!! VIDYA VINAYEN SHOBHATE !!
Sarvoday Shikshan Santha's
rts, Commerce and Science college, Umadi.
Tal - Jath, Dist - Sangli. (Maharashtra)Pin-416413
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Key Indicator 1.3

1.3. Curriculum Enrichment

1.3.2 Percentage of Students undertaking project work/field work/ internships(Data for the latest completed academic year)

project work

Arts, Commerce and Science college, Umadi.

Tal - Jath, Dist - Sangli.

B.Sc. II Roll No. List 2022-23

Sr No.	Name of The Student	Roll No	Sign
1	Aivale pramod Prakosh	326	Aivale. P.P.
2	Aivale Pratiksha Prakash*	327	
3	Aiwale Vikas Shivaji	328	
4	Asabe Adity Bharat	329	
5	Attar Gaibisab Hajarat	330	
6	Balaganur Shivanand Bilenisiddha	331	S.B. balganur.
7	Balgaon Bhagyashri Mahadev*	332	Balgaon.
8	Bhosale Santosh Yashwant	333	
9	Biradar Akshata Siddaram*	334	
10	Biradar Atiya Dadepeer	335	
11	Biradar Kaveri Lakkanna*	336	
12	Biradar Oudutasiddha Jagadev	337	
13	Birajadar Shiddharam Shrishail	338	
14	Birajadar Kaveri Hanamant*	339	
15	Birajdar Akshata Ashok*	340	
16	Bisti Soyal Kasheem	341	
17	Chanagond Samarth Guralingappa	342	
18	Chavhan Akash Siddeswar	343	A.S. chavan
19	Chouke Jayashree Mahadev	344	
20	Chouke Sachin Somaning	345	
21	Deshmukh Vijayaraj Pandurang	346	
22	Dhumale Aaksh Mallikarjun	347	
23	Emmi Roopa Shrishail*	348	R.S.E.
24	Gaikwad Namrata Rajaram*	349	
25	Ghatage Prajakta Gangadhar	350	
26	Gouragond Jayshri Ashok*	351	G.J.A
27	Gouragond Sudharani Gurubala*	352	
28	Gurav Aravind Amagonda	353	
29	Halagunaki Rajshree Lakkappa	354	
30	Halake Anuja Ashok*	355	
31	Halakude Chinmaya Dundesh	356	
32	Hattalli Shruti Dhareppa*	357	
33	Hattikar Pratiksha Suresh*	358	
34	Hinchageri Hanamant Mallappa	359	
35	Horti Prashant Shrishail	360	
36	Hortikar Premkumar Chandrakant	361	
37	Hortikar Sangeeta Malleshappa*	362	
38	Jadhav Ajit Ankush	363	

39	Jadhav Mayuri Dadaso*	364	M. D. Jadhav.
40	Jakune Sachin Mahadev	365	Jakune S. M.
41	Jakune Sagar Mahadev	366	Jakune S. M.
42	Kalamani Akash Mallikarjun	367	Kalamani. A M
43	Kamble Shruti Nagappa*	368	
44	Kate Sayabanna Layappa	369	
45	Keshgond Subadra Sidaray	370	
46	Koli Ajay Kashinath	371	
47	Koli Laxmi Baburao*	372	Koli L. B.
48	Koli Laxmibai Kantappa*	373	
49	Kore Amol Vijaykumar	374	
50	Kottalagi Akash Mallappa	375	
51	Kshirasagar Sujata Vitthal*	376	
52	Lengare Sachin Mhalappa	377	
53	Malakotagi Santosh Nagappa	378	
54	Mali Sachin Shiddhappa	379	
55	Mali Sweta Siddappa*	380	
56	Mane Ganesh Baliram	381	
57	Marathe Mitali Mahadev*	382	
58	Mhetre Puneetkumar Guribasappa	383	
59	Misal Vijay Balu	384	
60	Mujawar Sahil Shabbir	385	Sahil T.
61	Nadaf Sohel Sikandar	386	
62	Nadaf Sumayya Lalasab*	387	
63	Naik Kousar Hajaratali*	388	
64	Nakate Somanath Rajashekar	389	
65	Namdgond Rajashri Vitthal*	390	
66	Nile Aravind Tukaram	391	
67	Padavale Murasiddh Mhalappa	392	
68	Paragond Amasiddha Hanamant	393	
69	Parit Mallikarjun Mahadev	394	
70	Pawar Avinash Devidas	395	
71	Potadar Umesh alias Baburav Sudhakar	396	
72	Rane Shivanand Appanna	397	
73	Sanadi Sana Gaibisab*	398	
74	Saragar Sachin Aravind	399	
75	Sargar Sunil Pandurang	400	
76	Shaikh Sahil Jainuddin	401	
77	Shinde Manisha Sahebrao*	402	
78	Shinde Ramu maruti	403	
79	Shinde Samarth Suresh	404	
80	Shinde Shivam Vinayak	405	—
81	Shinde Shubham Damodar	406	

