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Doctoral Thesis

**Sustainable development and social responsibility in
practice with reference to Sri Lanka**

Case Study

**Udržitelný rozvoj a sociální odpovědnost v praxi s odkazem na
Srí Lanku**

Případová studie

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ABSTRACT

The reality of the concept of sustainable development is to provide the basic needs to the people for their well being and to protect the natural resources and environment for future generations. The primary objective of the free market economy is to maximise profit and increase return on investments. During the last five decades the free market economy made a major contribution for the development of the societies, yet a considerable percentage of world population are suffering with many social, economical and environmental issues and left those issues to the future generational too. Free market economy and the Sustainable development are two concepts distinct from each other which would act on the contrary to a greater extent in its implementation. The present trend on economic development of the world trend is mainly based on free market economic concept. Simultaneously it is important to implement the concept of sustainable development for the well being of the society and to protect the world for future generations. The biggest responsibility of the present society is to implement these two concepts together for the prosperity of the present and future world. In this event every society faces many contradicting issues. The question is what are the instruments and the mechanisms that should be used to combine these two concepts for the successful implementation? During last six decades international law widely discussed the social responsibilities of sustainable development and imposed laws, concepts and principals, to promote it with blessings of the civilize nations of the world. Therefore the most appropriate strategy is apply the international law as the mechanism and international conventions and legal documents as instruments to combine and implement, both these concepts.

ABSTRAKT

Podstatou konceptu udržitelného rozvoje je ve skutečnosti poskytnutí základních potřeb pro dobré životní podmínky a ochranu přírodních zdrojů a životního prostředí pro budoucí generace.. Hlavním cílem ekonomiky volného trhu je zvýšení marže pro investice. Přestože v průběhu posledních pěti desetiletích tržní ekonomika učinila velký přínos pro rozvoj společnosti, značné procento světové populace trpí množstvím problémů z oblasti sociální, hospodářské a životního prostředí a vyvíjí tak tlak na budoucí generace. Tržní hospodářství a udržitelný rozvoj jsou dva pojmy odlišné jeden od druhého, který by jednal v kontrastu k větší míře jeho provedení. Současný trend světového ekonomického rozvoje je založen hlavně vstříc ekonomice volného trhu. Současně je důležité zavést koncept trvale udržitelného rozvoje pro blahobyt společnosti a pro ochranu světa v budoucnu. Největší odpovědností současné společnosti je provádět tyto dva koncepty spolu s prosperitou současného i budoucího světa. V tomto případě každá společnost čelí mnoha problémům. Otázkou je, jaké jsou nástroje a mechanismy, které by měly být použity pro sloučení těchto dvou konceptů pro úspěšnou realizaci? Během posledních šesti let mezinárodní právo široce diskutovalo o sociální odpovědnosti udržitelného rozvoje a předepsaných zákonech, pojmech a principech na jeho podporu s požehnáním civilizovaných národů světa. Proto je nejvhodnějším mechanismem uplatnění mezinárodního práva jako mechanismu a mezinárodních úmluv a právních dokumentů jako nástrojů k provozování tohoto mechanismu ke kombinaci a uskutečnění obou těchto pojmů.

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ROZŠÍŘENÝ ABSTRAKT

Během posledních třiceti let rozvojové země postupně transformovaly svou ekonomiku na tržně orientované hospodářství a od té doby mají mnohem větší význam ve světovém obchodě. Na přibližně 1/3 světového obchodu se nyní podílí rozvojové země, které zastávaly pouze 1/4 počátkem roku 1970. Rychlý nárůst počtu obyvatel ohrožuje schopnost zvýšit životní úroveň. Rostoucí poptávka po omezených zdrojích a znečištění, které vznikají při stoupající životní úrovni, jsou hlavní příčiny znečišťování životního prostředí a snižování přírodních zdrojů. Tlak chudoby je třeba vidět v širším kontextu. Na mezinárodní úrovni existují velké rozdíly v příjmech na jednoho obyvatele. Asi 1/5 světové populace trpí chudobou a žije za méně než jeden americký dolar denně. Venkovská chudoba představuje téměř 63% z celého světa, dosahující 90% v některých zemích jako je Bangladéš a 65% až 90% v subsaharské Africe. Přestože hospodářský růst vedl ke zlepšení životní úrovně, odráží se to často negativně na životním prostředí a společnosti, a to zejména v rozvojových zemích. Rostoucí negativní vliv na tuto situaci je tak dalekosáhlý co se týče chudoby, která se sama o sobě stala velkým globálním prokletím. Současně s tržně orientovaným hospodářstvím byly od poloviny 20. století rozvíjeny další dva důležité pojmy. Jedná se o koncept lidských práv a koncept udržitelného rozvoje. Koncept udržitelného rozvoje se postupně zvyšoval spolu se základními lidskými právy jako je právo na potravu, právo na vzdělání a právo na ochranu zdraví. Tržně orientované hospodářské politiky a udržitelný rozvoj jsou dva různé pojmy, které jsou však stejně důležité pro pokrok v současné společnosti. Problémem je, že v praxi jsou tyto dva různé pojmy často staveny proti sobě. Je tedy nezbytné, aby tato strategie byla v dostatečném souladu pro přijetí obou těchto konceptů společně v procesu rozvoje. V tomto případě by otázka zněla, které nástroje a jaký mechanismus mají být použity, aby byly tyto dva pojmy sloučeny? Rozvoj mezinárodního práva, zejména po druhé světové válce, upozornil na sociální rozvoj, ekonomický rozvoj a ochranu životního prostředí prostřednictvím mezinárodních úmluv a jiných mezinárodních právních nástrojů. Tyto právní nástroje v zásadě jednaly o odpovědnosti za společnost týkající se jak blaha občanů, tak ochrany světa pro budoucnost. Ekonomika založená na volném trhu zaměřena na maximalizaci zisku neposkytuje rezervy v otázkách sociálních, ekonomických, životního prostředí a dalších souvisejících problémech. Proto v moderním světě působí politiky tržně orientovaného obchodu na jedné straně, přičemž by měl být rovněž zaveden udržitelný rozvoj politik. Úkolem dnešního světa je realizovat tyto rozporuplné koncepty současně. Například, pokud je postavena nová továrna nebo stanoveno nové uspořádání, s největší pravděpodobností to ovlivní odlesnění, degradaci půdy, znečištění ovzduší, znečištění vody a mnoho druhů znečištění životního prostředí a sociální problémy, ale ani z těchto důvodů nelze vývoj zastavit. Proto musí společnost najít řešení, které minimalizuje negativní dopady na udržitelný

rozvoj a efektivně podporuje hospodářský rozvoj. To je hlavní současná a budoucí odpovědnost společnosti. Během posledních šesti let mezinárodní právo široce diskutovalo o sociální odpovědnosti udržitelného rozvoje a předepsaných zákonech, pojmech a principech na jeho podporu s požehnáním civilizovaných národů světa. Proto je nejvhodnější strategií použít mezinárodní právo a jako mechanismus spolu s mezinárodními úmluvami a právními principy tyto nástroje kombinovat a provádět obě koncepce trvale udržitelného rozvoje a ekonomiky volného trhu pro blaho současných a budoucích generací.

EXTENDED ABSTRACT

During the last thirty years developing countries have gradually transformed their economies into free market oriented economic system and have become much more important in world trade ever since. Approximately 1/3 of the world trade is now contributed by the developing countries which was only 1/4 in early 1970s. The rapid rise in population has compromised the ability to raise living standards. Increasing demand on scarce resources and pollution generated by the rising living standards are major causes for environmental pollution and reduction of natural resources. The pressure of poverty has to be seen in a broader context. At the international level there are large differences in per capita income. About 1/5 of the World population is afflicted by poverty which is living on less than one U.S Dollar per day. Rural poverty accounts for nearly 63% world wide, reaching 90% of some countries like Bangladesh and 65% to 90% in sub Saharan Africa. Although the economic growth has led to improvements in living standards, it has often been affected negatively to environment and the society particularly in developing countries. The increasing negative effect on this situation is so far-reaching as to make poverty itself a major global curse.

Parallel to Market oriented free economic system another two important concepts were developed from the mid 20th century. Those are the concepts of Human Rights and the concept of Sustainable Development. The concept of sustainable development enhanced gradually with mixing the fundamentals of human rights such as right to food, right to education, and right to prevent health. Development of international law particularly after Second World War drew the attention over social development, economical development and environment protection through international conventions, and other international legal instruments. These legal instruments broadly discussed the responsibility of the society, both the well being of the people and to protect the world for future. That is the essence of sustainable development.

Market based economy on the objective of profit maximization does not draw reservations to environmental, social, economical and other related problems. The concept of sustainable development mainly focused the well being of the society and protection of environment. Therefore in the modern world the market oriented free trade policies operate on one side while sustainable development policies also should be implemented particularly in developing countries. Market oriented free economic policies and sustainable development are two different concepts which are two key concepts in developing process of the present society. But the problem is in practice these two different concepts are confronting each other fundamentally and practically. Thus, it is essential to apply strategy should be compatible enough to adopt both these concepts

together in the development process. In this event the question would be what are the instruments to be used and what mechanism that needs to be applied to amalgamate these two concepts.

The challenge of the present world is to implement these contradicting concepts simultaneously. Therefore the society must find out solutions to minimise the barriers to sustainable development and support economic development effectively as a primary responsibility for the present and the future.

During last six decades international law widely discussed social responsibilities of sustainable development and imposed laws, concepts and principals, to promote it with blessings of the civilize nations of the world. Therefore the most appropriate strategy is apply the international law as the mechanism and international conventions and legal principals as instruments to combine and implement, both these concepts of sustainable development and free market economy together for well being of the present and future generations.

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ABBREVIATIONS

ANCLS	United Nations Convention on the Law of the Sea
AIDS	Acquired immune deficiency syndrome
BOD	Bio-chemical Oxygen Demand
BOI	Board Of Investment
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPOL	Vienna Convention for the Protection of the Ozone Layer
CSD	Commission on Sustainable Development
EEZ	Exclusive Economic Zone
GATT	General Agreement on Tariffs and Trade
GCEC	Grater Colombo Economic Commission
GT	Grounded theory
HIV	Human Immunodeficiency Virus
ICEAC	International Court of Environmental Arbitration and
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICJ	International Court of Justice
ILO	International Labour Organization
IMF	International Monetary Fund
ISD	Indicators of Sustainable Development
MAEs	Multilateral Environmental Agreements
NGO	Non Governmental organizations
PPF	Production Possibilities Frontier
UDH	Universal declaration Of Human rights
UMC	Upper Mahaweli Catchment
UNEP	United Nations Environmental Programme
UNICEF	United Nations Children's Fund
UV	Ultraviolet Radiation
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION

International trade has become as one of the main significant driving tool of economic growth for the past sixty years. Integration of world trade has proven a powerful instrument to promote economic growth particularly in developing countries and many developing countries transformed to free market economy during last six decades. Contrary social economical and environmental problems also rising all over the world particularly in developing countries and there is significant adverse impact for well being of the people. The concept of sustainable development mainly focused the well being of the society and protection of environment therefore it has become a much popular concept in the development process from the latter part of 20th century.

In this research mainly I focused three existing components of the development process: Concept of the Sustainable Development and Social responsibilities in practice; sustainable development within the context of free market economy in developing countries; and roll of the international law in sustainable development process.

To reach the sustainable development goals firstly, it is necessary to understand the objectives and indicators. Sustainable development indicators are essential in variety of ways for planning, implementation and decision making affairs in development process. Therefore this study focused to identify objectives, themes and the indicators of sustainable development.

Sustainable development cannot be limited to a particular geographical area or a political jurisdiction because it overlaps and exceeds the political and geographical boundaries. Thus in the process of achieving the sustainable development goals social responsibilities among the societies and within the societies are most important dimension. Since, further I did an analytical study to identify the commonly accepted social responsibilities in sustainable development. There was a significant development in international law during last six decades and widely it discussed all aspects of development through many legal instruments, hence did an analytical study in international law to.

Including many developing countries most of the societies transformed to free market economy from the mid 20th century and it has become the development trend of the developed and many developing countries today. Therefore this research focused to analyse the economic development within the context of free market economy particularly in developing countries. In this event I drew my attention on sustainable development of Sri Lanka because being a

developing country Sri Lanka has been gained more than 30 years experience in free market economy from 1977 up to now.

Although both of these concepts, Free market economy and Sustainable development are equally important in development process, but when these two concepts implement simultaneously there is a conflict occur frequently. Because sustainable development mainly concern to provide the basic needs of the people and while doing that protect the environment and natural resources for future generations and free market economy mainly concerns the higher profits on production. Therefore these two contradictory objectives confront frequently.

In the development process the main social responsibility of the present society is to find a mechanism to reach the sustainable development goals within the context of free market economy, other wise concept of sustainable development will be limited for an ideology. To make it realty it is an urgent an important to find a useful and common mechanism. The mechanism must be a universally accepted one because sustainable development cannot be restricted to the geographical boundaries or political jurisdictions; it is a universal need and it should be the common intention of societies.

During last six decades development of international law has drew a significant attention over social development, economical development and the environment protection through many legal instruments which recognises universally by the civilized nations. Not only that but also for development of free market economic policies (General Agreement of Trade and Tariff and World Trade Organization) and the concept of sustainable development (World Environment Commission of 1987) international law have done a tremendous contribution through many legal instruments. Therefore this study mainly focused to identify how far international law can be used as the mechanism to implement the social responsibilities of sustainable development within the context of free market economy to reach sustainable development goals.

CHAPTER 2

PRESENT STATE OF THE PROBLEMS –

PART ONE

2.1. Theory and practise of sustainable development

In this research before analyse the social responsibilities of sustainable development concerned to analyse the development of the concept of sustainable development and its objectives. Further made an effort to identify the common indicators of sustainable development which enable to apply for every society in development process. Apart from that the study launched to understand the imperatives which influence the development process strongly to reach sustainable development goals.

2.1.1. Sustainable development

The concept of sustainable development is not a new phenomenon. There were many ethics, traditions, customs and practices applied by the ancient societies for sustainability. But among those there were many disparities from society to society, time to time and place to place. The key factor is that there was no uniformity and common acceptance for those traditions or the practices. The concept of sustainable development is a fast gathering momentum and has now become part of accepted International Law and a principle becomes absorbed into International Law in a variety of ways. There is now a sufficient body of treaties, declarations and recognitions in international practice for sustainable development to be accepted as a recognised legal concept by societies. Not only the societies but also International financial institutions such as the World Bank, the Asian Development Bank, International Monetary Fund and the Multilateral Investment Guarantee Agencies have accepted the concept of sustainable development. Therefore, the recognition of the concept of sustainable development is universal.

2.1.2. The definition of sustainable development

For the first time in the history in 1987 the United Nations (UN) World Commission on Environment and Development emphasized a firm definition for the concept of sustainable development and which has accepted by civilized

nations as a universally recognized concept. It was emphasized, that “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [1]. It contains two key concepts:

- The concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given;
- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

This definition has been described two key obligations in development process. One is to provide the needs for the people to improve the living standard for their well being. (The living standard means that go beyond the basic minimum).The other one is, while providing the needs to the people protects the environment and natural resources for future generation.

In 1995 the UN World Summit for Social Development in Copenhagen, enhanced that definition and it was emphasized “economic development, social development and environmental protection are components of sustainable development which is the framework to achieve a higher quality of life for all people” (Section 6) [2]. According to those definitions the most appropriate legitimate definition for Sustainable development is “ensure the well-being of the human person by integrating social development, economic development, and conservation of resources and protection of environment”. Thus the concept of Sustainable development is a delicate balancing of competing interests. It represents the balance between the concept of development and the concept of environmental protection.

2.1.3. Elements of sustainable development

The concept of sustainable development coherent with two key elements. Those two elements are *Common Interest* and *Strategic Imperatives* (Section 16-26) [1].

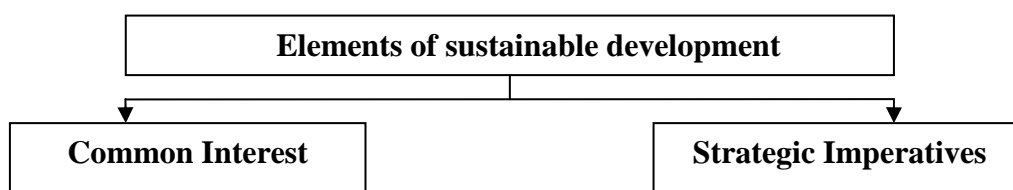


Figure 01: Elements of sustainable development

- ***Common Interest***

Every individual must have a general understanding why the society needs sustainable development? That understanding should develop as a common interest of the society and among the societies. Ecological interactions do not respect the boundaries of individual ownership and political jurisdiction. For an example: Using pesticides in farms of one society can be effected to the neighbouring farms and farms in neighbouring societies. Therefore to overcome adverse impact of one person's action to other person, society must have common interest to avoid such harmful situations. In such occasions, effective participation within the society and among the societies is most important in the decision-making processes which will help to articulate and effectively enforce the common interest to protect the society as well as protect the environment (Sec: 16-26) [1].

- ***Strategic Imperatives***

To reach sustainable development goals, societies must quickly design strategies that will allow society to move from often destructive, and promote the process of economic growth. This will require policy changes in all nations with respect to both their own development and to their impacts on the society and other nation's development possibilities. Strategic imperatives can be categorized as follows (Section 29-80) [1]:

- Reviving growth;
- Changing the quality of Growth;
- Meeting essential needs;
- Ensuring a sustainable level of population;
- Conserving and enhancing the resource base;
- Reorient technology and managing risk;
- Merging environment and economics in decision making.

Reviving growth: Growth must be revived in developing countries because there is a direct links between economic growth, the alleviation of poverty, and environmental issues which operate most directly in development process.

Changing the quality of growth: Sustainable development requires a change in the content of growth, to make it less Material and energy-intensive and more equitable in its impact. These changes are required in all countries as part of a package of measures to maintain the stock of ecological capital, to improve the distribution of income, and to reduce the degree of vulnerability to economic crises.

Meeting essential needs: Identify the inadequate basic needs and socio-economic programs should encourage giving priority to produce essential needs.

Ensuring sustainable level of population: Sustainable development can be pursued more easily when population size is stabilized at a level consistent with the productive capacity of the ecosystem.

Conserving and enhancing the resource base: Particularly conservation of agricultural resources is an urgent task because in many parts of the world cultivation has already been extended to marginal lands. Fishery and forestry resources have been over exploited. If needs are to be met on a sustainable basis, the earth's natural resource base must be conserved and enhanced to meet the needs of growing populations.

Reorient technology and managing risk: Improve the capacity for technological innovation needs to respond more effectively to the challenges of sustainable development and that orientation of technology development must be changed to pay greater attention to environmental factors. Technologies are needed to pay greater attention to produce 'social goods' such as improved air quality and purified water.

Merging environment and economics in decision making: Development interactions through trade, finance, investment, and travel will also grow and enhanced economic and ecological interdependence. Hence in the future, even more than now, sustainable development requires the unification of economics and ecology in development. Thus the integration of economic and ecological factors into the law and into decision making systems within countries has to be matched at the international level.

2.1.4. Objectives of sustainable developments

The Objectives of sustainable development leads to build a sound sustainable development programme particularly in planning and implementation. Hence in this research drew a serious attention to identify the commonly accepted objectives of sustainable development. The identified sustainable development objectives are (Sec: 4-11) [1]:

- Requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life;
- Requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire;

- Requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all;
- Sustainable development should be pursued if demographic developments are in harmony with the changing productive potential of the ecosystem;
- Society should not over exploit the resources when they compromise their ability to meet the essential needs of the people;
- At a minimum, sustainable development must not endanger the natural systems that support life on Earth, the atmosphere, the waters, the soils, and the living beings;
- Maximum sustainable yield must be defined after taking wide effects and impacts of environment exploitation into account;
- Requires that the rate of depletion of non renewable resources should foreclose as few future options as possible;
- Requires the conservation of plant and animal species;
- Requires that the adverse impacts on the quality of air, water and other natural elements are minimized so as to sustain the ecosystem's overall integrity;
- Sustainability requires the world must ensure equitable access to the constrained resource and reorient technological efforts to relieve the pressure.

In essence, objective of sustainable development is a process of change in which the exploitation of resources, the direction of investments, the reorientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.

2.1.5. Indicators of sustainable development

Indicators can provide key guidance for decision-making in a variety of ways[3]:

- They can translate physical and social science knowledge into manageable units of information that can facilitate the planning, implementation and decision-making process;
- They can help to measure and calibrate progress towards sustainable development goals;
- They can provide an early warning, sounding the alarm in time to prevent economic, social and environmental damage;
- They are also important tools to communicate ideas, thoughts and values because we measure what we value, and value what we measure.

In sustainable development, everyone is a user and a provider of information from an overall perspective. That includes data, information, appropriately packaged experience and knowledge. Developing the sustainable development indicators at the national, regional and international level is useful for all countries in decision making, planning and implementation of development process particularly in the development process of developing countries.

In 1995 UN Commission on Sustainable Development (CSD) referred this situation and established the Work programme on the Indicators of Sustainable Development (ISD) with the corporation of Non Governmental organizations (NGO), Governments and the International Organizations. The main objective of the CSD Work Programme was to make indicators of sustainable development accessible to decision-makers at the national level by defining them, elucidating their methodologies and providing training and other capacity building activities.

2.1.6. Sustainable development categories

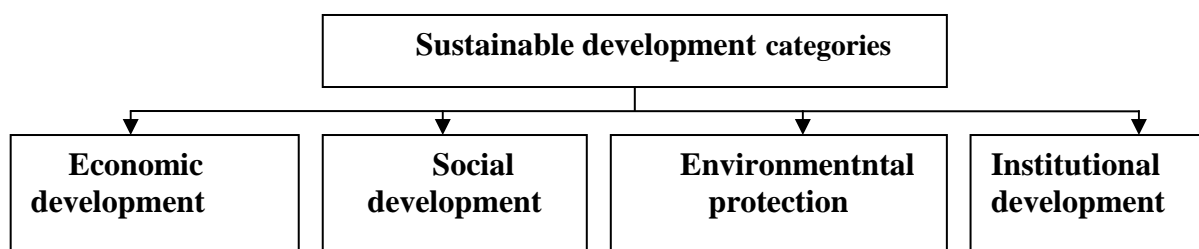


Figure 02: Sustainable development categories

The report of the CSD work programme on ISD provided a detailed description of key sustainable development themes and sub-themes and the CSD approach to the development of such indicators for the use in the decision-making processes at the national level. This report also finalizes the presentation of the proposed framework and the core set of indicators which are made available to countries to assist them in their efforts to measure progress towards sustainable development. According to the CSD report, sustainable development indicators (SDI) are categorized under four primary dimensions of Economical, Social, and Environmental and institutional.

Further these categories were classified according to the following:

Table 01: Social development indicators

Theme	Sub theme	Indicator
Equity	Poverty	Percent of Population Living below Poverty Line
		Index of Income Inequality
		Unemployment Rate
	Gender Equality	Ratio of Average Female Wage to Male Wage
Health	Nutritional Status	Nutritional Status of Children
	Mortality	Mortality Rate Under 5 Years Old
		Life Expectancy at Birth
	Sanitation	Percent of Population with Adequate Sewage Disposal Facilities
	Drinking Water	Population with Access to Safe Drinking Water
	Healthcare Delivery	Percent of Population with Access to Primary Health Care Facilities
		Immunization Against Infectious Childhood Diseases
Contraceptive Prevalence Rate		
Education	Education Level	Children Reaching Grade 5 of Primary Education
		Adult Secondary Education Achievement Level
	Literacy	Adult Literacy Rate
Housing	Living Conditions	Floor Area per Person
Security	Crime	Number of Recorded Crimes per 100,000 Population
Population	Population Change	Population Growth Rate
		Population of Urban Formal and Informal Settlements

Sources: (CSD) Work Programme on Indicators of Sustainable Development (1995)

Table 02: Economic development indicators

Theme	Sub theme	Indicators
Economic Structure	Trade	Investment Share in GDP
		Balance of Trade in Goods and Services
	Financial Status	Debt to GNP Ratio
		Total ODA Given or Received as a Percent of GNP
Consumption and Production Patterns	Material Consumption	Intensity of Material Use
	Energy Use	Annual Energy Consumption per Capita
		Share of Consumption of Renewable Energy Resources
		Intensity of Energy Use
	Waste Generation and Management	Generation of Industrial and Municipal Solid Waste
		Generation of Hazardous Waste
		Generation of Radioactive Waste
		Waste Recycling and Reuse
	Transportation	Distance Travelled per Capita by Mode of Transport

Sources: (CSD) Work Programme on Indicators of Sustainable Development (1995)

Table 03: Institutional development indicators

Theme	Sub theme	Indicator
Institutional Framework	Strategic Implementation of SD	National Sustainable Development Strategy
	International Cooperation	Implementation of Ratified Global Agreements
Institutional Capacity	Information Access	Number of Internet Subscribers per 1000 Inhabitants
	Communication Infrastructure	Main Telephone Lines per 1000 Inhabitants
	Science and Technology	Expenditure on Research and Development as a Percent of GDP
	Disaster Preparedness and Response	Economic and Human Loss Due to Natural Disasters

Sources: (CSD) Work Programme on Indicators of Sustainable Development-1995

Table 04: Environmental protection indicators

Theme	Sub Theme	Indicator
Atmosphere	Climate Change	Emissions of Greenhouse Gases
	Ozone Layer Depletion	Consumption of Ozone Depleting Substances
	Air Quality	Ambient Concentration of Air Pollutants in Urban Areas
Land	Agriculture	Arable and Permanent Crop Land Area
		Use of Fertilizers
		Use of Agricultural Pesticides
	Forests	Forest Area as a Percent of Land Area
		Wood Harvesting Intensity
	Desertification	Land Affected by Desertification
Urbanization	Area of Urban Formal and Informal Settlements	
Oceans, Seas and Coasts	Coastal Zone	Algae Concentration in Coastal Waters
		Percent of Total Population Living in Coastal Areas
	Fisheries	Annual Catch by Major Species
	Water Quantity	Annual Withdrawal of Ground and Surface Water as a Percent of Total Available Water
		Water Quality
Biodiversity	Ecosystem	Area of Selected Key Ecosystems
		Protected Area as a % of Total Area
	Species	Abundance of Selected Key Species

Sources: (CSD) Work Programme on Indicators of Sustainable Development (1995)

As a result of this final framework, 15 themes 38 sub-themes and 58 indicators has been developed under four primary dimensions of Economical, Social, and Environmental and institutional to guide common national indicator.

2.1.7. Considerations of sustainable development indicators

This organizational framework was an important starting point for identification and selection of sustainable development indicators. In essence, the rationale for the framework is to better assist national policy decision-making and performance measurements. The framework has been developed to address the following considerations [3]:

- **Future risks:** The framework becomes a proactive tool to assist decision-making especially where quantitative thresholds are known.

- **Correlation between themes:** Attempted to reflect the connections and correlation between dimensions, themes, and sub-themes of sustainable development.
- **Sustainability goals:** It should implicitly reflect the goals of sustainable development to advance social and institutional development, to maintain ecological integrity and to ensure economic prosperity.
- **Basic societal needs:** Such goals echo provide human needs related to food, water, shelter, security, health, education, and good governance.

Through CSD international community has established more specific benchmarks and targets for many of the themes and sub-themes in sustainable development indicators.

2.2. Imperative practices of sustainable development

2.2.1 Capital stocks management

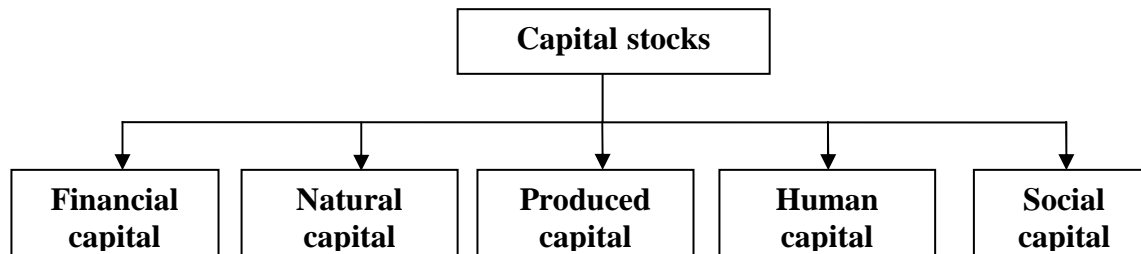


Figure 03: Capital stocks

The concept of ‘capital stocks’ as derived from economics and describes development that take place through the services and outputs provided by capital. Thus capital stock must have the potential to produce something that is economically desirable. In the development process capital stocks should manage efficiently to reach the sustainable development goals otherwise the societies have to face adverse consequences. The concept of capital has a number of different meanings. Neva R. Goodwin of Global Development and Environment Institute describes it is useful to differentiate between five kinds of capital. All capitals are stocks that have the capacity to produce flows of economically desirable outputs and society should takes good care of all its capitals: **Financial**, **Natural**, **Human**, **Social** and **Built capital** [4] because that

is the essential requirement for the produce goods and services and in order to continually improves the quality of life of all its inhabitants. Since efficiently and properly manage the capital stocks is an essential requirement in sustainable development. According to Neva R. Goodwin of Global Development and Environment Institute five capitals are describes below.

