

CHAPTER ONE

Introduction

1.1 General Background

Working capital is the lifeblood and nerve centre of a business. Just as circulation of blood is essential in the human body for maintaining life, working capital is very essential to maintain the smooth running of a business. No business, no undertakings, no enterprise can bring a sound solvency to the business. It also enables an undertaking in creating and maintaining goodwill. It also enables a business undertaking to pay off its current dues and also provides regular supply of raw materials. Adequate working capital provides inherent strength to the business undertaking and ability to face crisis.

Every business needs funds for two purposes for its establishment and to carry out its day- to-day operations. Long terms funds are required to create production facilities through purchase of fixed assets such as plant and machinery, land, building, furniture, etc. Investments in these assets represent that part of firm's capital which is blocked on permanent or fixed basis and is called fixed capital. Funds are also needed for short-term purposes for the purchase of raw material, payment of wages and other day – to- day expenses etc.

These funds are known as working capital. In some simple words, working capital refers to that part of the firm's capital which is required for financing short – term or current assets such as cash, marketable securities, debtors, and inventories. It is referred as total investment in the net current asset. Funds, thus, invested in current assets keep revolving fast and are being constantly converted in to cash flows out again in exchange for other current assets. Hence, it is also known as revolving or circulating capital or short term capital. The net working capital (NWC) is the difference between the sum of current assets and the sum of the current liabilities. Since the long term

financing is not required to pay back within a year, the net working capital is determined as the excess of current assets over such liabilities which are required to be paid back within a period of less than one year. In other words, NWC is the portion of current assets financed by long-term sources. Mathematically, it is derived as the excess of current assets over current liabilities as under:

$$\text{Working Capital (WC)} = \text{Current Assets (CA)} - \text{Current Liabilities (CL)}$$

Working capital management involves managing the balance between a firm's short-term assets and its short-term liabilities. The goal of working capital is to ensure that the firm is able to continue its operation and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. The interaction between current assets and current liabilities is, therefore, the main theme of the theory of working capital management. The various components of working capital include:

<i>Current Assets:</i>	
Cash and bank balance	
Short term investments	
Sundry Debtors/Receivables	
Inventories	
Prepaid expenses/advances	
Total Current Assets (A)	
<i>Current Liabilities</i>	
Sundry Creditors	
Outstanding expenses	
Short-term loans/borrowings	
Advances received	
Bank Overdraft	
Total Current Liabilities (B)	
Total Net Working Capital (A-B)	
Less: Provision for Contingencies	
Net Working Capital	

Working capital is extremely essential for meeting the daily requirements of an organization. No organization can thrive even for a

single day without adequate working capital. It is evident from the words of Accounting Standards Board Guidance which states working capital as “the funds available for conducting day to day operation of an enterprise.” For our present purpose working capital refers to funds which generate a current income of a type, which is consistent with the major purpose of a company’s existence.

In today’s world of intense competition, working capital management is receiving increasing attention from managers. In fact the goal of many leading companies today is Zero Working Capital. Proponent of the zero working capital concept claim that a movement toward this goal not only generates cash but also speeds up production and helps business make more timely deliveries and operate more efficiently. The concept has its own definition of working capital (Inventories + receivables – payables). The rationale here is that inventories and receivables are the keys to making sales, but that inventories can be financed by suppliers. The idea is to reduce investment in working capital. Reducing capital requires increasing turnover. Reducing working capital forces a company to produce and deliver faster than its competitors. The most important factor in moving toward zero working capital requires is increased speed. The production process has to be fast.

The management of working capital is synonymous with the management of short-term financial liquidity (Kolb, 1983:189). The importance of short term liquidity can be best gauged by examining the repercussions which stem from the lack of ability to meet short-term obligations (Bernstein, 1978:68). The lack of liquidity implies the lack of freedom of choice as well as constraints on management’s freedom of movement. If a lack of liquidity continues to be a problem, it may ultimately lead to insolvency and bankruptcy. Thus, working capital management is linked with the continued existence of an enterprise. Regardless of excellent products, effective marketing, efficient production, and wise fixed assets management, many a management has lost

the control of its firm because a liquidity crisis resulted in takeover by creditors, forced merger or bankruptcy (Kolb, 19883:72-76).

The management of working capital plays an important role in maximizing the value of an enterprise. The inefficient management of working capital will lead to loss of profits in the short run but will ultimately lead to downfall of the enterprise in the long run. A deeper understanding of the importance of the importance of working capital can lead not only to material savings in the economical use of capital but also assert in furthering the ultimate aim of business. An adequate investment in working capital will lower the rate of return while the inadequate investment will hamper the solvency position and growth, thereby affecting the smooth operation of business.

1.2 Profile of Nepal Electricity Authority

Nepal Electricity Authority (NEA) was created on August 16, 1985 (Bhadra 1, 2042) under the Nepal Electricity Authority Act, 1984, through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards. To remedy the inherent weakness associated with these fragmented electricity organizations with overlapping and duplication of works, merger of this individual organization became necessary to achieve efficiency and reliable service.

The importance of electricity can clearly be justified by the increasing number of consumers yearly. The number of customers in the fiscal year 2009/10 was 1,786,084 which is an increase of about 10.91% over last fiscal year 2008/09 and the number of customers in the fiscal year 2010/11 was 2,053,259 with an increase of 10.15% over last fiscal year. In fiscal year 2010/11, on a sector-wise basis, domestic sector consumed 94.92% of electricity, industrial sector consumed 1.61% of electricity, commercial sector consumed 0.53% of electricity, non-commercial sector consumed 0.62% of electricity and others sector consumed 2.31% of electricity. Although the

consumption of electricity by industrial sector is comparatively less, NEA is continuously trying to increase the supply electricity to such sectors.

Investment of Private Enterprises

Global trend in the power sector is pushing it more and more in private domain and public utilities of the sector are in the phase of transformation. NEA is also facing similar situation. A realization that increasing energy demands cannot be met by public investment only and the private enterprises must be encouraged to invest in the sector for better mobilization of resources and better for private sector participation in Nepal. Today about 26% of served energy come from private generators.

The names of the private sectors companies in the power development of Nepal are mentioned below.

Name of the Company		Capacity (KW)
1.	Himal Power Ltd.	60,000
2.	Bhotekoshi Power Co Ltd.	36,000
3.	Chilime Hydro Power Co. Ltd	22,000
4.	National Hydro Power Co. Ltd	7,500
5.	Butwal Hydro Power Co. Ltd	17,100
6.	SyangeBidut Co. Ltd	183
7.	Arun Valley Hydro Power Co. Ltd	3,000
8.	Rairang Hydro Power Development Co. Ltd	500
9.	Sanima Hydro Power Co. Ltd	2,500
10.	Alliance Power Nepal Pvt. Ltd	1,500
11.	Khudi Hydro Power Co. Ltd	3,450
12.	Unique Hydel Co. Pvt. Ltd	980
13.	ThoppaKhola Hydro Power Co. Ltd	1,650
14.	Gautam Buddha Hydro Power Co. Pvt. Ltd	750
15.	Kathmandu Small Hydro Power System Pvt. Ltd	232
16.	KhorangaKhola Hydro Power Co. Ltd	995
17.	Unified Hydro Power Pvt. Ltd	996
18.	Task Hydro Power Co. Pvt. Ltd	979
19.	Ridi hydropower Development Co. Pvt. Ltd	2,400
20.	Center for Power Dev. And Services Pvt. Ltd	991

21.	Gandaki Hydro Power Co. Pvt. Ltd	3,100
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Source: www.nea.org.np

In addition of above about 8 Power Companies are under construction.

1.3 Statement of the problem

The efficient management of working capital is very vital for business survival. This is premised on the fact having too much working capital signifies inefficiency, whereas too little cash at hand signifies that the survival of business is shaky. In the modern business world the problem of efficient financial management is of prime importance. The efficiency of an organization in terms of certain parameters such as profit/ earnings, management of working capital and payments made to investors in the form of dividend, etc., the giant structure of any enterprise including power sector industry can only built on a sound financial base, which ultimately depends upon the availability of adequate finance in the form of working capital. For bright success of any enterprise the management of working capital and earnings is a significant function of finance manager because it affects the price of share in stock market and return to the shareholders.

The Nepal Electricity Authority as a government undertaking enterprise, management of working capital has been one of the serious problem since they are meeting their working capital requirement from various borrowings. They are usually found to depend on Nepal Government and borrowings from financial institutions for overcoming the shortages of working capital besides trying to manage working capital from their won sources. This thesis is mainly focused to highlight the problems to find out the answer of the following questions.

- What is the relationship between working capital and profitability of NEA?
- What is the relationship between net working capital and net profit of NEA?

- What is the relationship between liquidity and profitability in NEA?
- Is NEA's investment in current assets appropriate to its total assets level?

1.4 Objectives of the study

The basic objective of this study is to analysis the working capital practice in Nepal Electricity Authority. Besides the main objective, there are following specific objectives of the study:

- To study the working capital management in Nepal Electricity Authority.
- To evaluate the relationship between profitability and working capital management.
- To evaluate the relationship between liquidity and profitability of NEA.
- To provide suggestions to NEA on the basis of study findings.

1.5 Importance of the Study

Working capital management is an important topic as the management of working capital has not been taken seriously by government undertakings of Nepal. Proper working management helps to maximize profits of a firm. It also analyzes the impact of working capital on capital, overall profitability of firm and the information to overcome current problems which is helpful for new researchers, government and organization itself.

1.6 Limitations of the Study

This study is mainly concerned about the working capital management of NEA. Although efforts have been made to make this study more realistic, practicable, analytical and informational, its limitations are as follows:

- This study is concerned with the working capital management of government undertaking.
- This study is only confined about the working capital management of NEA.
- The study is based on secondary data only.
- This study used statistical and financial tools for measuring the working capital management and other results of NEA.
- The major sources of the secondary data are balance sheet and income statement of NTC Annual Report.
- The study covers the period of four years from 2007/08 to 2010/011.

1.7 Organization of the Study

The study has been organized in five chapters. They are:-

▪ Introduction

This chapter is the introductory framework that includes general background, introduction of the company, background of the study, focus of the study, statement of the problem, importance of the study, objective of the study, limitations of the study and organization itself.

▪ Review of Literature

This chapter reviews the existing literature in the relevant areas. It mainly includes the fundamental concept and brief review of previous research studies.

▪ Research Methodologies

The third chapter, research methodology, describes the various research methods i.e. research design, population and sample, nature and sources of data, data collection procedure, data analysis tools and limitations of the methodology.

- **Presentation and Analysis of the Study**

This is the most important and most expensive chapter as it includes the main theme of the study. It presents and analyses the information by using various accounting, financial as well as statistical tools in specific form to meet the stated objectives of the study.

- **Summary, Conclusion and Recommendation**

This chapter is the final chapter of the study that includes summary of the study, conclusion and recommendation.

Bibliography and appendices have also been included in the last part of the study.

CHAPTER TWO

Review of Literature

2.1 Conceptual Framework

2.1.1 Meaning of Working Capital Management

“In simple words working capital is the excess of current Assets over current liabilities. Working capital has ordinarily been defined as the excess of current assets over current liabilities. Working capital is the heart of the business. If it is weak, business cannot proper and survives. Cash is the lifeline of company. If this lifeline deteriorates so does the companies ability to fund operation, reinvest do meet capital requirements and payment. Understanding Company’s cash flow health is essential to making investment decision. A good way to judge a company’s cash flow prospects is to look at its working capital management. The company must have adequate working capital as much as needed by the company. It should neither be excessive or nor inadequate” (*Hampton and Wagner; 1989: 34*).

“Excessive working capital cuisse for idle funds lying with the firm without earning any profit, where as inadequate working capital shows the company doesn’t have sufficient funds for financing its daily needs working capital management involves study of the relationship between firm’s current assets and current liabilities. The goal of working capital management is to ensure that a firm is able to continue its operation. And that is has sufficient ability to satisfy both maturing short term debt and upcoming operational expenses. The better a company managers its working capital, the less the company needs to borrow. Even companies with cash surpluses need to manage working capital to ensure those surpluses are invested in ways that will generate suitable returns for investors” (*Khan and Jain; 1999:15*).

The goal of the firm is the maximization of the wealth invested by the owner of the firm. Under most condition, this objective can be obtained by persuading of policy of maximizing the profits. Thus the main objectives of the firm are the maximizing the profit. New business firms require various types of assets in order to carry out its day-to-day operation. A new business firm requires various types of asset in order to carry out its day-to-day operation. Some assets are required to meet the needs of regular production and some assets are required to meet day-to-day expansion and short-term obligations those firm, which generally raise short-term and long-term fund at balance. They' will get success as well as other ordinary firm a new firm generally uses current assets as cash, marketable securities, account receivables and inventories which are necessary for the new types of business more than a running business. The cash and marketable securities are considered ads purely liquid assets and account receivable and inventories are not taken as purely liquid assets.

Working capital management is an important domain of financial management, which affects the decision making of enterprises inadequate level of working capital can result in serious financial difficulties working capital management plays vital role in maximizing shareholders wealth, such as it could be better to understand, the theory of working capital management: in brief, as it provides conceptual and analytical in making this decision, skillfully.

Thus working capital is firm investments in short term asset such as cash, short term securities account receivable, and inventories. The working capital is an important and time consuming aspect of managerial finance Working capital management which encompassed on aspect of the administration of both current assets and current liabilities, have needed to adjusted to changes in the firms levels of sales activity caused by seasons And factor, in other side working capital management provided as aspects of to contribute to maximizing the value of the firm Current assets holding, for example, should be expanded to the point where marginal returns on increase in such assets are just equal to the cost of capital required to finance the increase current liability

should be used in place of long-term debt where their use lowers the cost of capital (Weston, J.F. and Brigham, E.F. "Managerial Finance", Holt Sounders International, 1982 Ed., P. 266.).

Working capital is needed for day-to-day operation, of the business, so it can be considered as the life-blood for any business. The management of working capital has a definitive effect on the profitability and the contributed existence of the business great importance has been attached to management of fixed assets but working capital management has not been given the much importance as it deserves inadequate planning of working capital requirements can more speedily effectively bring as otherwise be paid to the management working capital. Efficiently and the optimum utilization of even the fixed assets to which a great importance is given depends upon the availability of adequate working capital Now a day the efficiency management of working capital has acquired a greater in view of the tight credit policy followed by the reserve bank of India is as a result of the acceptance of recommendation made by the Tandon and Chore committees (Jain S.P. and Narang K.L., "Financial Management Accountancy," Ed. 1991, p. 171.).