82	Sonakanalli Malashri Dundappa*	407	M.D.S
83	Sonakanalli Shreemant Lakkanna	408	
84	Sonakanalli Vishnu Dundappa	409	
85	Sonar NarayanVithal	410	
86	Swami Mahananda Gurupad*	411	M.G.S
87	Tamboli Hina Shafik*	412	
88	Teli Lalita Hanamant*	413	
89	Thombare Ranjana Dnyanadev	414	
90	Wagadari Santosh Chidanand	415	
91	Waghamare Rushikesh Sunil	416	
92	Waghamode Bapu Tayappa	417	

I/C. PRINCIPAL
Arts,Commerce & Science College
Umadi.Tal-Jath.Dist-Sangli.

ENVIRONMENT PROJECT 2022-2023

Sarvoday Shikshan Sanstha's Umadi

Art's Commorce Science College, Umadi
Tal.Jath Dist.Sangli,PIN-416 413

ENVIRONMENTAL PROJECT

NAME OF PROJECT- **Water Pollution**

Submitted By:- Jakune S M.

Sr. No	Name of the Student	Roll No.
01	Horti P S	360
02	Hortikar P C	361
03	Jadhav A A	363
04	Jakune S M	365
05	Jakune S M	366
06	Kalamani A M	367
07	Kate S L	369
08	Koli A K	371
09	Kore A U	374
10	Kottalagi A M	375

Under The Valuable Guidance Of

Prof. SHIKHARE S M

DEPARTMENT of Environment Science

Teacher In Charge Examiner Head Of Department

2022-23

What Is Water Pollution?

Water pollution occurs when harmful substances—often chemicals or microorganisms—contaminate a stream, river, lake, ocean, aquifer, or other body of water, degrading water quality and rendering it toxic to humans or the environment.

This widespread problem of water pollution is jeopardizing our health. Unsafe water kills more people each year than war and all other forms of violence combined. Meanwhile, our drinkable water sources are finite: Less than 1 percent of the earth's freshwater is actually accessible to us. Without action, the challenges will only increase by 2050, when global demand for freshwater is expected to be one-third greater than it is now.

What Are the Causes of Water Pollution?

Water is uniquely vulnerable to pollution. Known as a "universal solvent," water is able to dissolve more substances than any other liquid on earth. It's the reason we have Kool-Aid and brilliant blue waterfalls. It's also why water is so easily polluted. Toxic substances from farms, towns, and factories readily dissolve into and mix with it, causing water pollution.

Here are some of the major sources of water pollution worldwide:

Agricultural

What is Water Pollution?

Water pollution can be defined as the contamination of water bodies. Water pollution is caused when water bodies such as rivers, lakes, oceans, groundwater and aquifers get contaminated with industrial and agricultural effluents.

When water gets polluted, it adversely affects all lifeforms that directly or indirectly depend on this source. The effects of water contamination can be felt for years to come.

Also Refer: Types of Pollution

Sources Of Water Pollution

The key causative of water pollution in India are:

- Urbanization.
- Deforestation.
- Industrial effluents.
- Social and Religious Practices.
- Use of Detergents and Fertilizers.
- Agricultural run-offs- Use of insecticides and pesticides.

Effects Of Water Pollution

The effect of water pollution depends upon the type of pollutants and their concentration. Also, the location of water bodies is an important factor to determine the levels of pollution.

- Water bodies in the vicinity of urban areas are extremely polluted. This is the result of dumping garbage and toxic chemicals by industrial and commercial establishments.
- Water pollution drastically affects aquatic life. It affects their metabolism, and behaviour, and causes illness and eventual death. Dioxin is a chemical that causes a lot of problems from reproduction to uncontrolled cell growth or cancer. This chemical is bioaccumulated in fish, chicken and meat. Chemicals such as this travel up the food chain before entering the human body.
- The effect of water pollution can have a huge impact on the food chain. It disrupts the food chain. Cadmium and lead are some toxic substances, these pollutants upon entering the food chain through animals (fish when consumed by animals, humans) can continue to disrupt at higher levels.