Financial capital: Money can be regarded as a capital stock if it will be invested in some activity that produces something for money. Thus financial capital refers to the money which invested to businesses to purchase real capital such as buildings, machinery, tools, raw materials, equipment etc, for producing goods and services [5] Furthermore, financial capital, is any liquid medium or mechanism that represents wealth, or other styles of capital. It is, however, usually purchasing power in the form of money available for the production.

Natural capital: Natural capital consists of all resources that we take out of nature and use, either as raw material or as part of a production process. The end result is either a finished product, waste material or both. Further it provides a wide variety of valuable ecosystem services including flood control, climate stabilization, maintenance of soil fertility, and even the beauty [6]. Healthy ecosystems make very significant economic contributions, but often in ways that transcend conventional accounting from which the human economy takes its materials and energy. The human economy uses many kinds of throughput streams, each associated with natural capital. Natural capital is being used unsustainably if sources are declining or sinks are increasing.

Produce capital: Produced capital is, specifically, physical assets that are generated by applying human productive activities to natural capital, and that are used to provide a flow of goods or services [4]. Including roads, communication lines and all kinds of infrastructure, as well as factories, buildings and machines, tools and equipments which use to produce economical goods and services are produce capital.

Human capital: The base of human capital is the population, including its age and gender structure. It is a various kinds of physical capital which refers to the productive capacities of an individual, both inherited and acquired characteristics and capabilities. All of these aspects of human capital have to be created and enhanced through education, and other aspects of life experience. These characteristics and capabilities depend not only on the knowledge, education, training, and skills. They also include useful behavioural habits as well as the level of energy and physical and mental health [4]. Primarily Human capital refers to the stock of skills and knowledge embodied in the ability to perform labour so as to produce economic value. The word "labour" is often used to refer the flow of effort, skill, and knowledge that humans directly provide as inputs into productive activities.

Social capital: Social capital is the quality and quantity of relationships, networks, and norms among people and it is most controversial and the hardest to measure. Social capital is most often used to refer to characteristics of a society that encourage cooperation among groups of people. Economically it refers to stock of trust, mutual understanding, shared values and socially held knowledge that facilitates the social coordination of economic activity [4]. The economic idea is connections between individuals and entities that can be economically valuable.

2.2.2. Sustainable production

To reach sustainable development an essential component is produce sustainable production (goods and services). In development process there are certain principals and methods have developed to make a sustainable production:

- Production efficiency;
- Production effectiveness; and
- Cleaner product is important principals and methods to reach sustainable productivity. In practice it is essential to combine them to form a unified system.

Production efficiency: measures whether the economy is producing required quality products as much as possible without wasting precious resources. Theoretically, production efficiency will include all of the points along the production possibility frontier (PPF) [7]. Three main out comes of in production efficiency:

- Optimum production;
- Minimize the resources; and
- Minimise the cost, which leads the production process to reach sustainable development.

Production effectiveness: also important as efficiency in production process to reach sustainable productivity [8] and it consists of few factors:

- Makes the best use of available resources;
- Can be relied upon to deliver the required results;
- Supports the human factors in the context; and
- Supports and sustains the overall purpose. The point here is that efficiency is neither the same as effectiveness, nor separate from it.

Cleaner production: is a preventive strategy that aims at promoting the use and development of [9]:

- Cleaner processes;
- Cleaner products; and
- Cleaner services. With the aim to increase the efficiency and limit the risks for humans as well as for the environment.

Therefore the concepts of production efficiency, production effectiveness and cleaner product should combine in production process to reach sustainable productivity. When I did the analytical study of them it was identified there are five essential requirements to reach production sustainability.

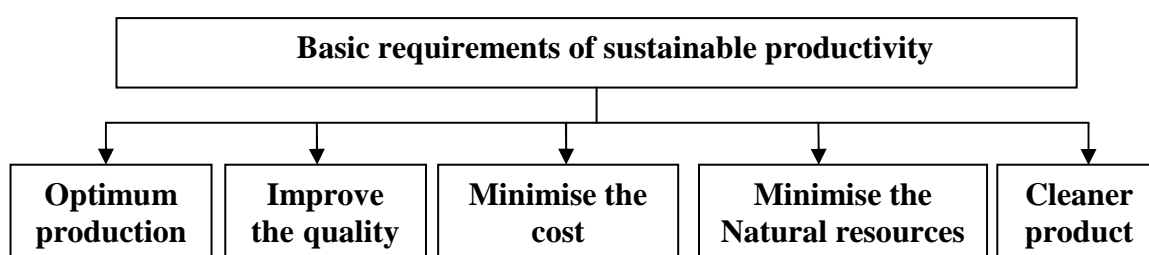


Figure 04: Basic requirements for sustainable productivity

Optimum production: Sustainable development requires meeting the basic needs of all for a better life. Therefore should apply all strategies to get the optimum production on limited production factors.

Minimise the natural resources: Conservation of natural resources is essential to protect the eco system and sustainable environment. Not only that but also it should protect resources to meet the needs of future generation. Thus it is essential to minimise the renewable and non renewable resources in production process.

Minimum cost: Less production and increasing prices of needs are major barriers for provide basic needs for affordable prices particularly in developing countries. Thus minimise the cost of the production will provides the needs for affordable prices to improve the living standard.

Improve the Quality: United Nation Environment Programme defines sustainable consumption as “the use of services and related products which respond to basic needs and bring a better quality of life”. Article 4 (1) (a), of the International Code of Conduct on the Human Right to Adequate Food in September 1997, emphasized “the availability of food, free from adverse substances and culturally acceptable, in a *quantity* and *quality* which will satisfy the nutritional and dietary needs. Further it describes the real meaning of the

Quality of the food is “it should cover overall nutritional needs in terms of energy and it should provide all the essential nutrients, including micronutrients such as vitamins and iodine and food should be safe, last from free of toxic elements and contaminants and taste and texture” [11] But the quality is not limited only for food. It totally covers all consumptions according to use of them.

Cleaner production: High levels of productive activity can endanger the environment and increase the pressure on resources. Thus society should develop strategies, plans and programs for the conservation of resources protect the environment and sustainable use of biological diversity. Cleaner production is a preventive strategy that aims at promoting the use and development of cleaner processes, products and services with the aim to increase the efficiency and limit the risks for humans as well as for the environment. In 1997 **International Declaration on Cleaner Production** was adopted by the United Nations Environmental Programme (UNEP) and objective of the Declaration is to support the existing and initiate new Cleaner Production activities. The Declaration includes the commitment to use and promote a preventive cleaner production strategy to reach sustainable development goals. [9].

CHAPTER 3

RESENT STATE OF THE PROBLEMS –

PART TWO

3.1. Free market economy

Including most of the developed and developing countries the present Global economic development trend based on the concept of Market oriented free economy. Parallel to that concentration on the sustainable development also has become key component of development process. This chapter concerned the consequences in practise of these two concepts simultaneously.

3.1.1. Concept of free market economy

The concept of market economy was firstly introduced by Adam Smith in his text of “Wealth of nation” in 1776. Logically he described the abolition of government intervention in economic matters is essential to develop the national economy on macro level. Smith was not advocating a social policy but fairly was describing an observed economic reality where buyers and sellers are allowed to transact freely based on a mutual agreement on price without any intervention of the state or any other organization. He apparently used the phrase “invisible hand” and argued the ability of the market to correct the disastrous situations with no intervention of the part of government or other organizations. Technically this means that the producer needs to decide what to produce, how much produce, how much charge from customers for those goods, what to pay employees, etc., and not the government. According to Smith if a product shortage occur in market, that product price in the market would rise, creating incentive for its production and a reduction in its consumption, eventually fulfil the shortage. The increased competition among manufacturers and increased supply would also lower the price of the product to its production cost plus a small profit. These decisions in a free-market economy are influenced by the pressures of competition, supply, and demand [13].

The term free market economy primarily means a system where the buyers and sellers are solely responsible for the choices they make. In a way, free market gives the absolute power to prices to determine the allocation and distribution of goods and services. These prices, in turn, are fixed by the forces of supply and demand of a respective commodity.

3.1.2. Development of free trade

Today the concept of free market economy is applying in development process as a development mechanism by the civilized nations not only just an economic concept but also as a recognised legitimate development theory by the international law. The *General Agreement on Tariffs and Trade (GATT) in 1947* influenced to expand the concept of free market economy through international trade among the societies globally. GATT provides a set of rules and principles that are committed to the liberalization of trade between member nations. The agreement was designed to provide an international forum that encouraged free trade between member states by regulating and reducing tariffs on traded goods and by providing a common mechanism for to resolve trade disputes.

GATT institutional framework signed in 1948 by 23 nations, for the purposes of fostering multilateral trade agreements among members but today membership includes more than 110 countries. The World Trade Organization (WTO) replaced the General Agreement on Tariffs and Trade (GATT) in January 1995 at the Uruguay round conference. WTO not only governs trade of goods, but also services and foreign direct investment. The Uruguay Round of trade negotiations made a significant contribution to the world trading system on two fronts: *improving market access* and *bringing international trade rules* [14].

A basic tenet of GATT is the most-favoured nation principle, which allows every nation to get the best contract terms from any single nation within the framework. Compared to GATT, the WTO is much more powerful international trade because of its institutional foundation and its dispute settlement system. Development of the international trade under GATT significantly influenced the developing countries to transform to liberal economies during last six decades with the blessings of international law.

Development of the world trade influenced the economic growth of developing countries and as group developing countries has become much more important in world trade. Developing countries now account for one-third of world trade, up from about a quarter in the early 1970s, and many have substantially increased their exports of manufactures and services relative to traditional commodity exports. The share of manufactures in developing country exports has risen to 80% [15] in globally and the progress has been very impressive for a number of developing countries and has become successful participants in global trade and attracted the bulk of foreign direct investment.

3.1.3. Existing issues under free market economy

Although transformed to liberal economy and development of the international trade indicated substantial development in societies but at present globally millions of people are unable to enjoy the outcome of the economical and social development and suffering lack of basic needs and environmental issues. In August 2008, the World Bank presented a major overhaul to their estimates of global poverty, incorporating what they described as better and new data. According to the World Bank statistics [18]:

- The World Bank's long-held estimate of the number of people living on the equivalent of \$1 a day has now been changed to \$1.25 a day.
- At a poverty line of \$1.25 a day, the revised estimates find 1.4 billion people live at this poverty line or below.
- This is more than the previous estimate of 984 million with the older measure of a \$1 a day in 2004. In 1981, the estimated number of poor was also raised upward, from 1.5 billion to 1.9 billion.

The global issues organisation emphasizes [18]:

- According to United Nations Children's Fund (UNICEF), 26,500-30,000 children die each day due to poverty. Around 27-28% of all children in developing countries are estimated to be underweight or stunted;
- In the Some 1.8 million child deaths each year as a result of diarrhoea. Close to half of all people in developing countries suffering at any given time from a health problem caused by water and sanitation deficits;
- Number of children in the world 2.2 billion and number in poverty 1 billion (every second child). For the 1.9 billion children from the developing world, there are 640 million without adequate shelter (1in 3), 400 million with no access to safe water (1in 5), 270 million with no access to health services (1in 7);
- About 72 million children of primary school age in the developing world were not in school in 2005; 57% of them were girls;
- Worldwide, 10.6 million died in 2003 before they reached the age of 5 and 1.4 million die each year from lack of access to safe drinking water and adequate sanitation. Worldwide, 2.2 million children die each year because they are not immunized. 15 million children orphaned due to Human Immunodeficiency Virus (HIV)/ Acquired immune deficiency syndrome (AIDS);
- Nearly a billion people entered the 21st century unable to read a book or sign their names;
- In 2005, The poorest 10% accounted for just 0.5% and the wealthiest 10% accounted for 59% of all the consumption;

- Infectious diseases continue to blight the lives of the poor across the world. An estimated 40 million people are living with HIV/AIDS, with 3 million deaths in 2004;
- Every year there are 350–500 million cases of malaria, with 1 million fatalities. Africa accounts for 90 percent of malarial deaths and African children account for over 80 percent of malaria victims;
- Water problems affect half of the world population. Some 1.1 billion people in developing countries have inadequate access to water, and 2.6 billion lack of basic sanitation. Almost two in three people lacking access to clean water.
- More than 660 million people without sanitation;
- 1.8 billion People who have access to a water source within 1 kilometre, but not in their house or yard, consume around 20 litres per day;
- Rural areas account for three in every four people of the world population are suffering from malnutrition;
- In 2005, one out of three urban dwellers (approximately 1 billion people) was living in slum conditions;
- In developing countries some 2.5 billion people are forced to rely on biomass—fuel wood, charcoal and animal dung—to meet their energy needs for cooking. In sub-Saharan Africa, over 80 percent of the population depends on traditional biomass for cooking;
- Indoor air pollution resulting from the use of solid fuels by poorer segments of society is a major killer. It claims the lives of 1.5 million people each year, more than half of them below the age of five that is 4000 deaths a day;
- According to the statistics of International Labour Organisation (ILO) [19]:
- Some 160 million workers were unemployed at the end of year 2000 all over the world. In Latin America and the Caribbean, the region described as hardest hit, the unemployment rate has risen to nearly 10%;
- Globally youth unemployment has reached 16 percent. Sub-Saharan Africa, unemployment rate of over 14 percent. In the Middle East and North Africa, overall economic conditions dramatically declined, with unemployment reaching double-digit levels in some countries;
- Developing regions will account for the majority of the world labour force by 2010, and 1 billion new jobs needed in the coming decade.

Therefore the biggest question is how the society achieves sustainable development, in development with in the context of free market economy.

CHAPTER 4

PRESENT STATE OF THE PROBLEMS –

PART THREE

4.1. Social responsibilities of sustainable development

Sustainable development cannot restrict or limit to one society or few societies. It should implement universally as a common necessity of humanism. Therefore to reach sustainable development goals a key requirement is develop the common interest between the societies and within the societies. Then only, the concept becomes a reality. In this event I mainly focused this research to identify the common social responsibilities and as well as the individual social responsibilities in sustainable development. During the last six decades there was a significant development in international law; many legal instruments addressed various aspects in development process including economical and social development and environment protection and impose laws concepts and principals. Importance of that is all civilize Nations accept, recognize and respect them. International law indicates social responsibilities towards sustainable development under two categories as:

- Human rights; and
- Social obligations.

In this event this study made a special attempt to identify the social responsibilities in international law.

4.1.1. Social responsibility on protection of plants

To protect the biodiversity it is necessary to secure common and effective action to prevent the spread and introduction of pests of plants and plant products and to promote measures for their control. Whether introduced deliberately or unintentionally, many of these once established may out-compete native species and take over their new environment. Therefore Governments should recognize the usefulness of international co-operation in controlling pests and diseases of plants and plant products and in preventing their introduction and spread across national boundaries, and desiring to ensure close co-ordination of measures directed to these ends. *International Plant Protection Convention* (IPPC) provides a framework and forum for international co-operation, harmonization and technical exchange in collaboration with regional

and national plant protection organizations to protect the biodiversity and sustain the environment (IPPC Preamble) [20].

International Plant Protection Convention in (Rome) 1951 emphasised Government shall make provision, as soon as possible and to the best of its ability, for an official plant protection organization, with the following main functions (Article V.1-2) [20]:

- The inspection of growing plants, of areas under cultivation.
- The inspection of consignments of plants and plant products moving in international traffic particularly with the object of preventing the dissemination across national boundaries of pests and diseases of plants and plant products;
- The disinfestations or disinfection of consignments of plants and plant products moving in international traffic, and their containers, storage places, or transportation facilities of all kinds employed;
- The issue of certificates relating to phytosanitary condition and origin of consignments of plants and plant products;
- The distribution of information within the country regarding the pests and diseases of plants and plant products and the means of their prevention and control;
- Research and investigation in the field of plant protection;

Government shall make arrangements for the issue of phytosanitary certificates to accord with the plant protection regulations of other contracting Governments, and in conformity with the following provisions [20]:

- Inspection shall be carried out and certificate issued only by or under the authority of technically qualified and duly authorized officers and in such circumstances and with such knowledge and information available to those officers that the authorities of importing countries may accept such certificates with confidence as dependable documents;
- Each certificate covering materials intended for planting or propagation shall be as worded in the annex to the convention and shall include such additional declarations as may be required by the importing country. The model certificate may also be used for other plants or plant products where appropriate and not inconsistent with the requirements of the importing country;
- Governments undertake not to require consignments of plants intended for planting or propagation imported into its territories to be accompanied by phytosanitary.

4.1.2. Social responsibility on protection of wild fauna and flora

Wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come as the ever-growing value of wild fauna and flora from aesthetic, scientific, cultural, recreational and economic points of view. Protect the fauna and flora is a prime necessity of environment sustainability. Peoples and States are should be the best protectors of their own wild fauna and flora. In addition, that international co-operation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade.

The Fundamental Principles of *Convention on International Trade in Endangered Species of Wild Fauna and Flora in (United States) 1973 (CITES)* are described in Article 2: It is defines the criteria for listing under the three appendices [21]:

- Appendix I (one) is reserved for those species that are threatened with extinction that are now, or may become, further endangered by international trade. As such, trade in those species is prohibited for all parties, although there are some exceptions.
- Species listed on Appendix II fall into two categories. This includes those that are not necessarily threatened with extinction by trade, but may become so unless conservation measures are taken, and those that may look like other species affected by trade and listed on the appendix.
- Appendix III includes species that are protected by individual States within their respective jurisdictions for the purposes of preventing or restricting exploitation, and as needing the cooperation of other parties in the control of trade.

Articles 3 - 5 of the CITES provide broad legal guidelines under which operates to regulate trade in specimen or parts/derivatives there from, and defines the role of the Scientific and Management Authorities that all States are required to have [21]. Articles 8 and 10 of CITES express obligate Parties to take enforcement measures, including confiscation and penalties for listed specimens illegally obtained, and it elaborates the legal roles of the Scientific and Management Authorities.

4.1.3. Social responsibility on protection on migratory species of wild animals

Migratory species of wild animals, although they represent a fraction of total biodiversity, are a significant portion of the world's genetic resources. They have evolved intricate inter relationships – in many cases still to be fully understood – with resident plant and animal species. Wild animals in their innumerable forms are an irreplaceable part of the earth's natural system which must be conserved for the good of mankind. Each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and, where utilized, is used wisely. The ever-growing value of wild animals is from environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic points of view. Those species of wild animals are migrating across or outside national jurisdictional boundaries. States must be the protectors of the migratory species of wild animals that live within or pass through their national jurisdictional boundaries. Conservation and effective management of migratory species of wild animals require the concerted action of all States within the national jurisdictional boundaries of which such species spend any part of their life cycle. The State parties have pledged to take measures for the protection and conservation of migratory species of wild animals, including their sustainable management.

The *United Nations Convention of Migratory Species of Wild Animals in Bonn 1979 (CMSWA)* encourages for regional agreements to protect the migratory species of wild animals. These agreements should include legally binding provisions on the protection, conservation and sustainable management of the species and should coordinate cooperation between the relevant states. The main obligation of the parties to the Convention of Migratory Species of Wild Animals is to adopt measures to conserve migratory species and their habitat.

Article II of the U.N. Convention of Migratory Species of Wild Animals, states that State parties [22]:

- Should promote, co-operate in and support research relating to migratory species;
- Shall endeavour to provide immediate protection for migratory species included in Appendix I of the convention;
- Shall endeavour to conclude agreements covering the conservation and management of migratory species included in Appendix II of the convention.

States have an obligation on species listed in Appendix I (Article V)[22]:

- To conserve and, where feasible and appropriate, restore those habitats that are of importance in removing the species from danger of extinction;
- To prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities that seriously impede or prevent the migration of the species;
- To the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species;
- Range states are also obligated to prohibit animals belonging to species listed in Appendix I from being taken from their home territories. Wild animal play a unique role as indicators for the interdependence between ecosystems and are especially vulnerable as a result of their long migrations. The flexible approach of the Convention of Migratory Species of Wild Animals has an appeal for countries that may wish to continue utilization of some migratory species.

4.1.4. Social responsibility on protection of wetlands

All over the world acceleration of degradation of lands leads for unsustainability of the societies. Wetlands play an essential part in the regulation of river flow through filtering pollutants they are spawning zones for some species of fish. They also provide a habitat for plants, insects, batrachians and birds. The present valleys and river beds were formed in the aftermath of the last glacial periods (erosion, deposits of sand and gravel) followed by a return to the present climate. Different types of features can be distinguished from the river bed carved out of the rock to alluvial valleys formed from a succession of deposits of gravel, fine sand and peat. The expanse of groundwater in these deposits when they are well developed can constitute a large reserve which absorbs the variations of water flow. Alluvial deposits act rather like sponges which absorb surplus water before releasing it later. In these alluvial areas part of the water follows the course of the river: this drainage can represent a large volume. This water has been filtered, has a more constant temperature and constitutes a reserve of good quality water. Wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable. The fundamental ecological functions of wetlands are to regulation of water regimes and as habitats supporting a characteristic flora and fauna, especially waterfowl. Protection of wet lands is a very important part of the protection of eco system and sustains the environment.

The *International Convention on Wetlands, (Ramsar Convention) in 1971* provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Considering the importance of wetlands now and in the future should be regarded as an international resource and the conservation of wetlands and their flora and fauna can be ensured by combining far-sighted national policies with co-ordinated international action. The convention emphasized (Article 2-4) [23]:

- States shall designate suitable wetlands within its territory for. The boundaries of each wetland shall be precisely described and also delimited on a map;
- Wetlands should be selected for the list on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology;
- States shall formulate and implement their planning so as to promote the conservation of the wetlands and as far as possible the wise use of wetlands in their territory;
- Its urgent national interest, demarcate or impose the boundaries of a wetland it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat;
- State shall promote the training of personnel competent in the fields of wetland research, management and development.

Ramsar convention calls upon states to recognize the interdependence of humans and their environment, and to consider the importance of the many ecological functions of wetlands, including flood control, nutrient cycling, and habitat for migratory wildlife and commercially important fish and suggests that wetland losses are irreparable because of their economic as well as scientific and recreational values. States are instructed to develop national policies to decrease wetland losses and to recognize that migratory waterfowl are important international resources because of their seasonal movements. The overall intent of Ramsar is to enhance national policies and international coordination for the conservation of both wetlands and waterfowl to reach sustainable development goals.

4.1.5. Social responsibility on protection of human environment

Proper environmental management is the key to avoiding the quarter of all preventable illnesses which are directly caused by environmental factors. The unsustainable environment negatively influences the health in many ways — through exposures to physical, chemical and biological risk factors, and through

related changes in behaviour in response to those factors. Thirteen million deaths annually are due to preventable environmental causes. Preventing environmental risk could save as many as four million lives a year, in children alone, mostly in developing countries wrongly or heedlessly applied, the same environment policies and practices can do incalculable harm to human beings and the human environment [24]. The natural growth of population continuously presents problems for the preservation of the environment, and adequate policies and measures should be adopted, as appropriate, to face these problems. To defend and improve the human environment for present and future generations has become an imperative goal for mankind a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of worldwide economic and social development. To achieve these sustainable environmental goals will demand the acceptance of responsibility by citizens and communities and by enterprises and institutions at every level, all sharing equitably in common efforts. Local and national governments will bear the greatest burden for large-scale environmental policy and action within their jurisdictions. International cooperation is also needed in order to raise resources to support particularly in developing countries in carrying out their responsibilities in this field.

Declaration of the United Nations Conference on the Human Environment in Stockholm 1972 emphasised many important social responsibilities in protection of human environment [25]:

- The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.
- The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved.
- Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.
- The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.
- The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems.
- States shall take all possible steps to prevent pollution of the seas.
- The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries.

- States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population.
- States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.
- States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.
- States shall ensure that international organizations play a coordinated, efficient and dynamic role for the protection and improvement of the environment.

The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic and social development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments. At present, human's capability to transform their surroundings, if used wisely, can bring to all peoples the benefits of sustainable development and the opportunity to enhance the quality of life.

4.1.6. Social responsibility on environment and development

The *Rio Declaration on Environment and Development in 1992* is a set of principles designed to commit governments to ensure environmental protection and responsible development and intended to be an Environmental Bill which, defining the rights of people to development, and social responsibilities to safeguard the common environment. The areas of discussion included in the Rio Declaration were:

- Promoting sustainable development through trade;
- Providing adequate financial resources to developing countries; and
- Encouraging macroeconomic policies supportive of both environment and development aspirations.

It established the "Precautionary principle" and the principle of "common but differentiated responsibilities". The Declaration recognizes that the only way to have long-term social and economic progress is to link it with environmental

protection and to establish equitable global partnerships between governments and key actors of civil society and the business sector [26].

The Declaration includes many progressive approaches such as the polluter pays principle (the polluter bears the costs of pollution) and the precautionary principle such as carry out environmental assessments to identify adverse impacts and eliminate any potential harms from a project before it is started. It advocates that today's development shall not undermine the resource base of future generations and that developed countries bear a special responsibility due to the pressure their societies. To that end Rio declaration emphasized following principles [28]:

- States have, in accordance with the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction;
- The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations;
- In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.
- The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries;
- States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command;
- States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply;
- States should cooperate to promote unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus;

- States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction;
- States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health;
- In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;
- National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment;
- States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith. Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.
- Peace, development and environmental protection are interdependent and indivisible.

The Rio Earth Summit laid the foundation for a new kind of global partnership to achieve sustainable development and lent impetus to search for a policy framework that would seek to promote both economic efficiency and environment improvement.

4.1.7. Social responsibility on waste management

Adverse effect of hazardous wastes and other wastes has grown considerably during last few decades globally, particularly in developing countries. In 1947, the worldwide generation of waste was about 5 million metric tons. By 1988 that figure had grown to over 300 million metric tons. Disposal of waste has become a major concern to both developed and developing countries today. The average cost of waste disposal is \$ 2,000 in 1988 per metric ton [27] .Over the

past few decades; developed nations have increasingly opted to ship their waste to developing countries. It was believed by both sides that agreeing on proper disposal methods was mutually beneficial from an economic standpoint; the developed world could dispose of its waste at a lower cost, while developing countries would benefit from the substantial revenue generated by waste disposal. Unfortunately, developing countries were often ill-equipped to dispose of the waste properly, leading to considerable environmental damage. Developing countries, desperate for hard currency, were also concerned that their environment was being destroyed by the garbage of the developed world. A compromise solution was needed to deal with the massive amount of hazardous waste generated every year. The main objective of the *Convention on the Control of Trans Boundary Movements of Hazardous Waste (Basel Convention) in 1989* is to protect countries from uncontrolled dumping of toxic wastes within their borders emanating from foreign sources. In addition, the Convention seeks to promote environmentally conscious disposal of wastes

Basel convention imposed many legal responsibilities on states for sustainability of the society. The states should [27]:

- Ensure the availability of adequate disposal facilities, for the environmentally sound management of hazardous wastes and other wastes;
- Ensure to take steps as necessary to prevent pollution from waste management and, if such pollution occurs, to minimize the consequences thereof for human health and the environment;
- Ensure that the wastes is reduced to the minimum consistent with the environmentally sound and efficient management and is conducted in a manner which will protect human health and the environment;
- Prevent the import of hazardous wastes and other wastes if it has reason to believe that the wastes in question will not be managed in an environmentally sound manner;
- Shall co-operate with each other in order to improve and achieve environmentally sound management of hazardous wastes and other wastes;

These are few general legal conditions as well as legal responsibilities in international law which generally effect on societies.