"Working capital management is concerned with the problems that arise in attempting to manage the current asset, current liabilities and the Interrelationship that exist between them (Smith K.V., "Management of Working Capital," West Publishing Company, New York, Ed. 1974, p. 5.).

2.1.2 Meaning and concept of Working Capital

The concept of working capital can also be explained through two angles.

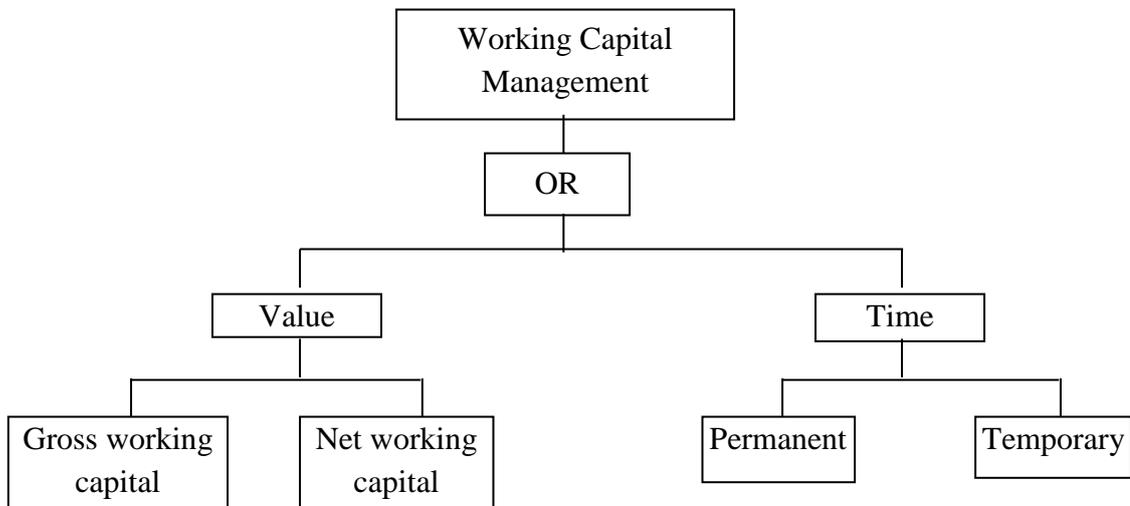


Figure No. 2.1: Permanent and Temporary Working Capital

a) Value:

From the value point of view, working capital can be defined as Gross Working Capital or Net Working Capital.

Gross working capital refers to the firm's investment in current assets. Current assets are those assets which can be converted into cash within an accounting year. Current Assets include stocks of raw materials, work-in-progress, finished goods, trade debtors, prepayments, cash balances, etc. Thus this concept can help to earn more profits through maximum utilization of current assets. This concept is known as quantitative concept. Another aspect of the gross working capital is to the need of arranging funds to finance current assets. Whenever a need for working capital arises due to the increasing level of business or for any other reason, the arrangement should be made quickly. Similarly if suddenly some surplus funds arise they should not be allowed to remain idle but should be invested in short term securities.

Net working capital refers to the difference between current assets and current liabilities. Current liabilities are those claims of outsiders which are expected to mature for payment within an accounting year. Current liabilities include trade creditors, accruals, taxation payable, bills payable, outstanding expenses, dividends payable, short term loans, etc. Suggestive extent to which working capital needs, may be financed by permanent sources of funds of current assets should be excess of current liabilities to constitute a margin of buffer for maturing obligations with the ordinary operating cycle of business. Every company must maintain current assets at a higher level than current liabilities. It is a conventional rule to maintain the level of current assets twice of the level of current liabilities. A weak liquidity position poses threat to the solvency of the company and makes it unsafe and unsound. It focuses the liquidity position of the firm and suggests extending which working capital should be financed with the permanent source of fund. This concept helps to compare the liquidity position of the similar or same firm over a time.

Net working capital can be positive or negative. A positive working capital means that the company is able to pay off its current liabilities. A negative working capital means that the company currently is unable to meet its short- term liabilities.

The meaning of working capital should not be allowed to limit either the gross or net concept of working capital as it keeps on circulating in the course of operations. The operating cycle of a company consists of time period between procurement of inventory and collection of cash from receivables. The knowledge of operating cycle is essential for smooth running of business with optimum size of working capital ensuring the healthy profitability and liquidity. The size of working capital depends on the length of operating cycle. Generally, longer the operating cycle, the larger the amount of working capital requirement that reduces the profitability of the firm and vice versa. The length of operating cycle is the indicator of efficiency in management of short term funds. The duration of working capital cycle depends on the nature of industry,

efficiency in management of short term funds, policies of government like taxation, credit policies of company and lenders.

b) Time:

The requirement of working capital may increase or decrease according to the level of sales and production. From the time point of view, the working capital can be divided into two categories; Permanent and temporary.

Permanent working capital refers to the hard core working capital. It is that minimum level of investment in the current assets that is carried by the business at all times to carry out minimum level of its activities. These are also known as fixed working capital, regular working capital, and core current assets. It should be financed from long term sources.

Temporary working capital refers to that part of working capital, which is required by a business over and above permanent working capital. It is also called variable, fluctuating working capital. This keeps on changing according to the increase or decrease in the volume of production and sales. It should be financed from short term sources. Both kinds of working capital i.e. permanent and fluctuating (temporary) are necessary to facilitate production and sales through the operating cycle.

2.1.3 Importance of Adequate Working Capital

Management of working capital is an essential task of the finance manager. He has to ensure that the amount of working capital available with his concern is neither too large nor too small for its requirements

A large amount of working capital would mean that the company has idle funds. Since funds have cost, the company has to pay huge amount as interest on such funds. If the firm has inadequate working capital, such firm runs the risk of insolvency. Paucity of working capital may lead to a situation where the firm may not be able to meet its liabilities.

The various studies conducted by the Bureau of Public Enterprises have shown that one of the reasons for the poor performance of public undertakings in our country has been the large amount of funds locked up in working capital. This results in over capitalization. Over capitalization implies that a company has too large funds for its requirements, resulting in a low rate of return a situation which implies a less than optimal use of resources. A firm has therefore, to be very careful in estimating its working capital requirements.

Maintaining adequate working capital is not just important in the short term. Sufficient liquidity must be maintained in order to ensure the survival of the business in the long term as well. When business make investment decisions they must not only consider the financial outlay involved with acquiring the new machine or the new building, etc., but must also take account of the additional current assets that are usually required with any expansion of activity. For example.

- Increased production leads to hold additional stocks of raw materials and work in progress.
- Increased sales usually mean that the level of debtors will increase.
- A general increase in the firm's scale of operations tends to imply a need for greater levels of working capital.

2.1.4 Factors Determining Working Capital Requirement

There are no particular rules that are applicable in all situations to ascertain the requirement for working capital. The various factors that influence the level of working capital are discussed below:

❖ *Nature of business*

The requirement of working capital depends upon the nature of business carried on by the organization. For example;

- The service organization needs lesser working capital than the trading and manufacturing organization.
- In case of trading organization the major part of resources are deployed on current assets, particularly in stock-in-trade. While in case of transport companies, the major part of funds are locked-up in fixed assets like motor vehicles and spare parts.
- It is obvious that working capital of a real estate business is far higher than working capital of a stationary shop or medical store.

❖ *Period of operating cycle*

Generally the period for working capital is high if the period of operating cycle is long and vice versa. A longer operating cycle means much funds are locked in the form of raw materials, work in progress, debtors or finished goods for a long time. This gives rises to a huge working capital.

❖ *Level of operating production and sales*

If the level production and sales are high, the funds locked in inventories and debtors will also be high. Similarly the amount for the payment of trade creditors is high. This causes a bigger size of working capital.

❖ *Seasonal Variation*

In case of seasonal industries, the demand and supply of products and raw materials are not uniform throughout the year. For example

- ✓ For a woolen garments, the demand is high in the winter season but the firm may have to continue the production throughout the year to retain its employees and keep the plant operative. This caused working capital blockage during off season.
- ✓ For sugar industries or oil industries, the raw materials (sugarcane or mustard seeds) are available for a particular period only. They have to maintain huge inventories during all seasons to meet regular demand.

❖ *Inventory Policy*

In a traditional inventory policy, the fund blocked in raw materials, work-in-progress or finished goods are generally high due to large quantities and longer stock holding periods. In such cases more working capital is needed. However, the adoption of JIT, Supply Chain Management or Vendor Management will drastically reduce the volume of inventories. This needs smaller size of working capital.

❖ *Credit Policy*

Credit policy of the business empowers to whom, when and to what extent credit may be allowed. A liberal credit period and follow-up procedures will increase investment in debtor's balances and simultaneously in working capital requirements than a strict credit policy.

❖ *Short term financing options*

Inventory is ideally financed by credit granted by the supplier; dependent on the cash conversion cycle, it may however, be necessary to utilize a bank loan (or overdraft), or to convert debtors to cash through factoring in order to finance working capital requirements.

❖ *Operating Efficiency*

❖ A company can reduce the working capital requirement by eliminating waste, improving coordination, etc.

❖ *Price level changes*

For e.g. rising prices necessitate the use of more funds for maintaining an existing level of activity. For the same level of current assets, higher cash outlays are required. Therefore the effect of rising prices is that a higher amount of working capital is required.

2.1.5 Working Capital Finance

The basic principle of financing an investment is the matching of investment period and sources of funds i.e. long term investment should be financed from long term sources and short term investment should be financed by short term sources. Accordingly the permanent working capital should be financed with long term sources such as equity, preference share or long term debt capital and the fluctuating working capital should be financed from short term sources such as trade credits, overdraft and short term loans.

The approaches of investment in working capital can be classified as Conservative, Aggressive and Moderate (or matching). The following diagram shows the alternative current assets policies.

Source: I.M. Panday, *Financial Management*, New Delhi: Vikash Publishing House, 1992, P.822

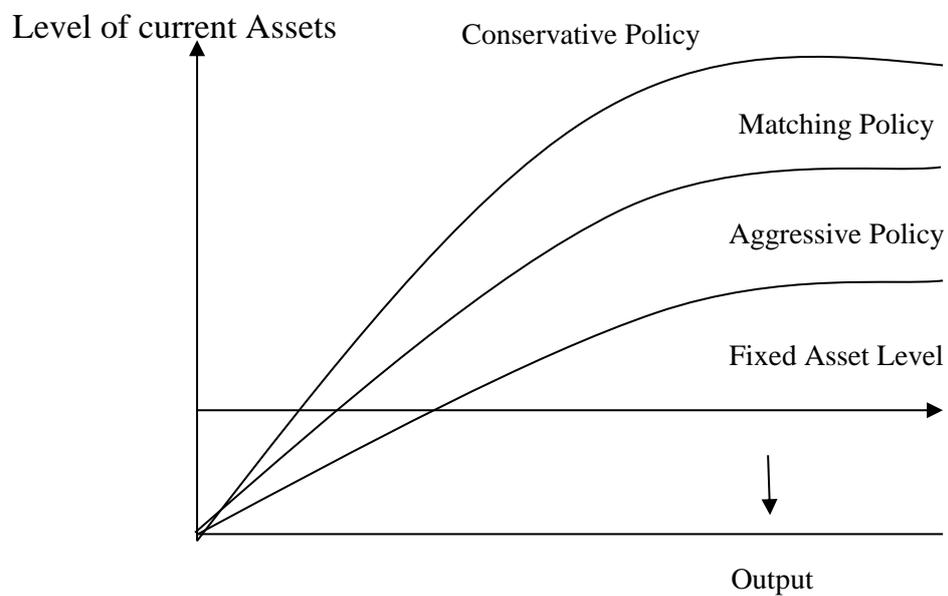
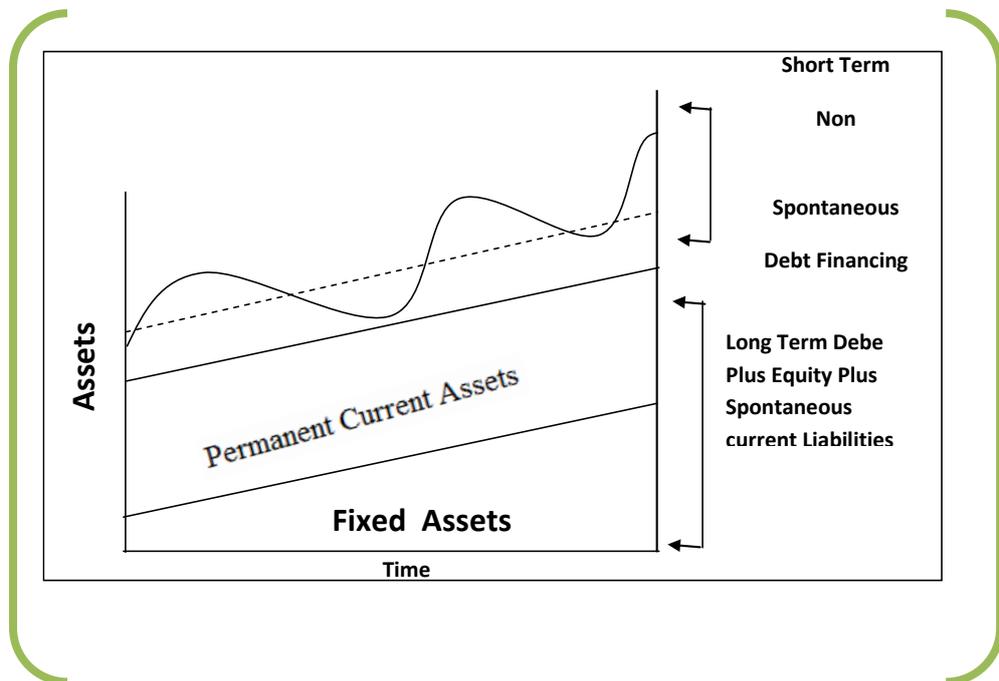


Figure 2.2 Working Capital Finance

Source: Weston and Brigham, *Financial Management* (1982): 374

a) Conservative Policy:

In this approach the investment in current assets remains very high. This leads to a high current ratio which reveals more preference of the company for liquidity than profitability. The financing in this approach is done through mainly equity and long term debt. In this policy all of the fixed assets all of the permanent current assets and some of the current assets of a firm are financed with long term capital. The financing of the firm is said to be conservative plan, the firm finance its permanent assets and part of temporary assets with long term financing. Thus in periods when the firm has no temporary current assets, its stores liquidity by investing surplus funds in two marketable securities. The conservative relies heavily on long term financing and there is less risky.



