensated by the service sector. This pattern of development raise questions on its nature, sustainability and replicability. It is in this context, the kind of stagnation that manufacturing experienced need to be examined.

Table - Share of Gross Capital Formation and Gross Fixed Capital Formation to GDP (in per cent)

Period	Gross capital formation	Gross fixed capital formation
1980	18	9
1985	23	9
1990	25	14
1995	26	15
2000	24	16
2005	34	23
2010	37	24
2012	36	23

Source: World Development Indicators, various years.

Manufacturing Growth and Employment Scenario The growth rate of the manufacturing sector which accounts in terms of weightage of 75.53 per cent of the industrial sector did not show strong trends in growth over the last decades (from 1981 82 to 2011 12). During the 1980s, by and large, the growth rate hovered around 7 to 8 per cent and the annual average growth rate was 7.63 per cent. This was a period in which industries were allowed to expand the capacity of production and relatively liberal capital goods imports were permitted. The manufacturing growth rate declined in the first decade of the liberalization (1991 92 to 2000 01), it was 6.22 per cent per annum on an average. The growth rate picked up in the middle of the decade but it tapered off towards the end of the decade due to the Asian financial crisis of 1997 and 1998. The decline in the growth rate was also influenced by downswing in the European and North American economies. The decade of 2000s (2001 to 2011 12) opened with world wide recession with low rate of growth in manufacturing. The growth recovered in 2003 2004 this continued till 2007 08. During this decade the manufacturing sector grew by 8.27 per cent per annum on an average.

Table : Growth Rates of Manufacturing and Industrial sector 1981 82 to 2011 12 (in per cent)

Period	Manufacturing	Industrial
1980 81	7.9	9.3
1985 86	9.7	8.7
1981 82 to 1990 91	7.63	7.86
1990 91	9.0	8.3
1995 96	14.1	13.0
1991 92 to 2000 01	6.22	5.97
2001 02	2.9	2.7
2005 06	8.9	11.9
2009 10	11.0	10.5
2011 12	3.0	2.9
2001 02 to 2011 12	8.27	7.21

Source: Reserve Bank of India, Handbook of Statistics, Various years.

Index numbers of industrial production use based classification from 1991 92 to 2012 13 shows that during this period consumer durables and consumer goods grew relatively at a rapid rate, this is particularly more impressive during 2001 02 to 2012 13 period. Growth has been relatively modest in case of consumer non durables and poor in case of basic goods, capital goods and intermediate goods (see table 4). The growth has been relatively impressive in capital goods sector during 1996 97 to 2000 01. Otherwise this sector did not show satisfactory growth. Somewhat recovery could be seen in basic goods only during 2001 02 to 2012 13. The growth rates of intermediate goods sector highly fluctuated over the reform period. This is more or less case with

the consumer non durables. In the reform period, consumer durables and consumer goods did attract relatively more investment from the domestic sources as well as foreign sources.

GROWTH IN EMPLOYMENT-

Growth in employment rate in the organized manufacturing sector has been dismal during the post liberalization period with the exception of the period from 2006 to 2011. It was negative during 2001 and 2005 period to the extent of 3.2 per cent per annum. Even in the decade of 1990s it was just positive to the insignificant extent (see table 6). The growth rates in the public sector has been continuously declining during the post liberalization period. Over the period public sector has been shrinking due to lack of government investment and some degree of privatisation. There was hardly any new investment On the other hand, private sector did not show high response to enhance employment. Relatively better growth in employment came in the private sector from 2007 onwards with exception of the year 2010 when the employment growth was negative. With inflexibility in hiring labour and rigid labour laws the private sector opted for more capital intensive mode of production. Increased competition in the domestic market also induced manufacturing units to go for capital. Further, the import liberalization enabled them to obtain new technology and capital equipment on easy terms.

Table- Employment Growth Rate in Organized Manufacturing Sector Public and Private Sector: 1991 to 2011 (in per cent per annum)

Period	Public Sector	Private Sector	Both Sector
1991 1995	1.24	1.10	0.25
1996 2000	2.70	1.62	0.5
2001 2005	5.89	2.46	3.21
2006 2011	1.75	3.22	2.18
2006	3.36	1.34	0.04
2007	0.46	4.92	3.48
2008	3.00	4.63	3.0
2009	0.01	4.59	4.06
2010	0.57	0.27	0.13
2011	4.70	4.11	2.61

Source: Economic Survey, Government of India, Various Years. Calculations by the author.

The declining trend in the employment content of growth in the manufacturing could be seen in terms of values of employment elasticity⁴ (ratio of employment growth to growth in value added) in table 7. Over the years employment elasticity in manufacturing has steeply declined. The employment elasticity with respect to GDP in manufacturing was 1.01 in 1983/87-88 period and it has fallen to 0.11 in 2004-05/2009-10. Some of the work tasks performed by the manufacturing has been outsourced and sub contracted to the service sector. This kind of changes were also responsible for contraction of employment in manufacturing sector. With the induction of new technology and knowledge component the use of labour did decline. Moreover, the entrepreneurs prefer use of

capital than labour because the management of labour is more difficult. Further, it is not easy to retrench workers. More importantly, the process production itself has changed to make products more competitive.

The study of Rajesh Raj (2006) Makes observation that the growth of value added has declined from 9.4 per cent in the pre reform period to 4.4 per cent in the reform period, implying that the unorganized manufacturing sector failed to sustain the growth momentum during the post reform period. This has been due to slow growth of employment and investment in the post reform period. This was on account of employment decline in the reform period. According to the above study the food and related industry group emerged as a major contributor to employment (from 23.6 per cent in 1978 79 to 27.6 per cent in 2000 01 period) and also value added (from 17.6 per cent to 20.1 per cent in the same period). At the same time, textiles and allied industries saw erosion in their shares in employment (from 35.8 per cent to 29.1 per cent between 1978 79 and 2000 01) and value added (from 33.1 per cent to 28.7 per cent in the same period). However, this sector continue to be the largest source of employment generation and value addition. Manufacturing of machinery goods and minerals registered high rates of value added growth both in pre and post reforms period. Their share in employment and investment increased. In contrast, basic metal and cotton industries had low rates of value addition growth and similar was the case with employment. The textile garment industry grew rapidly during the reform period which was on account of increased investment in the sector and also the reflection of boom in demand. This sector grew rapidly in the unorganized sector in the reform period. In contrast, the performance of wood products, cotton products and beverages were disappointing. Their growth rates fell in the reform period. The analysis of productivity in the unorganized manufacturing sector reveals that the productivity has improved during the reform period, however, there has been a wide variation across the industries. The low growth performance industries such as wood products, cotton products and beverages did experience low rise productivity. The total factor productivity show decline of 1.19 in the textile industry despite of its impressive performance in terms of gross value added, employment and investment. This indicates that the textile industry has a potential to enhance output much beyond the present level. The decomposition of productivity growth suggests that technological up gradation needs to be prioritized to improve the growth of output of the unorganized sector.

SOME ASPECTS OF STRUCTURAL CHANGES:

The fixed capital in manufacturing increased by 19.4 per cent over the period 1991 92 to 2006 075. The increase in the fixed capital was faster in the initial years of reform and it tapered off in the subsequent period particularly in the period 2001 02 to 2006 07. This was largely due to the down turn both the Indian economy and the global economy. The process of economic reform also slow down in the later period. An increase in fixed capital differed vastly from industry to industry. For example, apparel (64.4%) and coke and petroleum products (54.7%) have high rate of growth in fixed capital. Similarly in publishing and printing (32.0%) and motor vehicles (31.8%) but to lesser extent. The rise in the fixed capital was low in important industries such as basic metals (12.4%) and machinery and equipment (12.9%). For details see table 8. The gross value added (GVA) in the manufacturing sector increased by 17 per cent during 1991 92 to 2006 07. In the second phase (1996 97 to 2000 01) the GVA growth declined to 1.9 per cent and in the subsequent period (2001 02 to 2006 07) the growth rate was restored to 16.8 per cent per annum. It may be interesting to observe industry wise growth in GVA. The growth rate of GVA has been impressive in case of coke and petroleum products (74.9 %), basic metals (30.2%), and motor vehicles and trailers (24.7%). Whereas it has been low in case of wood and wood products (3.6%), radio, T.V. and communication equipment The share of all labour intensive industries in total manufacturing GVA has declined more or less continuously over 1991 92 to 2006 07 period.6. Steep decline is evident in case of textiles, paper and paper products. Among the capital intensive industries share of GVA increased sharply with respect to coke and petroleum products, motor vehicles and trailers and basic metals. This scene clearly indicates

the industrialization is moving towards capital intensity. Yet another example is the share of labour intensive industries has declined in total manufacturing GVA over the period from 1991 92 to 1995 96 period to 2001 02 to 2006 07 from 29.3 per cent to 23.8 per cent. And in the same period, capital intensive industries GVA has increased from 70.7 per cent to 78.6 per cent. This also supports view that the manufacturing activity is moving towards capital intensity. Falling GVA growth in labour intensive industries is a cause concern to a labour surplus country like India. It has a long term employment implications. Increase in the fixed capital growth rate has been higher than GVA growth rate in most of the industries during the reform period. However, the exceptions are coke and petroleum products, basic metals, electric machinery and apparatus, medical, optical instrument and watches and transport equipment. All these product groups are capital intensive industries. This may be due to technological changes in these industries which enhanced the productivity per worker. The rise in the growth of fixed capital is higher than the rise in work force in all industries except furniture. And finally, the rise in the GVA is higher in all industries over the work force rise except in the case of apparel and dyeing fur. This indicates the capital intensity in the industry is growing at a faster rate. The output is becoming increasingly capita intensive including that of labour intensive industries. The labour productivity is also on the rise with increased amount of capita per worker. Gross value added per unit of capital declined in most of the industries during the period 1991 92 to 2006 07, except in case of coke and petroleum products, basic metals, electric machinery and apparatus, medical, optical instrument and transport equipment. The GVA per unit of fixed capital declined sharply in the case of wood and wood products (68%), apparel and fur (64.3%), office, accounting and computing machinery (59.9%), textiles (57.8%), publishing and printing (53.8%) and radio, T.V. and communication equipment (50.9%). All labour intensive industries experienced steep fall in GVA per unit of fixed capital for details see table 10. It provides yearly variations in each industry about GVA per unit of fixed capital. For the total manufacturing as a whole decline in GVA per unit of fixed capital was 9.24 per cent per annum during 1991 92 to 2006 07 period. The GVA per worker increased in all industries except in the case of apparel and dyeing of fur during the period. Among the labour intensive industries, GVA per worker is highest in publishing and printing, tobacco products and food products and beverages; the lowest is in leather and leather products. Among the capital intensive industries, the GVA per worker is high in the case of coke and petroleum products, transport equipment and basic metals. However, it is low in the case of rubber and plastic products, office, accounting and computing machinery, radio, T.V. and communication equipment. For total manufacturing as a whole, GVA per worker increased by 136.20 per cent from 1991 92 to 2006 07 (see table 10, col.2). Similarly, fixed capital per worker increased in all industries, the highest being publishing and printing, coke and petroleum products, tobacco products, wood products and textiles. The capital per worker increased rapidly in case of labour intensive industries. The fact again emphasised is the labour intensive industries are substituting capital for labour.

THE ACTION REQUIRED:

The policy corrections are required to enhance manufacturing output. The New Manufacturing policy (NMP) has proposed to increase the share of in GDP to 25 per cent and increase the absorption of labour from around current 50 million to more than 150 million by 2022. Besides, it seeks the creation of required skill set among the rural migrants and urban poor to make growth inclusive; increased domestic value addition; and technological depth in manufacturing; enhance global competitiveness of Indian manufacturing; and ensure sustainability of growth particularly with regard to energy efficiency, optimal utilization of natural resources and restoration of degraded eco system⁹. Meeting the objective of 25 per cent share for the manufacturing sector, the implications ought to be looked into. In the period 2005 06 to 2010 11, the manufacturing sector grew by 9.35 per cent and GDP 8.62 per cent per annum. This implies that the sector would need to grow at an average of 14 per cent per annum in the 11 years (2011 12 to 2021 22), while retaining the policy target growth of 4 per annum in primary sector and GDP growth at 9 per cent per annum for the period. This would mean a growth of 8.6 per

cent per annum in services. And the share of services would remain constant 10 (see table 11). This analysis shows that the rise in the share of manufacturing sector would be entirely on account of the decline in the share of the primary sector in GDP. The average growth of 14 per cent per annum appears highly improbable in the context of manufacturing sector growth in the last two years. Currently, new investment is not coming in green field ventures. Less said the better about the foreign direct investment. However, it may be useful to outline measures needed to achieve some better results in this direction.

First, the issue of availability of land for industrial and infrastructure use is caught in a controversy. The present Bill on Land Acquisition and Rehabilitation Bill which will come into effect in January 2014 has not met the industry's approval, particularly issues relating to compensation. This need to be attended to by the government. Further, reallocation of agricultural land to manufacturing is linked with the issue of agricultural productivity and food security. The situation could be a win win for both manufacturing and agriculture, if agricultural productivity increases to a level both less land and labour is required in that sector for food security. The surplus land and labour can become available for manufacturing. The manufacturing sector to better equipped to absorb the labour displaced from agriculture. **Second**, the growth of the services sector depends on the growth of manufacturing. At the same time, growth of the services sector with quality benchmarking could contribute to the productivity improvements in manufacturing. Banking, insurance, trade, transport, communication and skill development are some of the sectors where the growth will be driven by a competitive and vibrant manufacturing sector and in turn would contribute to growth of manufacturing sector. The forward linkage with the services sector is strong but with the agricultural sector it is low. There is a need to strengthen the linkage of agriculture with the manufacturing sector. **Third**, within manufacturing there is a need to shift structurally in favour of high value addition industries. Specific policy thrust is required for the development of sub sectors like high precision machinery, pharmaceuticals, biotechnology, ship building, defence production and aerospace industry which provide scope for diversification. Growing domestic demand in many of these sectors has to be leveraged for locating production facilities in the country by bringing in suitable foreign collaborators. This can provide depth to Indian manufacturing while increasing value addition from this sector. These sub sectors are research and technology intensive with significant backward linkages. System integration is the key area where India has ample scope to expand, leveraging its technical education and existing production base. While India was the 9th largest producers of manufactured product with a share of 1.8 per cent of global manufacturing value added, it was not a dominant producer in any of the broad manufacturing category. India will need to nurture a large science and techno based innovation eco system that channelizes the capability of young population to understand new technology and absorb and simulate it to meet local needs. **Fourth**, investment requirements in India will continue to exceed the availability of resources from the domestic savings. The investment saving gap during 2005 12 was 1.7 per cent of GDP. This gap may be covered through foreign direct investments (FDI). There is a need to create economic environment for the larger inflow of FDI. There is need for further liberalization in FDI policy. **Fifth**, the new manufacturing sector will need to be environment friendly. Environment issues encompass exploration, excavation, use of resources and pricing. The resource needs of the manufacturing sector would require a certain balancing, consistent with sustainable protection of environment. A more transparent policy framework for pricing and allocation of natural resources would be a starting point in this regard. There is also a case for creating capacity in harnessing solar energy on a scale and technology that provides with a serious alternative to addressing India's energy security.

