# **CHAPTER - I**

### **INTRODUCTION**

#### 1.1 <u>BACKGROUND</u> :

Among various infrastructures, transportation is the most widely accepted infrastructure for the development of a nation. As we are prepared to enter into the 21th century, the pace for our development has been accelerated by different modes of modernized transportation. The need of transportation is deeply penetrated in the daily life of people. It has made the world smaller and human being feel more close ever before, whether they live in any part of the world.

While we look towards developed countries we find that they have been using modern and technically advanced modes of transportation which are most economical and suitable as per their present needs. The developing countries have been using very old modes. These are non-economical and not sufficient to fulfil their present needs. Investment in transportation requires vast amount which is very difficult to bear by poor and developing countries. The lack of transportation facility affects the whole economic structure of a country and creates hindrance in the development. Transportation is the conveyance of persons or property from one place to another.<sup>1</sup> Transportation is concerned with a movement of persons or goods for some particular purpose.<sup>2</sup>

It is merely a means to serve other objectives. Some of these objectives are economic to exploit natural resources, to raise agricultural productivity, to increase industrial output, to enhance per capita consumption and so forth. Side by side with these are non economic objectives : to promote political cohesion, to strengthen the country's defence, to bring about certain socially desirable locational patterns etc.<sup>3</sup>

The function of transport is to carry commodities from points where their marginal utility, the significance of a little more or a little less, is relatively low to where it is relatively high.<sup>4</sup> Effective transportation is indispensable for economic progress. Without adequate facilities for moving goods and people from place to place, economic and social activities can be carried on only a limited, local way. Under such conditions, economies have seldom, if ever, advanced very far. So important is transportation that it has generally been a major concern of

<sup>1 &</sup>lt;u>The Encyclopedia American</u> International Edition - 1992. Volume - 27, Page - 22.

<sup>&</sup>lt;sup>2</sup> G.C. Bamford and H. Robinson, <u>Geography of Transport</u>. Macdonald and Evans Ltd. London - 1978, Page - 8.

<sup>&</sup>lt;sup>3</sup> Hans Heymann, JR - The objectives of transportation. <u>Transport</u> <u>Investment and Economic Development</u> (Gary Fromm, Editor). The Booking Institution, Transport Research Program, Washington D.C., 1965, Page - 18.

government in all progressive countries. Sometimes, the government owns and operates one or more means of transport.<sup>5</sup>

Transportation is only one of the many ingredients necessary to accelerate the pace of economic progress, but in many instances it pays the key role, and in all cases it sets the limits.<sup>6</sup> As we know that mobility is essential for developing countries and transportation is a factor in the success or failure of the entire development effort. Food, shelter, health, education and useful jobs can be realized with the help of transportation. The common goal for most of the developing countries in the world is to provide enough for people to eat and to supply the kinds of food that will assure and adequate diet. Transportation occupies pivot role in the development because it is a back-bone for the country either it is developed or developing nation. At present there are various transportation systems viz. water, air and land transport. These all transport systems have own nature, significance, characteristics, merits and demerits.

Water transportation is one of the least expensive type of movement because less energy and less expense is necessary to move a

<sup>4</sup> Michael R. Bonavia - <u>The Economics of Transport</u>. Digswell Place, James Nisbet Co. Ltd., Cambridge, Reprinted 1957, Page - 2.

Turman C. Bigham and Merrill J. Roberts. <u>Transportation Principles and</u> <u>Problems</u>. M.C. Grawl - Hill Book Company Inc. New York - 1952, Second Edition, Page - 1.

<sup>6</sup> Wilfred Owen - <u>Distance and Development</u> : <u>Transport and</u> <u>Communication in India</u>. Transport Research Program, The Booking Institution, Washington D.C., First Edition - 1968, Page - 1.

given weight on water. A substantial amount of goods move by ships and barges on coastal and inland waterways. Water transportation is very low in cost for shipping bulky, low-value, non-perishable products such as sand, coal, grain, oil and metallic ores. On the other hand, water transport is the slowest transportation mode and is dependent on climatic condition.<sup>7</sup>

Nepal is a land locked country so water transportation is not possible. Other factor is that our rivers flow with high current so these are not navigable.

Among various modes of transportation, the most modern, air transportation is least affected by topography or other natural conditions in following a straight-line route. Its main characteristics are speed and flexibility. Air freight rates are considerably high but it is ideal where speed is essential and/or distant markets have to be reached. Among the most frequently air-freighted products are perishables and high-value, low-bulk items. Air freight reduces required inventory levels, number of warehouses, and cost of packaging.

About 83 percent part of Nepal is covered with mountain, hill and forest so there is lack of roads and bridges. Airway is the most suitable mode but too expensive. So poor people are not in a position to bear fare of air transport. Further Nepal's high mountains and narrow

Philip Kotler - <u>Marketing Management, Analysis, Planning,</u> <u>Implementation and Control</u>, Prentice Hall of India P. Ltd., New Delhi -1, 6th Edition - 1990, Page - 582.

valley makes flying difficult. During the monsoon, internal service have to be cut because of poor visibility and muddy runways.

Motor (Land) transport is different in so many respects from the other mode of transport that it falls into an almost totally independent category with regard to its technical characteristics, ownership, operation, public and private use, financing, and even the relationship of the market to output considerations. Motor transport provides a very significant proportion of its services for consumption purposes. It has many advantages, but the primary benefits are speed, flexibility, economy, reliability and convenience.<sup>8</sup> Consequently motor transport have steadily increased their share of transportation. This is most efficient mode of transportation for short hauls of high value merchandise.

Transportation sector was most neglected sector in Nepal during Rana regime. Politically they had adapted isolationist policy in mobility. Transportation facilities were made limited to maintain the supply of essential commodities to Kathmandu valley. Till 2007 B.S., there was only 376 KM road in Nepal. In which there was 5 KM pitch<sup>9</sup>, 83 KM gravel and 288 KM fair weather road. It is very difficult and expensive to construct road in mountains and hills although by the end of first 9 months of fiscal year 2052/053 B.S. total available road facility

<sup>8</sup> Charles A. Tuff - <u>Commercial Motor Transportation</u>, Richard D. Irwin Inc. Homewood, Illionis, Fourth Edition - 1969, Page - 8.

<sup>&</sup>lt;sup>9</sup> International Development Centre of Japan - <u>Current Status and</u> <u>Development Prospect of Transport Sector in Nepal</u>, - 1979, Page - 16.

was 10109 KM Similarly by the end of first 10 months of fiscal year 2052/053 the total number of vehicles was 1,64,814.<sup>10</sup>

Ropeway is mostly suitable for cargo traffic specially in hilly areas. Until early 1950's the ropeway played an important role as the only means of transportation other than porters in carrying trade between India and Kathmandu valley. At present, 42 KM long rope-line from Hetauda to Kathmandu, remains to be a poorly utilized transport facility in Nepal. Although several recommendations for improvement has been made, none has been implemented.

Pipelines are a specialized means of shipping petroleum and chemicals from sources to markets. Pipeline shipment of petroleum products is less expensive than rail shipment, although more expensive than waterway shipment.

Railroad is a form of land transportation in which a locomotive, or self propelled motor unit, draws a train of cars over a track of two parallel rails placed on a permanent roadway. The flanged wheel rolling on iron or steel rails, which involves relatively little friction, furnishes a very economical and reliable mode of transportation.<sup>11</sup> In spite of shrinking share of total transport, railroads remain the largest transportation carrier in most of the countries.

<sup>10 &</sup>lt;u>Economic Survey FY - 1995/96</u>, H.M.G. Ministry of Finance, July 1996, Page - 65 & 67.

<sup>11 &</sup>lt;u>The Encyclopedia American</u> International Edition - 1992, Volume - 23, Page - 205.

#### **1.2** FOCUS OF THE STUDY :

Railroads are one of the most cost effective modes of shipping carload quantities of bulk products - coal, sand, minerals, farm and forest products - over long land distances. Railroad can transport very heavy loads at a small cost in energy for very high speeds at a not prohibitive increase of energy. Rail's main contemporary advantages lies as a provider of inter-urban travel. For domestic journeys of around 250 KM rail can even complete favourably with air transport. Road transport by the private car is usually rail's main competitor. Railways are able to achieve higher speeds and also easier access into the heart of cities. It also has a role to play in travel over shorter distances. For example, it is widely used for commuting into large cities, especially, of course, in the case of London. Private car congestion becomes more self-defeating as city size increases and, therefore greater use tends to for travel within as well as into cities, since large volume of passengers can be transported efficiently over short distances. London, Liverpool, Paris, Moscow, and Tokyo all have underground rail system to serve this need.<sup>12</sup>

In the absence of water transportation the railway provides the most economical way of carrying heavy bulk materials long distances, and in many countries, the railway system is the principal method of mechanized movement. Although there have been substantial reduction in certain types of traffic that formerly moved by rail. One of these is perishables, where alternative services were available by truck and highway, another is crude petroleum products, which have shifted from rail to pipeline, and a third is coal, where sources of energy have shifted to petroleum and natural gas. A decline in rail movement of forest products has also occurred, reflecting the economy of logging trucks which provide complete transportation from forest side to mill without costly transhipment.<sup>13</sup> The next factor is that, in most of the countries, governments have been restricting to cut trees for the preservation of environment. So there is substantial reduction in forest products. But in the nineteenth century railway was the main mode for transportation of log from the forest. 71 logging railroads flowered at Michigan alone shortly after the end of the civil war.<sup>14</sup>

Nepal is a developing country so effective and suitable mode of transportation is essential for the further development. Because it is the function of transport to supply the means to bring together the resources used in the productive processes and to provide access to the markets for the resulting products.<sup>15</sup>

Since Nepal has no water transportation, the railway can provide most economical way of transportation. But this sector is most neglected. The first railway of Nepal was commenced in Nautanwa Jungle to export timber as per contract of British Company. Later, the parts of rail carried away by Janakpur Railway for Bizalpura section. At the time of Rana Prime-minister Chandra Samsher, the second railway

<sup>12</sup> C.G. Bamford and H. Robinson - Op. Cit. Page - 30 & 31.

<sup>&</sup>lt;sup>13</sup> Wilfred Owen - <u>Strategy for Mobility</u>. The Booking Institution, Transport Research Program, Washington D.C. - 1964, Page - 95.

<sup>&</sup>lt;sup>14</sup> Kramer Adams- <u>Logging Railroads of the West</u>, Superior Publishing Company, Seattle, Washington - 1961, First Edition, Page - 11.

Dudley F. Pegrum, <u>Transportation Economics & Public Policy</u>, Richard
D. Irwin Inc. Homewood, Illinois, Revised Ed. 1968, Page - 4.

named 'Nepal Government Railway' (NGR) started from Raxual ( India ) to Amlekganj in 1927 A.D. It was 47 KM long narrow gauge train and now it is closed. In 1937 A.D. (1994 B.S.), the third 53 KM ( 33 Miles ) long narrow gauge railway was constructed at the time of Rana Prime-minister Judh Samsher. 'Nepal Jaynagar Janakpur Railway' (NJJR) was constructed between Jaynagar (India) to Bilzapura. Now it is known as 'Janakpur Railway' (JR) which has been running under 'Nepal Transport Corporation' (NTC). Transport sector has been given priority in every plan but railway is the most neglected sector. JR is running in loss due to its poor performance. In fact, JR is only one mode of transportation for the people of Dhanusha and Mohottari district and there is no any competiting road. JR has been running in monopolistic situation. Nevertheless, it is not exploiting the monopoly situation and could not develop. It has not extended service. The performance, speed and hauling capacity are same as before. The most indispensable mater is to increase the revenue and performance of JR so that it can meet the present need of this area. It is a challenge for government to preserve and promote railway of Nepal.

#### **1.3 <u>STATEMENT OF THE PROBLEM</u> :**

Janakpur Dham is a holy place of the Hindus. Due to famous temple of Goddess Sita ( Janki ) and Lord Ram and being a cultural and religious centre a large number of pilgrims, visitors, and tourists come to Janakpur especially on different holy fairs. Further, Janakpur is the main center of the Central Terai region for official, educational and business point of view. A large number of people come to Janakpur to fulfil their objectives. The largest cigarette factory of Nepal, Janakpur Cigarette Factory Ltd., is also situated at Janakpur Dham. All these factors affect the transportation sector. Large volume of cargo and passengers are transported in this area. Janakpur Railway is a single mode for the connection of Jaynagar (Indian border) to Janakpur Dham and in northwest, Janakpur Dham to Bizalpura. There is no alternative mode of transportation for the people of this area. To accelerate the regional and economic growth, transportation has significant role. Janakpur Railway (59 years old single railway in Nepal ) has been operating in poor condition. Although it has been running in monopolistic situation. The revenue trend is negative. Its tracks are in pitiable condition, rolling stocks are old, bridges are either weak or damage, communication system is worst, service is not safe and punctual. In rainy season it generally closes service due to breakage of bridges, culverts and tracks by flood.

JR has deficiency in liquidity; negative return; unavailability of funds for long term investment in fixed assets; lack of modernized technology, technical assistance, machineries, equipments, repair and maintenance; low employee morale; over staff; fully dependent on other countries for the supply of fuel and materials. All these are the hindrances for the proper development of JR. Due to above various problems JR could not expand its network during 59 years' life and it is not able to meet the expectations of people. In fact, proper development has not been made in comparison to other means of transportation.

Transportation is an indispensable per-requisite for the economic prosperity and Nepal has a great challenge to facilitate modes of transportation. The feasibility of development of railway is extremely high in Terai region which covers more than 17 percent land of Nepal. Railway is the most suitable and cheap mode of transportation for our country, especially in Terai area. However, the present study is an attempt to analyse the performance, service, and contribution of Janakpur Railway in the field of transportation. The following important problems have been noted :

- a) Janakpur Railway is 59 years old but it could not draw benefits from long experience. The performance of JR is not satisfactory. It has not changed technology as per present need.
- b) Volume of cargo and passengers have been decreasing gradually.
- c) The revenue trend of JR is negative whereas it has been enjoying monopoly situation.
- d) JR has not been providing punctual, regular and reliable service as it has paucity of essential means. The condition of rolling

stocks, tracks, bridges, culverts, communication system (telephone and signals), platforms, and godowns etc. is poor.

- e) JR has no funds to spend on long term investments and fixed assets. The government is not assisting properly to improve the condition and extend the length of railway.
- f) The present number of employees is maximum for only 51 KM train service so over staff is a burden for JR.

#### 1.4 <u>OBJECTIVES OF THE STUDY</u> :

The main objective of the study is to assess the contribution of 'Janakpur Railway' in the field of transportation. The following are the specific objectives of the study.

- a) To analyse the cause of the poor performance of Janakpur Railway.
- b) To examine the performance of JR in its ability in discharging the service facility to the people.
- c) To conduct an opinion survey of Janakpur Railway's employees, businessmen, and general people to know the opinion towards JR.
- d) To examine the revenue generation and expenditure trend of JR.
- e) To measure the contribution of different stations in passenger and cargo traffic.
- f) To give suggestions and recommendations for the improvement of JR.

#### 1.5 <u>RESEARCH QUESTIONS</u> :

The following research questions are proposed to fulfil objectives of the study.

- a) What is the contribution of Janakpur Railway in the field of transportation ?
- b) What is the ability of JR in discharging the service facility to the people ?
- c) What is the opinion of employees of JR, businessmen and general people towards JR ?
- d) What is the position and trend of revenue generation in JR?
- e) Which is the proper way for the improvement of JR ?
- f) Which have the problems and hindrances been confronting by JR?
- g) What is the contribution of different stations in passenger and cargo traffic ?
- h) What is the cause behind deterioration in passengers and cargo volume ?
- i) What is the feasibility for the extension of JR ?

#### **1.6** <u>NEED OF THE STUDY</u> :

A study of 'Janakpur Railway' is felt utmost necessary because of the following causes :

- a) For the measurement of performance of JR and its contribution in the field of transportation, the study is essential.
- b) Since JR, is only one media of transportation in this area, it is the most challenging question before the nation to operate it efficiently and JR should fulfil the needs of people, so the study is needed.
- Weak points prevailing in the corporation should be found out so that problems can be solved and the improvement in JR will be done. For this purpose, the study is necessary.
- d) Depending on single mode of transportation is not feasible. Consequently railway should be either restructured or alternative arrangements should be made as per present need. We can use our own source of power i.e. electricity in railway and it will lead to us in the way of independence. Thus we will be able to reduce air pollution simultaneously.
- e) Development in infrastructure (e.g. railway) has direct correlation with regional and national development so the study is important.

f) JR has been operating in loss and its volume of cargo and passenger have been decreasing. So the study is important to know the causes of deficiency in revenue and performance.

#### **1.7** <u>LIMITATION OF THE STUDY</u> :

The study is concentrated mostly on eight fiscal years' data, i.e. from 2045/046 to 2052/053, to show the contribution of JR towards its discharging service (Passenger and cargo traffic). In this study, among various areas of JR, the operating activities and causes for decline in service have been taken into account. Further, the expenditures and revenues have been taken into account to examine the profitability.

For inferential analysis, the opinion survey has been conducted by questionnaire to know the opinion of employees and general people. Stratified & Judgemental sampling has been done which include 33 administrative employees, 19 technical employees, and 10 general people. Out of total employees of JR almost 20 percent respondents have been taken from each group which consist different levels and departments ( sections ).

## **CHAPTER - II**

## **REVIEW OF LITERATURE**

#### 2.1 <u>TRANSPORTATION : THEN AND NOW</u> :

Man is a slow moving but most intelligent social animal. Since hunting stage, he has been fighting against nature uninterruptedly in the expectation of making life more safe and convenience. Man found himself at a great disadvantages in the matter of speed, strength and endurance. Consequently, he began to divise measures to remove these handicaps. With the help of devices he defeated speedy and strong animals and made command on them. Gradually he conquered water and air and removed all obstacles and obstructions that nature had placed in his way. To attain his objectives he had to make numerous sacrifices. After attainment of one objective another appeared in his mind and he again prepared himself for the new and more difficult task. The history of these efforts and achievements is the history of transport, and, at the same time the history of civilization.<sup>16</sup>

In the beginning, man was more oriented to be self dependent than to be dependent on others. But he felt trouble when animals chased him and faced problem at the time of movement of bulk volume of goods as he was unable to carry it. Thus he felt the need of transportation. Confidently, woman has been the first beast of burden in the history of transport. Even among certain other animals in nature, for example monkey, we find the mothers carrying about their young ones on their backs, or hugging them to other parts of their bodies. While going on a journey on foot, the woman was required to carry the household goods, while the man went about empty handed, except that he took his weapons with him and carried them in his hands or on his shoulders for the safety from looting, plunder, outlaws, wild animals. It was necessary for the male members to be free from any load so that they could freely fight with the enemy and defend themselves, their women, children and property or some other animals had to be sought and killed to serve as food.

Very soon, however, the needs of man became such that he began to utilise domesticated animals for the purpose of transport. The ass, the dog, the horse, the camel, the bullock and the elephant were all utilised for the purpose in accordance with the topography of the country and the local needs of the inhabitants. The former loads on the backs of women were now transferred to those of pack animals. This marked a great advance in man's civilization, specially as some animals were also milk yielding<sup>16</sup>. The main benefits of pack animals were that, they could load bulky goods, they could move faster in travel, they gave flesh, skins, and wool. Similarly they served as beasts of burden; horse,

<sup>16</sup> N.L. Bhatnagar - <u>Transport in India and Abroad</u>, Jai Prakash Nath and Company, Meerut - 1951, Page - 2.

<sup>16</sup> N.L. Bhatnagar, OP. Cit. Page 11-14.

camel, elephant and dog were utilised in hunting and fighting. Needs of man grew rapidly so he felt that only animals were not sufficient to carry load. In this way some devices were made for hauling, different types of contrivances were used for means of conveyance, many kinds of sledges began to be used to serve the purpose of vehicle. First the man himself hauled it and later on different animals began to be harnessed. The wheel was invented after some time and wheel carriages came into use. Man built surfaced road, dug canal and used boats for transportation purpose.

While we go through ancient history we find that by 3000 B.C. ass was the first animal which was used in transportation. Pack animal was used by merchants who piled the caravan routes between Asia and Africa. Before 1100 B.C. many countries developed wheels and carts which were harnessed by animals like camel, horse and dog. Thereafter man's interest switched to water transportation. Small canoe or wooden boat for carriage as well as travel was first developed in Egypt. American and English people also adapted water transport soon after animal transport. Important contribution to transportation were made by the civilizations on the Far East and Mediterranean, which evolved along navigable waterways. The sailboat was the first vehicle to receive significant improvement in ancient times. The sailing vessels of the Babylonians, Phoenicians, Egyptians, and Chinese were great improvements over the crude craft of prehistoric man.<sup>17</sup> Prior to the settlement of the New World by the white man, ocean transportation had become quite highly developed in many areas of the world. It was by

<sup>17</sup> The <u>Encyclopedia American</u> International Edition - 1992, volume 27, Page 21-23.

means of ocean transportation, of course, that the New World was discovered. <sup>18</sup> The steam engine, invented by James Watt in 1765, was applied to both water and rail transportation early in 19th century, ushering in the mechanical age in transportation.<sup>19</sup> But in 1783 the first steamship was built. Almost forty years later a steamship crossed the Atlantic. It took twenty eight days whereas now - a days it takes three and a half days by ship. Scientific and technical advancement has been gained in water transport in the 20th century. There are various modes in water transport viz. Small boat, giant ship, motor-boat or speed-boat, frigate, hovercraft and submarine (specially used in defence) etc.

The first air navigation took place on June 5,1783, when a balloon filled with heated air was floated over Annonay, France, by Joseph Michel Montgolfier and his brother Jacques. Airplane transportation began with successful flight of the Wright bothers and Kitty Hawk, North Carolina in 1903.<sup>20</sup> In the 1950's the airlines began to abandon gas engines in favour of jets, which offered new possibilities in speed and much greater economy of maintenance and operation. Air transport has shrunk the earth to less than a tenth its previous size, and jets have again by half. Jet aircraft matured the air transportation into a speedy and reliable transportation. The rapid technical advancement launched supersonic transport - Viz. Concorde, British-French supersonic

 <sup>18</sup> Roy J. Sampson, Martin T. Farris - <u>Domestic Transportation, Practice</u> <u>Theory and Policy</u>. Houghton Mifflin Company. First Edition 1966, Page - 16

<sup>&</sup>lt;sup>19</sup> The <u>Encyclopedia American</u> Op. Cit., Page 21-23.

<sup>&</sup>lt;sup>20</sup> The <u>Encyclopedia American</u> International Edition - 1992, volume 27,

transportation, inaugurated in 1976. (the most speedy passenger aircraft in the world.)

In road transportation, the most important contribution of the Romans was the famous system of roads that they built, not only in Italy but elsewhere in Western Europe, Asia Minor and North Africa. Also of important was their invention of the swiveling front axle for four wheeled vehicles with a cutout in the forward part of the bed of the wagon for turning the front wheels. Nicolas Cugnot, a French engineer, in fact devised a steam wagon to run on roads in 1768, and the idea was explored in England and even the United States. The primitive and experimental machines were not practical units of power but they held the promise that steam could someday be so used. In 1887 the German engineer Gottlieb W. Diamler first applied the gasoline engine to a highway vehicle. This was the first successful petrol burning Internal Combustion (I.C.) Engine. He used his first engine in a motor-cycle and soon it was used in car. Because of light but powerful I.C. engine, aeroplanes could be made.

Railways were pioneered in Britain. The world's first steam locomotive, designed by Richard Trevethick (1771-1833), ran on the Penydarren tramway in South Wales in 1804; earlier tramways had relied on horse traction. The Penydarren engine was not successful, being too heavy, but over the following 20 years engineer such as John Blenkinsop (1783-1831) and George Stephenson (1781-1848) built other, more serviceable locomotives generally for use on colliery railways intended to move coal to the quayside. A major step forward

was the opening in 1825 of the Stockton and Darlington Railway (32 KM). This was the first public passenger railway in the world to be worked by steam power, although it, too, also used horses. It was followed in 1830 by the opening of the Liverpool and Manchester Railway, which from the beginning was worked entirely by steam.<sup>21</sup> Steam power was the first man made power used in transport. The Liverpool and Manchester Railway was really the first Railway to throw down the challenge to canals. Robert Stephenson, son of famous railway builder, George Stephenson, produced what is perhaps the prototype of the modern locomotives the 'Rocket'. This machine brought together the best designs of the time for steam locomotion and formed a general plan that was copied to the end of the steam era. The offered prize of £ 500 for the best locomotive, and George Stephenson's ROCKET won easily and the superiority of the locomotives was demonstrated. The ROCKET had a speed of forty eight Kilometres per hour. It is hard to believe that railways, as we know them did not exist in part of the world before 1825, and that the highest speed man could attain till then was in the saddle of the fastest horse.

On 16th April 1853, the first railway ran over a stretch of 21 miles from Bombay to Thana in India.<sup>22</sup> In France railways started in 1829, in Germany in 1835, in Russia in 1836, in Holland and Italy in 1839, in Spain in 1848, and in Japan in 1872. The first railway in United States was opened on a section of 15 miles of the Baltimoro - Ohio line

<sup>21</sup> Aspects of Britain - <u>Transport and Communications</u>. HMSO Publication Centre, London - 1992, Page - 25.

in May 1830. Although true railroads did not appear until the 19th century, crude railways consisting of horse drawn wagons running on wooden rails were used in western European English mines as early as 16th century. Cast iron wheels and rails were in use by the 18th century, and some lines were extended to nearby wharves. A horse could draw on a rail many times the weight it could draw on the road.