Control Measures of Water Pollution

Water pollution, to a larger extent, can be controlled by a variety of methods. Rather than releasing sewage waste into water bodies, it is better to treat them before discharge. Practising this can reduce the initial toxicity and the remaining substances can be degraded and rendered harmless by the water body itself. If the secondary treatment of water has been carried out, then this can be reused in sanitary systems and agricultural fields.

A very special plant, the Water Hyacinth can absorb dissolved toxic chemicals such as cadmium and other such elements. Establishing these in regions prone to such kinds of pollutants will reduce the adverse effects to a large extent.

Some chemical methods that help in the control of water pollution are precipitation, the ion exchange process, **reverse osmosis**, and coagulation. As an individual, reusing, reducing, and recycling wherever possible will advance a long way in overcoming the effects of water pollution.

What Can You Do to Prevent Water Pollution?

With your actions

We're all accountable to some degree for today's water pollution problem. Fortunately, there are some simple ways you can prevent water contamination or at least limit your contribution to it:

- Learn about the unique qualities of water where you live. Where does your water come from? Is the wastewater from your home treated? Where does stormwater flow to? Is your area in a drought? Start building a picture of the situation so you can discover where your actions will have the most impact–and see if your neighbors would be interested in joining in!

ENVIRONMENT PROJECT 2022-23

Sarvoday Shikshan Sanstha's Umadi

Art's Commorce Science College, Umadi
Tal.Jath Dist.Sangli,PIN-416 413

ENVIRONMENTAL PROJECT

NAME OF PROJECT- **Deforestation**

Submitted By:- Shinde S S

Sr. No.	Name of the Student	Rool No.
01	Shinde S S	404
02	Shinde S V	405
03	Shinde S D	406
04	Sonakanalli S L	408
05	Sonakanalli V D	409
06	Sonar N V	410
07	Wagadari S C	415
08	Whagmare R S	416
09	Waghamode B T	417

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Teachear in Charge Examiner Head Of Department

2022-23

Deforestation: Causes, Effects and Control Strategies

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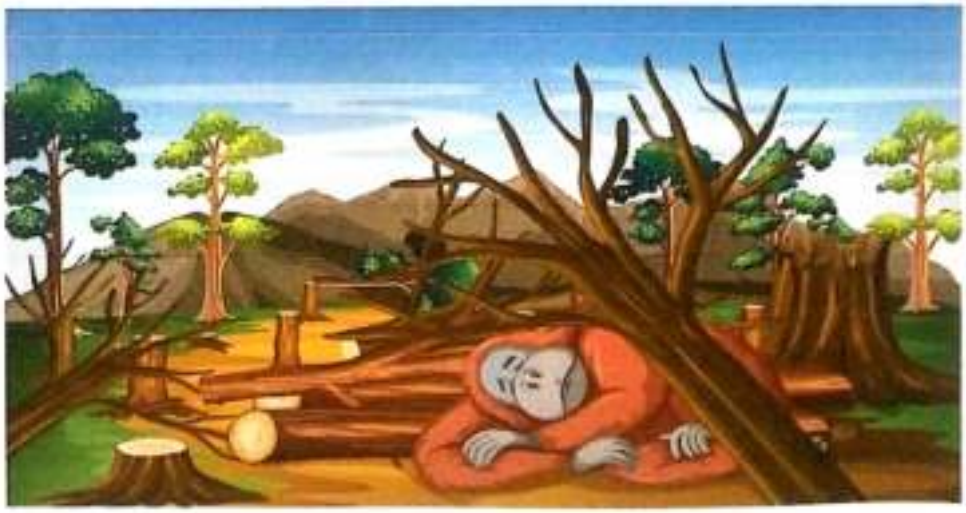

1. Introduction

The year 2011 is 'The International Year of Forests'. This designation has generated momentum bringing greater attention to the forests worldwide. Forests cover almost a third of the earth's land surface providing many environmental benefits including a major role in the hydrologic cycle, soil conservation, prevention of climate change and preservation of biodiversity (Sheram, 1993). Forest resources can provide long-term national economic benefits. For example, at least 145 countries of the world are currently involved in wood production (Anon., 1994_a). Sufficient evidence is available that the whole world is facing an environmental crisis on account of heavy deforestation. For years remorseless destruction of forests has been going on and we have not been able to comprehend the dimension until recently. Nobody knows exactly how much of the world's rainforests have already been destroyed and continue to be razed each year. Data is often imprecise and subject to differing interpretations. However, it is obvious that the area of tropical rainforest is diminishing and the rate of tropical rain forest destruction is escalating worldwide, despite increased environmental activism and awareness.

