1.1 Background of Study

Nepal is a landlocked agro-based and livestock dependent country with diversified geo-ecological and climatic condition. Nepal is an independent country situated on the southern slopes of the middle Himalayan. It stretches over a length of 850 km (east-west) and a width of 145 to 241 kms (north-south) surrounded by the sparsely populated Tibetan autonomous region of China in the north and India in the east, south (Gangetic Plain) and west. Nepal covers about 0.03% of the total land area of the world and 0.3% of the Asia.

The country is divided into three ecological zones namely Mountains, Hills and Terai, out of the total area of 1,47,181 sq. kms of land space area of sovereign Nepal. The mountain zone occupies 35.2 percent land space with a density of population of only 32.6 persons per sq.km (CBS, 2002). This zone has only 7.3 percent of the total population of the country, and it ranges the altitude from / around 600 mtrs. to the highest altitude (8848 mtrs.) of the world.

The hill zone in altitude ranges from 610 meters to 4,877 meters with moist subtropical climate. It occupies 41.7 percent of the total area with a population density of 167.1 persons per sq. kms and
has 44.3 percent of the total population. The Terai zone ranges in altitude of less than 610 meters to minimum 60 mtrs. from sea level with humid tropical and sub-tropical climate. It has 20 districts with only 23.1 percent of the total area of the country but has a density of population almost twice greater (329.6 persons per sq.km) than in the hills. This zone has been accommodating 48.4 percent of the total population of Nepal.

There are five development Regions-Eastern Development Region, Central Development Region, Western Development, Mid-Western Development Region and Far-Western Development Region accommodating 23.1, 34.7, 19.7, 13.0, 9.5 percent of population respectively in 2001 (CBS, 2006). There are 75 administration districts which are further divided into small units called Village Development Committee (VDC) and Municipality. Currently there are 3,915 VDCs and 58 Municipalities in the country. Each VDC is composed of 9 wards. Municipality ward ranges from 9 to 35. The per capita GDP in terms of US dollar is 383 (The Kathmandu Post, 13 June, 2007) and 32 percent of the population are below the absolute poverty line. Kathmandu is the capital city of the country and the currency is Nepalese Rupees (Rs.).
In the context of Nepal, children are those who are less than 16 years of age (Child Act, 2048) and teenagers are 14-16 years. Therefore 11-13 years period is considered as pre-teen age group in Nepal and has been considered them as it was in this study.

Since round about two hundred years Nepal has lived an integrated and independent existence, but as a nation she is so much small-sized as to become a closed-pocket in the Himalayas. She is sufficiently rich in agricultural products but educationally and technologically has remained under-developed. She has significant variations in environments as regards atmospheric pressure, topography, climate and socio-economic conditions.

Considering atmospheric pressure, climate and topography she can be divided into three parts viz. Mountain, hill (Valley), and Tarai (Plain). For this study point of view Himalayan region was left out of question, because the density of population was too scarce in this region. Socio-economically Nepal’s environment can be classified into middle-hither, middle-middle and middle-lower strata. Socio-economically lower and higher strata are neglected because of their very low coverage in the total number of population. It seems that these environmental variations are affected Nepal’s education in general and physical education particularly. It may be said that
physical education has remained almost neglected in this country in any tier of educational level as well.

The acquisition of fundamental motor proficiency, which is directly linked to physical activity, is an important goal for early childhood. Not only children must learn to control their bodies in space, they also need to acquire the fundamental skills which would aid daily living, vocational pursuits and recreational/leisure activities. These skills are interdependent with health-related physical fitness and must be considered in any discussion of the biophysical effects of physical activity on individuals.

It is important that activities in childhood include both the motor and health aspects of physical fitness. Both health-related fitness and motor skill development are important because: (a) children need a reasonable level of motor skill proficiency to participate in activities that build endurance, power and strength, and (b) they need reasonable levels of fitness to engage in exercise and sport activities which would provide them with physical activity as adults. Recognizing the need for both motor skill development and adequate fitness is critical because the benefit of lifetime participation in physical activity has an impact on psychological and social aspects of young individuals.
The simultaneous acquisition of both motor and physical fitness begins in early childhood, as children use movement as their mechanism to learn about their world. It continues in school where all children should participate in daily physical education activities which set both the pattern of physical activity and the fundamental skills to be successful and happy when participating even for future.