4.1.8. Social responsibility on protection of costal area and the sea

The oceans had long been subject to the freedom of-the-seas doctrine - a principle put forth in the seventeenth century essentially limiting national rights and jurisdiction over the oceans to a narrow belt of sea surrounding a nation's coastline. The remainder of the seas was proclaimed to be free to all and belonging to none. While this situation prevailed into the twentieth century, by

mid-century there was an impetus to extend national claims over offshore resources. There was a growing concern over the toll taken on coastal fish stocks by long-distance fishing fleets and over the threat of pollution and wastes from transport ships and oil tankers carrying noxious cargoes that plied sea routes across the globe. The hazard of pollution was ever present, threatening coastal resorts and all forms of ocean life. The navies of the maritime powers were competing to maintain a presence across the globe on the surface waters and even under the sea. A knot of claims in spreading pollution, competing demands for lucrative fish stocks in coastal waters, growing tension between coastal nations' rights to these resources, the prospects of a rich harvest of resources on the sea floor, the increased presence of maritime powers and the pressures of long-distance navigation are seemingly outdated, if not inherently conflicting, freedom-of-the-seas doctrine - all these were threatening to transform the oceans into another arena and exists instability [30]. The problems of ocean space are closely interrelated and need to be considered as a whole. With due regard for the sovereignty of all States, a legal order for the seas and oceans which will facilitate and promote the peaceful and sustainable uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and preservation of the marine environment. To achieve of these goals will contribute to the realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked.

The Convention of the Law of the Sea (UNCLS) solemnly declared inter alia that the area of the seabed and ocean floor and the subsoil thereof, beyond the limits of national jurisdiction, as well as its resources, are the common heritage of mankind shall be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States, whether coastal or land-locked, and taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence (Article 140) [28].

According to the United Nations Convention on the Law of the Sea in 1982 (UNCLS) emphasised the importance of protection the costal area, sea and the conservation of the living resources. To that end (Article 61) [28]:

- The coastal State shall determine the allowable catch of the living resources in its exclusive economic zone;
- The coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation;

- Such measures shall also be designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special requirements of developing States;
- In taking such measures, the coastal State shall take into consideration the effects on species associated with or dependent upon harvested;
- Species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened;
- Available scientific information, catch and fishing effort statistics and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organizations.
- Further Article 62 of the UNCLS [28] emphasized the utilization of the living sea resources as:
 - Coastal State shall promote the objective of optimum utilization of the living resources in the exclusive economic zone;
 - Coastal State shall determine its capacity to harvest the living resources of the exclusive economic zone;
 - In giving access to other States to its exclusive economic zone, the coastal State shall take into account all relevant factors, including, inter alia, the significance of the living resources of the area to the economy of the coastal State concerned and its other national interests;
 - Coastal States shall give due notice of conservation and management laws and regulations.

According to Article 193-195 of UNCLS, States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in order to protect and preserve the marine environment. To that end States shall take, individually or jointly as appropriate, all measures to prevent reduce and control pollution of the marine environment from any source and shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment. Those measures shall deal with all sources of pollution of the marine environment.

Article 196 of the UNCLS says, release of toxic, harmful or noxious substances, especially those is persistent, from land-based sources, from or through the atmosphere or by dumping;

- Pollution from vessels, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea;
- Pollution from installations and devices used in exploration or exploitation of the natural resources of the seabed and sub soil, in particular measures for

preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices.

- In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another and shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto.

To this end States shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment to reach sustainable development goals.

4.1.9. Social responsibility on protection of ozone layer

Human activity is by far the most prevalent and destructive source of ozone depletion, while threatening volcanic eruptions are less. Human activity, such as the release of various compounds containing chlorine or bromine, accounts for approximately 75 to 85 percent of ozone damage. Depletion of ozone layer from the Sun can be very damaging to many things on Earth. Ultra Ultraviolet Radiation UV are damaging to human health and wildlife particularly small plants and animals living in the sea called plankton. Plankton is not protected from the Sun's rays, which can penetrate water to a depth of many meters. Plankton forms the base of the ocean food chain. Prolonged exposure to the sun causes the sunburn which may develop into skin cancer. UV rays can damage certain crops, like rice, which many people in the world rely on for food. Finally, UV rays can damage paint, clothing and other materials. Any decrease in the amount of ozone in the ozone layer will increase the amount of UV rays reaching the Earth's surface, and worsen the impacts due to UV exposure. Measures to protect the ozone layer from modifications due to human activities require international co-operation and action, and should be based on relevant scientific and technical considerations [29]. It is need for further research and systematic observations to further develop scientific knowledge of the ozone layer and possible adverse effects resulting from its modification, determined to protect human health and the environment against adverse effects resulting from

modifications of the ozone layer and all civilized societies have an inalienable responsibility on that.

States shall take appropriate measures in accordance with the provisions of *Vienna Convention for the Protection of the Ozone Layer in 2001 (CPOL)* to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer. To this end the States shall [30]:

- Adopt appropriate legislative or administrative measures and co-operate in harmonizing appropriate policies to control, limit, reduce or prevent human activities under their jurisdiction or control should it be found that these activities have or are likely to have adverse effects resulting from modification or likely modification of the ozone layer;
- Co-operate by means of systematic observations, research and information exchange in order to better understand and assess the effects of human activities on the ozone layer and the effects on human health and the environment from modification of the ozone layer;
- Co-operate in the formulation of agreed measures, procedures and standards for the implementation of this Convention, with a view to the adoption of protocols and annexes;
- Co-operate with competent international bodies to implement effectively this Convention and protocols to which they are party;
- Undertake, as appropriate, to initiate and co-operate in, directly or through competent international bodies, the conduct of research and scientific assessments;
- Shall facilitate and encourage the exchange of scientific, technical, socio-economic, commercial and legal information relevant to this convention as further elaborated in annex II. Such information shall be supplied to bodies agreed upon by the Parties
- Consistent with their national laws, regulations and practices and taking into account in particular the needs of the developing countries, in promoting, directly or through competent international bodies, the development and transfer of technology and knowledge.
- Co-operate to carry out facilitation of the acquisition of alternative technologies by other parties, provision of information on alternative technologies and equipment, and supply of necessary equipment and facilities for research and systematic observations;
- Vienna convention in 2001 was established through a participatory process that brought government decision-makers, scientists and academics, industry partners and civil society to the table in search of a solution for the protection of a global sustainability.

4.1.10. Social responsibility on combat malnutrition

The high prevalence and increasing numbers of malnourished children less than five years of age in parts of Africa, Asia, Latin America and the Caribbean. Moreover, millions of people, mostly women and children, are deficient in one or more micronutrients: babies continue to be born mentally retarded as a result of iodine deficiency; children go blind and die of vitamin A deficiency; and enormous numbers of women and children are adversely affected by iron deficiency. Hundreds of millions of people also suffer from communicable and non-communicable diseases caused by contaminated food and water. At the same time, chronic non-communicable diseases related to excessive or unbalanced dietary intakes often lead to premature deaths in both developed and developing countries. Hunger and malnutrition are unacceptable in a world that has both the knowledge and the resources to end this human catastrophe, access to nutritionally adequate and safe food is a right of each individual. Globally there is enough food for all and that inequitable access is the main problem, bearing in mind the right to an adequate standard of living, including food, contained in the Universal Declaration of Human Rights. World declaration on Nutrition pledge to act in solidarity to ensure that freedom from hunger becomes a reality. Ensuring the development programs and policies lead to a sustainable improvement in human welfare, are mindful of the environment and are conducive to better nutrition and health for present and future generations. The multifunctional roles of agriculture, especially with regard to food security, nutrition, sustainable agriculture and the conservation of natural resources, are of particular importance in this context. It is an essential necessity implements coherent agriculture, animal husbandry, fisheries, food, nutrition, health, education, population, environmental, economic and social policies and programs to achieve and maintain balance between the population and available resources and between rural and urban areas to reach sustainable development goals.

The provisions of *The World Declaration on Nutrition and Plan of Action for Nutrition in -1992* emphasized the responsibility of the society to combat malnutrition and hunger and the guide lines to sustain the society. To achieve satisfactory nutritional status [31]:

- It is essential to ensure continued access to sufficient supplies of a variety of safe foods at affordable prices and of safe drinking-water;
- Nutritional well-being should be adopted as a key objective in human development and must be at the centre of development strategies, plans and priorities;
- Development policies and programs in developed and developing countries should be sustainable and environmentally sound and lead to improved nutrition and health for both present and future generations;

- Development of national early warning systems and the existence of emergency food reserves are essential to avoid famines;
- Achieving the objective of promoting the nutritional well-being of all its people as an integral part of its development policies, plans and programs in the short and long run;
- Agricultural and overall economic policies should seek to preserve and enhance the productive capacity of agriculture where appropriate, to foster the sustainable growth of agricultural productivity. Assuring access to adequate and safe food supplies, health care, education and related services can and must be achieved by using sustainable measures that are environmentally sound;
- Implement development strategies to reduce poverty and ensure better nutrition for all should be oriented towards achieving economic growth with equity, ensuring social justice and protecting and promoting the well-being of all, particularly of vulnerable groups;
- Infants, young children, pregnant and nursing women, disabled people and the elderly within poor households are the most nutritionally vulnerable groups. Priority must be given and should be concretely supported to protecting and promoting their nutritional well-being;
- People-focused policies for nutritional improvement must acknowledge the fact that people's own knowledge, practices and creativity are important driving forces for social change;
- Women are inherently entitled to adequate nutrition in their own right as individuals. They need to constantly balance their reproductive, nurturing, educational and economic roles, which are so important to the health and nutritional well-being of the household and of the entire community;
- It is also necessary to strengthen the teaching of nutrition in universities, medical and agricultural faculties, schools of health sciences and other concerned educational institutions;
- Countries should devise appropriate population policies, programs and family planning services to allow prospective parents to freely and knowingly determine the number of their children and the spacing of their births;
- Governments have a responsibility to protect and promote the health of their people and should formulate national policies, programs and services in accordance with the strategy for Health for all;
- Increased economic and technical cooperation among developed and developing countries is also essential to decrease the existing disparities in the use of food.

Nutrition is an input to and foundation for health and development. Interaction of infection and malnutrition is well-documented. Better nutrition means stronger immune systems, less illness and better health. Healthy

children learn better. Healthy people are stronger, are more productive and more able to create opportunities to gradually break the cycles of both poverty and hunger in a sustainable way. Better nutrition is a prime entry point to ending poverty and a milestone to achieving better quality of life and sustainable social development.

4.1.11. Social responsibility on food security

The right of everyone is to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger. Millions of people throughout the world, and particularly in developing countries, do not have enough food to meet their basic nutritional needs. This situation is unacceptable. Food supplies have increased substantially but constraints on access to food and continuing inadequacy of household and national incomes to purchase food, instability of supply and demand, as well as natural and man-made disasters, are barriers to reach basic food needs. The problems of hunger and food insecurity have global dimensions and are likely to persist, and even increase dramatically in some regions, unless urgent, determined and concerted action is taken, given the anticipated increase in the world's population and the stress on natural resources. A peaceful, stable and enabling political, social and economic environment is the essential foundation which will enable States to give adequate priority to food security and poverty eradication. Poverty is a major cause of food insecurity and sustainable progress in poverty eradication is critical to improve access to food. Conflict, terrorism, corruption and environmental degradation also contribute significantly to food insecurity. Increased food production, including staple food, must be undertaken. This should happen within the framework of sustainable management of natural resources, elimination of unsustainable patterns of consumption and production, and early stabilization of the world population. UN Declaration on World Food Security in Rome Italy in 1996 emphasized the urgency of taking action to fulfil the responsibility to achieve food security for present and future generations. Attaining food security is a complex task for which the primary responsibility rests with individual governments. They have to develop an enabling environment and have policies that ensure peace, as well as social, political and economic stability and equity. *United Nations Declaration on World Food Security in 1996* provides guidelines and a framework to the states, organizations and individuals for sustainable food security. To that end:

Poverty, hunger and malnutrition are some of the principal causes of accelerated migration from rural to urban areas in developing countries and poverty eradication is essential to improve access to food. The vast majority of

those who are undernourished, either cannot produce or cannot afford to buy enough food because they have inadequate access to means of production such as land, water, inputs, improved seeds and plants, appropriate technologies and farm credit (Article 2) [32]. A peaceful and stable environment in every country is a fundamental condition for the attainment of sustainable food security. Governments are responsible for creating an enabling environment for private and group initiatives to devote their skills, efforts and resources, and in particular investment, towards the common goal of food for all.

Ensure stable economic conditions and implement development strategies which encourage the full potential of private and public, individual and collective initiatives for sustainable, equitable, economic and social development which also integrate population and environmental concerns. To this end, governments, and as appropriate, in partnership with all actors of civil society, should (15.Objective 1.2) [32]:

- Promote policies in order to foster conducive sustainable, equitable economic and social development;
- Establish legal and other mechanisms, as appropriate, that advance land reform, recognize and protect property, water, and user rights, to enhance access for the poor to resources.;
- Fully integrate population concerns into development strategies, plans, and decision-making.

Encourage national solidarity and provide equal opportunities for all, at all levels, in social, economic and political life. To this end, governments, in partnership with all actors of civil society, will, as appropriate (17 Objective 1.4) [32]:

- Support investment in human resource development such as health, education, literacy and other skills training, which are essential to sustainable development;
- Enact or strengthen policies to combat discrimination against members of socially vulnerable and disadvantaged groups, and persons belonging to minorities;
- Give special attention to promoting and protecting the interests and needs of the child, particularly the girl child, in food security programs.

Pursue poverty eradication, among both urban and rural poor, and sustainable food security for all as a policy priority and to promote, through sound national policies. To this end, governments, in partnership with all actors of civil society, as appropriate, will (19 Objective 2.1) [32]:

- Review and adopt policies to pursue the eradication of hunger and attain sustainable food security at the household and national levels as a top policy priority, and make every effort to eliminate obstacles such as unemployment and lack of access to factors of production that adversely affect the attainment of food security;
- Develop human skills and capacities through basic education and training;
- Adopt policies that create conditions which encourage stable employment, especially in rural areas, including off-farm jobs, so as to provide sufficient earnings to facilitate the purchase of basic necessities;
- Pursue sound economic, agriculture, fisheries, forestry and land reform policies that will permit farmers, fishers, foresters and other food producers, particularly women, to earn a fair income to allocate their basic needs.
- Improve equal access, by men and women, to land and other natural and productive resources;
- Promote access, by farmers and farming communities, to genetic resources for food and agriculture.

Ensure that food supplies are safe, physically and economically accessible, appropriate and adequate to meet the energy and nutrient needs of the population. To this end, governments, in partnership with all actors of civil society, as appropriate, will (19 Objective 2.3) [32]:

- Monitor the availability and nutritional adequacy of food supplies and reserve stocks, giving particular attention to areas at high risk of food insecurity;
- Ensure the quality and safety of food supply, particularly by strengthening normative and control activities in the areas of human, animal and plant health and safety;
- Develop and promote improved food processing, preservation and storage technologies to reduce post-harvest food losses;
- Encourage rural households and communities to adopt low-cost technologies and innovative practices;
- Promote and support community-based food security and nutrition programs;

4.1.12. Social responsibility on adequate food

It is an intolerable situation that millions of people throughout the world, and particularly in developing countries, do not have enough food to meet their basic nutritional needs. World Food Summit in Rome in November 1996 adopt the "Rome Declaration on World Food Security" was reaffirming "the right of everyone to have access to safe and nutritious food, dependable with the right to adequate food and the fundamental right of everyone to be free from hunger". The promotion and implementation of the right to adequate food must be a

central objective of all states and other relevant actors in order to end hunger and malnutrition. The right to adequate food is a fundamental human right firmly established in international law. This right flows from the Charter of the United Nations, the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights (ICESCR) of 1966 and has been reaffirmed in many pronouncements of the international community over the last fifty years. According to the Article 6 of the *International Code of Conduct on the Human Right to Adequate Food in 1997* (Article 61-64) [33]:

- States will respect physical and economic access to adequate food or to a resource base appropriate for its acquisition and will protect everyone under their jurisdiction from having their access to food being undermined by a third party;
- Whenever an individual or group is unable to enjoy the right to adequate food, states have the obligation to fulfil that right. This obligation also applies to persons who are victims of natural or other disasters;
- All states have the duty to satisfy a minimum core obligation, which means that everyone is, as a minimum, free from hunger.
- States should, in international agreements, whenever relevant ensure that right to adequate to food be given due attention;
- States' international policies and programs must respect the full realization of people's right to adequate food. This has implications for their trade and finance policies, and for technology transfers. It also requires states to consider the international implications of their domestic agricultural policies and use of technology.

In cases of emergency, states shall provide disaster relief and humanitarian assistance to any country that may need it. Food should, as appropriate, be mobilized from the nearest available sources (Article 7) [33].

Attaining food security is a complex task for which the primary responsibility rests with individual governments and they have to develop an enabling environment and have policies, plans and programs to ensure the food security of the society and to that end governments should also cooperate actively with one another and with international organizations, financial institutions, inter-governmental and non-governmental organizations, and public and private sectors, on programs directed towards the achievement of food security for all.

4.1.13. Social responsibility on human settlement

At present rural backwardness which compels a large majority of mankind to live at the lowest standards of living and contribute to uncontrolled urban growth, on involuntary migration, politically, racially, and economically motivated relocation and expulsion of people from their national homeland. Uncontrolled urbanization and consequent conditions of overcrowding, pollution, deterioration and psychological tensions are increasing in metropolitan regions. Thus consumption of world resources is essential for socio-economic development and improvement of human settlement, particularly in developing countries. Human settlements largely determine the quality of life, the improvement of basic needs, such as employment, housing, health services, education and recreation. But due to the increasing difficulties which are facing the world in satisfying the basic needs and aspirations of peoples consistent with principles of human dignity. Vast numbers of people in human settlements are unacceptable, and particularly unsustainable situation exist in developing countries. These conditions are likely to be further aggravated, as a result of, inequitable economic growth, wide disparities in wealth which exist between countries and between human beings and existing poverty. Therefore it is essential, to be taken positive and concrete action at national and international levels to find solutions to sustain the human settlement to reach sustainability of the society.

The General **Principals (1-17) of the *Vancouver Declaration on Human Settlement in 1976*** emphasised, to reach sustain of human settlement responsibility of the society is adopt the following social and development programs. Those principals are emphasized [34]:

- The improvement of the quality of all people, beginning with the satisfaction of the basic needs of food, shelter, clean water, employment, health, education, training, social security and social justice;
- Priority must be given to the needs of the most disadvantaged people;
- Provided that it contributes to a more equitable distribution of its benefits among people and nations;
- It is therefore the duty of all people and Governments to join the struggle against any form of colonialism;
- The establishment of settlements in territories occupied by force is illegal;
- The right of free movement and the right of each individual to choose the place of settlement within the domain of his own country should be recognized and safeguarded;
- Land is one of the fundamental elements in human settlements. Every State has the right to take the necessary steps to maintain under public control the use, possession, disposal and reservation of land;

- The waste and misuse of resources in war and armaments should be prevented;
- All persons have the right and the duty to participate, individually and collectively in the elaboration and implementation of policies and programs of their human settlements;
- To achieve universal progress in the quality of life, a fair and balanced structure of the economic relations between States has to be promoted;
- The highest priority should be placed on the rehabilitation of expelled and homeless people who have been displaced by natural or man-made catastrophes.
- Historical settlements, monuments and other items of national heritage, including religious heritage, should be safeguarded against any acts of aggression or abuse by the occupying Power.
- Every State has the sovereign right to rule and exercise effective control over foreign investments, which affect directly or indirectly the human settlements programs.
- International co-operation is an objective and a common duty of all States and necessary efforts must therefore be made to accelerate the social and economic development of developing countries.

The Vancouver Declaration further imposed responsibilities on Governments and international organizations in Human settlement and emphasised that they should make every effort to take urgent action as set out in the following Guidelines(Guide line for action 1-24) [34]:

- It is the responsibility of Governments to prepare spatial strategy plans and adopt human settlement policies to guide the socio-economic development efforts.
- A human settlement policy must seek harmonious integration or co-ordination of a wide variety of components, including, (for example), population growth and distribution, employment, shelter, land use, infrastructure and services. Governments must create mechanisms and institutions to develop and implement such a policy.
- It is of paramount importance that national and international efforts give priority to improving the rural habitat.
- Human settlement policies and programs should define and strive for progressive minimum standards for an acceptable quality of life.
- Attention must also be drawn to the detrimental effects of transposing standards and criteria that can only be adopted by minorities and could heighten inequalities, the misuse of resources and the social, cultural and ecological deterioration of the developing countries.
- Adequate shelter and services are a basic human right which places an obligation on Governments to ensure their attainment by all people,

beginning with direct assistance to the least advantaged through guided programs of self-help and community action.

- Governments should endeavour to remove all impediments hindering attainments of these goals or special importance is the elimination of social and racial segregation, inter alia, through the creation of better balanced communities, which blend different social groups, occupation, housing and amenities.
- Health is an essential element in the development of the individual and one of the goals of human settlement policies.
- Basic human dignity is the right of people, individually and collectively, to participate directly in shaping the policies and programs affecting their lives.
- Governments promote programs that will encourage and assist local authorities to participate to a greater extent in national development.
- Land is an essential element in development of both urban and rural settlements. Governments should also ensure that prime agricultural land is destined to its most vital use.
- Human settlements are characterized by significant disparities in living standards and opportunities. Governments should adopt policies which aim at decreasing the differences between living standards and opportunities in urban and non-urban areas.
- Governments and the international community should facilitate the transfer of relevant technology and experience in human settlement programs. The knowledge and experience accumulated on the subject of human settlements should be available to all countries. Research and academic institutions should contribute more fully to this effort by giving greater attention to human settlements problems.
- Due attention should be given to implementation of conservation and recycling technologies.

4.1.14. Social responsibility on adequate shelter

Inadequate shelter and homelessness are growing plights particularly in developing countries. It has become threatening standards of health, security and even life itself. Human settlements are an imperative need to improve the quality of human life which profoundly affects the daily lives and well-being of the peoples. Human beings are at the centre of concerns for sustainable development, including adequate shelter for all and sustainable human settlements. They are entitled to a healthy and productive life in harmony with nature. Istanbul declaration on human settlements (Habitat II) objective is to achieve adequate shelter for all, especially the deprived urban and rural poor, through an enabling approach to the development and improvement of shelter

that is environmentally sound. On that basis Habitat II is concerned two themes of equal global importance: "Adequate shelter for all" and "Sustainable human settlements development in an urbanizing world". A large segment of the world's population lacks shelter and sanitation, particularly in developing countries. Many rural settlements, however, are facing a lack or an inadequacy of economic opportunities, especially employment, and of infrastructure and services, particularly those related to water, sanitation, health, education, communication, transportation and energy. The growth of cities and towns causes social, economic and environmental changes that go beyond city boundaries. Cities, towns and rural settlements are linked through the movements of goods, resources and people. Urban-rural linkages are of crucial importance for the sustainability of human settlements. Human rights emphasized access to safe and healthy shelter and basic services is essential to a person's physical, psychological, social and economic well-being. To that end sustainable development of human settlements combines economic development, social development and environmental protection, with full respect for all human rights and fundamental freedoms, including the right to development (Preamble 1-21)[35].

The communities, local governments and partnerships among the public, private join efforts to create comprehensive, bold and innovative strategies for shelter and human settlements. It is a responsibility of the society to implement and promote this objective in a manner fully consistent with human rights standards. In this context obligation by Governments to enable people to obtain shelter and to protect and improve human settlements. According to the section 40 of *Istanbul Declaration on Human Settlements (Habitat ii) in 1996*, to this end Government should concern [35]:

- Ensure consistency and coordination of macroeconomic and shelter policies and strategies as a social priority within the framework of national development programmers;
- Provide legal security of tenure and equal access to land to all people, including women and those living in poverty; including the right to inheritance and to ownership of land and other property;
- Promote access for all people to safe drinking water, sanitation and other basic services;
- Promote broad, non-discriminatory access to open, efficient, effective and appropriate housing financing for all people;
- Promote locally available, appropriate, affordable, safe, efficient and environmentally sound construction methods and technologies in all countries;

- Increase the supply of affordable housing, including through encouraging and promoting affordable home ownership and increasing the supply of affordable rental;
- Promote the upgrading of existing housing stock through rehabilitation and maintenance and the adequate supply of basic services, facilities and amenities;
- Eradicate and ensuring legal protection from discrimination in access to shelter and basic services, without distinction of any kind;
- Assist the family, in its supporting, educating and nurturing roles, to recognize its important contribution to social integration, and encouraging social and economic policies that are designed to meet the housing needs of families and their individual members;
- Promote shelter and supporting basic services and facilities for education and health for the homeless, displaced persons, indigenous people, women and children who are survivors of family violence, persons with disabilities, older persons, victims of natural and man-made disasters;
- Protect within the national context, the legal traditional rights of indigenous people to land and other resources, as well as strengthening of land management;
- Protect all people from and providing legal protection and redress for forced evictions that are contrary to the law, taking human rights into consideration;
- Access to safe and healthy shelter and basic services is essential to a person's physical, psychological, social and economic well being.

Rural and urban areas are economically, socially and environmentally interdependent and that cities and towns are engines of growth contributing to the development of both rural and urban human settlements. Half of the world's inhabitants live in rural settlements, in Africa and Asia majority of the population represents in rural areas. World is facing the unprecedented growth of urban population, mainly in the developing world.

Declaration on Cities and Other Human Settlement, New Millennium, in 2001 emphasized; the deteriorating environmental conditions, poverty and hunger that threaten the health and quality of life of billions of people. It is also essential to eradicate poverty, hunger and to improve living conditions, as well as to create employment and educational opportunities and basic health services in rural and urban settlements and small and medium-sized cities and towns in rural areas.(Article 1-14) [36] But Well-managed cities can provide an economic environment capable of generating employment opportunities, as well as offering a diversity of goods and services. The motive of the Habitat Agenda is providing adequate shelter for all and develops the urbanizing world to sustain the society.

4.1.15. Social responsibility on elimination of discrimination against women

Particularly in most of the developing countries, in situations of poverty women have the least access to food, health, education, training and opportunities for employment and other needs. But women make a great contribution to the welfare of the family and to the development of society. So far the social significance of maternity and the role of both parents in the family and in the upbringing of children have not fully recognized. Aware that the role of women in procreation should not be a basis for discrimination but that the upbringing of children requires a sharing of responsibility between men and women and society as a whole [37]. To achieve full and complete development of a country, the welfare of the world and the cause of peace require the maximum participation of women on equal terms with men in all fields. *World Convention on the Elimination of All Forms of Discrimination Against Women in 1981* determined to implement the principles and emphasized [37]:

- States shall take in all fields, in particular in the political, social, economic and cultural fields to ensure the full development and advancement of women, for enjoyment of human rights and fundamental freedoms on a basis of equality with men. And shall take all appropriate measures to eliminate discrimination against women in all fields (Article 3-7).
- States Parties shall take all appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education, field of employment and protection of health and to safety in working places (Article 10-11).

4.1.16. Social responsibility on protect the rights of the women

Beijing declaration and Convention on the Elimination of All Forms of Discrimination against Women implicated, it is requires the involvement of women in economic and social development with equal opportunities and the full and equal participation as agents and beneficiaries of people centred sustainability. Sustainable development and economic growth that is both sustained and sustainable are possible only through improving the economic, social, political, legal and cultural status of society. More than 1 billion people in the world today live in unacceptable conditions of poverty, the great majority of who are women mostly in the developing countries. Women are key contributors to the economy and to combating poverty through both remunerated and unremunerated work at home, in the community and in the workplace. One fourth of all households world wide are headed by women and many other households are dependent on female income even where men are

present. Women's poverty is directly related to the absence of economic opportunities and autonomy, lack of access to economic resources, including credit, land ownership and inheritance, lack of access to education and support services and their minimal participation in the decision-making process. Eradication of poverty based on sustained economic growth, social development, environmental protection and social justice (Article 1-60) [38].