The railway was in a very real sense a product of the Industrial Revolution and for almost a century was the predominant mode of inland transport in Britain.<sup>23</sup> The steam locomotive went through great technical development in power and efficiency until it was replaced by diesel power after world war II, but the development of railroads depend on many things besides locomotive power. These include the employment of the automatic coupler, air brake, and standardized track, all of which took place in the latter half of the 19th century. Improvements during the 20th century included the development of welded tracks, mechanical maintenance, and electronic central traffic control system, block signal systems and automatic train control system. Despite these great technological advances, the railroads were destined to face serious competition from new modes of transportation.

Steam locomotives, the traditional method of propulsion was eventually challenged by electric and later by diesel locomotives.

J. N. Sahni - <u>Indian Railways One Hundred Years 1853-1953</u>, Ministry of Railways (Railway Board), Government of Indian, New Delhi - 1953, Page - 1 & 2.

<sup>&</sup>lt;sup>23</sup> G. C. Bamford and H. Robinson. Op. Cit. Page - 8.

Electric locomotives are the most superior form of railway propulsion presently available. They are quiet, clean, efficient and powerful. The major electric railways of the world are concentrated in Japan, India, Western Europe - particularly Switzerland and France - and the north eastern United States.

The diesel locomotive is the most widely used form of locomotives in the world today. In North America it is used to the all but total exclusion of any other form of locomotives. Its ascendancy represents one of the most revolutionary changes ever undertaken by the railroad industry. Most striking is the increase in horsepower. Units of 3000 horsepower are common, and some engines as powerful as 5500 horsepower have been built.

Since mid-nineteenth century most of the developed countries have been using underground railways. This railway is most suitable in crowded cities. Today London Underground Ltd. operates services on 394 KM (245 Miles), of railway, of which about 169 KM (105 Miles) are underground. The system has 273 stations, with 478 trains operating in the peak period. Some 775 million passenger journeys were made on London underground trains in 1990-91. British Rail's new Intercity 225 trains have been introduced on the recently-electrified London - Edinburgh east coast main line. The Intercity 225 is designed to travel a speeds of 225 KM/H.<sup>24</sup>

Aspects of Britain - <u>Transport and Communications</u> Op. Cit. Page - 34 and 48.

The Trans Siberian Express also known as the Russia, is a long-distance train in the world giving daily service between Moscow and Vladivostok. The Trans Siberian Railway Line is the longest and largest continuous stretch of railway in the world, which is 5787 miles ( 9259 KM ) long. Service over the Trans Siberian Railroad is not fast, since it takes nearly 8 days to complete the entire trip.

The HIKARI trains on the new Tokaido line in Japan give extra fast service between Tokyo and Osaka. This fully electric streamlined trains complete the 320 miles (512 KM) run in 3 hours and 10 minutes including two stops. This 100 mile (160 KM) per hour service is the fastest regular passenger service (leave both terminal cities at 15 minute intervals during most of the day) in the world.

BB 26000 locomotives, used by the French Railways, are designed to haul passenger trainsets at speeds of upto 200 KM/H. This new locomotive is designed by GEC ALSTHOM for SNCF (French Railways).<sup>25</sup> The goal set by GEC ALSTHOM for its TVG high speed trains is to reach a commercial speed of 360 KM/H within a few years. To accomplish this the company's Transport Division is currently determining the best solutions to a variety of technical problems in terms of performance, safety and passenger's comfort.<sup>26</sup>

<sup>25 &</sup>lt;u>GEC ASLTHOM Technical Review</u>, No. 13, Feb. 1994, Page - 3.

<sup>26</sup> C. Bertrand, P. Desevaux, and J. C. Roy - International Aerodynamic Design of a TVG High Speed Train. <u>GEC ALSTHOM Technical</u> <u>Review</u>, No. 18, 4th Quarter, France 1995, Page - 17.

### 2.2 <u>TRANSPORTATION : ITS CONTRIBUTION IN ECONOMIC</u> <u>DEVELOPMENT</u>

The economic, governmental and social progress of each individual nation and of all nations of the world considered collectively depends upon rapid, reliable, and efficient transportation services by rail, water, highway, air and pipe line. Transportation enters into every stage in the production, distribution, and consumption of goods. In economic science and in business, transportation plays an important, though often unappreciated, part.<sup>27</sup> Every product we consume, however, has been transported, usually several times before it gets to us. Our daily journeys to and from work, shopping centers, or university classrooms involve transportation.<sup>28</sup>

Man has passed through several stages in economic progress. In hunting stage man was dependent upon his own power and capacity for movement. In pastoral stage he used certain animals as beast of burden. In agricultural and handicraft stage man began to grow and produce things, and used crude carts to harness animals for movement. In last stage, the industrial and commercial stage, the greatest progress achieved by man and he achieved uncountable success in the economic field. The successful steps in transportation lead to the

Emory R. Johnson, Grover G. Huebner and G. Lloyod Wilson - <u>Transportation Economic Principles and Practices</u>, D. Appleton -Century Crafts, Inc. New York - 1940, Page - 3.

Roy J. Sampson, Martin T. Farris - Op. Cit., Page - 3.

economic development. Old and conventional methods of production and transport we revolutionized by steam and this was an initial way in further progress. The industrial and commercial revolution of 18th century was a direct result of the use of steam power in production and transportation. The railway and steamships made transport over land and seas both rapid and cheap. Mechanical power began with steam and as soon followed it up by utilizing mineral oil, natural gas and then solar power.

There is intimate connection between transport and economic progress. Economic progress means the ownward march of humanity in its activities regarding the production and consumption of wealth.<sup>29</sup> It has been felt that if means of transportation are primitive, economic progress will also remain of the primitive type. When we develop required means of transportation, the barrier to further economic progress is removed and we resume our ownward march. An increased power of production necessitates the development of quicker means of transportation, the opening of new markets as a result of improved transportation gives further stimulation to productive activity. Commercial and industrial growth stimulates invention and innovation in agriculture, mining and manufacturing, which in turn tend to increase demand for transportation. Mechanization makes possible a greater division of labour which increase productivity. Large scale production becomes possible if extensive markets can be developed; this calls for the expansion of transportation facilities.

N. L. Bhatnagar, Op. Cit., Page - 8.

The position of transportation in economics can be described by explaining its relation to the production, exchange, distribution, and consumption of wealth. Production is the creation of utilities, and transportation, through providing place utility, is a part thereof. Merely to grow, mine, or manufacture an article is generally not enough; to complete its usefulness, it must be transported.<sup>30</sup>

Transportation is the very foundation of economic development. A study of investment and developmental loans for underdeveloped countries shows that one of the first and most necessary elements in any economy is that of an adequate transportation system. Without this, it is of little use to construct expensive plants or to hope for a broad distribution of economic goods. Large-scale production and mass distribution are necessary for economic development and these are not possible without efficient and relatively cheap transportation. Economic significance of transportation is that it provides a foundation upon which the economic growth of a nation progresses.<sup>31</sup>

Transportation is an integral part of the process of production. Transportation creates both 'place' and 'time' utility. Transportation adds place-utility value to all of the commodities important to modern life. In many cases, place utility is created by transportation at several stages in the process of converting raw materials into finished consumer's goods, just as industrial processing adds from and quality utility. Iron ore must be transported vertically from the underground deposits to the surface of the earth by mine

<sup>&</sup>lt;sup>30</sup> Truman C. Bigham & Merrill J. Roberts. Op. Cit., Page - 5.

facilities, including light railways or elevating equipment. Value is added by this transportation operation. For productive purpose, raw materials or parts for assembly have no value unless they are transported to the place where they are needed. Thus transportation creates value by changing the location of things so that production may occur.

Generally large-scale production is considerably cheaper than production on a smaller scale. The huge output of productive system would be impossible without adequate transportation and assembly facilities to bring tremendous amounts of raw materials to the place of production and to hold them until the exact time they are needed. Transportation stimulates regional specialization and division of labor. All areas and people are not equally endowed. Resources, climate, arts and skills vary. Thus, the productive process in one region may be different from that is another. With adequate transportation, each area is able to specialize in the production which it does best.

It must be borne in mind, however, that machines were introduced in the field of transportation as well as in manufacturing, and without the mechanization of transportation the introduction of machinery in factories would have been of little avail, because without improved transportation facilities raw materials could not have been brought economically to the factories in sufficiently large quantities to supply the centralized production units nor could the finished products be distributed over sufficiently wide areas to support the factory system.<sup>32</sup> The development of rapid and cheap transportation has given

Roy J. Sompson and Martin T. Farris, Op. Cit., Page - 5.

<sup>&</sup>lt;sup>32</sup> Emory R. Johnson, Grover G. Huebner, and G. Lloyod Wilson. Op. Cit., Page - 5.

many products national and international markets. In fact transportation broadens the market. An item produced at one point has little value unless it is moved to the place where it is needed or demanded. Transportation has made possible to place great varieties of the products of the mines, the forests, and the factories within the reach of all people. The most efficient large-scale production plant can not operate unless the things produced are sold. An adequate transportation system provides the means by which mass distribution takes place.<sup>33</sup>

The results of regional specialization or division of labor are unavailable without transportation. By having an efficient transportation system, the availability of goods is greatly increased. Perishable items are now available in areas where they were unheard a few years ago because of the technological advances of transportation. For example, Pacific coast salmon is distributed to all parts of the United States and Canada. Citrous fruits and fresh fruits and vegetables from California, Florida, and Texas are shipped in refrigerator, ventilated, or other perishable-protective freight cars to national markets. Transportation indeed provides the means to distribute the results of production and makes a multiplicity of goods available from all concerns to the earth.

Transportation costs make up a substantial share of the price of any item. Transportation plays an important role in price stability in economic sector. If long-haul transportation were not available, each market would be dependent on the local production area for its supply. Most items are not produced equally during each month

Roy J. Sampson and Martin T. Farris. Op. Cit., Page - 7.

of the year. This is especially true of agricultural items which have a long production cycle culminating in a harvest period. Under circumstances of isolation and without adequate tranportation, the price of an item would be low when it was available in large quantities and high when it was scarce. Further, transportation allows other areas to compete in a given market. Therefore, if local supplies are unavailable, the price usually does not rise greatly. Supplies may be shipped into meet the need. Thus, due to transportation, a great deal of price stability exist in economy. Transportation facilities allow more producers to enter a given market, and more price competition is possible. Without transportation and more competitors in a given market, the price could be higher.

Cost factor is very important in economic progress. Businessmen will select the lowest cost method of transportation available to them, assuming no differences in quality of service.<sup>34</sup> Shippers are increasingly combining two or more transportation modes, containerization consists of putting the goods in boxes or retailers that are easy to transfer between two transportation modes. <u>Piggy - back</u> describes the use of rail and trucks; <u>fishyback</u>, water and trucks; <u>transship</u>, water and rail; and <u>airtruck</u>, air and trucks. Each coordinate mode of transportation offers specific advantage to the shipper in time and cost saving.<sup>35</sup>

At present, the most advanced and efficient modes of transportation are available in developed countries whereas poor and developing countries have been using yet traditional, inefficient and

<sup>&</sup>lt;sup>34</sup> John B. Lansing - <u>Transportation and Economic Policy</u>. Collier - Macmillan Limited, London - 1966, Page - 392.

<sup>&</sup>lt;sup>35</sup> Philip Kotler - Op. Cit. Page - 582.

non-economical modes of transportation. This proves that transportation has great contribution in the economic development of a nation.

#### 2.3 <u>CONTRIBUTION OF TRANSPORTATION IN OTHER FIELDS</u> :

Transport plays a dynamic role in the real world, and decisions in this sector affect all other sectors.<sup>36</sup> For the efficient administration of country good transport facilities are required.<sup>37</sup> Efficient transportation makes it possible for large geographic areas to be politically unified. Cultural similarity, mutual understanding, and the economic interdependence brought about by large-scale interregional trade reduce tendencies toward isolationism, while the ability to communicate rapidly makes unification administratively feasible. Ancient Egypt was held together for many centuries by its Nile River and ancient Rome by its magnificent system of highways. One cause for succession of the United States of America form Britain, despite a common heritage, was the slow and inefficient transport which hampered political administration and mutual understanding. The first Canadian transcontinental railroad was likewise built to encourage the Province of British Columbia to remain a political part of Canada. Australians built a railroad across the wide desert area of their continent to hold their country together politically. Railroads played a key role in Bismarck's unification of numerous small independent states and principalities into modern Germany during the late 1800's.<sup>38</sup> British could not rule in Nepal. The

Robert T. Brown - <u>Transport and the Economic Integration in South</u> <u>America</u>. Transport Research Program, Washington D. C. - 1996, Page - 3.

K. E. Verghese - <u>The Development and Significance of Transport in India (1834 - 1882)</u>, N. V. Publication, New Delhi - 110016, 1976, Page - 1.

Roy J. Sompson and Martin T. Farris. Op. Cit., Page - 4.

lack of transportation in mountainous region was the main obstacle to mobilise their military forces and due to this cause they were defeated several times by Nepalese brave warriors.

Good transportation is also vital to national defence. The ability to transport troops and materials quickly and to mobilize industrial power is essential both in actual war and in international political bargaining. The political interests of Rome resulted in her building an extensive system of highways that became the wonder of the ancient world, and most other nations have recognised the importance of transportation to national defence. The objective of British Government in developing railways in India was to increase facility in the administration of the country and the greater mobility that railways gave to military forces.<sup>39</sup>

The social life of a country is being greatly influenced by the rate of development in transportation and the kind of service made available. Cultural life requires an interchange of ideas, and the mobility of people is a requisite of this interchange and to the general sharing of cultural accomplishments. Community activities require mobility. Hence the accelerated transport facilities have stimulated and expanded the social and recreational activities.

Sometimes transportation becomes medium to establish mutual cooperation and consolidate the relationship among different countries which were isolated before. For example, recently with the opening of 395 KM Mashad-Sarakhs-Tajan railroad, the Liang Yung Port in East China has been linked to Bandar Abbas in the Persian Gulf via the cities Urumqi, Almaty, Tashkent, Sarakhs, Mashad and Tehran with the railroad operation, the long distance from ports in China to Bandar Abbas will be reduced substantially. All the five land locked central Asian republics i.e. Turkmenistan, Uzbekistan, Kyrgyzstan, Tejikistan and Kazakhstan, are now connected to the sea.<sup>40</sup>

Social and cultural unity is based upon the existence of adequate transportation. Transportation is an important part of human culture and heritage. It plays a pivotal role in the settlement and development of nation. The freedom and mobility of people, literally a nation on wheels and a people ever curious to see new places and ever anxious to undertake new tasks, is based upon efficient transportation. Society is a blend of many regional and local view-points and traditions growing out of differing heritages, environments, and problems. Interregional contacts through travel and the exchange of goods promote the interchange of ideas and the breakdown, thus encouraging an upward uniformity in tastes, health, education, and way of life in general.<sup>41</sup>

Transportation service affects our social activities. Railroad, motor, bus, automobile and airplane are used by those who seek education and pleasure in travel to the scenic resources of country and the world, and by those whose lives are enriched by visiting friends, or by attending conferences, conventions, exhibitions or other social,

<sup>&</sup>lt;sup>39</sup> John B. Lansing - Op. Cit., Page - 135.

<sup>40 &</sup>lt;u>Rashtriya Sahara</u>, June - 1996, India, Page - 87 & 88.

scientific or business gatherings. The automobile has done much to put an end to the isolation of rural life. The practice of medicine is facilitated by improved transportation. The administration of justice is aided. Educational facilities have been extended. Pilgrimage have been possible in remote areas. Thus social life has been enriched in many ways.

One of the objective of British Government to develop railroads in India was to prevent famines in the latter part of the nineteenth century. On investigating a serious famine the official Famine Commissioners found in 1880 that the mortality due to famine was greatest in those areas where the transportation facilities were the worst. Their recommendations played a part in the subsequent period of railroad development.<sup>42</sup>

#### 2.4 <u>TRANSPORTATION IN NEPAL</u> :

Nepal is a land locked, small and mountainous country having 1,47,181 square Kilometres of area. The nearest sea-shore is 1127 KM far from Nepal. Transportation has played pivotal role in the backwardness of Nepalese people. Politically, transportation sector was most neglected in Rana regime. It was difficult to construct road or apply any other modes of transportation at that time, nevertheless, intentionally this sector was neglected by rulers.

After the political change in 1951 A.D., Nepal emerged from the isolationist policy of Ranas. It is well to be noted that mobility was very much discouraged then. Transportation facilities were made limited to maintain the supply of essential commodities to the Kathmandu valley, but passenger service was still discouraged. The political change of 1951 marks the beginning of the steady development in Nepal.<sup>43</sup>

Poor transportation is a major factor in country hunger. The twentieth century revolution in transport has made aware of the relation of immobility to poverty. The high cost of moving farm products and the long delays and consequent damage and loss to perishables have been powerful deterrents to increasing food supplies. Produce rots on the ground because transport is not available.

<sup>&</sup>lt;sup>42</sup> John B. Lansing - Op. Cit. Page - 135 & 136.

<sup>&</sup>lt;sup>43</sup> Bhuban Bajra Bajracharya and Chandra Bahadur Shrestha - <u>Transport</u> and <u>Communication Linkage in Nepal</u>. Centre for Economic
Commercial fertilizers arrive after the growing season is half over. Most of our resources have been lying untouched because there is no way to reach them. Some portion of our country that is suitable for cultivation remains idle. A tremendous wealth of forest and mineral resources that could help in the struggle against poverty makes no contribution because no one can get to it or move it to where it is needed.

Our pace for industrial growth is slow because industrial activities have been severely hampered by lack of transport. Our factories have been facing problem of discontinuous supply of fuel, raw materials and spare parts. There is no reliable means of marketing for products. Industries are enforced to maintain excessive inventories at high cost to compensate for uncertain deliveries. Often they shut down operations or produce at a fraction of plant capacity because of fuel or material shortages. Inadequate investment in transportation has reduced the effectiveness of investments elsewhere.<sup>44</sup>

While we import and export goods to overseas countries, we are dependent on India. The problem is not always the complete absence of transportation, but its unreliability, high cost, slow schedules, high demurrage charges and high rates of damage and pilferage. Moving hundred miles to port may be costlier than moving thousand miles by sea. These hindrances of transportation restrict the market, increase the cost of production and due to high price consumers can not purchase goods. Thus our products can not compete in international markets.

Development and Administration, T.U., Kirtipur, Kathmandu, Nepal, June - 1981, Page - 1.

Poor transportation has put us in difficulty to achieve national unity and to maintain internal security also. In the case of violence, earthquake, flood, storm, famine and natural disaster we can not send rescue immediately in some part of our country. The most obvious obstacle is the combination of unfavourable topography and bad weather. The potential of a country and its transportation is largely determined by geography. Mountains prevent transportation system from penetrating various areas. We have to cope with a formidable combination of mountains, untamed and high current ( not navigable ) rivers and either too much or too little rain. We face difficulty of transport to supply adequate service over different areas of scattered settlements. Since we are broken up by mountain ranges we have to cope with difficult engineering, high-cost construction and circuitous routes.

Further, often, we are not able to maintain or renew transport facilities due to low income. Merchandise transport services are typically old, of limited capacity, and rundown. Rail systems operate with ancient locomotives, rail cars are over age, and track is in poor condition. Roads are often built in isolated short pieces rather than in an interconnected system, and maintenance is apt to be completely neglected after the facilities have been built. Motor vehicle performance is frequently poor due to the condition of roads, the lack of parts and servicing, and regulations that make economical use impossible. We have been facing problem to obtain capital and foreign exchange to get

<sup>&</sup>lt;sup>44</sup> Wilfred Owen - <u>Strategy for Mobility</u>. The Booking Institution, Transport Research Program, Washington D.C. - 1964, Page - 4 & 5.

things built, and to keep them going because transport system almost always require substantial capital investment.

Nepal is an agricultural country and most of the people live in villages. Almost 46.7 per cent people live in plain area. In comparison to other areas transportation sector is more progressive in plain (Terai) area. In most of the villages where fair weather semisurfaced road is available, people use conventional modes of transportation. The animal cart is the major means of goods transportation in rural areas. Generally they use animal cart which is drawn by a pair of bullocks and buffaloes. Somewhere horse is also used to draw cart. Two different types of cart are widely used, the traditional variety with large diameter wooden wheels and improved version with pneumatic tyre and roller bearings. A survey conducted in India in 1985 A.D. showed that the bullock cart was one of the major means of transportation in India. It was estimated that there were some 15 million carts of which 12 million were in the rural areas.<sup>45</sup> The other media of transport in our Terai area are bicycles and rickshaws in small towns. They also use animals like horse, donkey. Yak is used in mountainous area as a mode of transport.

While we look toward transportation development in Nepal we find that actually it commenced since 1951 A.D. When Nepal started its first plan there was virtually no special and economic infrastructure and accordingly Nepal placed high priority to develop

<sup>45</sup> I. Barwell, G. A. Edmonds, J. D. G. F. Howe, and J. de. veen - <u>Rural</u> <u>Transport in Developing Countries</u>, I.L.O., Intermediate Technology Publication Ltd., London - 1985, First Edition, Page - 21.

transportation sector with the assumption that development of this infrastructure would lead into the generation of multiple economic activities. Furthermore, the process of national integration would also be enhanced.<sup>46</sup>

Before beginning of first five year plan Nepal had two railroads (NJJR and NGR - total length of both 100 KM), one ropeway from Hetauda to Kathmandu 42.14 KM long, 5 airports and 624 KM road network. in which there was 259 KM all weather road and 365 KM fair weather road.

The democratic government broke isolationist policy and provided first priority to the transportation in first five year plan (2013 B.S. to 2018 B.S. ). Government's target was to construct maximum road in this period and out of total budget 37.58 per cent amount was allocated for transportation. At the end of plan period government had constructed 912 KM road. In those years maintenance work was conducted and seven airports were built. In the sector of air transport Royal Nepal Airlines Corporation was established and all internal services were taken by RNAC. Transportation was given first priority till fourth plan. During fourth plan period the rope of ropeway was changed. During fifth plan period (2032 to 2037 B.S.) improvement was made by Nepal Transport Corporation (NTC). They changed 50 lbs. rail in down section (from Janakpur to Jaynagar) and 30 lbs. in upper section (from Janakpur to Bijalpura) in 'Janakpur Railway'.

<sup>46</sup> Bhuban Bajra Bajracharya and Chandra Bahadur Shrestha - <u>Transport</u> and <u>Communication Linkage in Nepal</u>. Centre for Economic

Now we are at the end of eighth five year plan (2049 B.S. - 2054 B.S.). Out of total budget (Rs. 17033.2 Crores) 15.3 per cent ( Rs. 2611.9 Crores) amount has been allocated for transport and communication. The target of this plan is to construct 2978 KM new road, rehabilitation of 1083 KM highways and sub-highways and repair of 1475 KM other roads. The construction of 500 suspension bridges and 25 motorable bridges is also kept in the target of this plan.

By the end of fiscal year 2051/052 (1994/95) the total road network was 10,018 KM An addition 91 KM of road was constructed in the first 9 months of FY 2052/053 (1995/96), thereby extending the road network to 10,109 KM in total. During the eighth five years plan period 3073 KM road has been constructed upto the first 9 months of FY 2052/053 (1995/96). In which 533 KM black - topped, 818 KM gravel and 1722 KM fair weather road have been constructed. Thus by the end of first 9 months of FY 2052 / 053 total available road facility was 10,109 KM in which black-topped 3432 KM, graveled 2439 KM and fair weather road was 4238 KM.<sup>47</sup> The total number of vehicles as of mid April of FY 1995/96 (2052/053 Baisakh) was 1,64,814. Out of which the number of motorcycles were 81731, 37767. Truck/Tanker 15776. Tractor/Trailer Car/Jeep 12505. Bus/Minibus 8611, Tempo 4963, Doser/Crane 177, other vehicles

Development and Administration, T.U., Kathmandu, June - 1981, Page - 1.

<sup>47 &</sup>lt;u>Economic survey Fiscal Year 1995 / 96</u>, HMG Finance Ministry, July - 1996, Page - 8 & 67, Statistical Table, Page - 49.

3284.<sup>48</sup> Out of total registered vehicles 1,13,065 were in private sector and 31519 vehicles were in transportation business. Different 12056 vehicles were running under government service and about 350 thousand people had received driving license of different vehicles. About one million people are directly or indirectly dependent on transportation sector and its supplementary organizations in Nepal.<sup>49</sup>

Various friend countries and organisations have provided us economical and technical help in transport sector. For fiscal year 1995/96 (2052/053 B.S.) we received total foreign aid Rs. 2861.1 million in transportation. In which Rs. 1741.1 million was granted whereas Rs. 1120.0 million was provided as loan.

The extension of air transport service in remote areas of the country is going on with a view that air transport becomes vital and effective in country's development where most parts are remote and inaccessible. In FY 2052/053 (1995/96) air transport service was available in 44 districts out of 75 districts of kingdom. In line with the policy of establishing airfield in remote areas six additional airfields including Talcha of Mugu, Kalikot, Kamalbazar of Achham, Thamkharka of Khotang, Kagel Danda of Solukhumbu and Masine Chaur of Rolpa are under construction. The number of airlines had reached to 14 by the end of first nine months of FY 2052/053 (1995/96). Nepal has now international link with various countries and in this

<sup>48</sup> Ibid.