Source

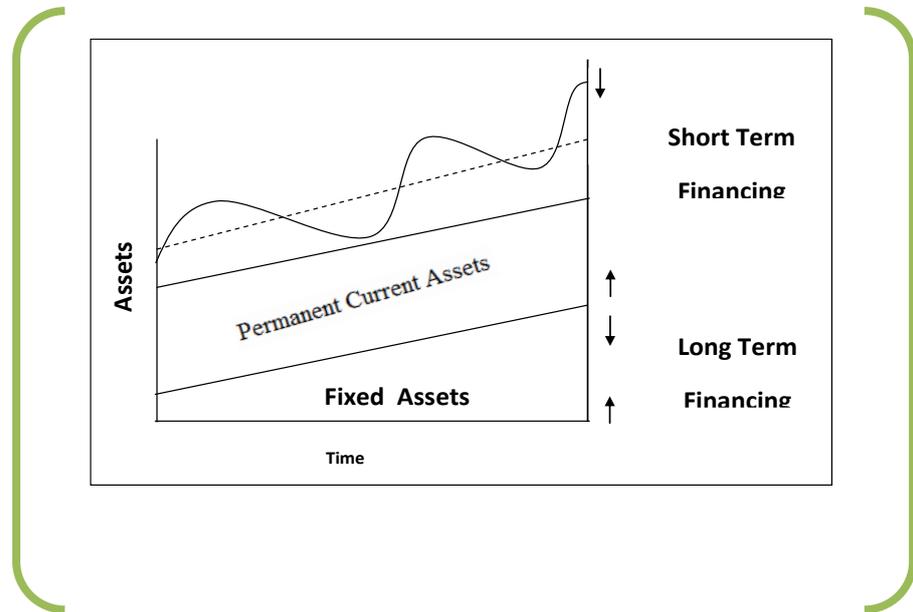
e: Khan and Jain, 1999 : 606

Figure 2.3: Conservative Policy

b) Aggressive Policy:

In this approach the investment in current assets is too low maintaining a low current ratio. The company is more focused on profitability than liquidity and wants to take more risk. The financing of investment in this approach is mainly done through short term debt sources. Equity

and long term debt capital is hardly used to finance the investment in current assets in this approach. We may follow more or less riskier to hedging policy to financing. The more risky policy is to follow aggressive financing policy. Here the firm attempts to employ more of the short-term funds. Shorter the maturity schedule of a firm's debt obligation, the greater the risk that it will be unable to meet principal and interest payments and hence the approach is more risky.

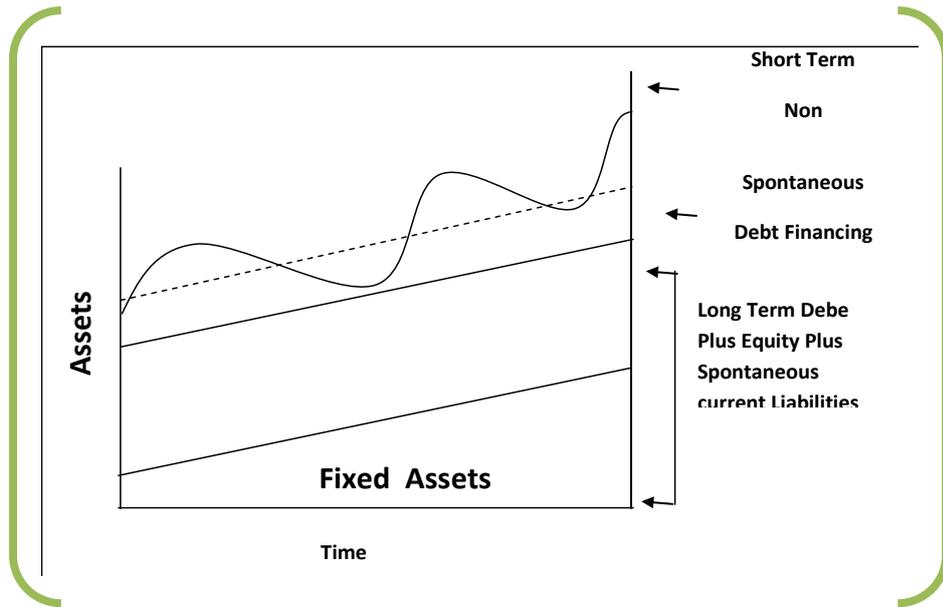


Source: Khan and Jain, 1999 : 607

Figure 2.4: Aggressive Policy

c) Matching Policy

In this approach, the company wants to invest in current assets at a moderate level giving a reasonable priority to liquidity and profitability. The current ratio is maintained competitive with that of industry norms. The investment term and sources of finances are fairly matched. The permanent working capital is financed by equity and long term debt capital, whereas the temporary working capital is financed through short term sources like trade credits and overdrafts.



Source: Khan and Jain, 1999 : 608

Figure 2.5: Matching Policy

2.1.6 Sources of Working Capital Finance

The sources of working capital finance may be classified into the following:

- **Spontaneous Finance:**

These finance arises naturally in the course of business, for example trade creditors, credit from employees, and suppliers of services etc. The time gap between receipts of goods and services and payment thereof provide the firm with a source of finance called trade credit. Spontaneous sources of finance are relatively cheaper and do not have any explicit cost. The firm should take minimum advantage of such sources of finance. These sources of finance are always short term and may be in the form of an open account or bills payable.

- **Negotiated Finance:**

Financing which has to be negotiated with lenders such as, commercial banks, financial institutions, and general public is called negotiated source of finance. Depending upon the time period, the sources may be short-term or long term. The various sources of finance are discussed below.

- *Overdraft facility:* Under this type of arrangement the borrower is allowed to withdraw the amount up to a certain limit from his current account over and above his actual credit balance.
- *Cash-credit:* This type of credit facility is sanctioned on need basis and worked out as per well defined parameters in each bank. The facility is generally granted against the security of stocks and book debts.
- *Letter of credit:* A letter of credit is the guarantee provided by the buyer's banker to the seller that in case of default or failure of the buyer, the bank shall make the payment to the seller.
- *Bill/Invoice Finance:* The banks may provide short-term finance against the bills of exchange or actual trade bills. The credit may be in the form of bills discounting or advance against bills.
- *Factoring:* Factoring is the outsourcing of the credit control department to a third party viz. Factor, normally owned by bank. Under this arrangement the company effectively sells its debts to a factor that takes responsibility of managing and collecting the debt for a service charge and provides finance against the debts undertaken for a charge.

2.1.7 Managing Working Capital Investment

According to Moyer, Mcguigan and Kretlow (1998), the major policy issue encountered in the management of working capital is related to levels of

investment and its financing. Therefore, we first consider the main components of working capital investment and liquidity management.

Liquidity:

Liquidity is a term used to describe the ease with which the assets can be converted into cash within a year during the normal course of business operations. Current assets include cash, marketable securities, account receivable, and inventories. Short-term debts or current liabilities are credit falling due within a year, and include accounts payable, accruals, tax payable, dividend payable, short-term loans, and long term loans maturing within a year. Cash consists of coins, currency, bank deposits, and negotiable instruments such as money orders, certified checks, personal checks and bank drafts. Cash is the most liquid of all assets and it is the medium of exchange that permits management to carry on the various functions of the business organization. In fact the survival of the firm depends on the availability of cash (liquidity) to meet financial obligations on time.

2.1.7.1 Cash Management

It is the duty of the finance manager to provide adequate cash to all segments of the organization. He also has to ensure that no funds are blocked in idle cash since this will involve cost in terms of interest to the business. A sound cash management scheme, therefore, maintains the balance between the twin objectives of liquidity and cost.

Objectives of Cash Management

There are two basic objectives of cash management:

- To meet the cash disbursement needs as per the payment schedule;
- To minimize the amount locked up as cash balances.

1. Meeting Cash Disbursements

“The first basic objective of cash management is to meet the payments Schedule. In other words, the firm should have sufficient cash to meet the various requirements of the firm at different periods of times. The business has to make payment for purchase of raw materials, wages, taxes, purchases of plant, etc. The business activity may come to a grinding halt if the payment schedule is not maintained. Cash has, therefore, been aptly described as the oil to lubricate the ever-turning wheels of the business, without it the process grinds to a stop” (*Shin and Soenen; 1998: 33*).

2. Minimizing Funds Locked Up as Cash Balances

“The second basic objective of cash management is to minimize the amount locked up as cash balances. In the process of minimizing the cash balances, the finance manager is confronted with two conflicting aspects. A higher cash balance ensures proper payment with all its advantages. But this will result in a large balance of cash remaining idle. Low level of cash balance may result in failure of the firm to meet the payment schedule. The finance manager should, therefore, try to have an optimum amount of cash balance keeping the above facts in view” (*Shin and Soenen; 1998: 34*).

2.1.7.2 Inventory Management

“Inventory management covers a large number of issues including fixation of minimum and maximum levels; determining the size of the inventory to be carried; deciding about the issue price policy; setting up receipt and inspection procedure; determining the economic order quantity; providing proper storage facilities, keeping check on obsolescence and setting up effective information system with regard to the inventories.

The objective of inventory management is, therefore, to determine and maintain the optimum level of investment in inventories, which help in achieving the following objectives:

- a. Ensuring a continuous supply of materials to production department facilitating uninterrupted production.
- b. Maintaining sufficient stock of raw material in periods of short supply.
- c. Maintaining sufficient stock of finished goods for smooth sales operations.
- d. Minimizing the carrying costs.
- e. Keeping investment in inventories at the optimum level” (*Shin and Soenen; 1998: 42-44*).

2.1.7.3 Receivable Management

“Accounts receivables (also properly termed as receivables) constitute a significant portion of the total current assets of the business next after inventories. They are a direct consequence of “trade credit” which has become an essential marketing tool in modern business.

When a firm sells goods for cash, payments are received immediately and, therefore, no receivables are credited. However, when a firm sells goods or services on credit, the payments are postponed to future dates and receivables are created. Usually, the credit sales are made on open account, which means that, no, formal acknowledgements of debt obligations are taken from the buyers. The only documents evidencing the same are a purchase order, shipping invoice or even a billing statement. The policy of open account sales facilities business transactions and reduces to a great extent the paper work required in connection with credit sales” (*Shin and Soenen; 1998: 52-55*).

Factors Affecting the Size of Receivables

The size of the receivable is determined by a number of factors.

Some of the important factors are as follows:

(1) Level of Sales

This is the most important factor in determining the size of accounts receivable. Generally in the same industry, a firm having a large volume of sales will be having a larger level of receivables as compared to a firm with a small volume

of sales. Sales level can also be used for forecasting change in accounts receivable.

(2) Credited Policies

The term credit policy refers to those decision variables that influence the amount of trade credit, i.e., the investment in receivables. These variables include the quantity of trade accounts to be accepted, the length of the credit period to be extended, the cash discount to be given and any special terms to be offered depending upon particular circumstances of the firm and the customer. A firm's credit policy, as a matter of fact, determines the amount of risk the firm is willing to undertake in its sales activities. If a firm has a lenient or a relatively liberal credit policy, it will experience a higher level of receivables as compared to a firm with a more rigid or stringent credit policy.

(3) Terms of Trade

The size of the receivables is also affected by terms of trade (or credit terms) offered by the firm. The two important components of the credit terms are:

(i) Credit Period

The term credit period refers to the time duration for which credit is extended to the customers. It is generally expressed in terms of "net days". For example, If a firm's credit terms are "net 15", it means the customers are expected to pay within 15 days from the date of credit sale.

(ii) Cash Discount

Most firms offer cash discount to their customers for encouraging them to pay their dues before the expiry of the credit period. The terms of the cash discounts indicate the rate of discount as well as the period for which the discount has been offered.

2.2 Review of Related Studies

2.2.1 Review of Articles

Dr. Manohar K. Shrestha has conducted an empirical observation of twelve – selected PEs. In these articles he has described the conceptual ingredients

which are concerning with working capital management, such as conceptual setting sources of working capital management, such as conceptual setting sources of working capital and types of working capital. From this analysis, he found that the liquidity position of the selected PEs demonstrated wide deviation. Based on the sales volume four out of seven PEs that normally inventory turnover. There was also high normal test ratio. Other three that not been satisfactory mentioned and some of them inventory has exceeded sales

The collection period relating to the selected PEs exhibited marked deference varying 32 days to 755 days. The profitability position was analyzed through return on net working capital. The return on net working capital was positive for four PEs negative for two PEs. And the rest two had not any return since they were in establishment phase.

“During the analysis, he observed some problems like the lack of farsighted liquidity adjustment strategy in most of the PEs no, guiding criteria to ascertain the satisfactory maintenance of acid test ratio and working capital needs, large booking of capital in inventories and low capacity utilization. All these were due to inefficient management of working capital in that PEs.”¹

Another articles relating to working capital study is given by **Dr. Khagendra Acharya** which is based on the finding and conclusion of his D. Phil Thesis. In the study, he has focused his study on the working capital management of Nepal Tea Development Corporation (NTDC) four years from 1975/76 to 1982/83. A.D. He has also made the comparison of the finding with the other five-selected PEs. In the Study, he fund that the net working capital of NTDC has negative due to increase in current liabilities. Inventory had the largest period and it was accumulating in the corporation. It has inventories twenty-four months' sales. The size of aggregate receivables of NTDC had also been increasing and its study period. Cash balance held by the corporation was insufficient to meet the routing work of the corporation. At the same time the

liquidity position of the NTDC was very poor since current assets were less than the current liabilities. While, comparing to other selected PEs. He found that the turnover of inventory, receivable and current assets in NTDC were below the average thereby relating with higher investment in each of them irrespective of the sales achieved. The break even analysis revealed that the NTDC had been selling mostly below the breakeven and had incurred variable cost sometimes even higher than sales price. The suggestion he was made on his articles is proper planning of production and sales, new credit policy.

In this regard of **Manohar K Shrestha's** articles, he has considered ten selected PEs and studies of the working capital management. He has focused on the liquidity turnover and profitability position of those enterprises. In this analysis, he found that 4 PEs had maintained adequate liquidity position and among them two is excessive and the remaining four has failed to maintain desirable liquidity Position. The turnover side' two PEs had negative working capital turnover and remaining four had adequate turnover. He had also found that out of the PEs four public enterprises were operating at losses, which only four were getting some percentage of profit with reference to those findings. He had brought certain, policy issues such as lack of suitable financial planning, negligence of working capital management, deviation between liquidity and turnover of assets and inability to show positive relationship between turnovers and return on net working capital. To end had made some suggestive measure overcome from above issues i.e. identification of needed of funds, regular check of account, development of management information with positive attitude towards risk and profit. And determination of right combination of short-term and long term sources of funds to finance working capital needs (Dr. ManoharKrishanaShrestha, "Working Capital Management in Selected Public Enterprises", A Pad Mgmt. Journal, 1992).