- ***Beijing Declaration of the Fourth World Conference on Women in 1995*** imposed some responsibilities over Governments regarding protect the rights and develop the life of the women for sustainability of the society. It emphasized Government should [38]:
- Encourage links between financial institutions and non-governmental organizations and support innovative lending practices for disadvantage women through public and private financial institutions, including legislative support to improve the financial assistance, savings and credit mechanisms (Article 64 a-d);
- Improve the quality of education and equal opportunities between women and men in terms of access to ensure that women of all ages can acquire knowledge, develop capacities, aptitudes and skills and ethical values needed to develop and participate fully under equal conditions in the process of social, economic and political development and advance the goal of equal access to education by taking measures to eliminate discrimination in education at all levels (Article 82 a-j);
- Design and implement, gender-sensitive health programs, including decentralized health services that address the needs of women throughout their lives and remove all barriers to women's health services and provide a broad range of health-care services. Provide more accessible, available and affordable primary health-care services of high quality, including sexual and reproductive health care, which includes family planning information and services, and giving particular attention to maternal and emergency obstetric care. (Article 107 a-k);
- Ensure opportunities for women, including indigenous women, to participate in environmental decision-making at all levels, including as managers, designers and planners, and as implementers and evaluators of environmental projects. Encourage, subject to national legislation and consistent with the Convention on Biological Diversity, the effective protection and use of the knowledge, innovations and practices of women of indigenous and local communities, including practices relating to tradition medicines, biodiversity and indigenous technologies, and endeavour to ensure that these are respected, maintained, promoted and preserved in an ecologically sustainable manner and promote (Article 253 a-g).

4.1.17. Social responsibility on economic social and cultural rights

Social development is a key component of sustainable development. Inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice, peace and social development in the world whereby everyone may enjoy economic, social and cultural rights, as well as civil and political rights. To that end obligation of the States is promote universal respect and observance of, human rights and freedoms. Individuals also having duties to other individuals and to the community to which he belongs and under a responsibility to strive for the promotion and observance of the rights recognized in international law to reach social development goals. *International Covenant on Economic Social and Cultural Rights in 1996* emphasized the rights of the people for their well being which should recognized by the states. The States should undertake to guarantee that the rights enunciate in the International Covenant on Economic, Social and Cultural Rights (**CESCR**) to reach sustainable development goals. To that end states will be exercised the following responsibilities without any discrimination [39]:

- People have the right to determine their political status and freely pursue their economic, social and cultural development. (PART I - Article 3);
- Every person has a right to work, which includes the right of every one to the opportunity to gain his living which he freely choose or accept and state shall include technical and vocational guidance and training programs, policies and techniques to achieve steady economic, social and cultural development and full and productive employment (Article 6 Part III) ;
- Recognize the right of everyone to social security, including social insurance (Article 9 Part III);
- Special protection should be accorded to mothers during a reasonable period before and after childbirth. During such period working mothers should be accorded paid leave or leave with adequate social security benefits (Article 10 part III) ;
- Recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions and will take appropriate steps to ensure the realization of this right (Article 11 Part III);
- Recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programs, which are needed to improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge and taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need (Article 12 Part III);

- Recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health and steps to be taken by the States to achieve the full realization of this right shall include those necessary for reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child, prevention, treatment and control of epidemic, endemic, occupational and other diseases, creation of conditions which would assure to all medical service and medical attention in the event of sickness (Article 13 Part III);
- Recognize the right of everyone to education. With a view to achieving the full realization of this right: Primary education shall be compulsory and available free to all. Secondary education in its different forms, including technical and vocational secondary education, shall be made generally available. Higher education shall be made equally accessible to all (Article 14 Part III);
- Recognize the right of everyone, to take part in cultural life, to enjoy the benefits of scientific progress and its applications. States recognize the benefits to be derived from the encouragement and development of international contacts and co-operation in the scientific and cultural fields (Article 15 Part III).

4.1.18. Social responsibility in social development

Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development. This is the framework to achieve a higher quality of life for all people. Democracy and transparent and accountable governance and administration in all sectors of society are indispensable foundations for the realization of social and people centred sustainable development. But continued growth in the world's population and gap between rich and poor countries and rich and poor people within the societies are widened and have created many social issues such as, chronic hunger, malnutrition, illicit drug problems, organized crime, corruption, foreign occupation, armed conflicts, illicit arms trafficking, terrorism, intolerance and incitement to racial, ethnic, religious and other communal issues, xenophobia, and endemic, communicable and chronic diseases. Thus goals and objectives of social development require continuous efforts to reduce and eliminate major sources of social distress and instability for the family and for society. To this end, responsibility of the society is coordination and cooperation at the national level and especially at the regional and international levels should be strengthened.

Section 25 Copenhagen Declaration on Social Development of the Social development is based on human dignity, human rights, equality, respect, peace,

democracy, mutual responsibility and cooperation with full respect for the various religious and ethical values and cultural backgrounds of people. Accordingly, society must give the highest priority in national, regional and international policies and actions to the promotion of social progress, justice and the betterment of the human condition, based on full participation by all. To this end the *Declaration of World Social Development Convention in Copenhagen 1995* created a framework for action which should be implemented by the states [40]:

- Economies should provide human needs effectively enabled to satisfy his or her basic human needs and to realize his or her personal dignity, safety and creativity;
- Ensure equity among generations and protect the integrity and sustainable use of the environment;
- State should cooperate with the international community to reach social development goals successfully;
- Requires sound and broadly based economic policies to achieve sustained social development;
- Promote democracy, human dignity, social justice and solidarity at the national, regional and international levels;
- Promote the equitable distribution of income and greater access to resources through equity and equality of opportunity for all;
- Recognize the family as the basic unit of society and be strengthened, with attention to the rights, capabilities and responsibilities of its members. Family is entitled to receive comprehensive protection and support;
- Promote universal respect for, and observance and protection of, all human rights and fundamental freedoms for all;
- Reaffirm the right of self-determination of all peoples, in particular of peoples under colonial or other forms of alien domination or foreign occupation;
- Recognize and support indigenous people in their pursuit of economic and social development, with full respect for their identity, traditions, forms of social organization and cultural values;
- Implement transparent and accountable governance and administration in all public and private national and international institutions;
- Empower the people, to strengthen their own capacities. Empowerment requires the full participation of people in the formulation, implementation and evaluation of decisions determining the functioning and well-being of the societies;
- Ensure and broaden the participation of women in all spheres of political, economic, social and cultural life, as equal partners, and improve their access to all resources.
- Improve the possibility of older persons achieving a better life;

- Make availability of the innovative technologies for poor people to overcome their social problems.

It is the primary responsibility of States to attain these goals. But it cannot be achieved by States alone. The international community, International organizations, financial institutions, all regional organizations and local authorities, and all actors of civil society need to cooperate and positively contribute their own share of efforts and resources in order to reduce inequalities among people and narrow the gap between developed and developing countries and reach social development.

4.1.19. Social responsibility on population and sustainable development

Ecological problems, such as global climate change, largely driven by unsustainable patterns of production and consumption, are adding to the threats to the well-being of future generations. Around the world many of the basic resources on which future generations will depend for their survival and well-being are being depleted and environmental degradation is intensifying, driven by unsustainable patterns of production and consumption, unprecedented growth in population, widespread and persistent poverty, and social and economic inequality. The world population is currently estimated at 5.6 billion. While the rate of growth is on the decline, absolute increments have been increasing, presently exceeding 86 million persons per year. The world is undergoing the largest wave of urban growth in history. In 2008, for the first time in history, more than half of the world's population will be living in towns and cities. By 2030 this number will swell to almost 5 billion, with urban growth concentrated in Africa and Asia. While mega-cities have captured much public attention, most of the new growth will occur in smaller towns and cities, which have fewer resources to respond to the magnitude of the change. Annual population increments are likely to remain above 86 million until the year 2015. By the year 2050, the United Nations projections range from 7.9 billion to the medium variant of 9.8 billion and a high of 11.9 billion. By the year 2015, nearly 56 per cent of the global population is expected to live in urban areas, compared to fewer than 45 per cent in 1994. The most rapid rates of urbanization will occur in the developing countries. The urban population of the developing regions was just 26% in 1975, but is projected to rise to 50 per cent by 2015 [41]. Principle, cities offer a more favourable setting for the resolution of social and environmental problems than rural areas.

Recognizing that the formulation and implementation of population-related policies is the responsibility of each country and should take into account the economic, social, and environmental diversity of conditions in each country,

with full respect for the various religious and ethical values, cultural backgrounds and philosophical convictions of its people, as well as the shared but differentiated responsibilities of all the world's people for a common future. International Conference on Population and Development recommends to the international community a set of important population and development objectives and principles to avoid the demographic issues and sustain the society and to that end *International Conference on Population and Development in 1994* emphasized [42]:

- To ensure that all individuals are given the opportunity to make the most of their potential, since human beings are at the centre of concerns for sustainable development, and they are the most valuable resource of any nation;
- All human beings are born free and equal in dignity and rights, including all the rights and freedoms of the Universal Declaration of Human Rights, and have the right to life, liberty and security of person;
- The right to development is a universal and inalienable right and an integral part of fundamental human rights and the human person is the central subject of development;
- The human rights of women and the girl-child are an inalienable, integral and indivisible part of universal human rights;
- Population-related goals and policies are integral parts of cultural, economic and social development, the principal aim of which is to improve the quality of life of all people;
- Sustainable development as a means to ensure human well being. States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate policies in order to meet the needs;
- States to cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development;
- States should take all appropriate measures to ensure universal access to health-care services, including those related to reproductive health care, family planning and sexual health;
- Everyone has the right to education, which shall be directed to the full development of human resources, and human dignity and potential, with particular attention to women and the girl-child;
- States and families to give the highest priority to children. The child has the right to the highest attainable standards of health, and the right to education;
- States should consider the development and population needs of indigenous people, to recognize and support their identity, culture and interests, and enable them to participate fully in the economic, political and social life of the country, particularly where their health, education and well-being are affected;

- The context of sustainable development and social progress, sustained economic growth be broadly based, offering equal opportunities to all people;
- All countries should recognize their common but differentiated responsibilities and the developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development.

4.1.20. Social responsibility on protection of the rights of indigenous people

Indigenous and tribal people also are doing an important roll in social, cultural, and economic development process in their societies. Despite their difficult natural environments indigenous peoples have managed to sustain an existence in ecologically fragile areas with low population carrying capacity. Many of these peoples have an intricate knowledge of their environments and the different plant and animal species, and have developed sophisticated technologies for the sustainable management of these resources. In fact it is interesting to observe the relationship between the areas of pristine forest and the location of indigenous people. Recent research at the World Bank and other agencies demonstrates the high degree of correlation between poverty and ethnicity. Assuming that the vast majority of indigenous people are among the poorest, a rough estimate indicates that one quarter of all Latin Americans living in extreme poverty are indigenous. However, this proportion is much higher in countries with relatively large indigenous populations such as Bolivia, Guatemala, Peru or Ecuador[43].To reach the social development goals, societies should implement programs to protect their rights including the aspirations to exercise control over indigenous and tribal people's own institutions, ways of life and economic development and to maintain and develop their identities, languages and religions, within the framework of the States in which they live. In many parts of the world these peoples are unable to enjoy their fundamental human rights to the same degree as the rest of the population of the States within which they live, and that their laws, values, customs and perspectives have often been eroded. States should make serious attention to the distinctive contributions of indigenous and tribal peoples to the cultural diversity and economical, social and ecological harmony of humankind. To that end, according to the *Convention Concerning Indigenous and Tribal Peoples in Independent Countries, in 1989* emphasized states should concern to [44]:

- Ensure that, whenever appropriate, studies are carried out, in co-operation with the peoples concerned, to assess the social, spiritual, cultural and environmental impact on them of planned development activities;

- Take measures, in co-operation with the peoples concerned, to protect and preserve the environment of the territories they inhabit;
- In applying national laws and regulations to the peoples concerned, due regard should be given to indigenous and tribal peoples customs or customary laws;
- Take steps as necessary to identify the lands which the peoples concerned traditionally occupy, and to guarantee effective protection of their rights of ownership and possession;
- Retains the ownership of mineral or sub-surface resources or rights to other resources pertaining to lands, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programs for the exploration or exploitation of such resources pertaining to their lands;
- Ensure that adequate health services are made available to the peoples concerned, or shall provide them with resources to allow them to design and deliver such services under their own responsibility and control, so that they may enjoy the highest attainable standard of physical and mental health;
- Develop and implement education programs and services in co-operation with Indigenous and Tribal People to address their special needs, and shall incorporate their histories, their knowledge and technologies, their value systems and their further social, economic and cultural aspirations. They shall participate in the formulation, implementation and evaluation of plans and programs for national and regional development which may affect them directly;

Indigenous and Tribal Populations Convention, No: C107 in 1957 broadly discussed the importance of improving living standards and protection the rights of the indigenous and tribal People in social development process. The close interdependence of most indigenous livelihood systems with the natural environment, reflected in their ethical, cultural and spiritual values, means that indigenous peoples can offer many lessons not only for survival but also for achieving a better quality of life and managing the environment sustainability.

4.1.21. Social responsibility on the Right to Development

Article 1 of the Declaration on the Right to Development in 1986 states that "the right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized." The right to development includes:

- Full sovereignty over natural resources;
- Self-determination;
- Popular participation in development;
- Equality of opportunity;
- The creation of favourable conditions for the enjoyment of other civil, political, economic, social and cultural rights.

The human person is identified as the beneficiary of the right to development, as of all human rights. The right to development can be invoked (appeal) both by individuals and by peoples. It imposes obligations both on individual States - to ensure equal and adequate access to essential resources - and on the international community - to promote fair development policies and effective international cooperation. To that end *The United Nations Declaration on the Right to Development in 1986* emphasized [45]:

- The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized;
- The human person is the central subject of development and should be active participant and beneficiary of the right to development;
- All human beings have a responsibility for development, individually and collectively, taking into account the need for full respect for their human rights and fundamental freedoms as well as their duties to the community, which alone can ensure the free and complete fulfilment of the human being, and they should therefore promote and protect an appropriate political, social and economic order for development;
- States have the right and the duty to formulate appropriate national development policies that aim at the constant improvement of the well-being of the entire population and of all individuals, on the basis of their active, free and meaningful participation in development and in the fair distribution of the benefits resulting there from;
- States have the primary responsibility for the creation of national and international conditions favourable to the realization of the right to development.
- The realization of the right to development requires full respect for the principles of international law concerning friendly relations and co-operation among States;
- Sustained action is required to promote more rapid development of developing countries. As a complement to the efforts of developing countries, effective international co-operation is essential in providing these countries with appropriate means and facilities to foster their comprehensive development;

- States should take steps to eliminate obstacles to development resulting from failure to observe civil and political rights, as well as economic, social and cultural rights;
- States should undertake, at the national level, all necessary measures for the realization of the right to development and shall ensure, inter alia, equality of opportunity for all in their access to basic resources, education, health services, food, housing, employment and the fair distribution of income;
- Steps should be taken to ensure the full exercise and progressive enhancement of the right to development, including the formulation, adoption and implementation of policy, legislative and other measures at the national and international levels;

Sustainable development means delicate balancing of competing interests of the society. Hence international legal instruments categorically stated that the sustainable development is an inalienable responsibility of every society. It represents the balance between the concepts of economic and social development and the concept of environmental protection and it contains the human rights and social obligations in international law. There is no room any longer for denying that legal status. International law contains very concrete formulation of principles and indicates that the sustainable development is no longer merely inspirational and it is an inalienable social responsibility which based on human rights and social obligations and it has gathered much strength from variety of international declarations, and conventions.

4.2. Sustainable development components in international law

The human rights and the social obligations which we discussed in previous chapter are consequences of development of international law. It is proves series of international conventions, treaties, declarations, and many other State practices have confirmed universally recognize social responsibilities of sustainable development generates from international law.

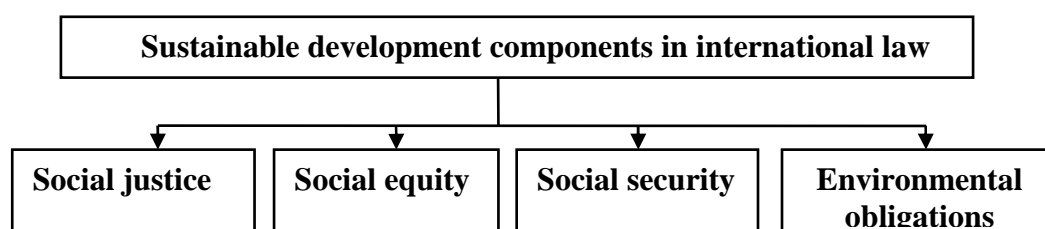


Figure 05: Sustainable development components in international law

International Law arises initially from the realm of aspiration. All its principles are formulations of aspirations of the civilise nations. This

formulated idea gradually hardens into concrete law. But as time went on, these aspirations became firmer, and they become part of accepted International Law. Analytical study in international law indicates aspirations of sustainable development mainly generate from four components of international law: social justice, social equity, social security and environmental responsibilities. Therefore this study focused to identify importance and relationships of social responsibilities and sustainable development components in international law.

4.2.1. Social justice

Agreement 6 of the introduction of *Copenhagen Declaration on Social Development* emphasized “States also recognize that broad-based and sustained economic growth in the context of sustainable development is necessary to sustain social development and *social justice*”. *Social justice* sometimes called *civil justice*, which is generally thought of as a world which affords individuals and groups for fair treatment and an impartial share of the benefits of all aspects of the society [46]. There are many definitions for the concept of social justice from many perspectives. The Saint Louis University School of Social Work has made a commitment on Social justice and emphasized there are four dimensions included in the concept of social justice [47]:

- The creation of just relationships at all system levels of the society;
- The development of structures that provide for equality of opportunity;
- The facilitation of access to needed information, services and resources;
- The support of meaningful participation in decision-making for all people.

It shows social justice is a moral imperative of human rights, and human life. Political philosopher John Rawls was made a statement of principle of justice in his text, *A Theory of Justice* (1971), where he says “justice denies that the loss of freedom for some is made right by a greater good shared by others.” To avoid inequalities of the society and to establish social justice he suggested [49] avoid the social and economic inequalities as a main condition. For that Rawls suggests:

- Provide greatest benefit to the least-advantaged members of society; and
- In economic and social activities everyone should get fair and equal opportunities.

Rawl’s “principal of justice” mainly concerned by the philosophers and politicians of green politics. They assert that the key to “social justice” is the equitable distribution of resources to ensure that all have full opportunities for personal and social development Worldwide the green political philosophy

define “social justice” as the principle that all persons are entitled to “basic human needs”, regardless of “superficial differences such as economic disparity, class, gender, race, ethnicity, citizenship, religion, age, sexual orientation, disability, or health” and social justice includes “the eradication of poverty, hunger, malnutrition illiteracy, the establishment of sound environmental policy, and equality of opportunity for healthy personal and social development”[48].

Article 29 of the World Summit for Social Development, (Copenhagen Declaration) [40] emphasized: Social justice, Solidarity, Harmony, and Equality are the aims of social development. In accordance the preliminary meaning of the principal of social justice is rights and possibilities to enjoy at the basic needs and all freedom without any kind discrimination.

These factors firmly indicates concept of social justice is a major component in inter national law, which generates social responsibilities of sustainable development.

4.2.2. Social equity

Social equity is one of the principal values underlying sustainable development, with people and their quality of life being recognized as a central issue. According to the article 1 of *Equality of Treatment Convention, of International Labour Organisation in 1962* [50] *Social Equity* involves the degree of fairness and inclusiveness with which resources are distributed, opportunities afforded, and decisions made. It includes the provision of comparable opportunities of employment and social services, including education, health and justice. Article 4 of the Equity treatment convention [50] further emphasized such human rights of the people should be based on equality of treatment for nationals and non nationals. This legal provision describes the reality of the concept of “social equity” and interpreted as resources and the social benefits should distribute on the basis of equality treatment for well being of the society.

Importance of social equity in sustainable development process broadly discuss in the report of *World Commission on Environment (Brundtland commission Report) in 1987*. Article 6 highlights [1] “Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life. Hence sustainable developments require that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all”. Article 4 describes “poverty and inequity are endemic will always be prone to ecological and other crises”. Article 24 of the *Brundtland commission Report* emphasized [1] “inequitable

landowner ship structure can lead to overexploitation of resources in the smallest holdings, with harmful effects on both environment and development. Internationally, monopolistic control over resources can drive those who do not share in them to excessive exploitation of marginal resources. The differing capacities of exploiters to commandeer 'free' goods - locally, nationally, and internationally - are another manifestation of unequal access to resources". The Brundtland commission report primarily concerned redistributing resources among poorer people of the society as a key element of the concept of social equity.

Article 6 of the Declaration of *World Summit for Social Development, Copenhagen, 1995 (Copenhagen Declaration,)* emphasized [40] "equitable social development that recognizes empowering the poor to utilize environmental resources sustainably"; it is a key part of the foundation for sustainable development. Article 25 says "Member states of the conference are committed to a political, economic and ethical and spiritual vision equality is an important element for social development among the other elements such as human dignity, human rights, peace, mutual responsibility and cooperation" Article 26 (b) indicates, "to reach social development goals fulfil the responsibility for present and future generations by ensuring equity among generations and protecting the integrity and sustainable use of the environment and article 26(g) says promote the equitable distribution of income and greater access to resources through equity and equality of opportunity for all is essential for sustainable development". It proves social equity is a major component of inter national law and which is a base to generate social responsibilities of sustainable development.

4.2.3. Social security

Social security generally defines as a program designed to provide for the basic economic security and welfare of individuals and their dependents the programs classified under the term social security differ from one country to another, but the fundamental principals are same. Human Rights Centre of the University of Minnesota in United States of America is consider that concept of social security contains five elements [51]:

- **Comprehensiveness:** The social security system should aim to provide comprehensive coverage against all contingencies and life circumstances that threaten the income-earning ability of persons and their ability to maintain an adequate standard of living;

- **Universality:** All those in need of social security should be able to gain access **Adequacy and appropriateness:** The level of benefits provided under the various schemes should be adequate and appropriate;
- **Respect of equality:** Social security programs should not discriminate unfairly against anyone on grounds such as race, sex, gender, sexual orientation, religion, political opinion, national or social origin, and birth or socio economic status;
- **Respect for procedural rights:** The rules and procedures governing eligibility for social security programs, as well as the termination of benefits, must be reasonable and fair.

During the last six decades International law frequently discussed the concept of social security and given clear meaning for that. Article 22 of *The Universal declaration Of Human rights (UDH)* guarantees the right to social security and article 25 recognized the right of every one to security in the event of unemployment, sickness, disability, widow hood, old age and other lack of lively hood in circumstances beyond his or her control. Article 9 of the *International Covenant on Economics, Social and Cultural Rights* [39] recognizes the right of the every one to social security. The convention number 102 of the *Social Security (Minimum Standard) Convention of the International Labour Organization (ILO)* recognizes the following nine specific Branches as essential requirements in social security [52]: Medical care, Sickness benefit, Unemployment benefits, Old age benefits, Employment injury benefits, Family benefits, and Maternity benefits and Survivors benefits. This evidence proves the concept of social security gradually establishes in international law as a major component on sustainable development and it generates the social responsibilities of sustainable development.

4.2.4. Environmental obligations

Environmental responsibilities are contained in concepts of social justice, social equity and social security but in modern international law it is developing as a separate concept because globally environment has become a key issue. During last six decades international law significantly discuss the environmental obligations as a major component in sustainable development by many legal instruments:

- International plant protection convention Rome in 1951;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973;
- United Nations Convention of Migratory Species of Wild Animals in 1979;
- The International Convention on Wetlands, (Ramsar convention) in 197;

- Declaration of the United Nations Conference on the Human Environment in 1972;
- Rio Declaration on Environment and Development;
- Convention on the Control of Trans Boundary Movements of Hazardous Waste (Basel Convention in 1989);
- United Nations Convention on the Law of the Sea in 1982 and
- Vienna Convention for the Protection of the Ozone Layer in 2001, are some of them. Those legal instruments strongly emphasized environmental responsibilities are a key component of sustainable development in international law. With reference to those international legal instruments Environmental responsibility has been widely discussed above in this chapter from 4.1.1 to 4.1.9.

All these evidence proves the major Sustainable development components in international law: *social justice, social equity, social security* and *environmental responsibilities* are the basis to generate the universally accepted social responsibilities of sustainable development. Therefore, major responsibility of the present society is every society should recognise these four components socially, politically and legally should not impose any barriers or the limitations to decline the development of them. Because the social responsibilities generate by these components to meets the present and future problems of sustainable development.

4.3. Social responsibility in sustainable development dispute settlement

Under free market economy not only the international trade but also all aspects of development process corporate with the other societies. Contrary to the trade and other development activities occurs the disputes and issue within and among the societies is natural: disputes in international trade, migration of refugees, spreading disease and using pesticides are few among them. Therefore to accelerate the sustainable development process there should be a sound, efficient and recognized dispute settlement system. It is a major social responsibility of the society to reach sustainable development goals. There are few disputes settlements systems existing at present which developed through public international law. In this research I did an analytical study to identify them to understand the impact of them to accelerate the of sustainable development.

4.3.1. Inject international law to the state law.

During last few decades international law widely discussed many aspects of the sustainable development and established legal concepts, legal principals and laws through international legal instruments. States should recognize such laws and should inject to the State legal systems to accelerate the sustainable development and settle the disputes. It is a key precautionary step to minimize the disputes which relate to sustainable development. A more correct way of putting this might be to say the state may recognized *de facto or de jure*. *De facto* mean although the international law or the legal principals does not inject to the state law but the Government recognized that by way of practice. *De jure* recognition is adopt the international law and legal principals to the state law by way of normal law enforcing procedure of the state most probably through legislation [53].

4.3.2. Dispute settlement mechanism of WTO

From 1947 to 1995 General Agreement of the Trade and Tariff (GATT) marked the biggest reform of international trade. It provided the set of rules for sustainability of the world trade and dispute settlement in trading process. When GATT transformed to World Trade Organization (WTO) after Uruguay round discussion, from 1st of January 1995 WTO continuous the GATT dispute settlement system with some changes in procedure and enforcement. WTO made a unique contribution to promote international trade with a very strong international dispute settlement system [54]. But WTO jurisdiction can be executed within limited jurisdiction: only member countries of the WTO can make an application for a remedy and the jurisdiction limited for the specific few fields including such as, agreements on trade services, trade related intellectual property rights, trade related investment measures, agriculture, and textiles which re reformed by Uruguay round discussion.

4.3.3. Alternative to the WTO dispute settlement mechanism

Conflicts in the context of international law looking at a set of possible alternatives to the WTO's dispute settlement mechanisms. Expecting dispute settlement method should be emphasized according to international agreements, mostly according to Multi Lateral Environment Agreements (MAEs). It is up to the parties to a specific dispute, if they want to involve a formal dispute settlement mechanism and, if so, which mechanism to opt for. Development of Public international law recognizes the following mechanisms to settle a

dispute[55]: *Diplomatic negotiation, Good offices Mediation, Commissions of inquiry, Conciliation, Adjudication, and Arbitration*. Only the parties to international convention can seek remedies from these dispute settlement systems.

4.3.4. International court of justice

There is no separate International Legal Tribunal to settle disputes in sustainable development. But according to the Article 36 of *Statute of International Court of Justice* (ICJ) the ICJ has jurisdiction to hear any matters including sustainable development issues. The ICJ is the principal judicial organ of the United Nations. Many Multilateral Environmental Agreements (MAEs) foresee as one option dispute settlement by the IJC as a possibility to arrive at a decision that is then legally binding for the parties involved in the dispute as long as the dispute parties agree to submit the case to this court [56].

4.3.5. The international court of environmental arbitration and conciliation

The International Court of Environmental Arbitration and Conciliation (ICEAC) were established in Mexico in November 1994, According to Article 2 of the statute of (ICEAC) facilitates through conciliation and arbitration the settlement of environmental disputes submitted by States, natural or legal persons. The court benefits from jurists representing all political and legal cultures and geographical areas, providing the Court with a consistent approach to the solution of environmental issues [57]. However the fact that its decisions are binding but enforcement of decisions will be a problem if there is insufficient political support by Governments and no institutional connection to organizations promoting compliance with public international law.

CHAPTER 5

PRESENT STATE OF THE PROBLEMS –

PART FOUR

5.1. Development of Sri Lanka

Sri Lanka is an island which is situated in Indian Ocean, 33 km away from the Southern tip of India. Population is approximately 20 million and the land extent is 65000 square km. The country is endowed with many natural resources. It has an equatorial climate with a high average rainfall. The land is fertile and suitable for growing a variety of crops, and one-third of the land is arable. Rivers cascading from the central hill country provide energy to generate hydropower, the major source of electricity in Sri Lanka. Also it has rich fishing resources. Sri Lanka's mineral resources include titanium ore, graphite, kaolin and gemstones. It also has large deposits of unexploited iron ore. Rice is the principal food crop and the main livelihood for over 70 percent of Sri Lanka's rural population. Sri Lanka economy is largely based on agriculture, services, and industry. Agriculture accounts for approximately 21 percent of the gross domestic product and employs 38 percent of the workforce. Manufacturing industries account for approximately 19 percent of the gross domestic product and employ about 17 percent of the workforce [58]. Chief manufactures include textiles, ceramics, petroleum products, vegetable oils, fertilizers, and cement. The service sector is the largest of the Sri Lanka economy, employing 45 percent of the workforce and contributing roughly 60 percent of Gross Domestic Products. Tourism, banking, finance, and retail trade are the major components of the service sector.