Deforestation is the conversion of forest to an alternative permanent non-forested land use such as agriculture, grazing or urban development (van Kooten and Bulte, 2000). Deforestation is primarily a concern for the developing countries of the tropics (Myers, 1994) as it is shrinking areas of the tropical forests (Barraclough and Ghimire, 2000) causing loss of biodiversity and enhancing the greenhouse effect (Angelsen *et al.*, 1999). FAO considers a plantation of trees established primarily for timber production to be forest and therefore does not classify natural forest conversion to plantation as deforestation (but still records it as a loss of natural forests). However, FAO does not consider tree plantations that provide non-timber products to be forest although they do classify rubber plantations as forest. Forest degradation occurs when the ecosystem functions of the forest are degraded but where the area remains forested rather cleared (Anon., 2010).

Thirty per cent of the earth's land area or about 3.9 billion hectares is covered by forests. It was estimated that the original forest cover was approximately six billion hectares (Bryant *et*

2. World deforestation

According to Professor Norman Myers, one of the foremost authorities on rates of deforestation in tropical forests, "the annual destruction rates seems set to accelerate further and could well double in another decade" (Myers, 1992). Mostly deforestation has occurred in the temperate and sub-tropical areas. Deforestation is no longer significant in the developed temperate countries now and in fact many temperate countries now are recording increases in forest area (Anon., 1990$_a$; 2010). In most instances developed nations are located in temperate domains and developing nations in tropical domains. However deforestation was significantly less in tropical moist deciduous forest in 1990-2000 than 1980-1990 but using satellite imagery it was found that FAO overestimated deforestation of tropical rainforests by 23 per cent (Anon., 2001$_{a; b}$). However the definition of what is and what is not forest remains controversial. The tropical rainforests capture most attention but 60 per cent of the deforestation that occurred in tropical forests during 1990-2010 was in moist deciduous and dry forests.

However extensive tropical deforestation is a relatively modern event that gained momentum in the 20th century and particularly in the last half of the 20th century. The FAO FRA 2001 and 2010 reports indicate considerable deforestation in the world during 1990-2010 but this was almost entirely confined to tropical regions (Anon., 2001$_a$; 2010). A summary of deforestation during the decades 1990-2010 is given in tables 1 and 2. These tables show there was considerable deforestation in the world during 1990-2010 but this was almost entirely confined to tropical regions. Rowe *et al.* (1992) estimated that 15 per cent of the world's forest was converted to other land uses between 1850 and 1980. Deforestation occurred at the rate of 9.2 million hectares per annum from 1980-1990, 16 million hectares per annum from 1990-2000 and decreased to 13 million hectares per annum from 2000-2010. The net change in forest area during the last decade was estimated at -5.2 million hectares per year, the loss area equivalent to the size of Costa Rica or 140 km^2 of forest per day, was however lesser than that reported during 1990-2000 which was 8.3 million hectares per year equivalent to a loss of 0.20 per cent of the remaining forest area each year. The current annual net loss is 37 per cent lower than that in the 1990s and equals a loss of 0.13 per cent of the remaining forest area each year during this period. By contrast some smaller countries have very high losses per year and they are in risk of virtually losing all their forests within the next decade if current rates of

3.1 Direct causes

3.1.1 Expansion of farming land

About 60 per cent of the clearing of tropical moist forests is for agricultural settlement (Myers, 1994; Anon., 1991) with logging and other reasons like roads, urbanization and Fuelwood accounting for the rest (Anon., 1994b). Tropical forests are one of the last frontiers in the search for subsistence land for the most vulnerable people worldwide (Myers, 1992). Millions of people live on the tropical forest with less than a dollar a day where a third of a billion are estimated to be foreign settlers. However, as the land degrades people are forced to migrate, exploring new forest frontiers increasing deforestation (Wilkie *et al.*, 2000; Amor, 2008; Amor and Pfaff, 2008). Deforestation is proxied by the expansion of agricultural land. This is because agricultural land expansion is generally viewed as the main source of deforestation contributing around 60 per cent of total tropical deforestation.