Dr. K. Acharya has described in his article "Problems and Impediments in the Management of working capital in Nepalese Enterprises" (ISDOC Bulletin VO. 10, No. 3: January- March 2005) that in most of Nepalese Enterprises, the

management of working capital is misunderstood as the management of money and the manager are found over conscious about hoarding of money rather than its efficient utilization. He has suggested that they have to follow system and method for decision making. It is also said to optimize its level of investment at a point of time because over and under investment in working capital will reduce the efficiency of the enterprises. Similarly he has suggested using modern scientific tools for the presentation and analysis of data.

Prof. RadheShyamPradhan and KundanDattaKoirala jointly have conducted a study on working capital management in Nepalese Corporations (Pradhan and Koirala, 1985). They have focused on evaluation of the working capital position of selected manufacturing and non-manufacturing corporations of Nepal. Major findings of the study were:- investment in total assets had declined over the period of time in both manufacturing and non-manufacturing corporations, management of working capital was more different than that of fixed capital, the major motive for holding cash in Nepal's corporation was to provide a reserve for routine not outflows of cash to keep on the production process and sales.

2.2.2 Review of Thesis

Mr. Shrestha (1994) has done research on "A study on working capital management in Bhrikuti Paper Mills Limited, 1994." His main objective of this study is to present overall picture and analyses the current asset and current liabilities of Bhrikuti paper mill limited. He used financial and statistical tools to achieve these objectives. According to his calculation of current assets with respect to total assets and net fixed assets ratio has showed in increasing trend during the study period. Cash and bank balances of the company holds largest amount of idle cash balance due to the mismanagement of cash. He has also found that average cash and bank balance with respect to current and total assets is increasing year after years during his study period. In his analysis inventory to current assets ratio shows decreasing trend but this ratio has improved from fiscal year 2046/47. Similarly, inventory to total assets ratio has

also fluctuating trend year after year. According to him, there is no consistency in inventory balance. The various turnover of his analysis indicates the increasing and fluctuating trend. Gross working capital, net working capital turnover is in decreasing trend in the study period. Besides this condition, there is no consistency in inventory turnover but it does not fluctuate largely. Liquidity position of the company shows increasing trend. Net working capital of the company is found positive and increasing year after year. The current ratio of the company is also increasing during the study period. Gross profit margin and net profit margin are found in increasing trend in the first three year of the study period and then decreasing in subsequent year and increasing in the next year. He has also defined that the company has earning profit but it is not enough to return on total assets. (Shrestha, 1994).

Mr. Poudel, (2002) has found out Gorakhali Rubber Udyog Ltd. (GRUL) simultaneously has followed various working capital policy at a time (Paudel, 2002), which indicates the GRUL has failed to set proper working capital policy and has not any clear vision about the investment policy of working capital. He has also drawn that GRUL has not took seriously about the liquidity management and its overall liquidity position unfavorable. GRUL has negative cash flows, negative EBIT and they had high level of current debts. He recommend to GRUL to determine certain proportion of current assets in order to improve the current assets performance; to determine the appropriate sources of funds. Mr. Paudel has also suggested that certain proportion of current liabilities of should be set to avoid the risk of default.

Mr. Acharya (2005): He has carried out a research on “A Study of Working Capital Management of Bottlers Nepal Limited” topic. The main objectives of this thesis, to examine the working capital policy, to know the correlation of inventory with net working capital and to evaluate the trend of current or total assets position. He analyzed five years published data of Bottlers Nepal Balaju Ltd. From 1999/2000 to 2003/2004 and used statistical and financial tools to achieve these objectives.

After analyzing the data he has found that the proportion of sundry debtors is negligible in current assets. It proves that almost all its products are sold in cash. The current ratio of the company is 1.74 that is near to standard ratio. It proves that the company has managed current assets effectively. Account receivable of the company is very lower. It shows that the company has good management over account receivables. The quick ratio of the company is 1.15, which meets standard. It reveals that the company is using current assets other than inventory efficiently. The average increment of current assets is greater than total assets. It increases the importance of working capital in the company. The profit margin of the company is not so satisfactory. The company should expand sales volume and should operate marketing activities in the competitive market. The correlation between assets and current assets is about 97%. That means 100% increase in current assets result 97% increase in total assets. He has found that the cash conversion cycle of the company is negative. It means that the company should not borrow additional loan for the management of the working capital. (Acharya, 2005)

Joshi (2007), in her thesis titled, A Comparative Study of Working Capital Management of Everest Bank Nepal Ltd. and Nepal SBI Bank Ltd., has the main objective to examine the working capital management in Everest Bank Nepal Ltd. and Nepal SBI Bank Ltd. Other specific objectives are:

- a. To study the current assets and current liabilities and their impact on liquidity and profitability.
- b. To analyze the comparative study of working capital management of EBL and NSBL.
- c. To analyze their liquidity, composition of working capital, assets utilization and profitability.

Subedi(2007), in his thesis, “*A Study of Working Capital Management with Respect to National Trading Limited and Salt Trading Corporation Limited*”, has the main objective to present overall picture of National Trading Limited

and Salt Trading Limited in terms of working capital management. The other specific objectives are;

- a. To evaluate the efficiency of the companies in managing working capital.
- b. To measure the promptness of the companies in converting sales into cash.
- c. To analyze the liquidity of STCL and NTL.

The major findings of the study are;

- a. There is operating inefficiency in both the companies and overall return position of the companies is also not in favorable condition because of inefficient utilization of current assets, total assets and shareholders' wealth.
- b. The outcome of cash conversion cycle of sample companies are not in satisfactory condition.
- c. Liquidity position of Salt Trading Corporation Ltd shows satisfactory and favorable position by being successful in maintaining the standers but NTL been unable to meet standard. Both are following aggressive financing policy.

Kharel(2008), in his study, "*An Analysis of Working Capital Management of Nepal Insurance Company*", has the main objective of analyzing the working capital management of Nepal Insurance Company. The specific objectives of the study are;

- a. To analyze the size and structure of working capital and relation between in non-life insurance company with reference to NIC.
- b. To analyze the relationship between operating income and different variables of working capital, to check the efficiency of working capital of NIC.

- c. To analyze the working capital cash flow cycle or cash conversion cycle of NIC.

The major findings of the study are;

- a. The higher percentage of current assets in total assets of Nepal Insurance Company denotes liquidity position of the company and lower risk of technical insolvency.
- b. The company has adopted the conservative current assets policy. The size of net working capital is also in increasing trend.
- c. The ratio of net working capital to operating income indicates less utilization of working capital where operating income is incomparably smaller than the net working capital.
- d. The company has eliminated its external financing using internal fund. Nepal insurance company kept excess amount of working capital in comparison to net sales, which can not be considered as the sign of efficient management of working capital in the organization.
- e. The profitability position is being unsatisfactory every year. The corporation has so far greater current assets than current liabilities in all years of observation that clarifies the better liquidity position. Cash is piling up lying unproductively.

2.3 Research Gap

The above mentioned studies is in the context of Nepalese manufacturing industries done in the last few years but there has not been studies about the working capital management of Nepalese Government undertakings, NEA. Therefore it is necessary to bring out a fresh studies in working capital management of Government undertakings whether the finding of above studies are still valid or not. This research study is based in different variable and tools using new secondary data. This research examines the liquidity and profitability position, efficiency, efficiency of working capital of NEA. So this study will be fruitful to scholars, teachers students, researchers and government for academically as well as policy perspective.

CHAPTER THREE

Research Methodology

3.1 Introduction

Research is the systematic and organized effort to investigate a specific problem that needs a solution. Research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with the certain objects in view to get the conclusion. The objective of this research work is to find out the answer of the questions.

The methodology, which has been used in this study, consists of research design, nature and sources of data, data gathering procedure and the analytical tools, etc.

3.2 Research design

“Research design is the plan structure and strategy of investigation conceived so as to obtain answer to research question and to control variance.” (Sthapit 2004, 45) “Research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.” (Kothari 2003.81)

Thus research design is a research plan or structure which is path for conducting research work. Without research design, it is not possible to conduct a research work. A well settled research design is necessary to fulfill the objective of this study. It means definite procedure and techniques that guide to study and propounds way of research variability. This study is based on descriptive and analytical research design. For the study, historical data of last four years are collected to find out the performance of Nepal Electricity Authority.

3.3 Population and Sample

Public enterprises in Nepal had been established in various sectors for the development of the country. There are 36 government owned organizations, which are operating at present. These are the population of the study. As study of each and every enterprise is not possible, so Nepal Electricity Authority which belongs to Government Authority and social sector has been selected as sample using judgmental basis.

3.4 Nature and Sources of Data

True and fact information are necessary for the reliability and effectiveness of research work as information is the lifeblood for any research work. For this study different techniques and procedure have been adopted to collect necessary information and data. The study is based on the secondary data.

3.5 Data Analysis Tools

Collection data is the connecting link to the world of reality for the researcher. The data collection in raw and crude form are managed, arranged, analyzed and presented in proper tables and formats are interpreted. To analyze the collected data, basically two types of tools are used.

3.5.1 Financial Tools for Analysis

A) Current Ratio

This ratio examines the liquidity position of the company. It examines the position of the company as to its holding of current assets against its current liabilities. Higher ratio indicates satisfactory position and vice versa. However, too high ratio is indication of poor management of cash indicating high inventory and poor credit management. Generally the current ratio 2:1 is considered satisfactory. More ratios indicate the greater amount of working

capital and fewer ratios indicates the lesser amount of working capital. It is given by:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

B) Quick Ratio

All current assets are not equally liquid. Inventory and prepaid expenses cannot be termed to be liquid assets. The assets can be converted into cash immediately as per the requirement of company. Therefore, liquid assets mean current assets after deducting inventory amount. It can be calculated as:

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

Generally, the company with the quick ratio of 1:1 is considered to be in sound position.

C) Gross Profit Margin

Gross Profit Margin ratio indicates the percentage of profits after the cost of production. This ratio is measure of productivity efficiency. It can be calculated by:

$$\text{Gross Profit margin} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100\%$$

High ratio indicates good management and a low ratio indicates higher cost of goods sold.

D) Net Profit Margin

This ratio also examines the profitability of a firm. Higher Ratio indicates high profitability and vice versa. In simple terms, this ratio gives the percent profit

or loss with respect to its sales. Net profit margin ratio is calculated using the following formula.

$$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit After Tax}}{\text{Sales}}$$

E) Return on Assets (ROA)

ROA measures the profitability of total funds or investment of the firm. But ROA is not sufficient for the analysis on profitability of different sources of funds for financing the total assets. It can be expressed as the relationship between net profit after taxes and total assets.

$$\text{Return on Assets} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}}$$

F) Inventory Turnover Ratio

Inventory turnover ratio gives idea how quickly is inventory being converted into cash. It means the ratio shows the efficiency of the business concern in inventory management. The higher ratio indicates the good inventory management and vice versa.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Good Sold}}{\text{Average Inventory}}$$

G) Debtors turnover Ratio

Debtors' turnover ratio gives an idea as to how quickly receivables are converted into cash. The ratio can be computed as follows:-

$$\text{Debtor Turnover Ratio} = \frac{\text{Sales}}{\text{Debtors}}$$

H) **Current Assets Turnover Ratio**

Current Ratio turnover ratio shows the relationship between current assets and sales. The ratio shows the requirement of working capital for one rupee of sales. It can be calculated as follows:

$$\text{Current Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Current Assets}}$$

A low current assets turnover ratio may reflect an inadequacy of working capital because of low turnover inventory or receivable.

I) **Inventory Conversion Period**

It is defined as the length of time required to convert raw material into finished goods and then to sell these goods. It can be calculated as:

$$\text{Inventory Conversion Period} = \frac{365}{\text{Average Inventory}}$$

J) **Receivable Conversion Period**

It indicates the time period required to convert debtors into cash. It refers to how fast the firm can collect its credit. It analyzes the collectability of debtors and efficiency of collection efforts and analysis in ascertaining the firm comparative strength and advantage relative to its credit policy.

$$\text{Receivable Conversion Period} = \frac{\text{Sales}}{\text{Debtors}} \times 100\%$$

K) **Payable Deferral Period**

Payable Deferral Period is the length of time between the purchase of raw materials and labor and the payment of cash for them. PDP can be computed by using following formula:

$$\text{Payable Deferral Period} = \frac{\text{Account Payable}}{\text{Daily Purchase}}$$

3.5.2 Statistical Tool

I) Trend Analysis: It is important to analyze trends in the ratio as well as their absolute levels, for the trends clue to whether the financial situation is improving or whether it is deteriorating. In other words trend analysis of ratios indicates the direction of changes. The significance of the movement is whether the movement is favorable or not. Thus the tools that are used to show grandly increase or decrease of variables over a period of time is known as trend analysis. With the help of trend analysis the tendency of variables over the period can be seen clearly.

II) Correlation Analysis: The measure of relation of two or more variables is known as correlation. Correlation is a statistical device designed to measure the degree of association between two or more variables. It describes not only the magnitude of correlation but also its direction. The coefficient of correlation is a number, which indicates to what extent two variables in one leads to the variation in other and is denoted by 'r'. The value of coefficient of correlation lies between +1. A value of 1 indicates of perfect negative relationship between the variables and a value of + 1 indicates a perfect positive relationship. A value of zero indicates that there is no relation between the variables. The zero correlation coefficient means the variable are uncorrelated. The closer r is +1 or -1, the closer the relationship between the variables and closer r is to zero, the less close relationship. The algebraic sign of the correlation coefficient indicates the direction of the relationship between two variables, whether direct or inverse, while the numerical value of the coefficient is concerned with the strength, or closeness of the relationship between two variables. The correlation coefficient can be calculated as:

$$r = \frac{Cov(X, Y)}{\sigma_x \sigma_y}$$

CHAPTER FOUR

Presentation and Analysis of Data

The main purpose of this chapter is to introduce the method of interpretation of the data to fulfill the research objective. The data collected through review of various financial statement of Nepal Electricity Authority, were organized and presented in the form of tables, charts, diagrams; appropriate statistical and financial tools were applied to the data to draw valid conclusions.

Thus, the main purpose of this study is to highlight the working capital management system in the Government Authorities. For this reason, NEA has been randomly selected for the study. To accomplish these objectives, this chapter gives a detailed analysis of the various aspects of working capital management as prevailed in the organization. Specially, the study covers the period of 4 years from fiscal years 2007/08 to 2010/011.