5.2. Economic development in Sri Lanka

In 1948 Sri Lanka got independence from Great Britain and established Parliamentary democratic system. During the first era from 1947 to 1977, development policy focused on achieving the objectives of equity and economic growth. The instruments adopted to achieve economic growth were aimed at import substitution industrialization, both in manufacturing and food sectors. The key measures used to achieve this growth strategy were the imposition of various restrictions on imports, and the encouragement of domestic production. Extensive social welfare programs such as price subsidies on food, statutory

price controls on consumer goods, and the provision of free education and health services were the instruments used to achieve greater equity. The welfare programs achieved significant improvements in the area of human development, including lower mortality rates, increased life expectancy, and high literacy rates. However, high welfare expenditures restrained the nation's capital growth and ability to invest. During the 1951-1976 periods, per capita gross domestic product grew only at an average of 0.2 percent per year [59]. The achievements of the import substitution policies were even less noticeable, except in the production of rice and subsidiary food crops. With a worsening trade balance crisis, most newly established industries operated well below the capacity due to a shortage of capital goods. This coupled with increased Government participation in industrial development, hindered industrial growth and the ability to remain commercially viable. The continued government intervention in all spheres of economic life reached its climax at the end of the first era.

In 1978 there was a major constitutional development and established the Executive presidency political system and parallel to that there was a big change in economic system too. In 1977, Sri Lanka shifted away from a socialist orientation to liberalize economy and opened its economy to foreign investment. Up to now Sri Lanka is experiencing more than 30 years of free market economic system as the main stream of economic development. Sri Lanka has 12 free trade zones, also called export-processing zones, administered by the Board of Investments (BOI). The oldest, the Katunayake and Biyagama Zones, located north of Colombo near the Bandaranaike International Airport, are fully occupied. The third zone is located at Koggala on the southern coast. Several new mini export-processing zones were opened in the provinces during the last few years. There are nearly 200 foreign export processing enterprises operating in these zones. There are also two industrial parks that have both export-oriented and non-export oriented factories. They are located in Pallekelle, near Kandy in central Sri Lanka, and in Seethawaka in Avissawela about 60 kilometers from Colombo [59].

The strategy aimed at liberalizing the economy from excessive government controls and it determined the private sector as the engine of growth. Policies were designed to accelerate economic growth by stimulating private investment through various incentives and also to increase the country's foreign earnings by promoting export-oriented economic activities. From 1977 foreign trade became an important segment of the Sri Lankan economy. Major imports include petroleum, consumables, machinery and capital equipment, motor vehicles, and various manufactured goods. Major exports include garments, tea, rubber, coconut products, foodstuffs, gems, and jewellery. Sri Lanka is the largest exporter of black tea in the world and the third largest producer of natural rubber. A variety of gemstones, for which Sri Lanka is world famous, are also

exported. The liberalization policies of Sri Lanka pursued under the watchful eye and participation of the International Monetary Fund (IMF) and the World Bank, met with success at the beginning.

5.2.1. Foreign direct investments

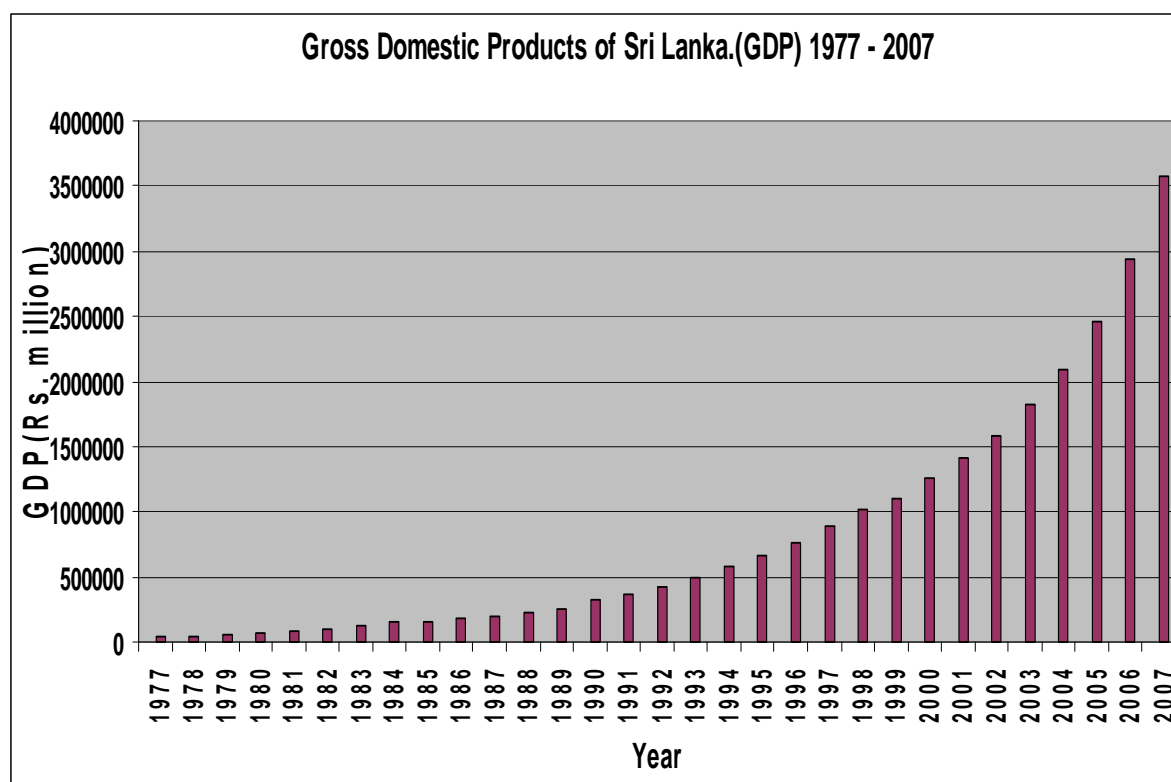
The incentive package offered by the Greater Colombo Economic Commission (GCEC) of Sri Lanka included, complete foreign ownership facility in investment projects [60]:

- Tax holiday for up to 10 years with complete tax exemption for remuneration of foreign personnel employed, royalties, and dividends of shareholders during that period;
- Duty exemption for the importation of equipment, and production material;
- Subsequently, GCEC enterprises were provided with unlimited access to foreign-currency credit at interest rates prevailing in world financial markets, under the Foreign Currency Banking Units scheme introduced in 1979;
- In addition to these incentives, firms located within Export Promotion Zones are provided with industrial services, building plants, power, water, and telecommunication services at subsidized rates and assistance with customs clearance procedures.

After trade freedom introduced in 1977, private investment increased substantially. For example, for the entire period of 1970 to 1977, the total investment was Rs.17 million but between 1978 and 1984, investment amounted to Rs.5,448 million [61]. From 1998-2001, foreign direct investment (FDI) flows to Sri Lanka averaged only about \$150 million per year (excluding privatization receipts). Since year 2002, annual Foreign Direct Investment (FDI) has averaged about \$200 million until 2006[62].

5.2.2. Gross Domestic Products

Gross Domestic Products (GDP) is commonly used as an indicator of the economic health of a country, as well as to gauge a country's standard of living.



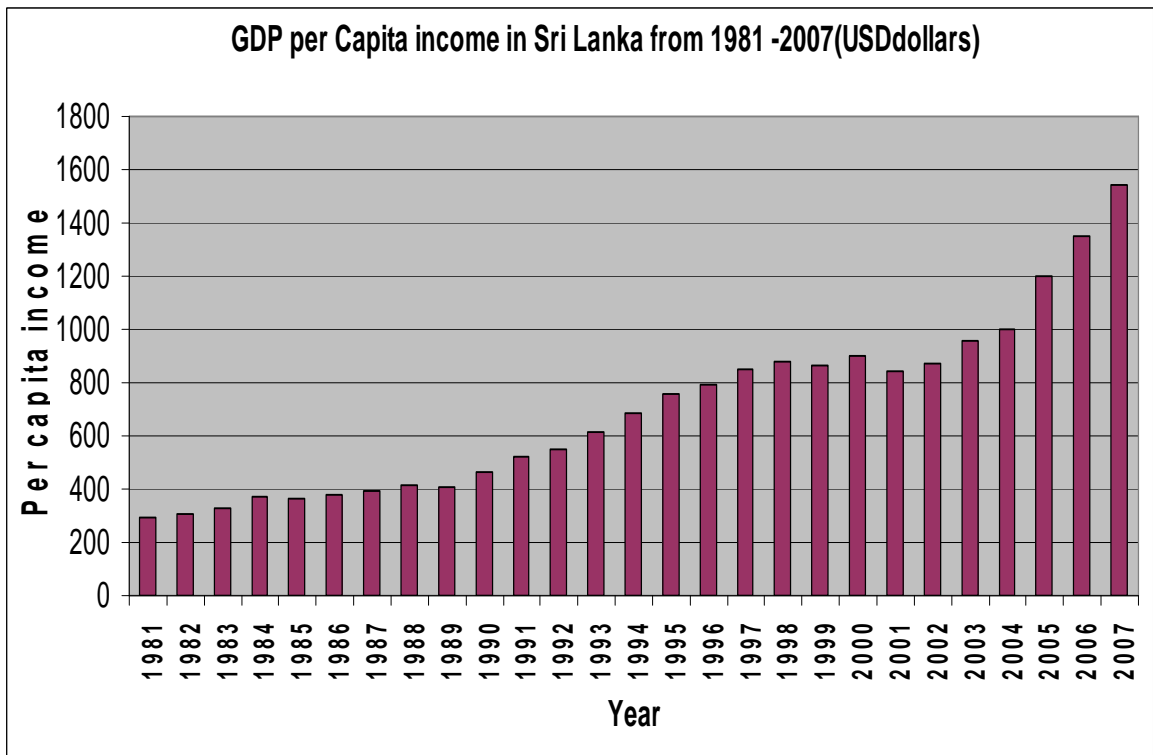
Sources: Annual report of Central Bank of Sri Lanka. (Statistical Appendix).Table 2- 2007

Figure 06: Gross Domestic Products of Sri Lanka from 1977 to 2007

In Sri Lanka per capita income also increased continuously from 1977 under free market economy (Figure 06).

5.2.3. Per capita GDP income in Sri Lanka

Personal Per Capita Income is generally seen as a key indicator of the economic vitality of an economy.



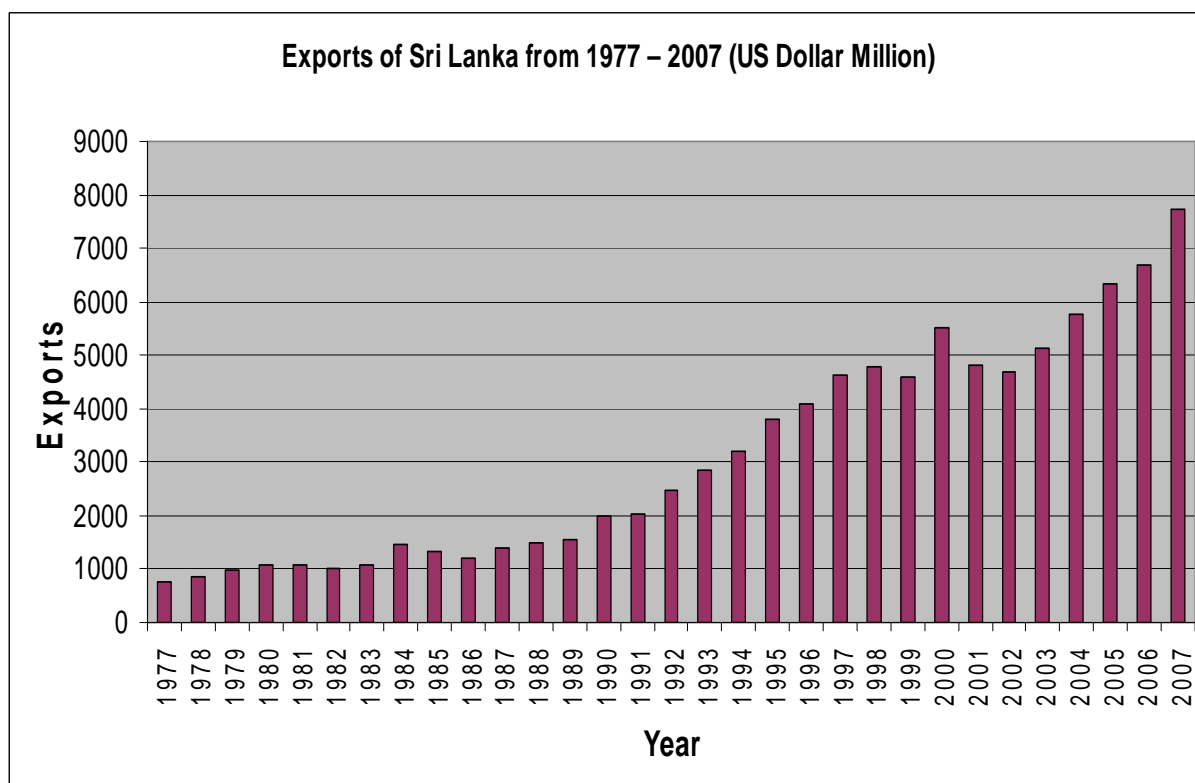
Sources: Annual report of Central Bank of Sri Lanka-2007

Figure 07: GDP per capita income in Sri Lanka from 1981 -2007

Under free market economy per capita income increased continuously in Sri Lanka (Figure 07).

5.2.4. Exports development in Sri Lanka

Improved export opportunities can significantly help to promote economic and social development particularly in developing countries. Liberalized economy pushed Sri Lanka for international trade and it was benefited to growth of economy of the country.



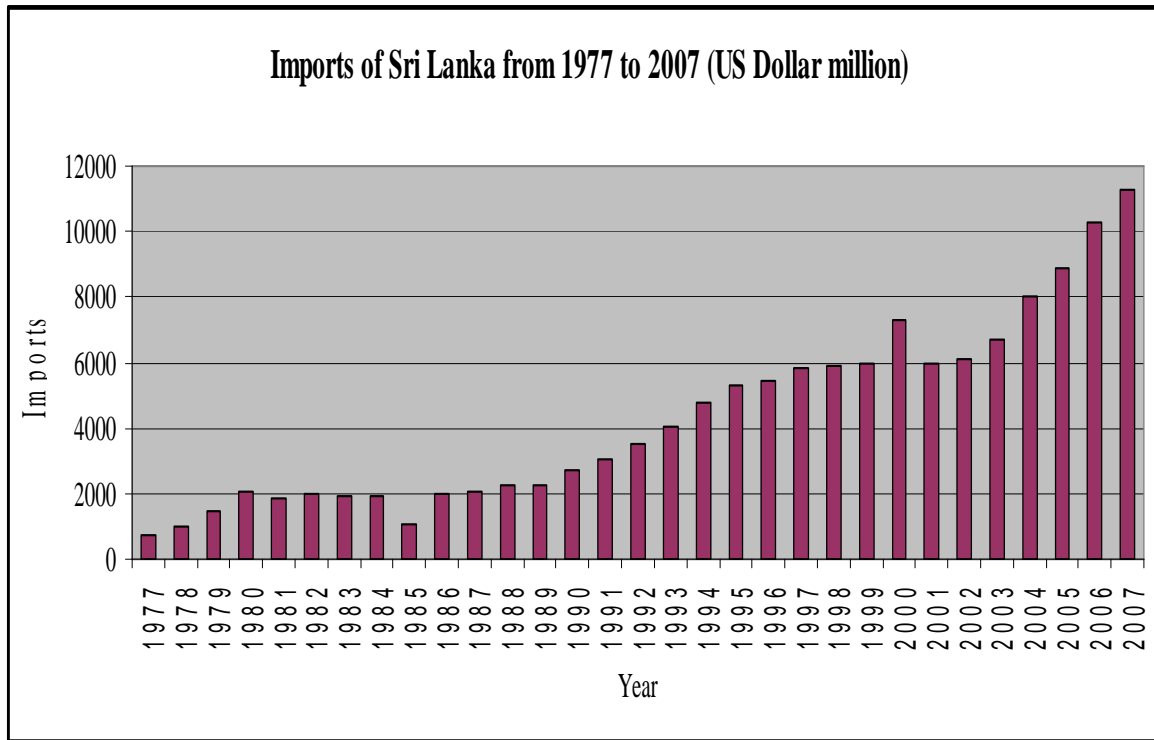
Sources: Annual report of Central Bank of Sri Lanka.(Statistical Appendix).Table 2.-2007

Figure 08: Exports of Sri Lanka from 1977 - 2007

There was a continuous increase of the export revenue in Sri Lanka under free market economy from 1977(Figure 08).

5.2.5. Imports in Sri Lanka

Contrary to the export development, Expenditure on imports also increased continuously under the free market economy from 1977 up to now in Sri Lanka (Figure 09).



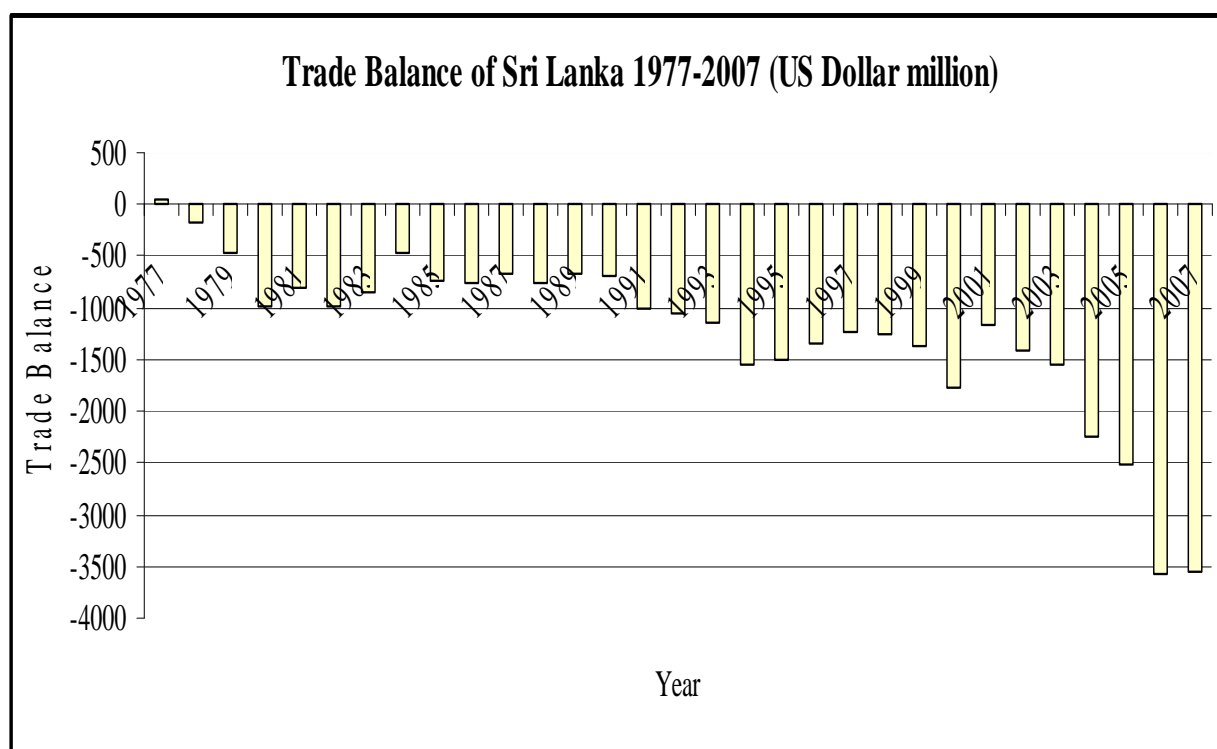
Sources: Annual report of Central Bank of Sri Lanka.(Statistical Appendix Table3)-2007.

Figure 09: Imports of Sri Lanka from 1977 to 2007

Increasing expenditure on imports declined the advantage of increasing exports. Further it was adversely affected on the economy because the imports included more consumer goods than the investment goods. In 2007 imports included 24% consumer goods and 56% intermediate goods but investment goods limited only to 19% out of the total volume of the exports in Sri Lanka[63].

5.2.6. Trade balance in Sri Lanka

Before transform to Market economy in 1976 there was a surplus trade balance in Sri Lanka, it was US Dollar 40.90 million [63].



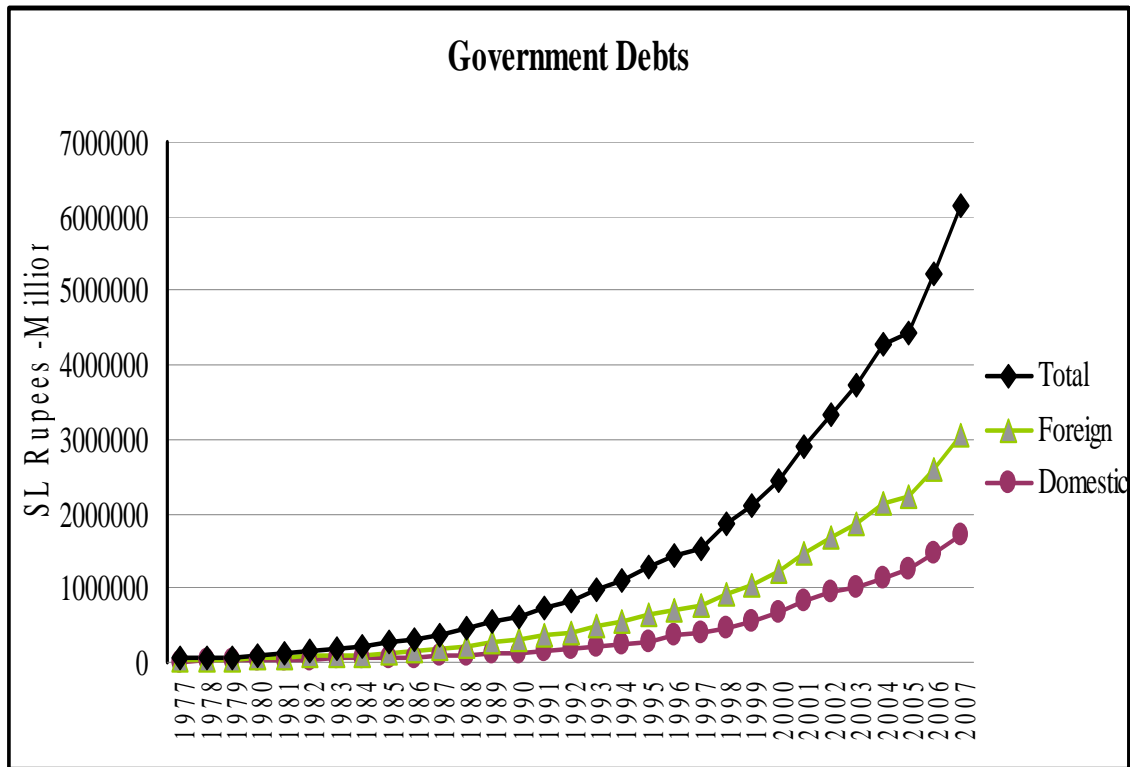
Sources: Annual report of Central Bank of Sri Lanka.(Statistical Appendix Table3)-2007.

Figure 10: Trade Balance of Sri Lanka 1977 – 2007

Although under free market economy total exports revenue continuously increased annually the total expenditure on imports increased more than that. As a consequence of that deficit trade balance widens continuously (Figure 10).

5.2.7. Government debts in Sri Lanka

Increasing Government debts shows an unhealthy economy of a country. Total debts also has significantly widen under free market economy in Sri Lanka from 1977 (Figure 11).



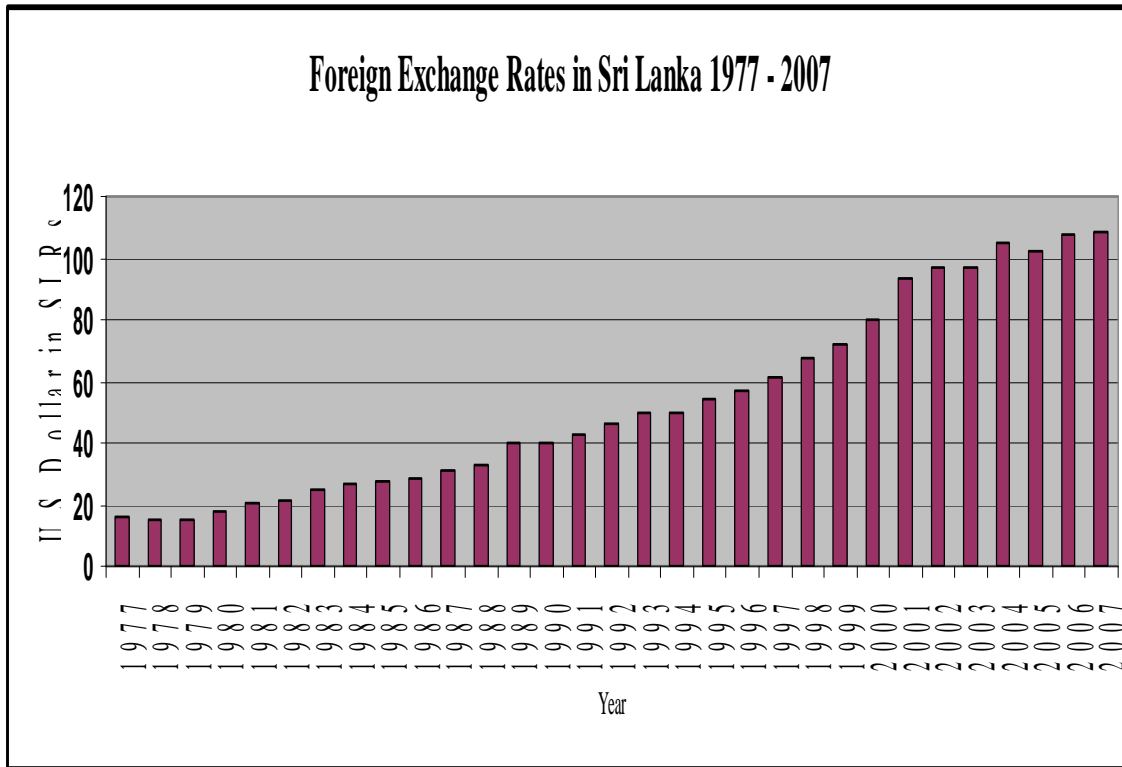
Sources: Annual report of Central Bank of Sri Lanka. (Statistical Appendix).Table 6 - 2007

Figure 11: Government debts in Sri Lanka from 1977 to 2007

When country liberalized the economy in year 1977 the total debts was rupees million 24,985 and continuously it was increased and in 2007 total debts accounted Rs. million 3,070,069 in Sri Lanka. This accounts 44% of foreign debts [63].

5.2.8. Foreign exchange rates of Sri Lanka

Sri Lanka economy was not able hold the exchange rate on a stable position under free market economy. When US Dollar compares with Sri Lanka Rupee from 1977 the Dollar value increased continuously (Figure 12). This situation adversely effect the Sri Lanka economy on increasing annul imports, increasing deficit trade balance and increasing foreign debts of the Government.



Sources: Annual report of Central Bank of Sri Lanka. (Statistical Appendix)Table2- 2007

Figure 12: Foreign exchange rates in Sri Lanka from 1977 to 2007

5.3. Environment protection of Sri Lanka

5.3.1. Water Pollution

Geographically Sri Lanka can be divided in to two parts as wet zone and dry zone and agriculture is the main livelihood of both zones. The island is endowed with rich water resources emanating from the central highlands that receive rain during the monsoons. The mean annual rain fall ranges between 900

mm to 6000 mm, with the island wide average of about 1,900 mm. The average annual river flow, which is 31% of the rainfall, is 40,680 million m³. Surface waters are carried radically from the central hills through 103 distinct river basins covering 90% of the island. Mahaweli is the longest river draining 16% of the country and carries water from the wet zone to the dry zone. Sri Lanka's inland waters include man made lakes and ponds and marshes, constituting one of the highest densities in the world. The area under water bodies covers 2905 sq. Km. (4.43% of the total land area). The dry zone possesses a sophisticated irrigation system of reservoirs and canals built mainly for rice cultivation. There are 309 major irrigation reservoirs and nearly 18000 minor irrigation reservoirs, of which around 12,000 are currently operational. Some of these reservoirs date back to 4000 years [64]. Water resources are at times, subjected to conflicting multiple demands such as domestic uses, agriculture, health and sanitation, inland fisheries, hydropower generation, industrial and commercial uses, recreational and other activities. The major intentional pressures on water resources are agriculture, urbanization and settlements and industrialisation.

