

**DEPARTMENT OF ENVIRONMENT AND FORESTS,  
GOVERNMENT OF MIZORAM:  
STRUCTURE AND WORKING**

**A Dissertation submitted to Mizoram University for the award of the  
Degree of Master of Philosophy in Public Administration**

**Submitted by:**

**H.LALZIDINGA**

**Regn.No. MZU/M.Phil/240 of 01.05.2015**

**Supervisor**

**Dr. A. Muthulakshmi**

**Associate Professor**

**DEPARTMENT OF PUBLIC ADMINISTRATION**

**MIZORAM UNIVERSITY**

**AIZAWL, MIZORAM**

**DECEMBER, 2015**

# Mizoram University

December, 2015

## Declaration

I, H. Lalzidinga, hereby declare that the dissertation entitled, **“Department of Environment and Forests, Government of Mizoram: Structure and Working”** is a record of work done by me, that the contents of this dissertation did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the dissertation has not been submitted by me for my research degree in any other University/Institution.

This is being submitted to the Mizoram University for the degree of Master of Philosophy in Public Administration Department.

(H.LALZIDINGA)

Candidate

(Dr. LALNEIHZOVI)

Professor & Head

( Dr. A. MUTHULAKSHMI)

Supervisor & Associate Professor

**MIZORAM UNIVERISTY**

**DECEMBER, 2015**

**CERTIFICATE**

This is to certify that **Mr. H.Lalzidinga**, a student of M.Phil programme in the Department of Public Administration, Mizoram University has prepared the present Dissertation titled '**Department of Environment and Forests, Government of Mizoram: Structure and Working**'. This is an original work of research which has not been used previously and which has not been submitted to any other university for any purpose. It covers the topic of the research adequately.

(Dr. A. MUTHULAKSHMI)

Supervisor

Associate Professor

Department of Public Administration

Mizoram University

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Date: 10<sup>th</sup> December, 2015

(H.LALZIDINGA)

Aizawl.

M.Phil. Scholar

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## **ABBREVIATIONS**

**ACF** – Assistant Conservator of Forest

**ACR**- Annual Confidential Record

**ADC** - Autonomous District Council

**ASEP** – Association for Environment Protection

**BIOCON** – Biodiversity and Nature Conservation Network

**CADC** – Chakma Autonomous District Council

**CAMPA**-Compensatory Afforestation Management and Planning Authority

**CDM** – Clean Development Mechanism

**CEP** – Centre for Environment Protection

**CF** – Conservator of Forest

**CSS** – Centrally Sponsored Scheme

**CWLW** – Chief Wildlife Warden

**DCCF** – Deputy Chief Conservator of Forest

**DoE** – Department of Environment

**DoEF** – Department of Environment and Forest

**DP&AR**- Department of Personnel and Administrative Reforms

**FAO** – Food and Agriculture Organization

**FDA**- Forest Development Agency

**FFCM**- Forest Fire Control Method

**FRA**- Forest Rights Act

**FSI** – Forest Survey of India

**FYP** – Five Year Plan

**GA** – Geographical Area

**GAD** – General Administration Department

**GDP** – Gross Domestic Product

**GMN** – Green Mizoram Network

**GOI** – Government of India

**GOM** – Government of Mizoram

**IFPS**-Integrated Forest Protection Scheme

**IFS** – Indian Forest Service

**IFSR** - India State of Forest Report

**ILRF** – Innerline Reserve Forest

**IT**- Information Technology

**JFM** – Joint Forest Management

**JFMC** – Joint Forest Management Committee

**LADC** – Lai Autonomous District Council

**LPG** – Liquefied Petroleum Gas

**MADC** – Mara Autonomous District Council

**MDF** – Moderately Dense Forest

**MFS** – Mizoram Forest Service

**MHIP**- Mizoram Hmeichhe Insuihkhawm Pawl

**MoEF** – Ministry of Environment and Forests

**MoEFCC** – Ministry of Environment Forest and Climate Change

**MPSC**-Mizoram Public Service Commission

**MTP**- Mara Thele Pi

**MUP** – Mizoram Upa Pawl

**MZU**- Mizoram University

**NAEB**- National Afforestation and Eco-Development Board

**NAM** – Non-Alignment Movement

**NAP** – National Afforestation Programme

**NCEPC**- National Committee on Environmental Planning & Coordination

**NF** – Non-Forest

**NFP** – National Forest Policy

**NGO** – Non-Government Organization

**NIB**- NLUP Implementing Board

**NLUP**-New Land Use Policy

**NTFP** – Non Timber Forest Products

**OF** – Open Forest

**PCCF** – Principal Chief Conservation of Forest

**PM** – Prime Minister

**RRF** – Riverine Reserve Forest

**SENA** – Save Environment Association

**SFS**- State Forest Service

**Sq km** – Square Kilometer

**UN** – United Nations

**UNCED** – United Nations Conference on Environment & Development

**UNEA** –United Nations Environment Assembly

**UNEP** – United Nations Environment Programme

**UNFCCC** – United Nations Framework Convention on Climate Change

**UT** – Union Territories

**VDF** – Very Sense Forest

**VFDC** – Village Forest Development Committee

**VFFPC**-Village Forest Fire Protection Committee

**WRC**- Wet Rice Cultivation

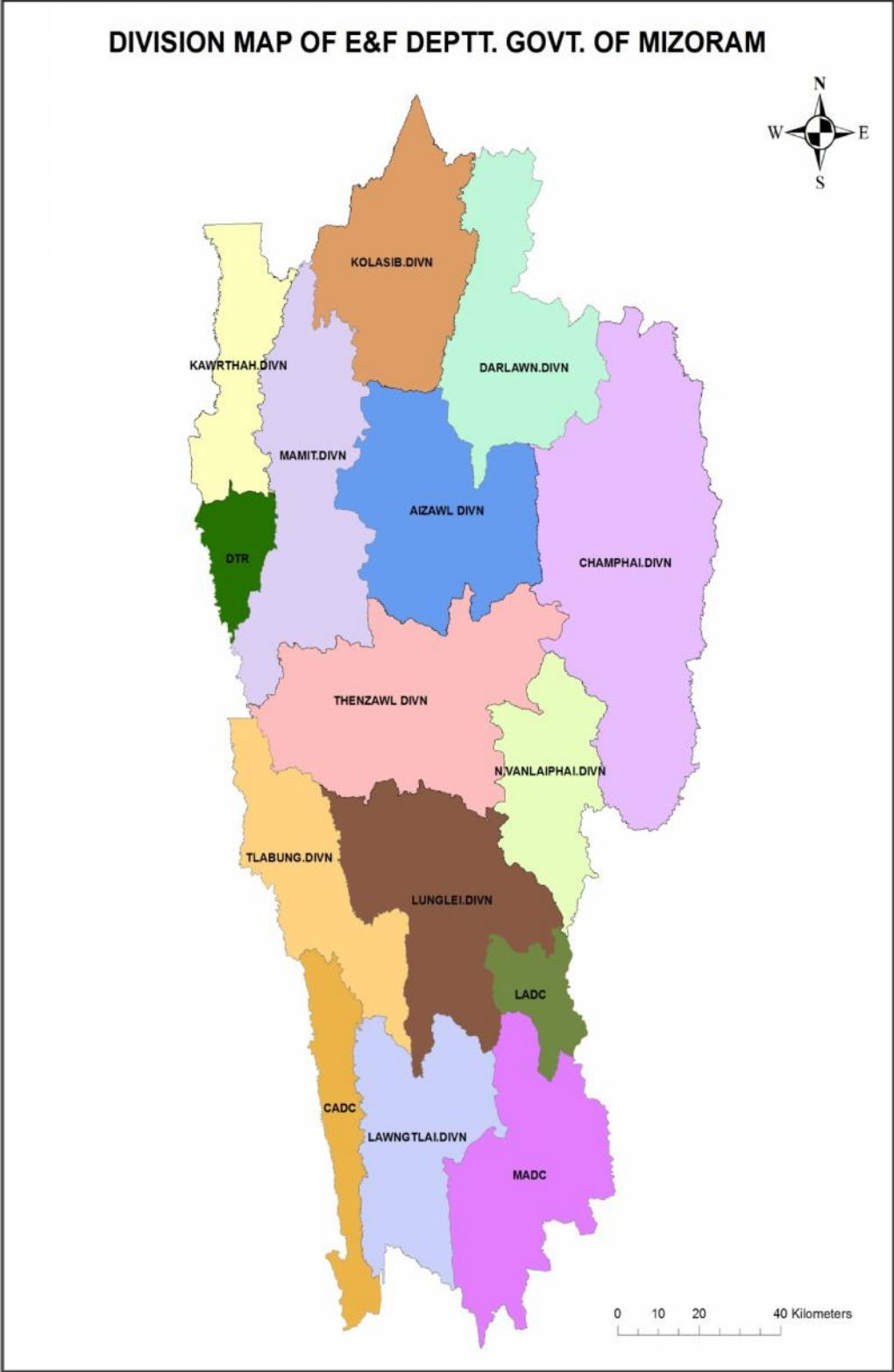
**YLA** – Young Lai Association

**YMA** –Young Mizo Association

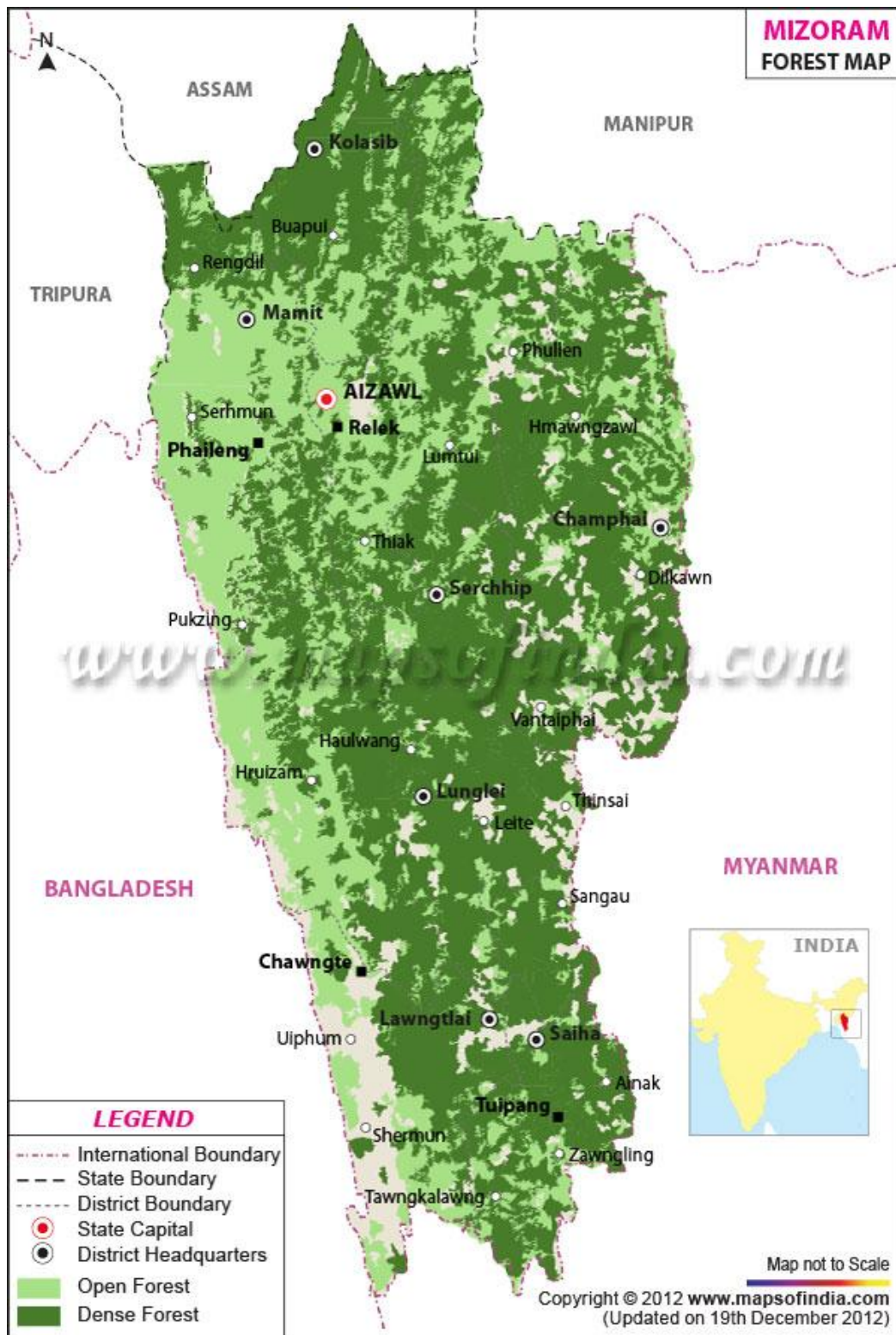


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Source: Forest Map of Mizoram at <https://www.google.co.in> accessed on 4.12.2013



Source: Forest Map of Mizoram at <https://www.google.co.in> accessed on 4.12.2013

# CHAPTER-I

## INTRODUCTION

This chapter presents a general introduction to the study. It starts by providing a detailed background to this research. The chapter further provides an insight into the statement of the problem, objectives, research questions, methodology, scope of the study and ends with structure of this study. A forest is any land, including the vegetation growing on it that has been so declared under legal enactment. The word '*forest*' is derived from Latin '*foris*' meaning outside, the reference being to village boundary of fence, and must have included all uncultivated and uninhabited land.<sup>1</sup> It is a large area of land covered with trees. But a forest is much more than just trees. It also includes smaller plants, such as mosses, shrubs, and a home for variety of insects, birds, and animals. A forest is a natural ecosystem having multi species and multi aged trees as dominant community.<sup>2</sup>The forest cover includes all lands which have a canopy density of 10 percent and above and have a minimum area of one hectare. Thus, all tree species along with bamboos, fruit bearing trees, coconut, palm, etc. and all areas including forest, private, community or institutional lands meeting the above defined criteria have been termed as forest cover.

Forests cover about one-third of the earth's land surface of which about 50 percent is occupied by tropical forest. As per India State of Forest Report (ISFR) 2013 assessment, Forest Cover of India is 697,898 sq. km (69.79 million.ha) which is 1.23

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<sup>1</sup> Trivedi, P.R. (2004). India's Environment, New Delhi: APH Publishing Corporation,, p. 97.

<sup>2</sup> Trivedi, P.T. (2004) Natural Resources Conservation, New Delhi: APH Publishing Corporation, p. 17.

percent of the geographical area of the country,<sup>3</sup> as against a minimum of 33 percent forest cover prescribed under National Forest Policy, 1952.

The term 'Forest Cover' as used in ISFR 2013 refers to all lands more than one hectare in area with a tree canopy of more than 10 percent irrespective of ownership and legal status including orchards, bamboo and palm. On the other hand, the term 'Recorded Forest Area' (or forest area) refers to all the geographic areas recorded as 'Forests' in government records. Thus, 'Forest Cover' indicates presence of trees on any land irrespective of their ownership and the 'Forest Area' denotes the legal status of the land.<sup>4</sup>

Forests have a number of functions which may be broadly classified into the following three categories, namely, protective functions, productive functions, and accessory functions.<sup>5</sup> Forests provide us with wood, raw materials and protect our environment against pollution. They prevent floods by controlling the flow of rain water and also prevent fast evaporation of water from land and increase the humidity of air by transpiration.<sup>6</sup>

Forests are vitally important in economic, social, ecological and cultural terms, both globally and for the development of individual countries. In many developing countries, they help to meet the basic needs of the local population and indigenous propels in particular, and are the basics for their economic and social development. Together with the oceans they regulate the global hydrological and carbon cycles and

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<sup>3</sup>India State of Forest Report 2013, Forest Survey of India, Dehradun: Ministry of Environment & Forests, Government of India, p. 7.

<sup>4</sup> Ibid., p. 2.

<sup>5</sup>Trivedi, P. T. (2004), Op. cit., p.17.

<sup>6</sup> Shrivastava, K.K. (2004). Environmental Education-Principles, New Delhi: Concepts and Management, Kanishka Publishers, Distributors , p. 13.

hence the earth's climatic balance. It is of paramount importance that these far reaching functions are preserved, and the contributions of forests to sustainable development guaranteed.<sup>7</sup>

Forest vegetation typically has a greater impact on climate than vegetation with less bio-mass and vertical structure. Vegetation modifies topography and in doing so, alters wind patterns and changes the light transmission to the ground. Forest exteriors are darker, more humid, more stable in temperature, and less windy than adjacent deforested areas. Precipitation intensity is also moderated. Transpiration from vegetation dries the soil and adds humidity to air above the forest. Photosynthesis removes carbon-dioxide from the atmosphere and generates oxygen as a by-product.<sup>8</sup>

Forests help to minimize the impact of air pollution, water pollution and noise pollution. Forests help to maintain the temperature at a lower level and prevent them from rising. In the absence of forests, the entire heat that is not absorbed by the atmosphere but strike the earth's surface are reflected by the earth's surface, leading to a rise in atmospheric temperature. But if forest coverage is thick and wide, these forests would absorb the heat and prevent the rise in temperature. Secondly, the ultra violet rays from the sun are absorbed by the ozone layer. Forests would serve as a natural filter of the ultra violet radiation that threatens the health of the people.

Above all forests form an important component of our natural environment. They are home to this planet's wildlife and harbour a wealth of natural resources such as

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<sup>7</sup> Murthy, D.B.N. (2004). Environmental Awareness and Protection, New Delhi: Deep & Deep Publications Pvt. Ltd., , p 31.

<sup>8</sup>Holechek, Jerry L., Cole, Richard A., Fisher, James T., Valdez, Raul. (2000). Natural Resources: Ecology, Economics and Policy, . New Jersey: Prentice Hall Inc, p. 156

medicinal herbs and plants. They also have a role to play in regulating the cycle of life on this planet.<sup>9</sup> They offer watershed protection, timber and non-timber products, and various recreational options. They check global warming by using carbon dioxide in photosynthesis.

Forest vegetation and its accompanying soil organisms make up as much as 90 percent of the total biomass on land. Due to deforestation, the stability of many ecological sub-systems has been greatly disturbed. Forest cover in the catchment areas of the river controls soil erosion and recurrence of floods. Once the forest cover is damaged, severe soil erosion takes place disturbing the entire eco-system, choking the dams and reservoirs with silt load and thereby promotes recurrence of floods<sup>10</sup>. Vast stretches of forests are lost as a price for development. Further, when trees are felled and soil is exposed to sun and wind and rain for a long time, the top of the layer of soil is lost. Thus deforestation accelerate soil erosion.

Two issues concerning forests are of global concern-deforestation and global warming. Deforestation is primarily a problem in countries outside the temperate zone. The conversion of forests in temperate regions to agricultural land has been reversed and forest area is now actually increasing. By contrast, deforestation remains intense in the tropical zones.<sup>11</sup> Forest fire, tree felling, over-grazing, mining, road construction and development projects, shifting cultivation etc are the major causes of forest degradation.<sup>12</sup>

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<sup>9</sup> Poddar, A.K, Mukherjee, Swayambhu, and Nandy, Deboshmita (2011). Forest Laws and Policies in India, New Delhi: Regal Publications, p. 1.

<sup>10</sup> Trivedi, P.R. (2004). Op. cit, p. 99

<sup>11</sup> Holechek, Jerry L.et. al.(2000). Op.cit. p. 330.

<sup>12</sup> Joshi, P.C., Joshi, Namita (2004). Biodiversity and Conservation, , New Delhi: APH Publishing Corporation, p. 5.



Increased urbanisation, industrialisation and mining also caused indiscriminate felling of trees and denudation of forests. Whatever be the cause, this deforestation has serious consequence on the quality of life. The influence of forests on environment may be localized or far reaching. The climate, rainfall, relative humidity, wind, soil, etc are all influenced by forests. Hence indiscriminate felling of trees or deforestation disturbs ecological balance and deteriorates quality of life.

Deforestation has arisen from four principal causes, often in combination with each other, excessive felling of trees for timber, over-grazing, fire and clearance of land for cultivation and pasture.<sup>13</sup> Shifting or jhum cultivation in which forests are slashed and burnt for cultivation destroys large areas of forests every year. Jhum cultivation which is practice in Mizoram along with forest fires are the most devastating factors towards protection, preservation, and conservation of forests, environment and wildlife.

Destruction of forests, particularly tropical forests could change the global climate and de-stabilize polar ice caps. Forest clearance accounts for nearly 50 percent of the added CO<sub>2</sub> which traps heat that would otherwise pass through the atmosphere into outer space. This 'greenhouse effect' means that the predicted doubling in the atmospheric concentrations of CO<sub>2</sub> will result in an average rise of about 5° F in the earth's atmosphere. The warming will not be uniform around the globe: the North and South Poles are forecast to have temperature increases of as much as 18° F; this may cause some melting of the polar ice packs, raising ocean levels and changing rainfall patterns

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<sup>13</sup>Srivastava, Kamal Shankar. (2007). Environment Management and Administration, , New Delhi: APH Publishing Corporation, p. 94

around the world. The oceans, would as a result of warming release CO<sub>2</sub> to the atmosphere, starting a feedback mechanism that could accelerate the disaster.<sup>14</sup>

Thus, due to a number of factors like jhum cultivation, forest fire, over-grazing, construction of roads, setting up of industries, towns and cities, construction of dams for irrigation and hydro-electric projects, etc., large areas of forests are being destroyed every year which led to serious environmental problems for men, animals and other living things; this has become a global concern.

United Nations Conference on Human Environment, a landmark towards the protection of the deteriorating environment at the international level was held at Stockholm on 5<sup>th</sup> June 1972.<sup>15</sup> The greatest significance of the conference was in the final declaration that nations had to work together on environmental issues, and that a healthy environment was essential for the long-term prosperity of developing nations.<sup>16</sup>

Understanding the linkage between development and environment the World Commission on Environment and Development called for the adoption, globally of strategy of sustainable development. The Report generally known as Bruntland Report has defined sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations.’<sup>17</sup> The Commission’s report highlighted how growth rates, in both developing and industrialized nations, would prove to be sustainable in the long run.

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<sup>14</sup>Ibid., pp. 97,98

<sup>15</sup> Leelakrishnan, P.(2010). Environmental Law in India, Nagpu: Lexis Nexis Butterworths Wadhwa, p. 9.

<sup>16</sup>The birth of green generation at <http://www.bbc.com/Stockholm>. accessed on 25.11.2015

<sup>17</sup> Fadnavis, Snehal .(2002). *Protection of Environment Under International Law*, Journal of the institute of Human Rights, Vol. V. No. 2. December 2002, p.119.

United Nations Conference on Environment and Development which gave birth to UN conventions on climate change, biodiversity and desertification and the Agenda 21 “roadmap” to sustainable development was held at Rio de Janeiro during 3-14 June 1992. The Conference states that poverty is a major cause and effect of global environmental problem.<sup>18</sup> The resulting document was the Agenda 21, the Rio declaration on Environment and Development, the Statement of Forest Principles, the UNs Framework Convention on Climate Change (UNFCCC) and the UNs Convention on Biological Diversity.<sup>19</sup> Agenda 21 is a document which outlined global strategies for cleaning up the environment and encouraging environmentally sound development.<sup>20</sup>

The Kyoto Protocol is an international agreement linked to the UNFCCC adopted in Kyoto in Japan on 11<sup>th</sup> Dec. 1997 and entered into force on 16<sup>th</sup> Feb. 2005 which commits its Parties by setting internationally binding emission reduction targets.<sup>21</sup> Recognizing that developed countries are principally responsible for the high levels of greenhouse gases emissions in the atmosphere the Protocol places a heavier burden on developed nations.

The delegates of the World Summit on Sustainable Development held at Johannesburg, South Africa in 2002 committed themselves to build a humane, equitable and caring society. The summit assumed a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable, economic

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<sup>18</sup> Ali, Nurshad. (2007). Natural Resource Management and Sustainable Development in North-East India, New Delhi: Mittal Publication, p. 2051

<sup>19</sup>Earth Summit-the United Nations at <http://un.org/geninfo>. accessed on 25.11.2015

<sup>20</sup>United Nations Conference on Environment and Development at <http://www.britanica.com/event/UNCED>. accessed on 26.11.2015

<sup>21</sup>Kyoto Protocol-unfccc at [http://unfccc.int/kyoto\\_protocol](http://unfccc.int/kyoto_protocol). accessed on 26.11.2015

development, social development and environment, at the local, national, regional and global levels.<sup>22</sup>

At the first universal session of the UNEP Governing Council held in February 2013, member states recommended to the UN General Assembly that the Governing Council, the 58-member governing body of UNEP in place since 1972, be renamed the United Nations Environment Assembly (UNEA) of the UNEP with universal membership. In March 2013, the UN General Assembly adopted the resolution formally changing the designation of the Governing Council to the “United Nations Environment Assembly (UNEA)”. It has the mandate to take strategic decisions, provide political guidance in the work of UNEP and promote a strong science-policy interface. The first UNEA was held in 23-27<sup>th</sup> June 2014, at Nairobi, Kenya.<sup>23</sup>

In India, people have been conscious about environmental problems ever since the *Vedic* times. It is clearly mentioned in its ancient scriptures that nature and humankind (i.e. *prakit* and *purush*) form an inseparable part of the life support system. This system has five elements-air, water, land, flora and fauna-which are interconnected, interrelated and interdependent and have co-existed. All these have caused the problem of environment pollution.<sup>24</sup> In the earlier times the regulation of people’s use of forests was through local customs.

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<sup>22</sup> Leelakrishnan, P. (2010). Op.cit., p. 10.

<sup>23</sup> UNEA-United Nations Environment Assembly at <http://www.unep.org/unea/about.asp>. accessed on 26-11-15

<sup>24</sup> Jain, R.B. (2004). Public Administration in India 21<sup>st</sup> Century: Challenges for Good Governance, New Delhi: Deep and Deep Publication, p. 36.

However, prior to 1972 Stockholm Conference, environmental concerns were dealt with by different central ministries, without a proper system of coordination. As a follow up of the 1972 resolutions adopted at Stockholm, the GOI set up a Committee on human environment to study the state of environmental problems in the country and the institutional set up, and to suggest measures. This led to the setting up of a National Committee on Environmental Planning and Coordination (NCEPC) in 1972 in the Department of Science and Technology, as an apex advisory body for all matters relating to environmental protection and improvement. NCEPC was inadequate and a high Powered Committee was set up as a result of which a separate Department of Environment (DoE) was established on 1 November, 1980.<sup>25</sup>

Following the Bhopal Gas Leak tragedy on 3Dec,1984 awareness and activism on protection of wildlife and environment increased significantly in India. Barely a month after the tragedy, on 4<sup>th</sup> January, 1985, the Department of Environment under the Ministry of Science and Technology was expanded into a full-fledged Ministry of Environment and Forests (MoEF) for developing a more comprehensive and effective institutional framework to respond to the growing scale of environmental challenge.<sup>26</sup>The Ministry has been renamed as the Ministry of Environment, Forests and Climate Change since 2014. The Ministry of Environment and Forests is the controlling ministry for forests and environment at the central government level. After independence, forests and wildlife were looked after by the Ministry of Agriculture. However, in the eighties as the

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<sup>25</sup> Strategic Plan, 2012-13 to 2016-17 (Aligned with 12<sup>th</sup> Five Year Plan), Ministry of Environment and Forests at <http://www.moef.nic.in> p. 7. Accessed on 25.11.2015

<sup>26</sup> *Ibid*, p. 10. Accessed on 25.11.2015.

importance of forests increased a separate ministry was created to look after environment and forests.<sup>27</sup>

India is the first country in the world which has made provisions for the protection and improvement of environment in its constitution. The constitution of a country is its most important document. The inclusion of protection of the environment in the constitution thus reflects the high priority and importance attached by the government to the situation of its environment.<sup>28</sup>

The Ministry of Environment, Forests and Climate Change is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programs. The primary concerns of the Ministry are implementation of policies and programs relating to conservation of the country's natural resources including lakes and rivers, its biodiversity, forests and wildlife, ensuring the welfare of animals and prevention and abatement of pollution.<sup>29</sup>

### **Forest Policies and Legal Provisions**

Any law governing forests and forest resources should seek to find, through its various provisions, the solution to problems like deforestation, depletion of forest resources and poaching of wildlife. It should also put in place mechanisms to protect the rights of forest dwellers and the tribals.<sup>30</sup> Forest policy of a country specifies certain

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<sup>27</sup> Negi, S.S. (2001), *Forest Policy and Law*, Dehradun: International Book Distributors, p. 3.