4.1 Analysis of Current Assets

The components of the current assets of NEA are inventories, sundry debtor's cash and bank balance and other prepaid, advance, loan and deposits. However sundry debtors occupy the major current assets portion

Table 4.1

Components of Current Assets of NEA

In Rs Million

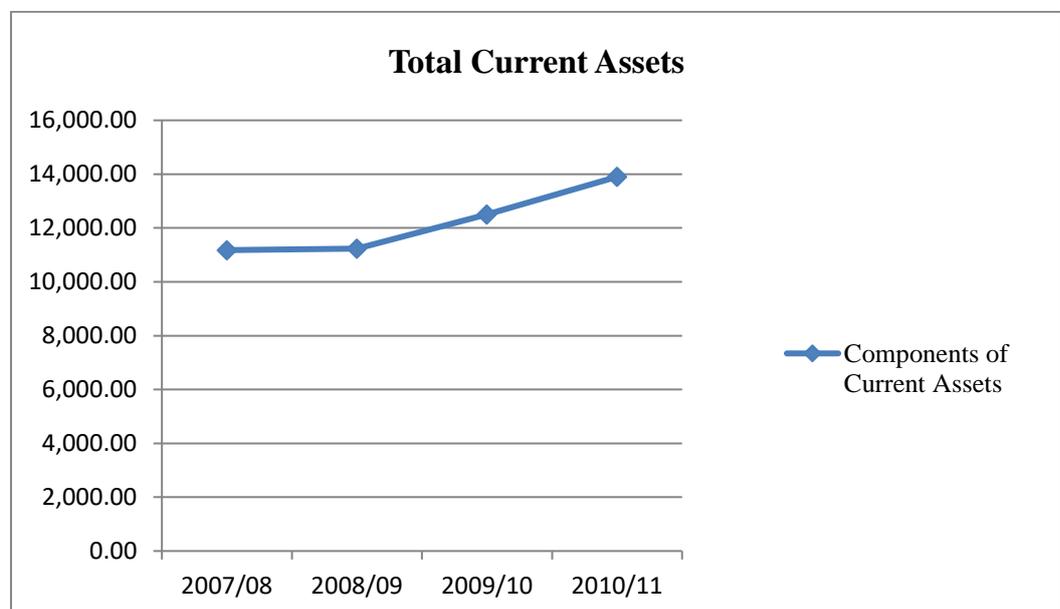
Financial Year	Inventories	Sundry Debtors & Receivable	Cash & bank balance	Prepaid Advance, loan & Deposits	Total Current Assets
2007/08	1,800.13	5,721.08	1,337.15	2,319.72	11,178.08
2008/09	2,159.12	4,854.02	1,724.76	2,495.13	11,233.03
2009/10	2,431.99	6,097.74	1,244.66	2,733.68	12,508.07
2010/11	2,509.75	7,282.00	1,288.49	2,821.08	13,901.32
Total	8,900.99	23,954.84	5,595.06	10,369.61	48,820.50

Source: Appendix 1

The above table 4.1 shows that the components of current assets of NEA consists of inventories, debtors, cash & bank balance, and prepaid, advance, loans and deposits. In fiscal year 2007/08 the current assets of NEA was Rs. 11,178.08 million which include Rs. 1800.13 million of inventories, Rs. 5721.08 million of debtors and receivables, Rs. 1337.15 million of cash and bank balances and Rs. 2319.72 million of prepaid, loans, advance and deposits. The current assets of the organization are in increasing trend from fiscal year 2007/08. The current assets of the organization of fiscal year 2008/09 had increased by Rs. 54.95 million than the fiscal year 2007/08 and similarly by Rs 1275.04 million in 2009/10 than 2008/09 and by Rs 1393.25 million in 2010/11 than 2009/10. Hence there is the highest increment in the fiscal year 2010/11. This is due to the increment of sundry debtors and receivables in the fiscal year 2010/11.

From this analysis it can be conclude that the component of current assets has highest on Receivable and sundry debtors and lowest on cash and bank balance.

Figure 4.1
Components of Current Assets



In the above figure the X axis shows the time and Y axis shows the value of total current assets. The value of total current assets on FY 2007/08 to 2010/11 is 11178.08, 11233.03, 12508.07 and 13901.32 million Rupees respectively.

As stated the above figure 4.1 shows the increasing trend of current assets with steady increase in fiscal year 2008/09 and increasingly highly thereafter with respect of previous year.

4.2 Analysis of Current Liabilities

Current liabilities refer to short term obligations of the firm payable within a year. The components of current liabilities of NEA include sundry creditors and payables and provision. The major part of the current liabilities includes sundry creditors. It seems that the creditors are outstanding since long time and there is delay in the payments to creditors.

Table 4.2
Components of Current Liabilities

Rs. In Million

Financial Year	Sundry Creditors & Payables	Provisions	Total Current Liabilities
2007/08	25,482.01	2,085.38	27,567.39
2008/09	29,221.35	3,330.78	32,552.13
2009/10	33,651.36	5,576.80	39,228.16
2010/11	38,433.00	7,630.20	46,063.20
Total	126,787.72	18,623.16	145,410.88

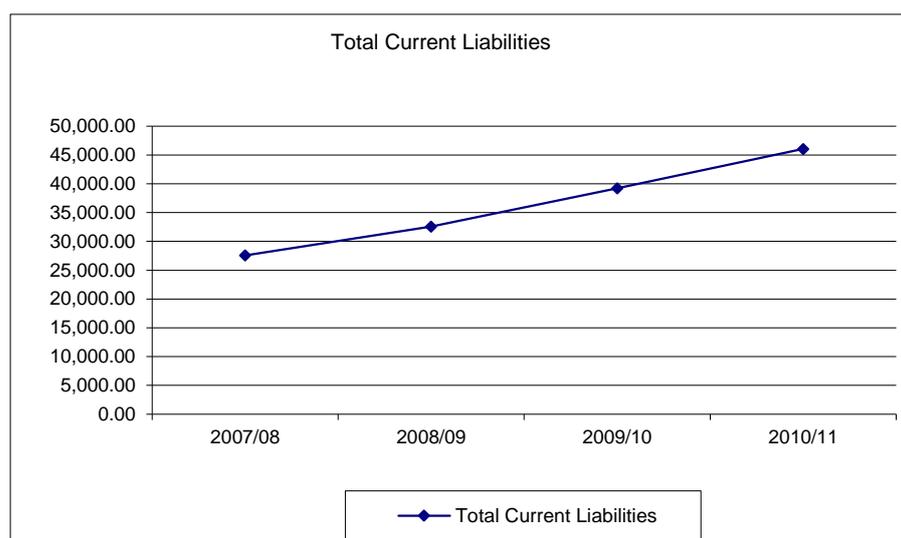
Source Appendix 1

From the above table current liabilities of NEA in fiscal year 2007/08 were Rs. 27,567.39 million which include Rs. 25,482.01 million of sundry creditors and Rs. 2,085.38 million of provision. The current liabilities of NEA are increasing year after year. It has increased by Rs 4,984.74 million in fiscal year 2008/09 than the fiscal year 2007/08 and similarly by Rs 6,676.03 in fiscal

year 2009/11 than the fiscal year 2008/09 and by Rs. 6,835.04 in fiscal year 2010/11 than the fiscal year 2009/10.

Above table 4.2 shows the current liabilities of NEA is in increasing trend. The components of current liabilities include sundry creditors & payables and provisions.

Figure 4.2
Components of Current Liabilities



The above fig. 4.2 depicts that the current liabilities of NEA is in increasing trend from fiscal year 2007/08.

4.3 Working Capital Position of NEA

Working capital management must be considered as one of the important function of the management. It needs a very careful analysis and proper decision making. It should not be either too large or too small as it affects the liquidity and profitability position of the firm. The following table shows the working capital position of NEA.

Table 4.3
Net Working capital of NEA (In Millions)

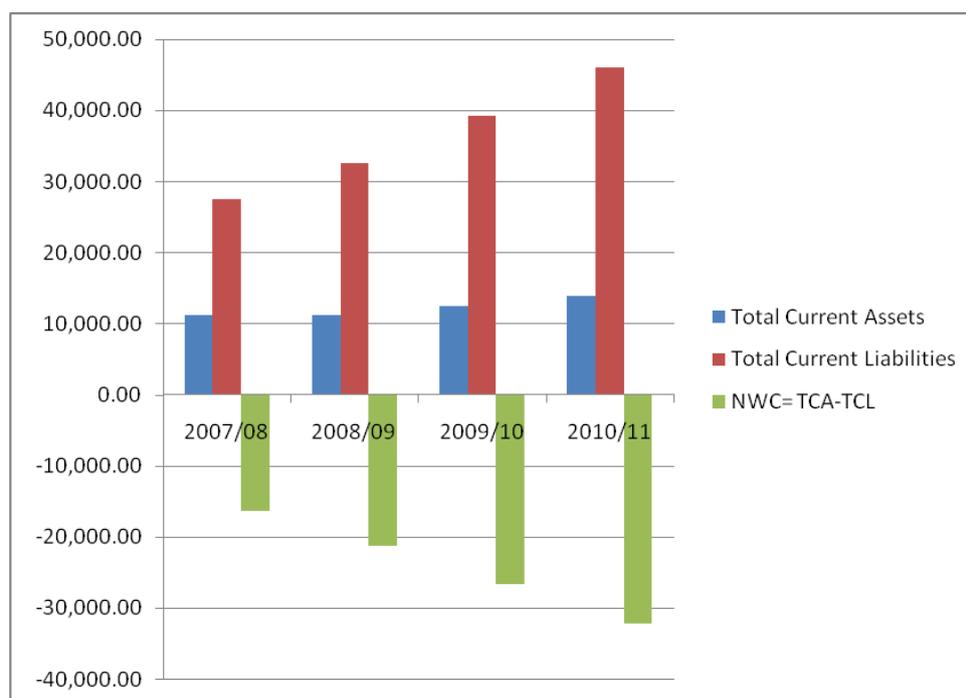
Year	Total Current Assets	Total Current Liabilities	NWC= TCA-TCL	Ratio
2007/08	11,178.08	27,567.39	(16,389.31)	0.40548
2008/09	11,233.03	32,552.13	(21,319.10)	0.34508
2009/10	12,508.07	39,228.16	(26,720.09)	0.31885
2010/11	13,901.32	46,063.20	(32,161.88)	0.30179
Total	48,820.50	145,410.88	(96,590.38)	
Mean	12,205.13	36,352.72		
Std.	1286.94	8045.46		
C.V	10.54%	22.13%		

Source: Appendix 2 & 3

In the above table 4.3, net working capital of NEA is negative in all the fiscal years and it is increasing negatively in every fiscal year than the previous fiscal year. Hence we can say that the investment in the current assets is not sufficient to cover the current liabilities. Working capital is in decreasing order. NEA is not able to pay off its creditors and hence the creditors in the current liabilities are in increasing end which is not covered by the current assets.

As mentioned above the current assets are overshadowed by the current liabilities. It depicts that the liquidity position of NEA is not good, hence shown by the ratio. NEA has very low ratio of current ratio. Hence, the position of NEA is deteriorating.

Figure 4.3
Net Working Capital of NEA



In the above figure the X and Y axis shows the time and net working capital in million rupees. The net working capitals for each year are negative and increasing trend.

From the above figure it can be understood that the position of current liabilities is more than that of the current years in each fiscal year and is increasing in each year, hence the working capital is increasing negatively in each year after year.

In order to test the significance of the relationship between current assets and current liabilities during the period of study Karl Pearson's correlation coefficient (r) has been calculated in Appendix 6 and the result is 0.167. The value shows the correlation co-efficient between current assets and current liabilities during the study period are with probable error of 0.32. So, there is lower degree of positive correlation between current assets and current liabilities.

4.4 Quick Ratio Position of NEA

Quick ratio explains the relationship between quick assets and quick liabilities. It measures the capacity of the firm to pay the current liabilities immediately. Hence it is more significance than current ratio, since it considers only those current assets that can be converted into cash immediately. Quick assets include current assets excluding inventory and prepaid expenses. Quick liabilities include current liabilities excluding bank overdraft and cash credit. Its standard ratio is 1:1. The quick ratio of NEA during the study period is as follow.

Table 4.4
Quick Ratio Position of NEA

In Rs. Million

Year	Quick Assets	Quick Liabilities	Quick Ratio
2007/08	3,137.28	27,567.39	0.11
2008/09	3,883.99	32,552.13	0.12
2009/10	3,676.65	39,228.16	0.09
2010/11	3,798.24	46,063.20	0.08
Total	14,496.16	145,410.88	
Mean	3,624.04	36,352.72	
S.D	335.47	8,045.46	
C.V	8.00	22.13%	

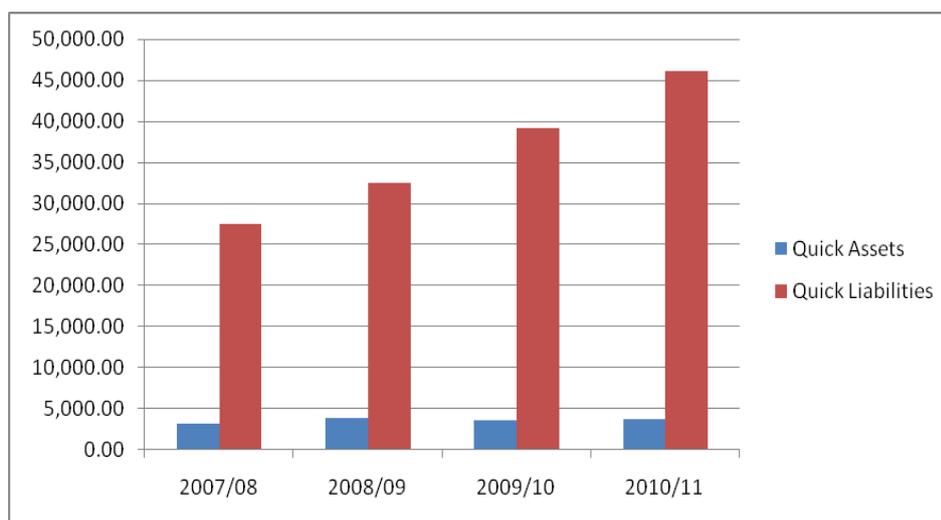
Source: Appendix 2 & 4

In the above table (Table 4.4) the quick ratios of the NEA on fiscal year 2007/08 to 2010/11 are 0.11, 0.12, 0.09, and 0.08 respectively. In the study period the quick ratio is in decreasing trend except first fiscal year (2007/08) to second (2008/09) in which it has increases from 0.11 to 0.12.

On the other hand the mean, standard deviation and coefficient of variations of Current Assets and Current liabilities are also shown. All indicators (Mean, standard deviation and C.V) of total current liabilities are greater than the current assets.

Form the above analysis we can conclude that the average current liabilities are more than the average current assets which results the negative working capital. The trend of negative working capital is in decreasing order.