<sup>&</sup>lt;sup>49</sup> <u>Bimochan</u>, Year - 15, Issue - 4, Ashar 2053, Dillibazar, Kathmandu, Nepal, Page - 3 & 4.

sphere several big and reputed international airlines are providing air service as well as RNAC.

Janakpur - Jaynagar - Bijalpura rail service (51 KM) of 'Janakpur Railway' has become sustainable from the fiscal year 1995/96 (2052/053 B.S.). The railway service has become more comfortable and reliable after the availability of 2 more diesel locomotives and 12 coaches from India in the fiscal year 1994 / 95 (2051 / 52 B.S.). In fiscal year 1993 / 94 (2050 / 051 B.S.) India had provided two diesel locomotives and 6 coaches to 'Janakpur Railway'. In fiscal year 2052 / 053 (1995 / 96) there was three times a day service from Janakpur to Jaynagar and two times a day service in upper section.

Among all transportation media railway has played decisive role in helping the development of many countries, and Nepal is no exception to this. A public utility concern, Janakpur Railway, as the only transport system without a road in competition with it in the sector, has been operating and filling a missing link in Nepalese transportation scheme. Extension of the railway is contemplated for another 10 miles towards north meeting the East West Highway upto Lalgarh, the Gateway to the middle mountainous region.

The main sector where railway development is warranted, as a independent line to be operated, is the Raxual - Hetuada -Kathmandu sector. It is desirable to lay a railway line at the first phase from Raxual to Hetauda. From Hetauda to Kathmandu crow flight distance is only about 25 miles having two big mountainous ranges in between (Mahabharat range ). The rest of the region is partly hillocks, party hilly terrains and party plain. Two major tunnels of about 2 to 3 miles each may be sufficient to approach Kathmandu valley from south.

The workable alternative for railway transportation in south north belt is extension of Indian Railway siding inside Nepal to meet the East - West Highway at places Jogbani to Biratnagar, Nautanwa to Bhairahwa, Nepalgunj Road to Nepalgunj proper etc.<sup>50</sup>

With the extension of Railway lines into Nepalese territory, the problems of delay and difficulties connected with loading and unloading goods in the border area could be minimised considerably. Seemingly, it is more desirable to extend railways upto Mahendra Highway as this road has a good prospect of urban development.<sup>51</sup>

Railway is considered to be most dependent, cheapest and best. Nepal has two major potentialities : Hydro Electric power and attraction of tourist. Railway in different sectors in Nepal and railway through tunnels to approach Kathmandu valley can be taken as one of the best plan for the development of tourism and the proper utilization of Hydro-Electric power in due course, although the initial cost may go up a little high.<sup>52</sup>

<sup>50</sup> Sarad Prasad Upadhyay - <u>Ropeway and Railway Development in Nepal.</u> <u>CEDA</u>, Second Seminar Cum Workshop on Transport Project Analysis, June 11, 1970, Page 3.

<sup>51</sup> Bhuban Bajra Bajracharya and Chandra Bahadur Shrestha, Op. Cit., Page - 47.

'Nepal Multimodel and Trade Facilitation Project' has conducted a survey with the help of 'Rail India Technical and Economic Service' (RITES). The survey has been conducted for the establishment of broad gauge railway line from Raxual to Sirsiya (Parsa district). Land has been acquired to construct Inland Container Depot (ICD) in Sirsiya. Such kind of depot will be established in Biratnagar also. With the establishment of depots there will be fifty percent saving in the present freight rate and it will be very helpful in the extension of Nepalese international trade. At present, Nepal has been carrying cargo by container traffic from Calcutta sea-port so after connecting the railway route with Birgunj, it will be a dry port. Petroleum products, food stuff, chemical fertilizer etc. should be transported in low cost with a minimum leakage after linking Birgunj with railroad.<sup>53</sup>

Efficient and effective transportation network and uncomplicated transit formalities are pre-requisites for meaningful economic cooperation, particularly in regional trade. Although the development of intra - SAARC transportation network is a difficult task, but it is hard to conceive regional trade without a basic transportation system linking the member countries. The insufficient and underdeveloped overland transportation network in the region is a major impediment for regional economic cooperation. The major problem for the development of regional trade is the absence of road and rail links between the SAARC countries. Nepal faces transit problems at a great magnitude. Nepal has been extensively using the land route - a

<sup>52</sup> Sarad Prasad Upadhyay - Op. Cit., Page 4.

<sup>53</sup> Gyaneshwar Bhattrai - <u>Brihat Gyankosh</u>, Lakshmi Pustak Sadan, Butwal
- 2052 / 053, Page - 767.

combination of road and rail transport - to reach the port of Calcutta. The chronic shortages of railway wagons in the transshipment points is a major problem faced by Nepalese traders. Sometimes goods are held for months at the points before railway wagons become available.<sup>54</sup>

For a nation predominant with difficult topography and rural areas, development and extension of transport infrastructures has the topmost importance. Ordinary people can not realise the benefit of development if there is no access to transport facilities to the nook and corner of the country. Accordingly, high priority should be accorded to the development of transport sector for the overall development of the nation and also for distribution of benefit of development to the people. Thus transportation provides employment, directly or indirectly, to the people, contributes substantially to the national income, and handles a immense volume of traffic and passenger.

<sup>54</sup> Dr. Kundan D. Koirala - <u>Economic Cooperation in SAARC -</u> <u>Possibilities and Impediments, Banijya Sansar</u>, A.B.S., Central Department of Management, T.U., Kirtipur, Kathmandu, Nepal., Issue - 8, Vol. - 13, Page - 37.

# **CHAPTER - III**

# **RESEARCH METHODOLOGY**

### 3.1 <u>INTRODUCTION</u> :

This chapter points out the research methodology that has been used throughout the study. The main objective of the research is to show the contribution of Janakpur Railway in the field of transportation. To accomplish the objectives mentioned earlier the methodology that has been used is presented here which include the research design, population and sample, respondents characteristics, nature and sources of data, data collection procedure, and analysis technique.

### 3.2 <u>RESEARCH DESIGN</u> :

The main objective of this study is to reveal the contribution of JR in the field of transportation. In this connection the

study attempts to know the ability of JR in discharging service facility to their public; number of passengers travelled in a month / year; number of passengers travelled through a particular station; volume of cargo carried by JR in a month / year; revenue generated by passenger and cargo traffic; profit/ loss trend of corporation; opinion of employees and general people towards JR; its possibility for further growth and improvement; and major problems faced by JR in present situation etc. The data are primary as well as secondary in nature and the research design followed in this study is descriptive. An opinion survey has been conducted to support the analysis of the secondary sources of information.

#### 3.3 <u>POPULATION AND SAMPLE</u> :

The population of this study is the service provider and users of 'Janakpur Railway'. Proportionate stratified sampling and judgmental sampling have been used for the collection of primary data. By the help of questionnaire, information have been collected from administrative and technical employees of JR, and general people of Janakpur. There are altogether 341 employees working in JR. Out of total employees 258 are as per appointment sheet and 83 are without it which include 48 daily wages and 35 retired but still working staffs. In fact, our population is only 258 employees and these are divided into two groups i.e. administrative and technical employees. Out of 165 administrative and 93 technical employees, 20 percent have been taken for opinion survey. Thus 33 administrative and 19 technical respondents are related with different levels and departments (sections). The respondents came from level 1 to 7 and they are connected with various six departments viz. administration, account, engineering, loco, store and traffic department. 10 general people of Janakpur have been taken as sample which consist businessmen, students, civil servants, and local inhabitants.

### 3.3.1 <u>RESPONDENTS CHARACTERISTICS</u> :

In opinion survey, an attempt has been made to reveal the opinion of employees and general people regarding 'Janakpur Railway'. The characteristics of respondents in terms of their group, department and level are presented below separately.

S.No.	Group	Deputation	No. of	% Out of Total
			Respondents	Respondents
1.	Administrative	165	33	12.7
2.	Technical	93	19	7.3
	Sub-Total	258	52	20.0 %
3.	General People		10	
	Total Respondents		62 ======	

### (a) <u>On the basis of group</u> :

S.No.	Department	Deputation	No. of Respondents
1.	Administration	11	2
2.	Account	6	1
3.	Engineering	87	18
4.	Loco.	84	17
5.	Store	4	1
6.	Traffic	66	13
		258	52
7.	General People :		
a.	Businessman	-	4
b.	Student	-	2
c.	Civil Servant	-	2
d.	Local Inhabitant	-	2
	Total Respondents.		62

# (b) <u>On the basis of department</u> :

# (c) <u>On the basis of level</u> :

S.No.	Level of Employee	Deputation	No. of Respondents
1.	Without level and level 1	125	24
2.	2	58	12
3.	3	36	7
4.	4	23	5
5.	5	9	2
6.	6	3	1
7.	7	3	1
8.	8	1	-
		258	52
9.	General People		10
			62

#### 3.4 <u>NATURE AND SOURCES OF DATA</u> :

Primary and secondary both data have been collected and used for this study. Primary data have been collected through questionnaire, interview, personal observation and unpublished official records of Janakpur Railway. Similarly secondary data and information have been collected through various sources viz. Janakpur Railway records, Janakpur cigarette Factory Limited records, magazines, dissertations, government publications and reports, published text books and CEDA publications etc.

### 3.5 <u>DATA COLLECTION PROCEDURE</u> :

Records, information and data relevant to 'Janakpur Railway' have been collected mainly for eight fiscal years i.e. from 2045/2046 to 2052/2053. The researcher visited JR several times and relevant data were obtained from railway's official records with their permission. Some data and information have been collected through personal observation also. Besides these, information related to the study have been collected through published books, magazines, dissertations, CEDA publications, government publications and Janakpur Cigarette Factory Limited records. The researcher distributed questionnaires to sample respondents and collected information. Literate and higher level respondents filled in questionnaire themselves whereas in the case of illiterate respondents the researcher conducted interview and filled in questionnaire himself.

#### 3.6 <u>ANALYSIS TECHNIQUE</u> :

The main purpose of this study is to see whether JR is contributing in the field of transportation significantly or not. For this purpose the data related to its operation, service, expenditure, revenue and present performance etc. have been analysed. The analysis chapter has been separated into two sections viz. descriptive analysis and inferential analysis. Descriptive analysis is related with the analysis of quantitative data in which percentage, mean value (average), index, figure, and graph have been used. In inferential analysis the researcher has tried to know the opinion of respondents towards the performance, condition, operating obstacles and improvements of JR. Very simple and limited tool i.e. percentage has been used to analyse the information collected through questionnaire. The information are presented in table and these are analysed with the help of percentage.

# **CHAPTER - IV**

# **DATA PRESENTATION AND ANALYSIS**

#### 4.1 <u>EXISTING CONDITION OF JR</u> :

The construction of 'Janakpur Railway' was started in 1935 A.D. (1992 B.S.) and the train service inaugurated since 1937 A.D. (1994 B.S.). During its 59 years' life several changes have been occurred. 'Janakpur Railway' was started with steam locomotives but now it has been using diesel locomotives. In fact, JR is the most neglected mode of transportation because government has not taken proper care for its development. Although it has been fighting for own existence. The present condition of 'Janakpur Railway' is mentioned below.

#### **MANAGEMENT** :

'Janakpur Railway' is operating under 'Nepal Transport Corporation' (NTC). There are altogether 341 employees working (as per record of Ashar, 2053) in JR. The manager's office is situated at Janakpur Dham. Out of 341 employees, 258 are as per appointment sheet, 35 are retired staffs (but still working on contract) and 48 employees have been appointed temporarily for consolidation work of JR. The composition of employees is mentioned in Table No. 1.

### TABLE NO. - 1

# NUMBER OF EMPLOYEES IN JANAKPUR RAILWAY (ASHAR, 2053)

Department	Deputation	Permanent	Monthly	Temporary	On	Total
			and Daily		Contract	
			Wages			
Administration	8	8	7	-	1	16
Account	6	3	4	-	-	7
Engineering	87	34	77	1	1	113
Loco.	84	35	46	1	-	82
Store	4	1	3	-	-	4
Traffic	66	42	42	-	-	84
	255	123	179	2	2	306
Temporary						
Appointment	3	Retired but Working on Contract		35		
	258	Total No. of Employees			341	

## **STATIONS AND INTER DISTANCE** :

The minimum and maximum distance between different stations is 4 to 8 KM Janakpur Dham station is situated in the middle of these 10 stations.

Jaynagar	Khajuri	Mahinathpur	Baidhi Halt
0 KM	8 KM	5 KM	4 KM
Parbaha	Janakpur Dham	Pipradhi Halt	Loharpatti
4 KM	8 KM	8 KM	5 KM
Singhiyahi	Bizalpura		
5 KM	4 KM	= Total 51	KM.

### $\underline{TRACK}$ :

The total length of railway track was 53 KM in the beginning but now it is 51 KM. There is 7 KM side and crossing line in different 10 stations. Thus the total length of track is 58 KM. Since it is narrow gauge railway line, its size (width) is 2 feet and 6 inches, (0.762 meter ).

### <u>**RAILS</u> :**</u>

There is 50 lbs. rail in down section (Jaynagar to Janakpur) which length is 29 KM. In the case of upper section (Janakpur to Bizalpura) 30 lbs. rail has been lain which length is 22 KM. JR is going to change 60 lbs. rail in upper section. This 60 lbs. rail will be changed between Janakpur to Pipradhi station ( upto 2.5 KM). The rail of upper section is very old and weak so it is most necessary to change the same.

#### <u>COMMUNICATION SYSTEM</u> :

Internal telecommunication system and signals have not been working in upper section. Telecommunication is working in down section to minimum extent but signal is totally closed.

#### **BRIDGES AND CULVERTS** :

There are altogether 135 bridges and culverts and among these, 15 bridges are major. The condition of bridges and culverts is poor.

#### **OPERATION SERVICE** :

There is three times a day train service in down section whereas in upper section two times a day train service is available for passengers. The service time often changes and it increases to 7 or 8 times a day, specially on the occasion of holy fairs.

### <u>PLATFORMS</u> :

Only Janakpur and Jaynagar stations have concrete platforms having facility of electricity.

#### <u>GODOWNS</u> :

Merely Janakpur, Khajuri, and Jaynagar stations have godown facility. In other stations goods are loaded and unloaded on the passengers' risk. The condition of these three stations' warehouses is not satisfactory.

### **WORKSHOPS** :

The workshop is situated at Khajuri station. Recently a new workshop has been established in Janakpur loco-shade to repair the new diesel locomotives. The machines of Khajuri workshop are very old, outdated, and ruined. These are not suitable for new diesel locomotive engines and passenger coaches. Some new machines have been added in Kajuri workshop. These machines have been installed for new trains. The available machines in Khajuri and Janakpur workshops are as follows :-

I.	<u>Khajuri Workshop</u>	<u>Number</u>
a)	Lathe machines	5
b)	Wheel turning lathe machine	1
c)	Shapper machine	2
d)	Wheel pressure machine	1
e)	Slotter machine	1
f)	Generator (Diesel)	1 Not working
g)	Drill machine	1
h)	Welding machine	2 One is not
		working
i)	Gas welding	1
j)	Hand crane 5 MT	1
k)	Diesel generator 8KVA (New)	1

II.	Janakpur Workshop	
m)	Air compressor machine with tank (New)1	
1)	Diesel engine 47 H.P. (New)	1

a)	Lathe machine		1
b)	Valve refacer	1	
c)	Gas welding		1
d)	Electric welding		1
e)	Table grinder		1
f)	Drill machine	1	
g)	Jeep crane 5 MT		1
h)	Motor pump		1
i)	Press machine		1
j)	Air compressor machine with tank	1	
k)	Diesel generator 100 KVA/Self start		1
1)	Pump station		1

m) Laboratory for chemical test and preparation of distilled water.

# **<u>ROLLING STOCKS</u>** :

# a) Passenger Coaches :

<b>Description</b>		<u>Number</u>	<b>Operating</b>
Ist	Class unit	1	1
Ist	Class compartment	3	3
IInd	Class compartment	16	12
IInd	Class compartment (New)	18	18
	( 6 coaches- 38 seats,		
	12 coaches- 42 seats)		
	Total Number	38	34
		==	==

# b) Goods Bogies :

Description.	<u>Capacity</u>	<u>Number</u>	<b>Operating</b>
B.C. (Bogies with cored)	14 MT 3	1	
C.G. (Cored guard)	7 MT	18	12
L.S. (Low sided wagon)	7 MT	8	8
Total Number		29	21
		==	==

c) Locomotive Engines :

<b>Description</b>	<u>Number</u>	<b>Operating</b>
Steam locomotives	11	4 Almost stopped to use
Diesel locomotives		
(small) 105 H.P.	2	1
New diesel locomotives		
(granted by India) 450 H.P.		
(1150 KTA) ZDM5 524, 533,		
535 and 536	4	4
	17	9
	==	==

According to above description 'Janakpur Railway' has 38 passenger coaches and out of these, 34 coaches are in running condition. There are 18 new passenger coaches which have been granted by India in fiscal years 2051/052 and 2052/053. Some old coaches have been occupied with vacuum brake and improved as per need of new diesel locomotives.

Out of 29 goods bogies only 21 bogies are operating but condition of these 21 bogies is not satisfactory. There are altogether 17 locomotive engines in JR and only 9 are in running condition. 4 steam locomotives are able to operate but these have been kept in yard (godown) Because there is paucity of coal, & spare parts. These are old and out dated. Further it is expensive to operate steam locomotives. 4 new, 450 H.P. diesel locomotives (1150 KTA) have been provided by India in two lots. The maximum speed of these diesel locomotives is 50 KM per hour but these are running with the speed of 20 KM per hour in down section and 15 KM per hour in upper section. JR has two motor trollies but only one is operating.

JR has revised (increased) fare and freight rate since Baisakh 2053 (27 April, 1996). Now the railway system has become sustainable. The railway service has become more convenience and reliable after the availability of 4 diesel locomotives and 18 passenger coaches from India. The Indian team 'Rail India Technical and Economic services' (RITES) has provided technological and engineering assistance to 'Janakpur Railway'. The old and small (105 H.P.) diesel locomotive hauling the over loaded passenger coaches in upper section. Passengers are sitting on roof and hanging on the door and windows.

Janakpur Railway has limited number of passenger coaches to handle large number of passengers. Although it is providing regular and punctual service by new train. Passengers are rushing to get seat inside the coaches. The new diesel locomotive ( 536 ZDM5, 1150 KTA. 450 H.P.) of 'Janakpur Railway' ( provided by India).

Janakpur Railway is providing extra service to handle a large number of passengers of 'Bibahpanchami Mela' (fair) in down section.

# **4.2 DESCRIPTIVE ANALYSIS**

TABLE NO. - 2

FIGURE NO. - 1

Table No. 2 and Figure No. 1 show station-wise passenger traffic of Janakpur Railway during fiscal years 2045/046 to 2052/053. The total number of passengers was 1357.34 thousand in FY 2045/046. Among them the maximum passengers, 490.21 thousand (36.12%), had been handled by Janakpur station and followed by Jaynagar, Mahinathpur, and Khajuri having 21.53%, 9.18%, and 8.90% respectively. Similarly the minimum passengers, 21.78 thousand (1.60%) had been handled by Singhiyahi station.

The total passenger flow was 1119.26 thousand in FY 2046/047 which was 17.54% lesser than FY 2045/046. The maximum passenger had been handled by Janakpur station (36.14%) and followed by Jaynagar, Khajuri, Mahinathpur, and Parbaha respectively. The lowest passengers had been handled by Singhiyahi station. In FY 2047/048 total number of passengers travelled was 1068.38 thousand, which was 4.55% lesser than previous FY 2046/047 and it was only 78.71% in comparison to base year 2045/046. During the year Janakpur station had maximum contribution (35.88%) followed by Jaynagar (19.94%), Khajuri (8.86%), Mahinathpur (8.15%) and Loharpatti (6.39%). Bizalpura station had lowest contribution (2.20%).

In FY 2048/049, the percentage of total passengers decreased to 65.46% and contribution of Janakpur station was in the highest position (37.49%) followed by Jaynagar, Khajuri, Mahinathpur, Loharpatti and Parbaha respectively. In fiscal years 2049/050 and 2050/051 the total percentage of passenger decreased to 55.67% (14.96% less than previous FY 2048/049) and 48.83% (12.29% less than previous FY2049/050) respectively. In both fiscal years Janakpur

station had maximum contribution whereas other stations were more or less same as previous fiscal years.

In FY 2051/052 there was drastic increase in the number of passengers travelled by JR. The total figure increased to 1122.24 thousand which was 69.32% more than previous year. The contribution of Janakpur station was 440.55 thousand (39.25%) and it was followed by Jaynagar (19.13%), Khajuri (9.64%) Mahinathpur (9.59%) and Parbaha (6.53%). Singhiyahi station had lowest contribution i.e. 18.28 thousand passengers (1.63%). Similarly, the increment in number of passengers continued in next FY 2052/053 also. Total 1281.64 thousand passengers (14.20% more than previous fiscal year) travelled by JR in that fiscal year and it was 94.42% in comparison to base year 2045/046. The contribution of different stations were almost same as previous fiscal years and again Janakpur station had maximum contribution having 505.74 thousand (39.46%) passengers. The total percentage of passengers travelled by four stations Pipradhi (1.24%), Loharpatti (1.23%), Singhiyahi (0.24%) and Bizalpura (0.13%) were very low because due to heavy flood in upper section the train service was almost closed.

While we look towards the average passenger flow of Janakpur Railway during aforesaid eight fiscal years we find that maximum percentage travelled from Janakpur and followed by Jaynagar, Khajuri, Mahinathpur, Parbaha, Baidhi and Loharpatti having 37.65%, 19.78%, 9.54%, 9.19% 6.77%, 5.95% and 4.63% respectively. Bizalpura station had lowest contribution which was only 1.75% on average.

The above analysis reveals that the number of passengers in down section (Janakpur to Jaynagar station) was more than upper (Pipradhi to Bizalpura station). Down section section held approximately 89% and the upper section held app. 11.0% passenger flow out of total passengers in JR. The contribution of Janakpur and Jaynagar station was about 57.0%. Similarly, about 31.0% passengers travelled from Khajuri, Mahinathpur, Parbaha and Baidhi stations. These has been three times a day train service in down section whereas only two times a day train service has been provided in upper section. Down section holds six stations but upper section holds only four stations. These are the causes of lower contribution in upper section. Further, it is most neglected section of JR The number of passengers increased during fiscal years 2051/052 and 2052/053 because during these periods two new trains were inaugurated by Janakpur Railway. The Indian government provided four diesel locomotives and eighteen passenger coaches in two lots so the capacity of Janakpur Railway increased substantially.

# TABLE NO. - 3

# FIGURE NO. 2
Table No.3 and Figure No. 2 reveal month wise passenger traffic for eight fiscal years of Janakpur Railway. In FY 2045/046 total 1357.34 thousand passengers travelled by JR. During the year maximum passengers having 132.75 thousand (9.78%) travelled in the month of Mansir and minimum 90.58 thousand (6.67%) passengers travelled in the month of Paush. During FY 2046/047 maximum passengers travelled in the month of Kartik (10.46%) and minimum in the month of Paush (5.40%). In FY 2046/047 the total number of passengers decreased by 17.54% in comparison to previous fiscal year. The decreasing trend of passengers continued upto FY 2050/051. Since FY 2051/052 the number of passengers began to increase because new trains were inaugurated in fiscal years 2051/052 and 2052/053.

During FY 2047/48 the number of passenger was maximum in the month of Ashwin (9.88%) and minimum in the month of Paush (6.16%). In FY 2048/049, 9.55% (maximum) passengers travelled in the month of Baisakh and 6.06% (minimum) passengers travelled in the month of Paush. In FY 2049/050, maximum 75.77 thousand passengers (10.03%) travelled in the month of Ashwin and minimum 33.79 thousand (4.47%) in Paush. During FY 2050/051 maximum passenger's flow was in the month of Baisakh (11.61%) followed by Ashar (11.42%), Jestha (11.38%), Kartik (10.12%) and Mansir (9.32%) respectively. Minimum 30.92 thousand (4.67%) passengers travelled in the month of Srawan.

In FY 2051/052 the total number of passengers travelled by JR was 1122.24 thousand which was 69.32% greater than previous year. Total 134.54 thousand (11.99%) passengers travelled in the month

8

of Ashar, and followed by Jestha (10.71%), Chaitra (10.26%), and Baisakh (9.33%) respectively. The minimum number of passengers travelled in the month of Srawan (5.22%) which was only 58.57 thousand.

In FY 2052/053 the maximum passengers travelled in the month of Jestha (12.09%) and minimum in Bhadra (1.29%). In this fiscal year the total number of passengers increased by 14.20% and it came up to 1281.64 thousand. Although it was 5.58% less than base year i.e. fiscal year 2045/046.

On average, while we look towards the trend of passenger traffic during eight fiscal years, the maximum passengers travelled in the month of Baisakh (9.69%), followed by Jestha and Ashar having 9.63% and 9.18% respectively. The minimum passengers travelled in the month of Paush (6.12%).