<sup>28</sup> Chakrabarti, Tapan (2002). *Role of Policy and Legislation in Integrating Economy and Environment*, Journal of the Institute of Human Rights, Vol. V. No, 2, December 2002, p. 80.

<sup>29</sup> About the ministry-Ministry of Environment and Forests at [envor.moef.gov.in/about ministry](http://envor.moef.gov.in/about%20ministry), accessed on 21.10.2015.

<sup>30</sup> Poddar, A.K., et al (2011). *Op. cit.*, p. 1.

broad principles for the use of a nation's forest resources. Forest governance in India may be divided into the pre-British period, British period, and the post-independence period.

### **Pre-British Period**

Historically, forests in India during the pre-British period were managed by communities living in and around the forests and by people dependent on them for their sustenance and livelihood. The word 'managed' has been specifically used here because there was a system at play. It was not a free-for-all, open-access system; social institutions like caste and cultural traditions regulated the extraction of produce from the forest.<sup>31</sup>

The oldest records of indigenous forest management in India can be traced to the ancient text Atharva Veda, 3,000 years ago. Similarly, Kautilya's Arthashastra (300 BC) describes several forest management practices in detail.<sup>32</sup> Chapter XVII of Book II of Kautilya's Arthashastra says that the Superintendent of Forest Produce shall collect timber and other products of forests by employing those who guard productive forest.<sup>33</sup> Arthashastra states that the ruler shall not only protect forests but also set up new ones; animal forests shall be established for wildlife protection.<sup>34</sup>

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<sup>31</sup> A history of forest regulations: [infochangeindia.org/environment/backgrounder](http://infochangeindia.org/environment/backgrounder) accessed on 27.11.2015.

<sup>32</sup> Kishwan, Jagdish. Pandey, Devendra, Goyal, A.K., Gupta, A.K. (2007). India's Forests, New Delhi: Xtreme Office Aids (Pvt) Ltd, p. 24.

<sup>33</sup> Book II-the duties of govt. supdt. at <http://www.sdstate.edu>. Accessed on 26.11.2015

<sup>34</sup> Khitoliya, R.K. (2008). Environmental Management & Conservation II, New Delhi: APH Publishing Corporation, p. 375.

## **British Period**

Forestry (mainly timber extraction and tree planting) activities were taken up in several parts of India in the early 19<sup>th</sup> century. However, the advent of scientific forestry in India is reckoned with the appointment of Dr. D. Brandis as the first Inspector General of Forests of India in 1864.<sup>35</sup> By 1870, the foundation of a forest department had been laid, and a regular forest service began to function in the country.

## **Indian Forest Act, 1865**

This is the first forest law for India. It aimed at to create forest reservations for meeting long term national and regional needs for forest resources. Reserved forests were created and provided with the legal backing for the first time and the interests of agriculturists were safeguarded.<sup>36</sup> It provided for the protection of trees, prevention of forest fires, and prohibition of cultivation and grazing in forest areas. This Act was later revised in 1878 and extended to most provinces of British India.

## **Forest Policy, 1894**

It was the first regular policy framed by the imperial rulers of the time. The Policy spoke of the right of the state to exclusive control over forest protection, production and management. The main aim was to enable easy acquisition of wood for meeting the defence requirements of the Imperial Army as well as for other purposes such as the

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<sup>35</sup>Kishwan, Jagdish. (2007). et.al. p. 24.

<sup>36</sup> Negi, S.S. (2001). Op.cit., p. 3.



construction of railways.<sup>37</sup> Permanent cultivation was given more importance than forestry.

### **The Indian Forest Act, 1927**

The Indian Forest Act of 1927 was enforced by the British rulers in India and is still valid in a big way. Forest was viewed as income generating source by this Act. Forests were divided into four categories, namely, reserved forests, protected forests, village forests and private or non-governmental forest.<sup>38</sup> This Act consolidated all the previous laws regarding forests that were passed before the 1920s.

### **Post-independence Period**

Environment and Forests Acts and policies of the country have their backgrounds from the British-India administration. However, with the changing scenarios of environmental degradation the old forest policies and regulations have to be amended and new Acts and policies have been enacted and developed by the government.

### **National Forest Policy, 1952**

The Government of India through a resolution (No. 13/52-F dated 12 May 1952) announced a 'National Forest Policy' under the erstwhile Ministry of Food and Agriculture.<sup>39</sup> This policy for the first time laid stress on having at least 33 percent of land area of the country under forest cover, as also the need for wildlife conservation. The policy introduced a fundamental concept of self-sustenance for meeting the local and national needs and advocated extension forestry. It provided for containment of shifting

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<sup>37</sup> Poddar, A.K. et al, (2011). p. 103.

<sup>38</sup> Khitoliya, R.K. (2006). Op. cit., p. 391.

<sup>39</sup> Ghosh, Asish (2007), Environment Issues and Concern, New Delhi: APH Publishing Corporation, p. 84.

cultivation and creation of village forests. It also underlined the importance of forest protection, wildlife conservation, contribution of forests in improving soil fertility and agricultural productivity. The prime emphasis remained on sustainable timber production.<sup>40</sup>

### **The Wildlife (Protection) Act, 1972**

This Act, a landmark in the history of wildlife legislation in our country came into existence in 1972. It provides for the preservation of forests and promotion of forests produce, and collection of Government revenues.<sup>41</sup> It deals with the declaration of National parks and Wildlife Sanctuaries and their notification. It establishes the structure of the State's wildlife management and the posts designated for Wildlife Management. It provides for state wildlife advisory boards, regulations for hunting wild animals and birds, establishment of sanctuaries and national parks, regulation for trade in wild animals, animal products and trophies, and judicially imposed penalties for violating the Act.<sup>42</sup> and Wildlife Advisory Boards.<sup>43</sup> Enactment of Wildlife (Protection) Act, 1972 is to provide for protection for wild animals, birds and plants for ensuring ecological and environmental security.

### **The Forest (Conservation) Act, 1980**

This Act was passed in 1980 to provide for the conservation of forests. It came into force on 25<sup>th</sup> Dec. 1980. It was passed to check further deforestation which

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<sup>40</sup> Kishwan, Jagdish et al. (2007). Op.cit, p. 19.

<sup>41</sup> Agarwal, K.C. (2000). Environmental Laws Indian Perspective, Bikaner: Nidhi Publishers (India), p. 87.

<sup>42</sup> Divan, Shyam and Rosencranz, Armin .(2011). Environmental Law and Policy in India, New Delhi: Oxford University Press, pp. 61,62.

<sup>43</sup> Bharucha, Erach. (2005). Textbook of Environmental Studies, Hyderabad: Universities Press (India) Private Limited, p. 192.

ultimately results in ecological imbalance. According to this Act the word ‘forest’ covers all statutorily recognized forests whether designated as reserved, protected or otherwise. The term ‘forest land’ includes any area recorded as forest in the Government record irrespective of the ownership.<sup>44</sup> Deals with the conservation of forests and related aspects. Excepting J&K, the Act is adopted all over India. The Act covers under it all types of forests including reserved forests, protected forests or any forested land irrespective of its ownership. The state government has been empowered under this Act to use the forests only for forestry purposes. If at all it wants to use it in any other way, it has to take prior approval of central government.<sup>45</sup> The Act is to regulate and control diversion of forest lands for non-forestry purposes. It was enacted with a view to check indiscriminate dereservation and diversion of forest land to non-forest purposes. Under this Act prior approval of Central Government is required before any reserved forest is declared as reserved, or forest land is diverted to non-forest purposes. If diversion is permitted, compensatory afforestation is insisted upon and other suitable conditions imposed.<sup>46</sup>

### **The Environment (Protection) Act, 1986**

The Act came into force on Nov. 19, 1986, the birth anniversary of our late Prime Minister Indira Gandhi, who was a pioneer of environmental protection issues in our country. The Act has defined environment which includes water and the relationship that exist among and between water and human beings, other living creatures, plants,

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<sup>44</sup> Agarwal, K.C. (2000). Op.cit., pp 89,90

<sup>45</sup> Kaushik, Anubha&Kaushik, C.P. (2014). Op.cit. p. 276..

<sup>46</sup> Sharma, R.A. (2012). Environmental Education, Meerut: R.Lall Book Depot, 1. p. 246.

microorganisms, and property.<sup>47</sup> The Act has given powers to the central government to take measures to protect and improve environment while the state governments coordinate the actions.<sup>48</sup> This Act not only has important constitutional implications but also an international background.

### **National Forest Policy, 1988**

In 1988, a new National Forest Policy was announced vide No. 3-1/86-FP dated 7<sup>th</sup> December 1988 under the Ministry of Environment and Forests, which admitted that ‘over the years, forests in the country have suffered serious depletion’. It was attributed to the relentless pressure arising from increasing demand for fuel wood, fodder and timber, inadequacy of protection measures, diversion of forest lands to non-forest uses and tendency to look upon forests as revenue earning resources.<sup>49</sup>

### **National Environment Policy, 2004 & 2006**

National Environment Policy is the outcome of extensive consultation with experts in different disciplines, Central Ministries, Member of Parliament, State Governments, industry associations, academic and research institutions, civil society, NGOs, and the public.<sup>50</sup> This National Environment Policy, 2004 and 2006 seeks to extend the coverage and fill the gaps that still exist in the present national policies for environmental management in the light of knowledge and accumulated experience.

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<sup>47</sup> Senger, Dharmendra S. (2009). Environmental Law, New Delhi: PHI Learning Private Limited, p. 43.

<sup>48</sup> Ibid. p. 280.

<sup>49</sup> Ghosh, Asish. (2007). *Op.cit.* pp. 84, 85.

<sup>50</sup> Khitoliya, R.K. (2008). *Op.cit.* p. 577.

## **Forest Rights Act, 2006**

The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 commonly referred to as the Forest Rights Act (FRA) is an Act to recognize and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recoding the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land.<sup>51</sup>

The legal framework for conserving wildlife in India is provided by the Wildlife Protection Act, 1972. The Act was amended in 1982, 1986, 1991, 1993, 2003, and 2006 to make it more comprehensive. The new provisions of the Act pertain to the setting up of a Central Zoo Authority (CZA) to oversee matters relating to management of zoos in the country, protection of rare and endangered species of plants and animals, empowering individuals to file complaints against offenders under the Act, creation of National Tiger Conservation Authority (NCTA) with powers to oversee management of Project Tiger areas in the country and creation of National Wildlife Crimes Control Bureau for making concerted efforts to check crimes related to trade in wildlife products of the country.<sup>52</sup> Most of the states have amended their respective forest legislations to meet the broad objectives of the NFP, 1988. Still, there are important gaps such as in the matters of providing legal backing to people's participation in forest management, and conferring

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<sup>51</sup> The Gazette of India Extraordinary, Part II Sec I, Jan. 2, 2007, Regd. No. DL-(N) 04/0007/2006-08.

<sup>52</sup> Kishwan, Jagdish. et, al, (2007). p. 22.

ownership of minor forest produce on forest dependent communities living in and around forests.

As per the India State of Forest Report 2013 assessment, the forest covers of India include 83,502 sq.km, i.e., 2.54 percent of very dense forest, 318,745 sq.km, 9.70 percent of moderately dense forest, 295,651sq.km i.e., 8.99 percent of open forest, 41,383 sq.km i.e.,1.26 percent of scrub, and 2,547,982 sq.km i.e., 77.51 percent of non-forest areas respectively.<sup>53</sup>

Madhya Pradesh with an area of 77,522 sq.km which is 25.15 percent of its geographical area has the largest forest cover among the States and Union Territories of India. In terms of percentage of forest cover with respect to total geographical area, Mizoram with 90.38 percent (19,054 sq.km area) has the highest forest cover;<sup>54</sup> The North Eastern States are endowed with rich forest resources. The region, which constitutes only 7.98 percent of the geographical area of the country, accounts for nearly one-fourth of its forest cover.

Provisions for environmental protection in the Constitution of India were made within four years of Stockholm Conference, in 1976, through the 42<sup>nd</sup> amendment. It is stipulated in Part IV: Directive Principles of State Policy in Article 48-A, which states that '*the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country*'.<sup>55</sup> Article 51-A (g) further provides that '*It shall be the duty of every citizen of India to protect and improve the natural environment*

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<sup>53</sup>ISFR 2013.Op.cit, p. 14

<sup>54</sup>ISFR 2013.Op.cit. p. 15.

<sup>55</sup> Divan, Shyam, and Rosencraz, Armin. (2011). Environmental Law and Policy in India, New Delhi: Oxford University Press,. p. 45.

*including forests, lakes, river, and wildlife and to have compassion for living creatures.*

Originally, forests were a subject of State list. As there was no uniform policy followed by the State in respect of protection of forests, this subject was transferred to list III (Concurrent List). Now on this subject the parliament and the state legislature both may pass legislation. The subject of protection of wild animals and birds was also transferred from list II, entry 20, and inserted in list III, entry 17B.<sup>56</sup> In 1980, the President of India promulgated the Forest (Conservation) Ordinance, 1980, which put severe restrictions on dereservation of forest or use of forest land for non-forest purposes, without prior approval of the Central Government.<sup>57</sup>

About 300 years ago, a ruler in Rajasthan decided to sell the ‘khejri’ trees in his state to create lime. Local women led by a Bishnoi woman, Amrita Devi, clung to the trees to prevent the felling of the trees that formed the basis of the scarce resources on which they were dependent. The women were ruthlessly massacred. This story has been remembered and was revived in the 1970’s when severe tree-felling for timber in the Himalayas prompted local women, supported by people such as Sunderlal Bahuguna and Chandi Prasad Bhat, led a people’s movement to prevent deforestation by timber contractors. They called their movement the ‘Chipko’ movement in memory of the event during which women had clung to their trees and given up their lives. Thus, Chipko is a movement primarily begun and supported by local women in the hills of Uttarakhand and Garhwal, where the women, traditional fuel collectors, have to bear the brunt of

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<sup>56</sup>Jain, R.B. (2004). Op.cit., p. 374

<sup>57</sup>Trivedi, P.R.(2004). Op.cit. p.125.

deforestation.<sup>58</sup> It is so gratifying to note that it was the so-called illiterate tribal women who first came forward to demand the conservation of the environment.

Narmada Bachao Andolan is the most powerful mass movement, started in 1985, against the construction of huge dam on the Narmada river, India's largest west flowing river. The construction of these dams has raised protests all over the world. The names of Baba Amte, Medha Patkar and Arundhati Roy have become well-known in the protest-movement launched in India.<sup>59</sup> The construction of these dams displaces many poor and underprivileged communities, destroying their relatively self-sufficient, environmentally-sound economy and culture and reducing a proud people to the status of refugees or slum dwellers. This movement is one of the most dynamic people's movements fighting for the rights of these underprivileged people who are being robbed of their homes, livelihoods and way of living in the name of 'national interest'. This movement has attracted international attention. Many prominent intellectuals are enlisting their support to the movement.

The densely-forested valley in the Palghat district of north Kerala is known as the 'Silent Valley'. The Kerala State Electricity Board (KSEB) decided to implement the Silent Valley Hydro-Electric Project (SVHEP) centred on a dam across the Kunthipuzha river in 1973. In 1976, the project attracted the attention of many environmentalists including the noted ornithologist Salim Ali who voiced their objections. Finally, in December 1980, the Kerala Government announced the scrapping of the project.

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<sup>58</sup> Bharucha, Erach. (2005). *Op.cit.*,. p. 172.

<sup>59</sup> Basu, Rathindra Narayan .(2000). *Environment*, Calcutta: Calcutta University Press, Hazra Road, p. 80.



The Government of India and the State Government of Mizoram, since the British rule have formulated and enacted a number of policies and acts to regulate, control, preserve, conserve, and protect the country's environment and natural resources. The Department of Environment and Forests, Government of Mizoram is responsible for the scientific management of the forests in the State. Its efforts are aimed at increasing the area under forest cover and enhancing the quality of existing forests with active participation of the local people.

The Department of Environment and Forests, Government of Mizoram is responsible for administration, protection, conservation and management of forests and environment in the state and enforcement of National Forest Policy and Central and State Legislations in forests, wildlife, climate change and environmental matters. The administrative head of the department, the Principal Chief Conservator of Forests (PCCF) and his staff are entrusted to discharge these crucial functions and responsibilities. The Department of Environment and Forests divides Mizoram into five Circles under the charge of Conservator of Forests viz., Northern Circle, Southern Circle, Research & Development Circle, Chief Wildlife Warden, and Central Circle. There are ten Territorial Area Forest Divisions in Mizoram with an area of 16,645.98 sq km; these Territorial Area Forest Divisions are Aizawl, Lunglei, Kolasib, Darlawn, Mamit, Kawrthah, Champhai, North Vanlaiphai, Tlabung, and Thenzawl under the charge of Divisional Forest Officer or Deputy Conservator Forests which further comprise of 60 Ranges.<sup>60</sup>

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<sup>60</sup> Statistical Handbook 2011, Aizawl: Environment & Forest Department, Govt. of Mizoram, Five Brothers' Offset Press, p. 25.

There are seven Wildlife Sanctuaries, two National Parks and one Tiger Reserve Forest named; the total area of these Protected Forests is 1370.75 sq km.<sup>61</sup> but the department is facing shortage of man-power. The overall post position of Environment and Forests Department as on 22-5-2014 shows that the government has sanctioned 1359 posts out of which only 908 posts are being filled i.e., 66.8% while 451 posts (33.2%) are yet to be filled.<sup>62</sup> The department has only one Forest Training School at Aizawl established in 1974.<sup>63</sup>

In spite of the great efforts made by the Department of Environment and Forests in collaboration with Non-Governmental Organizations like Young Mizo Association (YMA), Young Lai Association (YLA), Mizoram Hmeichhe Insuihkhawm Pawl (MHIP), Mizoram Upa Pawl (MUP), and environmental NGOs like the Centre for Environment Protection (CEP), Association for Environmental Preservation (ASEP), Biodiversity and Nature Conservation Network (BIOCONE), Green Mizoram Network (GMN), Save Environment Association (SENVVA) etc, large areas of forests area are being destroyed every year by traditional jhum method of cultivation, forest fires, road construction, landslides etc.

The forest and environmental Acts in vogue in Mizoram can be divided into Central Acts and State Acts. The Central Acts include The Wildlife (Protection) Act, 1972, Forest Conservation Act, 1980, and The Environment (Protection) Act, 1986, which have been discussed briefly. The State Acts include Assam Forest Regulation of

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<sup>61</sup> Chief Wildlife Warden office, Deptt of E & F, GOM, 2015.

<sup>62</sup> Forest Extension Division, Deptt. of E&F, GOM, 2015.

<sup>63</sup> Mizoram Forest 2006, Aizawl: Department of Environment and Forests, Government of Mizoram, LM Offset, p. 76.

1891, The Mizoram (Forest) Act, 1955 (as passed by Mizo District Council), The Pawi Autonomous District Council (Forests) Act, 1976, The Lakher Autonomous District Council (Forests) Act, 1981, and The Chakma Autonomous District Council (Forests) Acts.<sup>64</sup> Besides these, there are a number State's Acts and Rules pertaining to biodiversity and for abatement of environmental pollution, viz., the Lushai Hills District (Jhumming) Regulation, 1954, the Mizo District (Agricultural Land) Act, 1963, the Mizoram Wildlife (Protection) Rules, 1990, the Mizoram (Prevention and Control of Fire in the Village Ram) Rules, 2001, the Mizoram Sale of Forest Produce Mahal Rules, 2002, etc.

**Table 1: Scheme wise approved outlay for the 11<sup>th</sup> Plan and projected outlay for the 12<sup>th</sup> Plan<sup>65</sup>**

sl no.	Name of Scheme	11 <sup>th</sup> Plan (Rs Crores)	12 <sup>th</sup> Plan (Rs crores)
	Environment & Ecology		
1	Environmental monitoring and governance	216.00	259.20
2	Pollution abatement	235.00	282.00
3	Research & Dev. for Conservation & Dev.	250.00	300.00
4	Conservation of Natural Resources and Ecosystem	600.00	720.00
5	Environment information, Education & Awareness	295.00	354.00
6	Envtl. Management in Heritage, Pilgrimage and Tourist Centres including Taj protection	0.01	0.012
7	International cooperation Activities	80.00	96.00
8	National Coastal Management Programme	10.00	12.00
9	National River Conservation Plan (NRCP)	2100.00	2520.00
	<b>Total Environment &amp; Ecology</b>	<b>3786.01</b>	<b>4543.212</b>
	<b>Forestry &amp; Wildlife</b>		
10	Grants-in-aid to Forest and Wildlife Instns.	450.00	540.00
11	Capacity building in forestry sector	110.00	132.00
12	Gregarious Flowering of Bamboos	37.00	44.00
13	Intensification of Forest Management	600.00	720.00
14	Strengthening Forestry Division	100.00	120.00
15	Strengthening og Wildlife Division	150.00	180.00

<sup>64</sup>Statistical Handbook 2011, E&F Deptt. p. 52

<sup>65</sup> Strategic Plan, MoEF at <http://www.moef.nic.in> accessed on 27.11.2015

16	Integrated development of Wildlife Habitats	800.00	960.00
17	Project Tiger	615.00	738.00
18	Project Elephant	81.99	98.388
19	National Afforestation & Eco-dev. Board(NAEB)	250.00	300.00
20	National Afforestation Programme	2000.00	2400.00
21	Social Forestry with communities(Panchayat Van Yojana)	900.00	1080.00
22	Animal Welfare	120.00	144.00
	<b>Total Forestry &amp; Wildlife</b>	<b>6213.99</b>	<b>7456.788</b>
	<b>Grand total-Environment, Forests &amp; Wildlife</b>	<b>10000.00</b>	<b>12000.00</b>

Source: *Strategic Plan: 2012-2013 to 2016-2017, MoEF, p. 49.*

The total annual plan of the MoEF is currently of the order of Rs 2000 crores, which is about 0.25 percent of GOI's plan budget. The expenditure on environment in India is a very small fraction of the GDP, much below most developed countries. Currently, the percentage of GDP spent on environment in India is 0.012, whereas it is 1.0 in Japan, 0.4 in USA and 0.3 in Netherlands.<sup>66</sup> There is need to provide allocation of adequate resources in those areas which have been focused in the new strategy of the Ministry of Environment and Forests.

## REVIEW OF LITERATURE

The following literatures have been reviewed by the researcher for this research work:-

William G. Camp and Thomas B. Daugherty (1991) in their book, *Managing Our Natural Resources* outline three different perspectives to look at the management of our natural resources such as the preservationists, the conservationists, and the exploiters. They claim that the purpose of their book is to present a balanced viewpoint of the place of humans in the world as long-term residents. They say that their book is written because

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<sup>66</sup> Strategic Plan, MoEF at [http:// www.moef.nic.in](http://www.moef.nic.in) accessed on 27.11.2015

they perceived a need for a book that take a broad look at the whole panorama of preservation, exploitation and conservation of natural resources.<sup>67</sup>

P.R.Trivedi (2004) in his book, India's Environment highlights that in a globally interconnected economy, fast deforestation, falling water tables, erratic climate change and environment pollution could harm economies around the world in the decades to come. As the 21<sup>st</sup> century advances the great challenge is whether we can marshal our resourcefulness to avert- rapidly enough environmentally-based economic falls. The future of budding generations in the 21<sup>st</sup> century and ever afterwards shall be rosy if natural resources are used prudently. We need growth without eco-disasters. We shall have to sweat to build environmentally sustainable global economy.<sup>68</sup>

K.S.Srivastava (2007) in his book, Environment Management and Administration explains the significance of the environment as a real sense of natural resources constitutes the capital on which the human beings depend to satisfy their needs to achieve their aspiration for development. The real management apart from administration of the environment has demanded positive and realistic planning, that balance human needs against the potential of the environment. Environmentalists guess that the thrust of the economic policy will result in greater pollution, as the authorities will be tempted to be lenient towards industries in the interest of growth. The present scenario of environmental administration and management faces multiple challenges and threats i.e.,

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<sup>67</sup>Camp, William G, and Daugherty, Thomas B. (1991). Managing Our Natural Resources, New York: Delmer Publishers Inc.

<sup>68</sup> Trivedi, P.T. (2004). Natural Resources Conservation, New Delhi: A.P.H Publishing Corporation.

threats of narrows social perspectives, enterprises mission, the scope and structure of the environment, the interaction among nature, society and enterprise.<sup>69</sup>

A.B.Chaudhuri (2007) in his book, *Forests, Environment and Man* explores the prime components of nature and their interaction under the prevailing impacts of socio-economic changes brought about by human beings. He addresses environmental degradation in the Himalayas, wetland, temperate hills, tropical hills and mangrove flora of India. He analyses the role of trees as pollution scavenger and manipulator of environment, conservation of wildlife in India, environment in tribal areas. He clearly discussed in short the role of trees in ameliorating environmental pollution and green-house effect.<sup>70</sup>

Kailash Thakur (2007) in his book, *Environmental Protection Law and Policy in India* highlights that in the present century, environmental degradation has emerged as a major global concern for human survival. The situation is getting alarming day-by-day. It is for these reason environmental issues are intensely debated increasingly often. The law relating to the environment is rapidly growing as a complex regulatory mechanism which increasingly reflects public concern over vital issues such as clean water and air, conservation of forests and wildlife, increasing noise and depletion of other natural resources. Recent spate of legislation and policy formulations on environmental issues in India reveal sincere efforts of the government to combat this stupendous problem. The

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<sup>69</sup>Srivastava, Kamal Shankar. (2007). *Environment Management and Administration*, New Delhi: APH Publishing Corporation.