New Challenges and Emerging Paradigms The task of raising manufacturing to 25 per cent of GDP encounters several new challenges in the current and the next decade. Some of them are internal and some of them external. The major challenges are:

- o How to achieve industrialization in an highly unequal and globalized world economy, dominated by large multi national companies and characterised by fragmented global value chains (GVC's);
- o The shrinking of policy space for latecomers like India to Industrialize in the present global order led by the institutions such as the WTO and regional economic trade blocs;
- o The rise of Asian economy like China and its

implications to Indian industrialization in a highly competitive domestic and international market; o How to deal with jobless growth in manufacturing in the pace of increasing capital and knowledge intensity in the process of production; o Creating adequate systems for financial intermediation that ensure the long term funds for industrial investment; and o How industrial policies should respond to the threats of global warming and climate change. Finding comparative advantage in a “slice” of production chain may perhaps easier than finding a comparative advantage in the entire production chain. In this context, global value chain has made industrialization much easier and quicker. In totality, the global value chains have opened a new industrialization path. The concept one nation supply chain has disappeared to a large extent with the advent of transnational corporations and organization of new type of service companies. The global trade started to shift from “trade in goods” to “trade in tasks”. The world trade in parts and components increased from \$502 billion in 1992 to \$2039 billion in 2010. The entrepreneurial drive and ability to adjust to the emerging situation will matter. Indian entrepreneurial class need to accept these ethos to carry forward the process of rapid industrialization.

CONCLUSIONS :

The manufacturing is an export driver and it creates employment and business opportunities. Its continued growth is an absolute necessary for forward movement in economic development. The experiences many countries is testimony to this fact. The Japanese manufacturing sector grew by leaps and bounds in 1970s and 1980s. South Korea and China repeated the same story in 1980s and 1990s respectively. The contents of the stories may be different to some extent but emphasis on the manufacturing sector is common. The growth was based on development of infrastructural facilities, abundant encouragement to enterprises and creation new entrepreneurship, availability finance, and more importantly incentive to R&D particularly innovation in manufacturing. The government support to industry was an critical input. This model cannot be replicated in the contemporary period but with marginal adjustment it is possible adopt this model.

The recent stagnation in the manufacturing sector is due to lack of investment from the private sector as well as public sector. The new investment projects have been drying up across sectors, partly as consequences of rising stalled projects which reduces the ability of firms to start new ones. New projects of both private sector and governments have been falling. Several factors have caused the stalling of investments and drying up new investments. A CMIE study¹⁴ shows that in 2011 12, 20 projects accounted for 70 per cent of total cost of shelved projects. The analysis of the projects indicates difficulties in land acquisition, coal linkages and mining bans as major causes. Other stalled project suggests that policy issues such as in telecom spectrum allocations have also played a role. Lack of demand condition and slow growth of GDP adversely affected fresh investment in consumer durables and non durables. Similar is the case with food and agro based products. Lack of growth and slow down in investment are feeding into each other, with causation flowing both ways. High interest rates have contributed the depressed investment climate. Most worrisome part the sharp slowing of corporate investment which is the source future manufacturing expansion. At the current reckoning it is indeed extremely difficult or impossible to realize 25 per cent of GDP from the manufacturing sector by 2021 22 or even at the end of 2024 25. At best, with great effort we may realize 20 per cent target from manufacturing. At any point of time the manufacturing sector never grew by 14 per cent per annum. Even this requires high focus on creation of infrastructure, better access to land, development of communication technology, education, skill development and fostering innovation in frontier technologies.

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2

ESCAPISM IN ANNE TYLER'S 'EARTHLY POSSESSIONS'

Dr. Vandana Chauhan

Anne Tyler is a domestic novelist, who describes her characters from the perspective of their relationship with other persons of their family and community. She herself admit this fact herself. Her novels have the components of evasion, home-coming, endurance and reliance through the means of different characters irrespective of their age and gender. Anne Tyler's novel 'Earthly Possessions' also reveals the same components through the life sketch of a middle –aged woman, Mrs. Charlotte Ames Emory, who loves queerness and desirous to break all the boundation and bondage, gets chance in her childhood, adolescence and middle age to fly away from her home. But in her middle –age she get a best chance to elope, she does and gets entrapped in a car by Jake Simms Junior. They undergoes a short trip, which gives pleasure to her. But in this short trip, she comes to realise that the act of relinquishing never proves to be a fine solution of any problem and domesticity is not a path of hardship. She feels that the real contentment and love for human kind exists in these relationship within the four walls of home. She realizes that the person, who quits from their abode and run behind the outside and fake world, will never get real love and happiness, never achieve success and pure unselfish passion, as all these components lie in the possessions of earth.

It is to be noticed that the female protagonist, Mrs. Charlotte Ames Emory is a round character who undergoes the stage of development, progress and improvement and gain ground in head and heart, moves from immaturity to maturity, from ignorance to brightness and knowledge. Finally, a curtain raised up from her mind and she realize the real concept of love and relationship. In a glance, the exterior structure of the novel seems to be flat while reading between the lines of the novel, there is a turmoil of emotion and progress of mind of the character. Likewise the same situations are being faced by the people of society in day-to-day life, in which they unknowingly become the victim of misunderstanding about family, relationship, domesticity, liabilities and boundations, appears as tyrant but when the veil of misunderstanding fog evaporates from the eyes, they see everything transparently as all the situations becomes as clear as crystal. They realize the fact that relationship and domesticity are as inevitable as oxygen and the existence of life is totally impossible. Hence without family and its possessions, there is no life and to think about its meaning is impossible.

Thus Anne Tyler succeeds in making it a very electrifying novel replete with suspense and retrospective technique.

Mrs. Charlotte Ames Emory, late child of her parents, her mother, Lacey Dabney is fatty, as round as mushroom and her father, Mr. Murray Ames, a photographer. Her mother Lacey Dabney's fattiness symbolizes the possession of fat in her body, occupy large space while sitting and walking. Her father, Lacey Dabney, a photographer, catching and keeping the memories of past and make them safer to keep for longer and longer time period. Both of these things are disliked by Charlotte Ames. Her husband Saul Emory is a preacher in Hamden Bible College Church. Many followers are visiting their house to listen the sermon of Charlotte's husband after church, again, occupy the space in her home, dislikes by Charlotte. Her husband brings all his parental belonging in Charlotte's house. All these things overstuffed her house, give appearance of bursting at the seams. Moreover, Charlotte's brothers-in-law, Amos and Linus also begin to live with them, along with their boarder, Ms Feather, also enhances Charlotte's frustration and so her desire to get rid from earthly possession become more deeper and violent. Charlotte has a girl child and becomes infertile after a miscarriage, her husband brings an orphan boy baby Jiggs in home.

Many incidences occurs one after one which prepare Charlotte more and more to break the shackles and make herself free, one of them, is her affair with her brother –in-law. Amos Emory, who proposes her to run away from house but charlotte's refuses, Amos rebukes her so bitterly and calls her a passive woman this things not only excite her but makes her more energetic and more determined to get her freedom.

Accidentally, Charlottes is extorted by mugger, Mr. Jake Simms Jr. who robbed the Mary land Safety Saving Bank, where Charlotte is also present for some work. Jake Simms Jr. a ruined Chauffeur and a fugitive from jail, do robbed bank for getting married to his unwed and pregnant beloved, Ms. Mindy and for it he will seek help of his friend, Oliver. Kidnapped Charlotte gives her financial assistance to Jake Simms Jr. This incidence shakes Charlotte to the bottom of her heart and she decides to return to her husband.

The desire of escaping from her house since childhood may be due to her mother's prejudice that her child may be exchanged in hospital. Charlotte's mother Lacey also doesnot see and find any resemblance in the features of baby Charlotte with any family member either from Debney (her own parents) and Ames (her in-laws). Baby Charlotte herself Compares, comes to a decision and concludes the same unressemblance and genetic unbelongingness to her ancestors. These things keeps on cementing in soft mind of baby Charlotte that it molds her whole life and mentality. Secondly, baby Charlotte also lives with a fear that,

“Somewhere out in the world her little blond daughter was growing up with false name, a false identity, a set of false, larcenous parents... Sooner or later her true daughter would be found. The what?... There was no point in eating. Anything you ate in that house would sit on your stomach forever, like a stone. These were my two main worries when I was child : one was that I was not their true daughter, and would be sent away...” (p-14-15)

Thus Charlotte grows up lonely and is always embarrassed from her mother's attitude as her mother prejudice about mixing of babies in hospital and secondly, the pregnancy and delivery, for her mother is like a drastic natural calamity such as volcano, earthquake, storm etc.

“My mother believed there'd been a mix-up at the hospital... On the day I went home they handed me this bundle : a stark naked child ... why ! I thought, This is not mine ! I ... surprised ... I took what they gave me. (p-13).

These words and behaviour of Charlotte's mother has imparted a deep

ill-impression on the soft mind and innocent heart of baby Charlotte, now, she's always thining about her biological parents and her roots. This might be the reason behind the desire of elopement, from home, family and

responsibilities or earthy possessions, of Charlotte. She wants to find out or to search out her real blood relations where she would not assume as other or stranger one. She is in search of her own home Charlotte's mind overbrims with the questions of her individuality and stability. She assumes herself as a stranger and outsider in Ames family. She escapes from home in search of her biological parents as "she spends much of her time constructing alternative mother". (p-96)

These incidences in her life influenced her little mind that she is always dreaming and knitting plan to leave her home with bag and baggage for good. This dream of escapism is growing in her along with her growing age and becomes her life-long, day-night companion. This is the reason she hates the burden of possessions on her, avoids people, does not have friends, loves strange and unfamiliar faces etc. Hence, the family, home, relationship and responsibilities appear as a prison for her, as a fetter for her.

"... walking in the overused air and my parents' eternal questions everything came back to me : I remembered who I really was. In the smoky mirror ... my pearls were... outlandish ... My face had a yellowed look around the edges... Through an enormous effort of will. I became known as the most vivacious girl in the senior class... I had few boy friends, though nobody serious. And girl friend too ; we rolled each other's hair up as I don't know how many slumber parties myself, of course. No one ever asked me why not." (p-54)

After the death of Charlotte's father, she left her college and take the charge of her father's photography studio. It seems as a dungeon to her where she has no permission to look outside, She gets throttled in this congested, murky and decayed ominous atmosphere. She gets over suppressed under the burden of responsibilities of financial management in her home, and care of totally physical and mental dependent mother. She becomes so much tense and overburdened that she feels.

"... it had hit me when I was : home trapped, no escape... I saw my life rolling in front of me like an endless, mildewed rug. It seemed to me that photos froze a person, pinned him to cardboard like a butterfly... In the darkroom I had the attacks of shortness of breath. I would grit my teeth and endure.... Everything about that place was depressed... We lived in a smaller and smaller... area of the house.... I dreamed I went to Markson college and found it locked and abandoned, its quadrangles echoing..." (p-56-57)

Charlotte falls in love with Saul Emory, exchanges ring and dreams that after marriage they would settle at new place in new house but again, it is her misfortune still there as Saul becomes a preacher at Hamden Bible College and keeps his mother's furniture in Charlotte's home which gives a look of bursting at the seams.

"A husband was another encumbrance... Saul gave me engagement ring. I was worried for months... I was glad when times got hard and we had to sell the ring back to Arkin's Jewelers... The house was overstuffed as it was, so he had to double things up : an end table in front of another end table, another sofa backed against the first. It was crazy, a Siamese twin... trying to get rid of all belongings that would weigh me down on a long march I was relieved" (after throwing) "It would only have been a burden... How did I end up with so much, when I had thrown so much ?... They were keeping me here forever, all the long, show days of my life." (p-36-37)

Charlotte A. Emory has same feelings towards her children, daughter Catherine (Selinda) and adopted boy, Jiggs, as she has toward her husband, homes, furniture and friends.

“I looked at my children with some mixture of love and resentment. . . I was pleased when I lost my friends. . . I’d though it would be a mistake to have another child. . . I imagined that one day he might lose his faith just like that, and go on to something new. Join a motor cycle gang why not?” (p-37)

Jake Simms Jr. a victim of circumstances forced him to resort to robbery and to abduct Charlotte. He has two aims behind all these deeds, first to make free his teenager pregnant beloved, Ms. Mindy, from her prison home and secondly, visits his friend Oliver’s Motel with the hope of some help from him. He proved as the eye-opener for Charlotte, who clears the veil or fog of prejudice and misunderstanding from her eyes and opens the doors of her mind. He is the only person who makes her understand the real meaning of life. Jake changes her thoughts and clear the picture of life as crystal.

Hence, a revolutionary change comes in life of Charlotte, she recalls her past and feels her life full of love and care, happiness and satisfaction. At last she realizes that the escapism is a show of cowardice which is completely very unfortunate. She feels that the actual life is to face the truth, reality and hardship of life despite of running away from life. She gets success in achieving maturity and goes far from self-destructiveness. In addition, she transforms from “passive and unreliable narrator” into an “active and reliable.” (Jones, Anne G., Home at last and Home Sick Again : The Ten Novel of Anne Tyler, The Hollins critic, 23 April 1986, 7-8).

Hence, Charlotte’s life is giving a message to all human being that the soul of life is in boundaries, commitments and responsibilities, it keeps the real happiness and joy of life. These earthly possession are not burdens or shackles creates hindrance, infact, they are thread of love, essential for the boundation among families and friends. To run away from these is not any solution instead, right and justified way of living is to live with possessions to face struggles of life and conquer trouble with support of your kith and kin.

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3

TRAGIC VISION AND SOCIAL ISSUES

Dr. Nishant Bhatt

Tragic vision is made up of two words tragic and vision. Tragic means something wrong happens in the life of a protagonist and leads to his downfall and his future is totally insecure. Vision means the act of seeing things in the future. John Galsworthy's tragic vision means the act of seeing things in the future. John Galsworthy's tragic vision includes all those social evils or issues which were present at that time.

The present paper highlights the vision of the writer with an instinctive sense of fairness. It shows us that he was fair to each and everyone. He does not show a good man's virtue or the bad man's vices. He shows us the cruelty of the English judicial system and the destruction of innocent lives that it causes without presenting a single villain. Every writer is always the product of his age. His vision is coloured by the circumstances of the times he has been living through. He puts forward all the circumstances of his age and society. When John Galsworthy's started writing in the nineties of the last century, England, nay all Europe was going through radical changes in all spheres of human thought and activity. To know more about the tragic vision first of all we should know more about tragedy. In tragedy there seems a mix of seven interrelated elements that helps us to establish what we may call tragic vision and these are as under :-

1. Conclusion is catastrophic.
2. Catastrophic conclusion will seem inevitable.
3. It occurs ultimately, because of the human limitations of the protagonist.
4. Protagonist suffers terribly.
5. Protagonist suffering often seems disproportionate to his or her capability.
6. Yet the suffering is usually redemptive live in bringing out the noblest of human capacities for learning.
7. Suffering is also redemptive in bringing out the capacity for accepting moral respectivity.

In today's context, tragedy is caused because everyone thinks of himself and nobody has any sympathy for the rest. In almost all the plays of Galsworthy he tries to show this aspect of human life which is completely true because of the inhuman and invisible force called society. Society is an organization of individuals but it acts with less intelligence than individuals making it. Society has made laws for its protection. It punishes those who break laws without considering it.

A thief is made, not born. Necessity often forces a man to steal in adverse circumstances. Once he is caught, he is subjected to such in human treatment that he makes up his mind to take revenge for this cruel treatment. Finally he possesses a miserable life in prison or is hanged or commits suicide. It is the society that drives people to commit crimes and drives them to destruction.