Figure 4.4
Quick Ratio Position of NEA



The above figure shows that the quick assets position of NEA is not satisfactory. It is in decreasing condition and has reached to 0.08 in fiscal year 2010/11. Hence it shows that the quick liabilities position of NEA is very high than the quick assets, since the amount of creditors is too high.

In order to test the significance the relationship between current assets and current liabilities during the period of the study Karl Pearson's correlation coefficient (r) has been calculated in Appendix and the result is 0.63 with probable error of 0.23.

In conclusion, it can be concluded that there is higher degree of positive correlation between quick assets and quick liabilities.

4.5 Proportion of current assets to total assets

Higher the position of current assets to total assets higher is the liquidity position of the firm as well the lower is the risk of being insolvent and vice versa. The given table shows the percentage of current assets to total assets.

Table 4.5
Proportion of Current Assets to Total Assets

In Rs. Million

Year	Current Assets	Total Assets	Ratio in %	Change in %
2007/08	11,178.08	100,528.26	0.11	
2008/09	11,233.03	108,161.91	0.10	-0.01
2009/10	12,508.07	117,628.14	0.11	0.00
2010/11	13,901.32	125,272.34	0.11	0.00
Total	48,820.50	451,590.65		
Average	12,205.13	112,897.66		
S.D	1286.94	10815.72		
C.V	10.50	9.58		

Source: Appendix 5

The above ratio shows that the proportion of investment made in current assets is very low. It had decreased in fiscal year 2008/09 and again remains steady in the year 2009/10 and 2010/11. Hence the investment in current assets to total assets is not proper.

In order to test the significance of the relationship between current assets and total assets during the study period Karl Pearson's correlation coefficient (r) has been selected in Appendix 7 and the result is 0.95 with probable error of 0.04. So, there is higher degree positive correlation between current assets and total assets.

4.6 Proportion of Cash and Bank Balance to Total Assets

To meet the daily business requirement such as purchase of raw materials and payment of debt, and other for other immediate expenses cash balance has to be maintained. The table below shows the proportion of cash balance to total assets.

Table 4.6**Proportion of Cash and Bank Balance to Total Assets (In Millions)**

Year	Cash and bank balance	Total Assets	Ratio in %	Change in %
2007/08	1,337.15	1,00,528.26	1.33%	
2008/09	1,724.76	108,161.91	1.59%	0.26
2009/10	1,244.66	117628.14	1.06%	(0.53)
2010/11	1,288.49	125,272.32	1.03%	(0.03)
Total	5,595.06	451,590.65	5.01%	
Average	1,398.77	112,897.66	1.25%	
S.D	220.58	10,815.72		
C.V	15.77	9.58		

Source: Appendix 8

The above table shows that the position of cash and bank balance is very low as compared to the total assets (i.e. Average cash balance of Rs 1398.77 million is much lower than average current assets of Rs. 112897.66).

It can be conclude that the cash is invested more in other sectors. It shows that the liquidity position of NEA is very low. The average ratio of cash and balance to total assets is only 1.25%.

4.7 Proportion of inventory to current assets and total assets

Inventory is one of the important parts of current assets. There must be proper management of inventory in any company. It should be neither too high nor too low. Excess inventory causes unnecessary holding of capital and results in high cost of inventory management. Hence optimum position of inventory is required to be maintained. The ratio calculated below shows the proportion of inventory.

Table 4.7

Inventory to Current Assets and Total Assets (In million)

Year	Inventory	Current Assets	Ratio %	Total Assets	Ratio %
2007/08	1,800.13	11,178.08	16.10	100,528.26	1.79
2008/09	2,159.12	11,233.03	19.22	108,161.91	1.99
2009/10	2,431.99	12,508.07	19.44	117,628.14	2.06
2010/11	2,509.75	13,901.32	18.05	125,272.34	2.00
Total	8,900.99	48,820.50	72.81	451,590.65	
Average	2225.2475		18.20	112897.66	

Source: Appendix 1 & 8

The table above shows the proportion of inventory to current assets and total assets. In fiscal year 2007/08, it is 16.10% and 1.79% of current assets and total assets respectively. Then it is increased to 19.22% and 1.99% in fiscal year 2008/09 respectively. The average inventory percentage to its current assets is 18.20% which shows that reasonable amount of inventory has been invested in inventory.

4.8 Proportion of Receivables to current assets and total assets

When a company provides any credit facilities to its customers, then receivable or debtors are created. It is one of the marketing tools which protects the company from its competitors and attacks the potential customers. For this purpose the company has to arrange some working capital. The company must have to employ proper receivable management in order to get the returns from the debtors. Since longer credit period blocks the working capital in debtors and lower degree of receivable may result in decrement of sales. The proportion of receivables to current assets and total assets of NEA is given below.

Table 4.8

Proportion of receivable to current assets & total assets (In millions)

Year	Receivable	Current Assets	Ratio %	Total Assets	Ratio %
2007/08	5,721.08	11,178.08	51.18	100,528.26	5.69
2008/09	4,854.02	11,233.03	43.21	108,161.91	4.49
2009/10	6,097.74	12,508.07	48.75	117,628.14	5.18
2010/11	7,282.00	13,901.32	52.38	125,272.34	5.81
Total	23,954.84	48,820.50	195.52	451,590.65	
Average	5,988.71		48.88	112,897.66	

Source: Appendix 1

The above table shows that the amount of receivable during the study period is in fluctuating trend. It is highest in fiscal year 2010/11 comprising 52.38% and 5.81% of current and total assets respectively. It is minimum in fiscal year 2008/09, comprising 43.21% and 4.49% of current and total assets respectively. The average proportion of receivables to current assets is 48.8% which shows that the practice of receivable management of NEA is not so good.

In order to test the significance of the relationship between receivable and total assets during the study period Karl Pearson's correlation coefficient (r) has been selected in Appendix 9 and the result is 0.77 with probable error of 0.045. So, there is higher degree positive correlation between current assets and total assets.

4.9 Proportion of Current Liabilities to Long-term loan

The company needs long term sources of finance for short term or long term purposes. The working capital of a company also increases when the company makes long term borrowings from financial institutions. The company may raise funds from different sources depending upon the financing policy of the financial institutions. The company should make appropriate mix of current liabilities and long term loan. If the company follows aggressive

policy, the company uses high proportion of current liabilities and higher proportion of long term loan when it follows conservative policy. The table given below shows the proportion of current liabilities to long term loan.

Table 4.9
Current Liabilities to Long-term Loan (In million)

Year	Current Liabilities	Long-term loan	Ratio in times	Change in %
2007/08	27,567.39	51,368.84	0.53	
2008/09	32,552.13	53,788.45	0.60	0.07
2009/10	39,228.16	58,231.66	0.67	0.07
2010/11	46,063.20	62,212.32	0.74	0.07
Total	145,410.88	225,601.27		
Average	36,352.72	56,400.31		
S.D	8,045.45	4,805.23		
C.V	22.13	8.5		

Source: Appendix 2 & 10

The above table shows the proportion of current liabilities to long term loan. The ratio shows that the proportion of current liabilities to long term loan is in increasing trend. The ratio is highest in fiscal year 2010/11 i.e. 0.74 times where current liabilities and long term loan are respectively Rs. 46,063.2 and Rs. 62212.32 million.

In order to test the significance of the relationship between current assets and total assets during the study period KarlPearson's correlation coefficient (r) has been selected in Appendix 11 and the result is 0.99 with probable error of 0.006. So, there is higher degree positive correlation between current liabilities and long-term loan.

Hence the above table and observations concludes that NEA uses conservative policy of working capital financing. The financing is mainly done by long term debt.

4.10 Turnover Position of NEA

The turnover position of a company is calculated in terms of sales. It generally focuses on the efficiency of working capital of NEA to earn profit and to increase more revenue. The efficiency of managing assets directly influences the sales volume.

4.10.1 Current Assets Turnover Position

The current assets turnover indicates the adequacy of sales in relation to investment in current assets. Generally a high current ratio indicates efficient utilization of current assets. The amount of working capital is affected by the sales policy. The current assets turnover position of NEA during the study period is tabulated below:

Table 4.10
Current Assets Turnover Position (In Million)

Year	Current Assets	Sales	Ratio in times
2007/08	11,178.08	15,041.49	1.34
2008/09	11,233.03	14,405.93	1.28
2009/10	12,508.07	17,164.59	1.37
2010/11	13,901.32	18,003.80	1.29
Total	48,820.50	64,615.81	
Average	12,205.12	16,153.95	

Source: Appendix 1 & 2

From the above table it is observed that the sales has been decreased in fiscal year 2008/09 and then has been increased in the later fiscal years. On the other hand, current assets are in increasing trend. The sales and current assets is highest in fiscal year 2010/11 i.e. Rs. 13,901 and Rs. 18003.8 million respectively.

The figure calculated in appendix 12 shows that there is positive correlation between current assets and sales during the period of study. Since

the calculated value of (r) is 0.95, it shows high degree positive correlation coefficient between current assets and sales during the study period.

4.10.2 Cash Turnover Position of NEA

Cash is one of the major parts of current assets as it used to meet the current liabilities occurred in the business. The company must maintain the risk return trade off to maintain the adequate and optimum cash balance. The figure 4.11 shows the cash turnover position of NEA.

Table 4.11
Cash Turnover Position (In Million)

Year	Cash & Bank Balance	Sales	Ratio in times
2007/08	1,337.15	15,041.49	11.24
2008/09	1,724.76	14,405.93	8.35
2009/10	1,244.66	17,164.59	13.79
2010/11	1,288.49	18,003.80	13.97
Total	5,595.06	64,615.81	
Average	1,398.76	16,153.95	

Source: Appendix 1 & 2

The above table shows that the turnover position of NEA is in fluctuating trend and is not steady. It has decreased in fiscal year 2008/09, and then is in increasing trend. It is highest in fiscal year 2010/11 having sales Rs. 18,003.80 million and cash & bank balance 1,288.49 million.

In order to test the significance of the relationship between current assets and total assets during the study period Karl Pearson's correlation coefficient (r) has been selected in Appendix 13 and the result is -0.762 with probable error of 0.2. So, there is negative high degree correlation between sales and cash & bank balance.

4.10.3 Inventory Turnover Position of NEA

Inventory management is considered as one of the important part of working capital management since major holding of inventory blocks the working capital and decreases sales. Hence optimum level of inventory has to be maintained by the company for efficient operation of working capital and sales. The given table shows the inventory turnover position of NEA during the study period.

Table 4.12
Inventory Turnover Position (In Million)

Year	Inventory	Sales	Ratio in times
2007/08	1,800.130	15,041.490	8.356
2008/09	2,159.120	14,405.930	6.672
2009/10	2,431.990	17,164.590	7.058
2010/11	2,509.750	18,003.800	7.174
Total	8,900.990	64,615.810	
Average	2,225.248	16,153.953	

Source: Appendix 1 & 2

The inventory turnover position during the study period is fluctuating. It has decreased in fiscal year 2008/09 and then increased thereafter. The above ratio shows that the inventory turnover ratio of NEA during the study period is low.

4.10.4 Debtors Turnover Position

It indicates the time period required to convert debtors into cash. It analyzes the collectability of debtors and efficiency of collection efforts and analysis in ascertaining the firm comparative strength and advantage relative to its credit policy. The given table shows the debtors turnover position of NEA during the study period.

Table 4.13
Receivable Turnover Position (In Million)

Year	Debtors	Sales	Ratio in times
2007/08	5,721.08	15,041.49	2.62
2008/09	4,854.02	14,405.93	2.96
2009/10	6,097.40	17,164.59	2.81
2010/11	7,282.00	18,003.80	2.47
Total	23,954.50	64,615.81	
Average	5,988.62	16,153.95	

The above table shows that the receivables turnover position of NEA is fluctuating. It has increased in fiscal year 2009/10 and again started to decrease thereafter. Hence the turnover position is not satisfactory.

In order to test the significance of the relationship between current assets and total assets during the study period Karl Pearson's correlation coefficient (r) has been selected in Appendix 14 and the result is 0.928 with probable error of 0.04. So, there is positive high degree correlation between sales and cash & bank balance.

4.11 Profitability Position

4.11.1 Gross Profit margin

The ratio is calculated by dividing gross profit by sales. It is expressed in percentage. It measures the production efficiency. It indicates the average speed between the cost of goods sold and sales revenue. Higher percentage indicates better performance and vice versa. Gross profit is calculated by deducting cost of goods sold from net sales. The given table presents the gross profit margin of NEA during the study period.

Table 4.14
Gross Profit Margin Position (In Million)

Year	Gross Profit	Sales	Ratio (%)
2007/08	5,510.660	15,041.490	36.600
2008/09	4,470.660	14,405.930	31.030
2009/10	4,689.240	17,164.590	27.320
2010/11	4,764.800	18,003.800	26.460
Total	19,435.360	64,615.810	
Average	4,858.840	16,153.953	

Source: Appendix 1& 2

The above table shows that the gross profit margin ratio is in decreasing trend during the period. In fiscal year 2007/08 it is 36.6%, than it has decreased to 31.03%, 27.32%, 26.46% in fiscal year 2008/09, 2009/10 and 2010/11 respectively. Although the sales is in increasing trend in fiscal year 2009/10 and 2010/11 but due to the increase in cost of sales the gross profit is less, so the gross profit margin. But still the gross profit margin is said to be satisfactory.

In order to test the significance of the relationship between current assets and total assets during the study period Karl Pearson's correlation coefficient (r) has been selected in Appendix 15 and the result is -0.169. So, there is negative low degree correlation between sales and cash & bank balance.

4.11.2 Net Profit Position of NEA

It is the final profit which comes after deducting operating expenses and income tax from gross profit. Higher the net profit, higher the profitability position of the organization and vice versa. The given table shows the net profit position of NEA.