<sup>70</sup>Chaudhuri, A.B. (2007). *Forests, Environment and Man*, New Delhi: Daya Publishing House.

environmental situation after coming into effect of the law and policy is not satisfactorily improving. It is against this background this book sets-out to provide a broad examination of environmental law and policy in India. <sup>71</sup>

Md. Danesh Miah, Man Yong Shin, and Masao Koike (2011) in their book, *Forests to Climate Change Mitigation* highlight that afforestation and reforestation can be one of the greatest choices in mitigating global warming by increasing the carbon sink in Bangladesh under the Clean Development Mechanism (CDM). Avoiding deforestation can be a great option by decreasing the carbon sources in Bangladesh. The greatest reforestation success of the Republic of Korea can be a better lesson for Bangladesh to increase the carbon sink in the forests. The bio-energy projects are attractive and CDM provides complementary options for international cooperation toward sustainable development in Bangladesh.<sup>72</sup>

N.K. Uberoi (2010) in his book, *Environmental Management* provides background material to various environmental problems. It surveys topics from sustainable development and ecological imperatives to strategies for managing environmental issues. He brings out the realities about the damage being inflicted on the environment and our exploitation attitude to nature. Our natural resources are either renewable or non-renewable, the latter have to be conserved and the use of former be

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<sup>71</sup>Thakur, Kailash. (2007). *Environmental Protection Law and Policy in India*, New Delhi: Deep and Deep Publications Pvt Ltd.

<sup>72</sup>Miah, Md. Danesh, Shin, Man Yong, Koike, Masao.(2011). *Forests to Climate Change Mitigation: Clean Development Mechanism in Bangladesh*, New York: Published by Springer.

judicious. Our living style, rate of consumption and disposal of wastes have created problems for manufacturing, marketing and management.<sup>73</sup>

Nursadh Ali (2007) in his book, *Natural Resources Management and Sustainable Development in North-East India* points out that the relationship between the indigenous tribal people and the available natural resources around them is multi-facets. He examines and analyses from issues such as the degree of dependency of poor tribals in natural resources in general and forests in particular, how far they are responsible for the destruction of these valuable resources in recent years in the North-East region, to what extent the poor tribals are affected by the depletion and degradation of these resources on which they depend significantly and the indigenous wisdom of management of natural resources including institutional factors that prevail in the self-governed tribal society.<sup>74</sup>

L.Teeter, B. Cashore and D. Zhang (2003) in their book, *Forest Policy for Private Forestry: Global and Regional Challenges* highlight that private forestry has become the focus of increasing scrutiny and concern as governments, non-governmental organizations, businesses and professional foresters attempt to define, address and develop the most appropriate policies for implementing sustainable forest management. They address these issues by providing a selection of peer reviewed papers from a conference held in Atlanta, USA in 2001. The main subjects covered include the emergence of a new paradigm for public involvement in private forestry, the challenges

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<sup>73</sup>Uberoi, N.K. (2010). *Environmental Management*, New Delhi: Excel Books.

<sup>74</sup> Ali, Nurshad.(2007). *Natural Resources Management and Sustainable Development*, New Delhi: Mittal Publication.



of sustainability, forest certification programs and country experiences from Americas, Europe, Asia and Oceania.<sup>75</sup>

Neelima Desmukh (2014) in her article, “*Environmental Education: Holistic Approach for Environment Protection and Sustainable Development*” in the Indian Context highlights that environmental education becomes an integral part of the strategy for ecological development, environmental improvement and protection as well as prevention of environmental degradation. Such an approach to education becomes a medium and process of creating awareness about man’s relationship with his natural as well as social and man-made environment. Public awareness and opinion on environmental protection and sustainable development could be achieved through environmental education in academic institutions like schools, colleges and universities.<sup>76</sup>

G.Q. Bull, C. Elliot, A. K. Boedhihartono, J. Sayer (2014) in their article, “*Failures in Tropical Forest Conservation Policy: What is the Solution?*” focus on the challenges on comprehensive forest conservation policy against deforestation and degradation of forests, continued loss of forest biodiversity, and limited recognition of forests in climate change. They highlighted that forest and conservation policy is at a crossroads. Conserving and managing forests depends on effective governance mechanisms that are transparent, participatory and accountable. They are critical of

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<sup>75</sup>Teeter, L., Cashore, B., and Zhang, D. (2003). *Forest Policy for Private Forestry- Global and Regional Challenges*, New York: CABI Publishing.

<sup>76</sup>Desmukh, Neelima. (2014). ‘*Environmental Education: Holistic Approach for Environment Protection and Sustainable Development in the Indian Context*’, *Indian Journal of Public Administration*, Vol. LX. No. 1. (January-March) pp 136-145.

efforts to impose top-down governance solutions based on a globally-designed solution without sufficient local involvement. They believed that progress will be made as long as national and international public opinion is supportive and civil society and the private sectors are engaged in this task.<sup>77</sup>

Sunita Roy (2013) in her article, “*Green Marketing and Its Impact on Indian Environment*” examines how the firms can use their environmental policy as a marketing tool or how they can remain simply environmentally responsible. Industrial and marketing entities are beginning to realize that they are members of the wider community and therefore must understand their environmental responsibility. They have to ensure that they do not breach any of the regulations or laws dealing with environmental marketing. Green marketing is still in its infancy and a lot of research is to be done to fully explore its potential.<sup>78</sup>

S.K. Soni and Yog Raj (2012) in their article, “*Non-Alignment Movement: Issues and Concerns*” traces the likes of activities of Non-Alignment Movement (NAM) countries in the direction of environment protection. The NAM members express readiness of non-alignment countries to intensify and promote international cooperation in the area of environment in order to prevent the disruption of global ecological balance. Humanity cannot afford to let the problems aggravate further and is looking towards

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<sup>77</sup>Bull, G.Q., Elliot, C., Boedhihartono,A.K., and Sayer,J. (2014). ‘*Failures in Tropical Forest Conservation Policy: What is the Solution?*’, Journal of Tropical Forest, Vol. 26. Number 1, (January) pp 1-3.

<sup>78</sup>Roy, Sunita .(2013). ‘*Green Indian Marketing and Its Impact on Indian Environment*’, Indian Journal of Public Administration, Vol. LIX. No. 4 (Oct- Dec) pp 875-885.

important players to come out to save the nature from possible appalling destruction around the globe.<sup>79</sup>

Shyamli Singh (2013) in his article, *'Keeping Track of Environmental Governance'* attempts to address the missing links in the knowledge about the state of challenge for better environmental governance. The author states that environmental governance is experiencing dynamic developments over the past few decades. Multi-sector and multi-level institutions, agreements, conventions and processes operate today for better environmental governance. Maintaining a healthy environment remains one of the greatest global concerns. Without concerted and rapid collective action to curb and decouple resource depletion and the generation of pollution from economic growth, human activities may destroy the very environment that supports economies and sustains life<sup>80</sup>.

The above review of literatures profoundly point to the necessity of conserving natural resources especially, the forests for the protection of the wildlife and environment. Since there is no research study on the structure and working of the Department of Environment and Forests, Government of Mizoram, the present study has been taken up.

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<sup>79</sup>Soni, Suresh Kumar, and Raj, Yog. (2012). *'Non-Alignment Movement: Issues and Concerns'*, Indian Journal of Political Science, Vol. LXXIII No. 3 (Jul-Sept), pp 527-534.

<sup>80</sup> Singh, Shyamli. (2013). *Keeping Track of Environmental Governance*, Indian Journal of Public Administration, Vol. LIX. No. 2. Apr-Jun, 2013.

## **STATEMENT OF THE PROBLEM**

At present the forest cover in Mizoram has been depleting at a fast rate due to many reasons such as persistence of traditional shifting cultivation which hitherto, uncontrolled fire, unregulated felling etc. And also illegal exploitation of timber is carried out especially along road and waterways. In addition to that, there is continuous clearing and burning of the forest for the purpose of farming. Wildlife is illegally exploited for its meat which is a delicacy and a source of protein. Jhum or Shifting Cultivation, a traditional means of agriculture based on indigenous knowledge system as the major form of livelihood for Mizoram farming community was a viable proposition in the past.

About 80 percent of farmers in Mizoram still depend on jhum cultivation that involves clearing forests and burning trees, weeds and bamboos and is believed to have caused considerable loss of forest cover in the species-rich tropical rainforest of the region. Jhum burning accounts for a very high percentage of gas emission when every year almost 2 lakh acres of land in rain forest are cut down and burnt. Some of the factors threatening the existence of biodiversity of the Mizoram are habitat fragmentation and destruction due to deforestation.

Large areas of forests area are being destroyed every year by traditional jhum method of cultivation, forest fires, road construction, landslides etc. During 2006-2011 there were 1787 forest fire incidents affecting 52295 Ha of forests,<sup>81</sup> 785 Forest Offence

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<sup>81</sup> Statistical Handbook 2011, E&F Deptt. p. 127.

cases in which 870 persons were involved, and 159 Wildlife Offence cases.<sup>82</sup> Deforestation is brought about by developmental activities, shifting cultivation, poaching, trade in wild flora and fauna, introduction of exotic and containing rapid wild spread of invasive species. The greatest impact that invasive species have on biodiversity is obviously in the protected areas that are relatively undisturbed. Through significant forest cover still exists outside the lake area; forests around it continue to deteriorate.

The actual reserve forest around Palak Dil is very small (about 10.5 sq km). The inter-village trail that surrounds it makes it vulnerable to disturbance. There are three main villages in the vicinity of the lake. Of these, Phura with 150 houses is the largest village. The main invasive species considered in the forestry area of Mizoram are *Mikaniamicrantha*, *Eupatorium*, *serotinium*, *Musa* sp. (wild banana), *Ageratum conyzoides* etc. Wild banana is predominant in the hilly slopes of Mizoram and hindered the natural biodiversity of the area. Large area of forest and huge amount of bamboo is wasted annually by ways of cutting and burning for jhum (slash and burn) cultivation and forest fire. At the back-drop of the above mentioned problems, the present research study is being proposed.

### **SCOPE OF THE STUDY**

The research work focused on the structure and working of the Department of Environment and Forests, Government of Mizoram which is responsible for administration and management of forests and environment in the state. It examined the programs and activities and achievements of the Department in implementing and

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<sup>82</sup> Ibid, p. 137.

enforcing the various programs, policies, and schemes entrusted to it. The research attempted to explore and analyze the challenges and problems faced by the Department and suggested remedial measures to improve its working.

### **OBJECTIVES OF THE STUDY**

- i. To study the historical background of the Department of Environment and Forests, Government of Mizoram.
- ii. To study the structure and working of the Department of Environment and Forests, Government of Mizoram.
- iii. To study the programs and activities of Department of Environment and Forests, Government of Mizoram.
- iv. To find out the problems and challenges of the Department of Environment and Forests and to suggest remedial measures in order to facilitate more effective and efficient way of working.

### **RESEARCH QUESTIONS**

- i. What are the important steps/events that led to the establishment of the Department of Environment and Forests, Government of Mizoram?
- ii. What are the major programs and activities carried out by the Department of Environment and Forests, Government of Mizoram?
- iii. What are the problems and challenges faced by the Department Environment and Forests to implement its programs and activities and how to solve them?
- iv. What are the necessary steps to solve the problems of the Department of Environment and Forests to function effectively?

## **METHODOLOGY**

The present study methodology has been descriptive in design. The primary data were collected through observation and interview schedule of the employees of the Department of Environment and Forests, Government of Mizoram. The secondary data were collected from books, journals, newspapers, published and unpublished works, official records, reports, notifications etc. The collected data have been analysed by using Microsoft excel to draw simple proportions and percentages.

## **CHAPTERISATION**

The whole study has been divided into five chapters.

The first Chapter is an introductory part which provides insights in to the role of forests in protecting environment and wildlife, degradation of environment and forests, global and national movements and legal provisions to protect and conserve them; literature survey; statement of the problem; scope and objectives of the study and the methodology applied in the study.

The second Chapter provides a profile of Mizoram in relation with administration of environment and forests, and the evolution of the Department of Environment and Forests, Government of Mizoram.

The third Chapter deals with the organizational structure, working, programs, and activities of the Department. It is an attempt to study the various programs like Jhum cultivation, Wildlife Sanctuaries, Green Mizoram Programs, Forest Fire prevention, and a number of other activities undertaken by the Department.

The fourth Chapter deals with the results of the responses of the employees in the scheduled interviews. The questions for the interview have been designed and framed to highlight the problems and challenges faced by the officials and their suggestions to solve these problems.

The fifth Chapter is a concluding chapter providing the summary and major findings of the study and finally suggestions and recommendations for improvement in the working and structural organization of the Department of Environment and Forests, Government of Mizoram.



## **CHAPTER –II**

### **EVOLUTION OF THE DEPARTMENT OF ENVIRONMENT AND FORESTS, GOVT. OF MIZORAM**

This chapter presents a detailed evolution of the Department of Environment and Forests, Government of Mizoram. The origin of the Mizos is generally accepted as part of a great Mongoloid wave of migration from China and later moved out to India to their present habitats. The Mizo history in the 18<sup>th</sup> and 19<sup>th</sup> Century is marked by many instances of tribal raids and retaliatory expeditions of security. Mizo Hills were formally declared as part of the British-India by a proclamation in 1895. North and South Hills were united into Lushai Hills district in 1898 with Aizawl as its headquarters. The name is derived from *Mi* (people), *Zo* (hill) and *Ram* (land), and thus Mizoram implies “land of the hill people” and also was known as the Lushai Hills District of Assam. The people demanded that the name “Lushai Hills” should be replaced by the words “Mizo Hills.” The Lushai Hills (Change of Name) Act, 1954 designated the Council as the “Mizo Hills District Council” from 1<sup>st</sup> September, 1954. The district was converted into the Union Territory by the North-Eastern Areas (Reorganisation) Act, 1971 on 21<sup>st</sup> January, 1972<sup>83</sup> and named it as Mizoram.<sup>84</sup> As a sequel to the signing of the Historic Memorandum of Settlement between the Government of India and the Mizo National Front in 1986, Mizoram was granted Statehood on February 20, 1987.

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<sup>83</sup> Thanhranga, H.C.(2007). District Councils in the Mizo Hills ( Updated), Aizawl: Lengchhawn Press, p. 88.

<sup>84</sup> Prasad, R.N., and Agarwal, A.K.(1995), Landmarks: A Study of Public Administration in Mizoram, Aizawl: Lengchhawn Press, p. 2.

During the British regime, there was no planned management of forest except the declaration of the Lushai Hills as ‘Excluded Area’ and the constitution of ‘Inner Line Reserve Forest’ along the inter-district boundary of Cachar and Mizoram covering an area of 1317.8 sq km vide the Assam Gazette dated 17.3.1877 issued under section 2 of the Bengal Frontier Regulation, 1873 (V of 1873). Another notification was issued in 1933 on the Inner Line of the Lushai Hills District. The forest and other resources were saved from exploitation and thus regarded as a remarkable landmark contribution by the British towards the protection and conservation of forests.<sup>85</sup> The Indian Forest Act, 1878 recognized the following classes of forests; viz; (i) Village Forests (Village Safety Reserve, Village Supply Reserved and Protected Forests), (ii) Council Reserved Forest (Any land at the disposal of the Council) and (iii) Riverine Reserved Forests (on both sides of the navigable rivers within one mile (1.6093 km) viz; Tlawng River, Tuichawng River, Tuirial River, Mat River, Tut River, Tuivawl River, Tupui River, Teirei River, Tuirini River, Langkaih River, etc.<sup>86</sup> During the British regime in Mizoram the Deputy Ranger Forests was personally responsible for all the Forest villages within the Lushai Hills boundary and for all activities within the Lushai Hills Reserve Forests by villagers outside this Reserve.<sup>87</sup> The village chiefs and the villagers helped very few government forest officials in executing and implementing the forest policies of the government and in protecting and conserving the natural resources of their respective villages.

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<sup>85</sup> *Foresters’ Guide*, Department of Environment and Forests, p. 58

<sup>86</sup> Jha, L.K. (1997), *Natural Resources Management Vol. I (Mizoram)*, New Delhi: APH Publishing Corporation, , p. 203.

<sup>87</sup> McCall, A.G. *The Lushai Hills District Cover (1980)*, Aizawl: Tribal Research Institute, Department of Art & Culture, I, p. 212.

In Mizoram, as over large tracts of NE India, there had been independent village communities headed by the village chief. The land (forest) belonged to the community, in contrast with land lordship (the Zamindari system) of East and North India where the landlord had all the rights over the land and controlled the tenancy. In 1898, the British introduced the delineation of village boundaries in order to simplify administration. When the village lands were demarcated by the British government, the chief was then restricted within the demarcated boundary.

After the British left India in 1947 the then Luhsai Hills District became an 'Autonomous District Council' under the Sixth Schedule to the Constitution of India which was inaugurated on 25<sup>th</sup> April 1952.<sup>88</sup> The management of all unclassed forests, other than the Innerline Reserved Forests was taken up by the District Council with the creation of a Forest Department headed by a District Forest Officer.

Democratic institution started functioning with the inauguration of Mizo District Council on 25<sup>th</sup> April 1952, under the Sixth Schedule to the Constitution; the District Council has the power to make laws with regard to the management of any forest not being a reserved forest, the regulation of the practice of Jhum or other forms of shifting cultivation. However, actual transfer of power took place only after the chieftainship was abolished by the Assam Lushai Hills (Acquisition of Chief's Right) Act, 1954.<sup>89</sup> Consequently, the office of chiefs was abolished and was replaced by democratically elected Village Councils, since then, the allocation of land was made by these elected Village Councils. The region was put under the Sixth Schedule with several unassailable

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<sup>88</sup> Thanhranga, H.C. (2007). Op.cit. p. 89.

<sup>89</sup> *ibid*, p.28

rights of the natives and their institutions and formed into an autonomous district under the state of Assam, then into an Union Territory (1972) and finally into a state (1986) when smaller autonomous districts were organized for non-Mizo tribes.<sup>90</sup>

However, after the abolition of village chief system, Village Councils were formed which were allowed to make land allotment in compact sectors for groups of families. There is no community ownership of land. The land belongs to the government which has instituted four new categories of tenancy, viz. Land Settlement Certificate, Periodic Land Pass, Land Lease and Revenue Pass. These may be acquired for a nominal consideration by original inhabitants of the State only. Permanent Settlement Certificates are issued to individuals for wet rice cultivation or for horticulture plantations. The area is restricted to four (4) ha. Periodic Land Pass is issued to individuals for the purpose of gardening or other forms of cultivations for a period of five (5) years at a time, which can be renewed if the land is utilized for the purpose applied for.<sup>91</sup> The remaining land forest is distributed by the government through the rural local government i. e., Village Councils to the villagers for jhum cultivation. Given the highly undulating terrain, the village communities adopted as a rule, slash-and-burn farming/jhumming under which clusters of families descended on a sector of land adjacent to the village for a time which was apportioned to individual families according to the need and status. The families would then move on to another sector and then to still another and so on till these

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<sup>90</sup> Prasad, R.N., and Agarwal, A.K.(1995), *Op.cit.*, p. 239.

<sup>91</sup> Jha, L.K. (1997), *Op. cit.*, p. 273.

returned to the first in a cyclic order. The time elapsed between leaving the first plot and returning to it is known as the shifting cultivation cycle.<sup>92</sup>

It is worthy to mention that the survival of the Mizo tribes depends on the forest or land surrounding the villages. The forests provide all the things they need for their livelihood. As jhumming / slash and burn method of cultivation has been the practice of the community from time immemorial protection of forests against forest fire was very crucial for their survival. The fertility of the jhum land greatly depends on the shifting cultivation cycle. The village chief had to ensure his village was self-sufficient in food, failing which was famine for there was no central government to supply food. All the villagers were aware of the harsh consequence of forest fires by destroying fertile forest land for the cultivation in the coming years. Thus, all the villagers took part in prevention of fire and in case of any forest fire they all joined hands together to stop the fire at the earliest; even the neighbouring villages would help in fighting forest fires. The village chief along with his council of elders and all the villagers worked as a team to prevent and fight forest fires. The Mizo Hills District Council, under the Lushai Hills District (Acquisition of Chief's Rights), 1954 abolished the exploitative and autocratic institution of chiefships.<sup>93</sup>

When elevated to the status of Union Territory on 21<sup>st</sup> January, 1972, Mizoram was divided into three districts, viz Aizawl District, Lunglei District and Chhimtuipui District. The Chhimtuipui District consists of three Autonomous Councils namely- Pawi,

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<sup>92</sup> Ibid., p. 272.

<sup>93</sup> Lalneihzovi (2006) District Administration in Mizoram, New Delhi: Mittal Publications, p.98.

Lakher and Chakma, now named as Lai Autonomous District Council, Mara Autonomous District Council and Chakma Autonomous District Council respectively. A full-fledged Forest Department was also established in the same year and the first Director of the Forests of the rank of Conservator of Forests was appointed on 17.07.1972 as the head of the Department. This post was upgraded to the rank of Chief Conservator of Forests on 29.12.1983. The Department has been renamed as the Department of Environment and Forests, Government of Mizoram with the creation of the post of Principal Chief Conservator of Forests (PCCF) as the head of the Department vide Notification No. A. 22012/4/80-APT (A) dated 20.05.1988. The subject 'Climate Change' has been allocated to the Department of Environment and Forests vide Government of Mizoram Notification No.A.46013/1/2013-GAD dated 10<sup>th</sup> August, 2015.

### **Traditional and modern Institutions in Mizoram**

Traditional forest management in Mizoram was administered by the 'chieftain'. The chief had absolute decision-making authority, he was assisted by the Khawnbawls or the Counsellors selected by himself. Another important traditional institutions were the Val Upa (youth commander) and Zawlbuk (men's dormitory). However, these institutions no longer exist today but their roles are embedded within the Young Mizo Association (YMA), Young Lai Association (YLA) and the village council. As people depend on resources derived from village forests, common land and private land, the village council, YMA and YLA play an important role in management of common property resources. YMA/YLA collaborated with village councils in protection and conservation of forests. At present, these non-government organizations have powerful

influence on Mizo society. We noted that the YMA has taken a leading role in creation of medicinal plantations and recreation forests as well as management of village reserved forests. The purpose of maintaining village reserved forest by villagers in Mizoram is to retain green cover in the village for environmental benefits equivalent to the sacred and restricted forests of Meghalaya.<sup>94</sup>

### **Profile of Mizoram**

Mizoram is located between 21° 58' to 24° 35' North Latitudes and 92° 15' to 93° 29' East Longitudes covering a geographical area of 21081 sq km.<sup>95</sup> It is a landlocked state surrounded by Myanmar in the east, Manipur and Assam in the north, Tripura and Bangladesh in the west and again Myanmar in the south. It has international boundary with Myanmar (404km) and Bangladesh (306km). Geographically, it is 277 km from north to south, and 121 km from east to west with inter State boundary Assam (123 km) Tripura (66 km) and Manipur (95 km).<sup>96</sup> The capital is Aizawl, in the north-central part of the State. Nearest railhead is Silchar, which is in Assam about 184 km away from the capital Aizawl. Besides Air service, at present through the gateway of N-E i.e. Guwahati, the State is connected to the Indian Road network through Silchar in Assam to the National Highway 54. Another highways, NH-150 connects the State to Imphal, Manipur and NH-40A links the State with Tripura.

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<sup>94</sup> Tiwar, B.K., Tynsong, H., Lynrah, M.M., Lapasam, E., Deb, S., Sharma, D. (2013), *Institutional arrangement and typology of community forests of Meghalaya, Mizoram and Nagaland of North-East India* in Journal of Forestry Research, March 2013, Vol. 24, issue 1, pp. 182,185.

<sup>95</sup> Statistical Handbook Mizoram, 2010, Aizawl: Directorate of Economics & Statistics, Mizoram, p.xxviii

<sup>96</sup> Prasad, R.N., and Agarwal, A.K.(1995), Op.cit., pp. 2,3.

The State is a storehouse of exotic flora and fauna and forests. The local flora and fauna bear a very close affinity and resemblance with the floral and faunal components of the Indo-Malayan and Indo-Chinese sub-regions. The State is located in the biogeographic zone of 9B-North- East hills and possesses an extremely rich bio-diversity. The hills here could be seen covered with bamboo and banana trees along with a wonderful array of pine trees. The forests here also house some of the rare varieties of orchids that are found only in this region of the country. About 90 percent of the area is under forest cover. About 94 percent of the population belongs to Schedule Tribes whose lives are intrinsically woven with that of the forests. The state is now striving to march ahead and utilize the available natural resources as the same holds the key for economic development. Yet, it is a challenging task as the state is characterized by geographical isolation, poor infrastructure facilities, communication bottlenecks and low capital formation.

### **Land use pattern**

Agriculture is the dominant economic activity of Mizoram, engaging more than two-thirds of the workforce in the early 21<sup>st</sup> century. Two types of agriculture are practiced: terrace cultivation, in which crops are planted on relatively permanent, graduated terraces on the sides of hills and mountains to conserve water and reduce soil loss; and shifting agriculture, in which tracts called jhum are cleared by burning, cultivated for a limited period of time, and then abandoned for a number of years to allow regeneration of the natural vegetation and nutrients in the soil. An increase in the number of people farming in the 20<sup>th</sup> century forced a reduction in the traditional eight-year cycle



of Jhum regeneration, which in turn resulted in a decrease in farm productivity. Rice, corn (maize), cotton, and vegetables are the main crops. Land use pattern of the State is illustrated in **Table.2**.

**Table 2: Land Use Pattern**

<b>Land Use</b>	<b>Area in '000 ha</b>	<b>Percentage</b>
Total geographical area	2,108	
Reporting area for land utilization	2,075	100.00
Forests	1,585	76.36
Not available for cultivation	95	4.58
Permanent pastures and other grazing lands	5	0.24
Land under misc. Tree crops and groves	41	1.98
Culturable wasteland	7	0.34
Fallow lands other than current fallows	183	8.82
Current fallows	61	2.94
Net area sown	97	4.97

**Source :** *Land Use Statistics, Ministry of Agriculture, GOI, 2011-12*

### **Types of Forest in Mizoram**

The forest types of Mizoram based mainly on the altitude, rainfall, and dominant species composition (Singh et. Al.) as mentioned below:

- i. Tropical Wet Evergreen Forests and Semi-Evergreen Forests: These forests usually occur below an altitude of 900 m and form one of the major forest types of the State with rich species diversity. The tropical wet evergreen forests are usually found in southern and

western part of the State, while semi-evergreen forests occur in northern, north-western, western and central parts of the State.

- ii. Montane Sub-Tropical Forests: These forests are usually found between 900 to 1500 m altitude in the eastern fringes bordering Chin Hills of Myanmar, and places, which are cooler and have less precipitation.
- iii. Temperate Forests: These forests usually occur above the elevation of 1600 m in areas like Lengteng, Farpak, Naunuarzo, Thaltlang, Phawngpui Reserves and display impenetrable primary forests. These forests are not typical temperate forests found elsewhere in the Eastern Himalayas.
- iv. Bamboo Forests: Large tracts of bamboos are seen throughout the State but their distribution is somewhat restricted to about 1600 m and below. They occur mostly between 40 m 1520 m, in tropical and subtropical areas, while few species occur in temperate area in Blue Mountain and Chalfilh.
- v. Quercus Forests: These forests are mostly found intermingled in subtropical and temperate areas. Pure patches or predominate *Quercus griffithiana* (Khaw-thli) are present near Champhai-Biate hill ranges and its distribution is restricted to lither small areas in the eastern part of the State.
- vi. Jhumlands: Jhumland are very common in Mizoram. They are classified variously as current jhumland, old jhumland and abandoned jhumland. Jhumlands are more prevalent in eastern part of the state where extensive and intensive jhumming is

practiced. Similarly, the areas in western side in Lunglei district towards Bangladesh also have jhumlands. Chhimtuipui is the most effected district as far as jhum cultivation is concerned.<sup>97</sup>

The below table 3 shows that Mizoram with an area of 21,081sq km has a population of 1.09 million as per 2011 Census. The urban population constituting 52.11 percent is higher than the rural population of 0.53 million. It has 8 districts namely Aizawl District, Champhai District, Kolasib District, Lawngtlai District, Lunglei District, Mamit District, Saiha District, and Serchhip District; the population density is 52 persons per sq km. It is a tribal state having tribal population of 1.03 million which constitutes 94.43 percent of the total population.