After analysing the table, it is obvious that maximum passengers travel in the months of Ashwin, Kartik, Mansir, Falgun and Baisakh. These are the result of holy fair (MELA) and some auspicious occasions which take place in these months. Ashwin and Kartik are festival months so a large number of people travel during these days. Bibah Panchami Mela (fair) is held in Mansir and Ram Nawmi Mela (Fair) is held in the months of Chaitra and Baisakh. Holi festival and Parikarma are usually held in Falgun so a large number of pilgrims, tourists and visitors come from different parts of country and India. At that time JR provides two or three times more train service to carry passengers. In FY 2051/052 the new train was inaugurated from the month of Kartik and in FY 2052/053 the next new train was inaugurated from the month of Chaitra. So after these months the capacity of JR increased and number of passengers also increased accordingly in the following months.

In FY 2052/053, due to flood the train service was interrupted in the month of Bhadra so the percentage was just 1.29%. In upper section the train service was almost closed during whole year. After analysing all eight fiscal years, we find that the number of passenger was minimum in the month of Paush. In the month of Paush most of the people are engaged in harvesting and storing grains so generally they avoid travel. This month consists only 29 days also. Besides this, when flood interrupts railway service in rainy season (especially in the months of Srawan and Bhadra) the number of passengers falls down, as it occurred in fiscal years 2051/052 and 2052/053.

TABLE NO. - 4

Table No. 4 exposes passenger's index of Janakpur Railway for eight fiscal years. Maximum passengers travelled from Janakpur station in fiscal year 2045/046 was 490.21 thousand. The number of passengers gradually decreased to 53.21% till FY 2050/051. In FY 2051/052 the number of passengers drastically increased to 89.87% and arrived at 103.17% during fiscal year 2052/053.

Jaynagar station was in second position which flow was 292.19 thousand in FY 2045/046. The contribution of Jaynagar station went down to 38.05% upto FY 2050/051. But it jumped to 73.46% in FY 2051/052 and increased to 90.15% in FY 2052/053. Unfortunately, it could not reach the target of base year and it was still lesser (9.85%) than base year 2045/046. The trend of Mahinathpur and Khajuri stations was same as Jaynagar till FY 2050/051. Thereafter it increased and went to 116.05% (in Mahinathpur station) and 118.03% (in Khajuri station) respectively. The number of passenger was 97.78 thousand in Parbaha station during FY 2045/046. It gradually went down to 42.09% in FY 2050/051 and in FY 2051/052 went up to 74.91%. In FY 2052/053 it crossed the number of base year 2045/046. The trend of Parbaha station was varying between 42.09% to 105.41% throughout the period. The passenger index of Baidhi station gradually decreased till FY 2050/051 and thereafter increased in FYs 2051/052 and 2052/053.

The index trend of Loharpatti station was erratic. It went to 95.26% in FY 2046/047 and increased upto 112.95% in FY 2047/048. In FY 2049/050 it again went down to 65.48% whereas it increased up to 78.01% in FY 2051/052. In FY 2052/053 the train service was interrupted by flood in upper section so the percentage came down to

26.06. Pipradhi and Bizalpura stations had same passenger's index trend as Loharpatti station.

Total 21.78 thousand passengers travelled from Singhiyahi station ion FY 2045/046 and the index trend was gradually increasing till FY 2047/048. In FY 2048/049 the index percentage was 112.63 and it gradually went down to 13.87% till FY 2052/053.

The above analysis explains that in down section the trend of passenger flow was gradually decreasing till FY 2050/051 and thereafter number of passengers increased drastically. The main cause was that new trains, which were provided by India, started in fiscal years 2051/052 and 2052/053. The trend was almost same in the stations of down section. But the index trend was erratic in upper section. The percentage of passenger traffic went down in FY 2052/053 in comparison to down section. Because in upper section, the train service was almost interrupted due to flood and breakage of track and bridges. TABLE NO. 5

Table No.5 reveals the monthly passenger's traffic of Janakpur Railway during FY 2052/053. Total 12,81,644.5 passengers travelled in the year. The train service was almost interrupted in upper section due to natural calamity. The flood damaged track, culverts, and bridges of upper section so since Bhadra 2052 to Chaitra 2052 the train service was closed in four stations (Pipradhi, Loharpatti, Singhiyahi and Bizalpura). In Baisakh 2053 the train service re-opened from Janakpur to Pipradhi only, and in the month of Jestha 2053 it was extended to Singhiyahi. Due to flood in Kamla river at Jaynagar, the train service was closed from Jaynagar to Khajuri in Bhadra 2052.

The minimum number of passengers travelled in the month of Bhadra because during this period most of the days the train service was interrupted and people were engaged in agricultural work. The total number of passengers were maximum in the month of Jestha (12.09%) followed by Baisakh (12.06%), Falgun (10.33%), Ashar (10.27%) and Chaitra (9.94%). During the months of Baisakh, Falgun, and Chaitra some holy fair (MEAL) and auspicious occasions took place so the number of passengers increased.

Among all ten stations, maximum passengers travelled from Janakpur station (39.46%) followed by Jaynagar (20.55%), Mahinathpur (11.28%), and Khajuri (11.13%). Movement of passengers in Jaynagar, Mahinathpur, Khajuri, Parbaha, and Baidhi stations was highest in the month of Baisakh whereas movement of passengers in Janakpur station was highest in Jestha. TABLE NO. - 6

FIGURE NO. - 3

Table No. 6 and Figure No. 3 deal station-wise cargo traffic for eight fiscal years of Janakpur Railway. This is also shown in figure no. 1. Janakpur Railway carried total 14850.00 MT cargo in the fiscal year 2045/046. Janakpur station had the major contribution of cargo traffic in fiscal FY 2045/046. Total volume of cargo carried by Janakpur station was 9795.2 MT and the percentage was 65.96 followed by Baidhi (11.96%), Bizalpura (7.52%), Khajuri (6.63%), and Mahinathpur (3.60%). The minimum volume of cargo carried by Pipradhi station was 3.4 MT (0.02%) whereas Jaynagar station had no contribution during the year. Volume or amount of cargo is accounted/added in that station where goods are delivered (i.e. station of destination). Nothing was exported through this route during the year so the contribution of Jaynagar station was nil. The contribution of Jaynagar station (in cargo traffic) was again nil in fiscal years 2046/047, 2048/049, 2049/050, 2050/051, and 2052/053.

In FY 2046/047, the total volume of cargo went down to 9898.5 MT which was 33.34% less than base year 2045/046. The cargo index went down to 66.66%. The maximum volume of cargo transported from Janakpur station during the year which was 5398.1 MT (54.54%). The contribution of Janakpur station was lesser than previous year. The other stations, which carried high volume of cargo, were Baidhi, Khajuri, Mahinathpur, Bizalpura, and Loharpatti having 16.85% 8.00%, 7.79%, 4.79%, and 3.04% respectively. Pipradhi station carried only 7.2 MT (0.07%) cargo, which was the minimum cargo carried from any station during the year.

There was steep rise in total cargo traffic of Janakpur Railway in FY 047/048. Total volume of cargo traffic went up to 11593.1 MT which was 17.12% greater than previous year, although it was still lesser than base year 2045/046. The total index percentage was 78.07 only. The contribution of Janakpur station increased to 68.26% followed by Khajuri (9.81%), Mahinathpur (9.47%), Bizalpura (3.03%), and Loharpatti (2.93%).Jaynagar had minimum contribution (0.10%). The volume of Baidhi station decreased drastically and went down to 244.2 MT (2.11%).

Total 11459.3 MT cargo carried by JR during FY 2048/049 which was 1.15% lesser than previous year. Janakpur station carried maximum 7637.4 MT (66.65%) cargo and followed by Mahinathpur (12.51%), Khajuri (8.25%), and Loharpatti (5.18%). The total volume of cargo carried by JR was 8876.9 MT in year 2049/050. It was 22.53% lesser than previous year and the cargo index was 59.78% Jaynagar and Pipradhi station did not carry any cargo. Janakpur station carried maximum 6340.4 MT (71.43%) cargo and followed by Mahinathpur (13.90%) and Khajuri (8.65%). The rest stations held negligible volume of cargo.

In FY 250/051 total volume of cargo carried by JR was 7123.5 MT which was 19.76% lesser than previous year. The contribution of Janakpur station was 4911.5 MT (68.95%) followed by Mahinathpur (14.72%) and Khajuri (13.48%). Jaynagar and Parbaha stations did not carry cargo during the year. In FY 2051/052 total volume of cargo went down to 6814 MT (4.34% lesser than previous year) and this volume was almost half of the base year 2045/046. Out of

total volume of cargo the contribution of Janakpur station was 67.13%. Contributions of Pipradhi and Singhiyahi were nil and Jaynagar contributed only 0.37%. Rest stations occupied more or less same percentage as previous year.

In the last fiscal year 2052/053, the total volume of cargo decreased to 5548.3 MT which was only 37.36% in comparison with base year 2045/046. Further, it was 18.58% lesser than previous year. The contribution of Janakpur station fell down to 61.75% (3426.1 MT). Mahinathpur station was in second position having 26.55% (1473.1 MT) cargo traffic. Contribution of Jaynagar and upper section's stations was nil. Due to flood in upper section the railway track, bridge, and culvert were damage. Consequently, train service was interrupted in most of the time during the year.

While we look towards the cargo traffic analysis of eight fiscal years, the trend of cargo traffic was decreasing except FY 2047/048. Contribution of Janakpur station was highest in every year and followed by Mahinathpur, Khajuri, Baidhi, Bizalpura, and Loharpatti.

In FY 2046/047 the trade and transit treaty between Nepal and India expired so the Indian border (Jaynagar) was closed by Indian Government. It was re-opened in FY 2047/048 and as a result the cargo traffic decreased by 33.34% in FY 2046/047 and increased by 17.12% in FY 2047/048. During the period of maturity of trade and transit treaty, most of the businessmen diverted their goods to other borders and it continued forever. The new trains were inaugurated in FY 2051/025 and 2052/053 and during these periods number of passengers increased but the volume of cargo did not increase because new trains were not provided with goods bogie. JR could not transport goods during those periods nicely because the condition of goods bogie was very poor. The cargo service was not reliable, safe, and quick so it lost the confidence of businessmen. In rainy season the cargo service was interrupted so people carried their goods through other route. As a result, in general condition also, people avoided JR to carry cargo and they used alternate mode/route of transportation. Thus in the sphere of cargo traffic, the performance of Janakpur Railway is not satisfactory.

TABLE NO.- 7

FIGURE NO. - 4

Table No.7 and Figure No. 4 display month-wise cargo traffic from fiscal years 2045/056 to 2052/053. In FY 2045/046 the total volume of cargo carried by Janakpur Railway was 14850 MT The maximum volume 1713.9 MT (11.54%) was carried in the month of Srawan followed by Chaitra (11.30%), Paush (10.84%), Jestha (10.28%), and Magh (9.17%). The minimum volume of cargo was transported in the month of Ashwin (607.9 MT) which was only 4.09% out of total cargo carried during that year.

During next FY 2046/047 the total volumn of cargo went steep down to 66.66% and it was 33.34% lesser than previous year. Thus total volumn of cargo was 9898.5 MT. In which, maximum 1554.0 MT of cargo was carried in the month of Paush (15.70%) followed by Mansir (12.65%), Ashwin (10.26%), Srawan (10.12%), Kartik (9.23%) and Ashar (9.11%). The minimum volume of cargo carried in the month of Baisakh.

The total volume of cargo increased in FY 2047/048 by 17.12% in comparison with previous year but it was still lesser than base year 2045/046. The index percentage was only 78.07%. The total volume of cargo was 11593.1 MT and out of these, maximum i.e. 1390.6 MT (11.99%) cargo was carried in the month of Ashar. It was followed by Jestha (10.43%), Ashwin (8.86%), Baisakh (8.82%), Chaitra (8.70%), Bhadra (8.66%), Falgun (8.12%), and Magh (8.08%). Minimum 740.2 MT cargo (6.38%) was carried in the month of Mansir.

In FY 2048/029 the total volume of cargo carried by JR was 11459.3 MT (1.15% lesser than previous year). In the month of

Ashwin maximum 1216.5 MT (10.62%) cargo was carried and it was followed by Ashar (9.73%) and Jestha (9.45%). In FY 2049/050 total volume of cargo decreased to 8876.9 MT which was 22.53% lesser than FY 2048/049. Maximum volume of cargo carried in the month of Srawan was 1180.6 MT whereas minimum volume (421.3 MT) was carried in the month of Kartik. Similarly in FY 2050/051 the total volume of cargo decreased to 7123.5 MT This volume of cargo was 19.76% lesser than previous year and the index fell down to 47.97%. Thus the contribution of cargo traffic decreased by half in comparison with base year 2045/046. The maximum and minimum volume were carried in the months of Falgun (10.92%) and Srawan (2.54%) having 777.8 MT and 181.0 MT respectively.

In FY 2051/052 the total volume of cargo again decreased by 4.34% and arrived at 6814.0 MT The maximum volume of cargo was carried in the month of Ashar (11.79%) followed by Bhadra (11.53%), Ashwin (10.89%), Srawan (10.28%), and Jestha (10.14%). Minimum volume of cargo carried in the month of Chaitra having 280.4 MT (4.11%). The cargo index fell down to 37.36% in FY 2052/053 and it was 18.58% lesser than previous year. The total volume of cargo carried by JR was 5548.3 MT during FY 2052/053. The volume of cargo was maximum in the month of Chaitra having 718.4 MT (12.95%) followed by Ashar (11.51%), Jestha (10.50%), and Falgun (9.42%). Minimum volume was carried in the month of Bhadra having 92.7% MT (1.67%).

While we look towards the average figure it is clear that maximum volume of cargo was carried in the month of Ashar (9.54%) followed by Jestha (9.31%), Srawan (9.07%), and Paush (9.06%). The

minimum cargo (6.46%) was transported in the month of Kartik. During the eight fiscal years maximum volume of cargo was transported in FY 2045/046 and minimum in FY 2052/053.

The analysis of above table shows that maximum volume of cargo was carried in the month of Ashar and followed by Srawan, Paush, and Falgun. Similarly the minimum volume of cargo was carried in the month of Kartik followed by Chaitra, Mansir, Ashwin, and Bhadra.

The stations of Janakpur Railway are connected with village areas (except Janakpur and Jaynagar station). In rainy season the roads of villages become muddy so people can not use own means of transportation for example cart, bicycle etc. During this period they are forced to use train to carry goods. Consequently, during the months of rainy season (Jestha, Ashar, and Srawan) JR carry's more cargo in comparison to other months.

TABLE NO.- 8

Table No.8 reveals the cargo index of Janakpur Railway from fiscal years 2045/046 to 2052/053. FY 2045/046 is the base year but in the case of Jaynagar station the base year is 2047/048. Total volume of cargo carried by Jaynagar station was 11.7 MT in FY 2047/048 and it had no contribution till FY 2050/051. In FY 2051/052 the cargo index of Jaynagar station increased to 216.24% but it was nil in FY 2052/053. Thus the contribution of Jaynagar station was negligible.

In the case of Khajuri station, the total volume of cargo carried was 984.3 MT. Its index decreased to 80.46% in FY 2046/047 and increased up to 115.49% in FY 2047/048.Since then the contribution of Khajuri station was increasing and decreasing. In last fiscal year (2052/053) it was almost half of the base year. Thus the index trend of Khajuri station was erratic.

The cargo index of Mahinathpur station was increasing till FY 2048/049 and it came up to 268.12%. But thereafter the index began to decrease and gradually went down to 198.84% in FY 2051/052. Mahinathpur station had shown positive contribution in FY 2052/053. The total volume of cargo carried by Baidhi station was 1775.6 MT in FY 2045/046. In FY 2046/047 it decreased to93.92% and in 2047/048 drastically it Jumped to 13.75%. Since then it began to decrease gradually and went down to 0.41% only. Thus there was maximum decreasing trend.

In the case of Parbaha station there was increasing trend in fiscal years 2046/047 and 2047/048. The cargo index came down to

176.00% in FY 2048/049. In fiscal year 2049/050 and 2051/052 it Jumped down 44.10%. During FY 2050/051 Parbaha station did not carry any cargo. The cargo index increased to 72.16% in FY 2052/053, although it was still lesser than base year.

The total volume of cargo carried by Janakpur station was 9795.2 MT in FY 2045/046, which was the maximum cargo carried by any station during the year. In FY 2046/047 it went down to 55.11% and increased upto 80.79% in FY 2047/048. Since then there was decreasing trend and it came down to 34.98% gradually till FY 2052/053.

The contribution of Pipradhi station was minimum in the base year 2045/046 and it was only 3.4 MT. It increased to 211.76% in FY 2046/047 and drastically jumped to 1588.24% in FY 2047/048. It decreased to 1523.53% in FY 2048/049. In FY 2050/051 it decreased to 441.18% only. The contribution of Pipradhi station was nil during fiscal years 2049/050, 2051/052, and 2052/053.

The index of Loharpatti station was fluctuating between 97.60% to 70.90% during fiscal years 2046/047 to 2049/050. In FY 2050/051 the index came down to 10.27% and raised upto 28.78% in FY 2051/052. Due to flood, the train service was almost interrupted in upper section during FY 2052/053, so all 4 stations could not carry cargo.

In FY 2046/047 the cargo index of Singhiyahi station increased to 173.60% and in following years the index were less than base year. It varied between 18.40% to 77.56%. During fiscal years 2051/052 and 2052/053 Singhiyahi station did not carry any cargo.

The contribution of Bizalpura station was 1117.3 MT in the base year 2045/046. In FY 2046/047 the index decreased to 42.43% and there was decreasing trend till FY 2051/052. In FY 2050/051 the cargo index slightly increased from 6.44% to 7.92% and again it drastically fell down to 1.29% in FY 2051/052.

From the above analysis it is obvious that the trends of all stations are decreasing cum erratic. In most of the stations and years the indexes were less than base year. Only in the case of Pipradhi and Mahinathpur stations the cargo index was more than base year. The index of Mahinathpur station was fluctuating between 144.21% to 275.40%. Finally, we can say that the index trend of cargo traffic is not satisfactory so Janakpur Railway should pay proper attention in this sphere.

TABLE NO. - 9

Table No.9 shows month-wise and station-wise cargo traffic of Janakpur Railway during fiscal year 2052/053. The amount of Freight is collected at delivery station hence the volume of transported cargo has been included in delivery station ( destination ) only.

Not any cargo was booked for Jaynagar station so the volume of cargo was nil during the fiscal year. The train service was interrupted in upper section due to heavy flood. So the contribution of Pipradhi, Loharpatti, Singhiyahi and Bizalpura stations was nil. Similarly cargo for Baidhi station was booked in the month of Srawan only and as a result during the whole fiscal year it carried only 72.0 quintals of cargo.

In the case of Khajuri station, maximum cargo was carried in the month of Magh which was 1138.0 quintals (22.21%). Mahinathpur station carried 13.69% (2016.0 Quintals) cargo in the month of Jestha, followed by Magh having 1584.0 quintals (10.75%). Janakpur station carried highest volume of cargo in the month of Chaitra having 5639.0 quintals (16.46%). It decreased to 4288.0 quintals ( 12.52%) in the month of Ashar. The volume of cargo went down to 3674.0 quintals (10.72%) in the month of Paush and followed by Jestha (9.99%).

In total figure, maximum cargo was carried in the month of Chaitra having 7184.0 quintals (12.95%) followed by Ashar ( 11.51%). Jestha (10.50%), and Falgun (9.42%). During whole fiscal year Janakpur Railway transported 55483.0 quintals cargo. Out of total cargo, Janakpur station contributed 34261.0 quintals (61.75%) followed by Mahinathpur and Khajuri having 14731.0 quintals (26.55%) and 5123.0 quintals (9.23%) respectively.

Janakpur is situated in the middle of all stations and Janakpur Cigarette Factory Ltd. provided large volume of cargo ( as it is the major customer of Janakpur Railway in cargo traffic ) so the contribution of Janakpur station was highest in cargo traffic.

Most of the goods were transported in the month of Chaitra, Jestha, and Magh. Businessmen and general people usually store goods before rainy season, so the volume of cargo increased in the month of Chaitra and Jestha. TABLE NO. - 10

FIGURE NO. - 5

Table No. 10 and Figure No. 5 show total volume of cargo carried by Janakpur Railway and Janakpur station during fiscal years 2045/046 to 2052/053.

In FY 2045/046 the total volume of cargo carried by JR was 14850.0 MT The share of Janakpur station was 9795.2 MT which was 65.96%. This contribution decreased to 54.53% in FY 2046/047. The volume of cargo carried by JR decreased to 9898.5 MT in this fiscal year. The contribution of Janakpur station decreased by 44.89% and the cargo index of Janakpur station fell down to 55.11%. Due to expiry of trade and transit treaty between Nepal and India, the border of Jaynagar was closed in fiscal year 2046/047.

In FY 2047/048 the border was re-opened by Indian Government so the total volume of cargo increased to 11593.1 MT and the contribution of Janakpur station also increased to 7913.1 MT (68.26%). The cargo index could not reach to its base year's figure although it reached to 80.79% which was 46.59% greater than previous year's index.

In FY 2048/049 total volume of cargo carried by JR went down to 11459.3 MT and the share of Janakpur station also fell down to 7637.4 MT ( 66.65% ). Cargo index of Janakpur station decreased to 77.97% which was 3.48% lesser than previous year index. The total volume of cargo carried by JR decreased to 8876.9 MT and contribution of Janakpur station decreased to 6340.4 MT ( 71.43% ) in FY 2049/050. In this year out of total cargo carried by JR, the contribution of Janakpur station increased to 71.43% which was the highest percentage occupied during eight fiscal years. But the cargo index of Janakpur station decreased to 64.73% which was 16.89% lesser than previous year.

In FY 2050/051 total volume of cargo and share of Janakpur station, both decreased simultaneously. The cargo index of Janakpur station fell down to 50.14% which was almost half of base year index. In this year the index figure decreased by 22.54% But in FY 2051/052 the index figure decreased by 6.87% only. New trains were started by JR during FYs 2051/052 and 2052/053. The new trains were not provided with goods bogies so the cargo transportation capacity could not increase. In FY 2052/053 flood affected the train service in upper section. As a result, the volume of total cargo decreased to 5548.3 MT and the contribution of Janakpur station fell down to 3426.1MT ( 61.75% ) which was 25.10% lesser than previous year. The cargo index of Janakpur station gradually decreased to 34.98% till FY 2052/053.

By analysing above table it is obvious that the contribution of Janakpur station fluctuated between 54.53% to 71.43% during eight fiscal years. The contribution of Janakpur station was highest in FY 2049/050 followed by 2050/051 and 2047/048 having 71.43%, 68.95%, and 68.26% respectively. The contribution of Janakpur station was minimum ( 54.53% ) in FY 2046/047. TABLE NO. - 11

FIGURE NO. - 6

Table No.11 and Figure No. 6 reveal total cargo carried by Janakpur Railway and Janakpur cigarette Factory Ltd. during fiscal years 2045/046 to 2052/053.

In year 2045/046 JR carried total 14850.0 MT cargo in which 5940.0 MT (40.0%) was transported for JCF. Next year JCF did not provide goods to JR. Because in FY 2046/047 Jaynagar border was closed due to expiry of trade and transit treaty between Nepal and India. In FY 2047/048 the Indian Government re-opened the border. During this year, out of total goods transported by JR, 46.53% cargo was transported for JCF. This figure decreased to 39.78% in FY 2048/049 and JR carried 4558.3 MT cargo for JCF.

In FY 2049/050, 8876.9 MT cargo was carried by JR The contribution of JCF increased to 4938.4 MT (55.63%). The total volume of cargo decreased from 11459.3 MT to 8876.9 MT but the volume of cargo carried for JCF increased from 4558.3 MT to 4938.4 MT The cargo index of JCF increased to 83.14% which was 8.34% greater than previous year.

The total volume of cargo carried by JR decreased to 7123.5 MT and out of total cargo the contribution of JCF was 3658.4 (51.36%) in FY 2050/051. Total volume of cargo carried for JCF decreased by 25.92% and the cargo index fell down to 61.59%.

The inauguration of new trains in fiscal years 2051/052 and 2052/053 could not exceed the volume of cargo in JR. The volume of cargo traffic decreased to 6814.0 MT and out of them the contribution of JCF was 3082.2 MT (45.23%). JCF provided 15.75% less goods in comparison with previous year. Similarly in FY 2052/053 the cargo carried by JR went down to 5548.3 MT only which was 37.36% of base year. In this fiscal year cargo carried for JCF was 2556.0 MT which was only 43.03% of base year 2045/046. In FY 2052/053 the contribution of JCF was 46.07% out of total cargo carried by JR. The cargo index of JCF fell down to 43.03% which was 17.07% lesser than previous year.

The main cause for the reduction of JCF cargo was that, it diverted goods in other routes and its production gradually diminished in following years. JCF imported less goods from India. Besides these, the cargo transportation capacity of JR decreased in following years due to paucity of steam coal, goods bogie and godown facility.

After analysing above table it is apparent that JCF is the major customer of JR in cargo traffic. The contribution of JCF fluctuated between 39.78% to 55.63% except FY 2046/047. It was maximum in FY 2049/050 (55.63%) and minimum in FY 2048/049 (39.78%). The total volume of cargo carried by JR was decreasing gradually and the same case was happening with the cargo traffic of JCF.

TABLE NO. - 12

FIGURE NO. - 07
Table No. 12 and Figure No. 7 reveal total volume of cargo (including luggage and parcel) carried by Janakpur Railway during fiscal years 2045/046 to 2052/053.