Shifting agriculture also called slash and burn agriculture is the clearing of forested land for raising or growing the crops until the soil is exhausted of nutrients and/or the site is overtaken by weeds and then moving on to clear more forest. It is been often reported as the main agent of deforestation. Smallholder production in deforestation and the growing number of such producers notably shifting cultivators were the main cause of deforestation (Anon., 1990a, c; Dick, 1991; Anon., 1992a, b; Barbier *et al.*, 1993; Ascher, 1993; Dove, 1993; 1996; Dauvergne, 1994; Porter, 1994; Thiele, 1994; Anon., 1994c; Angelsen, 1995; Ross, 1996). Mostly all reports indicate shifting agriculture as responsible for about one half of tropical deforestation and some put it up to two-thirds. Shifting agriculture was greatest in Asia (about 30 per cent) but only about 15 per cent over the whole tropical world. It appears that the proportion of direct conversion of forest to agriculture is increasing and the proportion of shifting agriculture is decreasing with time.

3.1.2 Forest and other plantations

Plantations are a positive benefit and should assist in reducing the rate of deforestation. The fact that plantations remove the timber pressure on natural forests does not translate eventually into less, but rather into more deforestation. Indeed, it is feared that agricultural expansion which is the main cause of deforestation in the tropics might replace forestry in the remaining natural forests (Anon., 2002; Cossalter and Pye-Smith, 2003; Anon., 2005). The impact of timber plantations could thus turn out to be quite detrimental to tropical forest ecosystems (Kartodihardjo and Supriono, 2000). Tree crops and rubber in particular plays a more important role in deforestation in Indonesia than subsistence-oriented shifting cultivation (Chomitz and Griffiths, 1996). Unfortunately about one-half of the plantations in the tropics are established on native forest cleared for the purpose. Moreover plantations can promote deforestation by constructing roads that improve access of the shifting cultivators and others to the forest frontier.

3.1.6 Mining

Mining is very intensive and very destructive (Mather, 1991; Sands, 2005). The area of land involved is quite small and it is not seen as a major cause of primary deforestation. Mining is a lucrative activity promoting development booms which may attract population growth with consequent deforestation. The deforestation rate due to mining activities in Guyana from 2000 to 2008 increased 2.77 times according to an assessment by the World Wildlife Fund-Guianas (Staff, 2010). Similarly, in the Philippines, mining, along with logging, has been among the forces behind the country's loss of forest cover: from 17 million hectares in 1934 to just three million in 2003 or an 82 per cent decline (Docena, 2010). Nearly 2,000 hectares of tropical forest in the Municipality of Coahuayana in the State of Michoacán (south-western Mexico) will completely be destroyed by mining iron minerals planned by the Italo-Argentine mining company TERNIUM (Anonymous, 2008). Similarly, Nyamagari hills in Orissa India currently threatened by Vedanta Aluminum Corporation's plan to start bauxite mining will destroy 750 hectares of reserved forest (Griffiths and Hirvelä, 2008). Massive and unchecked mining of coal, iron ore and bauxite in Jharkhand, India has caused large scale deforestation and created a huge water scarcity (Anon., 2011$_b$). In return for US$3.8 billion of investment, the agreements between the State government of Jharkhand, India and mining companies, there will be a massive land acquisition which will deforest no less than 57,000 hectares of forest and displace 9,615 families, many of them located in legally protected Scheduled Areas set aside for indigenous peoples in the State (Mullick and Griffiths. 2007). Moreover, Roads constructed to support the mining operations will open up the area to shifting agriculturists, permanent farmers, ranchers, land speculators and infrastructure developers. For instance the core of Brazil's Amazon development strategy were infra-structure development projects such as roads providing access to frontier regions, mining area and large hydroelectric reservoirs (Mahar, 1988; Fearnside and Barbosa, 1996; Carvalho *et al.*, 2002, 2004). The construction of roads, railways, bridges, and airports opens up the land to development and brings increasing numbers of peoples to the forest frontier. If wood is used as fuel in mining operations and it is sources from plantations established for the purpose, it can cause serious deforestation in the region. On the other hand, mining can be labour intensive and take labour away from clearing forest.