Physical activity has long been recognized for its effects on the maturing child. However, one of the challenges of interpreting research on children is the difficulty of differentiating between the changes in physiological functioning which may be affected by regular exercise or strenuous training, and those effects which are the natural result of maturation. This problem is compounded by the traditional use of control groups to help differentiate between the effects of the exercise intervention and those of normal growth and development, because most children are already quite active (Barrow, 1989). This makes the experimental designs more complicated, the exercise interventions more intensive than those which would be adequate for adult participants, and the interpretation of the data more challenging for the researcher.

It is well known fact that physical education is the education system based on practical activities. It means physical education gives education or makes one skillful and genius by using physical
activities. To give education through physical activities is an old and
famous system in the field of education. Physical education is proud
in it that most of the theories, which is taught in this subject, can be
proved physically and psychologically on practical field. Physical
education is the subject in which experimental research can be done
on human beings. Many types of activities must be done to educate
through physical education. To perform in each and every physical
activity many types of human movement elements and abilities are
needed. And to develop those types of abilities students must
practice physical activities in proper guidance and equipments.
There are many determined factors which affects development of
students' capacity and ability in physical education. Among of them,
sports facilities are one of the main determined factors which directly
affect the students’ performance, ability and capacity of sports and
games. There are many types of human movement elements and
skills which can not be developed without proper physical education
programme, but in Nepalese contest, this aspect is lacking much
more than other countries.

1.2 Probable Factors Affecting Nepali Children’s Motor
Performance in reference to the past evidence.

Generally performance is affected by heredity and
environment. If motor performance in all children in Nepal is
considered, it seems, perhaps less influenced by nation's socio-heritage but more by variations in already explained environment. Of-course, this is a conjecture. The present study might have revealed the truth behind this first conjecture.

Individual's performance is generally affected by maturation, learning and training. If the motor performance of any non-school-going Nepali child is considered, it is conjectured that it may be affected by maturation and learning only. Where as, if the motor performance of any school-going Nepali child is considered, it is conjectured that it may get affected by maturation, learning and training. The present study might have revealed the truth behind this second conjecture about the motor performance and their fitness differences.

There is a recognized need for a physically fit nation. Fitness of the citizens is an index of the prosperity of the country. The standard of health and fitness of the citizens of a country would determine the productivity of a nation. Fit citizens are an asset and on the other hand weak people are a liability. There is an emergent demand for physically fit citizens, whether in peace or in war, a fit nation is an efficient and productive nation.
Since the dawn of civilization physical fitness has occupied very important place in the lives of the human beings. Even the primitive man survived due to his physical prowess only.

Ancient Greece, which is considered to be the cradle of civilization, attached great importance to physical well-being and health of the people. Greek Philosopher, Aristotle stated that the body is the temple of the soul, and to reach harmony of body, mind and spirit, the body must be physically fit.

Swami Vivekanand, the philosopher Saint of India advocated that our country wants muscles of iron and nerves of steel. He further stated that first of all our young men must be strong, religion would come afterwards. The ancient Indian system of Yogic exercises also emphasizes physical well-being besides mental and spiritual attainments. The Ramayana and the Mahabharata testify that physical fitness was given lot of importance during those periods. (Singh, 1986)

The recent advances in science and technology have resulted in innovations and inventions which have influenced human life style in many ways. This means that modern working conditions lead to a sedentary life and human endeavours have reduced physical involvement of the people. The resultant easy-going life has its own
consequences negatively related to the development and maintenance of physical fitness.

Under these circumstances physical fitness demands are increasing in modern times. According to Barret (1974) physically fit persons lead longer lives, have better performance records and participate fully in life.

According to Russel R. Pate (1985) health-related physical fitness is the ability to perform strenuous physical activity with vigour and without excessive fatigue, and demonstration of physical activity traits and capacities that are consistent with minimal risk of developing hypo kinetic diseases.