- *Agriculture*

Agriculture is the most important sector in the economy of Sri Lanka in terms of land utilization about 37110 sq. km. and provides means of livelihood for around 35% of work force and contributes around 19% of GDP. Rice, as the staple food of the country, occupies about 56% of arable land [65]. Development of agricultural sector enhanced the application of agrochemicals and fertilizers and contributed largely to water pollution. Extensive use of agrochemicals leads to higher level of water pollution. The use of ground water resources for agriculture is prevalent particularly in the dry zone of the country. [66].

- *Fertilizer and agrochemicals*

Fertilizer and agro chemicals have become a major reason for water pollution. In the islands off the peninsula, 50% of the wells contained nitrates above 10 mg/l. Leaching of agrochemicals from intensively cultivated soil is responsible for elevated concentrations of chloride, nitrate and potassium. Observed in many irrigation wells in the Kalpitya peninsula, with nitrate concentrations of up to 40 mg/l. In some areas such as Puttalam, Mannar, Paranthan, Kilinochchi and Mullativu, groundwater is over exploited. About 12000 large diameter shallow wells are using in the dry zone for irrigation due to this situation there is a future risk. . The North Western Province is an important example of an agricultural region, which exploited ground water through 130 tube wells and finally suffered as a result of intrusion of salt water In these agricultural areas, population density is high, and consequently bacterial pollution is common from pit latrine soak ways. Soil, which is the most effective layer in protecting

groundwater through absorption and biological degradation, is bypassed by pit latrines and increases the risk of faecal contamination. Widespread water contamination in the peninsula results from agricultural washouts and pit latrine soak ways. In some areas in Point Pedro, nitrate concentrations ranged from 122 to 174 mg/l due to sewage pollution [66].

- *Pesticide*

Recent data is lacking on pesticide residues in water resources. As agrochemicals are extensively used in agriculture, there is little doubt as to the existence of pesticides in water and resultant effect of bioaccumulation in animal tissues. The Kotmale Oya tributary brings the highest load of nutrients through the upper Kotmale catchment, covered with dense tea estates [66]. The consequent risk of high phosphate levels in Nuwara Wewa and to a lesser extent in Tissa Wewa (both in Anuradhapura District) is severe [67]. Similar studies for the surface waters in Mahaweli System ‘H’ revealed high agricultural agrochemical inputs [68]. The Kandy Lake in Kandy and Lake Gregory in Nuwara Eliya (Both situated in up country) are also victims of nutrient enrichment. Water quality surveys of many irrigation reservoirs and channels in Mahaweli irrigation System ‘H’ in the Anuradhapura and Polonnaruwa districts was found to contain high nutrient levels.

- *Urbanization*

Increasing population and urbanization are highly effects the water pollution particularly in urban areas. The population in urban areas has increased significantly. The pace of urbanization in the future is likely to be rapid.

The highest proportion, 51% of the urban population is centred in the Western Province which includes Colombo, Gampaha and Kalutara districts. Colombo covers 1.1%, Gampaha 2.1% and Kaluthara 2.4% of the land area and carries 11% of the total population at a high density of over 3213 persons per km². Gampaha and Kalutara towards the north and south of Colombo have population density of 609 and 1265 persons per sq. km respectively.

Table: 05: Population density in western province Sri Lanka in 1981 and 2001

District	Land area Sq. Km	Land %	Population 000		Population Density 1Sq Km	
			1981	2001	1981	2001
Colombo	699	1.1	1,699000	2,251000	2,605	3,330
Kaluthaa	1,387	2.1	1,391000	2,064000	994	1,539
Gampaha	1,598	2.4	830000	1,066000	516	677

Sources: Department of Census and Statistics of Sri Lanka -2007.

Urbanization and the lack of adequate waste disposal and management facilities have resulted in water pollution through discharge of domestic waste into water ways. The larger cities such as Colombo, Galle, Jaffna and Kandy have serious problems in the disposal of liquid waste, sewage, industrial effluents and industrial and domestic solid waste. It is revealed that only 19% of the population in Colombo metropolitan region was served by piped sewers and 59% by onsite facilities. The total quantity of excreta disposed in this area is estimated at 726 metric tones/day, 59% of which is released into earth through septic tanks and pit latrines. 138 mt sewage are released daily into waterways owing to grossly inadequate sewerage systems. The highest density of housing is within the Colombo metropolitan region, which enhances pollution through waste water discharges. It has been estimated that of the total waste water generated (370,000 m³/day in the GCA), 90,000 m³ / day are discharged through ocean outfalls. The remaining 280,000 m³ / day re-enters the environment as waste water [66].

- **Industrialization**

Sri Lanka is shifting her focus from agriculture to industry particularly during last four decades the large manufacturing industries of the country include cement, paper steel, petroleum refining, sugar, ceramics and textile (garments). Industries in the rural areas are small cottage units using traditional technology. The urban sector is dominated by small and medium sized manufacturing industries, including tanneries, textiles, batiks, garments, food processing, paints, varnishes, cosmetics and other chemical products. The spatial distribution of industry shows that more than 50% are located within 12 kilo meters from Colombo (main city), 80% within 21km. and more than 90% within 27 km. of the city centre. Most of the industries in Colombo are located in Ratmalana industrial estates, Homagama and Orugodawatte in the Colombo district and Peliyagoda, Waththala Katunayake (free trade zone), and Biyagama (free trade zone) in Gampaha district. Colombo and Gampaha account for

nearly 80% of industries in the country. Composition of Solid Waste of Katunayake Export Processing Zone per day is approximately 18 tonnes [66].

The major effluent generating industries have been identified as textile dyeing and bleaching, food processing, leather tanning, metal finishing, agro produce, sugar, distilleries, breweries, pulp and paper, leather and tanning and mineral products. Urbanization and industrialization cause water pollution due to discharge of waste water, sewage, solid waste etc, into surface groundwater and stagnant waters. The condition of the Kelani River and adjacent water bodies indicates the level of such pollution. The Colombo Urban Area is bisected by the Kelani River with heaviest pollution in the western part and less pollution in the eastern and northern parts. All natural vegetation except for some small areas of tropical forest, mangrove and swamp vegetation, in this area has been destroyed by human activity [69]. The Kelani River runs through densely populated areas and receives much organic pollution in the last 50 km stretch due to the discharge of untreated faecal matter. In addition, the concentration of total and faecal coliforms at the mouth of the Kelani is greater than in the seawater above the Mutwal outfall.

5.3.2. Land degradation

Land degradation has been defined as “the temporary or permanent lowering of the productive capacity of land. It thus covers various forms of soil degradation, adverse human impacts on water resources, deforestation and lowering of the productive capacity of the rangelands” [70]. Land degradation occurs due to natural causes and is also human induced. The main natural cause for soil erosion is the combined effect of soil texture, intensity of rainfall, and steepness of slopes. High intensity of rainfall, which leads to flooding, is considered to be the main determining factor of the rate of erosion. These factors, when combined within inappropriate land use practices and poor management intensifies erosion of the soil. There are few factors concern as main causes for land degradation on human activities such as agriculture, plantation, human settlements, poverty, and unemployment.

A clear pattern of soil erosion in Sri Lanka has been observed in the Hill Country, mid country and the low country. Comparative studies of erosion by zones have shown that mid country to be the most vulnerable to erosion.

Hill Country: Soil erosion is of particular concern in the Hill Country where the water sheds of major rivers are located. The most important catchment of Upper Mahaweli Catchment (UMC) consists of 3118 sq. km. The Mahaweli River feeds four major reservoirs of Kotmale, Victoria, Randenigala, and

Rantembe and a diversion pond at Polgolla. These reservoirs irrigate over 300,000 ha of lands and generate 50% of hydropower. Up country vegetable cultivation also mainly effect for soil erosion. Typical land use changes in the hill country have a direct bearing on increasing soil erosion rates. Extent of soil loss in Hill Country is 412 tonnes/ha/year[70]

Mid country: Soil erosion appears to be acute in the mid country intermediate zone particularly on arable cropping land due to a combination of factors. These include the large extents of land under plantation crops, fragmentation of land due to increase in population, encroachment of sensitive lands and the existence of immature brown loam soils vulnerable to soil erosion. A large percentage of neglected tea lands are concentrated in the mid country. A similar pattern of erosion has been observed in the upper watersheds of Uma Oya, Kirindi Oya, Walawe Ganga and Kalu Ganga located in the mid zone. Neglected tea lands with a cover of less than 40% and human settlements are prone to erosion. The cultivation of varied seasonal crops such as tobacco, potato, sugarcane, and maize and vegetables on steep terrain with shallow soil is a contributory factor in erosion. Extent of soil loss in Mid Country is 1,026 tone/ha/year [70].

Low country: Forest lands in the low country released for timber extraction develop large-scale gully formations. Cultivated extents have increased at the expense of forest. Extent of soil loss in Low Country is 147 Tones/ha/year [70].

- ***Agriculture***

Several direct and indirect pressures contribute to soil erosion. Agriculture provides the livelihood for 35% of the population in Sri Lanka. The total extent of agricultural land is 31% and agricultural land per capita is .26 ha which is among the lowest in Asia and which is subjected to fragmentation and eventual overexploitation of land. Employment opportunities in the rural sector did not expand in proportion to increasing population. Consequently the poorer groups are forced to depend on the diminishing land resource base [70]. With increasing demand for land, encroachment takes place in environmentally sensitive lands. Unregulated and poor land use practices have resulted in widespread soil erosion. Soil erosion also takes place when land users have no incentive for investment in maintaining land productivity.

- ***Plantation***

The pressures on land leading to soil erosion and land degradation also emanate from the Plantation sector in Sri Lanka.

Tea: In 2006 there are 212,715 hectares allocated for tea plantation. It has been established that soil erosion is very high on abandoned and poorly managed tea lands. A study of soil erosion in tea lands in the upper catchment of Mahaweli revealed that an estimated loss was 115 mt/ha/yr [70].

Vegetable: Vegetable cultivation on slopes without conservation has the highest, that is EHR 40. Tobacco on uplands presumably without conservation has an EHR of 40 [70]

Rubber: Most rubber plantations are located on lands with an average slope of 15-20%. Erosion becomes higher with the increase in slope and inversely with the level of management. In well managed rubber estates the run off is below the accepted figure of 5 mt/ha/yr even on steep slopes. Studies on rubber have shown a decline in production of 174 kg/ha /yr [70].

Tobacco: Small holders grow tobacco on a wide scale, because of an attractive range of facilities offered by private entrepreneurs. The loss of soil on tobacco land is estimated at 70 mt/ha/ya [70].

- **Deforestation**

Deforestation also significantly effect on the land degradation. This has caused to reduce natural dense canopy forest cover in the country from 80% at the turn of the century, to less than 24% by 1992 [70]. Forests have been cleared by government agencies for agriculture, settlement schemes and other development projects.

5.3.3. Waste management

Generation of Municipal Solid Waste, from both domestic and commercial sources, has grown dramatically in Sri Lanka over the past three decades owing to the population growth, urbanization, and industrial development and changing life styles of the people etc. It is estimated that about 3000 tonnes of municipal solid waste is collected per day throughout the country. However, the actual generated quantum may be much higher. The current population in Sri Lanka is close to 20 million of which 73.7 % is rural population [71].

In rural areas due to lower population densities and greater availability of lands, disposal of solid waste is not as a serious issue. In most rural areas, management of solid waste is undertaken at individual or community level.

By contrast, the urban areas are densely populated and generate larger quantities of waste, which contain a higher amount of non-biodegradable components than in rural areas. Ever growing quantities of solid waste impose increasing pressures on individual Local Authorities which are responsible for the management of waste (Table 06). Local Authorities are responsible for the collection and disposal of solid waste arising from the following sources:

- Residential and commercial waste; (including market waste);
- Hospital waste (clinical and non-clinical);
- Industrial waste;
- Slaughter house waste;
- Drain clearings and street sweepings.

Table 06: Local authorities with a waste collection of more than 50/tonnes/day; in Sri Lanka

Local Authority	Waste collection (tonnes /day)
Colombo Municipal Council	680
Dehiwala Mt.Lavinia Municipal council	150
Moratuwa Municipal Council	135
Kandy Municipal Council	102
Negembo Municipal Council	54
Sri Jyawardanepura Municipal Council	95
Trincomalee Urban Council	72
Bandarawella Urban Council	118
kayts	60

Sources: -UNEP Report -2002

The data available that would help estimate the total quantity of municipal waste collected or generated in the country is not entirely accurate. However, the best estimate of total waste generation in Sri Lanka is around 6,400 tonnes per day.

- ***Hazardous Waste***

Although recent data not available hazardous waste (excluding clinical waste) was estimated at 40,617 tones in 1996. Around 50 percent of the hospital waste consists of clinical waste which includes:

- Human tissue, sharps, pathology and laboratory wastes;
- Pharmaceutical wastes;
- Disposable equipment and containers that have been in contact with body fluids;

- Special treatment wastes related to chemotherapy
- Low level radioactive wastes.

Data is not available for clinical waste generated in Sri Lanka but a survey limited to Colombo estimated a total waste generation of 3 tones per day in 1996. Hazardous waste is expected to increase substantially over the next decade. At a constant growth rate of 5% per annum, the estimated hazardous waste by year 2010 is 80,420 tones. In 1996, over 95% of the clinical waste generated in Colombo was disposed in open dumps without pre-treatment [71].But that situation is not changed up to now.

- ***Municipal Waste***

The past two decades has seen a marked increase in industrialization in rural areas. The Government policy to improve access to rural areas through infrastructure development and targeted regional growth centres will have a strong influence on the quantities and composition of waste generated in areas that are currently predominantly rural. As a consequence, the problems of solid waste management now experienced in urban areas will become more widespread across the island. Projections for waste collection quantities have been carried out for the years 2001 to 2010 are summarized below (Table 07). The projections are based on current waste collection rates (not generation rates) and a population growth rate of 1.2 percent. The estimates given above are only an indication of the approximate waste quantities that will be collected in the future and would require final disposal. Finding disposal sites in urban areas in Sri Lanka is increasingly difficult. Few sites in the urban areas have the capacity to receive waste for more than six months, and thus are transient. This indicates the severity of the crisis in the disposal of waste. The prevalent method of disposal of solid waste in Sri Lanka is open dumping. This comprises non engineered sites where waste is tipped haphazardly without environmental controls.

Table 07: Projections for waste collection quantities 2001 - 2010

Year	Projected Quantity Of Waste Collected (tones per day)
2000	2560
2005	2770
2010	2885

Sources: -*UNEP Report -2002*

A majority of open dumps are in low lying areas such as marshes and abandoned paddy fields in filled with solid waste primarily as a means of land reclamation. A review of dumpsites of the Greater Colombo area was carried out under the Colombo Environmental Improvement Project in 1999/2000. It

was found that the 41 existing disposal sites were all open dumps with the exception of one site where market waste was buried in trenches [71].

5.3.4. Depletion of coastal resources

Sri Lanka comprises one large island in the Indian Ocean, situated about 80 kilometres east of the southern tip of India. Sri Lanka has a land area of 65,000 km² and the length of the coastline is 1,562 km. from which the Exclusive Economic Zone (EEZ) extends 200 nautical miles.

Table 08: Extents of some Coastal Habitats in Sri Lanka

Costal Habitat	Extent (ha)
Estuaries and Lagoons	1,58017
Mangroves	12,500
Salt marshes	23,819
Sand dunes	7,606
Beaches	11,788
Marsh	9,754
Other water bodies	18,839

Source: Coast Conservation Department of Sri Lanka. (CCD), 2000

This is 6.7 times the country's land area occupying 437,400 sq. km. Coastal waters extends from the continental shelf to the other limits of the EEZ [72]. The coastline and adjacent waters support highly productive marine ecosystems such as fringing coral reefs, shallow beds of coastal and estuarine sea grasses and an extensive system of 45 estuaries and 40 lagoons.

The coastline itself consists of a wide range of geomorphologic features such as headlands bays, lagoons, peninsulas, spits, bars, and islet. It encompasses a variety of tropical habitats including wetlands, lagoons and estuaries, mangroves, salt marshes, and sea grass beds; coral reefs; and coastal sand dunes barrier beaches, and spits. The coastal habitat covers 24% of land area and constitutes a significant natural resource base large extent by access to the sea [73]. One third of the population of Sri Lanka, two-thirds of the total urban population, two thirds of the industrial facilities and over 80% of the tourist infrastructure accommodated within only one fourth of the island's land area having a coastal boundary. The term "coastal resources" refers to resources, both living and non living, found in the coastal region. The term "coastal area" in the context of the Coast Conservation Act of Sri Lanka (1981), is defined as the Coastal Zone, a 2 km wide band of ocean and an adjoining strip of land extending 300m inland. In the event a water body connected to the sea occurs the zone extends two km. inland from the mouth of the water body

- ***Coastal Erosion***

In Sri Lanka coastal erosion has been a problem over the years especially in the south, west and north western coasts. At certain locations, net erosion has been recorded up to 01 meter per year. Accretion rates, on the other hand, have not exceeded 0.1 meter per year, except in the northeast where the rate is 0.3 m per year. The average for the entire county is a net mean rate of erosion of 0.20 to 0.35 m per year [72] Apart from the impact on the shoreline, the financial impact brought about by the necessity for shore line protection indicates, in economic terms, the gravity of the problem and why factors that increase erosion need to be controlled. Protective measures to approximately 52 km of coastline by construction of revetments have cost Rs. 373 million since 1970; coast protection by stabilising 16 km of coast in Negombo and Moratuwa (1987 to 1989) have cost Rs. 322 million. The protection of threatened points along the main coastal road from Beruwala to Weligama (1990 to 1992) has cost Rs. 520 million [74]. The expenditure incurred annually to mitigate shore erosion is at great cost to the national economy.

- ***Destruction of Coral Reef Ecosystem***

Coral reefs are an important coastal resource that contain coastal erosion and sustain coastal fisheries. The mass coral bleaching that occurred in April 1998, resulted in extensive (around 80%) coral death followed by serious impacts on the reef ecosystem and in changes in fish populations, species composition, reef structure, biodiversity, succession and ecosystem functions. Even after two years of the bleaching, existing coral species have not recovered their reproductive capacities and there is little likelihood that reef ecosystems would regenerate and provide their normal services [73].

Apart from bleaching, many other causes, outlined earlier, have resulted in most coral reefs being degraded or destroyed. Most of the known reefs, particularly readily accessible near-shore reefs, were degraded due to human-induced damage [75]. Possible over-collecting, improper and inappropriate techniques of collecting by the export aquarium trade damage or destroy the reef habitat. Through coral mining and dynamite blast fishing are continuing yet. High sediment and particulate matter loads as well as pollution from land-based sources, with loads of up to 3.2 kg/day/1m² (are other pressures affecting changes in the reef habitat. Possible over-collecting, inappropriate techniques (moxy net) of aquarium fish collecting, holding and transport in the export aquarium trade, damage and destroy the reef habitat. Coral mining, dynamite blast fishing, ghost nets from bottom nets, unplanned expansion of domestic and overseas tourism in coastal areas contribute to further destruction of the reef structure and reef habitat [72].

- ***Destruction of Mangroves and Associated Habitats***

The destruction of mangroves and interruption of natural drainage has reduced flood buffering capacity, with the result that the north western shrimp growing areas experienced massive flooding in 1997. The pressures on mangroves and associated lagoons and estuaries attributed to tiger prawn farming have affected ground water quality and resulted in increased salinization of lands upstream of estuarine areas. Increased salinity in paddy lands have rendered them unproductive or reduced rice yields by over 50 % [72]. There are many reasons effects for the depletion of coastal resources in Sri Lanka and following are the major causes.

Fisheries expansion: The fisheries sector plays a key role in Sri Lanka's social and economic life. The fisheries sector of Sri Lanka consists of three main sub sectors, namely coastal; offshore and deep sea; and inland and aquaculture. These three sub sectors employ around 250 000 active fishers and another 100000 in support services. This workforce represents a population of some one million people. Fishing activities take place around the entire coast of the country, with landings made, at 12 fishery harbour centres, several large and small anchorages and as many as 700 village-level sites[72]. The undeveloped traditional fishing systems and unplanned infrastructure development for the fishing industry such as the construction of harbours creates pressure on coastal ecosystems and coastal resources.

Prawn farms: Prawn farms were established in cleared ecologically sensitive mangrove areas in the northwest exerting tremendous pressure on mangroves and degrading associated lagoons and estuaries. It is estimated that 359.5 ha out of 1083 ha of shrimp ponds and 400 to 500 ha of mangroves or mangrove associates have been cleared [72]. Pressure on water of lagoons and estuaries by the addition of chemicals and organic matter has resulted in changed water quality and depressed productivity of these waters. Waste from illicit liquor brewing has also exerted pressure on the productivity of these sensitive habitats and pressure on mangroves and estuaries: causes of degradation /destruction. During the period of the shrimp farm boom from 1983 to 1992, water quality in the Dutch canal deteriorated dramatically.

Aquarium fishery: In the marine capture aquarium fishery, 530 metric tones of organisms (both marine and fresh water) comprising approximately 200 species with a value of about Rs.300 million was exported in year 1996, which almost doubled to 1043 metric tones (with a value of Rs. 531 million) in year 1998 [72]. All exported individuals are collected mostly from inshore areas where corals occur. The ecological status of the reef habitat would determine the sustainability of this industry due to unethical and undeveloped fish collecting methods.

Tourism expansion: The marketable “services” of coastal resources include the resource base for overseas and domestic tourism. Foreign tourist arrivals have risen annually in Sri Lanka and increased visitation by domestic tourists, particularly to sites such as the Hikkaduwa Nature Reserve (the only marine Nature Reserve in Sri Lanka) has serious repercussions on the reef habitat. Increasing tourist arrivals will continue to be a source of pressure on coastal resources, particularly because coastal tourism is showing rapid growth worldwide (Table 09)

Table 09: Growth of tourism in Sri Lanka 2000 – 2006

Year	No: of Tourists	Income US \$	Direct Employments	Indirect Employments
2000	400,414	252.8	37,943	53,120
2001	336,794	211.1	33,710	47,194
2002	393,171	253.0	38,821	54,349
2003	500,642	340.0	46,761	65,465
2004	566,202	416.0	53,766	75,272
2005	549,308	362.3	22,085	72,919
2006	559,603	410.3	55,649	77,909

Sources: Department of Census and Statistics of Sri Lanka –Statistical Book-2007.

The changing pressure on coastal habitats through hotel construction, which was low over last 7-year period, is now seeing a gradual increase while most coastal hotels discharge their used water and even sewage into the coastal waters causing pollution, social pressure is also created by communities through changed patterns of lifestyle. Reefs are damaged by careless snorkelling and diving by tourists. Increased sewage pits in the tourist areas of Beruwala, Bentota and Hikkaduwa of southern coastal area have caused pollution of ground water and domestic wells [73].

Sand mining: Sand, a commonly used non-living resource, is exploited from the lower reaches of river basins and, to a lesser extent, from the shores. The volume of sand extracted has increased from 523,780 cubes in 1984 to 625,662 cubes in 1991 in Sri Lanka⁷⁷. Sand mining from the offshore seabed has attracted discussion in recent times for purposes of infrastructure development such as highways. Excessive sand mining from riverbeds would increase saline intrusion and riverbank collapse. Pressure generated by both human-induced activities and natural phenomena result in impacts on coastal resources, and brings about changes in the availability of coastal resources and their ecological functions.

Silting: Silt loads that are the inevitable results of construction. The inadequacies in integration of policy frameworks have resulted in unplanned and disjointed coastal activities. These include expansion of industries, building of

hotels, over-visitation, etc at sensitive coastal locations. The construction of ill planned fishery harbours has produced almost continuous silting whilst siltation has already commenced in the Hikkaduwa harbour, located adjacent to the Hikkaduwa Nature Reserve [73]. Fishery harbour construction will increase in terms of approved fisheries development plans. Lessons learnt from these experiences make it necessary to diligently carry out pre-construction impact assessment studies, to model, assess and plan for changed current patterns.

5.3.5. Air pollution in Sri Lanka

Air pollution, both indoors and outdoors, is a major environmental health problem affecting both developed and developing countries alike. It comes from sources of dust, gases and smoke and is generated mainly by human activities and less often by nature itself. In Sri Lanka, 69% of the Domestic sector and 17% of the Industrial sector cause air pollution. Power generation, open burning of domestic and industrial refuse can be mentioned as other stationary sources. Transport sectors also a bigger contributor of pollutants to the environment that is about 12.5%. Air pollution in Sri Lanka is primarily due to the combustion of commercial energy from which the industrial sector accounts for nearly half of the total emission of SO_2 (Sulphur dioxide) [76]. Among urban areas. Colombo, the capital of Sri Lanka is highly polluted due to high traffic congestion during peak hours, higher vehicle population, low priority for vehicle maintenance and fuel efficiency and improper releasing of harmful air pollutants from the factories in the metropolitan area. According to a finding of World Health Organization (WHO) it is understood that air pollution affects the human respiratory system. Also to the records of main children's hospital in Sri Lanka data of hospitalization and hospital deaths related to the respiratory system, which indicates Asthma and Acute Bronchiolitis has cause for hospitalization. Annual Health Bulletin 2001(Sri Lanka) records that respiratory diseases are ranked within the first five leading causes of death in all age groups except 15 – 24 and 25 – 49 years [77].

5.3.6. Deforestation in Sri Lanka

Loss of biodiversity is due to several pressures arising from the high population density and expansion of the human environment. Population increase and decrease in forest cover are frequently a combine factor which adversely effect biodiversity. Increasing population mean utilize more land for settlements, agricultural, commercial and business enterprises, recreation and so

on. Ultimate result is reducing the forest cover and increase the pressure on natural ecosystem.

Demography: There is an inverse relationship between forest cover and population growth. The increase in the Island’s population, accompanied by expansion of the land area under agricultural, industrial development have contributed to the loss and reduction of extents of natural forest ecosystems, their inherent species as well as genetic diversity. In year 1900 Sri Lanka population density was 82 per Square kilometres and it was increased to 262 after 90 years in 1990 and further it was increased up to 317 within 15 years in year 2005 (Table 10). According to the population ranking in the world, Sri Lanka is in 26th position. The highest population is in the wet zone districts, which is home to nearly 90% of the endemic biodiversity. The proportion of endemic flowering plants in relation to 100 square miles of land area in the wet and dry zones is 5.71 and 0.11 respectively [78] the population in a square mile of land in each of these zones is 449 and 141 respectively. These values indicate the relationship between population and endemically in the wet zone.

Table 10: Population of Sri Lanka from 1881 to 2006

Year	Population (million)	Population density	
		year	Per Sq: km
1881	27.00	1900	54
1971	12.70	1956	131
1980	14.75	1983	230
1985	15.40	1992	265
1990	16.99	1997	282
1995	17.28	2000	295
2000	18.73	2002	303
2005	19.66	2004	310
2006	19.88	2005	317

Sources: Department of Census and Statistics in Sri Lanka.

Forest Cover of Sri Lanka: The forest resources of Sri Lanka have been steadily declining over the years, from 70% of the land area in 1900 to 24% in 1992 and further to 22% in 1999. The average annual rate of deforestation between 1992 and 1999 has been approximately 13,000 ha. Over the past 15 years, between 1990 to 2005, Sri Lanka has had one of the highest deforestation rates of primary forests in the world. In that period the country lost more than 35 percent of its old-growth forest cover, while total forest cover was diminished by almost 18 percent. Since the close of the 1990s, deforestation rates have increased by more than 25% [78].