In FY 2045/046 total volume of cargo carried by JR was 18111.85 MT. Out of total volume of cargo, 1587.75 MT (8.77%) was carried under 'luggage'; 1674.1 MT (9.24%) was carried under 'parcel;. and rest 14850.0 MT (81.99%) was carried under 'goods'. In FY 2046/047 the total volume of cargo decreased by 27.73% and it went down to 13089.19 MT The contribution of 'luggage', 'parcel' and 'goods' was 14.22%, 10.16% and 75.62% respectively.

The Indian border (Jaynagar) was re-opened in FY 2047/048 as it was closed in FY 2046/047 due to expiry of trade and transit treaty between Nepal and India. Consequently, the total volume of cargo traffic increased by 12.49%. Out of total volume of cargo (14724.25MT) the contribution of 'luggage', 'parcel', and 'goods' was 8.73%, 12.54%, and 78.73% respectively. The contribution of 'parcel' and 'goods' both increased in this fiscal year. In FY 2048/049 the total volume of cargo carried by JR was 13921.05 MT which was 5.45% lesser than previous year. The contribution of 'goods' was 82.32% which was maximum during eight fiscal years. In this year Nepal Coal Ltd. transported 1504.8 MT coal by JR and this volume of cargo was included in 'goods'. Therefore, the contribution of 'goods' increased in comparison with 'luggage' (6.26%), and 'parcel' (11.42%) during the year. The total volume of cargo went down to 11311.30 MT in FY 2049/050 and 9075.83 MT in FY 2050/051. The contribution of 'goods' was same in both fiscal years.

In FY 2051/052 the total volume of cargo decreased by 0.40% only and it came to 9039.30 MT But the share of 'goods' and 'parcel' decreased to 75.38% and 15.38% respectively whereas contribution of 'luggage' increased to 9.24%. In FY 2052/053 total volume of cargo decreased to 8077.65 MT (10.64% lesser than previous year) out of which 'goods' was 5548.30 MT (68.69%); 'parcel' was 1710.10 MT (21.17%); and 'luggage' 819.25 MT (10.14%). During fiscal years 2051/052 and 2052/053 new passenger trains were started so the volume of 'luggage' and 'parcel' increased substantially. Whereas the volume of 'goods' decreased to 5548.3 MT and its contribution also decreased to 68.69%.

Thus from above analysis, it is apparent that contribution of 'goods' fluctuated between 68.69% to 82.32%, 'parcel' was in second position fluctuated between 9.24% to 21.17%); and lastly contribution of 'luggage' fluctuated between 5.10% to 14.22%. 'Luggage' and 'parcel' both are attached with passenger coaches and the condition of passenger service was improved by the inauguration of new trains so the volume of 'luggage' and 'parcel' increased from FY 2051/052. TABLE NO. 13

FIGURE NO. - 8

Table No. 13 and Figure No. 8 reveal the revenue generated by 'Janakpur Railway' during fiscal years 2045/046 to 2052/053. Other revenues (sundries) is non operating revenue. It is generally earned from the rent of shops which are operated in station compound or area. Income received from railway line side land, excess fare etc. are also included in this head. The incomes received from luggage and parcel are the amount of coachings so these are included in the revenue from passengers.

In the FY 2045/046 total revenue generated by JR was Rs. 7474.34 thousand. Out of which Rs. 6303.37 thousand (84.33%) was generated by passenger traffic, Rs. 903.28 thousand (12.09%) was generated by cargo traffic, and rest amount by sundry revenue. In total revenue the passenger traffic had major contribution. Revenue from per MT of cargo was Rs. 60.83 and from per passenger was Rs. 4.64.

In FY 2046/047 number of passengers and volume of cargo decreased so the total revenue also went down to Rs. 6225.60 thousand. The contribution of passenger traffic was Rs. 5615.05 thousand (90.19%), revenue from cargo traffic was Rs. 334.94 thousand (5.38%), and revenue from other sources was Rs. 275.61 thousand (4.43%). The index of total revenue fell down to 83.29%. Revenue from per passenger increased up to Rs. 5.02 whereas the revenue from per MT of cargo went down to Rs. 33.84. There was about fifty percent reduction in revenue from per MT of cargo traffic.

In FY 2047/048 the figures of passengers and cargo increased, so total revenue also increased to Rs. 7222.52 thousand. The

total revenue index increased to 96.63% in comparison with previous year. Revenue from passenger traffic was Rs. 5960.33 thousand (Rs. 5.88 per passenger) and revenue from per MT of cargo was Rs. 96.25 Which was almost three times greater than previous year. Revenue from cargo traffic was Rs. 1115.80 thousand. There was heavy reduction in the revenue from sundries and it fell down to Rs. 146.39 thousand. It was 46.89% lesser than previous year's revenue. The contribution of passenger traffic was 82.52% and the cargo traffic was 15.45% out of total revenue generated during the year.

The total annual revenue of JR Increased to Rs. 7623.55 thousand in FY 2048/049. The index figure exceeded the target of base year 2045/046 and arrived at 102.0%. During this fiscal year the number of passengers and volume of cargo decreased, although total annual revenue increased. The main cause was that the rate of passenger fare and cargo freight was revised in FY 2048/49. As a result the revenue from per passenger increased to Rs. 6.53 (17.03% more than previous year) and revenue from per MT of cargo also increased to Rs. 150.92 (56.80% more than previous year). Out of total revenue, Rs. 5799.71 thousand (76.08%) generated from passenger traffic, Rs. 1729.39 thousand generated from cargo traffic (22.68) and revenue from sundries was Rs. 94.45 thousand (1.24%). In total revenue, the contribution of passenger traffic decreased to 76.08% whereas share of cargo traffic increased upto 22.68%. There was substantial reduction in the share of sundry revenue and it fell down to 1.24%.

In FY 2049/050 total annual revenue decreased to Rs. 6529.76 thousand and the index was 87.36%. Number of passengers and

volume of cargo both decreased. Although the revenue from per passenger, per MT of cargo, and other revenue increased and came upto Rs. 6.57, Rs. 161.12, and Rs. 134.52 thousand respectively. The total revenue decreased again in FY 2050/051 and it went down to Rs. 5670.92 thousand. (75.87%). Out of total revenue, the contribution of passenger and cargo traffic decreased whereas sundries revenue increased. The number of passenger and volume of cargo both decreased.

In FY 2051/052 the total revenue increased to Rs. 8232.48 thousand (110.14%) out of which, revenue generated from passenger was Rs. 6960.16 (84.55%), revenue from cargo was Rs. 1149.29 (13.96%) and other revenue was Rs. 123.03 (1.49%). Revenue from cargo and others decreased whereas revenue from passengers increased. The cause behind this increase was that new train was started in this fiscal year. New train was equipped with passenger coaches only, so the number of passengers increased but volume of cargo did not increase. In FY 2052/053 the total revenue increased of Rs. 9932.70 thousand and the index percentage increased to 132.89. Out of total annual revenue Rs. 8807.23 thousand (88.67%) was generated from passenger traffic; Rs. 873.93 thousand was generated by cargo traffic; and Rs. 251.54 thousand (2.53%) from sundries. The sundry revenue was almost double in comparison with previous year. But revenue from cargo and per MT of cargo traffic decreased. The next new passenger train was inaugurated in this year so number of passengers and revenue from passenger increased again.

By analysing above table, it is obvious that trend of total revenue generation was decreasing till fiscal year 2046/047. In FY

2046/047 the trade and transit treaty between Nepal and India matured, and India closed Jaynagar border to import export goods. As a result, volume of cargo and the number of passengers decreased. There after Jaynagar border was re-opened in FY 2047/048 and due to increment in number of passengers and volume of cargo, total revenue increased. Since FY 2049/050 the index of total revenue fell down because there was paucity of coal, rolling stocks, locomotives, and spare parts etc. But in fiscal years 2051/052 and 2052/053 India granted 4 diesel locomotives and 18 passenger coaches. Consequently, the number of passengers, revenue from passengers, and total annual revenue increased. The above analysis reveals that out of total revenue, the contribution of passengers' revenue was maximum. TABLE NO. - 14

FIGURE NO. - 9

Table No. 14 and Figure No. 9 reveal 18 fiscal years' passenger and cargo traffic trend of Janakpur Railway.

In fiscal year (base year) 2035/036 the total passengers carried by Janakpur Railway was 1200.39 thousand and the volume of cargo traffic was 23413.8 MT. Till fiscal year 2038/039 the passenger traffic increased upto 1273.58 thousand (106.10%) and cargo traffic decreased to 17867.7 MT (76.31%) gradually. In FY 2039/040 the number of passengers decreased by 10.10% and cargo traffic increased by 10.89%. Thus the total passenger traffic was 1144.94 thousand ( 95.38% )and volume of cargo was 19813.0 MT ( 84.62% ). Till FY 2042/043 the passenger traffic increased upto 1644.30 thousand ( 136.98%) and the volume of cargo traffic fell down to 16651.5 MT ( 71.12% ). In FY 2043/044 the total number of passengers increased by 2.23% only whereas the volume of cargo increased by 26.67%. Thus both were 1681.02 thousand (140. 04%) and 21092.9 MT (90.09%) respectively. Since FY 2044/045 passenger and cargo traffic were in decreasing trend. In FY 2046/047 the number of passengers went down to 1119.26 thousand (93.24%) and volume of cargo decreased to 9898.5 MT (42.28%). There was heavy decrease (33.34%) in the volume of cargo traffic during FY 2046/047 and the cargo index came at 42.28%. But in FY 2047/048 the volume of cargo increased by 17.12% whereas passengers' trend was still decreasing. The total percentage of passenger and cargo went down to 55.21 and 30.42 respectively till the FY 2050/051. In fiscal years 2051/052 and 2052/053 the number of passengers increased by 69.32% and 14.20% respectively. There was a drastic increase in FY 2051/052. Passenger index arrived at 93.49%, and in FY 2052/053 the passenger index steep rose to 106.77%. Thus the

number of passengers exceeded the base year's figure. Actually, there was a continuous erosion in the number of passengers since FY 2044/2045, and it was a substantial break in decreasing trend. This happened due to addition to two new trains. But this had no effect in the sphere of cargo. In FY 2051/052 the volume of cargo decreased by 4.34% and again decreased 18.58% in FY 2052/053. The total volume of cargo carried by JR was only 5548.3 MT in FY 2052/053 which was only 23.70% of base year 2035/036. In the beginning, the volume of cargo was maximum and it fell down gradually. At that time logs were exported in large volume. But in the following years government banned to cut trees from forest and export it. It is now totally restricted. Thus there was heavy decrease in cargo traffic of JR.

From fiscal years 2035/36 to 2042/043 there was inverse trend between passenger and cargo traffic. In fact, the trend of passenger service was positive till FY 2043/044 (except in FY 2039/040) but since then, there was decreasing trend. Although it stopped from FY 2051/052. In the case of cargo traffic there was almost decreasing trend except fiscal years 2039/040 and 2047/048. In conclusion, we can say that passengers traffic had erratic trend whereas cargo traffic had almost decreasing trend.

The major causes for the poor performance of JR were, paucity of steam coal, locomotives, rolling stocks, spare parts, and lack of maintenance. There was not continuous supply of coal in JR so firewoods were used. Wood is exhaustive so it was not able to produce sufficient heat ( steam ) in time. As a result, 29 KMs' travel took usually five to six hours. This diminished the hauling capacity also so the trains had less bogies. Steam locomotives were in pitiable condition and most of the time they became failure in journey. In absence of proper maintenance engines were always kept in workshop. Passenger coaches were in limited number so passengers were compelled to travel on roof. Goods bogies were in pitiable condition so people were anxious about the safety of goods. Train service was delay, irregular, and it was interrupted in most of the years during rainy season. The administration of JR was not strict so there was maximum number of without ticket passengers. TABLE NO. - 15

FIGURE NO. - 10

FIGURE NO. 11

Table No. 15 reveals the annual expenditure, revenue, and profit/loss analysis of Janakpur Railway from fiscal years 2045/046 to 2052/053. Figure No. 10 shows annual expenditures and Figure No. 11 shows profit/loss of Janakpur Railway during eight fiscal years.

In FY 2045/046 total expenditure amount was Rs. 88,43,207.70. Out of total expenditure, maximum amount (41.86%) expended on 'Direct Operational Expenditure' and 37.91% amount spent on 'Total Salary Wages and Allowances'. The minimum amount 1.84% spent on 'Building and Bridge Repair Expenditure'. Total revenue generated by JR was Rs. 74,74,337.47 and the amount of net loss was Rs. 13,68,870.23 (18.31%).

FY 2046/047 In total expenditure raised to Rs.98,56,779.59 in which 40.17% spent on 'Direct Operational Expenditure'; 39.19% spent on 'Total Salary, Wages and Allowances'; and 0.24% (minimum amount) spent on 'Track Maintenance Expenditure'. Total revenue decreased to Rs. 62,25,596.87 and as a result the amount of net loss increased to Rs. 36,31,182.72 (58.33%). In FY 2045/046 the contribution of 'Administrative Expenditure' was 6.03% whereas in FY 2046/047 it increased to 12.34%. There was an extra item named 'Interest Expenses'. The amount to 'Interest Expenses' included in 'Administrative Expenditure' which was Rs. was 6,60,725.87. Therefore the percentage of this expenditure increased to 12.34%.

The total amount of expenditure was Rs. 1,21,86,776.17 in FY 2047/048 which was 23.64% greater than previous year. Out of total

expenditure 42.15% spent on 'Direct Operational Expenditure'; 45.61% spent on ' Total Salary Wages and Allowances'; and the minimum amount ( 0.39% )spent on 'Track Maintenance Expenditure'. Expenditure on 'Total Salary, Wages, and Allowance' increased whereas 'Administrative Expenditure' decreased in comparison with previous fiscal year 2046/047. The total revenue increased to Rs. 72,22,519.34 (16.01% greater than previous year) in FY 2047/048. Net loss increased to Rs. 49,64,256.83 ( 86.73% ) which was 36.71% greater than previous year. The main cause for the increase in loss was that total expenditure increased by 23.64% but total revenue increased by 16.01% only. Thus there was a little increase in total revenue.

Total amount Rs. 1,30,59,987.64 spent in FY 2048/049 which was 7.17% greater than previous year's total expenditure. Out of total expenditure 42.21% spent on ' Direct Operational Expenditure'; 41.44% on 'Total Salary, Wages and Allowances'; and only 0.20% spent on 'Track Maintenance Expenditure'. There was increase in the expenditure of ' Gratuity, Grant and Medicine'. Rs. 4,51,555.68 spent for 'upper section railway consolidation' which was added in 'Administrative Expenditure'. Thus its contribution increased to 4.70%. Total revenue increased to Rs. 76,23,553.20 which was 5.55% greater than previous fiscal year. Total expenditure increased by 7.17% and net loss also increased to 71.31% ( Rs. 54,36,434.44 ). It was 9.51% greater than previous fiscal year.

In FY 2049/050 the total expenditure drastically increased to Rs. 1,88,19,051.53 which was 44.10% greater than FY 2048/049. A sum of Rs. 42,96,288.49 (Gratuity ); and Rs. 23,49,043.21 (Medical

Treatment ) paid under 'Gratuity, Grant and medicine Expenditure' head which contribution was 35.31% in total expenditure. Similarly the 'Amount of Leave' Rs.9,26,677.81 was added in 'Total Salary' Wages and Allowance' so its amount increased to Rs. 60,55,068.56 (32.17%). In comparison with previous year the amount of 'Direct Operational Expenditure' decreased and the amount of 'Vehicle Maintenance Expenditure' increased during fiscal year 2049/050. The amount of 'Building and Bridge Repair Expenditure' drastically went down to Rs. 14,307.71 (0.08%). The composition of expenditure was differ in this year. Total revenue decreased to Rs. 65,29,759.73 which was 14.35% less than previous fiscal year. Due to heavy expenditure on 'Gratuity', 'Medicine' and 'Amount of Leave' the total expenditure increased up. In other side, revenue figure went down so net loss raised to Rs. 1,22,89,291.80 (188.20%).

In FY 2050/051 total expenditure of JR went down to Rs. 1,01,17,845.62. Out of total expenditure 45.25% spent on 'Total Salary, Wages and Allowances'; 40.70% spent on 'Direct Operational Expenditure'; and minimum 0.29% spent on 'Building and Bridge Repair Expenditure'. Total revenue of JR again decreased down to Rs. 56,70,919.15 which was 13.15% less than previous year. Although the figure of net loss fell down to Rs. 44,46,926.47 (78.42%) in FY 2050/051. It was not the sign of good performance rather there was not any heavy expenditure on 'Gratuity', 'Medical Treatment' and 'Amount of Leave' etc. as previous fiscal year. The performance of JR fell down because its revenue was minimum and it carried less cargo and passenger in comparison with previous years.

Till FY 2050/051 the performance of JR was not good. In fiscal year 2051/052 Indian Government provided two new diesel locomotives and 6 passenger coaches. Similarly old and damage sleepers, rails etc. were changed, old passenger coaches were repaired, new locoshade was made in Janakpur station and other improvements were made in JR. New employees were added. Thus the total annual expenditure increased to Rs. 1,40,51,433.44. Out of total expenditure Rs. 70,08,816.90 (49.88%) spent on 'Total Salary, Wages and Allowances'; Rs. 35,77,993.74 (25.46%) spent on 'Direct Operational Expenditure'; Rs. 16,50,312.72 (11.75%) spent on 'Gratuity, Grant and Medicine Expenditure'; and minimum amount Rs. 22,602.52 spent (0.16%) on 'Building and Bridge Repair Expenditure'. JR spent Rs. 4,28,531.75 (3.05%) on 'Track Maintenance Expenditure' which was 144.43% greater than previous fiscal year. This amount was spent on the renovation and repair of track. Expenditure on the head of 'Gratuity', 'Grant' and 'Medicine' also increased to greater extent. JR appointed new personnels so the expenditure on the head of 'Total Salary, Wages, and Allowances' increased substantially. But the 'Direct Operational Expenditure' decreased to Rs. 35,77,993.74 (25.46%). The main cause was that JR has almost stopped to operate old and out dated steam locomotives which were consuming more coal and most of the times they were brought to workshop for repair. JR inaugurated new diesel locomotives which hauling capacity is higher with low consumption of fuel (diesel). Besides these, the diesel locomotives were new so there was not any heavy maintenance expenditure in operation. Thus due to above alterations the total revenue of JR increased to Rs. 82,32,478.75 and the percentage of net loss fell down to 70.68%.

In fiscal year 2052/053 the total expenditure was Rs. 1,28,81,142.66. Out of which Rs. 73,66,260.81 (57.19%) spent on 'Total Salary Wages and Allowances'; Rs. 21,33,363.22 (16.56%) on 'Direct Operational Expenditure's; Rs. 16,68,532.43 (12.95%) spent on 'Gratuity, Grant and Medicine Expenditure'; and Rs. 8,06,337.83 (6.26%) spent on 'Administrative Expenditure'. The total revenue of JR was Rs. 99,32,705.93 which was 20.65% greater than previous year. There was net loss of Rs. 29,48,436.73 (29.68%) which was 49.33% less than previous years. The next new train was granted by Indian Government in FY 2052/053. 2 new diesel locomotives and 12 passenger coaches were provided so the passenger carrying capacity of JR increased substantially. In this FY JR handled more passengers than previous 6 years. But the condition of cargo traffic did not increase. There was paucity of gods bogies and godown so the volume of cargo decreased.

Total 341 employees were working in JR during FY 2052/053. Out of total employees 123 were permanent, 2 were temporary, 2 employees were on contract, 179 were on daily wages, and 35 employees were retired staff who were working on contract. There was burden of over staff and as a result out of total expenditure 57.19% amount spent on ' Salary Wages and Allowances'. In fact, JR could not expand the service and it could not extend the length of railway but there was increase in the number of employees. Thus it was a burden for JR and as a result the financial condition of JR could not improve. Further due to natural calamity (flood) most of the bridges and tracks in upper section were broken or damaged so the train service was interrupted. This factor also affected the revenue generation of JR. It

paid heavy amount as Gratuity, Grant, and Medicine Expenditure so this also affected the net loss. There was substantial reduction in the expenses of 'Direct Operational Expenditure' in FY 2051/052. In FY 2052/053 it again decreased to Rs. 21,33,363.22 (only 16.56% out of total expenditure) which was 40.38% lesser than previous fiscal year.

According to above analysis it is obvious that JR could not gain profit in any fiscal year. The trend of net loss was increasing till FY 2049/050 and since then it began to fell down. In FY 2052/053 the net loss was 29.68% and it is expected to earn profit in coming years.

# **4.3 INFERENTIAL ANALYSIS**

#### **TABLE NO. - 16**

### **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING IMPROVEMENT OF JANAKPUR RAILWAY**

Field of	Respondents								
Improvement	Administrative		Technical		General People		Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
a) Passenger	26	78.79	15	78.95	6	60.00	47	75.81	
b) Cargo	-	-	-	-	1	10.00	1	1.61	
c) Both	7	21.21	4	21.05	3	30.00	14	22.58	
d) None	-	-	-	-	-	-	-	-	
		100.0		100.0		100.0		100.0	

Table No.16 reveals the responses of employees and general people regarding improvement of Janakpur Railway in the field of passenger and cargo traffic. In the responses from administrative employees of Janakpur railway, 78.79% respondents felt that passenger service had been improved and 21.21% respondents accepted that improvement had been made both in passenger and cargo services. Similarly 78.95% technical respondents accepted that passenger service had been improved. Only 21.05% technical respondents felt that improvement had been made both in passenger and cargo services. The responses of general people were positive towards passenger traffic. Among the general people, 60% agreed with the fact that improvement in passenger traffic had been made.

In total, 75.81% respondents agreed that there had been substantial improvement in passenger traffic whereas 22.58% respondents agreed to the improvement in both passenger and cargo services. According to analysis, it is seen that most of the respondents are in support of passenger traffic improvement. In fact, now JR has four new diesel locomotives and eighteen passenger coaches, as a result of which the passenger traffic capacity has increased substantially.

#### **TABLE NO. - 17**

# RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING MAJOR OBSTACLES CONFRONTING BY JANAKPUR RAILWAY

	Respondents								
Major Obstacles	Administrative		Techr	nical	General	People	People Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
a) Problems arosen									
by	4	12.12	-	-	-	-	4	6.45	
employees									
b) Economic problem	14	42.43	5	26.31	3	30.00	22	35.48	
c) Paucity of essential									
means and	2	6.06	12	63.16	2	20.00	16	25.81	
facilities									
d) Lack of efficient									
administration	4	12.12	-	-	5	50.00	9	14.52	
e) Natural calamity	9	27.27	2	10.53	-	-	11	17.74	
		100.0		100.0		100.0		100.0	

Table No. 17 reveals the opinion of respondents in regard to different obstacles confronted by Janakpur Railway. 42.43% administrative respondents opined that the 'economic problem' was the major obstacle faced by JR whereas 27.27% respondents agreed to 'natural calamity' like 'flood'. Similarly 12.12% respondents argued that JR had been facing those obstacles which were 'arosen by own employees'. Among the technical personnels of JR, 63.16% respondents argued that 'paucity of essential means and facilities' were the main obstacle and 26.31% respondents agreed with 'economic problem.'

Among the general people, 50% respondents opined that there was 'lack of efficient administration' in JR and 30% respondents emphasized on 'economic problem.' Rest 20% agreed to 'paucity of essential means and facilities.'

In the case of total respondents, 35.48% respondents agreed with 'economic problem', 25.81% agreed with 'paucity of essential means and facilities. 17.74% respondents emphasized on 'natural problem' (flood) and 14.52% respondents agreed with 'lack of efficient administration'. Only 6.45% respondents agreed with 'problems arosen by own employees' of JR

According to above table analysis it is apparent that Janakpur Railway has been facing economic problem in greater extent and there is paucity of essential means and facilities. So the government and relevant department should provide financial help to Janakpur Railway.

### **TABLE NO. - 18**

### RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CAUSE FOR LOSS IN JANAKPUR RAILWAY

		Respondents							
Causes for Loss	Adminis	trative	Techr	nical	General	People	Tot	al	
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
a) Reduction in the									
number of									
passenger and									
cargo traffic.	-	-	5	26.31	-	-	5	8.07	
b) Irregular and non-									
standardized									
service	4	12.12	-	-	4	40.00	8	12.90	
c) Being burden of									
over staff in the									
corporation	22	66.67	12	63.16	4	40.00	38	61.29	
d) Manipulation of									
cash	-	-	-	-	1	10.00	1	1.61	
e) Lack of means and									
facilities	7	21.21	2	10.53	1	10.00	10	16.13	
		100.0		100.0		100.0		100.0	

Table No. 18 reveals the opinion of employees and general people with respect to different causes for the loss in JR. Among the administrative respondents 66.67% have accepted that 'burden of over staff' was the main cause for the loss in corporation. 'Lack of means and

facilities' were the cause of loss in JR, accepted by 21.21% respondents whereas 12.12% respondents have emphasized on 'irregular and non-standardized service'.

In the case of technical respondents 63.16% opined that 'over staff' was the main cause for loss in JR and 26.31% argued that 'reduction in the number of passenger and cargo traffic' was the cause of loss. Among the general people 40% respondents opined that 'irregular and non-standardized service' was the main cause for loss. Another 40% respondents agreed to the cause of 'over staff' in the corporation.

Out of total respondents, 61.29% argued that' over staff in the corporation' was the main cause for loss. 16.13% respondents supported that' lack of means and facilities' was the cause for loss. 12.90% respondents' agreed with the fact of irregular and nonstandardized service.'