Table 4.15

Net Profit Position (In Million)

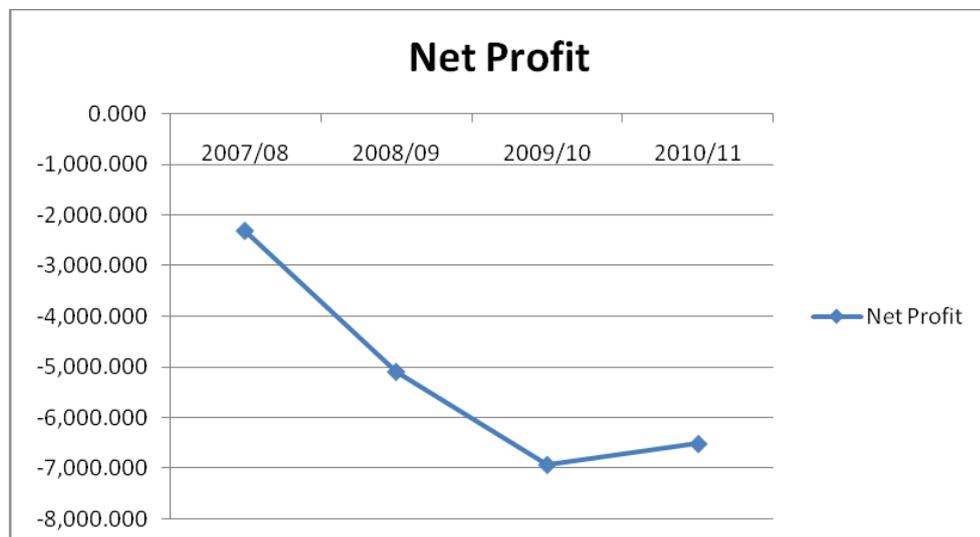
Year	Net Profit
2007/08	(2,315.47)
2008/09	(5,093.22)
2009/10	(6,923.53)
2010/11	(6,511.65)
Total	(20,843.87)
Average	(5,210.96)

Source: Appendix 1

The above table shows the net profit position of NEA during the study period. It shows that NEA during the study period is in loss. This is due to the increase in distribution and administrative expenses. NEA had to pay back huge amount of interest expenses for the borrowed long term loans. The net loss is in increasing trend except in fiscal year 2010/11, where the net loss has been decreased by Rs. 411.88 million. Hence the net profit position of NEA during the study period is deteriorating. It can be further cleared form the following figure.

Figure 4.5

Net Profit Position (In Million)



It is clear from the above figure that the net loss of NEA had increased till fiscal year 2009/10 and then decreased in fiscal year 2010/11.

Correlation Test

In order to test the significance of the relationship between net profit and net working capital during the study period Karl Pearson's correlation coefficient (r) has been shown in the below figure.

Calculation of Correlation of Coefficient and Probable Error between Net Profit and Net Working Capital (In Million)

Table 4.16

Let x and y be net profit and net working capital respectively.

Year	X	y	x ²	y ²	xy
2007/08	(2,315.47)	(16,389.31)	5,361,401.32	268,609,482.27	37,948,955.62
2008/09	(5,093.22)	(21,319.10)	25,940,889.96	454,504,024.81	108,582,866.50
2009/10	(6,923.53)	(26,720.09)	47,935,267.66	713,963,209.60	184,997,344.71
2010/11	(6,511.65)	(32,161.88)	42,401,585.72	1,034,386,525.13	209,426,905.90
Total	(20,843.87)	(96,590.38)	121,639,144.67	2,471,463,241.82	540,956,072.74

Source: Appendix 1

Computation of Correlation of Coefficient (r)

$$\text{Correlation}(r) = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}}$$

$$r = 0.884$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1 - r^2}{\sqrt{n}}$$

$$= 0.07$$

$$6 \times P.E = 6 \times 0.0761$$

$$0.4565$$

Since $r > 6PE$, we conclude that r is significant

Again limit of correlation coefficient

$$= r \pm P.E$$

$$= 0.88 \pm 0.0761$$

$$\text{Upper limit} = 0.956$$

$$\text{Lower limit} = 0.816$$

From above figure it can expect that correlation coefficient lies between 0.95 and 0.810

Correlation coefficient defined the degree of linear relationship between two or more variable. In the above case we found the result of two variables 0.884 with probable error of 0.07. So, It indicates that there is positive high degree correlation between working capital and net profit during the study period.

In order to test the significance of the relationship between Current assets and net working capital during the study period Karl Pearson's correlation coefficient (r) has been shown in the below figure

Calculation of Correlation of Coefficient and between Total current assets and Net Working Capital (In Million)

Table 4.17

Let x and y be current assets and net working capital respectively.

Year	x	y	x ²	y ²	xy
2007/08	11178	(16,389.31)	1249476840	268,609,482.27	(183200198.9)
2008/09	11233.03	(21,319.10)	1261809630	454,504,024.81	(239478089.9)
2009/10	12508.07	(26,720.09)	1564518151	713,963,209.60	(334216756.1)
2010/11	13901.32	(32,161.88)	1932466977	1,034,386,525.13	(447092585.7)
Total	(20,843.87)	(96,590.38)	6008286483	2,471,463,241.82	(1203987630)

Source: Appendix 1

Computation of Correlation of Coefficient (r)

$$\text{Correlation}(r) = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}}$$

$$r = (0.9)$$

Computation of Probable Error (P.E)

$$\begin{aligned} \text{P.E} &= 0.6745 \times \frac{1 - r^2}{\sqrt{n}} \\ &= 0.0641 \end{aligned}$$

. In the above figure we found the result of two variables (0.94) with probable error of 0.0641. So, it indicates that there is a significant very high degree negative correlation between working capital and current assets during the study period. Other tests of correlation coefficient have been shown in the appendix.

4.12 Major Findings of the Study

Major findings of this study are as follows:

- The current assets of NEA are in increasing trend during the study period.
- The current liabilities of NEA are in increasing trend during the study period.
- Net working capital of NEA is negative in all the fiscal years and it is increasing negatively in every fiscal year than the previous fiscal year. Hence we can say that the investment in the current assets is not sufficient to cover the current liabilities.
- Working capital is in decreasing order. NEA is not able to pay off its creditors and hence the creditors in the current liabilities are in increasing order which is not covered by the current assets.
- Quick assets position of NEA is not satisfactory. It is in decreasing condition and has reached to 0.08 in fiscal year 2010/11. Hence it shows that the quick liabilities position of NEA is very high than the quick assets, since the amount of creditors is too high.
- Turnover position of NEA is in fluctuating trend and is not steady.
- Inventory turnover ratio of NEA during the study period is low.
- The receivables turnover position of NEA is fluctuating. Hence the receivables turnover position is not satisfactory.

- Due to the increase in cost of sales the gross profit is less, But still the gross profit margin is said to be satisfactory.
- The net profit position of NEA during the study period is deteriorating. net loss of NEA had increased till fiscal year 2009/10 and then decreased in fiscal year 2010/11
- There is positive high degree correlation between working capital and net profit during the study period.
- There is significant very negative high degree correlation between working capital and current assets during the study period
- There is higher degree of positive correlation between quick assets and quick liabilities
- There is higher degree positive correlation between current assets and total assets.
- There is higher degree positive correlation between current liabilities and long-term loan.
- There is negative high degree correlation between sales and cash & bank balance.
- There is positive high degree correlation between sales and cash & bank balance.
- There is negative low degree correlation between sales and cash & bank balance

CHAPTER FIVE

Summary, Conclusion and Recommendation

Nepal is the second largest country in water resources. But still Nepal is under the short of power, which is one of the weak point of NEA and the government. Power sector is considered as one of the indicator of economic development. Energy lies at the core of resources what nation needs for overall national development. Nepal Electricity Authority (NEA) is undoubted leader of power sector and hence an important driving force for growth and industrial development of the country.

5.1 Summary

Nepal Electricity Authority (NEA) was created on August 16, 1985 (Bhadra 1, 2042) under the Nepal Electricity Authority Act, 1984, through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards. To remedy the inherent weakness associated with these fragmented electricity organizations with overlapping and duplication of works, merger of this individual organization became necessary to achieve efficiency and reliable service. The role and responsibility of NEA are growing continuously as the nation is reeling under the unprecedented energy shortage, and NEA is the prime layer of the sector. Energy lies at the core of resources what nation needs for overall national development. The demand for energy always remains high, hence in Nepal as the main source of energy is hydropower (electricity) the demand for electricity always remains high and NEA has always been struggling to fulfill the demand. The number of customers receiving electricity service is growing year by year. By the end of FY 2010/11, the number of customers has reached to 2,053,259.

Organization usually invests huge amount of capital in the form of working capital in order to run its day-to-day business. Hence the performance of the organization depends on the structure and efficient utilization of working capital. The position of working capital in any company must be in optimum position; it should neither be too high nor too low. Working capital is determined by difference between current assets and current liabilities. High amount of current assets increases the cost and remains the capital ideal whereas high amount of current liabilities refers firm inability to pay its debts.

The basic objective of this study is to analyze the working capital management of Nepalese Undertakings. The present study is small step to examine the use of working capital management practices of Nepal Electricity Authority.

The scope of the study is limited to four years i.e. fiscal year 2008/09 to 2010/11. Analytical and descriptive research has been followed; mainly secondary data has been used. Financial tool like financial ratio have been used to analyze the data. Similarly, accounting and statistical tool have also been used.

The study concentrates in accounting and financial aspects. Thus it lacks the other area. The study has been divided into five chapters:- introduction, review of literature, research methodology, presentation and analysis of data and summary, conclusion and recommendation.

After analyzing the working capital management of NEA, the researcher comes to the findings which were the objectives of the study. NEA has not been able to manage its working capital effectively and efficiently. The proportion of current assets is too low with that of current liabilities, resulting in negative working capital. Debtors are playing the huge part of current assets and sundry creditors and payables covers the huge part of current liabilities. The working capital investment and financial policy is not proper and effective. There is no proper use of working capital management.

5.2 Conclusion

The current ratio and quick ratio of NEA is too low than the standard ratio, which indicates very low liquidity position. The trend of sales is comparatively low and is fluctuating. NEA has been facing serious problem on the collection of outstanding debts, which has reached to Rs. 7,282 million in fiscal year 2010/11 which is increased by 16.26% than the previous year. As the receivable turnover position is very low. The proportion of cash and bank balance to current assets and total assets is too low. The amount of creditors is also very high. It covers about 83.34% of the total current liabilities.. If the current assets are funded by the short term financing. As per the annual report of NEA 2010/11, NEA managed its working capital requirement through short term borrowings from local financial institutions. All the correlation test shows the little bit same result, and almost the correlation test shows the positive correlation. So we can say that NEA variables are interrelated It should be manage all the variables to keep in balance. Moreover, the authority has no in depth analysis of the strengths, weakness and threats, where as this study can be concluded by listing out the strength and weakness as follows:-

Strengths

- Government Undertaking
- Sufficient Manpower
- Leading as monopolistic organization in power sector
- Government funding

Weakness

- Lack of proper management
- High government and political interventions
- Lack of technical manpower and technical knowhow.
- Underutilization of available resources.
- Lack of proper planning.

5.3 Recommendations

It is the suggestive framework based on the analysis of the study. These recommendations will be useful for the management of NEA, other concerned organization, individuals, institutions and other interested parties.

- Various techniques of cash management, receivable management, inventory management payables management has to be adopted by NEA by introducing concentration banking system, mobile collection center, for the collection of cash.
- NEA has the need for improving investment in current assets, application of cash management techniques (mainly the fast collection and delay payment through banking contract), the need for concentration on collection of outstanding debts and funding of current assets.
- Spontaneous sources of financing for current assets must be adopted which is interest free sources of finance like trade credits, credit from employees, credit from suppliers, etc. which will help to increase the rate of return.
- For such huge organization, large liquidity is required. Large fund has been tied up in debtors and inventories. Hence it is better to invest such funds in fixed assets to increase the capacity and generate the returns.
- Systematic and periodicals performance reports should be strictly followed to trace poor performance and take corrective action immediately and finely.
- Expert's suggestions and auditors recommendations must be properly followed up.
- Financial state of the organization is in decreasing stage and it should implement new and effective marketing strategies to improve its financial condition.

- The organization must be provided full autonomy and a business culture should be established. The senior management should be more professional instead of bureaucratic culture.
- Research work should be carried out periodically on the opportunities and threats of NEA.
- Open investment policy must be established for the investment in power sectors.

There are some rays of hope as NEA is coming up with new commitment and new mode of management. NEA should focus its efforts to increase generation, control electricity pilferage and losses improve operation and maintenance and expedite revenue collection in order to decrease load shedding and improve its financial health. It should channelize every possible effort to transform NEA into more efficient, effective and consumer oriented NEA. NEA need to concentrate its efforts at three fronts including improving its own financial health, improving quality of its operation and services delivered and accelerated expansions to wipe out the imbalance between demand and supply. For that it has to increase its own generation and transmission capacity as well as take lead role in making possible the cross border trade through development of appropriate infrastructure and mechanisms.

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Appendix-1
Nepal Electricity Authority
Highlights of FY 2010/2011

(NRs. In Million)

Particulars	2011*	2010	2009	2008
Sales	18,003.80	17,164.59	14,405.93	15,041.49
Cost of Sales	13,239.00	12,475.35	9,935.27	15,041.49
Generation	1,045.26	1,541.27	1,119.71	979.76
Power Purchase	10,956.81	9,746.57	7,691.28	7,437.04
Royalty	855.02	849.77	796.12	839.18
Transmission	381.91	337.74	328.16	274.85
Gross Profit	4,746.80	4,689.24	4,470.66	5,510.66
Other income	1,189.58	1,188.27	1,601.67	934.66
Distribution Expenses	2,888.05	3,091.21	2,575.09	2,110.01
Administration Expenses	783.56	789.52	651.69	683.98
Profit from operation	2,282.77	1,996.78	2,845.55	3,651.33
Interest	3,535.60	3,668.65	2,492.55	2,274.37
Depreciation	3,535.60	3,668.65	2,492.55	2,274.37
(Profit) Loss on Foreign Exchange	44.44	28.67	813.96	484.10
Street light dues written off	-	-	863.00	-
Provision for losses on property, plant & equipment	-	-	-	60
Provisions (including employee retirement benefit plan)	2,053.40	2,246.01	1,246.00	1,354.00
Deferred revenue expenditure written off	150.00	112.35	96.98	108.51
Sub Total	8,744.42	8,958.60	7,873.39	6,176.15
Profit(Loss) from operation in the current year	(6,461.65)	(6,961.82)	(5,027.84)	(2,524.82)
Prior years (Income) Expenses	50.00	(38.29)	163.19	(151.96)
Net profit (loss) before tax	(6,511.65)	(6,923.53)	(5,191.03)	(2,372.86)
Provision for tax	-	-	-	-
Deferred Tax expenses(income)	-	-	(97.81)	(57.39)
Net profit (loss) after tax	(6,511.65)	(6,923.53)	(5,093.22)	(2,315.47)
Balance of profit as per last account	(21,022.36)	(14,098.83)	(8,985.61)	(6,650.14)
Prior years Deferred Tax Expenses	-	-	-	-
Total profit available for appropriation	(27,534.01)	(21,022.36)	(14,078.83)	(8,965.61)
Insurance Fund	-	-	20.00	20.00

Profit (Loss) transferred to balance sheet	(27,534.01)	(21,022.36)	(14,098.83)	(8,985.61)
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* Provisional figures