The individual is crushed under the mighty wheels of social forces. Society has no sympathy for the suffering of individuals. Galsworthy sees all these problems very minutely. He used to say that what is the need of the society

if society is not helping the man coming out of Jail for his wrong task? He says that Justice has not been done with him on or because, We are not helping them. Looking at these circumstances what is the future of society? Through his plays and novels written on different themes he explores the reality of society that individuals should be given the same reputation in the society. We should later give him time to make himself on herself good in front of the society. He further says that crime is not equal for all human beings for rich people it is other and for poor it is other it should be on the same parameter.

Galsworthy keeps all his plays and novels on the human level and implies his doctrine in an effective manner. His vision was totally different from the other tragic writers including classical tragedy writers. In his tragedies, conflict only takes place comprising of different people of different races, religion etc. Whereas it does not occur where a person belongs to a particular community. In almost all the plays of Galsworthy, the conflict is between the individual and a social institution. It seems to be an unequal fight and the individual is easily crushed down by the powerful social force. Galsworthy uses dramatic irony with telling effect in his plays. It is ironical that the machinery of Justice which was devised to protect the poor and weak only protects the rich and strong and crushes down the poor and weak.

It is ironical that in spite of man's inherent nobility and sense of Justice and fair play, a large no of people come to sorrow, suffering and tragic death. It is also ironic that the people enforcing the laws of society are generally honest, sincere and dutiful and yet their actions results in the waste of thousands of innocent lives every day.

Galsworthy brought a different point of view to the social issues he presented in his work. He was concerned with the problems of contemporary life and society. Social issues are those issues which are directly related to the society. He only presented the social issues as he really found them without fear or prejudice. He exposed all the evils and shortcomings of contemporary social institutions.

His function was to throw light on social evils and to offer any remedies or solutions for them, **“it is not the artist's business to preach”**. He says **“his business is to portray, but portray truly he couldn't if he is devoid of insight which comes from instinctive sympathy. The sincere artist is bound to be curious and perceptive, with instinctive craving to identify himself with the experience of others.”**

Galsworthy thus, portrays social conditions or issues with great insight, curiosity and with sympathy. All his tragedies may be described as sociological tragedies. He had made an important contribution to tragedy in the form of his social tragedy, his characters are weak individuals who are crushed down by the powerful forces of modern society. All his plays are tragedies in which he deals with the various social, domestic, moral and legal problems of the modern man.

He saw that in modern life individuals who are basically weak, come into conflict with the inhuman and pitiless laws and institutions of society and are crushed by them. Galsworthy writes social tragedy which is the dramatization of the misery in social relationships. The place of external fate is taken up by society or the other forces like law or democracy. The struggle is not between a human being or superior supernatural agency, or between one man and another man, but between man and society. The conflict in his tragedies is endangered because of human folly, greed or selfishness. These tragedies are based upon the sorrows and sufferings, brought about to common men and women by the maladjustment of society and the evil forces like the system of legal justice. Galsworthy considers all the social issues of contemporary society and presents them in his plays with the discussion of the problem.

Moreover, the modern age is the age of the common man. Kings, statesman and eminent persons are rather despised. So it is the common man and his social relationship which is the subject of Galsworthian tragedy. Galsworthy never used the classical concept of tragedy and never practiced, he seems to follow Meredith's dictum:

**In tragic life, God Wot “No villain need be!
Passions spin the plot: we are betrayed by what is false within.”**

It can be said that tragedy neither goes with the help of villain nor with the help of God. The tragic life goes only when there is passion in tragedy. It only gives pleasure when there is passion for writing it.

In his social tragedies there is no hero and no villain the characters are ordinary men and women and when they come to grief we only feel pity for them. In this type of tragedy conflict is transformed from the individual to the community. Groups, races, castes and classes come into conflict with each other. There is only an external conflict

between social forces. The hero is not an important person. He comes under group of social issues which devastate him altogether.

Considering all these issues, Galsworthy desires to produce a mental and moral ferment by presenting the truth. He sets before the public no cut-and-dried codes, but the phenomena of life and character without fear, favour or prejudice, learning the people to draw their own moral form it.

Galsworthy affirms: **It can be seen how a dramatist strongly and pitifully impressed by the encircling pressure of modern environments, predisposed to the naturalistic method will neither create characters seven or six feet high, or write plays detached from the movements and problems of his time.**

It can be said that Galsworthy presents the problems of modern society in a natural manner and he presents the problems of his time in a sympathetic and in pitiful manner.

The works including the lays John Galsworthy fix his attention on the power of wealth, on the dishonesties and exploitation involved in making money, and on how people who do not have it manage. We are made conscious of the price of things and the commercial valuation of lives; made aware that actions have unforeseen implications in the lives of other people. His plays indicate self-interest and complacency, particularly of the middle classes, where morality and respectability is demonstrably bolstered by money and influence. They also attest to the existence of the working classes and to the damaged condition of lines on the poverty line.

In *Man Of Property*, we see how it affects the lives and manners of a typical English family engaged in big business and finance. This spirit of possession is set in opposition to a beauty which the Forsyte do not take into account in their philosophy, not in spite of them comes into upset their plans and disturb their emotional life. The man of property has the elements of against novel, a very great satire. It sets out to reveal the social being in all his strength and inferiority. But the author has no courage to carry it. It is a satire on modern humanity, done from the inside, with realistic skills and sincere creative passion which was something new. It seems to be a real effort to show up the social being in all his weirdness.

Galsworthy describes his character rather than letting them live; what when they face a crisis, he solves it intellectually: and that again and again he fails to sound the real truth in situations which he himself has evoked. Soames Forsyte, for example is a real person, on the whole admirably drawn. But could Soames, granted the sensitiveness which we see him to be endowed, possible have lived for four years with from in so total blindness as to the real state of things between them? Here was a situation which could have been magnificent. A real realism would have luxuriated in the minute-by-minute analysis of this profound discard. But Mr. Galsworthy never comes to grips with it.

In *The Swang Song*, the code to the Forsyte Saga. In this charming but rather slight book, we are given the culmination of the interrupted affair of Fleur and John, we look forward to it from the very beginning, but when it comes, it is quite adamantly inadequate; it is as if the author had gone into a complete psychological funk about

it, and had simply not known how two such people would have behaved on such an occasion. This scene needed to be realist and richest and most moving in the book; and given the sufficient actuality of the people, it could easily have been so. Tragic vision has a great impact on social issues which are born from social institution sociological tragedies are a part of social issues which Galsworthy used it in almost all his work. He sees all social issues of modern society. These social issues create a deep feeling in the minds of reader social issues have a direct relation to tragic vision. He rounds up the psychology of the individual where the society in the villain. Tragic vision describes human as inherently limited in several aspects, including knowledge, wisdom and virtue. For social arrangement to function, these limitations must be recognized. Tragic vision believes that human nature has not changed. Traditions that have lasted because they taken into account the short-comings of human nature and allow us to work with them. The tragic vision vices human nature as being selfish at its core that is based on an individual's concern for his or her own well In all his sociological plays, we find that society is the main villain. Society crushes the weak individual. The main problem reveals around the society its culture, its traditions and vices. Through these plays, we came to know that the society is the main villain in it. Galsworthy's characters are social victims. *The silver Box* is based on the idea that in modern society there is one law for the rich and another for the poor. The play clearly shows that the machinery of law is ruthless and unjust. It gives punishment to the weak and helpless. Mrs. Jones and her children who are entirely innocent become the victims of gross injustice. The real criminal in the play is our society and its judicial system. The play presents the tragic spectacle of the machinery of law grinding the innocent ruthlessly. In other words, it can be said that the poor are crushed down by the law without the fault of his or her. As a result his or her life is ended. The place of the tyrant or villain has been taken by law. Mrs. Jones loses her reputation and work; she is left to starve with her three children.

The play also shows us the cruelty and injustice of our social and economic order. A large number of people are condemned to poverty and distribution by the present system. Mrs Jones do not get chance to retain her reputation or honest living. She become innocent victims of social apathy and indifference. Society is responsible for their destruction. She cannot be regarded as corrupt and wicked. Galsworthy condemns cruelty and injustice. He only pleads for sympathy and understanding.

In *Justice*, Galsworthy tried to show that there is no justice in our legal system. Law is blind, malignant force which crushes down an innocent person under its iron heels. It shows no consideration for the basic weaknesses of human beings. It is a heartless, mechanical process and pays no heed to human feelings. This idea is brought home to us through the conviction and death of an innocent young man of twenty-three who has committed a crime on an impulse which almost amounted to temporary insanity. In this play there is no villain who is responsible for tragedy. The real villain is the law which is blind and considers only the action and does not bother about the feelings that motivated the action.

The real problem of the play is what society has to do with a young clerk who falsifies his employer's cheque and steals their money in order to run away with another man's wife and children. Does society do justice to the people who commit crimes under an impulse of the moment and pressure of certain circumstances? Another problem related to this play is the problem of the effect of prison life on an unintentional criminal. The third problem treated in the play is that of a poor and helpless women married to a cruel man who ill-treated her. The dramatist has posed a question; What is society to do with a woman like Ruth Honey Will who cannot be legally separated from her cruel husband? The evil of solitary confinement is also depicted in the play. *Justice* is a study of the machinery of justice and punishment in modern society. Here also society is the main villain which puts laws only for its protection.

In the skin game, the play depicts the clash between two classes and interests. It shows the clash between the old class of nobles and aristocrats and the new rich class of the owners of industry. It shows the clash between strong individuals. Hillcrest who represents the landed aristocracy of England and Horn Blower who represents the

manufacturing class. Hillcrest is an old man, whereas Horn Blower is an aggressive man who wants to become richer and richer. He comes from north to the countryside and wants to develop this locality. The quarrel starts when both of them want to purchase the same piece of land.

Century is a beautiful estate which provides a fine view to the Hilchrist family. Horn blower has money and he wants social recognition which the aristocrats do not give him. He purchases this estate and wants to set up factory there. Mrs. Hilchrist starts spreading scandals about Horn blower's daughter-in-law, Chloe who has a questionable past. Chloe attempts to commit suicide. No one has any grievance against her but she suffers because of the clash of between the two forces. Here also the main villain is the society. Both families are destroyed. The motto of the play is **"Who touches pitch, shall be defiled"** A question which is on the lips of Hilchrist and his daughter Jill is; "What's gently worth if it can't stand fire?" Galsworthy states the case for both sides impartially and shows how ruinous quarrels between individuals and classes can be. Here also the society is the villain; we see how the two different classes of people only think of others' destruction. They do not think of others. They only think of themselves, only for their profit. If this difference is not that there will be a good and happy society.

In *The Eldest Son*, the play deals with class consciousness. The eldest son of a rich class English family falls in love with and wants to marry the serving maid. But this union is opposed by the family on the grounds that he must not marry a girl which is much below him in status, position and wealth. Here also the society is the Villain. Human feelings are sacrificed because of the fear of the society its culture and traditions. Society does not give the full support to the persons of different classes in any case. Although all of them are part of the same society. By creating such condition society takes role of villain and wants results only in his favour.

In *Strife*, the play deals with the conflict between capital and labour. A strike has been going on in the factory for the previous five months. It is extremely cold. The families of workers are suffering a lot because of hunger and cold. The two sides arrived at compromise but due to the adamant attitude of two men John Anthony, Chairman of the company and Roberts, the leader of the workers. The workers are on strike.

Mr. Anthony's daughter Enid, appeals to her father to relent. Her maid Annie had married Roberts. She is in a miserable condition. She wants to help Annie but Robert refuses to take any help from her. Workers are in the mood to compromise, but Roberts appeals to them not to surrender. Annie Roberts dies of cold and hunger the workers now want to make terms with the employers. Anthony is voted down in the Board and he resigns his position. Roberts is disowned by the workers and Harness brings about a compromise. The strike is at end. Harness sums up the situation thus "A woman deadly and the two best men both broken" Trench tells us that the terms of final settlement are the same as had been drawn up by him and Harness before the fight began. The losses of the company and the sufferings of the workers have been in vain. It can be said that these two men are the part of society. Both of them have fighting for their social prestige nothing else. Here also the main villain is the society.

In play *The Mob*, it is a play about the mentality of a Mob. A Mob has no brain it is carried away by sentiments. It is not moved by an idealist's appeal to reason. Stephen More is an idealist and is not in favor of war. In this play, mob roused up in favor of war. More fights, against this desire of the mob and perishes in the struggle. This is how idealists and visionaries are sacrificed at the mentality of the mob and then the monuments are raised in their honour. Galsworthy dislike this mob mentality is expressed thus in the play. **"You-mob are the most contemptible things under the sun. You are the thing that pelts the weak; kicks women, hurls down free speech. This is today, that tomorrow. Brain you have none, spirit, not the least of it."**

The mob depicts the fight of idealists against adverse social forces. Galsworthy feels that it is **"the duty of a man to stick to his guns in the face of popular disapproval, so long as his convictions tell him he is**

right.” Here also the main villain is the society. The disaster could have been avoided if the idealist has been listened to and this conflict can remove if there would be good coordination among these two classes.

It can be concluded that in sociological tragedies of Galsworthy Society is the main villain society plays an important part in making the future of an individual as well as destroying the future of an individual.

In the plays he shows us that society how follows those rules and traditions which he sees are proper to him according to the need of the hour as a result weak protagonist or individuals are scattered down by the society.

Seeing all these tragic situations and conditions Galsworthy foresees the future and thinks that how these people may cooperate with each other and live happy in this society which is made up of many classes of people i.e. rich and poor, aristocrats and businessmen. It can also be seen that a particular individual remains loyal to his or her own class not to the other class. In other words, it can be said that Galsworthy shows us the nature of the society of England which were present at that time.

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4

A STUDY OF ENVIRONMENT AWARENESS AMONG THE STUDENTS OF PLUS TWO LEVEL IN NAINITAL DISTRICT OF UTTARAKHAND

Dr. Savita Bhandari

INTRODUCTION:

Awareness to environment is a horizon-sweeping word and presents the totality of social, biological, and psycho-chemical factors individually or collectively that comprise the natural and man-made surroundings.

Specialists have repeatedly pointed out that any solution to the environmental crises will require environmental awareness and understanding to be deeply rooted in the educational systems at all levels.

Environmental awareness provides power and understanding to-

- Recognize the interdependence among materials into physical environment, plant and animal life for survival, growth and development.
- To take decisions individually and collectively and initiate actions for social, cultural and economic survival, growth and development and for conservation of nature and natural resources.
- To identify human, material, space and time resources in the environment.
- To recognize ways of making effective use of environmental resources for social, economic and cultural survival, growth and development.
- To take decisions for the effective use of resources, to recognize the special significance of conservation of natural resources.

Environmental education as pointed out by the UNESCO is to create environmental awareness in the world population—an awareness about the whole environment and problems associated with it and generate commitment in people to work individually and in unison towards solving existing problems and preventing new ones from emerging. The need for environmental education is recognised by all. The objective of such education is that individuals and social groups should become aware, acquire knowledge, develop attitudes, skills and abilities and be able to address real-life environmental problems.

ABSTRACT:

The environment related problem is a major global problem. Any solution to the environmental crises will require environmental awareness in the education system at all level.

The study presented here focuses on the analysis of level of environmental awareness among the plus two level students in nainital district. The youngsters can work together to achieve the goal of a green healthy environment through several innovative sustainable practices.