According to above analysis it is obvious that over staff is the main cause for the loss in JR because more than 60% respondents have accepted this cause. As we know that JR is providing only 51 KM train service with a few number of rolling stocks. Its revenue trend is negative so it does not need present number of employees which is more than actual requirement. Therefore, either JR should extend railway service with present number of employees or reduce them.

#### **TABLE NO. - 19**

<u>NEGANDING F</u>	ULFILN		JF UKG	ANLA						
	Respondents									
Rank	Administrative		Techr	Technical		General People		Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	-	-	-	-		
2	9	27.27	2	10.53	3	30.00	14	22.58		
3	18	54.55	6	31.58	6	60.00	30	48.39		
4	4	12.12	11	57.89	1	10.00	16	25.81		
Maximum 5	2	6.06	-	-	-	-	2	3.22		
		100.0		100.0		100.0		100.0		

### **REGARDING FULFILMENT OF ORGANIZATIONAL OBJECTIVE**

**RESPONSES OF EMPLOYEES AND GENERAL PEOPLE** 

Table No. 19 reveals the opinion of employees and general people regarding the extent of JR to fulfil its objectives. Among the administrative respondents, 27.27% agreed with extent 2, 54.55% respondents agreed with extent 3,12.12% with maximum extent 4 and 6.06% respondents agreed with maximum extent of success achieved by JR to fulfil its objectives. In the case of technical employees 10.53% agreed with minimum extent 2, 31.58% with moderate extent 3, and rest 57.89% agreed with maximum extent 4. Among the general people 30% respondents agreed with minimum extent 4.

Out of total respondents, 48.39% respondents agreed to moderate degree which meant that JR had got neither highest success nor failure to achieve the objectives. Besides this, 22.58% agreed with minimum extent 2, 25.81% respondents agreed with maximum extent 4, and only 3.22% respondents agreed with maximum extent of fulfilment of objectives.

Through above analysis it is easy to understand that JR is neither failure nor it has got highest success to fulfil own objectives. Actually JR is in the moderate position.

#### **TABLE NO. - 20**

### OPINION OF EMPLOYEES AND GENERAL PEOPLE IN RESPECT OF ALTERNATIVE OF JANAKPUR RAILWAY

	Respondents									
Option	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Yes	10	30.30	-	-	8	80.00	18	29.03		
No.	23	69.70	19	100.0	2	20.00	44	70.97		
		100.0		100.0		100.0		100.0		

Table No. 20 deals with the responses of employees and general people about the alternative of Janakpur Railway. 69.70% administrative respondents and 100% technical respondents argued that it was not necessary to search alternative of Janakpur Railway whereas 30.30% administrative respondents opposed this argument. In the case of general people, 80% respondents emphasized on the search of alternative whereas 70.97% respondents (out of total respondents) argued that JR was sufficient to provide transportation facility so only some improvements were needed.

Through above analysis it is apparent that most of the respondents are in favour of JR and they do not want alternative. Because if other mode of transportation is provided in lieu of JR the case of N.G.R. will repeat. The single railway of Nepal will sink and close for ever. Consequently, in present situation they want improvement and extension in JR.

#### **TABLE NO. - 21**

### **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE BEST WAY TO IMPROVE JANAKPUR RAILWAY**

				Respo	ondents			
Different Ways	Adminis	trative	Tech	nical	General	People	Tot	al
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
a) To expand the service								
by extending the								
length of railway.	27	81.82	11	57.89	5	50.00	43	69.36
b) To carry more								
passerger and cargo								
by providing more								
railway services and								
changing the time								
table.	-	-	2	10.53	2	20.00	4	6.45
c) To improve the speed								
of train.	-	-	-	-	-	-	-	-
d) To change the rate of								
fare and freight.	-	-	-	-	-	-	-	-
e) The economic loss								
should be reduced by								
establishing efficient								
administration;								
reducing cash								
manipulation; and								
making railway service								
more reliable,								
comfortable and								
suitable.	6	18.18	6	31.58	3	30.00	15	24.19
		100.0		100.0		100.0		100.0

Table No. 21 reveals different probable ways to improve the present situation of Janakpur Railway. Out of total administrative respondents 81.82% agreed to extend the length of railway and 18.18% respondents agreed to reduce the economic loss (financial loss). Out of total technical respondents, 31.58% agreed to reduce economic loss and 10.53% agreed to carry more passenger and cargo by providing more railway service and changing the time table. Besides these, 57.89% respondents agreed to expand the railway service by extending the length of railway.

Among the general people, 50% respondents agreed with the way to expand the service by extending the length of JR. 30% respondents agreed to reduce economic (financial) loss and 20% respondents agreed to carry more passenger and cargo by providing more railway service and changing the time-table.

In total, 69.36% respondents agreed with the fact that the best way to improve the present condition of Janakpur Railway was the expansion of service by extending its length. Although 24.19% respondents agreed to reduce the economic (financial) loss of JR

In conclusion, for the improvement of JR, it should expand the service and extend the length. The next priority has been given to reduce economic (financial) loss by establishing efficient administration; reducing cash manipulation; and making rail service more reliable, comfortable and suitable.

#### **TABLE NO. - 22**

# RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING PARTICIPATION OF SUBORDINATES IN DECISION <u>MAKING OF JR</u>

	Respondents								
Rank	Administrative		Technical		General People		Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
Minimum 1	-	-	12	63.16	4	40.00	16	25.81	
2	11	33.33	2	10.53	3	30.00	16	25.81	
3	17	51.52	5	26.31	3	30.00	25	40.32	
4	5	15.15	-	-	-	-	5	8.06	
Maximum 5	-	-	-	-	-	-	-	-	
		100.0		100.0		100.0		100.0	

Table No. 22 deals with the extent of lower level staffs' participation in decision making process. In the case of administrative respondents, 33.33% agreed with minimum extent 2, 51.52% respondents agreed with extent 3, and only 15.15% agreed with minimum extent 4. 63.16% technical respondents agreed with minimum extent 1, 10.53% respondents agreed with minimum extent 2. They agreed that subordinates had not been participated by top management in decision making (related to their job). 26.31% technical respondents agreed with moderate extent 3. In the case of general people, they replied as per experience gained by different railway employees. 40% respondents agreed with minimum extent 2.

Among the total respondents, about 50% respondents agreed with minimum extent 1 and 2. 40.32% respondents agreed with moderate extent 3. Only 8.06% respondents agreed with maximum extent 4 which meant that subordinates were participated by top management in decision making.

As per above analysis it is obvious that top management of Janakpur Railway participate to subordinates in decision making to the minimum extent. Generally the decisions are made without consulting them. Although the top level employees oppose it and they argue that subordinates have been participated in decision making (related to their job) whereas lower level staffs refuse the same. This disclose that, there is no sound relationship between higher and lower level employees.

#### **TABLE NO. - 23**

### OPINION OF EMPLOYEES AND GENERAL PEOPLE REGARDING TRAINING OF EMPLOYEES IN JANAKPUR RAILWAY

	Respondents									
Option	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Yes	13	39.39	13	68.42	8	80.00	34	54.84		
No	20	60.61	6	31.58	2	20.00	28	45.16		
		100.0		100.0		100.0		100.0		

Table No. 23 deals with the training facility provided by JR to its employees. Among the administrative respondents, 39.39% accepted and 60.61% respondents refused that training programme was

provided to the employees of JR whereas the opinion of technical respondents was opposite. 68.42% respondents agreed that they had received training from time to time. 31.58% technical respondents opined that they had not got any training. With respect to training of employees, 80% respondents of general people accepted it. In total, 54.84% respondents agreed that JR had been providing training to its employees but 45.16% respondents refused it.

In fact, the training facility has been provided to technical employees only in J. R. India has granted 4 new diesel locomotives and 18 passenger coaches so technicians were sent to India for operational and maintenance training. Whereas administrative employees have not got any training, J. R. should provide training to its administrative employees also because without efficient administration it is very difficult to operate an organisation successfully.

#### **TABLE NO. - 24**

### **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING PERFORMANCE APPRAISAL SYSTEM OF JR**

	Respondents									
Option	tion Administr		trative Techni		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Yes	24	72.73	10	52.63	5	50.00	39	62.9		
No	9	27.27	9	47.37	5	50.00	23	37.1		
		100.0		100.0		100.0		100.0		
Table No. 24 deals with the performance appraisal system in JR. Out of total administrative respondents 72.73% accepted that there was performance appraisal system of employees in JR. 27.27% respondents refused it. Among the technical respondents 52.63% accepted it and 47.37% refused with the argument that, there was not any performance appraisal system in JR. In the case of general people, 50% respondents accepted it whereas 50% refused the same. Actually, general people are not related with this question although they replied as per own feeling. In total, 62.90% respondents accepted that there was the existence of performance appraisal in Janakpur Railway whereas 37.10% respondents refused it.

According to above analysis it is apparent that most of the respondents are in favour of having performance appraisal system in JR. Rest respondents either do not know about it or they have not found it in practice. Generally it is assigned by higher level employees so lower level employees are unknown to it. There is no perfect rule or system for the promotion of employees. So they generally think that their best performance has not been evaluated because there is no existence of performance appraisal system. There is frustration in most of the employees because they have not been rewarded and promoted while they showed the best performance. Janakpur Railway should adapt performance appraisal system to encourage the efficient and honest employees and discourage the irresponsible and inefficient employees.

## OPINION OF EMPLOYEES AND GENERAL PEOPLE REGARDING BEHAVIOUR OF LOCAL ADMINISTRATION

		Respondents							
Option	Adminis	Administrative		Technical		General People		Total	
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
Yes	21	63.64	15	78.95	5	50.00	41	66.13	
No	12	36.36	4	21.05	5	50.00	21	33.87	
		100.0		100.0		100.0		100.0	

Table No. 25 reveals the behaviour analysis of local administration towards employees of Janakpur Railway. 63.64% administrative employees accepted that they had been getting sufficient help from local administration during duty period whereas 36.36% respondents opposed to it. 78.95% technical respondents accepted that they had been receiving essential help from local administration during duty period and 21.05% respondents refused this argument. Among the general people, 50% respondents refused in favour of help from local administration and 50% respondents refused it. But in the case of total respondents, 66.13% respondents accepted to get sufficient help from local administration whereas 33.87% respondents refused the same.

The above analysis clarifies that most of the employees have got help from local administration. But one third respondents are in opposition. As per their opinion they face various problems but they do not get essential help from local administration.

## <u>RESPONSES OF EMPLOYEES AND GENERAL PEOPLE</u> <u>REGARDING BEHAVIOUR OF PASSENGERS AND BUSINESSMEN</u>

				Respondents							
Option	Administrative		Technical		General People		Total				
	No.=33	%	No.=19	%	No.=10	%	No.=62	%			
Yes	26	78.79	10	52.63	8	80.00	44	70.97			
No	7	21.21	9	47.37	2	20.00	18	29.03			
		100.0		100.0		100.0		100.0			

Table No. 26 reveals behaviour analysis of passengers and businessmen. 78% administrative respondents accepted that they had received cooperation from passengers and businessmen to operate railway service. But 21.21% respondents refused it. Among the technical respondents, 52.63% respondents accepted that they had received cooperation from passengers and businessmen. 47.37% respondents argued that they did not get any cooperation from businessmen and passengers, rather they created problems in railway service. In the case of general people, 80% respondents argued that passengers and businessmen cooperated in railway service.

In the case of total respondents almost 70% respondents agreed with the fact that passengers and businessmen cooperated the employees of JR, during duty period. 29.03% respondents argued against this opinion.

According to above analysis, it is clear that more than two third respondents have accepted to receive cooperation from passengers and businessmen to operate railway service.

#### **TABLE NO. - 27**

# RESPONSES OF EMPLOYEES AND GENERAL PEOPLEREGARDING BEHAVIOUR OF INDIAN CUSTOMS

				Respo	ndents									
Option	Administrative		Technical		General People		Total							
	No.=33	%	No.=19	%	No.=10	%	No.=62	%						
Yes	24	72.73	13	68.42	7	70.00	44	70.97						
No	9	27.27	6	31.58	3	30.00	18	29.03						
		100.0		100.0		100.0		100.0						

Table No. 27 deals with the responses of employees and general people in respect of behaviour of Indian customs. Among the administrative employees, 72.73% respondents argued that the passengers and businessmen were facing difficulties from Indian customs whereas 27.27% respondents refused it. 68.42% technical respondents accepted that passengers and businessmen were facing problem from Indian customs whereas 31.58% respondents refused it. Among the general people, 70% respondents accepted that Indian customs was creating problem for passengers and businessmen but 30% respondents refused the same.

In total, the opinion of 70% respondents was negative towards the behaviour of Indian customs and merely 29.03% accepted that Indian customs did not create problem.

According to above analysis it is seen that most of the businessmen and passengers face problem from Land Custom Station Jaynagar. The officials of Indian customs unnecessarily harass the travellers, and specially businessmen feel more problem. This is also a cause for regular reduction in cargo traffic volume of JR. Because businessmen divert their goods to another border (route).

#### **TABLE NO. - 28**

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING INCONVENIENCE FACED FROM DIFFERENT GROUPS OF PEOPLE.

				Respo	ndents			
Groups of People	Adminis	trative	Techr	nical	General	People	Tot	al
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
a) Students	4	12.12	3	15.79	2	20.00	9	14.52
b) Civil Servants	2	6.06	-	-	-	-	2	3.22
c) Illiterates	2	6.06	-	-	4	40.00	6	9.68
d) Local	25	75.76	16	84.21	4	40.00	45	72.58
Inhabitants								
		100.0		100.0		100.0		100.0

Table No. 28 reveals the responses of respondents regarding inconvenient faced by different group of people. About 75%

administrative respondents accepted that the corporation faced inconvenience as passengers from local inhabitants. 12,12% respondents argued that students were the main cause of inconvenience in JR 84.21% technical respondents also accepted that local inhabitants were main problem creator. Rest 15.79% respondents pointed to students. Among the general people, 40% respondents argued that local inhabitants were creating problem in JR and again 40% respondents emphasized on illiterates. Whereas 20% respondents argued that students were creating problem in JR.

In total, 72.58% respondents have accepted that local inhabitants created problem for JR. Similarly students and illiterate persons have low percentage having 14.52% and 9.68% respectively. According to above analysis it is clear that local inhabitants create problem in JR. Generally they travel without ticket and if the railway staff charge penalty they quarrel. Sometimes they threaten the employees of railway also.

#### **TABLE NO. - 29**

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING COOPERATION OF ADMINISTRATION TO DISCOURAGE THE SMUGGLERS

				Respo	ndents										
Option	Adminis	trative	Techr	nical	General	People	Tot	al							
	No.=33	%	No.=19	%	No.=10	%	No.=62	%							
Yes	28	84.85	16	84.21	2	20.00	46	74.19							
No	5	15.15	3	15.79	8	80.00	16	25.81							
		100.0		100.0		100.0		100.0							

Table No. 29 reveals the responses of employees and general people towards the administrative help received by JR to discourage the smugglers. 84.85% of administrative respondents and 84.21% technical respondents accepted that JR was getting administrative help to the discourage the smugglers who illegally carried goods from India by train. 15.15% administrative respondents and 15.79% technical respondents argued that they were not getting any kind of help from administration. The opinion of general people was just opposite. They argued that JR did not get administrative help to discourage the smugglers. This opinion was given by 80% respondents whereas 20% of them opposed to it. In total, 74.19 % respondents were in favour of receiving help from administration whereas 25.18% were in opposition.

It is clear from above analysis that more than 80% employees accept that JR gets helps from administration to discourage the smugglers. Although the smugglers are active in their work (smuggling). The prevention of smuggling is a challenge for administration and government. This is not the duty of JR to check the smuggling, though it can assist the administration to control the same.

## <u>RESPONSES OF EMPLOYEES AND GENERAL PEOPLE</u> <u>REGARDING ENFORCEMENT OF PENALTY TO WITHOUT</u> <u>TICKET PASSENGERS IN JANAKPUR RAILWAY</u>

		Respondents							
Option	Administrative		Technical		General People		Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
Yes	30	90.91	16	84.21	5	50.00	51	82.26	
No	3	9.09	3	15.79	5	50.00	11	17.74	
		100.0		100.0		100.0		100.0	

Table No. 30 reveals the responses of respondents regarding the enforcement of penalty to without ticket passengers. 90.91% administrative respondents, 84.21% technical respondents, and 50% general people accepted that penalty was strictly enforced to discourage the without ticket passengers. But 9.09% administrative respondents, 15.79% technical respondents, and 50% general people refused the same and told that penalty was not strictly enforced to without ticket passengers. In total, 82.26% respondents agreed that penalty was strictly enforced to without ticket passengers and only 17.74% refused the same.

According to above analysis it is obvious that JR has been implementing strictly the rule of penalty. This is a best way to control financial leakage. Generally the local inhabitants travel without ticket and employees of Janakpur Railway hesitate to charge them penalty

## OPINION OF RESPONDENTS REGARDING THE CONDITION OF RAILWAY TRACK OF JANAKPUR RAILWAY

				Respo	ndents			
Rank	Adminis	trative	Techr	nical	General	People	Tot	al
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
Minimum 1	-	-	-	-	2	20.00	2	3.23
2	18	54.55	13	68.42	5	50.00	36	58.06
3	15	45.45	6	31.58	3	30.00	24	38.71
4	-	-	-	-	-	-	-	-
Maximum 5	-	-	-	-	-	-	-	-
		100.0		100.0		100.0		100.0

Table No. 31shows the opinion of respondents regarding the condition of railway track in Janakpur Railway. 54.55% administrative respondents agreed with minimum extent 2 and 45.45% agreed with extent 3. 68.42% technical respondents agreed with minimum extent 2 and 31.58% agreed with extent 3. Thus as per employees of JR, the condition of track is not good. Among the general people, 20% respondents agreed with minimum extent 1, 50% agreed with extent 2, and rest 30% agreed with extent 3. General people also accepted the poor condition of track. In total, 3.23% respondents agreed with minimum extent 2, and rest 38.71% agreed with moderate extent

As per above analysis, only 38.71% respondents agreed with moderate condition of railway track. Rest 61.29% respondents agreed with poor condition of track. In fact, the track of upper section is worse than the track of down section.

#### **TABLE NO. - 32**

## OPINION OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF PASSENGER COACHES OF JR

				Respo	ndents			Total .=62 %  2 3.22 20 32.26 30 48.39					
Rank	Adminis	trative	Techr	nical	General	People	Tot	al					
	No.=33	%	No.=19	%	No.=10	%	No.=62	%					
Minimum 1	-	-	-	-	-	-	-	-					
2	2	6.06	-	-	-	-	2	3.22					
3	11	33.33	6	31.58	3	30.00	20	32.26					
4	18	54.55	10	52.63	2	20.00	30	48.39					
Maximum 5	2	6.06	3	15.79	5	50.00	10	16.13					
		100.0		100.0		100.0		100.0					

Table No. 32 reveals the responses of respondents in respect of condition of passenger coaches in Janakpur Railway. 6.06% administrative respondents agreed with minimum extent 2, 33.33% agreed with moderate extent 3, 54.55% agreed with maximum extent 4, and 6.06% agreed with maximum extent 5. Thus 60.61% administrative respondents ranked the good condition of passenger coaches. 31.58% technical respondents agreed with moderate extent 3,52.63% agreed with maximum extent 4, and 15.79% agreed with extent 5.30% of general people agreed with moderate extent 3, 20% respondents agreed

with maximum extent 4, and 50.00% respondents agreed with maximum extent 5.

In total, 64.52% respondents agreed with good condition (maximum extent 4 and 5) of passenger coaches in JR. 32.26% respondents agreed with moderate condition and only 3.22% agreed with poor condition of passenger coaches in JR.

According to above analysis, the condition of passenger coaches is good. After including two new trains in JR, the number of new passenger coaches increased.

#### **TABLE NO. - 33**

## <u>RESPONSES OF EMPLOYEES AND GENERAL PEOPLE</u> <u>REGARDING THE CONDITION OF GOODS BOGIES OF JR</u>

				Respo	ndents			otal % 6.45 70.97 22.58 - -				
Rank	Adminis	trative	Techr	nical	General	People	Tot	al				
	No.=33	%	No.=19	%	No.=10	%	No.=62	%				
Minimum 1	2	6.06	-	-	2	20.00	4	6.45				
2	22	66.67	18	94.74	4	40.00	44	70.97				
3	9	27.27	1	5.26	4	40.00	14	22.58				
4	-	-	-	-	-	-	-	-				
Maximum 5	-	-	-	-	-	-	-	-				
		100.0		100.0		100.0		100.0				

Table No. 33 reveals the responses of employees and general people in respect of condition of good bogies in JR. Out of

total administrative respondents 6.06% agreed with minimum extent 1, 66.67% respondents agreed with minimum extent 2, and rest 27.27% with extent 3. As per the opinion of administrative respondents the condition of goods bogies is very poor. In the case of technical respondents, 94.74% of them agreed to minimum extent 2. 20% respondents from general people agreed to minimum extent 1, 40% agreed with extent 2, and rest 40% agreed with moderate extent 3. Out of total respondents 6.45% agreed with minimum 1, 70.97% respondents agreed with minimum extent 2, and 22.58% agreed with moderate extent 3. In total figure most of the respondents' opinion was negative and they confirmed about the poor condition of goods bogies.

According to above analysis, it is apparent that the condition of goods bogies is poor in JR. There is paucity of goods bogies and available bogies are in very weak and damage condition. These are not able to carry goods safely. The Indian Government has provided diesel locomotives and passenger coaches only. They have not provided any goods bogies so JR could not improve the condition of cargo traffic.

## **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF LOCOMOTIVE ENGINES**

				Respo	ndents			
Rank	Adminis	trative	Techr	nical	General	People	Tot	al
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
Minimum 1	-	-	-	-	-	-	-	-
2	9	27.27	-	-	-	-	9	14.52
3	4	12.12	2	10.53	1	10.00	7	11.29
4	18	54.55	15	78.94	6	60.00	39	62.90
Maximum 5	2	6.06	2	10.53	3	30.00	7	11.29
		100.0		100.0		100.0		100.0

Table No. 34 reveals the responses of employees and general people towards the condition of locomotive engines of Janakpur Railway. Among the administrative respondents, 54.55% agreed with maximum extent 4, and 6.06% agreed with extent 5. In the case of technical respondents, 89.47% respondents agreed with maximum extent 4 and 5. Similarly 90% respondents of general people agreed with maximum extent 5. In total, 74.19% respondents agreed with good condition of locomotive engines in Janakpur Railway (maximum extent 4 and 5).

As per above analysis, most of the respondents are agree with good condition of locomotive engines in Janakpur Railway. JR has almost stopped to use steam locomotives because their is paucity of coal and spare parts. Further these are too much old and move slow. After the inauguration of new trains the condition of locomotive engines improved substantially. The Indian Government has provided 4 new and powerful diesel locomotives to Janakpur Railway. Now-a-days these diesel locomotives have been working efficiently.

#### **TABLE NO. - 35**

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF COMMUNICATION FACILITY OF JANAKPUR RAILWAY

				Respo	ndents			
Rank	Adminis	trative	Techr	nical	General	People	Tot	al
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
Minimum 1	4	12.12	-	-	-	-	4	6.45
2	25	75.76	16	84.21	8	80.00	49	79.03
3	4	12.12	3	15.79	2	20.00	9	14.52
4	-	-	-	-	-	-	-	-
Maximum 5	-	-	-	-	-	-	-	-
		100.0		100.0		100.0		100.0

Table No. 35 exposes the opinion of respondents towards the communication facility of Janakpur Railway. Among the administrative respondents 87.88% agreed with minimum extent 1 and 2. Only 12.12% respondents agreed with moderate extent 3. 84.21% technical respondents agreed with minimum extent 2. Similarly 80% respondents of general people agreed with minimum extent 2. Thus out of total respondents, 79.03% agreed with minimum extent 2, with a view that communication facility of JR was not good. The above analysis clarifies that the communication system within JR is failure. It has been working in pitiable condition in down section whereas in upper section the communication facility is totally interrupted.

#### TABLE NO. - 36

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF SIGNALS IN JR

				Respo	ndents			
Rank	Adminis	trative	Techr	Technical		People	Total	
	No.=33	%	No.=19	%	No.=10	%	No.=62	%
Minimum 1	33	100.0	19	100.0	10	100.0	62	100.0
2	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
Maximum 5	-	-	-	-	-	-	-	-
		100.0		100.0		100.0		100.0

Table No. 36 reveals the opinion of general people and employees in respect of signals' condition in JR. Out of total respondents, all agreed with minimum extent 1. This indicates that the signal system of JR has not been operating. In absence of signals the possibility of accident increases so JR should use signals compulsorily.

## **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF SLEEPERS IN JR**

	Respondents									
Rank	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	3	30.00	3	4.84		
2	15	45.45	16	84.21	5	50.00	36	58.06		
3	16	48.49	3	15.79	2	20.00	21	33.87		
4	2	6.06	-	-	-	-	2	3.23		
Maximum 5	-	-	-	-	-	-	-	-		
		100.0		100.0		100.0		100.0		

Table No. 37 reveals the condition of sleepers in JR. As per opinion survey conducted in JR 45.45% administrative respondents agreed to minimum extent 2 and 48.49% agreed to moderate extent 3. But 6.06% respondents agreed to maximum extent 4. Among the technical respondents 84.21% agreed to minimum extent 2. Similarly 80% respondents of general people agreed to minimum extent 1 and 2. In total, 62.90% respondents agreed to minimum extent 1 and 2, whereas 33.87% respondents agreed to moderate extent 3.