**Table 3: Profile of Mizoram**

<b>Geographical Area</b>	21,081 sq km
<b>Population</b> (as per Census 2011)	1.09 million
Urban	0.57 Million (52.11%)
Rural	0.53 Million (47.89%)
Tribal	1.03 million (94.43%)
<b>Average population Density</b>	52 per sq km
<b>No. of Districts</b> (as per Census 2011)	8
No. of Hill Districts	8
No. of Tribal Districts	8

**Source:** *India State of Forest Report 2013, Forest Survey of India, Ministry of Environment & Forests, Government of India, Dehradun, p. 168.*

The followings are the State's animal, bird, tree, and flower:<sup>98</sup>

State Animal: Common name-Serow, Scientific name-*Capricornis sumatraensis*, and Local Name- Saza.

<sup>97</sup> *Statistical Handbook 2011*, Environment & Forests Department, A Forest Extension Compilation, Five Brothers' Offset Press, Aizawl:p.26.

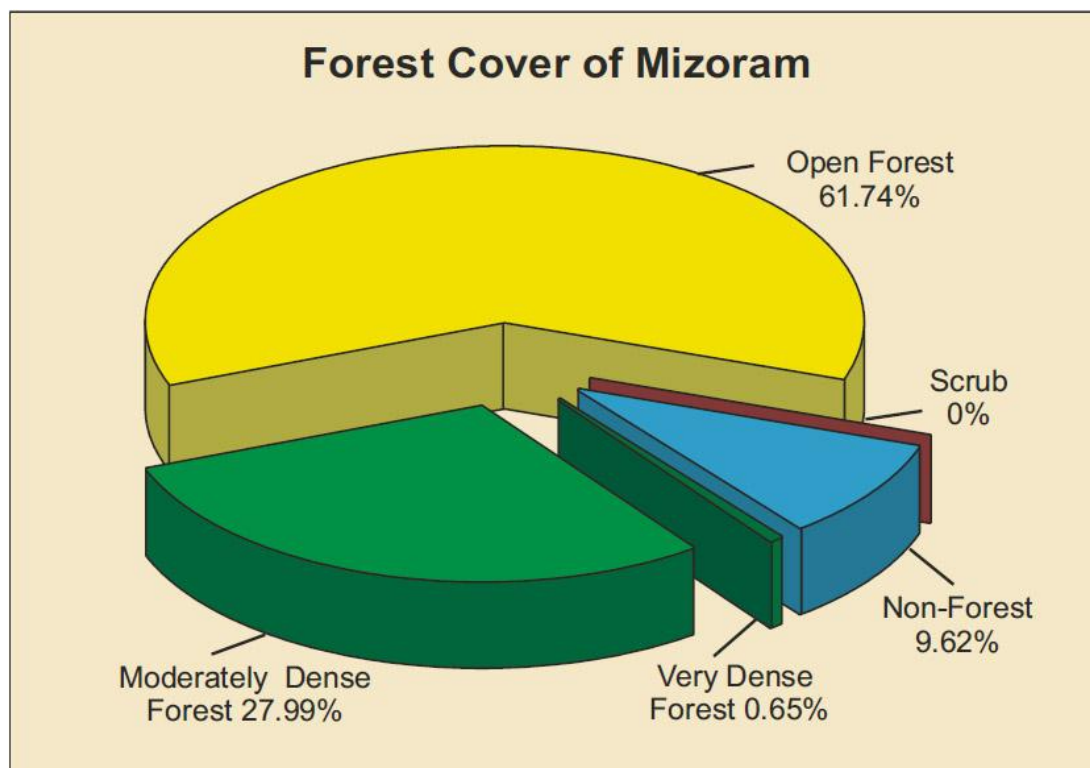
<sup>98</sup> *Statistical Handbook 2011, Op.cit, pp.2,3.*

State Bird: Common name- Hume's Bar-tailed Pheasant, Scientific name- *Symaticus humiae*, Local Name- Vavu.

State Tree: Common name- Iron-wood tree, scientific name- *Mesua ferrea*, and Local Name- Herhse.

State Flower: Common name- Red Vanda, Scientific name- *Renanthera imschootiana*, and Local Name- Senhri.

**Figure 1: Pie-Chart showing Forest Cover of Mizoram**



**Source:** *India State of Forest Report 2013, Forest Survey of India, Ministry of Environment & Forests, Government of India, Dehradun, p. 169.*

The above Figure 3.1 and Table 4 depict that the forest cover of Mizoram. Open Forest covers 13016 sq.km which contributes 61.74 percent, Moderately Dense Forest is 5900 sq.km which contributes 27.88 percent, Very Dense Forest of 138 sq.km comprising 0.65 percent, and Non-Forest covers 9.62 percent of the total geographical area of the

State respectively. The total Forest Cover of the State is 19,054 sq.km which is 90.38 percent of the total geographical area and the Tree Cover is 223 sq.km.

**Table 4: Forest Cover of Mizoram**

<b>Forest Cover within Green Wash</b>	
Very Dense Forest	130 sq. km
Moderately Dense Forest	5,841 sq. km
Open Forest	12,690 sq. km
<b>Sub Total</b>	<b>18,661 sq. km</b>
<b>Forest Cover outside Green Wash</b>	
Very Dense Forest	8 sq. km
Moderately Dense Forest	59 sq. km
Open Forest	326 sq. km
<b>Sub Total</b>	<b>393 sq. km</b>
<b>Total Forest Cover</b>	<b>19,054 sq. km</b>
<b>Tree Cover</b>	<b>223 sq. km</b>
<b>Total Forest &amp; Tree Cover</b>	<b>19,277 sq. km</b>
Per capita Forest & Tree Cover	1.757 ha
Of State's Geographical Area	91.44%
Of India's Forest & Tree Cover	2.44%

**Source:** *India State of Forest Report 2013, Forest Survey of India, Ministry of Environment & Forests, Government of India, Dehradun: p. 168.*

**Table 5: Recorded Forest Area in Mizoram**

Reserved Forest	7,909 sq.km
Protected Forest	3,568 sq.km
Unclassed Forest	5,240 sq.km
<b>Total</b>	<b>16,717 sq.km</b>
Of State's Geographical Area	79.30%
Of India's Forest Area	2.17%

**Source:** *India State of Forest Report 2013, Forest Survey of India, Ministry of Environment & Forests, Government of India, Dehradun, p. 169.*

The above Table 5 depicts Circle-Wise number of Divisions, Ranges, and Beats. Accordingly there are five (5) Forest Circles, 20 Divisions, 71 Ranges, and 211 Beats. The total area of Beats is 16645.98 sq km which is 78.96 percent of the total geographical area of Mizoram State.

**Table 6: District-wise Forest Cover of Mizoram (area in sq km)**

District	Geo graphi cal Area	2013 Assessment			Total	% of Geogr aphica lArea	change	Scrub
		Very Dense Forest	Moder ately Dense Forest	Open Forest				
Aizawl	3,575	30	1,168	2,051	3,249	90.88	-16	0
Champhai	3,185	60	1,058	1,647	2,765	86.81	-20	0
Kolasib	1,382	0	191	1,038	1,229	88.93	8	0
Lawngtlai	2,557	0	704	1,646	2,350	91.90	-18	0
Lunglei	4,536	1	1,192	3,003	4,196	92.50	-10	0
Mamit	3,025	41	644	2,091	2,776	91.77	2	0
Saiha	1,400	0	553	712	1,265	90.36	-26	0
Serchhip	1,421	6	390	828	1,224	86.14	17	0
<b>G.Total</b>	<b>21,081</b>	<b>138</b>	<b>5,900</b>	<b>13,016</b>	<b>19,054</b>	<b>90.38</b>	<b>-63</b>	<b>0</b>

**Source:** *India State of Forest Report 2013, Forest Survey of India, Ministry of Environment & Forests, Government of India, Dehradun, p.170*

The above table shows 6 District-wise Forest Cover of Mizoram. Three districts of Mizoram viz. Lawngtlai District, Kolasib District, and Saiha District have no very dense forest cover area. The four districts namely Champhai, Kolasib, Saiha and Serchhip districts are having forest cover area below the State's Forest Cover Area of 90.83percent. Out of the eight districts of Mizoram only Kolasib District, Mamit District, and Serchhip District have an increase in forest cover between 2011 and 2013. In other words, there was a net decline of 63 sq.km during this period as the other five districts' forest cover loss exceeded the forest cover gain of the other three districts.

## Territorial Forest Divisions in Mizoram

**Table 7: Area of Territorial Forest Divisions in Mizoram**

Sl. No.	Name of Forest Division	District	Area in sq km	No. of Ranges
1	Aizawl	Aizawl	1683.66	5
2	Lunglei	Lunglei	2131.00	5
3	Kolasib	Kolasib	1471.99	9
4	Darlawn	Aizawl	1310.00	6
5	Mamit	Mamit	1787.83	6
6	Kawrthah	Mamit	802.67	4
7	Champhai	Champhai	3279.73	8
8	N.Vanlaiphai	Serchhip	994.16	5
9	Tlabung	Lunglei	1138.00	3
10	Thenzawl	Serchhip	2046.94	9
	<b>Grand Total</b>		<b>16645.98</b>	<b>60</b>

*Source: Statistical Handbook 2011, Environment & Forests Department, A Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p. 25.*

The above table 7 shows that there are ten (10) Area Territorial Forest Divisions in Mizoram with area coverage of 16,645.98 sq.km which is 78.96 percent of the total geographical area of the State. Excepting Saiha District and Lawngtlai District all the administrative districts of Mizoram have territorial divisions. The total number of ranges is 60 out of which Serchhip District with 14 has the highest number of Range Offices.

**Table 8: Forest Change Matrix of Mizoram**

2011 Assessment	(Area in sq km)					Total 2011
	2013 Assessment					
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	130	2	0	0	2	134
Moderately Dense Forest	7	5,806	149	0	124	6,086
Open Forest	1	92	12,789	0	15	12,897
Scrub	0	0	1	0	0	1
Non Forest	0	0	77	0	1,886	1,963
<b>Total 2013</b>	<b>138</b>	<b>5,900</b>	<b>13,016</b>	<b>0</b>	<b>2,027</b>	<b>21,081</b>
Net Change	4	-186	119	-1	64	

*Source: India State of Forest Report 2013, Forest Survey of India, Ministry of*

*Environment & Forests, Government of India, Dehradun, p. 171.*

Mizoram with a population of 1.09 million (as per Census 2011) with a geographical area of 21,081 sq.km has forest cover area of 19,054 sq.km (90.38 percent of its geographical area), and tree cover area of 223 sq. km; the total forest and tree cover area is 19,277 sq.km which constitutes 91.44 percent of the State's geographical area. Although the State of Mizoram contributes a mere 2.44 percent of India's Forest and Tree Cover, with 90.38 percent of Forest Cover with respect of total geographical area, has the highest Forest Cover among the States and Union Territories of India.<sup>99</sup> Table 8 shows that though there was an increase of four (4) sq km in respect of Very Dense Forest during 2011 to 2013, there was a net decline of 186 sq km with respect to Moderately Dense Forest in the same period.

#### **Notified Forests of Mizoram.**

##### **A. State owned:**

The State owned Notified Forests are divided into the following categories:

i. Riverine Reserved Forests (Table 9):

Notification No. ADC supplement to the Assam Gazette dated 19<sup>th</sup> May, 1965 under Sec. 14 & 21 of the Mizo District (Forest) Act, 1955 notified Riverine Reserved Forests in the 14 rivers of Mizoram with a total area of 1832.50 sq.km.<sup>100</sup> The Department of Environment and Forests, Government of Mizoram is facing a number of problems with matters relating to protecting and managing these Riverine Reserved Forests as large number of individuals are allotted within the areas by Revenue Department of Mizoram.

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<sup>99</sup> *India State of Forest Report 2013*. Op.cit, p, 168.

<sup>100</sup> *Statistical Handbook 2011*, Op.cit, p. 31



**Table 9: Riverine Reserved Forests (RRF) in Mizoram**

Sl. No	Name of the RRF	Area in sq km
1	Tlawng (Dhaleswari)	369.8
2	Tut (Gutur)	182.8
3	Teirei (Pakwa)	125
4	Langkaih (Longai)	62
5	Chemlui (outside ILRF)	29
6	Serlui (outside ILRF)	75
7	Tuivai	168
8	Tuivawl	190
9	Tuirini	64.8
10	Tuirial (outside ILRF)	217.8
11	Tuiruang (outside ILRF)	0
12	Khawthlangtuipui (Karnaphuly)	140.7
13	Tuichawng	54
14	Kau	35.6
15	De	45.2
16	Phairuang	72.8
	Total	1832.50

**Source:** *Statistical Handbook 2011, Environment & Forests Department, a Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p. 30.*

ii. Inner line Reserved Forest:

This Inner line Reserved Forest was created vide Notification No. 5 of 17.10.1878 under Sec. 34 of the Indian Forest Act, 1878, Revenue Department, Govt. of Assam. Out of the total Inner line Reserved Forest area of 1318.31 sq.km, only 570.0 sq.km is falling inside Mizoram and another 748.31 sq.km is falling inside Cachar District of Assam.<sup>101</sup>

iii. Roadside Reserved Forest:

As per the Notification No.ADC Supplement to the Assam Gazette, dated 19<sup>th</sup> May, 1965 under Section 14 and 21 of the Mizo District (Forest) Act, 1955 a total of

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<sup>101</sup> Ibid, p. 30.

97.20 sq.km was being declared as reserved on the roadside forest between Aizawl and Sairang via Sairang road.<sup>102</sup>

iv. The Protected Areas in Mizoram:

The Protected Areas include Dampa Tiger Reserve, two (2) national Parks, and seven (7) Wildlife Sanctuaries with a coverage area of 1240.75 sq. km which is 5.88 percent of the geographical area of the State (Table 10).

**Table 10: Protected Areas of Mizoram**

Sl No	Name of Protected Area	Area in sq km	District	Notification No. and Date
1	Dampa Tiger Reseve	500	Mamit	No.B11011/14/90-FST of 07.12.1994
2	Murlen National Park	100	Champhai	No.B.12012/5/99-FST of 24.01.2003
3	Phawngpui National Park	50	Lawngtlai	No.B.12011/5/91-FST of 22.0701997
4	Ngengpui-Wildlife Sanctuary	110	Lawngtlai	No.B.12012/4/91-FSTof 22.0701997
5	Khawnglung Wildlife Sanctuary	35.75	Lunglei	No.B.12012/10/96-FST of 12.10.2000
6	Lengteng Wildlife Sanctuary	60	Champhai	No.B.12012/15/94-FST of 31.05.2002
7	Tawi Wildlife Sanctuary	35	Aizawl	No.B.12012/1/94-FST of 16.11.2001
8	Thorangtlang Wildlife Sanctuary	130	Lunglei	No.B.12012/17/2001-FST of 23.04.2002
9	Pualreng Wildlife Sanctuary	50	Kolasib	No.B.12012/19/01-FST of 27.07.2004
10	Tokalo Wildlife Sanctuary	250	Saiha	No.MADC 68/E&F/2006-2007/63 of 01.10.2007
	<b>Total</b>	<b>1370.75</b>		6.50% of the geographical area of the State

**Source:** Chief Wildlife Warden Office, October 2015

<sup>102</sup> Ibid, p. 31.

**Table 11: Community Reserved/Sanctuary Forests in Mizoram**

Sl No	Name of Community Reserve	Area in sq km	Remarks
1	Bird Sanctuary cum Community Reserve at Saitual	2.5	Aizawl Forest Division
2	Bird Sanctuary cum Community Reserve at Hmawngkawn	12.36	Aizawl Forest Division vide No. B. 17012/1/2005-CWLW/171 dt. 28.7.2010
3	Community Protected Forest Reserve under Saichal	NA	Khawzawl Forest Division Notification issued by LAD, GOM vides No.B. 14016/27/02-LAD/VC (A) dt. 6.8.2010
4	Lurh Vavu Sanctuary	30	Champhai Forest Division
5	Mini Sanctuary between Melthum and Hualngohmun	NA	Aizawl Forest Division dt. 16.6.2009 endorsed by PCCF office to CWLW vides No.B.15012/4/2002-PCCF/172 dt. 30.7.2009
6	Wildlife Sanctuary at Saizawl	50	Kolasib Forest Division vide No.B.17012/1/2005-CWLW/218 dt.20.5.2013
7	Fungkah Sanctuary under Lai Autonomous District Council	NA	LADC vide No.N.1103013/5/2011-LADC/EFD dt.23.7.2013-DCCF,LADC
8	Puansen Community Reserve	7.6	Aizawl Forest Division
9	Zuchhip Community Reserve	3	Khawzawl Forest Division
10	Muthi Community Reserve	4	Aizawl Forest Division
11	Bengbawng Community Reserve	5	Aizawl Forest Division
12	Kharzawl Community Reserve	21	Kolasib Forest Division
13	Sakhisih Community Reserve	1.2	Thenzawl Forest Division
14	Neihdawn Community Reserve	6	Khawzawl Forest Division vide No.B.17012/1/2005-CWLW/136 Dt.26.3.2009

**Source:** Chief Wildlife Warden Office, October 2015

The area of Thorangtlang Wildlife Sanctuary has been extended from 50 sq km to 180 sq.km vide order No. B-12012/24/2014-FST dated 30-9-'15; with this the total area of Protected Areas has become 1370.75 sq.km.

v. Other Reserved Forests:

There are another 23 Reserved Forests and 12 Compensatory afforestation areas notified in various parts of the state with a total area of 1963.63 sq km.

vi. Community Reserved/Sanctuary Forests:

Besides these Protected areas there are 14 Community Reserved/ Sanctuaries with a total area of more than 142.66 sq. km (Table 11).

**B. District Council Forests**

- i. Lai Autonomous District Council has an area of 976 sq km of reserved forests.
- ii. Mara Autonomous District Council has 217 sq.km of reserved forests
- iii. Chakma Autonomous District Council has 1369 sq.km of reserved forests.

The total area of Notified Forests of Mizoram is 8266.08 sq km which is 39 percent of geographical area of the State. With such a high percentage of notified forests in the state in relation with the total geographical area, the Environment and Forests Department of Government of Mizoram has a huge task to preserve and protect them. As is with any governmental programs and policies, the department needs the support and participation of the people in achieving this important goal.

**Table 12: Wetlands in Mizoram**

No.	Name of Wetland	District	Area in sq km	Important Flora and Fauna found
1	Palak dil (Natural lake)	Saiha	26.85	A 3(Biome 9: Indo-Chinese Tropical Moist Forest) Recent research inthis area has revealed the presence of 42 speciesof mammals and 136 species of avifauna including rare and threatened primates like the Phayre’s leaf monkey ( <i>Trachypithecus obsdurus phayrei</i> ) and theWestern Hoolock gibbon ( <i>Hoolck hoolock hoolock</i> )
2	Tamdil (River)	Aizawl	7.92	Surrounded by tropical evergreen and moist deciduoud forest with species like Sehenia Wallichii, Chirassia tabularis, Albizzia sp., Artocarpus sp., Merus sp., bamboos ec. Fish& plenty of prawns in this lake. In surrounding forests, bear, deer, wild pigs and common avifauna are found.

Source: *National Wetland Atlas Mizoram 2012 (MoEF)*

**CHAPTER -III**  
**STRUCTURE, WORKING, PROGRAMS AND ACITIVITIES OF**  
**THE DEPARTMENT OF ENVIRONMENT AND FORESTS, GOVT.**  
**OF MIZORAM**

**Organizational Structure of the Department**

The State Forest Department designated as Department of Environment and Forests, Government of Mizoram is one of the most important departments of the State. It is responsible for administration and management of forest and environment in the state and enforcement of National Forest Policy and Central and State Legislations in forests, wildlife, climate change and environmental matters. It is the nodal agency in the administrative structure of the government for the planning, coordination and overseeing the implementation of the State's environmental and forestry policies and programs. The primary concern of the department is the implementation of policies and programs relating to conservation of natural resources of the State like forests, wildlife, biodiversity, lakes, rivers and prevention and abatement of various kinds of environmental pollution.

The organizational structure of the Department is depicted in Chart 1 'Administrative Organization Set up under Environment & Forests Department, Mizoram'.

The Department became a full-fledged department on 17.7.1972 and the first Director of Forests of the rank of Conservator of Forests was appointed. At present the Department is headed by Principal Chief Conservator Forests (PCCF) and is assisted by

one Addl. PCCF. Other Group 'A' officers include three Chief Conservator of Forests in-charge of Administration, Planning & Development, Wildlife Warden; five Conservator of Forests (CF) in-charge of Circles; fourteen Dy. Conservator of Forests( four IFS and ten MFS), thirteen Assistant Conservator of Forests (one IFS and twelve MFS), and another eleven officers. There are 172, 555, and 133 employees in Group 'B', Group 'C', and Group 'D' respectively.

### **Number of Circles, Divisions, Ranges etc**

There are five Circles each headed by Conservator of Forests as under:-

1. Northern Circle was created Vide No. A. 11013/2/81-FST on 13.1.1984; there are four Divisions, 25 Ranges, 94 Beats with an area of 5,372.49 sq km.
2. Southern Circle was created Vide No. A. 11013/2/81-FST on 13.1.1984 having three Divisions, 13 Ranges, 41 Beats covering an area of 4,263.16 sq km.
3. Research & Development Circle was created Vide No. A. 11013/1/87-FST dated 5.8.1987; there are 6 Divisions.
4. Chief Wildlife Warden was created Vide No. A. 11010/8/93-FST dated 15.6.1994 having four Divisions, 11 Ranges.
5. Central Circle was created Vide No. 11019/8/93-FST on 3.7.2003. The Circle has three Divisions, 22 Ranges, and 76 Beats with an area of 7,010.33 sq km.

**Table 13: Circle-Wise No. of Divisions, Ranges & Beats**

Sl no	Name of Circle	No of divisions	No. of Ranges	No. of Beats	Area of Beats- (sq.km)
1	Northern Circle	4	25	94	5372.49
2	Southern Circle	3	13	41	4263.16
3	R &D Circle	6	-	-	-
4	Chief Wildlife Warden	4	11	-	-
5	Central Circle	3	22	76	7010.33
		20	71	211	16645.98

**Source:** *Statistical Handbook 2011, Environment & Forests Department, A Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p. 25*

Table 13 shows that the Department of Environment & Forests, Government of Mizoram has five Circles consisting of three Territorial Circles viz Northern Circle, Southern Circle, and Central Circle with ten Territorial Divisions, one Functional Circle known as Research and Development Circle with six Functional Divisions and one Wildlife Circle with two Wildlife Divisions and one Tiger Reserve. The total area of the three Territorial Divisions is 16,645.98 sq .km.<sup>103</sup> At present, the Department of Environment & Forests, Government of Mizoram has 20 Divisions, 71 Ranges and 211 Beats.

Table 14 shows that there are twenty six (26) Heads of Offices in the Environment and Forests Department of the State. These heads of offices include the office of PCCF, four Circle offices, ten Forest Division offices and a Forest Extension Division, two Working Plan offices, three Deputy Conservator of Forests (Wildlife) offices, one office each for Chief Wildlife Warden, Field Director of Dampa Tiger

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<sup>103</sup>*Statistical Handbook 2011, E & F, Op. cit., p.25*



Reserve, Resources Survey & Silviculture Division, Forest Protection Division, and Principal of Forest Training School.

**Table 14: Head of Department/Heads of Offices under Environment and Forests Department, Mizoram as on October, 2014.**

Name of Office(1)	No. and date of creation(2)	Present incumbent (3)
Principal Chief Conservator of Forests	A. 22012/4/80-APT (A) of dt 20.5.1988	LalramThanga IFS
Conservator of Forests, Northern Circle, Aizawl.	A. 11013/2/81-FST Dt 13.1.1984	LiankimaLailung, IFS
Divisional Forest Officer, Kolasib Forest Division.	FOR-37/74-78/47 Dt. 29.9.1975	LalthlamuanaPachauu, MFS
Divisional Forest Officer, Darlawn Forest Division	FOR-37/74-80/91 Dt. 30.3.1981	Kawlhnuna, MFS
Divisional Forest Officer Kawrthah Forest Division	FOR-202/29/31-A Dt. 3.7.1982	LalnunsangaKhawlhiring, MFS
Conservator of Forests, Southern Circle, Lunglei	A.11013/2/81-FST Dt. 13.1.1984	C.Lalengliana, IFS
Divisional Forest Officer Lunglei Forest Division	FOR-37/72/5 Dt. 30.12.1972	H.Lianmawia, MFS
Divisional Forest Officer North Vanlaiphai Forest Division	FOR-335/85/41 Dt.12.8.1985	V.L.Para, MFS
Divisional Forest Officer Tlabung Forest Division	FOR-335/85-86/98 Dt.17.2.1986	Lalnunzira, MFS
Conservator of Forests, Research & Development Circle, Aizawl	A. 11013/1/87-FST Dt. 5.8.1987	LiankimaLailung, IFS
Working Plan Officer 'N' Aizawl	FOR-37/74-78/48 Dt. 29.9.1978	Vidyasagar, IFS
Divisional Forest Officer Forest Extension Division Aizawl	FOR-202/79/31(A) Dt. 3.7.1982	LalrammawiiSailo, MFS
Principal Forest Training School, Aizawl	16-0/15-80/116 Dt.24.10.1974	N.R.Pradhan, MFS
Divisional Forest Officer Resources Survey & Silviculture Res Divn.	A.11013/1/83-FST Dt.11.12.1986	TewwangGyaltson, IFS
Divisional Forest Officer Forest Protection Divn.	A.11013/1/83-FST Dt. 11.12.1986	Lalduhawma, MFS
Working Plan Officer 'S'	A.11013/1/87-FST/Pt II	LaltlanhluaZathang,

Lunglei	5.9.2002	MFS
Chief Wildlife Warden, Aizawl	A. 11010/8/93-FST Dt.15.6.1994	Liandawla, IFS
Dy. Conservator of Forests Wildlife, Lti.	FOR-202/29/31-A Dt 3.7.1982	M.Z.Singson, MFS
Dy. Conservator of Forests (Wildlife), Aizawl	A.11013/1/81-FST Dt.14.10.1986	Saurabh Sharma, IFS
Field Director, Dampa Tiger Reserve	F-No. 1-1/92-Pt Dt.20.10.1994	Lalrinmawia, IFS
Conservator of Forests, Central Circle, Aizawl	A.11019/8/93-FST Dt. 3.7.2003	Lalthangliana Murray, IFS
Divisional Forest Officer Aizawl Forest Division	FOR-37/72/5 Dt.30.12.1972	V.Lalfala, IFS
Divisional Forest Officer Mamit Forest Division	FOR-37/74-80/91 Dt. 30.3.1981	C.Lalbiaka, MFS
Divisional Forest Officer Champhai Forest Division	FOR-256/80-84/190 Dt. 11.10.1984	Vanlalchuilova, MFS
Divisional Forest Officer Thenzawl Forest Division	A. 11017/6/91-FST Dt. 15.10.1991	Lallianzuala, MFS
Dy. Conservator of Forests (Wildlife), Khawzawl	A. 11018/1/2006-FST Dt. 6.10.2008	Margaret Lalramchhani, MFS

**Source:** *Statistical Handbook, Deptt. of E & F, GOM, 2015(unpublished)*

### **Post Position in the Department of Environment and Forests**

The employees of the Department of Environment and Forests are classified into four 'Groups'. The first group i.e., Group 'A' in which there are seventeen different posts comprising the Indian Forest Service (IFS), Mizoram Forest Service (MFS), and others. There are 78 sanctioned posts but only 48 posts are being filled in this group. The second group consists of Group 'B' comprising of 13 different posts, there are 256 sanctioned posts out of which 172 posts are filled. The third group consists of Group 'C' with a sanctioned posts of 809, but only 555 posts are filled. This group comprises of the field staff like the Foresters, Forest Guards, etc. The fourth and last group is Group 'D' which consists of 16 different posts and there are 216 sanctioned posts out of which 133 posts are being filled.