OBJECTIVE:

The objective is -

- To study the difference in the environment awareness between rural boys and rural girls at +2 level.
- To study the difference in the environment awareness between urban boys and urban girls at +2 level.
- To study the difference in the environment awareness between rural and urban students at +2 level.

HYPOTHESIS:

- 1-There is a significant difference in environment awareness between rural boys and rural girls at +2 level.
- 2-There is a significant difference in environment awareness between urban boys urban girls at +2 level.
- 3-There is a significant difference in environment awareness between Urban and rural students at +2 level.

Delimitation of the study-

- Present study is limited to four schools (two from rural area and two from urban area) of Nainital district.
- It is Confined to a sample of only 100 students (50 urban and 50 rural)
- Only two factors (gender and +2 level) are considered as variables for this study.
- Sample Students were selected randomly.

Research Methodology

To study the environment awareness among students, survey method was adopted.

Sample-

For present study the investigator selected samples from four schools of rural and urban area of nainital district.

Method used-

The investigator used normative survey method to collect data for the present day study.

Tool used

A questionnaire was used as a tool to collect data. The questionnaire was prepared by the investigator himself, the questions were in the form of MCQs, true/false and yes/no.

Statistical analysis- In order to analyse and interpret the scores, the investigator used the following statistical techniques- mean standard deviation, standard error, t.test.

Main Findings-

On the basis of analysis and interpretation of data the following finding were drawn-

1. While making comparison between rural boys and rural girls, it was found that there is no significant difference between girls and boys students of plus 2 level.

Comparison of Mean, S.D and C.R between rural boys and girls of plus 2 level**Table-1**

Group	Number of students	mean	S.D	C.R	T.TEST	SIGNIFICANT LEVEL
Boys	25	28.65	3.86	1.27	0.90	Not significant at 0.05 level
Girls	25	30.62	4.33			

2. While making the comparison between urban boys and girls of plus two level regarding environment awareness, it was found that there is no significant difference between boys and girls students of plus two levels regarding environment awareness.

Table 2**Comparison of Mean, S.D and C.R between urban boys and girls of plus 2 level**

Group	Number of students	mean	S.D	C.R	T.TEST	SIGNIFICANT LEVEL
Boys	25	31.21	3.15	0.51	2.12	Significant at 0.05 level
Girls	25	32.56	2.30			

3. While making comparison between urban and rural students of plus two level regarding environment awareness, it was found that there exists significant difference between urban and rural students at plus two level.

Table 3**Comparison of Mean, S.D and C.R between rural and urban students of plus 2 level**

Group	Number of students	mean	S.D	C.R	S.ED.	T.TEST	SIGNIFICANT LEVEL
Boys	25	30.26	3.75	0.51	0.71	3.25	Significant at 0.05 level
Girls	25	31.82	2.45				

EDUCATIONAL OMPLICATION:

Study presented has its educational implications for the teachers, educational planners, parents, educators and educational administrators. Special awareness programmes in the form of seminars, symposium, camps and community visits should be arranged among the teachers, students, parents and masses.

Environment awareness should be provided to the youths and young children through the formal system of education. Environmental consciousness should be developed among teachers by introducing the courses of environmental education in teacher education programmes and their teaching subjects.

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5

LANDSLIDES: CAUSE AND IMPACTS : AN APPRAISAL WITH SPECIAL REFERENCES OF UTTARKASHI DISTRICT

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ABSTRACT:-

Geographically instability of the Himalayan region together with high atmospheric precipitation is responsible for widespread landslide occurrences in the region. The rocks of the region are characterized by multiple structural discontinuities and the relationship of these with the slope often make conditions favorable for landslides to occur. Landslides cannot be completely prevented but with proper planning intensity of its impact can certainly be reduced. In recent time land-use and land cover changes have taken place following various development activities that have changed the slope conditions and have resulted in a frequent occurrence of landslides. Landslides are very common in mountain regions. Generally, it occurs due to slope failure, flash flooding and high rainfall. Anthropogenic factors further accentuate its intensity. It has negative impacts on the environment and economy of the affected regions as well as on flora and fauna. Similarly, landslides impacts the economy with loss of agricultural land, existing crops, forests, roads, settlements, public and private property and human lives. This paper aims to examine the impact of landslides on the environment and economy of the affected areas of the Uttarkashil Himalaya.

(Key words: Earthquake, Flash Flood, Forest fire, Himalaya, Land slide, Management and Uttarkashi)

INTRODUCTION: Since the beginning of the civilization natural hazards have threatened human lives and environmental ecosystem. Every year in terms of both direct and indirect cost, landslide hazard accounting for large damage on properties in mountainous regions. Uttarkashi Himalaya is well known for frequent occurrence of landslide due to a fragile landscape. The large number of people living in this areas is thus under a continuous threat of landslides, leading to many deaths and property damage. Geological setup of the Uttarakhand Himalaya and geotectonic make the region most vulnerable to seismic events and landslides while topographic characteristics provide ideal conditions for frequent cloud bursts and resultants flash floods. The rapid rate of increasing building activities mainly road constructions consequent upon expansion of tourism and recreation industry, pilgrimage and urban growth have resulted into accelerated rate of soil erosion and increase in the frequencies and magnitude of landslides. Rapacious exploitation of forest resources and resultant deforestation and cultivation on steep hill slopes have also aggravated the problem of landslides. Landslides are regular features of Uttarakhand Himalayan ecosystem and one can not stop slides so long as human presence in the geologically and ecologically fragile Himalayan environment dominates hill ecosystem.. The Uttarkashi Himalaya region is suffering every year due to some of these disasters.

Landslide is a destructive process in which debris continue to flow down the hills carrying along water, mud, sand, boulders, trees and other materials. This leads to debris spreading in vast areas in thick deposits. Landslides causes extensive damage to roads, bridges, human dwellings, agricultural lands ,orchards, forests etc., resulting in loss of property as well as life. Economic degradation of hill areas has also been on the increase due to greater frequency of occurrences of landslides. There are so many existing landslide areas in the Upper Bhagirathi valley Varunavat, Netala, Malla, Bhatwari, Dharasu, Dabrani , Bhairo chap nala, and Zyansu are prominent among them. Landslide apparent Uttarkashi is a border hill district of Uttarakhand, located at 30° 28' to 31° 28' north latitude and 77° 49' to 79° 25' east longitude. 88% area of the district is covered by forests and having 329686 population (2011). The main central thrust and the main boundary thrust lines are passing through the district. The average rainfall is 1193mm., 17% of this is in the form of snow at the higher elevations. The district also faced the heavy flood in 1978, 1997 and 1998, mass land slide in Varunawat hill in 2003. Thus the possibility occurrences of earthquake, flood and land slides are always remains there. In Uttarkashi Himalayan Mountains landslide and earthquake have been major and widely spread that strike life and property almost perennially year after year. debris flows affect the economy on a large scale, depending upon flow magnitude and velocity. Debris flow costs include both direct and indirect losses affecting private and public properties. Direct costs can be defined as the costs of replacement ,rebuilding, repair, or maintenance resulting from direct debris flow-caused damage or destruction to property or installations. The entire Uttarkashi Himalaya is ecologically fragile, geologically unstable, and tectonically and seismically active like most of the HMS. The situation is grim and, there are many cases in the entire region where, due to debris flow, many villages were devastated. The process of uplift of mountain peaks and deepening of the river valleys continues due to tectonic forces throughout the region, resulting in instability and disturbances in the landmasses. The effects of natural hazards, both terrestrial (earthquakes) and atmospheric (cloudburst, landslides, debris flows and flashfloods), can be seen everywhere. agricultural land and the existing crops, bridges, roads, watermills and other amenities were washed away.

GEOLOGY:

Uttarkashi Himalaya lies in the high seismic-tectonically active zone (seismic zone V). The MCT zone has witnessed two major earthquakes. Since then this area was subjected to tectonic movements due to which several faults and weak planes have developed in the region. The Uttarkashi formation includes Netala Quartzite, Lower Uttarkashi Limestone, Pokhri slate, Upper Uttarkashi Limestone and Bareti Quartzite (Jain, 1971). The rocks found in the Varunavat Parvat comprise mainly quartzite and phyllites of Damta Group which are highly shattered, fragmented and fractured and thinly jointed. These are covered with 20-25 m thick slid material. The beds are dipping at 30-35° towards N35°W inside the hill slope. There are three sets of major joints while, the soil is generally shallow and moderate with less than 50 cm thickness on steep slope area except in cultivated areas on moderate slope where the thickness of the soil relatively more and mainly comprise of fine soil (NRSA, 2001). The flat areas and inter-mountain valleys contain thicker soil cover. The piedmont zones in the area contain variable thickness of the soil types. It can be noticed in the entire study area that the characteristic of soil changes with changing altitude and geomorphic situations. The major landforms in the area are glacial, fluvial, structural and denudational in origin.

VEGETATION AND CLIMATE:-

Uttarkashi is bestowed with abundance of forests, which house a variety of wild life and plant species. It can be observed that in the entire study area with high altitude, the dominant plants are Deodar, Pinus, Rhododendron, Betula, Cistus, Picea with beautiful pasture and grass land. In moderate and low altitude slope are generally used for step cultivation for growing vegetables and crops. The dominant natural vegetation over these slope are mainly Pinus, Dalbergia, Shorea, Robusta etc. The natural forest resources with unique biodiversity have played an extremely important and crucial role in the socio-

economic development of the region. Uttarkashi is also famous for its apple orchards and pulses it produces. The rain in the district instead of being seasonal is a regular feature.

As the study area is part of high altitude location, it experiences a subtropical temperature climate throughout the year. The whole area receives heavy precipitation during summer monsoon between July and September and moderate rainfall during winter monsoon between January to march every year. On an average there are about 100 rainy days in a year and average annual rainfall in the area is approximately 1200mm. About 70 % of the total rainfall is received during the month of July to September in which duration maximum landslide occurs.

Problem of Landslide and its Interdisciplinary relevance:

The problem of landslides and mass wasting in the region is severe. Every year, the highway network in the study area sustains damages, due to the increase of landslides. The increased frequency of landslides in the last few years may particularly be attributed to the interference of man with geo-environmental factors of the region. Landslides occur frequently during monsoon rains, as water is an important catalyst for initiating landslides. The landslides are creating problem for the proper development of the region. Landslides are being regularly observed and becoming hazardous to the human life in the area. Besides, the soil loss due to heavy rains during rainy season and uncontrolled tourism, is quite sensitive to the landslides. The ongoing deforestation process is creating problems as the water table in the Dodital, Nachiketa Tal and Kedar Tal and many other places is decreasing. Some rare medicinal plants and herbs are on the verge of becoming extinct. The rural people of this region are also not lagging behind to extract the natural resources in an uncontrolled way, thus, the resources availability in the region is becoming short.

Objectives of the study:-Landslide all over the region influenced the development of the human beings directly and indirectly. As:- (I) Loss of human beings and other animals. (II) Loss of vegetative cover. (III) Soil erosion and loss of crops and agricultural land. (IV) Damages of roads and distraction of tourists. (V) Loss of residential and commercial establishments. (VI) Ecological imbalances. (VII) Shift of river flow. (VIII) Diversion from other developmental activities.

With the reference of the above points the aim of the present study is to investigate the causes and impacts of the landslides in the region and to provide solution for them. Other related aims are as:-

- (1) To analyse the existing landslides.
- (2) To investigate the causes of landslides.
- (3) To observe the socio-economic impacts of landslides.
- (4) To analyse the environmental impact of landslides.
- (5) To identify potential landslide zones.
- (6) To provide pre and post disaster management measures.

Land cover: Land-cover is an important factor in landslide studies. The seasonal dynamic nature of land cover pattern can thus act as a potential triggering factor of landslides and can alter the vulnerability. Land cover changes in hill slopes affect the slope stability and can lead to land slide in hilly regions. These regions do not only become hazardous but also the changed land cover, such as crop land from forest, pastures from forest and settlement from

barren land becomes vulnerable. The major land cover patterns in the study area are forest, scrubs, barren land and agriculture land. The agricultural land is mainly present in hill cut terraces and near the river terraces.

Methodology: Detail geographical and geomorphological setting, slope morphometry, landslip morphometry and clay mineralogy analysis has been done.. The geological analysis of the presence of different rock types and the orientation of discontinuities has been carried out. Primary and secondary data were collected for assessing risk degree of landslide hazard, impact on human life, vegetation, cultivable land, roads & environment..

For the fulfillment of the above aims following procedures and methods were adopted.:-

1. Study of surface structure
2. Observation of the nature of the slope
3. Landslide Hazard Grading (LHG).
4. Impact analysis of Potential cloud busting areas.
5. Presence of water springs.
6. Nature of vegetative cover.
7. Human interference

Nature of Slope: Landslide is a destructive process. in which debris continue to flow down the hills carrying along water, mud, sand, boulders, trees and other materials. This leads to debris spreading in vast areas in thick deposits. Geomorphologically contrasted terrain the Uttarkashi Himalaya, like other mountain ranges of the world, is a land of severe distress. The major constraints and some of the ongoing developmental activities are leading to the negative chain reactions in this geomorphologically diverse terrain. Landslide is a collective term used to describe various types of movement of the slope forming materials i.e. rock, earth, artificial materials or a combination of these materials. Landslides are not an isolated phenomenon, they can occur virtually anywhere. Orthodox philosophy about landslide was that it only occurs in steep slopes but with passage of time and research it has been noticed that it can influence gentle slope too. One can experience this hazard on land as well as under the water.

Socio-Economic Impact: Yamuna , Bhagirathi and Tons with their tributaries are major river, which passes through the region and very important national highways are passes along their valleys. These highways are not only of strategic importance, but as the main communication line for this Garhwal region and also the pilgrims and tourists for the Gangotry, Yamunotry, KedarnathBadrinath and other religious, natural and adventurous places of the the region. These Highway are frequently blocked because of soil erosion and landslides. Quite often the life of the entire region is disrupted. For the past few decades biotic pressure on over used land and resources have developed tremendous effects leading landslides, flash floods, erosion and destruction of vegetation on a large scale. Landslides causes extensive damage to roads, bridges, human dwellings, agricultural lands, orchards, forests etc., resulting in loss of property as well as life. Economic degradation of the hill areas has also been on the increase due to greater frequency of occurrences of landslides. There are so many existing landslide in the district, Dharasu, Nalupani, Banderkot, Varunavat, Naitala, Gangori, DabraniFafrolaKhad,Khuni Gad Khanera, Chaptari and Bariya are prominent. Every year landslide damage the life and property in the region. It also damaged vegetative cover, soil, agriculture land crops and settlements, which disturb the ecosystem and economy of the region. Blockade of roads due to landslide create problem to trade, commerce and tourists.. The life and property of the hill people can be saved through implementation of disaster management measures as early as possible. Considering the wider and massive physical , social, economic, infrastructural development and environmental implications of natural hazards and enormous losses caused to men and material specially by landslide. The socio-economic significance of landslides

considers both direct and indirect costs. Direct costs include injury or loss of life, damage to infrastructure and property, and the loss of resources, and are relatively straight forward to calculate and quantify. Indirect costs include items such as lost wages, added costs for redirecting traffic, and so on and although just as important as direct costs, are much more difficult to calculate and quantify., a landslide that buries a stream may immediately destroy fish and fish habitat – a measurable direct cost. But the fish habitat may be lost for many years, and a slow recovery can affect fish stocks for decades. If the river is an important fish habitat, the indirect costs of the suppressed fishery industry could exceed the direct costs.