In brief, physical fitness is an integral part of total fitness and this is being gradually recognized as a vital element in good living. In a charter, UNESCO (1978) while stressing importance of physical fitness proclaimed that everyone has a right to participate in physical education and sports irrespective of race, colour, sex, religion and political affiliations. This simply implies that physical fitness is essential for everyone because everyone is expected to perform his optimum throughout one’s life.

Regular participation in a well-designed exercise programme can play a very important part in weight control, which obviously contributes towards the improvement of personal appearance.
Exercise increases muscle tone, and the muscular development further improves body carriage and postural poise.

After the all party agreement and declaration of Federal Republic Nepal, country has passing through a very delicate and sensitive period in every fields in general and specifically in education system. Although there has been re-established the new ministry to look after the situation of youths and sports in Nepal, but it has not developed plan, policy and clear vision to promote sports and physical education in the country to develop and keep healthy-fit youths as responsible citizens in the country. Therefore, they need to have some idea or guidelines about the motor ability of the youths to give them right direction in their future life or career.

As regards to motor performance status of Nepal’s children no research has been undertaken so far. Hence, the present researcher has determined to undertake this study and put the above said conjecture to rigorous testing after developing a suitable test battery in motor ability for the Nepalese boys.

1.3 Statement of the Problem

The basic patterns of motor movements are embodied in and so called as fundamental skills or fundamental movements. They are racial activities common to all mankind with no boundaries either
racially or geographically which includes such fundamental movement patterns as walking, running, jumping, throwing, climbing, striking, carrying etc.

The general abilities of movement have been divided into motor ability, motor capacity, motor educability and motor fitness.

Motor capacity has been defined as a general overall quality which is representative of one’s potential or innate performance. Motor capacity is associated with motor educability. The students who possesses a high level of educability factors is the own who responds to teaching and coaching quickly. Thus, educability is evidently related in some sense in relation to age and maturation. Motor ability, sometime referred to as general athletic ability and has been defined as, “the present acquired and innate ability to perform motor skills of a general or fundamental nature exclusive of highly specialized sports or techniques.” Of course this definition implies that motor ability is a combination of the innate and the acquired potentials of the students and implies motor ability in general. Once learned and practiced these potentials persist and develop over a long period of time as a part of muscle memory.

All these abilities and factors underlie the overall performance as representing total body movement patterns. Another facet of motor performance is motor fitness. It represents a limited phase of
physical fitness, motor fitness like motor ability is gauged or measured by performance. But motor fitness are influenced more by training, practice, and performance affected by endurance, strength, power, flexibility etc. and may loss/disappear if there is no regular practice, whereas motor ability may not be loss or disappear, but better improve further if those potentials are known / measure and proper guidance's are given to the concerned in right time. Therefore, it is worthy to measure the motor ability potentials of the school age students before they grow up and become mature and start to play or maneuver more skilful sporting activities in their life. Hence, the problem was stated as under:

"Development of motor ability tests battery for boys from different topography of Nepal".

1.4 Significance of the Study

Due to the lack of physical and medical examinations and standards required for self-evaluation of motor performance, Nepali boys are unaware of their state of performance and achievement even in general motor activities. This study aimed to supply them of course, to some extent some self-evaluatory standards of motor performance. These evaluatory standards and selected tests would likely to help physical educators to measure the present status, to
improve upon it, and to know progress, regarding the motor performance of their students as well.

It is thought that there is a dire need for such type of study to bring out whether the current physical education system is well-equipped to provide the requisite stimulation for motor performance to the students undergoing through it.

The present work regarding the measurement and comparison of motor performance parameters of pre-teenage boys from different eco-zones, is expected to contribute some motor performance tests to satisfy the need of performance improvement of those who would desire to know it or to measure on it.

Some additional but selected contributing points of the study are listed here as under:

1. A suitable battery of motor ability test could be developed.
2. Motor performance status of pre-teenage boys of Nepal, could be identified.
3. The comparison regarding the motor performance between the boys of (a) hill, valley and plain and, (b) urban and rural school going group, could make them conscious of the effect of their environment on their motor performance and know their status of fitness.
The personnel concerned could be motivated to apply the test-battery emerging out from this study to measure motor performance of the boys under their charge.

1.5 Objective of the Study

Main objectives of the study were as under:

1. To select the tests to measure the emerging parameters of motor performance suitable to mass investigation from time, cost and energy point of view.