3.1.7 Urbanization/industrialization and infra-structure

Expanding cities and towns require land to establish the infrastructures necessary to support growing population which is done by clearing the forests (Mather, 1991; Sands, 2005). Tropical forests are a major target of infra-structure developments for oil exploitation, logging concessions or hydropower dam construction which inevitably conveys the expansion of the road network and the construction of roads in pristine areas (Kaimowitz and Angelsen, 1998). The construction of roads, railways, bridges, and airports opens up the land to development and brings increasing numbers of people to the forest frontier. Whether supported or not by the governmental programmes, these settlers have usually colonized the forest by using logging trails or new roads to access

the forest for subsistence land (Wilkie *et al.*, 2000; Amor, 2008; Amor and Pfaff, 2008). (Wilkie *et al.*, 2000; Amor, 2008; Amor and Pfaff, 2008). The development of these infra-structure projects are of worldwide concern, since tropical forest clearing accounts for roughly 20 per cent of anthropogenic carbon emissions destroying globally significant carbon sinks (Anon., 2001_c) and around 21 per cent of tropical forests have been lost worldwide since 1980 (Bawa *et al.*, 2004).

3.1.8 Air pollution

Air pollution is associated with degradation of some European and North American forests. The syndrome is called "Waldsterben" or forest death. In 1982, eight per cent of all West German trees exhibited damage that rose to about 52 per cent by 1987 (Raloff, 1989) and half of the trees reported dying of Waldsterben in the Alps (Lean, 1990). High elevation forests show the earliest damage including forests in the north-east and central United States.

3.1.9 Wars and role of the military

It is well established that military operations caused deforestation during the Vietnam War and elsewhere (Mather, 1991; Sands, 2005). More recently, linkages have been documented between the civil war in Myanmar and the timber trade between Myanmar and Thailand. Myanmar regime sells timber to the Thais to finance its civil war against the Karen hill tribe. Forest destruction in El Salvador has resulted from war. Apart from military involvements in wars, the role of military in deforestation has been documented in Southeast Asia and South America (Mather, 1991; Sands, 2005). The authors also observed that role of powerful military in Brazilian politics are a major cause of Amazonian forest destruction.

3.1.10 Tourism

National parks and sanctuaries beyond doubt protect the forests, but uncautioned and improper opening of these areas to the public for tourism is damaging. Unfortunately, the national governments of tropical and sub-tropical countries adopt tourism for easy way of making money sacrificing the stringent management strategies. Further, many companies and resorts who advertise themselves as eco-tourist establishments are in fact exploiting the forests for profit. In Cape Tribulation, Australia, for example, the rain forest is being threatened by excessive tourism (Colchester and Lohmann, 1993). Similarly, in the Terai Duars of eastern India foothill Himalaya, eco-tourism is encouraged and we fear this is being done without developing adequate management plans. For instance, the Chilapatta Reserve Forest in this area is opened for eco-tourism for its ancient ruins deep in the forest and a tree species *Myristica longifolia* that exudes a blood like sap when injured. The site has become a popular eco-tourist destination because of the ruins and for this blood exuding tree. In the whole forest only eight individuals were found but two of the trees in the near vicinity of the ruins completely dried away due to repeated injuries caused to the plants by the curious tourists (Shukla, 2010). In fact, in the name of eco-tourism, infra-structure development is taking place mostly be the private players in these wilderness areas which are further detrimental in terms of attracting peoples other than tourists also, causing deforestation especially deep in the forest.

3.2 Indirect causes

The World Rainforest Movement's 'Emergency Call to Action for the forests and their Peoples' asserts that "deforestation is the inevitable result of the current social and economic policies being carried out in the name of development" (Anon., 1990_d). It is in the name of development that irrational and unscrupulous logging, cash crops, cattle ranching, large dams, colonisation schemes, the dispossession of peasants and indigenous peoples and promotion of tourism is carried out. Harrison Ngau, an indigenous tribesman from Sarawak, Malaysia and winner of the Goldman Environment Award in 1990 puts the cause of tropical deforestation like this, "the roots of the problem of deforestation and waste of resources are located in the industrialized countries where most of our resources such as tropical timber end up. The rich nations with one quarter of the world's population consume four fifth of the world's resources. It is the throw away culture of the industrialized countries now advertised in and forced on to the Third World countries that is leading to the throwing away of the world. Such so-called progress leads to destruction and despair" (Anon., 1990_d)! Such a development leads to overconsumption which is the basic underlying cause of deforestation.