Table 11: Forest Cover of Sri Lanka from 1881

Year	Forest cover %
1881	82
1900	70
1956	44
1983	27
1992	24
1999	22
2000	2,082,000 ha
2005	1,933,000 ha

Sources: Sri Lanka Environmental Profile UNEP 2002

Sri Lanka, an island off the southern- point of India, is known as a global biodiversity hotspot for its high number of species in a relatively limited area. However this biological richness is highly threatened by one of the highest deforestation rates of primary forests in the world. This has led to problems such as biodiversity loss, soil erosion, land degradation and impacts on levels of carbon sequestration. Threats to natural forest ecosystems in the wet zone are mainly due to the expansion of tea, rubber, oil palm and other cash crops. In the dry zone the cultivation of cash crops, large-scale development schemes like the accelerated Mahaweli Development Project and shifting cultivation have impacted on natural forests. Mangrove ecosystems on the other hand, are threatened by the reclamation of land and urbanization. The construction of large reservoirs continues to reduce the extents of natural ecosystems, particularly in the lowland wet and intermediate zones. In the northern and eastern part of the “Knuckles” mountain range, the forest undergrowth in 2,400 ha. has been cleared for cardamom cultivation [78]. Large scale agricultural and irrigation projects and settlement schemes have also reduced the extents of these forests.

5.4. Social Issues in Sri Lanka

5.4.1. Poverty in Sri Lanka

Poverty has become a serious socio economic problem in developing countries and Sri Lanka also suffers as an inalienable socio-economic issues. According to the table no: 12 there is a improvement of decline in poverty in Sri Lanka from 1995 to 2007 but still national level poverty headcount is existing around 15% and the estate sector does not show satisfactory improvement (Table 12).

Table 12: Poverty Head Count Index (percentage) by Sector, and National level from 1990/1991 to 2007

Sector	Poverty head count index(percentage) by survey period			
	1990/ 1991	1995 / 1996	2002	2006 / 2007
Sri Lanka	26.1	28.8	22.7	15.2
Sector				
Urban	16.3	14.0	7.9	6.7
Rural	29.5	30.9	24.7	15.7
Estate	20.5	38.4	30.9	32.0

Sources: Department of Census Statistics Sri Lanka –Poverty Indicators survey 2007.

The daily per capita calorie requirement for the country (caloric norm) that was calculated on minimum per capita calorie requirements by age and sex obtained from medical research studies and according to age and sex distribution of the population and food consumption data gathered in Household income and expenditure survey. According to that method in 2002, the nutritional anchor for the official poverty line of Sri Lanka set as 2030 calories.

Table 13 shows that an average poor in Sri Lanka receives only 1696 calorie (kcal) per day while a non-poor receives 2194 kcal and 50.7 % of the population receives less dietary energy than the minimum required level. Persons in Urban sector of Sri Lanka and highly urbanized Western province consume less dietary energy despite their minimum Poverty Head Count Index. Further it is revealed that the daily energy consumption of 65 percent of the urban population is less than the level of 2030 kcal per person. Comparatively very high dietary energy consumption is reported by all the Estate sector persons regardless of their poverty status and the percentage of population below the 2030 kcal level in Estate sector is also only 32.7% which is far below the national figure (50.7%) and the values reported by the other two sectors both urban (65%) and rural (49.2%).

Table 13: Dietary energy consumption by poverty status, sector, and national level in Sri Lanka 2006/ 2007

	Daily average dietary energy consumption per person			Population below 2030 calorie level of dietary energy Consumption %
	Both Poor and Non poor kcal.	Poverty status		
		Non poor kcal.	Poor kcal.	
Sri Lanka	2118	2194	1696	50.7
Sector				
Urban	1906	1949	1316	65.0
Rural	2138	2222	1886	49.2
Estate	2420	2626	1984	32.7

Sources: [7] Department of Census Statistics Sri Lanka –Poverty Indicators survey 2007

The Estate sector persons regardless of their poverty status and the percentage of population below the 2030 kcal level in Estate sector is also only 32.7% which is far below the national figure (50.7%) and the values reported by the other two sectors both urban (65%) and rural (49.2%).

5.4.2. Malnutrition in Sri Lanka

Malnutrition is the condition that develops when the body does not get the right amount of the vitamins, minerals, and other nutrients it needs to maintain healthy tissues and organ function. Water supply, sanitation and hygiene, given their direct impact on infectious disease, especially diarrhoea, are important for preventing malnutrition. Both malnutrition and inadequate water supply and sanitation are linked to poverty. Infants, young children, teenagers and women who are pregnant or breastfeeding need additional nutrients. Malnutrition is a major health problem, especially in developing countries. According to the latest statistics released by the Health and Nutrition Ministry and the Census and Statistics Department of Sri Lanka [79]:

- Current level of anaemia and malnutrition of mothers is 30%;
- Under-weight among children is at 22% while stunting among the children is at 18%. Under-weight and stunting means chronic malnutrition among children under the five years of age;
- Wasting or acute malnutrition among children under five years currently stands at 15%;
- Around 29 per cent of under fives are reported to be underweight, rising as high as 37.4 per cent, in some deprived districts;
- 22% of ever married women in the productive age group are mal nourished.

- Nearly 58% of infants between 6 and 11 months and 38 per cent children between 12 and 23 months are anaemic;

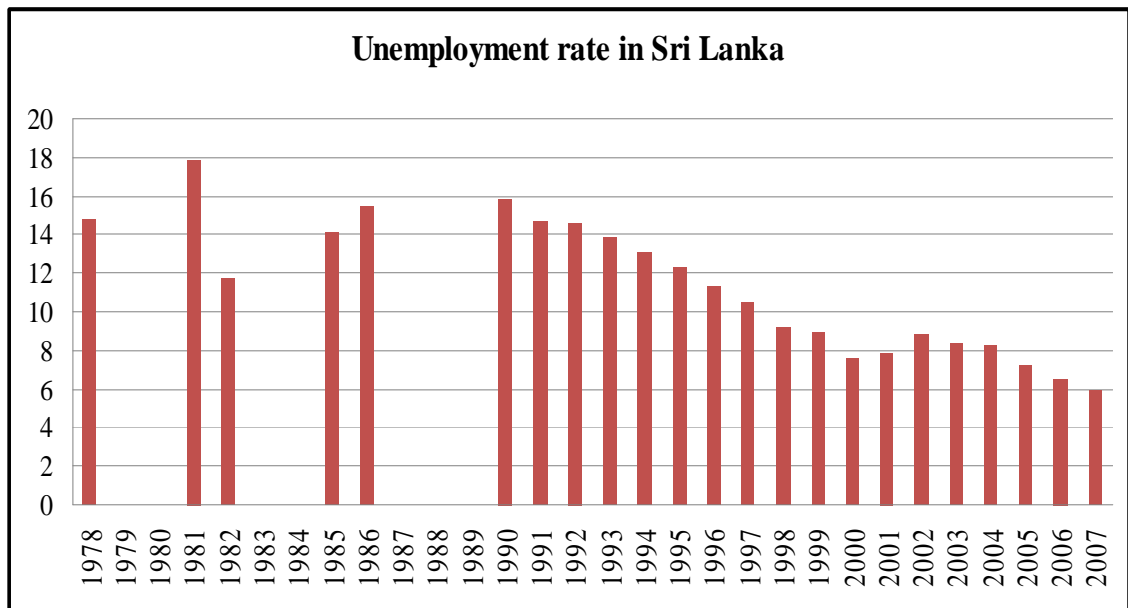
The greatest tragedy of malnutrition is that it prevents children from reaching their full potential for growth and development.

5.4.3. Unemployment in Sri Lanka

Unemployment and underemployment disproportionately affect the poor, women, youth, older people and for the less skilled people. Although the working poor make up the bulk of the labour force in developing countries, they are also a significant portion of the labour forces in developed and transition economies. Long-term unemployment is a major cause of poverty.

Many people are not entitled to unemployment benefits or may qualify for benefits only at a lower rate particularly in developing countries. As a developing country, Sri Lanka also faces serious socio economic issue of unemployment. In 1963 total unemployment population had been 265000 and unemployment rate was only 7.7% in Sri Lanka. At the time more than 75% of the unemployed were males. In 1973 there are 700000 unemployed people in Sri Lanka. From 1978 to 1995 period the total unemployment rate fluctuated between 15% and 12% [80].

Since 1995 total unemployment rate shows downward trend up to now. However in Sri Lanka female unemployment rate is more than two fold of male unemployment rate. Although the total unemployment rate shows a downward trend from 1996 still the female unemployment rate is very high and the unemployment issue still exists as a serious socio economic issue in Sri Lanka (Figure 13).



Sources: Central Bank of Sri Lanka: Annual report, (Statistical Appendix, Table: 01) 2007.

Figure 13: Unemployment rate in Sri Lanka from 1978 to 2007.

According to a surveyor done by Department of census and statistics of Sri Lanka in 2002 some of the major issues related to unemployment situations in Sri Lanka are summarised below [81].

- Around 80% of unemployment is in the age of range from 20-29 years.
- The unemployment rate is highest among educated youth. Although the rate has been decreased from around 30% in 1990 to 17% in 2002 for those who have General Certificate of Education. (Advance Level) G.C.E (A.L) or above still the unemployment rate is higher for educational youth than the less educational groups. The situation is worst for females compared to males.
- The unemployment is not restricted only to educated youth but also to less educated. Around 40 to 50% of the unemployed have completed only between Grade 5 and 10. In this case male around 50-58 are in the group.
- Graduate unemployment has already become a serious problem in the country and may become worse because in future as the number increases every year.

Although the unemployment rate has declined in recent years still it is an existing main socio economic problem in Sri Lanka.

5.4.4 Income distribution in Sri Lanka

Income distribution is a very important indicator to gauge the living standard of the people. Equal income distribution cannot be seen in any society but reasonable income distribution is needed at least to provide the basic needs of the people. In most of the developing societies frequently there is a big gap indicates between the majority of poor and hand full of rich. The most important fact is that there should be a reasonable income distribution within the society at least to exceed the minimum basic needs to survive.

According to the table 14 mean per capita income of 60% of the population is 4321 in year 2006 and the share of the income among that 60% of the population is 27.1. But in 2006 according to the Colombo consumers' price index of Sri Lanka, cost of living rate was 5114.1 and the mean per capita income of the 60% of the population is below the cost of living rate. This situation indicates majority of the people in Sri Lanka society has less access for basic needs and material well being.

Table 14: Mean per capita income, household size and share of income to total income by national per capita income deciles – 2006

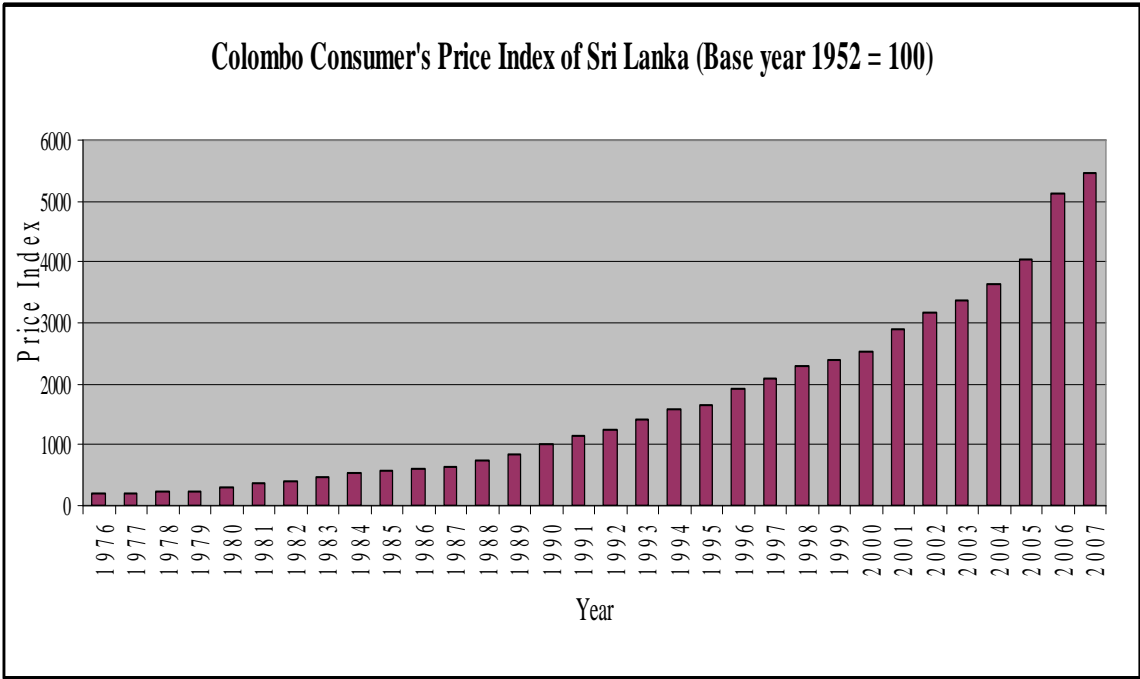
Decile group	National per capita income group	Mean per capita income	Household size	Share of Income
All groups		6235	4.1	100.0
1	Less than 1723	1301	4.5	2.1
2	1724 -- 2273	2001	4.6	3.2
3	2224 – 2788	2530	4.5	4.1
4	2789 – 3297	3036	4.4	4.9
5	3298 – 3931	3608	4.3	5.8
6	3932 – 4829	4381	4.0	7.0
7	4830 – 5939	5327	4.0	8.6
8	5940 – 7805	6786	3.7	10.9
9	7806 – 11379	9218	3.7	14.8
10	More than 11379	24203	3.5	38.7

Sources: Department of Census and Statistics Sri Lanka- House hold income survey – 2007

5.4.5. Cost of living in Sri Lanka.

Consumer price index is an indicator to measure the living standard of the people. Increasing cost of living decreases the purchasing power and decline the consumption ability of the people and it leads to poor wellbeing of the society. If cost of living increased un-proportionately to the income it indicates inflation of the society.

According to the Colombo consumer price index (Sri Lanka) it indicates at the base year in 1952 the cost of living rate was 200.7. In year 1977 when Sri Lanka transformed to market economy cost of living rate was 203.2 and that situation indicates a significant increase continuously up to now. In 1987 the consumer price index reached to 652.8 and in the end of the next decade in 1997 it was reached to 2098.1 (Figure 14) [82].



Sources: Department of Census and Statistics Sri Lanka

Figure 14:Colombo Consumer's Price Index of Sri Lanka (Base year1952 =100)

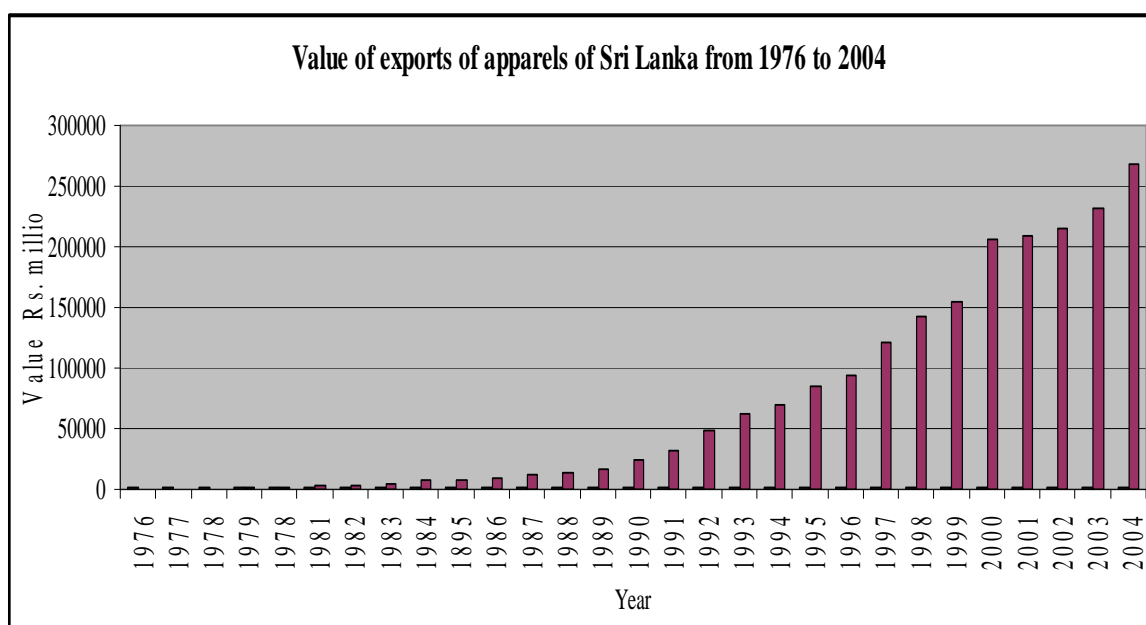
It was further increased and after another ten years in 2007 Colombo consumer price index achieved 5453.2. On prima fascia this data indicates free market economy did not influenced to promote the life standard of the people of Sri Lanka.

5.5. Risk of the market economy in Sri Lanka

After transforming in to liberalize economy in 1977 Sri Lanka manufacturing output accelerated. Garments exports placed as a driving force in the transformation from a largely export agriculture based economy to an increasingly industrialized one. Before 1977 Sri Lanka did not have a well-developed export-quality textile industry base but the garment industry in Sri Lanka expanded rapidly after the liberalization of the economy in 1977. Export-led expansion of the industry led to the replacement of tea by garments as the nation’s largest foreign exchange earner. There was a rapid development and in

2002 Sri Lanka's textile and garment sector contributed for 6% of GDP, 39% of industrial production, 33% of manufacturing employment, 52% of total exports and 67% of industrial exports[16]. Cheap labour, a literate labour force, high labour standards, and investment-friendly government policies are the competitive strength to establish the garment industry within a very short period in Sri Lanka.

According to Figure 15 it is indicates exports revenue of Sri Lanka is highly depending on the garment industry. In 1976 revenue from garment exports was Rs. million 68.91 and within five years it was reached to Rs. Million 2956.78 in 1981. From there, after ten years in 1991 massive growth shows and reached to Rs, million 31626.72 and in 2004 it was Rs. million 268574.00.



Source: Sri Lanka Garments-The Apparel of Digest

Figure 15: Value of exports of apparels of Sri Lanka from 1976 to 2004 (Rs. million)

Not only that growth of apparel exports acquired a key position in exports of Sri Lanka, it contributes average 45% to the country's total export income during last 15 years [16]. Clear fact is transformed to free market economy pushed the economy of Sri Lanka to a rapid progress, particularly increasing the volume of garment exports (Figure 16).

Garment industry provided an important sources of employment during last three decades and strengthened the economy and make major contribution for socio economic development in Sri Lanka. Direct employment estimated in 2006 about 330,000, that is accounts 30% of the manufacturing employment in the country. Out of that workforce nearly 90% are female [16].

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Sources: Department of Census and Statistics Sri Lanka.

Figure 16: Apparel Income as a % of the Exports in Sri Lanka.1992 – 2006

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- **Dependency**

United States of America (USA) and the Countries of European Union are the major buyers of Sri Lanka apparels and Canada is a regular buyer although the share is a very small percentage of total exports of Sri Lanka apparels. Table 15 indicates from 1993 USA contributed the major share of average 60% and EU Countries sharing average 30% of the total Apparel exports [17]. USA and EU countries make a substantial contribution for economy of Sri Lanka by importing apparels. Under free market economy although Sri Lanka achieved high growth of economic development, country's export income is mainly depend on US and EU countries on exports garments. Supposing USA and/or EU countries reduce or decline their imports volume of apparels of Sri

Lanka there is no doubt it will be adversely affected in social, economical, and political situation of the society.

Table 15 Major export markets for Sri Lanka apparels (Rs. million)

Year	USA		EU Countries		Canada	
	Value	Value %	Value	Value %	Value	Value %
1993	39335.76	63.08	19593.855	31.42	908.942	1.45
1994	41807.87	60.64	22274.180	32.31	1561.98	2.27
1995	51469.85	60.67	28848.119	34.00	1417.34	1.67
1996	55049.67	58.68	33336.620	35.53	2070.13	2.21
1997	73883.72	61.02	40870.520	33.57	2134.31	1.76
1998	91361.31	64.19	44788.980	31.47	2367.49	1.66
1999	93950.06	60.53	54115.760	34.86	2212.72	1.43
2000	127890.59	61.97	67821.260	32.87	3418.08	1.66
2001	134064.00	62.26	63,028.00	30.21	4049.26	1.94
2002	136446.00	63.69	67,158.00	31.30	3890.67	1.81
2003	142,913.00	61.69	76,388.00	32.98	4017.46	1.73
2004	155728.00	57.89	100,489.00	37.42	4590.33	1.71

Sources: Sri Lanka Garments-The Apparel of Digest Issue no; 83.

Finally increasing unemployment, widening unequal income distribution, increasing poverty rate and more other socio economic problems will make adverse impact on society. On that hidden risk, to protect the export trade and to survive the economy, Sri Lanka has to consider her international relations pro USA and EU countries otherwise it leads to unsustainability of the society.

Although as free market economic policies international trade increased the investments and exports in developing countries, their economies have become largely dependent on industrialised countries. Therefore industrialised countries have become more powerful to dictate terms and conditions in terms of socio economic and political affairs of the developing countries. It is a serious hidden risk to the economic development process of developing countries in achieving sustainable development.

CHAPTER 6

PRESENT STATES OF THE PROBLEMS –

PART FIVE

6.1. Analytical study

In the fifth chapter it describes the analytical study of sustainable development in Sri Lanka from 1977 to 2007. With reference to that the study focused to indicate a summary of that study to show the confrontation between in sustainable development and free market economy.

Foreign investments: From 1977 it is accelerated the Foreign Direct Investments in Sri Lanka (FDI). From 1970 to 1977 total investments for seven years Rs. 17 million, but 1978 to 1984 for six years investments amounted Rs. 5448 million. From 1988 to 2001 average FDI flow \$ 150 million per year. From 2000 to 2006 averaged investment flow is \$200 million per year and in 2006 total FDI amounted \$ 450 million and in 2007 it was increased to \$ 550 million.

Gross Domestic Products: In 1977 GDP in Sri Lanka was Rs. 36407 million and there was a continuously increased from there and after 10 years in 1987 it amounted (amount is a noun it should be amount) Rs. 196723 million. It increased further, in 1997 GDP reached Rs. 890272 million and in 2007 it was reached to Rs. 3578386 million. It indicates intervened in to international trade strengthened the Sri Lanka economy.

GDP per capita income: In 1981 per capita income of Sri Lanka was \$ 295 and it was increased gradually and reached to \$ 397 in 1987. Within another 10 years in 1997 per capita income increased up to \$ 853 and further increased within another 10 years and indicated \$ 1540 in 2007. It reflects the free economy contributed very much to improve the living standard of the Sri Lanka society.

Exports: When Sri Lanka transformed to free market economy in 1977 total exports income was \$ 767.1 million but there is a tremendous continuous improvement in the first decade and reached to \$ 1395.7 million in 1987. In the second decade also it was increased magnificently and reached to \$ 4639.0 million. Further the revenue of exports increase in the third decade too and

reached to \$ 7740.4 million. It indicates free trade policies influenced very much to improve the foreign trade.

Imports: In 1977 when Sri Lanka transformed to free market economy value of the total imports was \$ 726.2 million it increased very fast within the first decade and reached to \$ 2075.1 million. In 1997 end of the second decade it was reached to \$5863.8 million. Further increased within the third decade and it reached to \$11300.5 million in 2007. This situation does not assist for a sound economy because it is amounted less percentage of capital goods and higher percentage of consumer goods. It was clearly proved in 2007, imports included 24% consumer goods and 56% intermediate goods but investment goods limited only for 19% out of the total volume of the Imports.

Trade balance: In 1977 when Sri Lanka transformed to free market economy she had a surplus trade balance and it was \$ 40.90 million. But it turned on the other way and in 1978 it indicated \$ -180 million deficit trade balance. From there up to now deficit trade balance increased continuously and in 1987 it was reached to \$ -679 million and in 1997 \$ -1224.8 million. It was further increased and reached \$ -3560 in 2007. This situation has become a burden to Sri Lanka economy under free trade policies.

Government debts: After transformed to free market economy Government debts also accelerated very fast in Sri Lanka. In 1977 Total debts was Rs. 24985 million and out of that Rs.10593 millions were foreign debts. the total debts increased continuously and reached to Rs.190809 million in 1987 and out of that Rs 11812 millions is foreign debts. In 1997 total foreign debts was Rs.764071 million and foreign debts increased to Rs 376331 million. Further total debts increased within the third decade also and reached to Rs.3070069 million in 2007 out of that Rs.1354871 was foreign debts. Increasing Government debts shows an unhealthy economy of the country under free market economy.

Foreign exchange rates: under free market economy Sri Lanka economy was not able hold the exchange rate on a stable position. In 1977 \$ 01 was Rs 15.56 and it increased within the first decade continuously and reached to Rs 30.76 in 1987. Further it increased up to Rs. 61.97 in 1997. Within the third decade also foreign exchange rate increased and in 2007 \$ 01 was equal to 108.72. This situation shows instability of the foreign exchange in Sri Lanka economy under free market policies.

Inland water resources: Pollution of water has been increased during last three decades all over in Sri Lanka. In urban areas the situation is worst. Urbanisation, industrialization has highly effected to urban water pollution and

using pesticides and Fertiliser and agrochemicals for agriculture widely increased the water pollution in interior areas.

Land degradation: Soil erosion is a main reason for land degradation. Agriculture, Plantation, deforestation and construction are main reason for land degradation in Sri Lanka. Extent of soil loss in Hill Country is 412 tones/ha/year, mid Country is 1,026 tones/ha/year and low Country is 147 Tones/ha/year. This situation is a real risk and leads to serious environment problems in near future.

Waste management: In Sri Lanka over the past three decades owing to the population growth, urbanization, and Industrialisation it was estimated that about 3000 tones of Municipal Solid Waste is collected per day throughout the country. However, the actual generated quantum may be much higher. Hazardous waste (excluding clinical waste) was estimated at 40,617 tonnes in 1996. However, the best estimate of total waste generation in Sri Lanka is around 6,400 tonnes per day. The projected waste collection quantities for the years 2000 is 2560 tones, for 2005 approximately 2770 tones and 2010 about 2885 tonnes per day. So it has become a serious social and environmental issue in Sri Lanka.

Depletion of coastal resources: One third of the population of Sri Lanka, two-thirds of the total urban population, two thirds of the industrial facilities and over 80% of the tourist infrastructure accommodated within only one fourth of the island's land area of the coastal boundary. Coastal erosion, Destruction of coral reef ecosystem, Destruction of mangroves and associated habitats are major depletion of coastal resources in Sri Lanka. Fisheries expansion, prawn farms, Aquarium fishery, tourism expansion, sand mining, and construction in coastal area are the main reasons for that. At certain locations, net coastal erosion has been recorded up to 01meter per year.

Air pollution: In Sri Lanka, 69% of the Domestic sector and 17% of the Industrial sector cause air pollution. Transport sectors also a bigger contributor of pollutants to the environment that is about 12.5%. Air pollution in Sri Lanka is primarily due to the combustion of commercial energy from which the industrial sector accounts for nearly half of the total emission of SO_2 (Sulphur dioxide) According to the Annual Health Bulletin 2001(Sri Lanka) respiratory diseases are ranked within the first five leading causes of death in all age groups except 15 – 24 and 25 – 49 years.

Deforestation: Demography, industrialisation, agriculture and plantation are main causes for deforestation in Sri Lanka. The forest resources of Sri Lanka have been steadily declining over the years, from 70% of the land area in 1900 to 24% in 1992 and further to 22% in 1999. The average annual rate of

deforestation between 1992 and 1999 has been approximately 13,000 ha. Over the past 15 years between 1990 to 2005, Sri Lanka has had one of the highest deforestation rates of primary forests in the world. In that period the country lost more than 35 percent of its old-growth forest cover, while total forest cover was diminished by almost 18 percent. Since the close of the 1990s, deforestation rates have increased by more than 25 percent in Sri Lanka.

Poverty: In Sri Lanka from 1995 to 2007 national level poverty headcount is existing around 15.2. In 2002, the nutritional anchor for the official poverty line of Sri Lanka set as 2030 calories. On national level 50.7% of the population receives less dietary energy than the minimum required level of 2030 calories per day. Further it is revealed that the daily energy consumption of 65% of urban population is less than the level of 2030 kcal per person.

Malnutrition: According to the latest statistics released by the Health and Nutrition Ministry and the Census and Statistics Department of Sri Lanka: Current level of anaemia and malnutrition of mothers is 30%. Under-weight among children is at 22% while stunting among the children is at 18%. Wasting or acute malnutrition among children under five years currently stands at 15%. Around 29 per cent of children less than five years are reported to be underweight. 22% of ever married women in the productive age group are malnourished. Nearly 58% of infants between 6 and 11 months and 38% children between 12 - and 23 months are anaemic.