2. To measure the status of the motor ability performance of boys under consideration.

3. To study the effects of differential environments on the motor performance.

4. To develop percentile norms for three eco-zones boys.

5. To develop percentile norms for the Urban and Rural boys.

6. To established national norms in motor ability test.

1.6 Hypotheses

Along with these objectives following hypotheses were put to test:

1) It was hypothesized that there was no differences between the Urban and Rural boys of Nepal in there motor ability performance tests.
II) It was hypothesized that there were no differences between the boys of different eco-zones in their motor ability tests.

1.7 Delimitation of the Study

Some of the delimiting points have already been stated in the statement of the problem. Some other delimiting factors were as under:

1. The study was delimited to only school boys of Nepal of pre-teenage from 11+ to 13+ years.

2. The study was restricted to selected representative schools from selected representative places in the urban and rural areas of Hill, Valley and Terai regions, which would represent all parts of Nepal.

3. This study was delimited in developing a test-battery of motor ability for teenagers.

1.8 Definition of the terms used

Norms:

A norm is a standard to which an obtained score may be compared. (Mathews, 1978)

Norms are values considered to be representative of a specified population. (Johanson and Nelson, 1982)
**Flexibility:**

Flexibility is usually interpreted as the range of motion at a particular joint measured in degrees. (Mathews)

Flexibility may be defined as the range of the moment in a joint. (Barrow and McGee, 1979)

**Agility:**

Agility is the ability to change the direction of the body or its parts rapidly. (Clearence, 1974)

Agility is revealed by the ability of the body or parts of the body to change directions rapidly and accurately. (Barrow and McGee, 1979)

**Power:**

It is the capacity of the individual to bring into play with maximum muscle contraction at the fastest rate of speed. (Barrow and McGee, 1979)

One’s ability to get his body mass moving in the shortest period of time is a measure of power. (Mathews, 1978)

**Co-ordination**

The ability of the performer to integrate types of movements into a specific patterns. (Barrow and McGee, 1979)
**Speed:**

Speed may be defined as the capacity of the individual to perform successive movement of the same pattern at a faster rate. (Barrow and McGee, 1979)

**Balance:**

To bring into or keep in equilibrium the body parts, it may be in static or in dynamic position of the body. (The Concise Oxford Dictionary 9th.ed.1995)

**Reaction Time:**

The act or instance of reacting, a responsive or reciprocation action measured in elapse of time. (The Concise Oxford Dictionary 9th.ed.1995)

**Kinesthetic perception:**

The brain's awareness of the position and movement of the body or body limbs while the body is in motion by means of sensory nerves in the muscles and joints. (The Concise Oxford Dictionary 9th.ed.1995)

**Test:**

A test is the instrument used to assess a variable. (Earle F. Zeigler, 1982)
**Eco-Zones:**

The climatic and altitude variations based on geomorphic belts. (The Concise Oxford Dictionary 9th. ed. 1995)

**Factor Analysis:**

It is a statistical procedure that is used to reduce a large number of variables called factors. The objective of factor analysis is to achieve parsimony and often to discover the essential variables that summarise the information in a large set of variables. (Richard M. Jaeger, 1983)

**Reliability:**

It means the extent to which a test is consistent in measuring what it measures. It is usually estimated by some form reliability coefficient or by the standard error of measurement. (Meyers R. Carlton, 1962)

**Validity:**

Validity means the extent to which a test measures what it intends to measure, specific to the purpose for which the test is used. (Meyers R. Carlton, 1962)

**Objectivity:**

It means the extent to which a test is consistent in measuring what is measured when administered by different individuals. (Meyers R. Carlton, 1962)
Motor Ability:

Innate or acquired ability to perform motor skills of a general or fundamental nature exclusive of highly specialized sports skills or techniques (Barrow, 1978)

A thing or ability that imparts motion in any intended direction by the whole body or its parts of an individual. (The Concise Oxford Dictionary 9th.ed.1995)

Topography:

The configuration of a surface and the relation among its manmade and natural features

The three dimensional arrangement of Physical attributes which make up the topography of an area include mountains, valleys, plains and other parts of a region. (http://dictionary.reference.com)