Appendix
Nepal Electricity Authority
Balance Sheet as of July 16, 2011

(NRs. In Million)

Particulars	2011*	2010	2009	2008
Capital and Liabilities				
Capital and Reserve				
Share Capital	42,002.26	38,651.76	33,659.46	28,382.18
Reserve and Accumulated Profit				
Capital & other reserve	1,631.31	1,631.31	1,497.85	1,407.83
Accumulated profit	(27,534.01)	(21,022.36)	(14,098.83)	(8,985.61)
Total reserve and accumulated profit	(25,902.7)	(19,391.05)	(12,600.98)	(7,577.78)
Secured Long Term Loan	62,212.32	58,231.66	53,788.45	51,368.84
Deferred Tax	693.2	693.2	693.2	793.01
Grand Total	79,005.08	78,185.57	75,540.13	73,192.04
Asset				
Property, Plant & Equipment	85,762.76	83,105.63	81,238.50	52,030.28
Capital Work in Progress	20,634.28	17,040.46	13,550.46	35,699.71
Investment	4,973.98	4,973.98	2,139.92	1,620.19
Sub Total	111,371.02	105,120.07	96,928.88	89,350.18
Current Asset				
Inventories	2,509.75	2,431.99	2,159.12	1,800.13
Sundry Debtors and other Receivable	7,282.00	6,097.74	4,854.02	5,721.08
Cash and Bank Balance	1,288.49	1,244.66	1,724.76	1,337.15
Prepaid, Advance, Loan and Deposits	2,821.08	2,733.68	2,495.13	2,319.72
Total Current Assets	13,901.32	12,508.07	11,233.03	11,178.08
Less: Current liabilities and Provision				
Sundry Creditors and Payables	33,433.00	33,651.36	29,221.35	25,482.01
Provision	7,630.20	5,576.80	3,330.78	2,085.38
Total Current Liabilities and Provision	46,063.20	39,228.16	32,552.13	27,567.39
Net Current Assets	(32,161.87)	(26,720.09)	(21,319.10)	(16,389.31)
Deferred Expenditure (To be written off)	334.02	323.67	361.22	423.33
Inter Unit Balance (Net)	(538.08)	(538.08)	(430.87)	(192.16)
Total Def. Exp. & Inter	(204.06)	(214.41)	(69.65)	231.17
Grand Total	79,005.08	78,185.57	75,540.13	73,192.04

APPENDIX-3

Calculation of Mean, Standard Deviation and Coefficient of Variation of Quick Assets and Current Liabilities (In Million)

Assume x and y be the quick assets & quick liabilities

Year	X	y	(x- \bar{x})	(x- \bar{x}) ²	(y- \bar{y})	(y- \bar{y}) ²
2007/08	3,137.28	27,567.39	(486.760)	236,935.29	(8,785.33)	77,182,023.20
2008/09	3,883.99	32,552.13	259.950	67,574.00	3,800.59	14,444,484.34
2009/10	3,676.65	39,228.16	52.610	2,767.81	2,875.44	8,268,155.19
2010/11	3,798.24	46,063.20	174.200	30,345.64	9,710.48	94,293,421.83
Total	14,496.16	145,410.88		337,622.75		194,188,084.58

respectively

Computation of Mean

For Quick Assets Mean(\bar{x}) = 3,624.04

For Current Liabilities Mean(\bar{y}) = 36,352.72

Computation of Standard Deviation

For Quick Assets S.D = 335.47

For Current Liabilities S.D = 8,045.46

Computation of Coefficient of Variation

For Quick Assets (C.V) = $\frac{\sigma}{\bar{X}} \times 100\% = 8.00\%$

For Current Liabilities (C.V) = $\frac{\sigma}{\bar{Y}} \times 100\% = 22.13\%$

Appendix-4

Calculation of Mean, Standard Deviation and Coefficient of Variation of Total Current Assets and Total Assets (In Million)

Let X and Y be the current assets and total assets respectively.

Year	X	Y	(X- \bar{X})	(X- \bar{X}) ²	(Y- \bar{Y})	(Y- \bar{Y}) ²
2007/08	11,178.08	100,528.26	(1,027.04)	1,054,821.43	(12,369.40)	153,002,118.20
2008/09	11,233.03	108,161.91	(972.09)	944,968.68	(4,735.75)	22,427,351.74
2009/10	12,508.07	117,628.14	302.94	91,775.67	4,730.47	22,377,417.37
2010/11	13,901.32	125,272.34	1,696.19	2,877,077.47	12,374.67	153,132,643.22
Total	48,820.50	451,590.65		4,968,643.27		350,939,530.55

Computation of Mean

For Current Assets Mean(\bar{X}) = 12,205.25

For Total Assets Mean (\bar{Y}) = 112,897.66

Computation of Standard Deviation

Standard Deviation (S.D) of Current Assets = 1,286.94

Standard Deviation (S.D) of Total Assets = 10,815.72

Computation of Coefficient of Variation

Coefficient of Variation (C.V) of Current Assets = 10.05%

Coefficient of Variation (C.V) of Total Assets = 9.58%

Appendix-5

Calculation of Correlation of Coefficient and Probable Error
between current assets and
current liabilities (In Million)

**Assume X and Y be the current assets and current liabilities
respectively**

Year	X	Y	X ²	Y ²	XY
2007/08	11,178.08	100,528.26	193,246,697.74	10,105,931,058.62	1,397,475,511.30
2008/09	11,233.03	108,161.91	126,180,962.98	11,698,998,774.84	1,214,985,979.88
2009/10	12,508.07	117,628.14	156,451,815.12	13,836,379,319.86	1,471,301,009.09
2010/11	13,901.32	125,272.34	193,246,697.74	15,693,159,169.07	1,741,450,885.48
Total	48,820.50	451,590.650	669,126,173.59	51,334,468,322.41	5,825,213,385.76

Computation of Correlation Co-efficient (r)

r =

0.167

Computation of Probable error of r (P.E)

$$\text{P.E} = 0.6745 \times \frac{1-r}{\sqrt{n}}$$

$$= 0.32$$

Appendix-6

Calculation of Correlation of Coefficient and Probable Error
between current assets and
total assets (In Million)

Assume x and y be the current assets and total assets respectively.

Year	x	y	x ²	y ²	xy
2007/08	5,721.08	11,178.08	32,730,756.37	124,949,472.49	63,950,689.92
2008/09	4,854.02	11,233.03	23,561,510.16	126,180,962.98	54,525,352.28
2009/10	6,097.74	12,508.07	37,182,433.11	156,451,815.12	76,270,958.76
2010/11	7,282.00	13,901.32	53,027,524.00	193,246,697.74	101,229,412.24
Total	23,954.84	48,820.50	146,502,223.63	600,828,948.33	295,976,413.20

Computation of Correlation Coefficient (r)

$$r = 0.93$$

Computation of Probable Error

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.045$$

Appendix- 7

Calculation of Mean, Standard Deviation and Coefficient of Variation of Cash and bank balance and Total Assets (In Million)

Let x and y be the cash & bank balance and total assets respectively.

Year	x	y	$x-\bar{x}$	$(x-\bar{x})^2$	$y-\bar{y}$	$(y-\bar{y})^2$
2007/08	1,337.15	100,528.26	-61.61	3,796.41	-12,369.40	153,002,118.21
2008/09	1,724.76	108,161.91	326.00	106,272.74	-4,735.75	22,427,351.74
2009/10	1,244.66	117,628.14	-154.11	23,748.35	4,730.48	22,377,417.38
2010/11	1,288.49	125,272.34	-110.28	12,160.58	12,374.68	153,132,643.23
Total	5,595.06	451,590.65		145,978.07		350,939,530.56

Computation of Mean

For cash and bank balance Mean(\bar{x}) = 1,398.77

For Total Assets Mean(\bar{y}) = 112,897.66

Computation of Standard Deviation

For Cash and bank balance S.D = 220.58

For Total Assets S.D = 10,815.72

Computation of Coefficient of Variation

For Cash and bank balance C.V = 15.77%

For Total Assets C.V = 9.58%

Appendix-8

Calculation of Correlation of Coefficient and Probable Error
between receivable and total assets (In Million)

Let x and y be receivable and total assets respectively.

Year	x	y	x ²	y ²	xy
2007/08	5,721.08	100,528.26	32,730,756.37	10,105,931,058.63	575,130,217.72
2008/09	4,854.02	108,161.91	23,561,510.16	11,698,998,774.85	525,020,074.38
2009/10	6,097.74	117,628.14	37,182,433.11	13,836,379,319.86	717,265,814.40
2010/11	7,282.00	125,272.34	53,027,524.00	15,693,159,169.08	912,233,179.88
Total	23,954.84	451,590.65	146,502,223.63	51,334,468,322.41	2,729,649,286.38

Computation of Correlation of Coefficient(r)

$$r = 0.77$$

Computation of Probable error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.13$$

Appendix-9

Calculation of Mean, Standard Deviation and Coefficient of Variation of Total Current Liabilities and Long-term loan (In Million)

Year	x	y	x- \bar{x}	(x- \bar{x}) ²	y- \bar{y}	(y- \bar{y}) ²
2007/08	27,567.39	51,368.84	-8,785.33	77,182,023.21	-5,031.48	25,315,765.83
2008/09	32,552.13	53,788.45	-3,800.59	14,444,484.35	-2,611.87	6,821,851.84
2009/10	39,228.16	58,231.66	2,875.44	8,268,155.19	1,831.34	3,353,815.35
2010/11	46,063.20	62,212.32	9,710.48	94,293,421.83	5,812.00	33,779,344.00
Total	145,410.88	225,601.27		194,188,084.58		69,270,806.00

Computation of mean

For Current Liabilities Mean(\bar{x}) = 36,352.72

For Long-Term Loan Mean(\bar{y}) = 56,400.31

Computation of Standard Deviation (S.D)

For Current Liabilities S.D = 8,045.45

For Long-Term Loan S.D = 4,805.23

Computation of Coefficient of Variation (C.V)

For Current Liabilities C.V= 22.13%

For Long-Term Loan C.V = 8.5%

Appendix-10

Calculation of Correlation of Coefficient and Probable Error
between current liabilities and long-term loan

Year	x	y	y ²	x ²	xy
2007/08	27,567.39	51,368.84	2,638,757,722.95	759,960,991.41	1,416,104,846.13
2008/09	32,552.13	53,788.45	2,893,197,353.40	1,059,641,167.54	1,750,928,616.90
2009/10	39,228.16	58,231.66	3,390,926,226.36	1,538,848,536.99	2,284,320,875.55
2010/11	46,063.20	62,212.32	3,870,372,759.78	2,121,818,394.24	2,865,698,538.62
Total	145,410.88	225,601.27	12,793,254,062.49	5,480,269,090.17	8,317,052,877.20

Computation of Correlation of coefficient(r)

$$r = 0.99$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.006$$

Appendix-11

Calculation of Correlation of Coefficient and Probable Error
between current assets and sales (In Million)

Let x be the current assets and y be the sales respectively

Year	x	y	x ²	y ²	xy
2007/08	11,178.080	15,041.490	124,949,472.49	226,246,421.42	168,134,978.54
2008/09	11,233.030	14,405.930	126,180,962.98	207,530,819.16	161,822,243.87
2009/10	12,508.070	17,164.590	156,451,815.12	294,623,149.87	214,695,893.24
2010/11	13,901.320	18,003.800	193,246,697.74	324,136,814.44	250,276,585.02
Total	48,820.500	64,615.810	600,828,948.33	1,052,537,204.89	794,929,700.66

Computation of Correlation of Coefficient (r)

$$r = 0.95$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.03$$

Appendix-12

Calculation of Correlation of Coefficient and Probable Error
between cash & bank balance and sales (In Million)

Let x and y be the cash and sales respectively.

Year	x	y	x ²	y ²	xy
2007/08	1,337.15	15,041.490	1,787,970.12	226,246,421.42	20,112,728.35
2008/09	1,724.76	14,405.930	2,974,797.06	207,530,819.16	24,846,771.83
2009/10	1,244.66	17,164.590	1,549,178.52	294,623,149.87	21,364,078.59
2010/11	1,288.49	18,003.800	1,660,206.48	324,136,814.44	23,197,716.26
Total	5,595.060	64,615.810	7,972,152.18	1,052,537,204.89	89,521,295.03

Computation of Correlation of Coefficient (r)

$$r = -0.762$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.14$$

Appendix-13

Calculation of Correlation of Coefficient and Probable Error
between debtors and sales (In Million)

Year	x	y	x ²	y ²	xy
2007/08	5,721.08	15,041.490	32,730,756.37	226,246,421.42	86,053,567.61
2008/09	4,854.02	14,405.930	23,561,510.16	207,530,819.16	69,926,672.34
2009/10	6,097.40	17,164.590	37,178,286.76	294,623,149.87	104,659,371.07
2010/11	7,282.00	18,003.800	53,027,524.00	324,136,814.44	131,103,671.60
Total	23,954.500	64,615.810	146,498,077.29	1,052,537,204.89	391,743,282.61

Computation of Correlation of Coefficient (r)

$$r = 0.928$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.04$$

Appendix-14

Calculation of Correlation of Coefficient and Probable Error
between Gross Profit and sales (In Million)

Let x and y be gross profit and sales respectively

Year	x	y	x ²	y ²	xy
2007/08	5,510.66	15,041.490	30,367,373.64	226,246,421.42	82,888,537.28
2008/09	4,470.66	14,405.930	19,986,800.84	207,530,819.16	64,404,015.01
2009/10	4,689.24	17,164.590	21,988,971.78	294,623,149.87	80,488,882.01
2010/11	4,764.80	18,003.800	22,703,319.04	324,136,814.44	85,784,506.24
Total	19,435.360	64,615.810	95,046,465.29	1,052,537,204.89	313,565,940.55

Computation of Correlation of Coefficient (r)

$$r = -0.169$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.32$$

Appendix-15

Calculation of Correlation of Coefficient and Probable Error
between Inventory and Sales (In Million)

Year	x	y	x ²	y ²	xy
2007/08	1,800.13	15,041.490	3,240,468.02	226,246,421.42	27,076,637.39
2008/09	2,159.12	14,405.930	4,661,799.17	207,530,819.16	31,104,131.58
2009/10	2,431.99	17,164.590	5,914,575.36	294,623,149.87	41,744,111.23
2010/11	2,509.75	18,003.800	6,298,845.06	324,136,814.44	45,185,037.05
Total	8,900.990	64,615.810	20,115,687.61	1,052,537,204.89	145,109,917.26

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y and sales respectively.

Computation of Correlation of Coefficient (r)

$$r = 0.81$$

Computation of Probable Error (P.E)

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.12$$