**Table 15: Post Position of Group ‘A’ Officers as on 22.5.2014**

Sl No	Name of Post	Sanctioned Post	Plan	Non-Plan	Filled	Vacant
1	Principal Chief Conservator of Forests	1	-	1	1	-
2	Addl. Principal Chief Conservator of Forests	1	-	1	1	-
3	Chief Conservator of Forests (Planning) (CWW)	3	2	1	3	-
4	Conservator of Forests (CC) (NC) (SC) (R&D) W/L)	5	1	4	5	
5	Deputy Conservator of Forests (IFS)	11		11	4	7
6	Deputy Conservator of Forests (MFS)	10	1	8	10	-
7	Deputy Director (Admn)	1		1	1	-
8	Assistant Conservator of Forests (IFS)	5		5	1	4
9	Assistant Conservator of Forests (MFS)	28	1-	28	12	16
10	Botanist	1	-	1	-	1
11	Orchidiologist	1	-	1	1	-
12	Deputy Director (Accounts)	1	-	1	1	-
13	Research Officer	1		1	1	-
14	Superintendent	3		3	3	-
15	Vety Assistant Surgeon	3		3	1	2
16	Assistant Engineer	1	1	-	1	-
17	Steno Grade-I	2		2	2	-
<b>TOTAL</b>		<b>78</b>	<b>6</b>	<b>72</b>	<b>48</b>	<b>30</b>

Source: *Forest Extension Division, Deptt. of E&F, 2015*

**Table 16: Post Position of Group ‘B’ as on 22.5.2014**

Sl No.	Name of Post	Sanctioned Post	Plan	Non-Plan	Filled	Vacant
1	Assistant	31		31	25	6
2	Junnior Engineer	3		3	1	2
3	Inspector of Statistics	3		3	3	
4	Computer Operator	1	1		1	
5	Assistant Auditor	2		2	1	1
6	Forest Ranger	78		78	69	9
7	Steno Grade-II	1		1	1	
8	U.D.C	85		85	51	34
9	Publicity Assistant	1		1	1	
10	Research Assistant	4		4	3	1
11	Steno Grade-III	7		7	2	5
12	Deputy Ranger	39		39	14	25
13	S.I. of Forests	1		1		1
<b>TOTAL</b>		<b>256</b>	<b>1</b>	<b>255</b>	<b>172</b>	<b>84</b>

Source: Forest Extension Division, Deptt. of E&F, 2015

**Table 17: Post Position of Group ‘C’ as on 22.5.2014**

Sl No	Name of Post	Sanctioned Post	Plan	Non-Plan	Filled	Vacant
1	Draftsman	11		11	9	2
2	Laboratory Assistant	1		1	1	-
3	Vety Field Assistant	3		3	1	2
4	Surveyor	22		22		22
5	L.D.C.	66		66	47	19
6	Forester	239		239	164	75
7	Cinema Operator	7		7	1	6
8	P.T. Instructor	2		2	2	
9	Forest Guard	417		417	302	115
10	Driver	31		31	22	9
11	Dispatch Rider	1		1		1
12	Duftry	1		1		1
13	Head Constable	8		86		
		809	-	809	555	254

Source: Forest Extension Division, Deptt. of E&F, 2015

**Table 18: Post Position of Group ‘D’ as on 22.5.2014**

Sl No	Name of Post	Sanctioned Post	Plan	Non-Plan	Filled	Vacant
1	Constable	40		40	23	17
2	Chowkidar	28		28	26	2
3	i.B. Chowkidar	8		8	7	1
4	Sweeper	8		8	7	1
5	Plantation Mali	15		15	5	10
6	Permanent Labour	5		5		5
7	Dak Runner	11		11	7	4
8	Boatmen	6		6	1	5
9	Handyman	3		3	1	2
10	Animal Feeder	4		4		4
11	Cook	4		4		4
12	Conductor	1		1	1	
13	Mahout	1		1	1	
14	Chainman	12		12		12
15	Camp Follower	10		10		10
16	Peon	60		60	54	6
Total		216		216	133	83
<b>Grand Total Groups ‘A’-‘D’</b>		<b>1359</b>	<b>7</b>	<b>1352</b>	<b>908</b>	<b>451</b>

Source: Forest Extension Division, Deptt. of E&F, 2015

Table 16 (Grand Total) shows that out of 1359 sanctioned posts in the department 908 are filled and the remaining 451 posts are lying vacant; these vacant posts include 30 in Group ‘A’, 84 in Group ‘B’, 254 in Group ‘C’, and 83 in Group ‘D’ respectively. The vacant posts comprises of 33.18%. Of the sanctioned posts which means one-third of the total posts. Thus, the department is facing an acute shortage of man-power. The department needs adequate field staff as a number of them has retired from their service and some others died while in service. The vacant posts from the *highest* to the lowest levels need to be filled up as soon as possible.

**Table 19: Staff Position of the Department (1.4.2003 to 31.3.2014)**

Sl. No.	Designation	Promotion	Retired	Expired	Voluntary Rtd.
1	Group 'A'	36	10	6	-
2	Group 'B'	66	24	31	4
3	Group 'C'	116	134	111	5
4	Group 'D'	48	21	9	1
	<b>Total</b>	<b>266</b>	<b>189</b>	<b>157</b>	<b>10</b>

**Source:** *Unpublished Data from Environment & Forests Deptt. GOM, 2015.*

Table 19 indicates that within a span of eleven years (2003-2014), 356 employees left the Department of Environment and Forests due to retirement, death or voluntary retirement. There seems to be correlation between Tables 13 to 15 and Table 16 in a sense that most of the posts left vacant by the employees depicted in Table 16 are not filled in by the Department which had led to the vacant posts reaching to a staggering one-third of the sanctioned posts by the government. Thus, a big problem faced by the Department is shortage of employees especially in the fields. Moreover, most of the Foresters and Forest Guards in the fields are on the verge of their retirement. Therefore, the Department urgently needs new recruits at least to fill up the vacant posts not mentioning additional man-power requirements of the department.

#### **WORKING OF THE DEPARTMENT**

The '*mission*' of the Department of Environment & Forests, Government of Mizoram is, 'to increase the area under forest cover and enhance the quality of existing forests thereby creating healthy environment for the people through the (1) application of the principles of sustainable management, (2) adoption of effective silviculture practices,

and (3) involvement of the local people actively in the efforts of planning, implementation and monitoring of schemes for conservation of the forests and the wildlife’.

The ‘*vision*’ of the Department is ‘to achieve well-stocked high-quality forests with rich bio-diversity for maintaining ecological balance and ensuring environmental stability while meeting the forest-based needs of the local people’.<sup>104</sup>

*Duties and responsibilities* of the Department are as follows:<sup>105</sup>

- i. Protection and enhancement of the existing forest cover as well as restoration of the degraded eco-systems.
- ii. Preparation of Working Plans as per the National Working Plan Code for facilitating scientific management of the forests in Mizoram.
- iii. Preservation of existing Wildlife by creating and supporting healthy habitats for their sustenance through the implementation of approved Management /Master Plans.
- iv. Implementation of various schemes (under State Plan as well as centrally sponsored) for afforestation and protection of forests-such as “Green Mizoram Program”, “National Afforestation Program”, “Intensification of Forest Management”, “Green India Mission” etc.

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<sup>104</sup>*Citizen’s Charter 2012-13*, Environment and Forests Department, Government of Mizoram, p. 1.

<sup>105</sup>*Ibid.* p. 2.

- v. Enhancing socio-economic status of the local people by promoting increased regeneration/cultivation and scientific harvesting of Non-Timber Forest Products (NTFPs) such as bamboo, broom grass, cane etc.
- vi. Inviting active participation of the local people in the management of forest resources by strengthening the Joint Forest Management Committees (JFMCs) and the Village Forest Development Committees (VFDCs).
- vii. Substantially, arranging the forest-based needs of the local people like timber through departmental timber operation i.e., by extracting timber on sustained yield basis, their transportation, and disposal at various Government Timber Depots.
- viii. Promoting the scientific management of private forests/plantations by providing technical inputs whenever required.
- ix. Providing casual/seasonal employment to the local people while implementing various schemes.
- x. Addressing key concerns related to climate change through effective adaptation and mitigation efforts.

**Services offered by the department for the citizens:<sup>106</sup>**

The Department of Environment and Forests, Govt. of Mizoram is committed to provide a variety of services, both tangible as well as intangible, to the citizens by scientifically managing the rich forest cover existing in the State. The tangible services include

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<sup>106</sup>Ibid, p. 9.



- 1) Arranging forest products of economic importance such as constructional timber, fodder, fuel-wood, sand, gravels etc. at reasonable or no costs.
- 2) Offering gainful employment while implementing various schemes for enrichment and protection of the forests.
- 3) Creating opportunities for additional income through the mechanism of “Joint Forest Management.”
- 4) Disseminating information on importance and economic benefits of the forests including Non-Timber Forest Products and medicinal plants.
- 5) Building and maintaining eco-friendly recreation sites and trails.
- 6) Making technical know-how available for raising and managing private forests/plantations.
- 7) Assisting private tree-growers in silvicultural harvesting and transporting of timber inside as well as outside the State.

There was no proper management of forests during the initial stage except the enactment of the following Acts under the Sixth Schedule to the Constitution of India with regards to the conservation and regulation of forest and its produces, etc. in addition to the Assam Forests Regulation, 1891, applicable in the Inner Line Reserved Forests:

- i. The Paw-Lakher Autonomous Region (Forest) Act, 1954. (Applicable in Pawi-Lakher Autonomous Region).
- ii. The Mizo District (Forest) Act, 1955. (Applicable in Aizawl and Lunglei Districts).

The above Acts made prescription on royalty rates to be levied for various forest produces and also classified forests into various categories.

### **Conservation and Protection of Forests**

Forests play a very important role in checking soil erosion either by wind or water. When there is degradation of vegetation cover, water moves unchecked with a great force and carries soil particles with it resulting in loss of soil fertility, formation of gullies, nallah, etc. excessive erosion of top soil reduces both the fertility and the water holding capacity of soil.<sup>107</sup>

Environmentally, the forests are very important. They help in balancing oxygen and carbon dioxide level in atmosphere, regulate earth's temperature regime and hydrologic cycle. Forests increase local precipitation and water holding capacity of soil, thus preventing drought situation. Since forests exert a tremendous influence in maintaining healthy environment, they need to be protected. The influence of forests on environment may be localized or far reaching. The climate, rainfall, relative humidity, wind, soil, etc. are all influenced by forests. Hence indiscriminate felling of trees or deforestation disturbs ecological balance and deteriorates quality of life.

According to India State of Forest Report, 2013, the forest cover of the country is 697,898 sq. km which is 21.23 percent of the geographical area of the country. India's

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<sup>107</sup>India State of Forest Report 2013, Op. cit., p. 62.

National Forest Policy 1988 aims at maintaining 33 per cent of country's geographical area under forest and tree cover<sup>108</sup>but it is far below the aim at only 24.01 per cent<sup>109</sup>.

The total forest and tree cover of Mizoram is 19,277 sq.km which constitutes 91.44 per cent of the state's geographical area and this is the highest of all the states and Union Territories. The tree cover of the country is estimated to be 91,266 sq.km which is 2.78 percent of the geographical area of the country. India has only two (2) per cent of the forest land of the world but supports 16 per cent of the world population. The north-eastern states of India which constitutes only 7.98 percent of the geographical areas of the country accounts for nearly one-fourth of the country's forest cover.

### **Environment Protection**

During last decade, environmental issues have been receiving increasing attention in all spheres of life, including greater coverage in media. There is also a growing awareness of the need and importance of involving people actively in the protection of environment and management of the natural resources of their locality. In India the policy makers have begun to voice their concern with ecological and environmental issues. These issues have in recent years become important in India. The enactment of the Environment (Protection) Act in 1986 and the Rules formulated under it by the Department of Environment and Forests have made immediate concern with these issues. This law is in addition to earlier laws and regulations as personified by the State Pollution Control Boards. Thus environmental management has become a serious issue of major

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<sup>108</sup>India State of Forest Report 2013, *Op. cit.*, p. 59.

<sup>109</sup>India State of Forest Report 2013, *Op. cit.*, p. viii

interest in the context of planning, and an important agenda item for the manager and public administrator.

### **Mizoram State Pollution Control Board<sup>110</sup>**

Mizoram is one of the few states in the country where pollution problems are almost negligible. But with growth and expansion of traffic jams and automobiles pollution problems are increasing day by day degrading the environment.

In Mizoram, the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Amendment Act, 1988 came into force on 31<sup>st</sup> March, 1989. In the same year, Mizoram Pollution Control Board was constituted. The main objective of the Board is to control, prevent and abate pollution of streams, wells, land and atmosphere in the state so as to protect the environment.

#### Air Pollution

The main sources of air pollution in Mizoram are vehicles, forest fire especially those during the mass jhum burning period, few industrial activities and dust. Air quality monitoring was initiated in Aizawl under National Air Quality Monitoring Programme (NAMP) which was sponsored by Central Pollution Control Board. The programme started with opening of three stations within Aizawl during June, 2005. In the year 2011 eight more air monitoring stations were opened. As of now a total number of 11 stations are available within the state.

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<sup>110</sup> [www.mizenivs.nic.in](http://www.mizenivs.nic.in)

## **Wildlife Conservation**

The Wildlife (Protection) Act, 1972 as it stands now, defines wildlife including all sorts of animals, bees, butterflies, crustacea, and fishes etc., which are to be protected. It also envisages establishment of three kinds of protected habitats namely- Sanctuaries, National Parks, and Closed areas. Section 11 of this Act permits hunting of wild animals in certain circumstances namely dangerous to human life and disable or diseased beyond recovery. Section 17A prohibits picking, uprooting, damaging, destroying, acquiring or collecting any specified plant from any forest land and in area specified by notification by the Central Government.<sup>111</sup> Wildlife Conservation includes all human efforts to preserve wild animals from extinction. It involves the protection and wise management of wild species and their environment. Some species have become extinct due to natural causes, but the greatest danger to wildlife results from human activities. Thus, we ourselves have created this need for wildlife conservation.

## **Protected Areas**

Mizoram is home to a great variety of wildlife species which has a significant influence on the tradition and culture of Mizos. Indiscriminate killings of animals are still prevalent in the state even after enactment of the Wildlife (Protection) Act, 1972. However, the Department has taken up wildlife protection by constituting ten Protected Areas which consist of one Dampa Tiger Reserve, two National Parks, and seven Wildlife Sanctuaries, and the Department is also conducting awareness campaign for enlisting public support.

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<sup>111</sup> Singh, V.P. (2004), *Tropical Forest Ecosystems: Structure and Functions*, Jodhpur: Scientific Publishers, p. 250.

The Protected Areas meant for preservation of wildlife in Mizoram covers 1240.75 sq.km which is 5.8 percent of the total geographical area of the state. However, the area of Thorangtlang Wildlife Sanctuary has been recently extended from 50 sq km to 180 sq km vide order No. B-12012/24/2014-FST dated 30-9-'15; with this the total area of Protected Areas has become 1370.75 sq.km which is 6.5 percent of the State's total area. The amount of money spent during 2011-2012, 2012-2013, and 2013-2014 are Rs 416.617 lakhs, Rs 337.70 lakhs and Rs 341.296 lakhs respectively. In spite of the great efforts of the field staff to protect and conserve these Protected Areas, there have been a number of Wildlife offence cases. Table 20 depicts Wildlife offence for five years (2006-2007 to 2010-2011) shows that there were 188 persons involved in 159 cases out of which 115 numbers were compounded, 46 court cases filed and 43 court cases disposed off. These figures indicate that there is a need for better and effective awareness campaigns for the preservation and protection of wild animals in the state.

The state has diverse species of different animals consisting of about 53 common mammals, 156 common birds (Dampa Tiger Reserve alone registered 215 birds, 25 common reptiles, a large number of fishes etc. Malayan Sun Bear which was thought to be extinct in the wild from the Indian sub continent has been recorded and photographed on Dec 2006 at Dampa Tiger Reserve. Much more animal species would be identified and recorded if proper researchs in this field is strengthened.<sup>112</sup>

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<sup>112</sup>*Mizoram Forest 2006, Op. cit.*, pp. 14-22

**Table 20: Protected Areas of Mizoram and Financial Assistance for CSS-  
'Integrated Development of Wildlife Habitats'**

Sl n o	Protected Area	Area in sq km	2011-'12 (Rs in lacs)	2012-'13 (Rs in lacs)	2013-'14 (Rs in lacs)	Notification No. & Date
1	Dampa Tiger Reserve	500	262.826	241.31	236.68	B.11011/14/90- FST of 7.12.1994
2	Murlen National Park	100	15.477	11.00	13.784	B.12012/5/99- FST of 24.1.2003
3	Phawngpui National Park	50	16.854	9.116	8.216	B.12011/5/91- FST of 22.7.1997
4	Ngengpui Wildlife Sanctuary (WLS)	110	17.904	10.574	10.594	B.12012/4/91- FST of 22.7.1997
5	Khawnglung WLS	35.75	19.812	11.002	10.12	B. 12012/10/96- FST 12.10.2000
6	Lengteng WLS	60	14.811	11.00	15.144	B.12012/15/94- FST of 31.5.2002
7	Tawi Wildlife Sanctuary	35	18.156	11.50	10.07	B.12012/1/91- FST 16.11.2001
8	Thorangtlang WLS	50	18.431	11.20	12.594	B. 12012/17/01 FST of 23.4.2002
9	Pualreng WLS	180	20.126	11.00	12.444	B. 12012/19/01- FST of 29.7.2004
10	Tokalo Wildlife Sanctuary	250	12.22	10.00	14.65	MADC 68/E&F/2006-07- 63 of 1.10.2007
	<b>TOTAL</b>	<b>1370.7</b>	<b>416.617</b>	<b>337.70</b>	<b>341.296</b>	

**Source:** *Unpublished Statistical Handbook, Deptt. of E & F, GOM, 2015*

The above Table 20 shows that through the CSS of 'Integrated Development of Wildlife Habitats' the Department received Rs 416.617 lakhs in 2011-2012, Rs 337.7 lakhs in 2012-2013, and Rs 341.296 lakhs in 2013-2014 respectively. According to the report in the Aizawl Post newspaper, there are about ten elephants and three tigers in Mizoram. A report from the office of the Chief Wildlife Warden of Forests Department says that there are about ten elephants and three tigers in Mizoram. Census of tiger was

conducted in Dampa Tiger Reserve in 2014 in which the forest officials confirmed that all the 3 tigers identified are male and this could indicate that there are more female tigers in the area as female population of tiger is generally more than the male population. The forest officials further says that there are ten Protected Forest Areas-Wildlife Sanctuaries covering 1728.75 (1730.7) sq. km. which constitutes about 8percent (6.5%) of the total geographical area of the State. The Government of India suggests that at least 10 percent of the geographical area be under Protected Area and Mizoram with 8 percent of its total area is expected to achieve this target soon and the forest official adds that the government is taking steps to declare another area as Protected Forest Area in the near future.<sup>113</sup> However, the people at large needs to be aware of the significance of protecting and preserving natural resources including wild animals and their habitats i.e., forests.

### **Eco-Development in the Protected Areas**

The Government of India implemented a Centrally Sponsored Scheme called Eco-Development Project around National Parks and Wildlife Sanctuaries since the 8<sup>th</sup> Plan. Eco-Development aims at 100 percent benefit to the fringe villages of the Protected Areas. Government of Mizoram also received Eco-Development fund for Protected Areas for various trades e.g., distribution of LPG, construction of water reservoirs, poultry farming, piggery, provision of solar lantern, fishery, free medical health camp etc.

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<sup>113</sup>*The Aizawl Post* Vol. XIII No. 222 Sept 34, 2015



**Table 21: Eco-Development Achievement 2000-2001 to 2007-2008****(No. of families benefitted)**

S No.	Name of Protected Area	LPG	Poultry	Terra-cing	Cash Crop	Pig-gery	Fish-ery	Water tank
1	Murlen NP	90	30	90	139	70	10	500
2	Lengteng WLS	360	20	110	113	70	20	300
3	Tawi WLS	415	31	190	140	87	20	200
4	Khawnglung WLS	152	40	95	80	135	21	400
5	Thorangtlang WLS	470	-	80	-	70	20	-
6	Pualreng WLS	60	-	-	20	35	-	-
7	Dampa TR	1983	35	360	75	160	-	400
8	Phawngpui NP	240	100	400	150	70	93	233
9	Ngengpui WLS	290	200	220	102	28	78	235
	TOTAL	4060	456	1545	819	725	262	2268

**Source:** *Statistical Handbook 2011, Environment & Forests Department, A*

*Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p. 91.*

The Department of Environment and Forests, Govt. of Mizoram has been implementing centrally sponsored scheme called as the Eco-Development Project which benefitted a number of families living in the fringes of the Protected Areas. The above Table 21 shows the number of families benefitted through this scheme during 2000 to 2008.

## **Wildlife Damage Compensation**

The incident of human-animal conflict has increased considerably. The increase is due to various reasons. Important among them are increase in wild animal population, fragmentation of habitats, non-availability of food and water in the habitat due to degradation, disturbance in the corridors due to development activities, change in cropping pattern, increase in human populations etc. the Ministry of Environment and Forests has been providing financial assistance to the states under various Centrally Sponsored Schemes. Disturbance of ecological balance leads to conflicts between component parts of the system. Every species plays an important role in maintaining an ecological balance among the living systems of the earth. These systems must continue to function if life is to survive. Loss of any species threatens the survival of several species inclusive of man.

Man's own survival depends on his willingness and ability to co-operate with the living environment. However, man exploits, destroys and reduces the renewable natural resources, eradicates wildlife and leads his own race to levels leading to catastrophe. Conservation, protection and prevention of natural resources including wildlife are indispensable for the survival of man. The governments of the world are now working together to protect valuable animals from extinction and conserve and protect them in Protected Areas or Wildlife Sanctuaries. However, there are times when these wild animals damage farms, crops, houses and other properties of man; sometimes they even killed and injured human beings and domestic animals. The government makes provision to compensate such kind of damages caused by wild animals.

The Govt. of Mizoram released Rs 170.069 lakhs as Wildlife Damage Compensation in the past 8 years i. e., from 2006-2007 to 2013-2014.<sup>114</sup> Out of this, Rs 84.089 lakhs was spent to compensate incidents that took place within the Protected Areas and the remaining amount was spent to compensate cases that happened outside the Protected Areas. During this period 21 persons were killed by wild animals, 35 persons were injured, about 20 domestic animals (mostly cattle )were killed, and more than 3000 cases of crop damage by wild animals were reported to the Department and compensated..

### **Wildlife Offence**

Wildlife (Protection) Act, 1972 is in vogue in Mizoram. Any person who violates any provision of this Act could be punished by the concerned authority. As depicted in Table 22, within a span of five years, 159 Wildlife offence cases were registered in which 188 persons were involved. Most of the arrested persons are from villages adjoining to the Protected Areas/Wildlife Sanctuaries.

A number of illegal hunting within the Protected Areas has been reported. Forest officials arrested 22 poachers along with 26 guns hunting In Dampa Tiger Reserve. The arrested poachers are from 14 different villages; the seized guns include nine SBBL, two miniature rifle, and local made guns. Mr. Laltlanhlua Zathang, E&F Field Director, said that altogether there are 170 staff in Dampa Tiger Reserve which include six Foresters (two are contract workers), seven Forest Guards (four are contract workers), fourteen daily labourers. He further said that it is a very difficult task to protect the area from

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<sup>114</sup>Unpublished Statistical Handbook, Deptt. of E & F, GOM, 2015.

poachers.<sup>115</sup> The forest officials used to visit the adjoining villages and requested them to stop hunting in the reserved area. In spite of many awareness campaigns of the Department of Environment and Forests with the support of NGOs, there is still a long way to go to stop illegal hunting of wild animals in the State.

**Table 22: Wildlife Offence for 5 Years (2006-2007 to 2010-2011)**

Sl. No	Year	No. of Persons involved	No. of Cases	No of Cases compounded	No. of cases filed in court	Cases disposed by court	Money Realised In Rs
1	2006-2007	74	67	52	23	1	12,045.00
2	2007-2008	31	41	38	4	38	5,000.00
3	2008-2009	16	9	2	7	2	700.00
4	2009-2010	38	17	8	4	2	11,500.00
5	2010-2011	29	25	15	8	-	16,030.00
	<b>TOTAL</b>	<b>188</b>	<b>159</b>	<b>46</b>	<b>46</b>	<b>43</b>	<b>45,275.00</b>

**Source:** *Statistical Handbook 2011*, Environment & Forests Department, A Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p.144.

During the last two years twenty two poachers and twenty six guns were arrested and seized in Dampa Tiger Reserve alone. The twenty two arrested poachers are from fourteen different villages. The seized guns consisted of two miniature rifles, nine SBBL gun and eleven local made guns. Seventeen poachers have been punished under Wildlife (Protection) Act of 1972. There is altogether 170 staff working in Dampa Tiger Reserve including four Foresters, three Forest Guards, two contract-Foresters, four contract-Forest Guards, fourteen daily labourers.<sup>116</sup>

<sup>115</sup>Vanglaini Daily, Vol. XXIX No. 198, Aug.29, 2014, p. 2.

<sup>116</sup>Vanglaini Vol XXIX no 198 Friday 29, 2014 , p. 2.

## National Afforestation Programme (NAP) in Mizoram

National Afforestation Programme (NAP) is one of the most important programmes of the Ministry of Environment, Forests and Climate Change. The national Forest Policy, 1988 provides that the national goal should be to have a minimum of one-third i.e., 33% of the total land area of the country under forest or tree cover. In the hills and in mountainous region, the aim should be to maintain two-third of the area under such cover in order to prevent erosion and land degradation and to ensure the stability of the fragile eco-system. A massive need-based and time bound programme of afforestation and tree planting on all degraded and denuded lands in the country is a national imperative.<sup>117</sup>

It is necessary to encourage the planting of trees alongside the roads, rivers and streams, and on other unutilized lands. Plantation of teak, gomari, etc and indigenous species of trees have been undertaken by the Department. Table 23 below shows that within a span of 52 years i.e., from 1958 to 2010, plantation area of 174359.798 ha has been covered by the Deptt. of E & F, Govt. of Mizoram.