With the above description first this study discusses landslides in the context of geological hazards, followed by the socio-economic significance of landslides in the study area.

(1) Floods and Landslides:- Vast area of the district are prone to having landslides and flash flood, particularly during the raining season due to heavy rain or sudden cloud burst .such incidents have often been witnessed in the past at Gyansu, Mori, and Agora and in the river Indravati. Similarly because of loose structure of soil in the mountain range along the banks of river Yamuna in Khaneda, there is always a possibility of heavy landslides in the area. The river at this place is about 10 feet wide and a sudden landslides can obstruct the flow or river Yamuna resulting in a flood like situation in the upper parts of the area.

(2) Landslide and Geological Hazards:-Landslides are part of a family of geological hazards that affect Uttarkashi region. Geological hazards include: earthquakes, tsunamis, volcanoes, floods (including glacial lake outburst floods and floods related to ice jam and landslide dam failures), surface erosion, subsidence, and landslides.

Mechanism of landslides in the study area: –

Occurrences of landslides includes a number of mechanism, which are again affected by number of factors. The major factors responsible for causing landslides in the study area are given below:

A Natural Factors :-

(1) **Resistance and sheer stress** – The resistance and the sheer stress on land disturb the slope material. Landslides are down slope movement of rock and soil along slip surface. They are always linked with disturbance of equilibrium relationship, which exists between stress and strength in material resting on slope. The relationship between stress and strength is determined by factors such as height and steepness of the slope and density strength cohesion and friction of the materials and the slope. Hill slope instability occurs when the strength of the material comprising the slope is exceeded by down slope stress. The shear strength of the material is the maximum resistance to shear stress and depend on.

a) Internal structure

b) Internal Friction

(2) Increase in slope height - In response to fluvial down cutting slope height occurs most commonly. As increased height may result in increased height over a potential share plane, its influence of weight on stability. Thus with a constant shear plane angle increase in height may come failure in a cohesive slope but not in a cohesion less slope.

The processes which create slope relief invariably involve the removal of material from the slope face and thus a reduction in lateral support for slope face, which set up a zone of negative earth pressure of tension extending for some distance into the slope. At the limit of the zone of tension a vertical crack may appear, which become the leading cause of landslides.

(3) **Difference in height** - Changes in the weight imposed on a slope (loading) result from both natural and human agencies and may alter the degree of stability depending on pre-existing slope conditions. Natural process producing a variation in weight include :

- i) Runoff pounding, precipitation, evapo -transpiration and drainage
- ii) Deposition and erosion by mass movement
- iii) Deposition and erosion from other geographic processes
- iv) Over thrust faulting
- v) Extrusion of volcanic material
- vi) Vegetation growth and vegetation destruction
- vii) Seepage drag from percolating water
- viii) variation in atmospheric pressure

Human factors responsible for variation of weight include :

- i) Afforestation and deforestation
- ii) Storage and transportation of water and other fluids
- iii) Leakage of water and fluids from storage and conveyance methods
- iv) Industrial activity
- v) Machinery (mobile and static)
- vi) Land developments, road construction
- vii) Erection of buildings & other structures

(4) **Lateral support & slope Angle** – Material, which is in contact with the slope or is part of the slope and offers more resistance than shear, constitutes lateral support. Generally lateral support is generated by slope material at the toe or base of the slope or in some instances by water and ice bodies or artificial support consequently removal of lateral support in the natural setting occurs most commonly as a result of slope.

(5) **Removal of underlying support** –The processes responsible for removal of underlying support in the area of Uttarkashi include.

- i) Surface action by localized weathering and erosion agents.
- ii) Preferential surface erosion or weathering as a result of differences in readability.
- iii) localized or diffuse subterranean removal of material by mechanical eluviations or plastic flow.

(6) **Seismicity and other sensations** –

(7) **Joint Process** -There are number of active factors like root wedging cleft water pressure, ice wedging, salt wedging , water wedging, clay swelling etc. operating primarily within joints and other void spaces. There actions are therefore referred to as joint process.

(8) Changes in water contents-

Human factors: –The human induced factors accountable for origin of landslides in the region may be given as below :

1) **Deforestation** – The Uttarkashi region remains wintry for about six months, people are totally dependents on forests for their basic needs of fuel and construction of houses. In the deforested area the soil receives all rainfall produced by rainstorm. The raindrops reach the ground with fall intensity and smash the tiny soil particles. As a result soil surface becomes hard and compacted as its pores are clogged with fine particles produced due to splash. Rainwater does not infiltrate and runs down the slope as surface runoff causing floods and landslides

2) **Slope cutting for constructions** -Excavations for road construction in geologically sensitive belts have been triggering massive landslides. The blasting for a hill road with its associated disruption is inevitably a major destabilizing influence.

Recommendations :-Based on above surface geological - geotechnical observations and considering the terrain in the study area adequate precautions are required to be taken. The area is geologically in a critical state and the following corrective measures are recommended:

1. It is suggested that the existing pine trees around crown and detached / subsided parts of every existing landslip be removed immediately before the onset of monsoon season.
2. Installation of wire crates with iron sticks is recommended in the landslip areas specially those which are situated near roadsides or settlements . This would help in beholding the critical mass.
3. Construction of wire crate check dams is recommended along the course of small tributaries or water channels specially Menagadnala together with setting up of deep rooted girders at specific intervals across the nala above Gyansu village area. This would retard the flow of transported material / large boulders.
4. It is recommended that damaged retaining walls / stone masonry walls on both flanks of small tributaries or water channels area should be repaired.
5. It is recommended that the transported debris lying on small tributaries or water channels bed area be removed as it results in debris coming down to the village area in a huge quantity.
6. It is recommended that all encroachments on small tributaries or water channels bed areas should be immediately removed.
7. In order to minimize the percolation of water into the slide zone lined drains are recommended in the upslope portion of the every landslip.
8. Disaster management awareness drive should be carried out.
9. Cloudburst potential areas must be identified.

Landslides, especially those that cover large areas, can result in significant modifications in the earth's natural environment. landslides affect the topography/morphology of the earth's surface. These surface changes occur in the study area. Forests and wildlife (especially fish) have been affected negatively by landslides. However, because landslides are relatively local events, both flora and fauna can recover with time if adequate habitats and viable populations remain to allow such recovery.

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6

CHANGING FACTS OF INDIAN RETAIL MARKET**Dr. Bharat Singh****ABSTRACT:**

The Indian retail industry is one of the fastest growing in the world. Retail industry in India is expected to grow to US\$ 1.2 trillion by 2020 from US\$ 680 billion in 2017. India is the fifth largest preferred retail destination globally. The country is among the highest in the world in terms of per capita retail store availability. India's retail sector is experiencing exponential growth, with retail development taking place not just in major cities and metros, but also in Tier-II and Tier-III cities. India is expected to become the world's third-largest consumer economy, reaching US\$ 400 billion in consumption by 2025. Increasing participation from foreign and private players has given a boost to Indian retail industry. India's price competitiveness attracts large retail players to use it as a sourcing base. Global retailers such as Walmart, GAP, Tesco and JC Penney are increasing their sourcing from India and are moving from third-party buying offices to establishing their own wholly-owned/wholly-managed sourcing and buying offices.

The Government of India has introduced reforms to attract Foreign Direct Investment (FDI) in retail industry. The government has approved 51 per cent FDI in multi-brand retail and 100 per cent in single brand retail under the automatic route which is expected to give a boost to ease of doing business and Make in India, and plans to allow 100 per cent FDI in e-commerce. India will become a favourable market for fashion retailers on the back of a large young adult consumer base, increasing disposable incomes and relaxed FDI norms. Healthy economic growth, changing demographic profile, increasing disposable incomes, urbanisation, changing consumer tastes and preferences are the other factors driving growth in the retail market in India. The main objective of the study is to analysing the facets that change retail market and also change consumer,s behaviour in india.

KeyWords : Retail Market, Disposable Incomes, Consumer Tastes, FDI, Single/ Multi-Brand Retail, Global Retailers.

INTRODUCTION:

The Indian retail industry is one of the fastest growing in the world. Retail industry in India is expected to grow to US\$ 1.2 trillion by 2020 from US\$ 680 billion in 2017. India is the fifth largest preferred retail destination globally. The country is among the highest in the world in terms of per capita retail store availability. India's retail sector is experiencing exponential growth, with retail development taking place not just in major cities and metros, but also in Tier-II and Tier-III cities. Healthy economic growth, changing demographic profile, increasing disposable

incomes, urbanisation, changing consumer tastes and preferences are the other factors driving growth in the organised retail market in India.

The dusty roads from the age of barter and the bazaars, shopping has taken a quantum leap to the glitter of swanky and palatial malls. Economic prosperity is reflected in the changing behavior of Indian consumers. If we look at the demographic profile of the Indian market, it is amply clear that changes occurring in demographic conditions will further fuel the economic growth of India in the next twenty years and forever change the conventional face of the Indian market. The demographic bonus phase is expected to open lots of economic opportunities and India's retail sector is all poised to ride on the same. All big names of Indian corporate world are already in and all major world retailers are more than keen to enter Indian market though FDI restrictions still exist

India's population is taking to online retail in a big way. Online retail sale is forecasted to grow at the rate of 31 per cent to reach US\$ 32.70 billion in 2018. Revenue generated from online retail is projected to grow to US\$ 60 billion by 2020. Organised retail penetration is expected to increase from 7 per cent in FY 2016-17 to 10 per cent in 2020. India is expected to become the world's third-largest consumer economy, reaching US\$ 400 billion in consumption by 2025. Increasing participation from foreign and private players has given a boost to Indian retail industry. India's price competitiveness attracts large retail players to use it as a sourcing base. Global retailers such as Walmart, GAP, Tesco and JC Penney are increasing their sourcing from India and are moving from third-party buying offices to establishing their own wholly-owned/wholly-managed sourcing and buying offices.

The Government of India has introduced reforms to attract Foreign Direct Investment (FDI) in retail industry. The government has approved 51 per cent FDI in multi-brand retail and 100 per cent in single brand retail under the automatic route which is expected to give a boost to ease of doing business and Make in India, and plans to allow 100 per cent FDI in e-commerce. India will become a favourable market for fashion retailers on the back of a large young adult consumer base, increasing disposable incomes and relaxed FDI norms

Objectives and Research Methodology:

The main objective of the study is to analysing the facets that change retail market and also change consumer,s behaviour in india This research paper is prepared by reviewing related literature produced in the area of retail in many decades yet. I have also incorporated views of policy formulators and customers related to this industry. Research paper is based on secondary data and provides only descriptive information and no statistics are used.

Traditional Retail vs Modern Retail

One set of thought advocates the idea that the growth of organized retail and the entry of the foreign brands may cause eradication of the traditional stores. The business tactics use by both, the modern and traditional, retailing vary as they are recognized by their cor characteristics. Where the modern stores are able to provide the customers with better affordable prices due to presence of large formats, the traditional stores are more convenient to approach with the presence of a trustworthy relation between the retailer and the customer. But instead of eradication of one, the experts foresee the coexistence of both modern and traditional retailing. They also opine that the organized retailers will also come out as a big support to these traditional mom-and-pop stores. It is observed that the traditional formats like hawkers, grocers and small *Bani*shops effectively coexist with the modern store formats like supermarkets and department stores, and non-store retailing formats such as e-retailing and telemarketing. "It is considered that modern formats have higher levels of sales per unit of space, stock turnover and gross margin but lower levels of net margins as compared to traditional formats" (Mulky and Nargundkar, 2003,). They strategically focus on upgrading their businesses in relation to market, cost, knowledge and customer. Retail experts like Amit Mitra, mentioned in *FICCI Report, 2007* that the retail sector does not

foresee any conflicts between organized and unorganized retailing because of huge number of unorganized retailers. While modern (organized) retail will register exponential growth from around 4% (\$ 12 billion) to around 20-22% (or 90 billion) by 2010. It will not happen at the cost of unorganized retail. Even unorganized (traditional) retail, during the next three years, will grow from present \$ 316 billion to \$ 340 billion (*FICCI Report, 2007*). A quarterly report *Retail Outlook* issues by Technopak in 2007 has also projected an immense growth in the Indian retail sector. It has been observed that where the organized sector is registering increasing growth rate, the unorganized sector is also indicating huge rise in its market share. India is expected to become the world's fastest growing e-commerce market, driven by robust investment in the sector and rapid increase in the number of internet users. Various agencies have high expectations about growth of Indian e-commerce markets. Indian e-commerce sales are expected to reach US\$ 120 billion! by 2020 from US\$ 30 billion in FY2016. Further, India's e-commerce market is expected to reach US\$ 220 billion in terms of gross merchandise value (GMV) and 530 million shoppers by 2025, led by faster speeds on reliable telecom networks, faster adoption of online services and better variety as well as convenience. India's direct selling industry is expected to reach Rs 159.3 billion (US\$ 2.5 billion) by 2021, if provided with a conducive environment through reforms and regulation. India is expected to become the world's third-largest consumer economy, reaching US\$ 400 billion in consumption by 2025.

Facets of a Changing Retail Market

Behind the growth headlines is an even more important the consumer behaviors and spending patterns are shifting as incomes rise and Indian society evolves. These shifts have big implications for how companies position themselves now. In 2012, BCG's Center for Customer Insight (CCI) conducted its first in-depth exploration of growth and consumer trends in India. BCG Focus, February 2012.) In 2016, we took an updated look at emerging developments, basing it on new research among 10,000 consumers in 30 locations nationwide. The evolution in consumer behaviors is playing out largely as we predicted four years ago, but inevitably, new developments, as well as twists and turns are affecting consumer attitudes and consumption. The factors that are shaping India's complex and growing market, consumers evolving spending patterns, the increasing and substantial impact of digital technologies on spending and emerging trends that could alter spending. It presents an assessment of how companies need to adjust their strategies and models to meet shifting circumstances.

Pre 1990s

- Manufacturers opened their own outlets.

1990-2005

- Pure-play retailers realised the potential of the market.
- Most of them in apparel segment.

2005-2010

- Substantial investment commitments by large Indian corporate.
- Entry in food and general merchandise category.
- Pan-India expansion to top 100 cities.
- Repositioning by existing players.

2010 onwards

- Cumulative FDI inflow from April 2000 to September 2017, in the retail sector, reached.

- US\$ 1,098.81 million.
- Retail 2020: Retrospect, Reinvent, Rewrite.
- Movement to smaller cities and rural areas.
- More than 5–6 players with revenues over US\$ 1 trillion by 2020.
- Large-scale entry of international brands.
- Approval of FDI limit in multibrand retail up to 51 per cent.
- Rise in private label brands by retail players.
- Sourcing and investment rules for supermarkets were relaxed.
- E commerce has emerged as one of the major segments.
- 100 per cent FDI in single brand retail under the automatic route.

THE FACTORS SHAPING A GROWING MARKET

Companies today need to focus on three aspects of India's fast-growing consumer market: rising affluence, the country's continuing and unique pattern of urbanization, and fundamental shifts in family structures.

Rising Affluence

It observed in 2012 that India's income pyramid was transforming itself into a diamond as household incomes grew. In terms of spending, the two top consumer categories—elite and affluent—will become the largest combined segment by 2025, accounting for 40% of consumption compared with 27% in 2016. Within this segment, the urban elite and affluent are fueling most of the growth. By 2025, wealthy urbanites will be responsible for one-third of total consumption. The share of the next billion and strugglers will shrink from 49% in 2016 to 36% in 2025.