According to above analysis the condition of sleepers is not satisfactory. Although JR is replacing old and damage sleepers. Consequently some respondents accept that the condition of sleepers is improving gradually.

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION ON BRIDGES AND CULVERTS OF JR

	Respondents								
Rank	Administrative		Technical		General People		Total		
	No.=33	%	No.=19	%	No.=10	%	No.=62	%	
Minimum 1	-	-	-	-	1	10.00	1	1.61	
2	21	63.64	12	63.16	6	60.00	39	62.90	
3	12	36.36	7	36.84	3	30.00	22	35.49	
4	-	-	-	-	-	-	-	-	
Maximum 5	-	-	-	-	-	-	-	-	
		100.0		100.0		100.0		100.0	

Table No. 38 reveals the responses of employees and general people in respect of condition of bridges and culverts in JR. Among of the administrative respondents 63.64% agreed to minimum extent 2 and 36.36% agreed to moderate extent 3. As per opinion of administrative respondents the condition of bridges and culverts is not good. 63.16% technical respondents agreed to minimum extent 1 and 36.84% respondents agreed to moderate extent 3. The opinion of 10% respondents (general people) belonged to minimum extent 1 and 60% agreed to minimum extent 2. In total, 64.51% respondents agreed to moderate extent 3.

According to above analysis the condition of bridges and culverts is not satisfactory. These are passable only, but in case of heavy rain they may fell down. The condition of bridges and culverts is passable in down section & very poor in upper section.

# TABLE NO. - 39OPINION OF EMPLOYEES AND GENERAL PEOPLE REGARDINGCONDITION OF PLATFORMS IN JR

	Respondents									
Rank	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	3	30.00	3	4.84		
2	22	66.67	16	84.21	7	70.00	45	72.58		
3	4	12.12	3	15.79	-	-	7	11.29		
4	7	21.21	-	-	-	-	7	11.29		
Maximum 5	-	-	-	-	-	-	-	-		
		100.0		100.0		100.0		100.0		

Table No. 39 shows the opinion of employees and general people in respect to condition of platforms. 66.67% administrative respondents and 84.21% technical respondents agreed to minimum extent 2. All respondents of general people agreed to minimum extent 1 and 2. In total 77.42% respondents agreed to minimum extent 1 and 2, 11.29% agreed to moderate extent 3, and rest 11.29% respondents agreed to maximum extent 4.

Thus the above analysis clarifies that the condition of platforms is not good because more than 75% respondents expressed this opinion. Only 11.29% respondents agreed with good condition of platforms.

In fact, out of 10 railway stations, JR has only two concrete platforms (Jaynagar and Janakpur). The condition of these two platforms is also poor. There is no facility of waiting-room, lock-room, inquiry cabin, railway canteen and communication (telephone) etc.

#### **TABLE NO. - 40**

## <u>OPINION OF EMPLOYEES AND GENERAL PEOPLE REGARDING</u> <u>CONDITION OF GODOWNS IN JANAKPUR RAILWAY</u>

	Respondents									
Rank	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	3	30.00	3	4.84		
2	21	63.64	16	84.21	6	60.00	43	69.35		
3	12	36.36	3	15.79	1	10.00	16	25.81		
4	-	-	-	-	-	-	-	-		
Maximum 5	-	-	-	-	-	-	-	-		
		100.0		100.0		100.0		100.0		

Table No. 40 reveals the opinion of respondents regarding condition of godowns. The condition of godowns is very poor because 63.64% administrative respondents and 84.21% technical respondents agreed to minimum extent 2. Among the general people, 90% respondents agreed to minimum extent 1 and 2. Merely 36.36% administrative respondents, 15.79% technical respondents and 10% other respondents agreed to moderate extent 3.

In total, 74.19% respondents agreed with poor condition of godowns (minimum extent 1 and 2) and 26% respondents agreed with neither bad nor good condition (moderate extent 3) of warehouses in JR

According to above analysis it is obvious that godowns' condition is poor in Janakpur Railway because only 3 stations (Janakpur, Khajuri, and Jaynagar) have godown facility. Most of the goods are carried from these stations so JR has not constructed godowns in rest stations. One of the main cause for the decline in volume of cargo is the lack of godown also. In absence of godowns JR keeps goods outside and people feel their goods are unsafe. Consequently, they avoid to carry goods by Janakpur Railway

## RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING THE CONDITION OF WORKSHOPS IN JR

	Respondents									
Rank	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	2	20.00	2	3.23		
2	16	48.49	13	68.42	5	50.00	34	54.84		
3	12	36.36	6	31.58	3	30.00	21	33.87		
4	5	15.15	-	-	-	-	5	8.06		
Maximum 5	-	-	-	-	-	-	-	-		
		100.0		100.0		100.0		100.0		

Table No. 41 reveals the opinion of respondents regarding present condition of workshops in JR. 48.49% administrative respondents, 68.42% technical respondents, and 50% general people agreed with poor condition of workshops (minimum extent 2). Whereas 36.36% administrative respondents, 31.58% technical respondents and 30% other respondents agreed with moderate condition of workshops ( extent 3 ) . They also argued that condition of workshops was not so good. Only 15.15% administrative respondents agreed to maximum extent 4. In total, 58.07% respondents accepted bad condition of workshops; 33.87% accepted neither good nor bad condition; and rest 8.06% agreed with good condition of workshops in JR.

According to above analysis the condition of workshops is not satisfactory. Mainly the workshop is situated in Khajuri station and recently next workshop has been established in Janakpur station. The old workshop of Khajuri station is suitable for steam locomotive engines but now-a-days JR has almost stopped to operate steam locomotives. The machines of Khajuri workshop are out dated and most of them are not working properly.

JR should improve the condition of workshops as per present need. It should appoint fully trained technicians who can repair new diesel locomotives. Certain new machines and equipments are needed for the repair and maintenance of new train.

#### **TABLE NO. - 42**

## **RESPONSES OF EMPLOYEES AND GENERAL PEOPLE REGARDING CONTRIBUTION OF JR IN TRANSPORTATION**

	Respondents									
Rank	Administrative		Technical		General People		Total			
	No.=33	%	No.=19	%	No.=10	%	No.=62	%		
Minimum 1	-	-	-	-	-	-	-	-		
2	-	-	-	-	-	-	-	-		
3	14	42.42	3	15.79	7	70.00	24	38.71		
4	17	51.52	16	84.21	2	20.00	35	56.45		
Maximum 5	2	6.06	-	-	1	10.00	3	4.84		
		100.0		100.0		100.0		100.0		

Table No. 42 shows the responses of respondents in respect of contribution of Janakpur Railway in the enhancement of business and transportation of local inhabitants. 42.42% administrative

respondents, 15.79% technical respondents, and 70% general people agreed to moderate extent 3. 51.52% and 6.06% administrative respondents agreed to maximum extent 4 and 5 respectively. As per opinion of administrative employees the contribution of JR is high in the field of transportation. 84.21% technical respondents agreed that the contribution of JR was maximum. Among the general people 30% respondents agreed with maximum extent 4 and 5. But 70% respondents agreed to moderate extent 3. In total, 38.71% respondents agreed to moderate extent, 56.45% respondents agreed to greater degree of contribution, and 4.84% respondents agreed to greatest degree of contribution of JR in the field of transportation. According to above analysis it is clear that JR has maximum contribution in the field of transportation.

# **4.4 MAJOR FINDINGS**

- The number of total passengers was greater in down section in comparison to upper section. On average, 89% passengers travelled in down section whereas only 11% passengers travelled in upper section during eight fiscal years (from 2045/046 to 2052/053). The contribution of Janakpur station was maximum having 37.65%, followed by Jaynagar (19.78), Khajuri (9.54%), Mahinathpur(9.19%) and Loharpatti (4.63%) respectively.
- 2) The total number of passengers began to decrease from FY 2045/46 and it was only half till FY 2050/051. But since FY 2051/052 it has been increasing rapidly. Although the number of passengers could not reach the target of FY 2045/046. In FY 2051/052 India granted 2 diesel locomotives and 6 passenger coaches. Again they provided 2 diesel locomotives and 12 passenger coaches in FY 2052/053. These new trains helped to increase the number of passengers. The trend of passenger traffic was falling till FY 2050/051 and thereafter it raised up drastically in down section. But the index trend was erratic in upper section.
- 3) On average, the maximum passengers travelled in the month of Bisakh (9.69%) followed by Jestha and Ashar having 9.63% and 9.18% respectively. But number of passengers was maximum in the months of Ashwin Kartik, Mansir, Falgun and Baisakh respectively. The minimum passengers travelled in the month of Paush (on average 6.12%). The number of passengers decreases in rainy season also ( in the months of Srawan and Bhadra) when heavy rain and flood interrupt the train service.

- 4) The total volume of cargo carried by Janakpur Railway was greater in down section than upper section. The volume of cargo does not include here 'luggage' and 'parcel'. From FY 2045/046 to 2052/053 93.42% cargo carried in down section and only 6.58% cargo carried in upper section. On average, the maximum volume of cargo carried from Janakpur station having composition of 65.64% followed by Mahinathpur (11.37%), Khajuri(9.24%), Baidhi(5.37%), and Bizalpura (3.06%). In FY 2045/046 JR transported total 14850 MT cargo but in following fiscal years it began to decrease, except in FY 2047/048. In FY 2052/053 it decreased to 5548.3 MT which was altogether 62.64% less than FY 2045/046.
- 5) On average, during eight fiscal years the maximum volume of cargo carried in the month of Ashar (9.54%), followed by Jestha, Srawan and Paush having 9.31%, 9.07% and 9.06% respectively. The minimum volume of cargo carried in the month of Kartik (6.46%).

According to analysis of eight fiscal years' cargo traffic, it is obvious that volume of cargo carried by JR was maximum in the month of Ashar and followed by Srawan, Paush and Falgun respectively. Similarly, the minimum volume of cargo carried in the month of Kartik.

6) The cargo index trend of all stations was decreasing cum erratic, only Mahinathpur and Pipradhi stations had increasing trend. The cargo index of Mahinathpur station was fluctuating between 144.21% to 275.40%. The contribution of Janakpur station was highest in cargo traffic although its index trend was decreasing except in FY 2047/048.

- 7) As per composition of total cargo, Janakpur station carried 61.75% cargo in FY 2052/053 whereas Mahinathpur station transported 26.55% cargo. The contribution of upper section was nil because train service was almost closed due to heavy rain and flood.
- 8) Out of total cargo carried by JR, more than 50% cargo transported from Janakpur station only. During eight fiscal years the contribution of Janakpur station fluctuated between 54.53% to 71.43%. The contribution of Janakpur station was maximum (71.43%) in FY 2049/050 and minimum (54.53%) in FY 2046/047.
- 9) Janakpur Cigarette Factory Ltd. is a major party (customer) of JR. Out of total cargo carried by JR. more than 40% goods transported for JCF. During eight fiscal years the contribution of JCF's cargo fluctuated between 39.78% to 55.63%, except FY 2046/047. JR transported 14850 MT cargo in FY 2045/046 and out of total cargo, 40% (5940 MT) cargo transported for JCF only. Similarly Out of total 8876.9 MT cargo, 55.63% (4938.4MT) cargo carried for JCF in FY 2049/050. The production of JCF decreased gradually in following years so it provided less goods for transportation. Thus the volume of JCF ' s cargo decreased to a great extent.

- 10) For the purpose of study the volume of 'luggage' and 'parcel' is also included in total cargo of JR. Because the contribution of 'luggage' and 'parcel' is significant in the transportation of JR. Out of total cargo carried by JR during eight fiscal years, the contribution of 'goods' fluctuated between 68.69% to 82.32% ,'parcel ' was in the second position which varied between 9.24% to 21.17% and lastly the contribution of 'luggage' reluctuated between 5.10% to 14.22%. The share of 'luggage' was maximum (14.22%) in FY 2046/047 and share of 'parcel' was maximum (21.17%)in FY 2052/053, whereas in the case of 'goods' it was maximum (82.32%) in FY 2048/049. During FY 2048/049 Nepal Coal Ltd. transported 1504.8 MT coal by JR so contribution of 'goods' was the highest.
- 11) The trend of total annual revenue was erratic in JR. The total annual revenue was Rs. 7474.34 thousand in FY 2045/046 which decreased to Rs. 7222.52 thousand in FY 2047/048. In FY 2048/049 the passenger fare and goods freight rate were revised so total revenue increased to Rs. 7623.55 thousand. Thereafter it fell down to Rs. 5670.92 thousand till FY 2050/051. After the inauguration of new trains in FYs 2051/052 and 2052/053 there was substantial improvement in passenger service. Therefore the total annual revenue increased to Rs. 9932.70 thousand in FY 2052/053. During eight fiscal years the number of passengers and revenue from passengers decreased till FY 2050/051 and after the addition of new trains these increased substantially.

The revenue from cargo traffic decreased drastically in FY 2046/047 when Jaynagar border was closed. It increased upto Rs. 1729.39 thousand in FY 2048/049. The freight rate was revised during this year and therefore revenue from per MT of cargo increased from Rs. 96.25 to Rs. 150.92. After FY 2048/049 the revenue from cargo traffic decreased continuously. The trend of 'other revenue' (sundries) was erratic. On average, out of total revenue the composition of passenger, cargo, and other revenue was 82.21%, 15.08%, and 2.71% respectively during eight fiscal years. There was maximum contribution of passenger (90.19%), cargo (22.68%), and sundries (4.43%) revenue in fiscal years 2046/047, 2048/049, and 2046/047 respectively.

12) While we look towards the past 18 years' record of JR (from FY2035/036 to 2052/053) we find that the condition of passenger and cargo traffic was satisfactory in the beginning. In FY 2035/036 JR transported 23413.8 MT cargo (the largest volume of cargo during eighteen fiscal years) and 1200.39 thousand passengers. From FY 2035/036 to 2042/043 there was inverse relationship between passenger and cargo traffic. In fact, the trend of passenger traffic was positive till FY 2043/044 (except in FY 2039/040) but since then, there was decreasing trend upto FY 2051/052. In the case of cargo traffic there was almost decreasing trend except FYs 2039/040 and 2047/048. The new trains could not increase the volume of cargo traffic. In conclusion, we can say that passenger traffic has erratic trend whereas cargo traffic has almost decreasing trend.

- 13) The expenditure amount was always greater than revenue so JR could not earn profit during eight fiscal years. There was too much change in the cost composition. The contribution of 'Direct Operational Expenditure' was maximum in fiscal years 2054/046, 2046/047, and 2048/049 having 41.86%, 40.17%, and 42.21% respectively. Contribution of 'Total Salary, Wages and Allowances' expenditure was maximum in fiscal years 2047/048, 2050/051, 2051/052, and 2052/053 having 45.61%, 45.25%, 49.88% and 57.19% respectively. Out of total expenditure, 35.31%, the maximum amount, spent on 'Gratuity, Grant and Medicine Expenditure' in FY 2049/050 and the composition of this cost was also heavy in fiscal years 2051/052, and 2052/053 having 11.75% and 12.95% respectively. The trend of annual revenue was erratic. Annual revenue increased in FYs 2048/049, 2051/052, and 2052/053 and in rest years it decreased. Although JR could not earn profit in any year. The net loss was increasing till FY 2049/050 and it reached to 188.20% but since FY 2050/051 it decreased to a great extent. In FY 2052/053 the net loss fell down to 29.68%. 'Direct Operational Expenditure' and 'Total Salary, Wages and Allowances' expenditure were always greatest during eight fiscal years except in FY 2049/050 when a large amount Rs. 66,45,331.70 paid under 'Grant, Gratuity and Medicine Expenditure' head.
- 14) Out of total respondents, more than 75% agreed that there was improvement in passenger traffic of JR. In fact, since FY 2051/052 the number of passengers and revenue from it increased substantially. Because India has provided 4 diesel locomotives

and 18 passenger coaches. There was no proper improvement in cargo traffic as new trains were not provided with goods bogies.

- 15) Most of the administrative employees (42.43%) argued that JR had been confronting 'economic problem' whereas some administrative employees (27.27%) agreed with 'natural calamity' (flood). 63.16% technical employees agreed that main obstacles of JR was the 'paucity of essential means and facilities' whereas one fourth of them agreed with 'economic (financial) problem'. Only 10% agreed with 'natural calamity' (flood), 50% general people agreed with 'lack of efficient administration' and 30% of them pointed to 'economic problem'.
- 16) More than 60% respondents pointed out that 'over staff' was the main cause for the loss in JR. 12.90% respondents agreed to the cause of 'irregular and non-standardized service' whereas 16% respondents agreed to 'lack of means and facilities'.
- 17) About 48% of total respondents agreed to the opinion that JR had got success to fulfil its objectives to a moderate extent 3.Whereas about 26% of total respondents agreed to maximum extent 4.
- Most of the total respondents (71%) recommend that JR is sufficient to provide transport service so its alternative is not needed.

- 19) For the improvement of JR majority of respondents agreed to expand the service by extending the length of railway. Only 24% respondents agreed to the way that the economic loss should be reduced by establishing efficient administration; reducing cash manipulation; making the railway service more reliable, comfortable and suitable.
- 20) 26% of total respondents agreed that lower level staffs were not participated in decision making and 26% respondents agreed to minimum extent 2. But most of the respondents (40%) agreed to the moderate extent 3 which means that the lower level staffs were participated by top management in decision making occasionally only.
- 21) 68% of total technical employees accepted that they had got training whereas 61% of total administrative employees refused it.
- 22) Most of the personnels of JR agree with having performance appraisal system in JR. Rest respondents either do not know about it or refuse about the existence of performance appraisal system in JR.
- 23) About 66% of total employees accept that they get sufficient cooperation from local administration during duty period.
- 24) Majority of employees and people agree that JR gets cooperation from passengers and businessmen to operate railway service.

- 25) Majority of respondents (71%) agree that the passengers and businessmen face difficulties from Indian Customs.
- 26) The most problem creator group for JR is the local inhabitants which have been accepted by 73% respondents. Only 15% respondents agree that JR faces inconvenience as passenger from students.
- 27) Majority of employees (85%) accept that JR gets administrative help to discourage smugglers, who illegally import-export goods by train. But 80% of total general people refuse it and agree with the fact that smugglers are active in smuggling and they frequently carry goods by train.
- 28) Most of the total respondents (82%) agree that penalty (fine) is strictly enforced to discourage without ticket passengers.
- 29) Majority of respondents agree that the condition of railway track, sleepers, bridges, culverts, platforms, godowns, workshops and goods bogies is not satisfactory. They agreed to minimum extent
  2. A few respondents agreed to moderate extent 3.
- 30) The signals of JR have not been operating since long time and trains are operating without signal.
- Most of the respondents agree that the condition of passenger coaches and locomotive engines is good.

- 32) JR has been contributing, to a great extent, for the enhancement of business and transportation of local inhabitants. This has been opined by more than 61% respondents, whereas 39% respondents agreed to moderate extent 3.
- 33) While the respondents were requested to give suggestions for making the railway more efficient, most of them suggested that :
  - The length of railway should be extended.
  - The improvement should be done in JR.
  - Proper attention should be given to cargo traffic.
  - Employees' facilities should be increased.
  - Essential means and facilities should be available in time.
  - Economic (financial) leakage should be prevented by the improvement in administration.
  - Without ticket passengers should be controlled and penalty (fine) should be enforced strictly.

## **CHAPTER - V**

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### 5.1 <u>SUMMARY</u> :

The importance of transportation is great in the present dynamic world. There is no any sector which is untouched with it. Transportation and economic development are closely related and it occupies pivot role in the development. Transportation is a sign for the development of nation because if means of transportation are primitive, economic progress will also remain of the primitive type. Thus transportation is the foundation of economic development.

As we know that mobility is essential for developing countries and it is a factor in the success or failure of the entire development effort. Efficient and relatively cheap transportation is necessary for economic development in developing countries like Nepal. Good transportation is vital to national defence. The social life of a country is being greatly influenced by the rate of development in transportation and the kind of service made available. Social and cultural unity is based upon the existence of adequate transportation because its service affects our social activities.

The history of transportation started with beast of burden and gradually it turned to animal, cart, boat, steam locomotive, motor transport and aeroplane. Thus it is functioning now on land, water and air.

Transportation is an indispensable pre-requisite for the economic prosperity and Nepal has great challenge to facilitate modes of transportation. Transportation has played pivotal role in the backwardness of Nepalese people. Politically it was most neglected sector in Rana regime. In comparison to other areas it is most progressive in plain (Terai ) area. Actual development in transportation started since 1951 A.D. when Nepal started its first plan. Before beginning of first five year plan Nepal had two railroads (NGR and NJJR ), one ropeway, 5 airports and 624 KM road network. Transportation has been given priority in every plan. By the end of first
9 months of fiscal year 2052/053 total available road facility was 10,109 KM. Total number of vehicles as mid Baisakh of fiscal year 2052/053 was 1,64,814. About 350 thousand people had received driving license of different vehicles. About one million people are, directly or indirectly, dependent on transportation sector and its supplementary organisations in Nepal. In FY 2052/053 air transport service was available in 44 districts.

'Janakpur Railway' (formerly NJJR) was commenced in 1937 A.D. (1994 B.S.) between Jaynagar to Bilzapura. This 51 KM. long narrow gauge railway was commenced with the purpose of transporting logs (timber) to India. Now it has been providing passenger and cargo services. In fact JR is only one mode of transportation for the people of Dhanusha and Mahottari districts and there is no any competiting road. JR has been enjoying monopoly situation although it is operating in loss. Its condition and performance is not satisfactory. The length and speed of JR are same as before. The possibility of development of railway is extremely high in Terai region but this 59 years old railway could not extend. Now Nepal has only one railway. Nevertheless, government is not taking care for its improvement and development.

The number of passengers, volume of cargo, and revenue of JR was decreasing but after the commencement of new trains its condition became sustainable. Although it is operating in loss and there is continuos reduction in cargo traffic.

JR has ten stations but the contribution of Janakpur and Jaynagar stations is maximum. Its upper section is neglected section and the condition is also very poor in this section. Maximum number of passengers travelled in the months of Ashwin, Kartik, Mansir, Falgun and Baisakh and maximum volume of cargo carried in the months of Ashar, Jestha, Srawan and Paush. Heavy rain and flood generally interrupt train service in rainy season. Janakpur Cigarette Factory Ltd. is a main party ( customer ) of JR. During last eight fiscal years the total revenue of JR was decreasing and net loss was increasing but since FY 2051/052, after the commencement of new trains, total revenue increased and net loss decreased to some extent. The management of JR is totally failure to control its cost (expenditure). It has excess employees so the financial load of over staff has led to loss. Financial (economic) problem, paucity of essential means, over staff etc. are major obstacles for its development. There is no sound relationship between top and lower level employees. Most of the employees are frustrated as they do not get promotion and other facilities. Local inhabitants and students are main problem creators in the operation of JR Travelers and businessmen face problem from Indian customs. The rule of penalty (fine) has not been strictly enforced so there is leakage in revenue. The present condition of railway track, sleepers, goods bogies, bridges, culverts, platforms, godowns and workshops is pitiable. Internal communication system is not working satisfactorily. Telephone, in upper section, does not work and in down section it is almost dead. Signals have not been operated so there is possibility of accident. Facilities are not available in stations. Thus it is obvious that JR is not performing well.

#### 5.2 <u>CONCLUSIONS</u> :

On the basis of analysis and major findings of the study following inferences are drawn.

 The maximum number of passengers travelled in down section which contribution was about 89%. Maximum passengers travelled from Janakpur station and followed by Jaynagar, Khajuri, Mahinathpur, Parbaha and Baidhi respectively. JR provided more train services in down section which holds six major stations whereas upper section holds only four stations and it was provided with less train service. The upper section is neglected by JR so its contribution was lower. Janakpur is the main centre of the Central Terai region and it is a holy place also so large number of people come to Janakpur. Jaynagar is the Indian border's station and people go there or any part of India through this route. Due to above causes a large number of people travel through Janakpur and Jaynagar Stations.

- 2) The trend of passenger traffic was decreasing from FYs 2045/046 to 2050/051. In FYs 2051/052 and 2052/053 two new passenger trains were provided by India so the position of passenger traffic became sustainable since then. The number of passenger has been increasing every year.
- 3) On average figure, maximum passengers travelled in the months of Baisakh, Jestha and Ashar. But while we go through the passengers' data of eight fiscal years it is obvious that the number of passengers was maximum in the months of Ashwin, Kartik, Mansir, Falgun and Baisakh respectively. This was the result of holy fairs (MELA)and some auspicious occasions which take place in these months. JR provides extra train services (specially for few days) to handle large number of passengers. The minimum number of passengers travelled in the month of Paush because most of the people were busy to harvest and store grains. Therefore, generally, they avoided traveling. Further, this month consists only 29 days so the total number of passengers fells down.

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Besides these, heavy rain and flood of different rivers interrupted railway service in rainy season (specially in the months of Srawan and Bhadra ) and the number of passengers decreased as it happened from fiscal years 2050/051 to 2052/053. In the rainy season most of the people are busy in agricultural work so they travel to the minimum extent.