**Table 23: Forest Plantation area in hectare (ha), 1958-2010**

Plantation area in ha. upto 1958-1972	1674 ha.
Plantation area in ha. upto 1972-1986	37088 ha.
Plantation area in ha. upto 1986-2006	112975.288 ha.
Plantation area in ha. upto 2006-2010	22640.51ha.
Plantation of Teak, gomari& indigenous species since inception of Forest Department	174359.798 ha.

**Source:** *Statistical handbook 2011, E & F Deptt. p. 52.*

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<sup>117</sup> Singh, V.P. (2004), Op.cit, p. 240.

### **Joint Forest Management:**

Mizoram has adopted the Joint Forest Management as per the Government of India's instruction No. 6-12/89 dated 1.6.1990, which envisaged involvement of the local communities and voluntary agencies in planning, protection, regeneration and development of forests, etc. Formal notification for adoption of the Joint Forest Management was issued by the Government of Mizoram Vide No. B. 11011/36/95-FST dated 18<sup>th</sup> Sept 1998.<sup>118</sup> As reported in the unpublished Statistical Handbook, 762 Joint Forest Management Committees (JFMC) have been constituted and out of this 637 JFMCs have formulated micro plan and the remaining 125 are yet to formulate.

Within the last five years i.e., 2009-2010 to 2013-2014 the State has achieved a target area of 13935 ha under National Afforestation Program with a fund of Rs 5934.61 lakh.<sup>119</sup> The Department is making use of the financial resources to move towards improving the forestry and environmental conditions of the State.

The JFM program has led to several positive impacts; the major ones being:

- i. Change in attitude and relationships of local communities and forest officials towards each other and forests,
- ii. Improvement in the condition of forests,
- iii. Reduction in encroachment,
- iv. Increase in income of the local people and

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<sup>118</sup>Mizoram Forest 2006, Op. cit., p. 44.

<sup>119</sup>Statistical Handbook , 2015(unpublished).

v. Involvement of NGOs.<sup>120</sup>

The growing depletion of forest resources and increasing deforestation led to the realization that active and willing participation of the forest fringe communities is necessary for any forest regeneration program to succeed. It was also realized that village communities will have little incentive to participate unless they benefit directly and have sufficient authority. Therefore a new strategy, called Joint Forest Management was adopted to protect and regenerate degraded forests.

Participatory forest management as an effective means of protecting and regenerating degraded forests has been gaining ground in India. In 1990, the Government of India issued guidelines for state governments highlighting the need and the procedure for the involvement of village communities and voluntary agencies in the management, planning and implementation for the protection and development of degraded forests, provision of fuel wood, fodder, NWFP and timber to people living in and around forests.

**Forest Development Agencies (FDA):**

Based on the instruction of the Ministry of Environment and Forests issued Vide F. No. 25.1.1.98 B-II dated 16.8.2002, the Government of Mizoram issued Notification for constitution of FDAs in all the Territorial Forest/Wildlife Divisions in Mizoram Vide No. 11011/36/95-FST dated 3.11.2002. According to the May 2000 Guidelines of Government of India, these FDAs are to be registered as Federation of all Joint Forest

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<sup>120</sup>Uberoi, N.K. (2003), Environmental Management, New Delhi: Excel Books, , p. 377.

Management Committees/Village Forest Development Committees (VFDC) within a Territorial/Wildlife Forest Divisions under Society Registration Act, 1860.<sup>121</sup>

**Table 24: Number of VFDC Implementing NAP in 10<sup>th</sup> & 11<sup>th</sup> Plan Under Normal FDA**

SI No.	Forest Circles	Name of FDA	Concerned Division	No. of VFDCs
1	Central Circle	Aizawl	Aizawl	35
		Champhai	Champhai	60
		Mamit	Mamit	26
		Thenzawl	Thenzawl	23
2	Northern Circle	Darlawn	Darlawn	37
		Kawrthah	Kawrthah	23
		Kolasib	Kolasib	32
3	Southern Circle	Lunglei	Lunglei	40
		N. Vanlaiphai	N. Vanlaiphai	21
		Tlabung	Tlabung	31
		Chakma ADC	Chakma ADC	45
		Lai ADC	Lai ADC	50
		Mara ADC	Mara ADC	29
4	Wildlife Circle	Dampa	Dampa	21
		Wildlife Division	Wildlife Division	1
		Chhintuipui	Chhintuipui	6
		Murlen NP	Murlen NP	6
		Tawi WLS	Tawi WLS	7
		Khawnglung	Khawnglung	2
		Thorangtlang	Thorangtlang	1
		Lengteng	Lengteng	1
	<b>Total</b>			<b>497</b>

Source: *Statistical handbook 2011, E & F Deptt. p. 60*

<sup>121</sup>Mizoram Forest 2006, Op. cit, p. 44.



**Table 25: Number of VFDC Implementing NAP in 10<sup>th</sup> & 11<sup>th</sup> Plan  
Under Rehabilitation of Degraded Jhumland**

Sl No.	Forest Circle	Name of FDA	Concerned Division	No of VFDCs
1	Central Circle	Aizawl	Aizawl	18
		Mamit	Mamit	12
		Thenzawl	Thenzawl	21
		Champhai	Champhai	14
2	Northern Circle	Kolasib	Kolasib	9
3	Southern Circle	Lunglei	Lunglei	17
		Mara ADC	Mara ADC	10
<b>Total</b>				<b>101</b>

**Source:** *Statistical handbook 2011, E & F Deptt. p. 61.*

As depicted in Tables 24 and 25 the total number of Village Forest Development Committees (VFDCs) constituted under the Normal Forest Development Agencies implementing NAP in the 10<sup>th</sup> and 11<sup>th</sup> Five Year Plan in Mizoram has reached 497, and another 101 VFDCs are constituted under Rehabilitation of degraded Jhum lands. This is a positive move towards the implementation of this important program. At present the Central Circle has 144, Northern Circle has 92, Southern Circle has 216, and the Wildlife Circle has 45 VFDCs under normal FDAs respectively.

**Compensatory Afforestation Management and Planning Authority (CAMPA).**

Sensing utilization of fund deposited with the state forest departments for compensatory afforestation is not been properly utilized, the Supreme Court of India mandated in a 2002 to form a ‘Compensatory Afforestation Management and Planning Authority (CAMPA).

The scheme for compensatory afforestation under CAMPA should contain-

- i. Details of equivalent non-forested or degraded forest land identified for raising compensatory afforestation;

- ii. Agency responsible for afforestation;
- iii. Details of work schedule proposed for compensatory afforestation;
- iv. Cost structure of plantation, provision of funds and the mechanism to ensure that the funds will be utilized for raising afforestation;
- v. Details of proposed monitoring mechanism;
- vi. Equivalent non-forest land identified for the purpose is to be transferred to the ownership of the State Forest Deptts., and declared as protected forests so that the plantation raised can be maintained permanently.
- vii. The transfer must take place prior to the commencement of the project. The compensatory afforestation should clearly be an additional plantation activity and not a diversion of part of annual plantation program.
- viii. In processing the proposals for forest clearance it has been decided that these proposals for development project be submitted to MEF's Regional Offices for processing.<sup>122</sup>

## **FOREST FIRE AND FIRE PREVENTION**

The incidence of forest fires in the country is high. Standing trees and fodder are destroyed on a large scale and natural regeneration annihilated by such fires. Forest fires occur mainly due to the activities of man but sometimes by lightning or friction between trees close by, due to their constant rubbing together or striking. Man burns forests for habitation, for agriculture, for the construction of roads, to burn litter, or due to

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<sup>122</sup>Uberoi, N.K.Op.cit., p. 370.

carelessness. Forest fire is one of the most devastating factor-causing deforestation and environmental hazards in Mizoram.

Large areas of forests are destroyed by fire every year. Table 26 shows that within five years there had been 1787 cases of forest fire incidents destroying 52,295.96 ha of forests and the estimated value of forest property lost was more than Rs 28 lakhs.

The ever increasing population pressure and resultant natural resources crunch has made it difficult to check forest fires through traditional methods. Realizing this UNDP pilot project was implemented in two states viz. Uttar Pradesh and Maharashtra, where fires had affected around 50 percent of the forest area. The primary focus was to adopt a systematic approach to deal with forest fires using modern techniques.

The excellent result prompted the Ministry of Environment and Forests, GOI to implement the modern Forest Fires Control Methods (FFCM) since 1992 in some states. In view of the positive results of the scheme in control and protection of forests against fires, this scheme was extended to all States and Union Territories. Realizing the acute shortage of the infrastructure in the North East and Sikkim for protecting the forest, the Ministry started a special scheme called Bridging up of Infrastructural Gaps in Forestry during 2000-01. In the 10<sup>th</sup> plan these two schemes were merged as Integrated Forest Protection Scheme (IFPS).<sup>123</sup>

The IFPS comprises of two main components, Viz. strengthening of infrastructure for fire protection and survey and demarcation/working plan preparation, and forest fire control and management.

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<sup>123</sup>*Mizoram Forest 2006*, Op. cit., p.58.

The Environment and Forests Department, Mizoram has availed Rs 2,605.55 lakhs during the last six years i.e., 2001-2002 to 2006-2007 this scheme. The Department spent the allocated fund to construct 262 buildings, 2300 kms of Fire-line, 47 Fire Watch Towers, 44 units of water storage structure, 54km of approach road, 153 km of footpath, over 100 vehicles- ranging from motor cycles to bulldozer, computers, GIS, GPS, W/T sets etc.<sup>124</sup>

One of the biggest challenges of the Department of Environment and Forests, Govt. of Mizoram is control and protection of the forests from fire. Fire Prevention Week as a state-wide program in Mizoram was started in 2000. Jhum or Shifting cultivation has been practiced in the Mizo society since time immemorial. Years of experience has led to the evolution of community-based fire management i.e., the whole community worked together to prevent forest fire. The Lushai Hills District Jhumming Regulation, 1954 was enacted which has been adopted by the State of Mizoram. The Local Administration Department has been the nodal department in this matter. The Mizoram Prevention and Control of Fire in the Village Ram Rules, 1983 was again enacted to prevent forest fire. The State Government forms a number of committees such as the Village Level Fire Prevention Committee headed by the Village Council President, the District Level Fire Prevention Committee chaired by the Deputy Commissioner, and the State Level Fire Prevention Committee headed by the Chief Minister respectively.<sup>125</sup>

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<sup>124</sup>*Ibid*, p.58.

<sup>125</sup> Forest Khawvel, vol. v. issue no 4, Jan.-March, 2015, Speech delivered by Pu Lalramthanga, PCCF on Fire Prevention Week Program.

**Table 26: Forest Fire Incidence During 2006-07 to 2010-11**

Sl No	Year	No. of occurrence	Total extent of area effected by fire (in hectares-ha)	Estimated value of forest property of wealth lost (in Rupees)
1	2006-2007	253	18115.30	1,69,44,829.00
2	2007-2008	117	1178.36	-
3	2008-2009	71	1453.20	10,200.00
4	2009-2010	1277	30184.00	2,299,900.00
5	2010-2011	69	1365.10	502,500.00
	<b>TOTAL</b>	<b>1787</b>	<b>52295.96</b>	<b>2,812,600.00</b>

**Source:** *Statistical Handbook 2011, Environment & Forests Department, A*

*Forest Extension Compilation, Five Brothers' Offset Press, Aizawl, p.127.*

Control and management of forest and jhum fires are the joint responsibility of every individual and the entire village. As jhumming has been an entrenched practice for the Mizos, the community has evolved its fire management around this tradition. Whenever a forest fire is reported, the Village Council President will immediately order the Village Crier to alert the community, and anyone who hears the announcement is duty-bound to immediately proceed to the site to fight the fire.<sup>126</sup> As provided in the Mizoram (Prevention & Control of Fire in the Village Ram) Rules, 1983, jhum burning can only be carried out between 15<sup>th</sup> February and 15<sup>th</sup> March of every year; each village is required to set up Village Forest Fire Prevention Committee (VFFPC); proper notification of the village authorities and immediate neighbours adjoining jhum fields about the date and time of burning; making a cleared corridor/fireline of about 8-10 m wide between the slashed region and the adjoining forests; penalties could reach up to a

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<sup>126</sup> Traditional Community-based Fire Management among the Mizo Shifting Cultivators of Mizoram in Northeast India, V.T.Darlong at <http://www.fao.org>, accessed on 27.8.2015

maximum of Rs 5,000.00 to the misdemeanour and Rs 50,000.00 to a particular community/village.

Uncontrolled fire is the greatest enemy of the standing vegetation. Severe fires occur in many forest types particularly in dry deciduous forests. The total damage from forest fires is enormous. Not only small trees and regeneration are often killed but severe fires can also damage big trees. Surface fire destroys the organic matter which is very necessary to maintain an optimum level of humus in the soil. Repeated annual fire may decrease the growth of grasses, herbs and shrubs which may result in increased soil erosion. It may also destroy various nutrient elements, particularly nitrogen. Various beneficial micro-organisms are also killed due to fire.

Protection of forests against fires is one of the important operations in forestry management. Protection measures include preventive measures, extinguishing fires after these have been detected and some post-fire operations.<sup>127</sup>

### **Green Mizoram Program**

The so-called “Green Aizawl Committee” was constituted by Government of Mizoram on 27<sup>th</sup> May, 1998 to restore the greenery and improve the aesthetic beauty of the city for making Aizawl a better place to live. Pu Lalthanhawla, the then Chief Minister was the Chairman and Pu Lalbiakzuala, the then Minister, E & F were Vice Chairman. Pu C.Ramhluna, Conservator of Forests, Northern Circle was the member secretary and 27 members were appointed therein. The Environment and Forests Department was the Nodal Department. In its year of constitution, the Green Aizawl

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<sup>127</sup>*India State of Forest Report 2013, Op.cit.*, p. 59.

Committee, as its first drive, planted 94,063 seedlings within the city.<sup>128</sup> Realizing the significance of this program the Government of Mizoram by Notification (Vide No.B.11023/13/98-FST dt. 6<sup>th</sup> May, 1999) constituted a State Level Committee on Green Mizoram on 6<sup>th</sup> May 1999.<sup>129</sup> Each year, a particular day during the first or second week of June is observed as Green Mizoram Day, dedicated for planting of trees and for maintenance of the trees planted in the previous years. Since its constitution, planting of trees have been carried out by Government Departments, Semi Government Departments, NGOs, Educational Institutions and public on identified locations which includes Government lands, roadsides, private lands etc.

The number of trees planted under the Green Mizoram Day Program has become 27, 45,590.<sup>130</sup> Green Mizoram Day has been observed since 1999 during rainy season without any specific day. But 11<sup>th</sup> June is to be observed as ‘Green Mizoram Day’ henceforth. Green Mizoram Day now has a logo, ‘*Everyone, Grow one*’. The theme for 2015 is ‘*Plant trees for your survival*’.<sup>131</sup>

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<sup>128</sup>A report on achievement under Green Mizoram Programme 1999-2008, Environment & Forests Deptt.Govt. of Mizoram (2009), J.P.Offset Printers, Aizawl, p.1.

<sup>129</sup>Idib.p.2.

<sup>130</sup>*Vanglaini Daily*, Vol. XXIX, No. 206, Sept. 7&8, 2014, p 1.

<sup>131</sup>Lalramthanga, keynote address on Green Mizoram Day, *Forest Khawvel*, April-June, 2015, Issued by E & F, Govt. of Mizoram, p.7.

**Table 27: Year-Wise Number of Seedlings Planted (1999-2014)**

<b>Year</b>	<b>No. of Seedlings Planted</b>
1999	1,72,511
2000	1,97,054
2001	1,28,215
2002	1,04,087
2003	64,072
2004	2,07,919
2005	1,04,875
2006	59,715
2007	1,61,683
2008	1,58,673
2009	2,92,051
2010	2,08,853
2011	2,06,339
2012	64,894
2013	5,38,246
2014	76,403
<b>Total</b>	<b>27,45,590</b>

**Source:** *Vanglaini*, Vol.XXIX. No. 206, p. 1. Sept. 7 & 8, 2014

### **Green India Mission**

One of the eight National Action Plan on Climate Change- ‘Green India Mission’ was inaugurated by Mr Lalthanhawla, Chief Minister of Mizoram. In his inaugural speech, the Chief Minister said that if we do not stop destroying our natural resources the coming generations will curse on us. This Green India Mission is a National Plan on Climate Change to create five million hectares of forests. The Chief Minister said that it is time to stop damaging forests and killing living creatures.<sup>132</sup>

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<sup>132</sup>*The Aizawl Post*, January 14, 2015, p. 1.



**New Land Use Policy (NLUP) Cell of the Deptt.ofE& F.**

**Table 28: Forest Division Wise List of NLUP Beneficiary 1<sup>st</sup> to 4<sup>th</sup> Phase**

Sl No	Name of District	Name of Division	No. of Beneficiaries in Different Phases				
			Phase-I	Phase-II	Phase-III	Phase-IV	Total
1	Mamit	Mamit	61	71	9	4	<b>145</b>
		Kawrthah	11	6			<b>17</b>
2	Kolasib	Kolasib	37	72	17	5	<b>131</b>
3	Aizawl	Aizawl	77	133	37	11	<b>258</b>
		Darlawn	52	83	33	6	<b>174</b>
4	Champhai	Champhai	283	211	104	13	<b>611</b>
5	Serchhip	Thenzawl	47	98	2	1	<b>148</b>
6	Lunglei	Lunglei	231	172	18	37	<b>458</b>
		Tlabung	516	257	98	53	<b>924</b>
7	Lawngtlai	Lawngtlai	94	88	107	42	<b>331</b>
		<b>Total</b>	<b>1409</b>	<b>1191</b>	<b>425</b>	<b>172</b>	<b>3197</b>

**Source:** NLUP Cell, Deptt. of E & F, GOM

From the above Table 28, the overall number of beneficiaries of NLUP in the Department of Environment and Forests during the First Phase to the Fourth Phase (till October 2015) is 3197 families, the total area covered for Bamboo Plantation is 6394 ha and the total amount of money spent has been Rs 28,85,97,365.00. Each beneficiary has to cultivate bamboo in 2 ha of land and they are given financial assistance and provided with reservoirs, natural and tissue-cultured good variety bamboo seedlings.

There are four specific actions to combat deforestation: sustaining the multiple roles and functions of all types of forests, forest lands and woodlands; Enhancing protection, sustainable management and conservation of all forests, and greening of degraded areas through forest rehabilitation, afforestation, reforestation and other rehabilitative measures; Promoting efficient utilization and assessment to recover the full

valuation of the goods and services provided by forests, forest lands and woodlands; Establishing and or strengthening capacities for planning, assessment and systematic observation of forests and related programs, projects and activities, including commercial trade and process.<sup>133</sup>

New Land Use Policy (NLUP), a flagship program of Government of Mizoram has an important contribution towards conservation of forests in the state. ZALEN newspaper highlights that with the implementation of New Land Use Policy (NLUP) the per capita income of the state has jumped from Rs 50,956.00 in 2010-2011 to Rs 90,015.00 in 2014-2015 and the rate of increase is 76.65 percent. The NLUP Implementing Board (NIB) informed the media that the Central Government had sanctioned Rs 1526.14 crores during a period from 2010-2011 to 2014-2015.

NIB officials said that researchers from MZU had found out that within these 4 years Jhum cultivation decreased to 45.5 percent with number of families engaged in jhum cultivation is reduced to 20 percent with the area of jhumming gone down to 6102 ha i.e., 22.52 percent. The number of jhumming families has been reduced from 68,433 in 2010-2011 to 58,751 in 2012-2013.<sup>134</sup> This report is a positive trend towards the work of the Department of Environment and Forests in Mizoram in protection and conservation of natural resources as Jhum or Shifting method of cultivation leads to degradation of forest lands, forest fires and damage to the habitats of wildlife and the forests. If the trend continues in the future the environment, forests and wildlife of the state would be better

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<sup>133</sup>Uberoi, N.K., *Op. cit.*, p. 365.

<sup>134</sup> ZALEN Newspaper Vol. 11 issue no 43 November 01, 2015

conserved and protected. This report indicates that a number of families in rural areas of Mizoram turned to other trades other than jhum cultivation.

### **Forest Training School**

Before the attainment of Union Territory, Mizoram formed a single District called Autonomous Mizo District Council under the state of Assam. The Assam Forest Department managed the forests of Mizoram by deploying a Superintendent of Forest with a few staff who got their training mostly at Kurseong and Dehradun. However, a full-fledged Forest Department headed by the Director of Forests was established. The government realized the need of having Forest Training Centre which resulted in the establishment of the first and only Training School for forest guards in 1974. The school was headed by Superintendent at the rank of Forest Ranger; it was upgraded in 1982 as Forest Education & Research Institute headed by Principal in the rank of Deputy Conservator of Forest and Forester course was opened in the same year.<sup>135</sup> It conducts refresher course for field staffs as well as officers of this Department for wildlife, firing, JFM, Working Plan, National Afforestation Program etc. So far, 587 Forest Guard, 267 Forester, and 4 Forest Ranger have passed out from this institute. A number of Refreshers Courses for Frontline Staff have been conducted in this School. It is a great relief for the Department to have this Training School as field staff could undergo different courses of training.

Most of the officials in the Department have been suitably trained in the subjects related to the management of forests and the preservation of wildlife. The trained

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<sup>135</sup>*Mizoram Forest* 2006, Op. cit., p.76.

manpower is the core strength which enables the Department to effectively implement various planned schemes. In addition, active involvement of the local people through the mechanism of “Joint Forest Management” has significantly helped the Department in its efforts to enrich and protect the valuable forest wealth of the State.

**Table 29: Training of Staff at Forest Training School, Aizawl**

Refreshers Course for Frontline Staff		
Year	Category of Staff Trained	Nos. Trained
2010	1) Dy. Ranger	10
	2) Foresters	45
	3) Forest Guard	94
	Sub Total	149
2011	1) Dy. Ranger	16
	2) Foresters	43
	3) Forest Guard	65
	Sub Total	124
2012	1) Dy. Ranger	6
	2) Foresters	18
	3) Forest Guard	25
	Sub Total	49
2013	1) Foresters	48
	2) Forest Guard	58
	Sub Total	106
2014	1) Foresters	10
	2) Forest Guard	15
	Sub Total	25

**Source:** *Unpublished Statistical Handbook, Deptt. of E & F, GOM, 2015*

## CHAPTER-IV

### RESULTS AND DISCUSSION

In this chapter, an attempt has been made to present the result and discussion which arises out of the study of organizational structure, functioning and activities etc., of the employees of the Department of Environment and Forests, Mizoram and to find out the problems and challenges and to suggest remedial measures. The scholar prepared empirical data collected through semi-structured interview schedule with thirty (30) employees of the office of the Principal Chief Conservator of Forest (PCCF), Department of Environment and Forests, Government of Mizoram, Tuikhuahtlang, Aizawl. The 30 respondents comprise of eleven (11) officers each from Group 'A' and Group 'B', six (6) from Group 'C' and two (2) from Group 'D' employee respectively. The respondents were asked to answer a number of semi- structured questions in their respective offices. The results of the collected data through scheduled interviews are discussed under the following headings.

#### **(a) Recruitment**

The interviewees were asked how they entered into the services i.e., method of recruitment and the recruiting agency at the time of their entry into the service. Their responds to this question are given in the table below:

**Table 30: Methods of Recruitment**

Recruiting Agency Or Methods of Recruitment	Group 'A' (11 nos)	Group B' (11 nos)	Group 'C' (6 nos)	Group 'D' (2 nos)
UPSC	4 (36.36%)	-	-	-
MPSC	5 (45.45%)	-	-	-
Departmental Exam	2 (18.18%)	5 (45.45%)	1 (16.6%)	-
Interview	-	5 (45.45%)	5 (83.3%)	2 (100%)
Compassionate	-	1 (9%)	-	-

Source: Computed

As depicted in the above Table 30 the respondents entered the service through different methods through different recruiting agencies. All the Group 'A' officers were directly recruited: out of the eleven (11) respondents, four (4) IFS officers were recruited through examinations conducted by Union Public Service Commission (UPSC), five (5) officers were recruited through Mizoram Public Service Commission(MPSC), and the other two (2) who were recruited through Departmental Exam belong to Ministerial Service. Group 'B' officers were recruited directly; five officers got their recruitment through interview, another five of the through written examination conducted by the Department, and one officer got appointment through compassionate ground. Among the Group 'C' respondents, five out of the six respondents got recruitment through interview and another one got appointment through departmental exam. Two Group 'D' employees got their appointment through interview. Government of Mizoram has made a positive step in entrusting an independent recruiting agency- the MPSC to recruit most of the Group 'B' officers. This would ensure to a great extent that the best talented and qualified candidates would be recruited not only in the Department of Environment and Forests, but in government services at large.

**(b) Promotion.**

The respondents were asked to respond to the question whether promotion in the department is done in the right manner at the right time i.e., as per the rules and regulations or not and to give their comment.

**Table 31: Fairness in Promotion in the Department**

<b>Designation</b>	<b>Yes</b>	<b>No</b>	<b>No response</b>
Group 'A'	3	8	-
Group 'B'	2	9	-
Group 'C'	3	3	-
Group 'D'	-	-	2
<b>Total (percentage)</b>	<b>8 (26.67%)</b>	<b>20 (66.67%)</b>	<b>2 (6.67%)</b>

Source: Computed

It is interesting to note from the above Table 29 that while 26.67 per cent respondents are satisfied with the promotion system in the department, a high 66.67 per cent believed that promotion is not awarded to them at the right time in the right manner.

The respondents were asked to give the reasons behind their answer on this question; they gave the following comments on this:

Compared to their counterparts in other states, officers belonging to the SFS (State Forest Service)/MFS (Mizoram Forest Service) expressed their dissatisfaction as they felt that they have been given poor or low grades in their Annual Confidential Record (ACR) in their service records which have resulted into poor chance of promotion. Some MFS officers who entered into service since 1982 are yet to be promoted/conferred to IFS while their counterparts in other states had been promoted a number of years back. The reason behind this could be inadequate initiatives and absence of representatives from Government of Mizoram in a meeting pertaining to such matters.

There have been late or delayed promotions which may be due to heavy stagnation or lack of fund and limitation of posts for higher promotion and sometimes due to loss of ACR (Annual Confidential Record) of some officers, essential to process promotion.

There is no promotion avenue for some posts. The Department of Personnel and Administrative Reforms (DP & AR) notified that out of the 479 isolated posts where there is no promotion avenue (Non-Functional Up gradation of Pay/Time Bound Promotion Scheme) there are 8 such isolated posts in Department of Environment and Forests, Government of Mizoram.<sup>136</sup>

Due to financial constraints or late/lack of approval from Finance Department some vacant posts could not be filled up leading to late promotion for a number of employees.