Continuing Urbanization

India's continuing pattern of urbanization is uniquely Indian. The migration to urban centers is not concentrated in a few cities as it is in countries such as Indonesia or Thailand; nor is urbanization in India occurring as quickly as in China. In India, the population is booming in scores of small cities across the country. About 40% of India's population will be living in urban areas by 2025, and these city dwellers will account for more than 60% of consumption. Much of this growth will take place in small towns.

In terms of consumption expenditures, emerging cities (those with populations of less than 1 million) will be the fastest growing. Fueled by rising affluence, expenditures in these cities are rising by nearly 14% a year, while consumer spending in India's biggest cities is increasing at about 12% a year. We expect emerging cities to see the highest growth in the number of elite and affluent households through 2025. By then, the number of such households will have increased by a factor of more than 2.5 in emerging cities, while it will have almost doubled in major metropolitan areas. Furthermore, some 120 cities will have matched today's major metropolitan areas in average household income.

Consumers in emerging cities behave differently from the big-city consumers. They have a strong value-for-money orientation, significant local cultural affinity, and a more conservative financial outlook. They have high purchasing aspirations but are often constrained by product availability. Emerging cities of similar sizes and growth

rates differ from each other and from metropolitan centers in just about all other respects. It would be a mistake to approach consumers in these cities as a homogeneous group. In addition, as the cities grow larger, companies will need to segment further within each one, to identify small areas of opportunity.

Shifting Family Structures

As we also noted four years ago, the extended Indian joint family has given way to nuclear households, which we define as a couple or a single person, with or without children. The proportion of nuclear households, which has been on the rise during the past two decades, has reached 70% and is projected to increase to 74% by 2025. This ongoing shift is significant to marketers because nuclear families spend 20% to 30% more per capita than joint families. Decision makers in nuclear households—younger and more optimistic than those in joint families—base their consumption decisions more on lifestyle considerations and the need to “keep pace” than on the need for functional necessities, especially in such categories as consumer durables and apparel.

SPENDING PATTERNS EVOLVE

Rising incomes affect spending patterns in various categories differently. Certain categories (and subcategories) become more or less relevant to consumers as their incomes increase. The BCG CCI’s most recent consumer survey in India studied consumption in more than 50 categories that fall into three broad purchase groups: high-frequency items (such as food and beverages, personal-care products, entertainment, and telecom products and services), medium-frequency items (apparel, home furnishings, and tourism, for example), and low-frequency items (such as consumer durables, cars, and appliances). We have found that the classic S-curve growth pattern does not always hold true and that different categories exhibit very different growth trajectories. The study revealed five broad categories of correlations between rising income levels and expenditures. The categories reflect the following consumption-income relationships:

- Consumption takes off at a certain income level.
- Consumption increases linearly with income.
- Consumption increases slightly with income.
- Consumption stabilizes after a certain income level is reached.
- Consumption decreases after a certain income level is reached.

A clear understanding of these correlations helps identify a growth trajectory for each of these categories and subcategories. In many cases, historical growth is not a good predictor of the future. For example, mobile-phone sales and mobile internet connections are likely to show disproportionately high growth rates over the next decade as incomes rise quickly. TV sales, on the other hand, increase only slightly with rising incomes, so they are more likely to maintain their historical growth trajectory.

Shifting Growth Drivers

Traditionally, for many consumer categories, increasing market penetration has been the biggest driver of sales growth. But this is set to change as frequency of purchase and spending per purchase occasion rise in importance. There is a shift toward higher-quality, higher-price subsegments within categories, as Indian consumers trade up with greater frequency and enthusiasm. Our survey suggests that 30% of consumers in India are willing to spend more on products that they perceive are “better”—a much higher percentage than is found in more developed markets such as the US, Germany, and the UK.

The impact of penetration, frequency, and spending per purchase varies across categories. For example, in women's apparel, elite and affluent consumers spend nine times and five times more, respectively, than a struggler. The difference is mostly a matter of higher spending per purchase; differences in product penetration and purchase frequency are not significant. Or take eating out. Elite and affluent householders spend 35 times and 13 times more, respectively, than strugglers in this category. All three factors contribute: increase in penetration, frequency of occasion, and spending per purchase.

Potential for Trading Up in Emerging Cities

Across all income segments, consumers in major metropolitan centers and tier 1 cities (those with populations of more than 1 million) spend more than their counterparts in other locations. This is true for basic categories (such as laundry detergent powder and biscuits) and for more discretionary categories (such as eating out and the mobile internet). Higher spending levels in big cities are not the result of greater product penetration, as penetration for a given income segment is generally similar across cities. Consumers in big cities, on average, buy more premium products, which leads to higher spending. This represents an opportunity for companies that make more premium products available—and can convince buyers of their value—to boost growth by encouraging consumers in small cities to trade up.

CHANGING SPENDING BEHAVIOR:

Our research shows a steady and progressive shift in consumers' aspirations and spending behaviors—in certain categories. For one thing, shopping is becoming more social—involving all family members—and much more frequent, thanks to the rise of online shopping. For another, many consumers are making different buying and tradeoff decisions. For example, immediate gratification is becoming more important than asset creation. Also, the biggest desires of aspirer households used to be to own a house and a car. Today, many more of these consumers want to take international vacations. Similarly, affluent households are becoming comfort seekers, and they are willing to pay for it.

Aspirer households are also trading up more frequently in categories such as apparel, buying better brands for everyone in the family. Social media have played a big role. People want to fit in with their peers. At the same time, consumers in numerous basic categories (such as biscuits, salty snacks, tea, and kitchen and floor cleaners) are far less conscious about the brands.

ANALYSIS:

- India is the 5th largest retail market in the world.
- Retailing in India accounts for over 10% of the country's Gross Domestic Product (GDP) and around 8% of the employment (Source: IBEF).
- From US\$ 672 billion in 2017, the Indian retail market is expected to grow to US\$1.1 trillion by 2020, while the modern retail market in India is expected to double in size over the next three years. (Source: IBEF)
- The retail sector in India is dominated by the unorganized retail trade, where unorganised trade forms around 93% of the overall trade. This is in contrast with the developed countries where the organised retail industry accounts for almost an average of more than 80% of the total retail trade. This highlights a lot of scope for further penetration of organized retail in India.
- The sector can be broadly divided into two segments: Value retailing, which is typically a low margin-high volume business (primarily food and groceries) and Lifestyle retailing, a high margin-low volume business

(apparel, footwear, etc). The sector is further divided into various categories, depending on the types of products offered.

- Transition from traditional retail to organised retail is taking place due to changing consumer expectations, growing middle class, higher disposable income, preference for luxury goods, change in the demographic mix, etc. This is further intensified with the convenience of shopping with online stores (online shopping), multiplicity of choice under one roof (Shop-in-Shop), and the increase of mall culture, etc. These factors are expected to drive organized retail growth in India over the long run.
- The online retail is growing at rapid pace. Online retail in India is expected to be at par with the physical stores in the upcoming few years, driven by robust investment and rapid increase in the number of internet users. (It grew 23% to US\$ 17.8 bn in 2017 (Source: IBEF))
- The overall retail market in India is expected to grow at 12% growth rate per annum, driven by growing urbanization, rising income, younger demographics and rising aspirations of the middle class. Modern trade is going to expand as twice as fast at 20% per annum and traditional trade is expected to grow at 10% (Source: IBEF).

HOW TO RESEARCH THE RETAILING SECTOR

Supply

- The retail industry is now leveraging the digital retail channels (e-commerce), which allows them to spend less on real estate while reaching out to more customers in Tier II and Tier III cities. Supply is also influenced by some international players entering domestic markets.

Demand

- Growing urbanization, increasing disposable incomes, changing demographic profile, changing consumer tastes and preferences are some of the factors that are driving demand in retail market in India.

Barriers to entry

- Lack of quality, economic backdrop, regulatory issues are some of the factors acting as an impediment to the spread of organised retail in India. Since it is capital-intensive industry, access to capital also plays an important part for expansion.

Bargaining power of suppliers

- The bargaining power of suppliers varies depending upon the target segment, the format followed, and products on offer. The unorganised sector has a dominant position in the total retail market in India. There are few players who enjoy an edge over others on account of being established players and enjoying brand distinction. Overall, the bargaining power of suppliers is low as retailers have low switching costs.

Bargaining power of customers

- High due to wide availability of choice and cheaper options available across various channels. Also, low switching costs, price sensitiveness, and easily accessible information of a product and its price gives customers high bargaining power.

Competition

- With India being an attractive retail market, there is a high level of competition. Competition is characterised by many factors, including assortment, products, price, quality, service, location, reputation, credit, convenience

offered, etc. Aggressive e-commerce and digital retailing coupled with new entrants such as business houses and international players are intensifying the competition at a rapid pace.

FINANCIAL YEAR 2017:

- Financial year 2016-17 stood as another year of mixed trends. The retail sector in India witnessed some improvement in consumer sentiments and business confidence.
- The introduction of Goods and Services Tax (GST) and the demonetisation move supported the growth of organized retail industry.
- With the rising need for consumer goods in different sectors including consumer electronics and home appliances, many companies invested in the Indian retail space in FY 17.
- Department of Industrial Policy and Promotion (DIPP) approved three foreign direct investments (FDI), Mountain Trail Food, Kohler India Corporation, and Merlin Entertainments India in the single brand retail sector and two FDI proposals of over Rs 4 billion (US\$ 62.45 million) within the retail sector. (Source: IBEF)
- 2017 was a successful year for herbal-ayurvedic brands. With the growing need for organic products, many new Indian companies were seen entering this segment.
- Investments by private equity firms in Indian retail sector reached US\$ 200 million in the first half of 2017. This was seen on the back of seven new global brands entering India during the period. (Source: IBEF)

The year saw emergence of online market places across a whole range of categories with aggressive discounting strategies funded by overseas investors.

Government Initiatives

The Government of India has taken various initiatives to improve the retail industry in India. Some of them are listed below:

- The Government of India may change the Foreign Direct Investment (FDI) rules in food processing, in a bid to permit e-commerce companies and foreign retailers to sell Made in India consumer products.
- Government of India has allowed 100 per cent Foreign Direct Investment (FDI) in online retail of goods and services through the automatic route, thereby providing clarity on the existing businesses of e-commerce companies operating in India.

PROSPECTS

- Retail industry has been on a growth trajectory over the past few years. Indian retail market industry is expected to be worth US\$ 1.1 trillion by 2020 (from US\$ 672 billion in 2017).
- A new trend emerging in retail sector is the increase in sales during discount seasons. It has been observed of late that sales numbers in discount seasons are significantly higher than at other times. This is prompting retailers to start discounts earlier and have longer than usual sale season. Also, concepts such as online retailing and direct selling are becoming increasingly popular in India thereby boosting growth of retail sector.

- E-commerce is probably said to create a revolution in the retail industry in the years to come. With the rapid expansion of e-commerce, there can be seen a trend of ever increasing choice of products at lowest rates. All of this will also lead to intensified competition in the industry.
- One of the major areas supporting the retail growth in India is the E-commerce industry. As per India Brand Equity Foundation, India is expected to become the world's fastest growing e-commerce market, driven by robust investment in the sector and rapid increase in the number of internet users. E-commerce sales in India are expected to reach US\$ 120 billion by 2020 from US\$ 30 billion in FY16. Further, India's e-commerce market is expected to reach US\$ 220 billion in terms of gross merchandise value (GMV) with 530 million shoppers by the year 2025. This will come on the back of faster speeds on reliable telecom networks, faster adoption of online services, variety of choice, convenience, etc.
- There is also an upward trend seen in modern retailing. Driven by western culture and urbanisation, it has become a part of day to day lifestyle. There are more than 500 operational shopping malls in India having thousands of brands across food, fashion and lifestyle which are offering best of national & international brands to better educated consumers.
- The new buzz word in retail is omni-channel. Omni-channel offers a seamless experience to the customers across various channels, whether brick & mortar, online stores, etc. The strategic objective here is to merge various channels (departmental stores, online stores) and link them to a multichannel retailer. This strategy makes a brand always available to the customer and gives an impetus to sales by increasing visibility, consumer base across various geographies. It also optimises inventory holding costs, operating costs and real estate cost. With modern retail gaining ground in India, there remains a lot of scope for omni-channel to expand.
- With rising incomes, favorable demographics, entry of foreign players and increasing urbanisation, the long-term outlook for the retail industry in India is positive.
- Goods and Services Tax (GST) is expected to simplify the distribution structure and reduce the operational complexities of overall supply chain in the retail business. The passage of GST will also come out as a positive development for the retail Industry in India.

Road Ahead

Nevertheless, there are certain impediments that may obstruct the growth of Indian Retail Sector; for example, slow internet connections in rural India and apprehensions about the security of online transactions. Regardless of these hurdles, the future of the retail sector in India seems to be exciting as both organized and unorganized retail businesses along with the government are working collectively to revolutionize the retail industry while keeping the interests of the customers in mind. All things considered, it seems reasonable to assume that an exciting year lies ahead for the Indian retail sector with global retail giants entering the market, ground-breaking technologies revolutionizing customers' journey by enhancing retail operations, and favorable government policies.

CONCLUSION:

The retail sector in India is one of the biggest contributors to the economy in terms of revenue and contributes about 15% towards its GDP. It provides the second highest rate of employment after agriculture. The retail sector in India is vast and has huge scope for development as majority of the constituents are of the unorganised sector. Changes in the Indian government policy regarding FDI in retail sector would

promote this industry on the whole economic development and social welfare of the country. It can be very profitable for the country if it is done in the right manner. In future FDI in multi-brand retail upto 100 percent can bring about huge investment in technology and real estate which will flourish Indian economy.

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7

SENSITIZATION TOWARDS ISSUES AND CHALLENGES OF WATER RESOURCES THROUGH SYLLABI AT SCHOOL LEVEL

Dr. Kalpana Patni Lakhera

ABSTRACT:

Syllabi is academic document that communicates information about a specific course and defines expectations and responsibilities. The syllabi ensures setting clear expectations of material to be learned. School is a educational institution designed to provide learning spaces and learning .In our system school education includes Primary and secondary education. Primary education is typically the first stage of formal education it tends to focus on basic academic learning and socialization skills .In some countries primary education is followed by ecosystem. Secondary education is the stage of education following primary education at this level values and attitudes formed at primary level are more firmly ingrained alongside the acquisition of knowledge and completing the delivery of basic skills lays the foundation of lifelong skills.

Key words- Sensitization,Syllabi,Sustainable.environmental education.

INTRODUCTION:

The education system in India had incorporated certain aspects of environment in school curricula as far back as 1930. The Kothari commission (1964-66) also suggested that basic education had to offer EE and relate it to the life needs and aspirations of the people and the nation. At the primary stage, the report recommended that “the aims of teaching science in the Primary schools should be to develop proper understanding of the main facts, concepts, principles and processes in physical biological environment” Environmental education at primary, secondary, Higher secondary levels was treated in different way. Environmental education is an essential part of every pupil’s learning. It helps to encourage awareness of the environment.