4) The contribution of down section was greater in total volume of cargo traffic during eight fiscal years. Out of total cargo carried by JR contribution of Janakpur station was the highest and it was followed by Mahinathpur, Khajuri, Baidhi, and Bizalpura stations respectively. The maximum volume of cargo transported in FY 2045/046 and since then it started to decrease except in FY 2046/047. In FY 2052/053 the total volume of cargo was less than half in comparison with FY 2045/046. The total volume of cargo decreased gradually because JR had paucity of goods bogies, godown and coal (fuel). It could not increase the quantity of goods bogies and could not repair ruined bogies. There was interruption in the supply of coal and spare parts so instead of increasing capacity of JR it decreased to the great extent. The cargo service was not regular, punctual, reliable and safe so JR could not build confidence among general people and businessmen. As a result they used to carry goods through JR and diverted the route in those years. In FY 2046/047 the 'Trade and Transit Treaty' between Nepal and India expired so Indian Government closed Jaynagar border. Consequently, the volume of cargo decreased substantially. Most of the businessmen diverted the route which continued for long time. The border was re-opened in FY 2047/048 so in this year total volume of cargo increased by 17.12%. The volume of cargo could not increase after the inauguration of new trains in FYs 2051/052 and 2052/053. Because these new trains were not provided with goods bogies. New trains could not stop the decreasing trend of cargo traffic.

- 5) JR carried maximum cargo in the month of Ashar followed by Jestha, Srawan, Paush and Falgun respectively. Minimum volume of cargo transported in the month of Kartik. In rainy season the roads of village become muddy so people can not use own modes of transportation like cart and bicycle etc. In this period they are forced to use train for carrying goods. Consequently, JR carries more cargo in rainy season (Jestha, Ashar and Srawan ).
- 6) The cargo index trend of all stations was decreasing cum erratic except Mahinathpur and Pipradhi. During eight fiscal years cargo indexes of most of the stations were less than base year 2045/046.
- 7) In FY 2052/053 the contribution of upper section was nil in cargo traffic. Maximum goods were transported from Janakpur station. Mahinathpur was in second position. Heavy rain and flood had broken and damaged the bridges, culverts and track so the train service was almost interrupted during whole fiscal year in the upper section. In down section, most of the goods transported in the months of Chaitra, Jestha and Magh respectively. The businessmen and general people usually store goods before rainy

season so the volume of cargo increased in the months of Chaitra and Jestha.

- 8) Out of total 10 stations, Janakpur Dham station contributed every year more than 50% in cargo traffic. The contribution of Janakpur station increased to 71.43% in FY 2049/050. Actually it is situated in the middle of all stations and both sections' goods are transported from Janakpur station. Janakpur Dham is the main centre for the Central Terai region. A large number of people come to Janakpur Dham for business and another purposes. There are so many industries, including large and small scale, and business concerns so a large volume of cargo is transported. Further foreign goods are also imported through this route. All these factors affect the total volume of cargo. In FY 2046/047 the border of Jaynagar was closed due to expiry of 'Trade and Transit Treaty' between Nepal and India. So the contribution of Janakpur Dham station was minimum (54.53%). The total volume of cargo was decreasing every year in Janakpur station so it affected the total cargo of 'Janakpur Railway'.
- 9) Janakpur Cigarette Factory Limited is the largest cigarette factory in Nepal. It purchases and imports a large volume of goods from India and other countries which are transported by JR. JCF is a major party ( customer ) of JR because out of total cargo carried by JR, more than 40% cargo belonged to JCF. In FY 2046/047 Jaynagar border was closed so JCF transported goods from Birgunj border. This affected the total cargo of JR and there was altogether 33.34% reduction in cargo traffic which was the

greatest reduction in cargo traffic during eight fiscal years. The total volume of cargo carried by JR was decreasing gradually and the same case happened to cargo traffic of JCF. The production of JCF fell down during eight fiscal years so it imported less goods. Further it diverted the route of transportation for some goods also.

10) Out of total commodities transported (including luggage and parcel both ) by JR, the contribution of luggage and parcel was significant, because it held 22.54% share in whole composition of cargo traffic. Out of total cargo carried by JR during eight fiscal years the contribution of luggage, parcel, and goods was 8.64%, 13.90%, and 77.46% respectively. The contribution of luggage was maximum (14.22 %) in FY 2046/047. Jaynagar border was closed in this year so goods bogies were not operated from Jaynagar. Instead of goods bogies the travelers and businessmen brought goods in luggage as it was not strictly checked by Indian customs. Therefore the volume of luggage drastically increased to 1861.24 MT. Luggage and parcel vans are attached with passenger coaches and the passenger service was improved after the inauguration of new trains. So the volume of luggage and parcel also increased since FY 2051/052. Out of total cargo the maximum volume of parcel (21.17 %) carried in FY 2052/053 which was 1710.10 MT. After including the volume of luggage and parcel the decreasing trend of total cargo reduced to some extent.

- 11) The index of total annual revenue in JR was almost decreasing till FY 2050/051. In FY 2048/049 the passenger fare and cargo freight rate was increased by JR so it boosted the total annual revenue. Since FY 2051/052 total revenue of JR started to increase as new trains were commenced. The total annual revenue was affected adversely due to expiry of 'Trade and Transit Treaty' in FY 2046/047. In other fiscal years the total revenue decreased because the performance of JR was dissatisfactory. There was paucity of coal, rolling stocks, locomotive engines, and spare parts etc. The fair and freight collection system was loose and number of without ticket passengers was greater. After the commencement of new trains the number of passengers, revenue from passengers and total annual revenue increased. Although the volume of cargo and its revenue did not increase because new trains were not provided with goods bogies. JR renovated and repaired the old passenger coaches after the entrance of new trains, but it neglected the cargo division and the improvements were not made in cargo bogies which affected ultimately the revenue from cargo traffic.
- 12) While we look towards 18 years' record of Janakpur Railway we find that the volume of cargo traffic was satisfactory in the beginning period. But it fell down gradually in following years. At that time rice, paddy, grains, and timber were exported to India to a great extent. JR transported these products in large volume. But in the following years the Nepalese government banned to export rice, paddy, grains, and timber. Therefore, JR lost opportunity to carry those commodities. Goods are only

imported through this route and nothing has been exported through Jaynagar border in recent years. Nepal has negative trade balance with India so JR could not get any export item. Mainly cement, fertilizer ( chemical ), iron, coal and salt etc. were imported through this route in the beginning period. JR carried those commodities in large volume. But in the following years the performance and capacity of JR decreased so people used to carry goods by JR and they diverted the route. Some public enterprises like 'Salt Trading Corporation Ltd.' diverted the route of importing salt; 'Nepal Coal Limited' used to carry coal by JR; the import of chemical fertilizer controlled by government and they diverted the route and mode of transportation. Thus JR lost major imported commodities also. JR could not build confidence and it could not convince people and businessmen to carry goods by train. The condition of JR was almost ruined and in absence of coal it was using fire wood which is exhaustive and not able to produce sufficient heat (steam) in time. As a result, 29 KMs' travel usually took five to six hours. This also reduced the hauling capacity so trains were operating with less bogies. Steam locomotives were out dated and ruined and most of the time they became failure in journey. In absence of spare parts and proper maintenance most of the time these were kept in workshop. The train service was provided only one or two times a day and passenger coaches were in limited number. So passengers were compelled to travel on roof and to hang on the door. Good bogies were old and ruined so people were anxious about the safety and punctual arrival of goods. Mostly the goods stayed in godown for long time in absence of bogies. The train service was delay,

irregular, and it was interrupted by heavy rain and flood in most of the years during rainy season.

The other causes for the reduction of passenger and cargo was that, in previous years there was no any route for 'Sirha' except 'Jaynagar'. In the subsequent years, Sirha connected with 'Mahendra Highway' at 'Chauharwa' and motor transportation started. Thus most of the people of 'Sirha' used to go by train. In the beginning period most of the people of Janakpur were dependent on Jaynagar market for local purchase but in following years they used to go Jaynagar.

13) During last eight fiscal years JR could not control or reduce expenditure amount and it could not raise the revenue also so there was continuity in net loss. Out of total expenditure more than 40% amount spent on 'Direct Operational Expenditure' till FY 2050/051 ( except FY 2049/050 ). During these years JR used steam locomotives which were ruined and out dated so those were consuming more coal and providing less service. The frequency of breakdown was maximum so train service also interrupted frequently. These causes increased the cost and reduced the revenue which ultimately led to loss. Many passengers travelled without ticket during these years so this factor also affected total revenue adversely.

JR had paucity of rolling stocks and locomotive engines so it provided less service. The number of passengers and volume of cargo decreased substantially. Consequently revenue of JR decreased and net loss increased. Since FY 2051/052, after the commencement of new trains, the direct operational expenditure reduced because new diesel locomotives have lower operating cost. The capacity of JR increased so there was positive sign in number of passengers and total revenue. JR hired excess employees which increased the 'Total Salary Wages and Allowances' expenditure to a great extent. The increased expenditure of 'Total Salary, Wages, and Allowances' and 'Gratuity, Grant, and Medicine Expenditure' were main cause of loss in FYs 2051/052 and 2052/053. Because these were fluctuating between 61.63% to 70.14% among total expenditure. Further, heavy rain and flood also affected train service which reduced total revenue. Besides these, there was no improvement in cargo service so it could not contribute in total revenue significantly.

- 14) More than 75% respondents agreed with improved condition of passenger service only because new trains were not provided with goods bogies. JR could not improve the condition of old and ruined goods bogies so volume of cargo decreased.
- 15) According to opinion survey it is obvious that JR has been facing economic (financial) problem to a great extent and there is paucity of essential means and facilities. Only 17.74% respondents agreed with natural calamity (flood) because this was a temporary phenomenon which occurred in rainy season.
- 16) After the commencement of new trains it has been felt that over staff is the major cause for the loss in JR. The present number of

employees is more than actual requirement and they are not needed to operate only 51 KM train service with a few rolling stocks and locomotives. Since JR is operating in loss, the excessive number of employees have become a financial burden.

- 17) JR has got success to fulfil own objectives, but it has not achieved all objectives to a great extent. In fact, JR has provided enough service for passengers but it is failure to provide reliable cargo service. Similarly it has provided employment, directly or indirectly, to the people, but JR is still unable to give contribution in government's revenue.
- 18) Most of the employees are in favour of JR and they do not want alternative. They think, if other modes of transportation is provided in the competition of JR, the case of 'Nepal Government Railway' may repeat and they will lose the job. Rather they emphasize on the improvement and extension of JR whereas the general people do not rely on the service of JR and most of them want its alternative.
- 19) Most of the respondents accept that the best way to improve present situation of JR is 'the expansion of service and extension of the length of railway'. About 24% of total respondents preferred to 'reduce economic (financial) loss by establishing efficient administration; reducing cash manipulation; making railway service more efficient, reliable, comfortable and suitable.'
- 20) There is no sound relationship between top and lower level staffs.Lower level employees are not participated by top management in

decision making and the decisions are made, generally, without consulting them.

- 21) The technical employees have received training but the administrative employees have not got any kind of training in JR. Some technical employees were sent to India for operational and maintenance training of new trains. Administrative employees also need training for the efficient administration of JR, but this facility has not been provided.
- 22) About 63% employees accept that there is performance appraisal system in JR. Rest respondents either do not know about it or they have not found it in practice. Generally, it is assigned by higher level staffs so lower level employees are unknown to it. There is frustration among employees because they have not been rewarded or promoted while they show the best performance.
- 23) Most of the respondents agree that passengers and businessmen do not create problems in the operation of train service. Only the traffic staffs face problem from without ticket passengers.
- 24) Majority of respondents accept that Indian Customs (Jaynagar) creates problem. Specially businessmen face different problems in the Indian Custom Office. The officials of 'Land Custom Station Jaynagar' unnecessarily harass them. This is also a cause for regular reduction in cargo traffic of JR. The businessmen feel easier to carry their goods from other border so they divert the route.

- 25) The most problem creator group is local inhabitants because some of them travel without ticket and do not pay freight for luggage.
- 26) Most of the total respondents agree that JR gets administrative help to discourage smugglers who illegally import - export goods by train. The prevention of smuggling is a challenge for administration and government. This is not the duty of JR to check smuggling although it can assist the administration to control it.
- 27) JR has been implementing the rule of penalty strictly. Because this is the best way to control financial leakage. It has been seen that local inhabitants and students sometimes travel without ticket and employees of JR hesitate to impose them penalty (fine). Because they often quarrel and threaten them. Although the rule of penalty (fine) has been enforced to some extent only after the commencement of new trains.
- 28) Most of the respondents agree with the poor condition of railway track, sleepers, goods bogies, bridges, culverts, platforms, godowns and workshops. In rainy season the track, bridges and culverts often break or damage. Sleepers are ruined and some of these have been changed. Goods bogies are very old and weak, telecommunication system does not work in upper section whereas it works to some extent in down section. Most of the time it has been found dead. Janakpur and Jaynagar stations have

the facility of concrete platform and godowns are available in Janakpur, Khajuri and Jaynagar stations only. The storing capacity of these warehouses is not enough so goods are kept outside and businessmen feel that their goods are unsafe. Consequently, they avoid to carry goods by JR. One of the main cause for the decline in volume of cargo traffic is the lack of godown facility also. The workshop is situated at Khajuri Station which is very old and not suitable for the repair and maintenance of new trains. A new workshop has been established in the loco shade of Janakapur station which has very few machines. There is only 30 lbs. old rail in upper section so the train can not exceed the speed of 15 KM per hour.

- 29) The signals are not working, which is very essential for the safety of train service. In absence of signal the possibility of accident increases.
- 30) The present condition of passenger coaches and locomotive engines is good because India has provided 4 new diesel locomotives and 18 new passenger coaches. These are providing service satisfactorily.
- 31) The contribution of JR is maximum in the enhancement of business and the transportation of local inhabitants. There is only one mode of transportation for the people of Dhanusha and Mahottari district so JR has maximum contribution in the field of transportation.

#### 5.3 <u>RECOMMENDATIONS</u> :

On the basis of total research, attempts have been made to provide some recommendations in the expectation that these would contribute significantly in the development of 'Janakpur Railway'.

- The contribution of upper section is very low in JR and it is the neglected section of railway. Janakpur Railway should try to improve the condition of upper section.
- In most of the years, heavy rain and flood break the tracks and damage the bridges. Thus the train service stops in rainy season.There should be proper plan to prevent and reduce the loss from flood. JR should make long term master plan to improve the

condition of bridges, culverts and track. Old and weak culverts, and bridges should be reconstructed; the height of track should be raised; ballast and boulder should be used; old and ruined sleepers and rail should be changed; plantation should be done in line side land; and dam should be constructed in flood affected areas. JR should try to get help from different relevant departments and it should draw the attention of government towards its problems and obstacles.

- JR should add some extra train services in those months when the number of passenger is greater.
- 4) The condition of cargo traffic is very poor so new goods bogies should be added. The old and ruined bogies should be repaired and improved as soon as possible. New warehouses should be constructed at Mahinathpur, Baidhi, Bizalpura and Loharpatti stations because the turn over of these stations is comparatively high. Storing capacity of Janakpur, Khajuri, and Jaynagar stations' godowns should be increased. Besides these, the condition of these warehouses should be improved.
- 5) Since JR has lost the confidence of general people and businessmen, it should convince them to carry goods by JR. But at first, it should tactfully improve own condition. JR should assure them for the regular, punctual, safe, and inexpensive cargo service. In case of any damage or pilferage reasonable compensation should be provided in time. Besides this, strict

action should be taken against responsible authority in case of damage and pilferage.

- 6) There should be extra arrangement for goods train. Generally goods bogies are attached with passenger train so JR should leave this practice gradually.
- 7) JR has no any mechanical facility to load and unload bulky goods so it should make an arrangement of crane. It will be an extra facility for customers. Further this saves loading-unloading time and cost. It also reduces the risk. Due to this cause bulky goods have not been provided by businessmen.
- 8) The imported goods, which belong to different part of country, are not transported by JR. The main cause is that after carrying only 29 KM (from Jaynagar to Janakpur Dham) goods are unloaded and after completing customs formalities businessmen (importers) arrange themselves to carry goods till destination. This takes more time and it is expensive also. Because there is different loading and unloading processes. Instead of this, if they carry goods by direct truck, they need not load unload goods in transit and the same truck can reach to their destination. Thus JR is providing only partial service.

JR has been operating under 'Nepal Transport Corporation' and it can make coordination with motor transport of NTC. The imported goods can be transported by the vehicles of NTC, to the final destination of importers. Thus, it will increase the revenue of NTC and businessmen will feel relief from unnecessary tension of loading, unloading and arrangement of vehicles for the final destination. Ultimately this effort and arrangement will increase the cargo volume of JR.

- 9) In the months of Baisakh, Jestha, Ashar and Ashwin the load of passenger and cargo traffic increases. So, during these months strategies should be formulated to handle the large volume of cargo and passengers. All rolling stocks and locomotive engines should be overhauled, and every things should be kept ready before these months. The employees should not be given leave during these months, except in urgent and emergency cases.
- 10) 'Janakpur Cigarette Factory Ltd.' is a major party ( customer ) of JR so special care should be taken in JCF's goods. Unnecessary delay in transportation will interrupt the production of JCF so JR should provide quick service in this case. The top management of JCF should be convinced to import all goods by this route only.
- 11) JR has maximum number of employees which is not essential for its operation. Out of total expenditure more than 70% amount spent on the salary, wages, allowances, gratuity, grant, and medicine expenditure in FY 2052/053. This expenditure is too much and it adversely affects the profit. So JR should reduce the number of employees. There should be tight control on administrative expenditure because it was excessive in recent years.

- 13) Comparatively, cargo service is in very poor condition so JR should try to improve its condition. The efforts should be made to draw the attention of relevant departments and government towards the pitiable condition of cargo traffic. Priority must be given to this sector.
- 14) JR has been confronting with economical (financial) problem so there is paucity of essential means and facilities. Since, JR is operating in loss, it can not arrange essential means by own resources and funds. Therefore, JR should try to get grant from friend countries through government. Further it should try to get long term loan on minimum rate of interest. This amount should be utilised in long term investment; renovation of railway; acquisition of fixed assets, and essential means; extension of railway; and execution of master plan etc.
- 15) Old bogies, coaches, locomotive engines, spare parts, rails, sleepers etc. have been kept in Khajuri and Janakpur stations which can not be used. These disposed items are lying since long period and rusting (damaging) by rain and air. The salvage value of these discarded goods is diminishing per year. So JR should sell these goods and the amount can be utilised for the improvement of railway.

- 16) The most selected way for the improvement and development of JR is to expand the train service by extension of its length upto 100 KM. But it is advised to connect JR with 'Mahendra Highway' near 'Lalgarh'. It will take time and need large investment, but it is very essential for the bright future of JR.
- 17) The economical (financial) loss can be reduced by establishing efficient administration; reducing cash manipulation; making railway service more efficient, reliable, comfortable and suitable.
- 18) There must be sound relationship between lower and top level employees. The authority should be delegated to the subordinates. The lower level employees should be participated in decision making, related to their job. There is no any system of training for administrative employees. The training program should be conducted for the administrative employees as it is essential for the efficient management. Punishment and reward system should be applied in JR and there should be perfect performance appraisal system. The efficient and honest employees should be promoted from time to time so that they can work with high morale.
- 19) JR should try to make good relation with 'Land Custom Station Jaynagar'. If they unnecessarily harass the travellers and businessmen then complaint must be forwarded to Indian Embassy through relevant authority and department. But JR should cooperate with Nepalese and Indian Custom Office, local

administration and police department to discourage the smugglers. In fact, the smugglers do not pay freight of goods, so it is a direct loss for JR.

20) Some of the students and local inhabitants do not pay freight of goods ( i.e. luggage ) and they travel without ticket. The rule of penalty ( fine ) must be strictly enforced to them. If they quarrel or threaten the traffic employees then action should be taken as per rules and regulations of JR and written complaint should be forwarded to local administration. JR should arrange monthly ticket for the regular passengers for example, civil servants, local inhabitants, and students. Concession ticket should be available for students.

Some stations are not yet fenced so these can be fenced by rusty and discarded rails. It will control the without ticket passengers and pilferage of goods. The train checking should be done occasionally throughout JR line with the help of police. By applying these recommendations the revenue of JR can be increased and it will also increase the moral among the people and employees.

21) The concrete platform should be constructed in Khajuri, Mahinathpur, Loharpatti, and Bizalpura stations. The condition of Janakpur and Jaynagar stations' platforms should be improved. JR should provide facilities of waiting-room, toilet, canteen, lock-room, inquiry cabin, fresh drinking water, telephone facility etc. in every station as far as possible. The platform and passenger coaches should be kept clean.

- 22) Special railway police force should be organised for the security of passengers, goods and railway property.
- 23) The internal communication system is worst so JR must start to use signals as soon as possible. It should replace or repair the dead telephone lines.
- 24) A well equipped workshop should be established at Janakpur station because the present workshop of Janakpur station is not enough. Janakpur Dham station is situated in the middle of 10 stations and it will be easy to control upper and down sections. JR should hire skilled mechanics or train working mechanics so that they can repair new trains. New machines and equipments should be installed in the workshop because the old machines of Khajuri station's workshop are not perfect and suitable for new trains.
- 25) 30 lbs rail should be changed in upper section as it is very old and weak. It reduces the speed of train also.
- 26) Maximum number of passengers travel from Janakpur and Jaynagar stations so express train should be commenced between Janakpur and Jaynagar stations.
- 27) JR has almost stopped to operate steam locomotives and now only new diesel locomotives are in operation. We are dependent on other countries for fuel ( diesel ). Nepal is almost independent on electric power so it will be better for JR to get electric

locomotives. Initially it will be expensive, but in future we will be independent on source of power. Further, this will help to reduce environmental pollution also.

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# **APPENDIX I**

## ORGANIZATIONAL STRUCTURE (As Per Appointment Sheet of FY 2052/053)

## JANAKPUR RAILWAY



# **APPENDIX II**

# QUESTIONNAIRE (Translation) JANAKPUR RAILWAY

Department :	Age :
Designation :	Sex :

#### Give answer as you like. Please answer all the questions.

 In which aspect do you think the improvement has been made recently in Janakpur Railway either passenger or cargo traffic ?

(a) Passenger (b) Cargo (c) Both (d) None.

2) Which one do you think is the major obstacle JR has been facing ?

(a) Problems arosen by employees.

	(b)	Econom	ic (financial)	) problem.		
	( c )	Paucity	of essential m	eans and facil	ities.	
	( d )	Lack of	efficient admi	inistration.		
	( e )	Natural	Calamity.			
	(f)	Any oth	er			
3)	Whic	h factor m	nay be the mai	n cause for los	ss in the corpo	pration ?
	(a)	Reduction	on in the num	ber of passeng	er and cargo t	raffic.
	(b)	Irregula	r and inferior	service.		
	(c)	Being b	urden of over	staff in the co	rporation.	
	(d)	Manipul	lation of cash.			
	(e)	Lack of	means and fac	cilities.		
	(f)	Any oth	er			
4)	To w	hat extent	JR has got su	ccess to fulfil	its objectives	?
	Minir	num				Maximum
		1	2	3	4	5
5)	In pr Janak	resent situ xpur Railw	uation whethe	er it is neces	sary to searcl	h alternative of
	(a) Y	Yes (1	b) No			

6) Which one may be the best way to improve the present situation of JR?

- (a) To expand the service by extending the length of railway.
- (b) To carry more passenger and cargo by providing more railway services and changing the time table.
- (c) To improve the speed of train.
- (d) To change the rate of fare and freight.
- (e) The economic loss should be reduce by establishing efficient administration; reducing cash manipulation; making the railway service more reliable, comfortable, and suitable.
- (f) Any other .....
- 7) To what extent the lower level staffs have been participated by top management in the decision making process, related to their Job ?

Minimum				Max	kimum
1	2	3	4	5	

- 8) Whether the corporation has provided training facility to the employees from time to time or not ?
  - (a) Yes (b) No
- 9) Is there any system or procedure for the performance appraisal of employees ?
  - (a) Yes (b) No
- 10) Do employees get sufficient cooperation from the local administration during their duty period ?

(a) Yes (b) No

- 11) Whether the passengers and businessmen cooperate to operate railway service or not ?
  - (a) Yes (b) No
- 12) Do the passengers and businessmen face difficulties from Indian Costums ?
  - (a) Yes (b) No
- 13) By which of the following group the corporation faces inconvenience as passengers ?
  - (a) Students (b) Civil Servants (c) Illiterates
  - (d) Local inhabitants (e) Any Other
- 14) Does JR get administrative help to discourage the smugglers who illegally import export goods from India by train ?
  - (a) Yes (b) No
- 15) Whether the penalty is strictly enforced to discourage the without ticket passengers or not ?

(a)	Yes	(b)	No
· · ·		· · ·	

## 16) What is the condition of following in JR ?

	Bad (Poor)					Good	
			1	2	3	4	5
	(a)	Railway track.					
	(b)	Passenger coaches.					
	(c)	Goods bogies.					
	(d)	Locomotive engines.					
	(e)	Communication facilities.					
	(f)	Signals.					
	(g)	Sleepers.					
	(h)	Bridges and Culverts.					
	(i)	Platforms.					
	(J)	Godowns.					
	(k)	Workshops.					
17)	To what extent JR has been contributing in the enhancement of business						
	and tr	ansportation of local inhabit	ants?				

Minimum				Maximum
1	2	3	4	5

18) Would you like to give any suggestion to make Janakpur Railway more efficient ?

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