### (c) Transfer and Posting of Employees

**Table 32: Fairness and Impartiality in Transfer and Posting**

Designation	Yes	No	No response
Group 'A'	6 (20%)	1(3.33%)	4 (13.33%)
Group 'B'	7 (23.33%)	4 (13,33)	-
Group 'C'	5 (16.66%)	1 (3.33%)	-
Group 'D'	1 (3,33%)	1 (3.33%)	-
<b>Total</b>	<b>19 (63.33%)</b>	<b>7 (23.33%)</b>	<b>4 (13.33%)</b>

Source: Computed

The interviewees were asked about their view on the fairness and impartiality of the Department in respect of transfer and posting. It is interesting to find out that 63.33 per cent said that there is fairness and impartiality in matters relating to their transfer and

<sup>136</sup>Vanglaini News, Sept. 13 & 14,2014, p.2.



posting. All the four respondents, constituting 13.33 percent of the total employees, who did not give response, belonged to Group ‘A’ officers only. However, who said that there is some kind of unfair means and partiality (23.33%) in this matter are telling that there are times of political interference in the matter. Some others are telling that those who are in the good book of the higher authorities are getting better posts.

**(c) Training**

The employees were asked whether they are being given proper training in their service.

Their responses on this question are summarised in the table below:

**Table 33: Whether Getting Adequate Training**

<b>Designation</b>	<b>Yes</b>	<b>No</b>	<b>No response</b>
Group ‘A’	11	0	-
Group ‘B’	8	3	-
Group ‘C’	6	0	-
Group ‘D’	1	0	1
<b>Total (percentage)</b>	<b>26 (86.67%)</b>	<b>3 (10.71%)</b>	<b>1 (3.33%)</b>

Source: Computed

The above Table 33 indicates that excepting three (3) Group ‘B’ officers all the respondents constituting 86.67 per cent responded that adequate training programs are organized by the Department. However, a number of the respondents suggested that training programs organized by the Department should be made compulsory, otherwise certain employees used to skip certain training programs essential for their service to let them perform their duties and responsibilities efficiently, effectively and economically.

**(e) Major problems and Challenges faced by the Department in Implementation of Programs and Policies**

When the officials working in a department were asked about the major programs and activities of the Department, their responses are more or less the same. Since the Department of Environment and forests, Government of Mizoram is a nodal agency responsible for administration, protection, conservation, and management of forests, environment and wildlife in the State and enforcement of policies relating to these subjects. The Department with its varied important functions and responsibilities is facing a number of challenges and problems. Being one of the departments of government it has to perform its programs in cooperation and coordination with its allied departments like Agriculture, Soil and Water Conservation, Local Administration, Horticulture, Fisheries, Land Revenue and Settlement etc. As the various departments are interdependent of each other there should always be good relations and teamwork among them.

Some of the problems and challenges faced by Department of Environment as pointed out by the officials themselves in responding the questions in the interview scheduled are discussed below:-

1) **Acute Shortage of Staff:**

About 50 percent i.e., 15 out of 30 respondents felt that lack of adequate staff is the first and foremost challenges faced by the Department. As given in Table 16 out of 1359 sanctioned posts 451 posts are vacant which constitutes 33.18 per cent. Instead of creating new recruits the sanctioned posts are still lying vacant. The vacant posts include 30 in Group 'A', 84 in Group 'B', 254 in The Group 'C', and 83 in Group 'D' respectively. Moreover, most of the field staffs are on the verge of their retirement. The shortage of staff in the field is so great that it is almost impossible for them to discharge

their duties. The Department is looking after 10 Protected Areas with a number of other Reserved Forests. There are just over 500 field staffs in the Department to look after forests of the whole Mizoram. To clarify the shortage of field staff there are 14 Deputy Ranger with 25 vacant posts, 164 Forester with 75 vacant posts, 302 Forest Guard with 115 vacant posts. This clearly indicates the acute shortage of man-power in the Department.

2) **Jhum Cultivation:**

Nearly 20 percent of the respondents believed that jhum cultivation which destroys a large area of forest every year is a major challenge for the Department. It is one of the biggest factors of deforestation and degradation of forests in Mizoram as large areas of forests are being slashed and burnt every year from time immemorial. As the government and the society are yet to find an alternative to this Jhum cultivation, the rural people of Mizoram are compelled to go on practicing this environmental and ecological devastating method of cultivation. Due to hilly terrain, the potential areas for wet rice cultivation (WRC) of the State is very limited and the studies using Remote Sensing and Geographical Information System (GIS) techniques found that there are 74,644 hectares of area having slope of 0-25 present considered as potential WRC area. Out of these potential WRC areas, only 15,620 hectares are currently under cultivation and the remaining areas of 48,103 hectares (64.44%) need further development and improvement for production of rice requirement of the State. Therefore, there is enough potential to increase area under settled/permanent cultivation and irrigation facilities in the State in order to minimize the Jhum practice in the State of Mizoram thereby

conserving environment, forests and ecology and to increase food grain production and productivity.<sup>137</sup>

**Table 34: District-wise W.R.C. in 2013-2014**

Sl.No.	Agriculture District	No. of WRC Farmer Families	WRC Potential Area (ha)	Area under cultivation (ha)	Area needs to be developed (ha)	% of utilization of WRC potential
1	Aizawl	795	4,140	740	3,400	17.87
2	Champhai	3,968	8,697	4,384	4,313	36.57
3	Kolasib	1,377	9,429	4,233	5,196	44.89
4	Lawngtlai	2,176	11,405	1,958	9,447	17.17
5	Lunglei	1,478	12,797	845	1,031	6.60
6	Mamit	943	20,182	888	19,294	4.40
7	Saiha	810	4,284	518	3,766	12.09
8	Serchhip	1,726	3,710	2,054	1,956	55.36
<b>TOTAL</b>		<b>13,273</b>	<b>74,644</b>	<b>15,620</b>	<b>48,103</b>	<b>22.20</b>

Source: *Agriculture Statistical Abstract 2013-2014, Published By Directorate of*

*Agriculture (Crop Husbandry) Mizoram: Aizawl, Jan 2015. p. 55.*

The National Forest Policy 1988 recognizes adverse effects of shifting cultivation on environment and land productivity, and stresses on containing shifting cultivation within areas already affected by it.<sup>138</sup>

### 3) **Financial Problems:**

Like other departments, the Department of Environment and Forests, Government of Mizoram is also facing financial problems. Out of the 30 respondents eleven of them (36.67%) claimed that one of the major problems of the Department relates to financial matters. One big problem or challenge faced by the Department is not primarily lack of

<sup>137</sup> Agriculture Statistical Abstract 2013-2014, Published By Directorate of Agriculture (Crop Husbandry) Mizoram: Aizawl, Jan 2015. p. 55.

<sup>138</sup> Kishwan, Jagdish et al (2007) Op.cit, p. 53

fund but delayed release of funds.. Most of the programs of the Department are seasonal and time-bound. Timely release of fund is crucial for the proper execution of these programs. In other words, if the funds are not released in time work could not be started at the right time and maintained as a result of which huge amount of money are being wasted without any positive results. Moreover, there were times when the State Government showed reluctance to give its financial contributory share to support programs initiated by the Central Government.

4) **Encroachment of Notified Reserved Forests:**

Encroachment of forestlands has been on the increase. This trend has to be arrested and effective action taken to prevent its continuance. There should be no regularization of existing encroachments. 26.7 percent of the respondents believed that encroachment of Notified Reserved Forests like Riverine Reserved Forest, Innerline Reserved Forests, Wildlife Sanctuaries, National Parks, Plantation areas, etc, are being encroached by individuals. Different land passes like Periodic Patta, Garden Pass, Wet Rice Cultivation Pass, and House Site Pass etc are being issued by Village Councils and even Revenue Department of Government of Mizoram. The respondents are expressing their views that even when the Department tried to take proper legal actions against these encroachers their political masters would rather protect them. A Forest Offence Case for the last five years (2006-2007 to 2010-2011) mentions that within this period there were 785 cases in which 870 persons were involved.<sup>139</sup> . The Department's immediate challenge is to demarcate all its reserved forest areas without delay to prevent further encroachment.

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<sup>139</sup>*Statistical Handbook 2011*, Op.cit., p 137

5) **Lack of Public Support and Cooperation**

About seven out of 30 respondents i.e., 23.3 percent believed that the Department does not get full support and cooperation from the public. Unless and until the public at large give their support and active participation in protection, conservation, preservation and control of environment, wildlife and forests, a mere strength of just over 1350 employees would never accomplish the goals and objectives of the Department covering the whole of Mizoram. There is a need to let the people to actively participate in JFM, Social Forestry, pollution control, wildlife protection etc and make them to involve in these programmes.

6) **Lack of Public Awareness:**

Another big challenge confronting the Department is lack of public awareness in matters relating to the issues of environment, forests, and wildlife. They should be made aware of the fact that the works of the Department are meant for the good of themselves. An activity of only one or two individuals can bring huge damage to environments; the awareness level of the public should be maintained at the highest possible level,

7) **Forest Fires:**

About twenty percent of the respondents pointed out that forest fires and its prevention are big challenges of the Department. In spite of the great efforts made by the Department to prevent forest fire especially during jhum burning or dry season and observing Fire Prevention Week every year all over Mizoram large areas of forests are being burnt and destroyed by fire. Between 2006-2007 and 2010-2011 i.e., within five years there were 1787 forest fire incidents reported and the total area affected was

52,295.96 ha. These forest fires are usually caused by jhum burning without making fire-line between the jhumlands to be burnt and the adjoining forests. Many villagers are no longer committed to prevent, control, and protect forest fires as had been done in the past. However, the Government of Mizoram is trying its level best to prevent forest fires by awarding best performing villages and districts in this endeavor.

8) **Protection of Wildlife:**

Nearly twenty percent (20%) respondents revealed that protection of wildlife is a great challenge of the Department.

Mizoram has ten Protected Areas which includes one Dampa Tiger Reserve, two National Parks, and seven Wildlife Sanctuaries covering 1370.7 sq km which is 6.50 percent of the geographical area of the State. In spite of a number of campaigns against illegal hunting in general and hunting in the Protected Areas in particular by the Department Environment and Forests and NGOs, poaching is still rampant. **Table 20** depicts that within five years (2006-07 to 2010-11) there were 159 Wildlife Offence cases in which 188 persons were involved. Another obstacle towards protection of wildlife is that the people are reluctant to lodge complaint in wildlife matters. Though majority of people support in wildlife protection, there are still a number of people who cannot give full support and cooperation to this end.

9) **Maintenance of Forest Plantation:**

More than twenty percent (20%) of the respondents emphasized that maintenance of forest plantations is a great challenge for the Department because most of the plantations especially of the roadside plantations of Green Mizoram Day Programmes

lack after-care by the Department. Large areas of forest plantations in different parts of the State had been lost to individuals due to lack of monitoring and maintenance by the Department. Not only the trees but even the forest lands are being lost due to negligence of the officials of the Department.

10) **Protection of Timber and Non-Timber Forest Produce:**

Illegal felling of trees and NTFPs within and without forest plantations and Reserved Forests areas also a big problem faced by the field staff. Without the support and cooperation of the public at large the very few forest field staff cannot in reality protect nor preserve the reserved forests and forest plantations. Between 2009 and 2014 the Department seized 4973.229 cubic metre of timber from illegal traders and illegal fellers of timber, bamboo, medicinal plants and a host of NTFPs; money received within the aforesaid period amounted to Rs 1,95,99,308.00.<sup>140</sup> Thus, there is a need to manage timber and NTFPs.

11) **Poor Performance of the Staff:**

Nearly ten percent of the respondents indicated that the performance of some staff is below the expected result which may be due to low commitment and lack of dedication, knowledge, skills, and attitudes among the employees. A number of them need enthusiasms, zeal, and motivation to be more productive and effective in their workings. The Department has one Forest Training School at Aizawl which is made use of by the department from its very inception since 1974. However, this Training School needs to be equipped with better facilities and faculty members. This institute has to be

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<sup>140</sup> Vanglaini, Tuesday, December 2, 2015, p. 2.



equipped with the latest information technology (IT) gadgets and tools. In today's world all the staff in the fields and employees in various offices should be trained to make use of latest IT and modern tools/gadgets. Their knowledge, skills, and attitudes should be reoriented and updated and they need motivation, commitment and a new vigor to become better employees.

12) **Lack of Sense of Ownership:**

About ten percent (10%) of the respondents claimed that there is lack of sense of ownership among the general people. Many of them still believe that protection of forests, environment and wildlife is for the government. They do not realize that the Department works for their own benefits and interests. This is the basic reason behind the introduction of Social Forestry, Joint Forest Management, Village Forest Development Committee, Forest Development Agency, etc. Through these bodies the people are now realizing that the Department of Environment and Forests is working for the benefits of their own community. As such the sense of ownership is improving among the people.

**(f) Reasons for Success of the Department**

The respondents were asked to point out the factors responsible for the success of the Department. They gave the following answers as under:

- Survival rate of plantation is about 50 per cent, which is quite satisfactory; one big reason behind this is due to favourable climatic conditions and good annual rainfall.
- Good discipline and administration, good teamwork and coordination among the employees.

- Commitment, good leadership and hard work of employees in spite of shortage of staff.
- Efficiency and promptness of the higher officers.
- Sincere efforts and sacrifices of the departmental staff especially of the field staff like the Foresters and Forest Guards.
- Inspection of field works and construction works from higher authority bring alertness to the field staff leading to improvement in work performance.
- Introduction of environmental education from the lowest level to the university level has brought deep-rooted awareness among the younger generations.
- Support and participation of various voluntary organizations like YMA, MHIP, MUP, YLA, MTP etc and a couple of environmental NGOs.
- Awareness campaigns by the Department with the support of NGOs have good results among the general masses.

### **(g) Future Plans for the Department**

#### **Responses of officials on what should be the future plans of the Department**

- i. Human resource development- the Department should focus on human resource development, good training with latest technological developments in various aspects of the workings of the department must be imparted to the staff. The staff should be strengthened. Follow specific procedures in line with the latest trend of technology
- ii. Motivation- The employees should be motivated to be more committed and dedicated in their work.

- iii. People's Participation- Good rapport must be built with the public to get their active and supportive participation; this is the only means of achieving success in any governmental programs.
- iv. Afforestation –Afforestation of degraded jhum lands with quality plantation of trees from outside and natural trees of the State and to speed up afforestation program to mitigate climate change.
- v. Development and Improvement of Infrastructure-There is an urgent need of construction of the department's own buildings for different divisions and fields at appropriate places to stop huge spending in renting private houses and establishment of State Climate Cell etc with sufficient and competent personnel.
- vi. Economic Return-To have systematic and scientific estimation and extraction of timber and non-timber forest produce resources so as to develop forestry as one of the main sources of economic return of the State.
- vii. Demarcation of Forest Lands and Land Lease – All the forest lands of the Department like Riverine Reserved Forests, Protected Areas, Roadside Reserved Forests, Compensatory Afforestation Areas, Reserved Forests, etc should be properly surveyed and demarcated with boundary pillars and land lease is made immediately for all the Reserved Forest areas to prevent further encroachment.
- viii. Better Monitoring System-of wildlife sanctuaries and other programs of the department.
- ix. The Department of Environment and Forests, Government of Mizoram plays a crucial role. The department works to provide better and healthier environment

not only for human beings but for other living things as well. The very existence and survival of life in this planet depends on the environment. Protection and conservation of forests is indispensable for human beings. But due to lack of awareness on the importance of the works of this department a number of people are still destroying the forests uselessly. The people at large should cooperate and support the works of the officials of this department and the officials also should realize that without the active participation and support of the masses they would never succeed in achieving their objectives. But with the help of the people most of the problems and challenges faced by the department could be solved and the officials together with the people could make a greener and better Mizoram for generations to come.

## **CHAPTER-V**

### **CONCLUSION AND SUGGESTIONS**

The conservation and management of forest resources has implications not only for the economy of the State but also for the environment of the State which has significant implications worldwide. While conservation of forests and wildlife implies protection and management of the resource, development of forests implies expansion of the resource and the environment. The conservation and protection of forest resources is intricately related to the livelihoods of local communities in view of their coexistence for centuries. The Department of Environment and Forests, Government of Mizoram stands for the conservation of environment and natural resources for the present and future generations in a manner consistent with the aspirations of the society for growth and development.

The whole work is divided into five chapters.

The first chapter is introductory in nature which includes the importance and indispensability of conserving environment and forests for the survival and the very existence of life itself. It attempts to highlight how forests are maintained carbon dioxide and oxygen balance in the atmosphere protect soil erosion, control water cycle, provide innumerable products, and provide food and home to almost all kinds of animals.

The second chapter deals with the structure and functions of Environment and Forests Department, Government of Mizoram. The development of Forest Department in Mizoram had its origin during the British rule. The department has become a full-fledged

department headed by Director of Forests of the rank of Conservator of Forests when Mizoram was elevated to Union Territory status in 1972; at present the Department is designated as the Department of Environment and Forests, Government of Mizoram and the Principal Conservator of Forests (PCCF) at its head since 10-12-1987.

The third chapter discusses the structure, working and activities of the department. At present there are Five Circles in the Department with Ten Territorial Area Forest Divisions with an area of 16,645.98 sq km. As on 22-5-2014 only 908 posts are filled out of 1359 sanctioned posts. There are a number of programs and activities are undertaken by the Department some of which are implementation of policies of Central and State Governments, protection and management of reserved forests, Protected Areas, forest plantations, forest fire prevention, afforestation program, Green India Mission, Green Mizoram Program, enforcement of various Central and State Forest and Environmental Acts etc.

The fourth chapter presents a study on the results and findings from the collected data through scheduled interviews of 30 employees of the Department and other sources.

The concluding chapter provides the summary and suggestions for improvement towards the structure and working of the Department of Environment and Forests, Government of Mizoram.

### **Summary and Findings**

Forests cover about one-third of the earth's land surface of which about 50 percent is tropical forest. As per ISFR 2013 India has 21.23 per cent forest cover as against a minimum of 33 per cent forest cover prescribed under National Forest Policy of

1988. In terms of percentage of forest cover with respect to total geographical area of Mizoram with 90.38 percent has the highest forest cover. The total Forest and Tree Cover area of the Mizoram is 19,277 sq km which is 91.44 percent of its geographical area and contributes 2.44 percent of India's Forest and Tree Cover. However, while India had a gain of 5871 sq km of forest cover within 2011 to 2013 Mizoram lost 63 sq km of forest cover in the same period.

Forests are important in two ways-ecologically and economically. Forests are environmentally important as they help in balancing oxygen and carbon dioxide level in atmosphere, help in mitigating air, water and noise pollution, regulate earth's temperature regime, climate or global warming etc. Forests act as a refuge and home of wild animals etc. Forests provide raw materials for various wood-based industries; it is one of the natural wealth which is shared by the rich and the poor alike.

India is one of the very few countries which inserted protection and improvement of natural environment (Article 51A (g) in its Constitution. The 42<sup>nd</sup> Amendment Act of 1976 transferred forests from the State list to Concurrent list.

Mizoram with a population of 1.09 million in 2011 has 52.11 percent urban population and 47.89 percent rural population. The average population density is 52 per sq km and 94.43 percent in Mizoram are tribals.

The Principal Conservator of Forests (PCCF) is the head of the Department of Environment and Forests. At present there are fourteen IFS (Indian Forest Service) and about twenty two Mizoram Forest Service (MFS) who occupy higher and more important posts in Environment and Forest Department of Mizoram. There are five circles with ten

territorial divisions and 60 ranges. Besides ten Protected Areas/Wildlife Sanctuaries, there are fourteen Community Reserved/Sanctuaries and the department is responsible to protect and preserve large areas of Reserved Forests. But there is acute shortage of staff as only 908 posts are filled out of 1359 sanctioned posts. Many field posts are lying vacant due to shortage of staff. The department has just over 500 field staff to look after the whole of Mizoram. Moreover, most of the present field staff is to retire soon from their service. If the government continues to fail to recruit new workers the Department would lack field staff.

One big problem faced by the Department is jhum method of cultivation. Large areas of forests in different parts of the state are being degraded each year by this slash and burn method of cultivation. Huge areas of forest are destroyed every year by forest fires mostly during jhum burning where the adjoining forests also burnt down due to failure to make proper fire-line to confine the fire within the jhum area. Within a span of five years (2006-2007 to 2010-2011) there was 1787 forest fire incidents reported with a damage area of 52,295 ha. Invaluable natural resources are being destroyed by jhum cultivation and forest fires. The ISFR 2013 mentions that Mizoram lost 186 sq km of moderately dense forest between 2011 and 2013. However, the rural villagers have no alternative other than jhum method of cultivation.

Wildlife Conservation includes all human efforts to preserve wild animals from extinction. It involves the protection and wise management of wild species and their environment. Some species have become extinct due to natural causes, but the greatest danger to wildlife results from human activities. Thus, we ourselves have created this



need for wildlife conservation. At present there are 10 Protected Areas within Mizoram with a coverage area of 1370.75 sq km which is 6.50 percent of the total area of the State. These Protected Areas consists of one Tiger Reserve known as Dampa Tiger Reserve, two National Parks namely Murlen National Park and Phawngpui National Park, and seven Wildlife Sanctuaries. Illegal hunting of wildlife animals is still rampant and there were 159 wildlife offence cases within in five years i.e., 2006-2007 to 2010-2011. Due to shortage of man-power it is almost impossible for the field staff posted in these Protected Areas to prevent illegal hunting. In Dampa Tiger Reserve alone twenty two (22) poachers and twenty six (26) guns were arrested by forest officials during the last two years. All these indicate that the people at large need to be more aware of the importance of conservation of wildlife and other natural resources.

The National Forest Policy (1988) emphasizes the creation of a massive people's movement through involvement of village communities living close to the forests in protection and development of forests. One of the noteworthy steps taken by the Government of India was the notification issued in June 1990 to all state governments to involve local communities in the management of forests. It is envisaged that the communities, in return for their participation in the protection and development of forest areas, will be entitled to a share of produce in a manner specified by the concerned State Forest Departments. This has led to the constitution of Joint Forest Management (JFM) program. Mizoram also adopted this program in 1990 as a result 762 Joint Forest Management Committees have been constituted. Through this program the department could realize the active and willing participation of the village communities in protection

and regeneration of forest resources and the environment. JFM has a big contribution towards the afforestation programs of the government.

Again the Government of Mizoram issued notification to constitute Forest Development Agencies in all the Territorial Forest/Wildlife Divisions in 2002. At present there are 452 Village Forest Development Committees (VFDCs) in the three Circles having Territorial divisions and the Wildlife Circle has forty five (45) VFDCs, and the total is 497 VFDCs. The government has also constituted another 598 VFDCs under Rehabilitation of degraded Jhumlands. The Department now could mobilize the active participation and support of the adjoining villagers in protecting the forest in general and the Protected Areas in particular. They could motivate the members of these agencies as the benefits are being shared with them.

One positive finding of the study is the contribution of the flag-ship program of the Government of Mizoram- NLUP towards protection of forests of the State. Beginning from the 1<sup>st</sup> Phase till the last /4<sup>th</sup> Phase of NLUP, the Department's NLUP Cell has selected 3197 beneficiaries and the total amount of money disbursed is Rs 28,85,97,365.00. Each beneficiary of the Department has 2 ha (two hectares) of land for bamboo plantation. The NLUP Implementing Board (NIB) reported that within the last four years Jhum cultivation has decreased to 45.5 percent and the number of families engaged in jhum cultivation is reduced to 20 percent with the jhuming area gone down to 6102 ha. The jhuming families have been reduced from 68,433 in 2010-2011 to 58,751 in 2012-2013. This is a positive and encouraging trend towards conservation of forests and environment in Mizoram.

Another important finding of the study is that the Department of Environment and Forests faces financial problem in relation with delayed release of funds from the Central Government as well as the State Government. Many programs of the Department are time-bound and seasonal which require timely release of funds from the funding agencies or authority. A number of programs could not be achieved as targeted due to scarcity and delayed release of fund.

As most of the employees of the Department are recruits of the 1980s they need to be aware of developments of new technologies and they should be well-versed with these developments; otherwise it is very difficult for any employee to be productive and efficient in their workings. Thus, the Department has to conduct more and more refresher and reorientation course trainings in these directions. Most of the respondents of the study said that there are a number of training programs conducted, but many of them do not attend these as they are not made compulsory.

The Department spends huge amount of money for awareness campaigns for the various programs. The support and cooperation of voluntary organizations and NGOs is essential in implementing the any program of government. It is through these awareness programs that the department could achieve the support of the people to a great extent. It is said that the leaders of major voluntary organizations and other NGOs are aware of the programs and activities of the Department, but the problem is with their members who are living in different parts of the State. The leaders of these organizations and the officials of the Department still face a huge challenge of making aware of these people

and convince them in the conservation and protection of environment, forests and wildlife.

### **Suggestions**

Based on the findings of this study the following recommendations/suggestions are made and if utilised, will contribute efficient and effective conservation and management of forests in general and in particular for the overall effectiveness in the functioning and working of the Department of Environment and Forests, Government of Mizoram. They are as follows:-

1. There is an acute shortage of man power especially in the fields of the Department of Environment and Forests, Government of Mizoram. Immediate steps have to be taken to fill up 451 vacant sanctioned posts. There is a need to make new recruitment to strengthen the staff; otherwise irreparable damage could arise leading to more problems due to shortage of staff.
2. Jhum cultivation should be at least checked, if not possible to stop at present, to prevent further deforestation and degradation of environment and forests. There is good potential to increase area under settled/permanent cultivation (103 ha) of the state's potential WRC area could be developed further leading to a huge reduction in jhum cultivation and forest fires. Jhum cultivators should be assisted to switch over to horticulture, poultry, fish farming, agro-based industry, cattle rearing, sericulture, carpentry, etc. There is a need to introduce improved land-use systems, agro-forestry practices and market linkages for produce coming from shifting cultivation lands with a view to improve the conditions of the forests and

people in the areas affected by shifting cultivation. The NLUP programmes of the government have to be improved and modified according to the changing situations and needs of the society.

3. Timely release of funds from the Central and State Governments should be introduced immediately so as to make use of financial resources at the right and appropriate time as most of the programmes and projects are time-bound and seasonal. It is essential for this.
4. To prevent and stop further encroachment of Notified Reserved Forests, the Department has to take actions to demarcate the various reserved forest areas with proper boundary pillars and cases relating to encroachment should be taken seriously and disputes solved without delay.
5. The employees of the Department should realise that without the support and cooperation of the people the goals and objectives would never be achieved by themselves alone. They should get the confidence of the public and at the same time the public should get the benefits of their support and participation in various schemes and projects of the government. A sense of ownership should be developed among the employees of the Department and the people of Mizoram. The people should realize that conservation and protection of forests, environment and wildlife is not for the officials but for the benefit of the whole society.
6. Public awareness in matters relating to the works of the Department should be made preserving and conserving the environment, forests, and wildlife for today and the coming future. The Department needs to continue awareness campaign

which has been instrumental in getting the support and cooperation of the people and it will continue to be an effective means of achieving this end as new and more programmes, projects, and plans would come up in the future.

7. Forest fires brought about a number of hazards to the environment, forests and wildlife. Proper fire-line should be made before burning of jhums. VFFPC should be provided with better equipments and training to fight forest fires. Ife
8. Wildlife protection is a huge task of the Department. The best method of protecting wildlife is to get the support and cooperation of the public in this aspect. Awareness campaigns in the fringe of the wildlife sanctuaries and getting the support of the local people is one of the most effective methods of protecting wildlife. Wildlife criminals should be punished as per the rules and regulations without delay.
9. Maintenance of plantations especially of roadside plantation is very crucial for the survival of the seedlings planted. Enough funds should be allocated for this. The Government should realise that maintenance and after-care of the seedlings planted is equally important with planting of seedlings.
10. Illegal felling of trees and sale of timber and NTFPs should be checked and stopped as this is an important source of revenue.
11. Some employees are not efficient and productive as they lack the required zeal and commitment to their works as well as the required skills and technical know-how of their works. The officers, especially at the higher ranks should be well-

versed on new developments in IT. The field staff should be provided with modern gadgets to be effective in discharging their duties.