Gopal G.V,Anand stated that ,the objectives of environmental education is to increase public awareness about environmental issues, as explore possible solutions, and to lay the foundations for a fully informed and active participation of individual in the protection of environment and the prudent and rational use of natural resources. The resolutions provide the following guiding principles for environmental education:

- The environment as a common heritage of mankind.
- The common duty of maintaining, protecting & improving the quality of environment, as a contribution to the protection of human health and safeguarding the ecological balance
- The need for a prudent and rational utilization of resources;

- The way in which each individual can, by his own behavior and action, contribute to the protection of environment;
- The long-term aims of environmental education are to improve management of environment and provide satisfactory solutions to environmental issues.
- Provide opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.
- Encourage pupils to examine and interpret the environment from variety of perspectives-physical, geographical, biological, sociological, economic, political, technological, historical, an esthetic and ethical
- Arouse pupil's awareness and curiosity about the environment and encourage active participation in resolving environmental problems.
- Environmental education is closely linked to the other cross circular themes of other subject areas.

Environmental education is a process that aims at the development of environmentally literate citizens who can compete in global economy, who have the skills and knowledge and inclinations to make well informed choices concerning the Environment, and who exercise the rights and responsibilities of the members of a community, Environmental knowledge contributes to an understanding and appreciation of the society, technology and productivity and conservation of natural and cultural resources of their own environment. Environmental education has an ability to solve the societal needs the needs of a community problem and their solutions and workforce for tackling cooperative mind. We need the school children to share and develop the motivation from school about various environmental issues, which are the challenges of today and prepare them for the future.

Environmental education must become a vehicle for engaging young minds in the excitement of first hand observation of the nature and understanding the patterns and processes in the natural and social worlds in order to take care of the habitat and its surroundings which becomes a major part of EE in both primary and upper primary stages of school education. In the secondary and senior secondary stages also some of the major issues such as environmental protection, management & conservation are to be dealt in more detail.

PRIMARY STAGE:-

Environmental education is imparted as EVS, which forms a common component of syllabus, prescribed by the States and CBSE. The text books for environmental studies which are prepared by N.C.E.R.T has taken cross curricular approach to teaching environmental concepts through language, mathematics about the environment. In classes I and II where there is no separate EVS book. For classes III and IV, EVS textbooks are available. EE has been further reinforced under the art of healthy and productive living (AHPL) for which a single teacher's handbook has been developed for classes I to V.

The contents and concepts covered in these books are as follows:

- Familiarization with one's own body;
- Awareness about immediate surroundings;
- Need for food, water, air, shelter, clothing and recreation
- Importance of trees and plants;
- Familiarization with local birds, animals and other objects;

- Interdependence of living and non-living things;
- Importance of cleanliness and sanitation;
- Importance of celebration of festivals and national days;
- Awareness of sunlight, rain and wind;
- Caring for pet animals;
- Awareness about air, water, soil and noise pollution;
- Need for the protection of environment;
- Knowledge about the source of energy;
- Importance of the conservation of water resources and forests and
- Indigenous and traditional knowledge about the protection of environment.

The textbooks lay emphasis on raising awareness levels and sensitizing children about environmental concerns. Emphasis has also been laid on the need to organize learning in local specific contexts, which will provide more meaningful experiences to children. Aspects of indigenous knowledge have also been introduced. There are references and suggestions for conducting activities in and outside the classroom. The NCERT textbooks for environmental studies generally take a comprehensive view of the natural, physical, social and cultural environment. It is evident that the textbooks represent relevant ideas commensurate with the age and developmental level of children so as to provide them the necessary understanding about their immediate environment. However, there is a scope for inclusion of more activities to enable children to translate awareness into effective behavioral action.

UPPER PRIMARY STAGE:-

The contents of textbooks present an extension and elaboration of the concepts introduced at the primary stage.

The major concepts dealt with in these textbooks are:

- Adaptation of living beings in environment;
- Natural resources
- Water cycle;
- Food chain;
- Importance of plants and trees in keeping the environment clean;
- Classification of plants
- Role of plants and animals in environmental balance and soil conservation;
- Ecosystems;
- Necessity of clean air for healthy living;
- Animals and their characteristics;
- Effects of environmental pollution and the consequences of air pollution-

- (i) Greenhouse effect,
- (ii) Ozone layer depletion and,
- (iii) increase in carbon dioxide;
 - Role of microorganisms in the environment;
 - Dependence of the community on the environment;
 - Basic knowledge about the earth and its atmosphere;
 - Physical features of the country;
 - Population and environment;
 - Care and protection of livestock;
 - Necessity of wildlife protection;
 - Impact of deforestation;
 - Impact of industrialization on environment; and Role of civic society in protection of the environment, personal and public property including monuments.

While most of the areas of EE have generally been covered, there is need for inclusion of more individual and group activities and project work in order to promote both the affective and cognitive domains of learning. Co-scholastic activities including organization of plays, cultural programs, debates, mock parliament, discussions and community activities may help further in achieving the objective.

SECONDARY STAGE:

The environmental concepts both are at concrete and abstract levels. The concepts covered are:

- Bio-sphere;
- Greenhouse effect;
- ozone layer depletion;
- Use of fertilizers and pesticides;
- Wildlife protection;
- Soil chemistry;
- Management domestic and industrial waste;
- pollution of noise, air, water, soil and control measures;
- Ecosystem;
- Management of non-degradable substances;
- Edible and ornamental plants
- Sewage disposal and cleaning of rivers;
- Nuclear energy;

- Radiation hazards;
- Gas leak;
- Wind power;
- Bio-energy; and
- Environmental laws and acts.
- Environmental concepts also extend to subject areas like languages and social sciences which reinforce learning and internalization of all such concepts.

Uses-water is used mainly for the following purposes-

- Domestic purpose
- Agriculture
- Industry
- Recreation
- Hydropower generation

Objectives of the study-

- to aware people about value of water.
- to sensitize about role of water in life.
- to focus about limited availability of fresh water through syllabi in schools.

REVIEW OF LITERATURE:

Tough there has been a long history of EE component in our school curriculum; it has always been treated as secondary to other scholastic areas like sciences, social-sciences, mathematics etc. The first aggressive thrust for EE at school level came in NCF 1986 and the document, Plan of Action, 1992. Environmental issues, environmental concerns and conservation were identified as core areas in the curriculum. Although, many state boards and CBSE emphasized the need to educate children about our environment, there was very little perceptible change in our approach to EE transaction. NCF-2000 & NCF 2005 has laid enormous emphasis on EE to the extent that it is projected as of grave concern in school curriculum that is as important as other school subjects.

RESEARCH METHODOLOGY:

Review method

Water is most common liquid on earth it covers about 71.4% of the earth .All known life needs liquid water to function properly water is a good solvent readily dissolving and transporting nutrients across a wide range of temperatures .Its molecule also plays a key role in ensuring protein behave properly .The water in our body is essential for life .water is involved in every bodily function from digestion.circulation, control of body temperature and the excretion of waste product. The water in our body is continually being used and lost from the body.

Without water we cannot survive .about 60%of adult human body is made up of water in infant and children this percentage is even greater.

Of all the water in this blue planet only 3% water is fresh water and this is precious life giving resource has been a decline of 35%since 1970 .We must use water more wisely .Water is essential in all life without this all living things such as ourselves ,animal and plant life would all die.

Directly or indirectly water affects all facets of life without it there would no vegetation on land, no oxygen for animals to breath the planet would look entirely different .Water is necessary to keep peoples bodies and environment healthy so water should be valued and protected as the precious resource for human survival .If we fail to conserve water eventually an adequate water supply may not be available. Lack of potable water may lead dramatic consequences .Water conservation can help prevent local and global problems such as rising cost, reduced food supplies,health hazards and armed conflicts Water is most probably important substance for preserving life ,Developed nations take water for granted because it flows out of the tap .But we are rapidly depleting the global supply of fresh water .

Throughout world 2.6 billion people lack proper sanitation which means that drinking water around the world is contaminated with the waste and disease .The WHO estimated that this has resulted in 1.8 million human deaths. Open water is often contaminated by agricultural chemicals ,trace and litters .Both the Pacific and Atlantic oceans contain large islands of.plastic trash which national geographic suggests came from litter bags and open landfills around the world.

The national council of educational research and training is the apex body for school education in India .The NCERT provides support and technical assistance to a number of schools in India and oversees many aspects of enforcement of education policies in India

Normally in our schools subject environmental studies is taught upto class 8.which includes syllabus regarding our environment and topics concerning prime importance like Useand. conservation of water.Because primary education which lays foundation of basic academic learning and socialization skills .while secondary education is the stage of education following primary education at this level values and attitudes formed at primary school are more firmly in grained alongside the acquisition of knowledge and completing the delivery of basic skills and the foundation of lifelong learning.

RELEVANCE OF SENSITIZATION TOWARDS WATER THROUGH SCHOOL SYLLABI:

Water is a valuable natural resource in this blue planet and fresh water ratio is declining drastically day by day creating alarming situation for our life &all creatures . Hence it is right time to sensitize our young minds towards water about its value & importance for continuity of life in this beautiful planet. Water plays a vital role for sustaining life in this planet.

Water is most important substance on earth. All plants and animals must have water to survive if there was no water there would be no life on earth . Water that is safe for drinking is called potable water water that is not safe to drink is said to be non potable. All action taken to make sure that drinking water is Potable is called water treatment. Water is colourless and odourless substance found all over the earth .each water molecule is made up of one oxygen and two hydrogen atoms held together by strong covalent bond water is found in three different forms-solid, liquid, gaseous.

CHALLENGES:

- Water scarcity is a global challenge with rapid population growth around the world.
- Agriculture is both a major cause and casualty of water scarcity.
- Water scarcity is expected to intensify the result of climate change.

- Food loss and waste.
- Food system.
- We're changing the climate ,making dry areas drier and precipitation more variable and extreme.
- More People+ more money=more water demand
- Ground water is being depleted.
- Water infrastructure is in dismal state of disrepair.
- Natural infrastructure is being ignored.
- Water is wasted.
- The Price is wrong.

SOLUTIONS:

- Educate to change consumption water and lifestyle.
- Invent new water consumption technologies,
- Recycle waste water.
- Improve irrigation and agricultural practices.
- Appropriate price water.
- Develop new efficient desalination plants.
- Plant more trees

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8

**CAUSES OF FAILURE OF PLANTATION PROGRAMMES,
IN REFERENCE TO UTTARAKHAND**

**वृक्षारोपण परियोजनाओं की असफलता के कारण,
उत्तराखण्ड के सन्दर्भ में,**

डॉ० किशोर सिंह चौहान

भूमिका (Introduction)

वन धरती पर जीवन का आधार है। वन विहीन धरती में जीवन की कल्पना नहीं की जा सकती है। पिछली तीन शताब्दियों में सम्पूर्ण धरती में अनियोजित विकास के कारण सर्वाधिक वन विनाश हुआ है। वन क्षेत्र घटने के कारण जलवायु परिवर्तन, पर्यावरण प्रदूषण प्राकृतिक आपदा जैसी विकट समस्या मानव जाति के समक्ष संकट के रूप में प्रकट हुई है। जनसंख्या में अपार वृद्धि होने से कृषि भूमि, औद्योगिक एवं नगरीय क्षेत्रों के कारण वन क्षेत्रों के बड़े भाग का सफाया किया जा रहा है। वन जिस अनुपात में काटे जा रहे हैं उसी अनुपात में उनका पुनर्स्थापन नहीं किया जा रहा है। भारत में ईसा से लगभग तीन वर्ष पूर्व 80 प्रतिशत भू-भाग पर वन पाये जाते थे। वर्तमान समय में हमारे देश भारत में मात्र 20.64 प्रतिशत भू-भाग पर ही वन शेष बचे हैं। जबकि एक अन्तर्राष्ट्रीय मानक के अनुसार किसी भी राष्ट्र में कम से कम 33 प्रतिशत भू-भाग में वन क्षेत्र होना आवश्यक है।

अध्ययन क्षेत्र 'उत्तराखण्ड' के शिवालिक पर्वत श्रेणी, मध्य हिमालय, महान हिमालय तथा भाबर तराई क्षेत्र में फैले वनों को सम्मिलित किया गया है, जिसका भौगोलिक विस्तार उत्तरी अक्षांश में 28°43' से 31°27' तथा पूर्वी देशान्तर में 77°34' से 81°02' पूर्वी देशान्तर के मध्य स्थित है।

इसका आकार लगभग आयताकार है तथा राज्य के पूर्व से पश्चिम तक की लम्बाई 385 किलोमीटर तथा उत्तर से दक्षिण तक इसकी चौड़ाई 320 किलोमीटर है। उत्तराखण्ड राज्य का कुल क्षेत्रफल 53,483 वर्ग किलोमीटर है। (सांख्यिकी डायरी के अनुसार) जो भारत के कुल क्षेत्रफल का लगभग 1.69 प्रतिशत है। उत्तराखण्ड राज्य का कुल क्षेत्रफल 86.07% भाग पर्वतीय तथा 13.93% भाग मैदानी है।

विधि-तंत्र (Methodology)

क्षेत्र व विषय के मुख्य उद्देश्यों की पूर्ति एवं मुख्य शोध प्रश्नों के उत्तर प्राप्ति हेतु वर्तमान में विकसित भौगोलिक शोध विधियों व तकनीक का उपयोग किया गया है। जिसमें अनुभाषिक एवं विश्लेषणात्मक विधि तंत्र (Empirical and Analytical Methodology) को अपनाया गया है। द्वितीयक आंकड़े, विषय से सम्बन्धित विभिन्न कार्यालयों एवं विभागों से तथा प्राथमिक आँकड़े, क्षेत्र भ्रमण के दौरान स्थानीय निवासियों एवं विभिन्न विभागों के अधिकारियों एवं से साक्षात्कार कर, प्राप्त किये गये हैं। मुख्य उद्देश्यों की प्राप्ति हेतु लम्बत एवं अनुर्दघ्य (Longitudinal and Transverse) क्षेत्रीय भ्रमण किये गये हैं। साथ ही विभागीय आंकड़ों का क्षेत्र में परीक्षण किया गया है। मानचित्र के निर्माण में विभिन्न मानचित्रण विधियों का प्रयोग किया गया है, जिसमें मात्रात्मक व प्रकारात्मक विधियों, रूढ़ चिन्हों, मापनी आदि को सम्मिलित किया गया है। जिनमें मात्रात्मक व प्रकारात्मक छाया विधियों, रूढ़ चिन्हों, मापनी आदि सम्मिलित हैं।

वन विस्तार परियोजनाओं का स्थानिक विश्लेषण –

भारत में 1952 में वन नीति लागू की गयी, जिसे 1988 में संशोधित किया गया। राष्ट्रीय वन नीति, का मुख्य उद्देश्य वनों की सुरक्षा, संरक्षण व विकास है। इसके मुख्य लक्ष्य हैं –