3.2.1 Colonialism

Erstwhile colonies of the colonial powers like Britain, France, Spain or Portugal are now the Third World Countries or the developing nations mostly have the tropical rainforests except Australia and Hawaii were exploited for their natural resources and their indigenous people's rights destroyed by the colonial powers. All these countries have indigenous populations who had their own system of land management and/or ownership in place for thousands of years before the intervention of colonists from rich industrialized nations. Colonialism turned previously self-sufficient economies into zones of agriculture export production. This process continues even today in different form of exploitation and the situation is worsening (Colchester and Lohmann, 1993).

3.2.2 Exploitation by industrialized countries

Wealthy countries or the erstwhile colonial powers having deficit of their own natural resources are mainly sustaining on the resources of the financially poorer countries those are generally natural resource rich. Twenty per cent of the world's population is using 80 per cent of the world's resources. Unfortunately also the governments of these poor resource rich countries had generally adopted the same growth-syndrome as their western neighbours or their erstwhile colonial master giving emphasis on maximizing exports, revenues and exploiting their rich natural resources unsustainably for short-term gains. Moreover, corruption in government, the military and economic powers is well known. The problem is further worsened by the low price of the most Third World exports being realized in the international market (Colchester and Lohmann, 1993).

3.2.3 The debt burden

Pursuing the guided development agenda, the financially poorer countries are on a heavy international debt and now feeling the urgency of repaying these huge debts due to escalating interest rates. Such a situation compels these debt ridden poorer countries to

exploit their rich natural resources including their forests partly to earn foreign exchange for servicing their debts. For instance, construction of roads for logging operations in some South-east Asian countries was funded by Japanese aid which allowed the Japanese timber companies to exploit the forests of these countries. Understandably, these timber companies profitably exploited the forests while the South-east Asian countries were left owing Japan money for construction of their roads (Colchester and Lohmann, 1993).

3.2.4 Overpopulation and poverty

The role of population in deforestation is a contentious issue (Mather, 1991; Colchester and Lohmann, 1993; Cropper and Griffiths, 1994; Ehrhardt-Martinez, 1998; Sands, 2005). The impact of population density on deforestation has been a subject of controversy. Poverty and overpopulation are believed to be the main causes of forest loss according to the international agencies such as FAO and intergovernmental bodies. It is generally believed by these organizations that they can solve the problem by encouraging development and trying to reduce population growth. Conversely, the World Rainforest Movement and many other NGOs hold unrestrained development and the excessive consumption habits of rich industrialized countries directly responsible for most forest loss. However there is good evidence that rapid population growth is a major indirect and over-arching cause of deforestation. More people require more food and space which requires more land for agriculture and habitation. This in turn results in more clearing of forests. Arguably increasing population is the biggest challenge of all to achieve sustainable management of human life support systems and controlling population growth is perhaps the best single thing that can be done to promote sustainability. Overpopulation is not a problem exclusive to Third World countries. An individual in an industrialized country is likely to consume in the order of sixty times as much of the world's resources as a person in a poor country. The growing population in rich industrialized nations are therefore responsible for much of the exploitation of the earth and there is a clear link between the overconsumption in rich countries and deforestation in the tropics (Colchester and Lohmann, 1993).

Poverty and overpopulation are inextricably linked. Poverty, while undeniably responsible for much of the damage to rainforests, has to a large extent been brought about by the greed of the rich industrialized nations and the Third World elites who seek to emulate them. Development is often regarded as the solution to world poverty, seldom helps those whose need is greatest. Thus, it is often the cause rather than the cure for poverty. The claim that overpopulation is the cause of deforestation is used by many governments and aid agencies as an excuse for inaction. In tropical countries, pressure from human settlement comes about more from inequitable land distribution than from population pressure. Generally, most of the land is owned by small but powerful elite which displaces poor farmers into rainforest areas. So long as these elites maintain their grip on power, lasting land reform will be difficult to achieve (Colchester and Lohmann, 1993) and deforestation continues unabated. Therefore poverty is well considered to be an important underlying cause of forest conversion by small-scale farmers and naturally forest-dense areas are frequently associated with high levels of poverty (Chomitz *et al.*, 2007). The population also often lacks the finance necessary for investments to maintain the quality of soil or increase yields on the existing cleared land (Purnamasari, 2010). Deforestation is affected mainly by the uneven distribution of wealth. Shifting cultivators at the forest frontier are among the poorest and most marginalized sections of the population. They usually own no land and have little