12. A sense of ownership should be developed among the employees of the Department and the people of Mizoram. The people should realise that conservation and protection of forests, environment and wildlife is not for the officials but for the benefit of the whole society. The employees of the department should develop a sense of ownership.

To conclude, the Department of Environment and Forests, Government of Mizoram has been working very hard for the good of the people of Mizoram. The role of forests in maintaining ecological balance, environmental stability, sustainable economic development, and climatic conditions has been recognized by the people of Mizoram. Most of the people are now aware of the need and importance of conservation of forests, environment and wildlife through the never ending efforts of this Department. The achievements and performance of the Department is highly commendable. However, there is always room for improvements. The Department has faced a number of problems emerging from the higher authority, from the community, and even from other government departments as well. It is faced with financial constraints, shortage of man power, unsupportive activities from the community it served etc. The Department has to adjust itself according to the changing need of the society and it will continue to be one of the most important departments of Government of Mizoram.

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**INTERVIEW SCHEDULE QUESTIONS**

(List of Questions for the Officials (Group ‘A’ to ‘D’) of the Office of the Principal Chief Conservator of Forests, Department of Environment and Forests, Government of Mizoram)

Name of Interviewee:-----Date & Time of Interview:-

1. Length of service in the department:  
 less than 1 year       1-5 years       6-10 years  
 11-20 years       21-30 years       31+ years
2. To which group of employee do you belong?  
 Group ‘A’       Group ‘B’       Group ‘C’       Group ‘D’
3. What are the major programs and activities of the Department of Environment and Forests?
4. What are the major challenges faced by the Department in carrying out these programs and activities?\*
5. What are the reasons behind the success and failures of the Department?  
Reasons of Success:  
Reasons of Failures:
6. What was the method of your recruitment (at the time of entry into service)?  
 Direct recruitment       Indirect recruitment
7. Through which selection process/agency did you enter into service?  
 UPSC    MPSC    Departmental Exam    Interview    Compassionate
8. Do you think that promotion of employees in the Department is carried out in the right manner at the right time i.e., as per the rules and regulations?  
 Yes       No  
Any comment on this: \_\_\_\_\_
9. Do you think that there is fairness and impartiality in the Department in matters relating to transfer and posting of employees?       Yes       No  
Any comment on this: \_\_\_\_\_
10. Do you get adequate training to perform your duties and responsibilities efficiently, effectively, and economically?       Yes       No
11. What should be the future plans of the Department?
12. What steps can be taken by the Department to improve its working?

## Mizoramah sai 10 vel leh sakei 3

POST NEWS SERVICE

Ramsa zat hi hriat kilh kelh a har a, chhiarpui an han tih te pawh hian mihring anga chhiar theih an nih loh avangin a hmangchang hriate'n an chhut a ni ber zawk.

A chhut thei ber tur forests deptt chuan Mizoramah sai 10 vel a awmin an ring a, chief wildlife warden office atanga thu dawn danin, sai hi Mizoram chhim lamah a a tam ber nia hriat a ni.

Saikei chu 2014-ah chhiarpui neih a ni a, mahse Dampa Tiger Reserve-ah chauh chhiarpui hi neih a ni. Chu chhiarpui chuan sakei 3 a awm tih a ni.

Saiki an chhiar dan hi, ramhnuai a ek an zawng a, a ek chu tunlai thiamna hmanga endik a nih hnuah Dampa Tiger Reserve-a an hmuhte chu a pa pathum tiin an chhinchhiah.

"A pa a awm chuan a nu pawh a awm ang tih a chiang a, a pa aiin a nu hi tam zawk tura ngaih a ni," conservator of forest (wildlife) Lalrinmawia chuan a ti.

A ek hmuh loh path a awm theih thu leh ramnei nei ve lo an nih avangin insawn reng thei an nih thu a sawi bawk.

Mizorama sakei awmte hi keite a ni tlangpui tih an sawi.

Mizoramah savawm a la tam ang rengin an ring a, 'Man and animal conflict' (sain mihring a seh/ tihbuai) case reng reng savawmin mihring a seh a ni tlangpui tih sawiin, chuta tang pawh chuan savawm hi la awm nual turah forests deptt chuan an chhut a ni.

Sanghal pawh buh leh thlai hmun a tibbuai thin dan atanga chhutin, a la awm nual ang tih an ring. Sakhi leh sazuk te pawh la awm nual turah an ngai a, a inthlahpung chak chi an nih avangin mipuiin an humhalh thiam chuan sakhi leh sazuk te hi chu Mizoramah tam thei tur a ni, an ti.

Ramsa humhalh nan Mizoramah protected area (sanctuary) 10 a awm a, a vaia belhkhawmin a zau zawng hi Sq.km 1728.75 a ni. India sorkarin ram leilung zau zawng atanga chhuta 10% tal protected area-a puan ni thei se a duh a, Mizorama protected area hi Mizoram zau zawng atanga chhutin 8% a ni. Puan belh tur, bawhzui mek pakhat a awm.

"Ramsa humhalh hi Mizo mipuite hian a tul dan kan hre vek tawh a, kan tum leh tum lovah a inghat tawh zawk. Ruihhlo nen hian a tehkhin theih ang; ruihhlo pawh a buaithlak lai chu 'demand' a awm tlat hi a ni a. Chutiang chiah chuan mipuih ramsa sa pawh hi 'demand' a awm tlat a. To deuh deuhva lei ngam kan awm reng a, chu chu a buaithlak lai chu a ni," Lalrinmawia, conservator of forest (wildlife) chuan a ti.

Source: The Aizawl Post, Ningani, Sept 24,2015 Vol XIII No.222

Aizawl: Mizoram ah New Land Use Policy (NLUP) kalpui tan a nih atangin chhungkaw tin sum laklub. Per Capita income' chu nasa takin a pung a, kum 2010-2011 a Rs. 50,956 chu 2014-2015 ah Rs. 90,015-in a pung chho a ni.

Tunhnaia NLUP Implementing Board in Media mite tana NLUP chungchang zirhona an buatsub ah he thu hi Planning mithiamte chuan an tarlang a. Kum tina Per Capita Income punna hi 19.16% nin kum 2010-11 atanga 2014-15 a punna hi 76.65% a ni. Mizoram sum debchhuah 'Gross Domestic Product' (GDP) pawh nasa takin a pung nin

# NLUP

**TINRENG feature**

## Per capita Income a pung



- ◆ Kum 2010-11 atanga 2014-15 chhungin Central in NLUP atan vbc.1526.14 a pe.
- ◆ NLUP dawngu mi 1060 chu dawng chhuzawm tlaklo an nih vangin cancel a ni a, beta tang hian vbc.5 hum a ni.
- ◆ NLUP hnuai a hian Department 10-Agr, Horti, Vety, Fisheries, Forests, Industries, Soil, Sen, UD&PA leh LR&S te an thawkh a ni.
- ◆ Trade hrang hranga NLUP tiawhtlinna hi 60% vel a ni.
- ◆ 2015-20 chhungin NLUP IInd Phase kalpui leh a ni dawn a, beta hman tur vbc.460 threl a ni.

an sawi a, kum 2010-11 a GDP chu vbc.6,387.88 anih lain 2014-15 ah chuan vbc.12,498.69 a ni a. Kum 2014-15 a Mizoram economy thamna chu 8.46% a niin a thanna hi a sang hle a, a chhan lianber zingah NLUP a tel nin an sawi bawk.

NIB mithiamte sawi danin NLUP chungchang zirchiangu Mizoram University (MZU) mithiamte chuan kum 4 chhungin thingtlang loneih chu 45.5%-in a tlahniam a, thingtlang lo nei chungkua pawh 20% a tlahniamin thingtlang loneihna area pawh hectare 6102 (22.52%) in a tlahniam nin an sawi a. Lo neia eizawng

hi kum 2010-11 ah chhungkaw 68,433 an awm lain 2012-13 ah 58,751 in a tlahniam a. Hetih lai hian leilet a eizawng (WRC) chu nasa takin an pung thung a. Kum 2009-10 a WRC hectare 11,198 chu 2013-14 chu 16,170 hectare-in a pung a, a punna hi 44.4% a ting a ni. MZU mi thiamten Serthlum (Mandarin Orange) bik an zirchianna ah chuan kum 2017 ah Serthlum tharchhuah hi 17.25%, 2017-20 ah 59.64% leh 2010 ah chuan 100%-a pung turin an chhut a. Kum 2012-13 ah Serthlum tharchhuah hi metric ton 24,100 anih lain 2014-15 ah chuan 55,960 mt a ni.

Source: Zalen, Pathianni, Vol.II Issue No. 43, Nov 01, 2015. p.1

# Fire Prevention Week 2015 hawn a ni

## NE-ah ram tikang nasa ber nia hriat kan ni - CM



**January 19 24 chungu hman tur 'Fire Prevention Week 2015' chu nimin khan chief minister Lal Thanhawla'n IS&PR auditorium-ah a hawnng. Lal Thanhawla chuan, Mizoram chu India hmarchhaka ram tikang nasa ber nia hriat c. r. h thu a sawi a, Mizote chu sava leh sangha tura hrâi ching hnam kan nih thu a sawi bawk.**

Fire Prevention Week hawn- na hi Environment & Forest minister Lalrinmawia Ralte-in a kaihrui a; Chief Minister chuan, "Forest Survey of India chhûd danin kum tin Mizoramah sq.km. 980 vel ram a kang thin a, India hmarchhakah ram tikang nasa bera hriat kan ni. Tunlai khawvel changkang tawhah chuan a zahthlak hle," a ti.

Lal Thanhawla chuan, ram kang lai hmuhawm thira thir thalai zingah an la awm thu sawiin, pawl a tih thu a sawi a, "Thil siam zawng zawng hmanah Chanchin Tha hril tura kohte kan ni a, nungchate leh thing leh mau thlang phaka kan hril lo hi a pawl hle," a ti. "Thing leh mau duat lo a, sava leh sanghate tura hrâi ching hnam kan ni a, a zahthlak hle a ni," a ti bawk.

Kan ram chu hring mawi ringawt mah se lawm tur a nih loh thu sawiin Chief Minister chuan, "Ramngawin a khuh tak tak chu ram zau zawng atanga chhûta sawma pakhat pawh a tling lo. Kan ram thing leh maute hi humhalh theuh ila, tuna hma kan lak loh chuan thangtharte'n fan ihlanah anchhia min 'awh ang tih a hlauhawm a ni," a ti.

CM Lal Thanhawla chuan, kum tin Green Mizoram Day pualin tha leh zung, sum leh pai tam tak sen ral a nih thin thu sawiin, "Thing phunte hi a thang lian ta maw tihah thu awih lote'n road side reserved zah miah loin an vat a, an hal zui thin. Road side reserved venhim kawngah hian department leh mipuite'n hmalak a hun tawh hle," a ti a; ram kang tam tak chu sapel mite fimkhur loh vang leh an huan/loramte meilam sial hmasa loa hal thin vang a nih thu a sawi.

Chief Minister chuan, kangmei venkawngah MLA 40-te'n an bial theuha khaw tin V/C-te leh YMA hruiute nen tan lak dan zawng se a duh thu a sawi bawk.

PCCF Lalramthanga tarlan danin, Fire Prevention Week hi kum 2000-ah hman tan a ni a, hman a nih chhan chu - nasa lehzuala ramngaw leh nungchate humhalh inzirtima hun hman a nih theihna atan a ni.

Fire Prevention Week hawn-naah hian minister pahnih - R Romawia leh H Rohluna, deputy speaker R Lalrinawma leh parliamentary secretary Hmingdailova Khiangte te pawh an tel a; zirlai thahnem tak an tel bawk.

Source: Vanglaini, Tuesday, Jan 20, 2015. p.1

# Mizoramah Green India Mission hawnng

## Ramngaw tihchereu kan bansan loh chuan tuchhuan ten anchhia min lawh duh mai ang: CM

**Aizawl : January 14** National Action Plan on Climate Change hnuuia mission pariat zinga pakhat, India rama kalpui mek "Green India Mission" chu nimin khan chief minister Lal Thanhawla'n Art & Culture Auditorium, Beraw Tiangah a hawnng.



Green India Mission hawnna inkhawmah chief minister Lal Thanhawla chuan khawvel sik leh sa danglam chho leh boruak lum chho mek siamthat hna chu khawvel ram tam takin an thawk mek a, hei hi India pawhin a ngaipawimawh hle a ni, a ti.

Lal Thanhawla chuan, Mizoramah pawh boruak lum chho mek (global warming) nasa taka tuar thei kan nih thu a sawi a; "Ramngaw siam thar te, nungcha leh chungleng sawa'te, lui sangha te mumal tak leh tha taka kan humhalh a tul a ni," a ti.

"Chhuan lokal leh zel tur ten chenna tlak leh nuam an neih theihna turin ramngaw tihchereu leh nungchate dim lohna hi kan bansan a pawimawh a; tun ang renga kan kal chuan kan ram zimte hi thlaler ramro ah kan chantir mai ang tih a hlauhawm a, kan thlan kotlangah kan tuchhuan ten anchhia min lawh duh mai ang tih a hlauhawm a ni," a ti.

Chief minister chuan kan mihring puite lakah chanchintha kan hril tha viau a, mahse A thil siam dang nungcha te, lui sangha te leh thing leh mau te chungah pawh kan hril a tul a ni, a ti a. Nungcha leh sava te leh lui sangha, tur hmang duh hial khawpa nurawanna kan lantir hian A siamtu zah lohna leh pawisawina a ni a, chuwangin a chhelai siam thatu kan nih a tul tak meuh a, a ram leilung fate hian neitu rilu pua tan kan lak thar sauh sauh a pawimawh hle a, khawtdang nun siam thatna kawngah pawh theihtawp kan chhuah a hun hle a ni, a ti bawk.

Mission hawnna inkhawm kaihruiate Lalrinmawia Ralte, Minister of State for E&F pawhin thsawiin, sik leh sa danglana avang leh global warming avanga khawvelijarsatna a tawh siam that kawngah kan zava'in k pawimawh a ni, a ti a; ng thil hi veilo leh ngaituahna seng duh loa 'kei ber ka awm tawh loh chuan a pawl hlei nem' ti mai loa a siam hnaah tan nasa taka la tur kan ni, a ti.

National Action Plan on Climate Change hnuuia mission pariat zinga pakhat a ni a. Ramngaw hectare maktaduai 5 a zau siam tumna a ni. He scheme hmanna senso tur hi hmarchhak bial tan central sorkarin 90 % a tum ang a, a bak chu state sawrkar tum tur a ni. 12th Plan chungu atana hman tur Cheng vaibelchhe 13,000/- dah a ni a, kum 10 chungu lo awm tur atan Cheng vaibelchhe 46,000/- ruahman a ni bawk.

Source: The Aizawl Post, Nilaini, Jan 14, 2015 p.1

## *2009-2014 chhungin Mizoram pumah thingzai cubic 4973.229 man a ni*

Environment & Forest department chuan January 2009 atanga kumin October thla thleng khan thingzai cubic metre (cum) 4973.229 leh thing tum 71 an man tawh a; hemi chhung veka thingzai man an tihralna atangin Rs. 1,95,99,308 an hmu.

E&F department SPIO-in RTI Act hmanga zawhna a chhan danin, E&F department chuan kum 2009-10 chhungin thingzai cum 30.724 an man a, kum 2010-11 chhungin cum 328/459, kum 2011-12 chhungin cum 1021.408, kum 2012-13 chhungin cum 1220.084 leh kum 2013-14 chhungin cum 2372.554 leh log 71 an man.

Thingzai mansak

avangin kum 2009 atang kumin October thla thlengin E&F department chuan mi 3,092 an man tawh. Heng mi man zinga mi 660-te chu Court-ah thiam loh chantir an ni a, hrem an ni.

Thingzai mante chu lilam leh hralhna atanga sum hmuh zat zawhna chhangin, E&F department SPIO chuan, January 2009 atanga October 2014 thlengin Rs. 1,95,99,308 hmuh a nih thu a tarlang.

Thingzai man (lilam/hralhna) atanga sum hmuh dan chu - kum 2009-2010 ah Rs. 9,940, kum 2010-11 ah Rs. 3,60,382, kum 2011-12 ah Rs. 15,18,778, kum 2012-13 ah Rs. 2,44,247 leh, kum 2013-14 ah October 2014 thlengin Rs. 1,52,62,962 hmuh a ni.

Source: Vanglaini, Tue, December 2, 2015. p.1



TUALCHHUNG

2

AIZ

## Dampa Tiger Reserve-ah kum 2 chhungin Ramvâk mi 22 leh silai 26 man a ni

Tun hnai kum hnai chhungin Dampa Tiger Reserve chlunga ramvâkê thin mi 22 man an ni a, chung mite hnen atang chuan silai 26 man a ni.

RTI Act hmanga zawhna Environment & Forest department SAPIO-in a chhan danin, silai an mansakte hi khaw hrang hrang 14-a mite an ni a; chung khuate chu - Damparengpui, Khawhnai, Kawnmawi, Dinthar, Phuldungsei, West Phaileng, Keisalam, Chhippui, Dapchhuah, Andermanik, Teirei hnar, Dilkawn Serhmun, Tut dung leh Dâpkhan khuate an ni.

Silai an mante hi tualchher silai 11, ulhbun (SBBL) pakua

leh maniatore pahnih a ni a; Dampa Tiger Rerserve-a ramvâk thunte leh silai an mansak zingah Tripura leh Bru refugee camp-a awnte pawh an tel a ni. Dan kalha sa kap mi 17 chu Wildlife (Protection) Act 1972 hmangin hrem an ni tawh.

Dampa Tiger Reserve bul hnai kuaah sarêp kg. 11 leh sahrang 258 an man tawh a, an manna khuate chu - Khawhnai, Lallen, Silsury, Phuldungsei, Damparengpui, Kawnpui leh Chhippui kuaahte a ni. Sarêp an mante chu Court-ah an thlen a, an thlen bak chu an hâl ral thin niin an tarlang.

E&F field director Laitlan-

hlua Zathang chuan, Dampa Tiger Reserve leh a chhehvela ramvak thin an man zinga Mizo pasarih, Bru pasarih leh Chakma parukte chu thubuai siamsakin, Aizawlah thlen an ni a, thenkhat chu Central Jail-ah tantir an nih thu a sawi.

Laitlanhlua Zathang chuan, Tripura-a Chakma-te'n saphu kâwr an duh vangin Dampa Tiger Reserve-ah silai nen an kal thin niin a sawi a; Bru refugee camp-a awnte pawh an ramvak thin tih sawin. "Theihtawpin tan la mah ila, kut insuih veka kan ding a nih loh chuan ven hneh a harsa hie a ni," a ti.

Laitlanhlua chuan, Dampa

Tiger Reserve bul hnai kuaa mipuite chu ramvâk lo turin an briattir thin a, mahse ramvâk lui duhte chuan silai an thiat a, ipteah an ak bo a, Tiger Reserve ngaw chhungah an vuah khawm leh thin niin a sawi a; Ramvak silai an mansak zingah pastor silai an hawsak pathum a tel tih a sawi bawk.

Dampa Tiger Reserve-ah hian forester pali, forest guard pathum leh contact-a thawk forester pahnih leh forest guard pali an awm mek a; ni tina inhlawh thin mi 14 awmin, office-a thawkte nen mi 170 velin Dampa Tiger Reserve hi an enkawl a ni.

Source: Vanglaini, Friday, Aug 29, 2014. p.2

## Green Mizoram Day pualin thing 27,45,590 phun tawh

Mizoramah kum 1999-a Green Mizoram Day hman tan a nih atanga kumin Green Mizoram Day thlengin Mizoram hmun hrang hrangah thing tiak 27,45,590 phun a ni tawh.

Green Mizoram Day hi kum 1999 atangin kum tin fūr laiin hman thin a ni a, a ni bik awm loin, fūr laia ni remchangah hman thin a ni. Tun hnuah erawh chuan Green Mizoram Day chu June 11-ah hman tawh tur a nih thu, Environment & Forest hotute chuan an sawi.

Kum 2005-a Forest Survey of India-in state hrang hrangte ramngaw neih dan a tarlan dan chuan, Mizoramah thing leh mauin a bawh zau zawng chu sq.km. 18,684 a ni a, hei hi ram pumpui zau zawng atangin 88.63% a ni.

Forest Survey of India vekin kum 2011-a state hrang hrangte ramngaw neih dan a tarlanah chuan, Mizoramah thing leh mauin a bawh zau zawng chu sq.km. 19,117 a ni a, chu chu ram pumpui zau

zawng atanga 90.68% a ni. Ramngawin a huam chin erawh chu sq.km. 134 a ni a, chu chu ram zau zawng atangin 39% a ni.

Kum 2013-a Forest Survey of India-in state tinte ramngaw neih dan a tarlan tharah chuan, thing leh mauin Mizoram a bawh zau zawng chu sq.km. 19,054 a ni a, chu chu ram pumpui zau zawng atanga chhûtin 90.38 a ni. Mizoram in ramngaw chhah a neih zau zawng erawh chu sq.km. 138 chauh a ni thung.

### MIZORAMA THING PHUN

Kum	Phun zat
1999	1,72,511
2000	1,97,054
2001	1,28,215
2002	1,04,087
2003	64,072
2004	2,07,919
2005	1,04,875
2006	59,715
2007	1,61,683
2008	1,58,673
2009	2,92,051
2010	2,08,853
2011	2,06,339
2012	64,894
2013	5,38,246
2014	76,403
<b>Total</b>	<b>27,45,590</b>

Source: Vanglaini, Sun & Mon, Sept 7 & 8, 2014. p.1



Office of the Principal Chief Conservator of Forest : Govt. of Mizoram

Source: Filed Study 25<sup>th</sup> November, 2015



State Bird: Hume's Bartailed Pheasant : Local Name : Vavu

Source : Mrs Hume's Pheasant at <http://www.google.co.in>

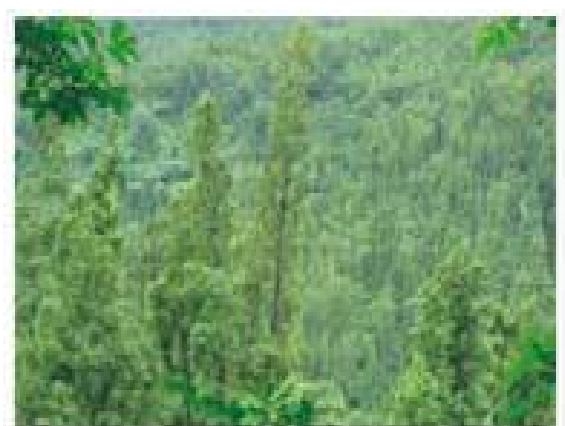


State Animal: Serow, Local Name: Saza

Source : Images for Serow Mizoram at <http://www.google.co.in/serow>



Very Dense Forest



Moderately Dense Forest



Open Forest



Scrub

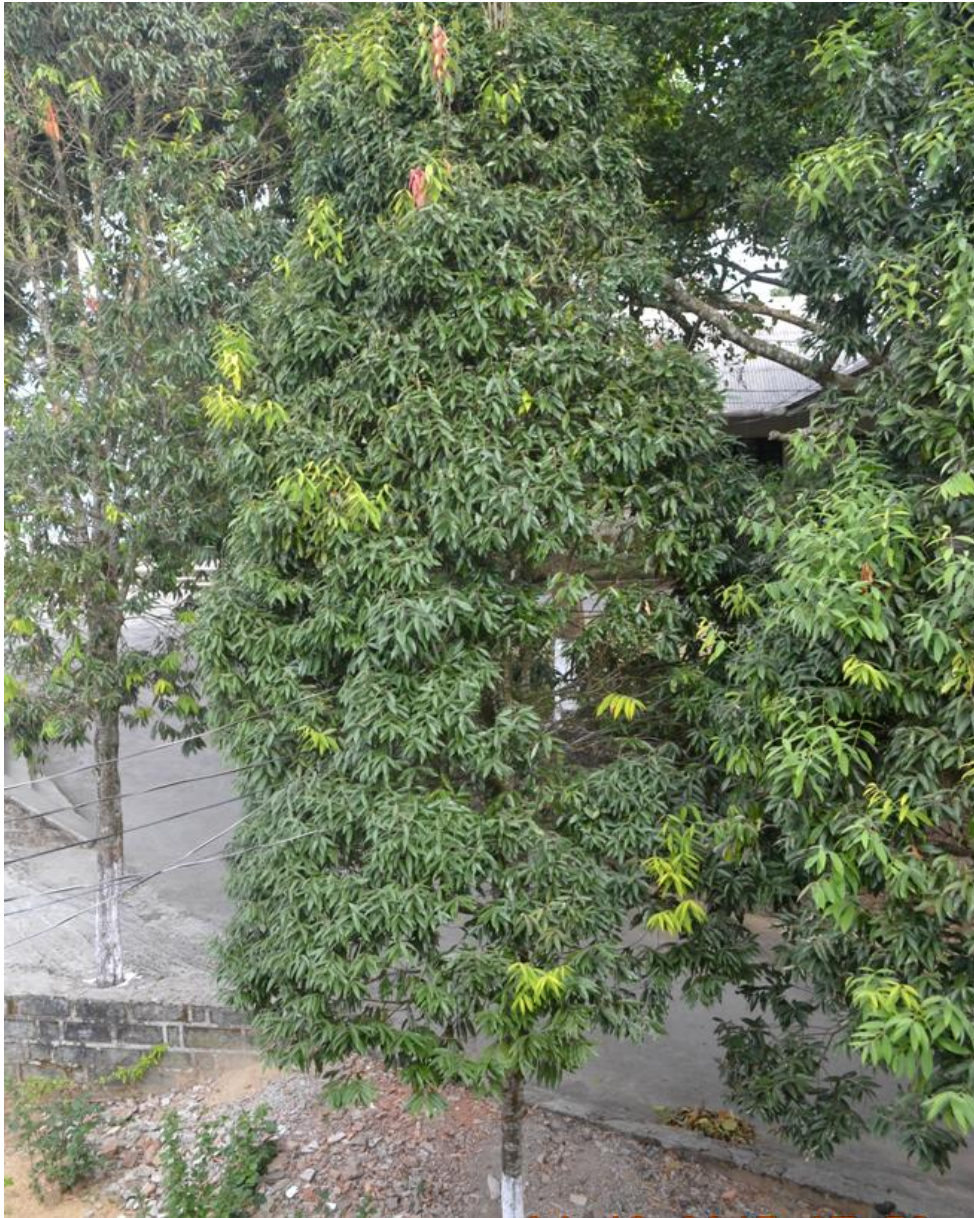
Source: India State of Forest Report 2013 p. 16.



State Flower : Red Vanda, Local Name : Senhri

Source : Orchids of Mizoram Pictorial Album

Orchidology Section E & F Deptt. Govt. of Mizoram



State Tree: Iron Wood Tree, Local Name : Herhse

Source : Field Study 25<sup>th</sup> November, 2015