1. पारिस्थितिकीय सन्तुलन के संरक्षण और पुनर्स्थापना द्वारा पर्यावरण सन्तुलन को बनाये रखना।
2. प्राकृतिक सम्पदा का संरक्षण।
3. नदियों, झीलों एवं जलाशयों के जलग्रहण क्षेत्र में भूमि कटाव एवं वनों के क्षरण पर प्रतिबन्ध।
4. राजस्थान के रेगिस्थानी क्षेत्रों तथा तटवर्ती क्षेत्रों में रेत के टीलों के विस्तार को रोकना।
5. व्यापक वृक्षारोपण एवं सामाजिक वानिकी कार्यक्रमों के माध्यम से वृक्षों की बढ़ोत्तरी करना।
6. ग्रामीण एवं आदिवासी जनसंख्या के लिए ईंधन की लकड़ी चारा तथा अन्य छोटी-मोटी वन उपज आवश्यकताओं की पूर्ति हेतु कदम उठाना।
7. राष्ट्रीय आवश्यकताओं की पूर्ति हेतु वन्य उत्पादों की वृद्धि।
8. वन उत्पादनों के सही उपयोग को बढ़ाना तथा लकड़ी का अनुकूलतम विकल्प खोजना।
9. इन उद्देश्यों की पूर्ति और वर्तमान वनों पर दबाव कम करने के लिये बड़े पैमाने पर आम जनता विशेषकर महिलाओं का अधिकतम सहयोग प्राप्त करना।

भारत सरकार द्वारा उक्त उद्देश्यों की प्राप्ति के लिये अनेक वृक्षारोपण परियोजनाओं का संचालन किया गया जिनमें से कुछ प्रमुख योजनायें निम्न प्रकार हैं –

क्र०सं०	वृक्षारोपण परियोजना का नाम	उद्देश्य
1.	संयुक्त वन प्रबन्धन परियोजना(1990)	सरकार ग्राम पंचायतों के साथ मिलकर स्वयं सेवी संस्थाओं के माध्यम से वृक्षारोपण एवं वन संरक्षण कार्य करना चाहती थी।
2.	जलागम परियोजना	सरकार के द्वारा ग्रामीण लोगों की सहायता से जलागम परियोजना का संचालन किया। जिसके अन्तर्गत जलागम क्षेत्रों में चाल-खाल के निर्माण कार्य के साथ ही वृक्षा-रोपण कार्य भी किये गये।
3.	सामाजिक वानिकी (1976)	भारत सरकार के द्वारा सामाजिक वानिकी के माध्यम से अनुसूचित जाति एवं जनजातिय क्षेत्रों में वृक्षारोपण परियोजनायें संचालित की गयी जिनका उद्देश्य ग्रामीणों को चारापत्ति, ईंधन की लकड़ी उपलब्ध करवाने के साथ ही स्वरोजगार से जोडना था।
4.	वन पंचायतों के माध्यम से वृक्षारोपण	भारत सरकार ने वन पंचायतों के गठन करके वृक्षारोपण परियोजनाओं का संचालन वन विभाग के माध्यम से ग्रामीणों के साथ मिलकर धरातल पर उतारने का प्रयास किया।
5.	अपना पेड़-अपना गांव	वन मंत्रालय एवं वन विभाग के माध्यम से अपना पेड़ अपना गांव योजना का संचालन भी किया गया।
6.	हरेला वृक्षारोपण परियोजना	उत्तराखण्ड के ग्रामीण क्षेत्रों से वन क्षेत्र के विस्तार को बढ़ाना।
7.	कैम्पा परियोजना	कैम्पा परियोजना के अन्तर्गत वृक्षारोपण कार्य किया जाता है।

उक्त वृक्षारोपण परियोजनाओं के माध्यम से व्यापक स्तर पर जन जागरण अभियान संचालित किये गये। इन वृक्षारोपण परियोजनाओं के अन्तर्गत भारत के समस्त राज्यों के विशाल भू-भाग वृक्षारोपण किया गया किन्तु कुल रोपित पौधों के 10 प्रतिशत पौधे भी जीवित नहीं बचाये जा सके हैं। इस तथ्य का विश्लेषण प्रस्तुत उदाहरण में किया जा रहा है।

**वृक्षारोपण परियोजना –
ग्राम–कोट गांव, चिन्याली सौड़, जनपद–उत्तरकाशी, उत्तराखण्ड**

सारणी– 1 स्रोत–प्राथमिक आंकड़ों पर आधारित
डॉ० किशोर सिंह चौहान

सारणी–1 में दिया गया वृक्षारोपण का विवरण शोधकर्ता ने स्वयं प्राथमिक आंकड़ों के आधार पर प्राप्त किये हैं।

कोटगांव ग्राम में पीड़ित कल्याण एवं महिला बाल उत्थान समिति के द्वारा वर्ष 2003 में एक लाख पौधों की पौधशाला तैयार की गयी। दो वर्ष बाद 2006 में पौधशाला से पौधों को लेजाकर के सिविल स्वयं की 50 हेक्टेयर भूमि में रोपित किया। प्रति हेक्टेयर 1600 पौधे रोपित किये गये। सम्पूर्ण 50 हेक्टेयर भूमि में पत्थरों की 4 फीट ऊंची सुरक्षा दीवार बनवायी गयी। वृक्षारोपण की इस परियोजना में ग्राम कोटगांव की 115 महिला व 22 पुरुषों ने कार्य किया। वर्ष 2006 में वृक्षा रोपण कार्य पूर्ण होने के पश्चात कोटगांव की ग्रामीण महिलाओं के 10 स्वयं सहायता समूह गठित किये गये, प्रत्येक समूह को पांच हेक्टेयर वन क्षेत्र के संरक्षण का दायित्व सौंपा गया।

सम्पूर्ण सावधानियों के बाद भी इस वृक्षारोपण परियोजना के अन्तर्गत मात्र 25 से 30 प्रतिशत रोपित पौधे ही वर्तमान में जीवित हैं। जिसके अनेक कारण हैं, जिन कारणों से रोपित पौधों के 70 प्रतिशत पौधे नष्ट हो गये। जिनमें से प्रमुख कारण निम्न प्रकार हैं –

1. रोपित पौधों की सिंचाई की कोई व्यवस्था नहीं थी।
2. परियोजना काल पूर्ण होने के बाद ग्रामीणों ने सुरक्षा करने में कोई रुचि नहीं दिखाई।
3. अगले वर्ष ग्रीष्म काल में ग्रामीणों के द्वारा आग लगा दी गयी।
4. रोपित वन क्षेत्र में सुरक्षा दीवार तोड़कर पशु चारण किया जाता रहा।
5. ग्रामीण अशिक्षित महिला पुरुषों के अतिरिक्त कुछ शिक्षित लोगों को भी वन के विषय में एवं वन के महत्व के सम्बन्ध में विशेष ज्ञान का अभाव पाया गया।
6. स्थानीय जनप्रतिनिधि कमिशन एवं घूस खोरी तथा भ्रष्टाचार में लिप्त पाये गये।
7. सरकार व प्रशासन का भी लचर व घूसखोरी वाला रवैया देखने को मिला।
8. परियोजना काल संचालन के दौरान ग्राम उप प्रधान ने वृक्षारोपण परियोजना के मुख्य संचालक के विरुद्ध झूठी शिकायत दर्ज करवायी गयी। प्रशासनिक जांच के पश्चात किसी भी प्रकार की अनियमिता सामने नहीं आई।
9. वन एवं पर्यावरण मंत्रालय ने समय से धनराशि निर्गत नहीं की।
10. वृक्षारोपण की अन्तिम किस्त की 1,60,000 रूपये की धनराशि बिना किसी कारण के रोक दी गयी जिसका भुगतान वर्तमान समय तक नहीं हो सका है।

उक्त वृक्षारोपण परियोजना के मुख्य संचालक के रूप में शोधकर्ता ने स्वयं कार्य किया है, जिसका मैं स्वयं प्रत्यक्षदर्शी रहा हूँ। शोधकर्ता के दावों की सत्यता की जांच के लिये ग्राम कोटगांव चिन्याली सौड़, जनपद उत्तरकाशी तथा वन प्रभाग उत्तरकाशी कोटबगला तथा पर्यावरण मंत्रालय भारत सरकार से संज्ञान लिया जा सकता है।

शोध पत्र में उक्त उदाहरण का विवेचन एवं विश्लेषण से अन्य वृक्षारोपण योजनाओं एवं परियोजनाओं का अध्ययन एवं विवेचन करने में सरलता होगी।

संयुक्त वन प्रबन्धन

1988 की राष्ट्रीय वन नीति में पर्यावरण सम्बन्धी मुद्दों को प्राथमिकता देने और स्थानीय लोगों की जरूरतों को पूरा करने की बात कही गयी। पश्चिम बंगाल में संयुक्त वन प्रबन्धन के सफल प्रयोग एवं अनुभवों पर आधारित अवधारणा के बाद महसूस किया गया कि वनों को फिर से हरा-भरा बनाने के लिए काम कर रहे ग्रामीण संगठनों को निर्धारित वन क्षेत्र से होने वाली आय में हिस्सा दिया जाना चाहिए। यह कार्यक्रम वनों की फिर से तैयार करने के तरीके में मौलिक परिवर्तन की बात करता है।

वर्ष 1999 में उत्तर प्रदेश के पर्वतीय भाग जो (9 नवम्बर 2000 में पृथक उत्तराखण्ड राज्य के रूप में अस्तित्व में आया) संयुक्त वन प्रबन्धन योजना का संचालन स्वैच्छिक संगठन (NGS) के साथ मिलकर प्रारम्भ किया गया। 22 वर्ष बाद भी संयुक्त वन प्रबन्धन कार्यक्रम विशेष कारगर साबित नहीं हुआ है। राज्य के अध्ययन से पता चलता है, यह कार्यक्रम भी अन्य सरकारी की तरह केवल दस्तावेज बनकर रह गया है। सहभागिता और सतत विकास की अवधारणाओं पर आधारित होने के बावजूद कार्यक्रम के तहत लोगों को अपनी सम्पदा का खुद प्रबन्धन करने का कोई अधिकार मुश्किल से ही मिल पाया है।

जलागम योजना

जलागम योजना के अन्तर्गत उत्तराखण्ड के पर्वतीय जनपदों में चाल-खाल के निर्माण किये गए। साथ ही जलागम क्षेत्र में वृक्षारोपण कार्य भी किये गये किन्तु सही क्रियान्वयन के अभाव में इस योजना के भी सफल एवं सकारात्मक परिणाम कम ही प्राप्त हुए हैं।

कार्य 0 वर्ष	ग्राम का नाम	किये गये कार्य का विवरण
2007	किराणू तहसील मोरी	वृक्षारोपण – 2000
	जनपद उत्तरकाशी	चालखाल का निर्माण – 200

– स्रोत प्रमाणिक आंकड़ों पर आधारित सारणी
डॉ० किशोर चौहान

वर्तमान समय में ग्राम किराणू में किये गये कार्य की शून्य प्रगति है। रोपित पौधों का एक प्रतिशत भी जीवित नहीं है। निर्मित 200 चालखाल में वर्षा जल से कभी भी रुका ही नहीं वरन उनके अवशेष भी नहीं दिखाई देते।

सामाजिक वानिकी वृक्षारोपण परियोजना

सामाजिक वानिकी का प्रमुख अर्थ हे लोगों का, लोगों के लिए, लोगों द्वारा चलाया गया “कार्यक्रम”

राष्ट्रीय कृषि आयोग ने 1976 में ईंधन, चारा लकड़ी और छोटे-मोटे वन उत्पादों की पूर्ति करने वाले पेड़ लगाने के कार्यक्रम के लिए सामाजिक वानिकी शब्द का प्रयोग किया सामाजिक वानिकी एवं वृक्षारोपण परियोजनाओं सर्वाधिक असफल रही है।

कैम्पा वृक्षारोपण परियोजना

Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

कैम्पा परियोजना का मुख्य उद्देश्य स्थानान्तरित वन भूमि से समाप्त हुए वनों की पुर्नस्थापित करने के लिए वृक्षारोपण कार्यक्रमों का संचालन करना है। किन्तु इस परियोजना की धन राशि से सौन्दर्यकरण एवं अन्य विकास कार्य किये जा रहे हैं।

वृक्षारोपण परियोजनाओं के अन्तर्गत रोपित पौधों की सुरक्षा का न हो पाना।

उक्त वर्णित समस्त वृक्षारोपण परियोजनाओं का संचालन उत्तराखण्ड राज्य में सरकार एवं गैर सरकारी स्तर के माध्यम से किया जा रहा है। सुरक्षा के पुख्ता इन्तजाम न होने के कारण रोपित पौधे मर जाते हैं।

अनियोजित विकास के कारण वनों की क्षति

उत्तराखण्ड राज्य का 80 प्रतिशत भू-भाग पर्वतीय क्षेत्र हैं, यहां की पारिस्थितिकी अत्यधिक संवेदनशील है। विशेषकर उत्तराखण्ड के पर्वतीय क्षेत्र में सड़क निर्माण एवं बांध निर्माण कार्यों से बड़े भू-भाग में वन विनाश होता है। इसकी क्षतिपूर्ति के लिये जो वृक्षारोपण किया जाता है वह निम्न कारणों से सफल नहीं हो पाता है।

- रोपे गये पौधों की आयु दो वर्ष होती है, जबकि इस समय पौधा कम से कम चार वर्ष का हो।
- पौधे रोपण के लिये 3 x 2 फीट का गड्ढा बनाया जाना आवश्यक है।
- पौधा रोपते समय उसे अच्छे प्रकार से मिट्टी में दबाया जाना चाहिए।
- रोपित पौधों एवं क्षेत्र का चयन करते समय जलवायु एवं धरातलीय संरचना, पारिस्थिकी को ध्यान में रखकर वृक्षारोपण कार्य किया जाना चाहिए।
- यह भी देखा जाता है कि वृक्षारोपण कार्य समय से नहीं किया जाता है। जबकि वृक्षारोपण का

उचित समय जुलाई व अगस्त माह है।

- अधिकांश वृक्षारोपण कार्य ठेकेदारों के द्वारा करवाये जाते हैं, जबकि जन सहभागिता आवश्यक है।
- रोपे गये पौधों की रूपाई के बाद पांच वर्षों तक सिंचाई—गुड़ाई व सुरक्षा करना अति आवश्यक है।
- आग से वनों की सुरक्षा हर समय करने की आवश्यकता है।
- रोपित वृक्षारोपण परियोजना क्षेत्र में सुरक्षा दीवार, तारबाड़ एवं चौकीदार की उचित व्यवस्था होनी चाहिए।
- वृक्षारोपण में स्थानीय समुदाय की भागीदारी सुनिश्चित करना आवश्यक है।
- सरकारी सेवकों एवं जनप्रतिनिधियों को भ्रष्ट आचरण का त्याग करना होगा, सख्त एवं ईमानदार मॉनिटरिंग की जानी चाहिए।
- स्थानीय समुदाय जो वन संरक्षण का कार्य कर रहा है को पुरुस्कृत किया जाना चाहिए।

सुझाव एवं निष्कर्ष –

उक्त विश्लेषण एवं अध्ययन से ज्ञात होता है कि सरकार के द्वारा प्रत्येक वृक्षारोपण योजना को राष्ट्रहित में लागू किया जाता है, किन्तु उसके परिणाम लगभग दस वर्ष पश्चात समझ में आते हैं। 1952 से वर्तमान समय तक सरकार के द्वारा अनेक सफल एवं असफल वृक्षारोपण परियोजनाओं का संचालन किया जा चुका है इन कार्यों से सीख लेते हुए भविष्य के लिये ठोस कार्य योजना तैयार कर 'वन विस्तार' कार्य को बढ़ावा देना आवश्यक है। क्योंकि 'वन ही धरती में जीवन का आधार है।'

वृक्षारोपण कार्य में सामुदायिक सहभागिता अति आवश्यक है। जागरूकता के साथ ही धरातल पर कार्य होना आवश्यक है।

सन्दर्भ सूची

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