2. World deforestation

According to Professor Norman Myers, one of the foremost authorities on rates of deforestation in tropical forests, "the annual destruction rates seems set to accelerate further and could well double in another decade" (Myers, 1992). Mostly deforestation has occurred in the temperate and sub-tropical areas. Deforestation is no longer significant in the developed temperate countries now and in fact many temperate countries now are recording increases in forest area (Anon., 1990*a*; 2010). In most instances developed nations are located in temperate domains and developing nations in tropical domains. However deforestation was significantly less in tropical moist deciduous forest in 1990-2000 than 1980-1990 but using satellite imagery it was found that FAO overestimated deforestation of tropical rainforests by 23 per cent (Anon., 2001*a, b*). However the definition of what is and what is not forest remains controversial. The tropical rainforests capture most attention but 60 per cent of the deforestation that occurred in tropical forests during 1990-2010 was in moist deciduous and dry forests.

However extensive tropical deforestation is a relatively modern event that gained momentum in the 20th century and particularly in the last half of the 20th century. The FAO FRA 2001 and 2010 reports indicate considerable deforestation in the world during 1990-2010 but this was almost entirely confined to tropical regions (Anon., 2001*a*; 2010). A summary of deforestation during the decades 1990-2010 is given in tables 1 and 2. These tables show there was considerable deforestation in the world during 1990-2010 but this was almost entirely confined to tropical regions. Rowe *et al.* (1992) estimated that 15 per cent of the world's forest was converted to other land uses between 1850 and 1980. Deforestation occurred at the rate of 9.2 million hectares per annum from 1980-1990, 16 million hectares per annum from 1990-2000 and decreased to 13 million hectares per annum from 2000-2010. The net change in forest area during the last decade was estimated at -5.2 million hectares per year, the loss area equivalent to the size of Costa Rica or 140 km² of forest per day, was however lesser than that reported during 1990-2000 which was 8.3 million hectares per year equivalent to a loss of 0.20 per cent of the remaining forest area each year. The current annual net loss is 37 per cent lower than that in the 1990s and equals a loss of 0.13 per cent of the remaining forest area each year during this period. By contrast some smaller countries have very high losses per year and they are in risk of virtually losing all their forests within the next decade if current rates of

Field Work

Sarvoday Shikshan Sanstha's Umadi

ARTS, COMMERCE & SCIENCE COLLEGE, UMADI

Tal - jath Dist - Sangli

EXCURSION DISEASE COLLECTION

CERTIFICATE

This is to certify that Mr. Adaki Mahesh Shrishail

Class B.Sc III Exam No._____,Roll No. 331 Has

Participated in the excursion disease collection conducted by the Botany dept. During the academic year 2019-20.

The excursion Report submitted by him is a bonafied.

Teacher in charge Examiner Head of dept.

Dept. Of Botany
Arts, Commerce & Science College

Puccinia disease on Wheat

Type of disease - fungal disease

Host - Triticum aestivum.

Causal organism - puccinia triticina

Location - Umadi

Anthracnose of leaf disease on Jawar

Type of disease - fungal disease.

Host - Sorghum vulgare.

Causal organism - colletotrichum sublinolum.

Location - Umadi

Tikka disease of groundnut

Type of disease- Fungal disease

Host - Arachis hypogea

Causal organism- Cercospora personata

location- Umadi

Phyllacora disease on cynadon ductilon.

Type of disease - Fungal disease.

Host - cynadon ductylon.

Causal organism - pythium sp.

Location - Umadi

Citrus canker on lemon

Type of disease - Bacterial disease.

Host - Citrus species.

Causal organism - Xanthomonas citrus.

Location - Umadi

Powdery mildew of grapes.

Type of disease - fungal disease.

Host - plasmopar viticola - 2

Causal organism - Uncinula necator

Uncinula disease on Teetong grandis leaf

Type of disease- Fungal disease

- Host - Teetona grandis

Causal organism - Uncinula teetonae.

Location - Umadi

Melaspora disease on Euphorbia geniculata.

Type of disease- Fungal disease.

Host - Euphorbia geniculata.

Causal organism- Melaspora lini

Location- Umadi