Unemployment: In Sri Lanka in 1963 total unemployment population had been 265000 and unemployment rate was only 7.7%. In 1973 there are 700000 unemployment people in Sri Lanka. From 1978 to 1995 during 17 years period the total unemployment rate fluctuated between 15% and 12%. Since 1995 total unemployment rate shows downward trend up to now and present rate is 6.0%. However through out in Sri Lanka female unemployment rate is more than two fold of male unemployment rate. Although the total unemployment rate shows a downward trend from 1996, unemployment issue still exists as a serious socio economic problem in Sri Lanka.

Cost of living: According to Colombo consumer price index of Sri Lanka at the base year in 1952 the price index was 200.7. In 1977 when Sri Lanka transformed to market economy price index was 203.2 and in gradually increased up to 652.8 in 1987 and in the end of the next decade in 1997 it was reached to 2098.1. It was further increased within another ten years in 2007 and price index achieved 5453.2. This data indicates free market economy did not influenced promote the life standard of the society and continuous inflationary situation was existing during last three decades.

Risk of the market economy in Sri Lanka: After transforming in to liberalize economy in 1977 Sri Lanka manufacturing output accelerated and there was a rapid development in Garment sector. Garment industry contributes average 43% to the exports revenue and provided 330,000 direct employments that were 30% of the manufacturing employment in the country in 2006. United States of America (USA) and the Countries of European Union are the major buyers of Sri Lanka apparels and from 1993 USA contributed the major share of average 60% and EU Countries sharing average 30% of the total apparel exports of Sri Lanka. Under this situation export industry of Sri Lanka mainly depends on USA and EU Countries Dependency is not a good indicator of a sound economy because politically economically and socially the society is at a risk.

The identified results in above can be categorised as follows.

Table 16: Impact on sustainable development of free market economy in Sri Lanka on few selected key indicators from 1977 to 2007

Positive impact	Negative impact
<ul style="list-style-type: none"> • Foreign direct Investments increased • Exports income increased • Gross Domestic Products increased • Per capita income increased • Unemployment decreased 	<ul style="list-style-type: none"> • Government debts increased • Imports increased • Deficit trade balance increased • Rupee value (currency) depreciated • Widen the unequal income distribution • Increased the poverty rate • Increased the rate of malnutrition • Increased the price index • Increased cost of living • Unemployment is a major issue • Water pollution increased • Land degradation increased • Deforestation increased • Costal erosion is a major issue • Air pollution increased • Waste management is a serious issue

6.2. Conflict between sustainable development and free market economy

In chapter 5.1 it is identified the impact of some key sustainable development indicators on development of Sri Lanka. It describes FDI's, GDP, and per capita income increased after transformed to free market economy but contrary to that increasing government debts and deficit trade balance and instability foreign exchange rate does not help to lay a sound base for economic development. Not only that but also social issues such as increasing poverty, malnutrition, cost of living, widening the gap of income distribution between handful of rich and majority of poor shows existing social issues. The environmental issues such as water pollution, land degradation, deforestation, deflation of coastal resources, air pollution and waste management have become serious problems to wellbeing of the society under free market economy. This situation clearly proved although the economic growth increases faster under free economy contrary to that many economic, social and environmental issues negatively affect and imposes barriers to reach sustainable development goals. This is the main conflict between the concept of free market economy and concept of sustainable development while both implement simultaneously.

In this study with reference to the development of Sri Lanka further I identified the following situations which generally affect on developing societies:

- Under free market economy unequal distribution of income and the resources of the society is a barrier to achieve basic needs for the people. But under free economy there is no possibility to adopt a programme to distribute the income or resources equally or reasonably.
- Under free market economy production process does not give a special priority to produce basic needs because the motivation of the investors is to make higher profits within a short period. Therefore price increase of basic needs and increasing cost of living is a frequently visible feature.
- Under free economy increasing cost of living adversely affect the wellbeing of the society because there is no any physical control on market but the motive of sustainable development is provide basic needs on affordable prices.
- If government intervene to provide needs reasonably and impose strategies such as price control, impose tax and limitations on production, exchange and distribution, investors get discourage and they go on reverse.
- There is a direct link between poverty and environment. The poor often depend on a wide range of activities that constitute their livelihoods [83]. People, especially the landless, depend on food and other resources – fuel, fodder, building materials and medicines – from a diverse natural

environment, therefore increasing poverty influence the poor people to extract more resources from environment to survive. Under that situation improper and disorganise natural resources extraction leads to create more and more environmental issues.

- Economic and social development depends on the environment because water, energy, natural resources are primary needs in economic and social development. In many developing countries, 80 - 90% of jobs are based on natural resources (e.g. agriculture, forestry, fisheries and tourism) and 80% of export earnings come from agricultural products. Therefore unplanned and disorganized development activities adversely affect the environment.
- Implementing free market principles are increasing the investments in developing societies but the physical environment is affected negatively. For many investors, the developing world is a tempting region for their investments because of cheap labour, access to inexpensive raw materials, lax environmental regulations, and other investment friendly incentives offered by host governments. Herman Daly argue that free traders seek to maximize profits and production without regard for hidden social and environmental damages, and the environmental costs rise faster than the benefits of production [84]. Under such situations Government intervention is essential to development process to avoid the adverse affects of development process but it violates the free market policies.

To over come such socio economic and environmental issues societies have experienced multiple strategies. Fiscal policy is an important instrument to stabilize the economy to overcome recession and control inflation. Impose taxes, limitation of imports particularly the luxury items, and control the foreign exchange are another few mechanisms. To avoid environment issues impose laws and legal regulations are frequently applying mechanisms. For an example: to reduce the increasing cost of living and to provide the basic needs to the people on affordable prices fiscal policies (tax systems), price control systems and foreign exchange control can be applied; those are very familiar strategies particularly in developing societies under such situations. But on one hand execution of price control, limitation of imports and control the foreign exchange directly govern the free market policies. On the other hand to execute such mechanisms Government should intervene to economic activates but that is violating principals of free market economy. Hence this situation shows that there is a conflict between free market economy and sustainable development concept while implement simultaneously.

CHAPTER 7

OBJECTIVE OF THE RESEARCH

7.1. Primary aims and objectives

During last six decades the concept of free market economy has gradually developed as the principal mechanism of the Global development process. Integration in to international trade proved it is a best mechanism to accelerate the economic growth particularly in developing countries. Contrary to that societies experienced major adverse impacts of the development process within the context of free market economy. This situation influenced to develop the concept of sustainable development process because the objective of sustainable development is economic development social development (including providing basic needs to the people) and protection of the environment. Hence there is a significant importance to implement sustainable development policies within the context of free market economy for wellbeing of the present and future generations. Therefore the main objectives of this research are:

- Provide guide lines to the society to identify the social responsibility in sustainable development;
- Provide the guide lines to the individuals, groups, organizations, and governments to identify the social responsibilities of sustainable development and importance of implementing them.
- Identify how and where these two concepts sustainable development and free market economy confront each other.
- Identify the mechanism to avoid the confrontation and implement both concepts; sustainable development and free market economy simultaneously for well being of the society.

7.2. Reason for choosing country

In 1948 Sri Lanka gained independence from Great Britain and up to now existing as a Republic with political sovereignty. Being a developing country during last 60 years Sri Lanka experienced two economic systems.

In the first era from 1947 to 1977 nearly 30 years. During that period development policy focused on achieving the objectives of equity and economic growth. The instruments adopted to achieve economic growth were aimed at

import substitution industrialization, restrictions on imports, and the encouragement of domestic production. Price subsidies on food, statutory price controls on consumer goods, and the provision of free education and health services were the instruments used to achieve greater equity. Increased the government participation in industrial development and continued government intervention in all spheres of economic life including nationalised the estates, impose land ceiling, housing ceiling, acquired the private enterprises, and imposed expenditure ceiling on house hold consumption and reached its climax at the end of the first era.

In 1977, Sri Lanka shifted away from the socialist orientation to liberalize economy and opened its economy to foreign investment. Up to now Sri Lanka is experiencing more than 30 years. The strategy aimed at liberalizing the economy from excessive government controls and it chose the private sector as the engine of growth. Policies were designed to accelerate economic growth by stimulating private investment through various incentives and promote export-oriented economic activities. The incentive package offered by the Greater Colombo Economic Commission of Sri Lanka was very attractive and encouraged the FDIs. From 1977 foreign trade became an important segment of the Sri Lankan economy.

This research I focused to do an analytical study to identify how to implement the social responsibilities within the context of free market economy. I understood Sri Lanka is the most appropriate entity does such a case study because Sri Lanka has been experienced socialist economic policies and free market economic policies equally within long two different eras in Asia.

CHAPTER 8

SELECTED PROCESSING METHOD

8.1. Guide lines and methodology

According to the theory, qualitative research is much more subjective than quantitative research. S.B. Merriam (1998) argues qualitative research assumes that meaning and knowledge are constructed in a social context and qualitative research methods represent a vast array of practices [85]. Hence researches in social sciences mainly based on Qualitative research method. As the nature of the research is in qualitative method, this research conducted mainly using subjective approach.

- *Qualitative Research*

S.B. Merriam defines qualitative research as “an umbrella concept”, covering several forms of inquiry that help to understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible”. She defined Grounded theory as “an inductive approach to inquiry in which theory emerges from observations of specific real-world phenomena, and **case study** in-depth examination of a single unit [85].

In qualitytative researches anthropologists make distinction between the **Emic** and **Etic** perspectives [86]:

Etic: perspective is an outside perspective that may represent the view of a cultural outsider or a researcher seeking to understand a phenomenon that is separate and apart from him or herself.

Emic: perspective is an inside perspective – that of a cultural insider the research participants whom seeks to understand. The qualitative research actively seeks to incorporate the *Emic* view into the inquiry.

This research mainly focused to do an analytical study in the fields of sustainable development, free market economy, international law and sustainable development of Sri Lanka within the context of free market economy. All these fields contained in social sciences and the research constructed in a social context in a vast array of practices thus this research is based on *emic* perspective.

- ***Inductive Research method***

According to Glaser and Strauss the inductive method, also referred to as the *scientific method*, is a process of using observations to develop general principles about a specific subject. A group of similar specimens, events, or subjects are first observed and studied; findings from the observations are then used to make broad statements about the subjects that were examined. These statements may then become laws of nature or theories [88]. The inductive method creates laws based on the observation of the facts, by generalizing the observed behaviour; actually, what achieves is a type of generalization without obtaining a demonstration of the laws or set of conclusions through logic.

This research focused to do a depth analytical study on variety of many collected data and observed the social responsibility in sustainable development within the context of free market economy particularly in developing countries. In this event did a depth study in selected one entity: that is development of Sri Lanka within the context of free economy and observed the behaviour on selected key sustainable development indicators. Therefore this research mainly focused to a single entity: That is Sri Lanka as a case study.

- ***Grounded Theory***

Before long time of Merriam in 1967 Grounded theory was introduced by two sociologists of Barney Glaser and Anselm Strauss by their text of “The Discovery of Grounded Theory”. According to them Grounded theory (GT) is a systematic qualitative research methodology in social sciences emphasizing generation of theory from data in the process of conducting research. In 2005 U. Kelle described, the “Grounded theory as a research method that operates almost in a reverse fashion to traditional research and at first may appear to be in contradiction of the scientific method. Rather than beginning by researching and developing a hypothesis, a variety of data collection methods are the first step [87]. Kelly describes GT contains with four steps:

Codes: Identifying anchors that allow the key points of the data to be gathered;

Concepts: Collections of codes of similar content that allows the data to be grouped;

Categories: Broad groups of similar concepts that are used to generate a theory;

Theory: A collection of explanations that explain the subject of the research.

From the collected data the key points are marked with a series of codes, which are extracted from the text. The codes are grouped into similar concepts, in order to make them more workable. From these concepts categories are formed, which are the basis for the creation of a theory, or a reverse engineered hypothesis [87].

This contradicts the traditional model of research, where the researcher chooses a theoretical framework, and only then applies this model to the studied phenomenon into the inquiry.

To identify the sustainable development in the developing countries within the context of free market economy I focused the research to do a in depth case study in development of Sri Lanka on selected key sustainable development indicators under the major components of sustainable development: economic development, social development and environment protection. The primary step of the research was variety of data collection. From the data the key points are marked with a series of codes. The codes are grouped into similar concepts, in order to make them more workable. From these concepts categories formed and which were the basis for the creation of a theory. Therefore this research is based on Grounded theory and on *emic* perspective because the research mainly based on depth case study on a single unit within the social context.

8.1.1. Case study

Founders of Grounded Theory (GT) Glaser and Strauss say case study is one of several ways of doing research whether it is social science related or even socially related. It is an intensive study of a single group, incident, or community. Other ways include experiments, surveys, multiple histories, and analysis of archival information. Rather than using samples and following a rigid protocol to examine limited number of variables, case study methods involve an in-depth, longitudinal examination of a single instance or event or a case. They provide a systematic way of looking at events, collecting data, analyzing information, and reporting the results. As a result the researcher may gain a sharpened understanding of why the instance happened as it did, and what might become important to look at more extensively in future research [88]. In 1988 Merriam defines the "Qualitative case study" as an intensive, holistic description and analysis of a single entity, phenomenon or social unit. Merriam further described the case study under four main categories: particularistic, Descriptive, heuristic, and inductive [89].

Particularistic: particularistic mean exclusive commitment to one group, especially when detrimental to the interests or well-being of a larger group.

Merriam says Particularistic means that a case study focuses on a particular situation, event, program, individual, institution or phenomenon and from that basis can be measured a larger entity.

Descriptive: descriptive mean containing or consisting of description. According to Merriam, Descriptive means “Thick' description is a term from anthropology and means the complete literal description of the incident or entity being investigated. That describes the end product of a case study is a rich, 'thick' description of the phenomenon under study”.

Heuristic: heuristic mean encouraging discovery of solution-education relating to or using a method of teaching that encourages learners to discover solutions for problems. Merriam says Heuristic means that case studies illuminate the reader's understanding of the phenomenon under study. Further describe it is as previously unknown relationships and variables can be expected to emerge from case studies leading to a rethink of the phenomenon being studied.

Inductive: Finally Merriam says “the case study research rely heavily on inductive reasoning in handling multiple data sources”. This research mainly based on the inductive approach because the inductive research method is more fit to develop the case study research on the basis of Grounded theory. The inductive method, referred to as the scientific method, is a process of using observations to develop general principles about a specific subject. A group of similar specimens, events, or subjects are first observed and studied; finding from the observations are then used to make broad statements about the subjects that were examined. These statements may then become laws of nature or theories.

To that end in this research:

- Analyzed and defined the sustainable development concept;
- Identified the major components of sustainable development;
- Identified the common social responsibilities of the concept of sustainable development in international law;
- Identified and categorised the major themes sub themes, indicators and sub indicators of sustainable development on social responsibilities and categorized them under major components of sustainable development;
- Identified the definition of free market economy its development and analyzed the existing situation;
- The case study focused to identify and measure the sustainable development within the context of free market economy on selected key indicators which are more relevant in development process of Sri Lanka;

- Introduced a logical theory on social responsibilities of sustainable development to reach sustainable development goals within the context of free market economy particularly in developing countries;
- The research developed on the variety of secondary data.

Hence this research is a case study to identify the social responsibilities of sustainable development in practice.

8.2. Research model

The entire research contained in two divisions as part one and two with in a one research model. Each division does not distinct from each other or contradict each other but divided in to two for the convenience construct the research. Indeed both divisions easily and logically can amalgamate together as one model and build a logical theory and after combination of two divisions there is uniformity as one research model.

The part one of the research model considered to identify the social responsibilities in sustainable development and how the development reach to sustainable development goals on that social responsibilities.

The second part of that research model studied the Concept of free market economy, its development and existing situation at present and analytical study of the sustainable development of Sri Lanka within the context of free market economy.

8.2.1. Part I of the research model

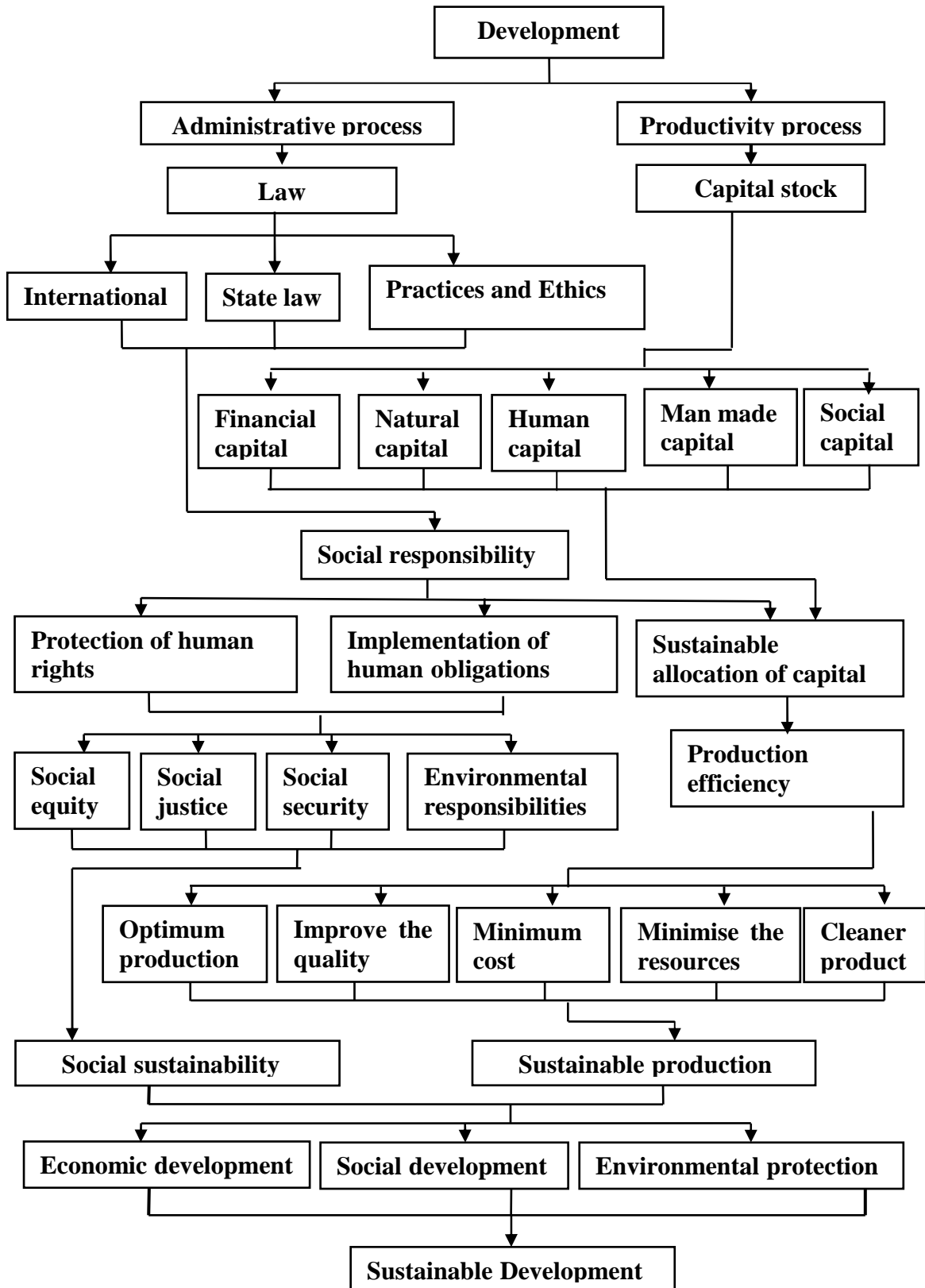


Figure 17: Research model I

8.2.2. Part II of the research model

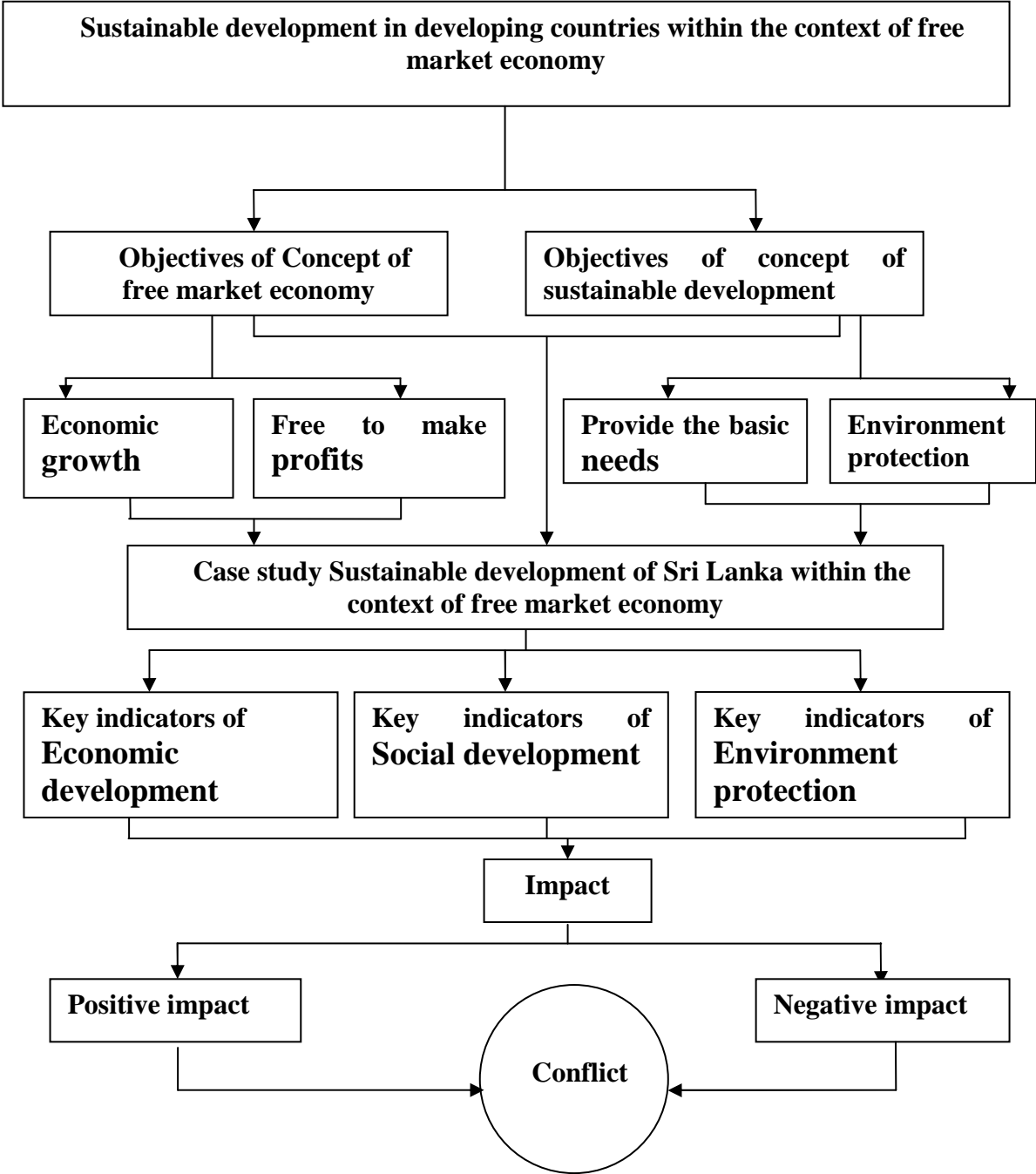


Figure 18: Research model II

8.3. Research steps

Above mention two parts of one research model studied by three research steps. The research steps I (one) entirely covered the first research model and did an analytical study to identify the sustainable development concept and

objectives social responsibilities of sustainable development and the sustainable development components and indicators

8.3.1. Research step one

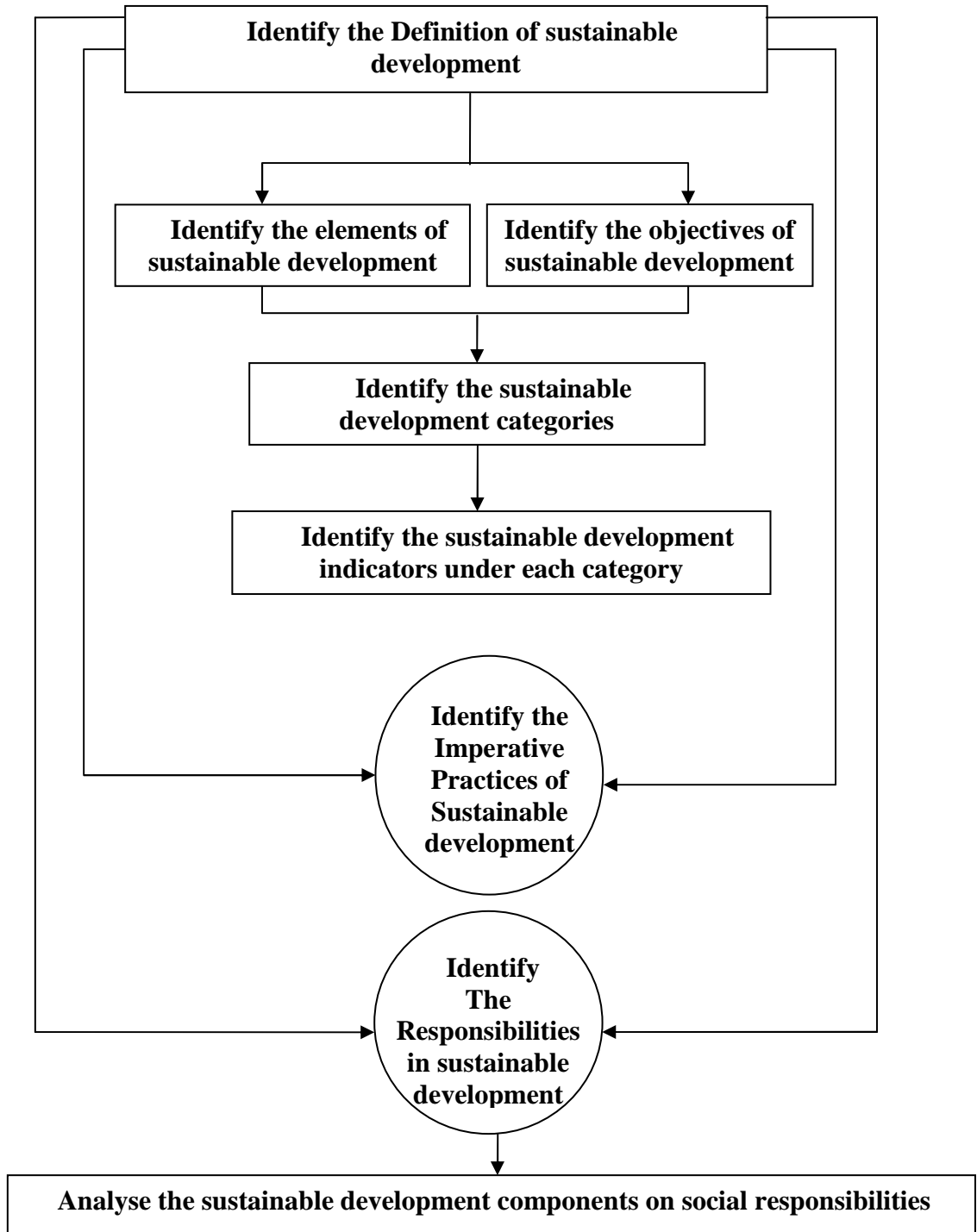


Figure19: Research step one

8.3.2. Research step two

The research step two studied the part of the II part of the research model and it considered to do an analytical study in free market economy.

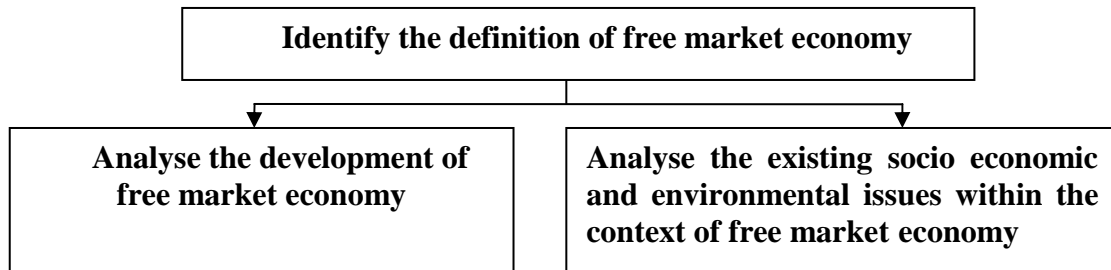


Figure 20: Research step two

8.3.3. Research step three

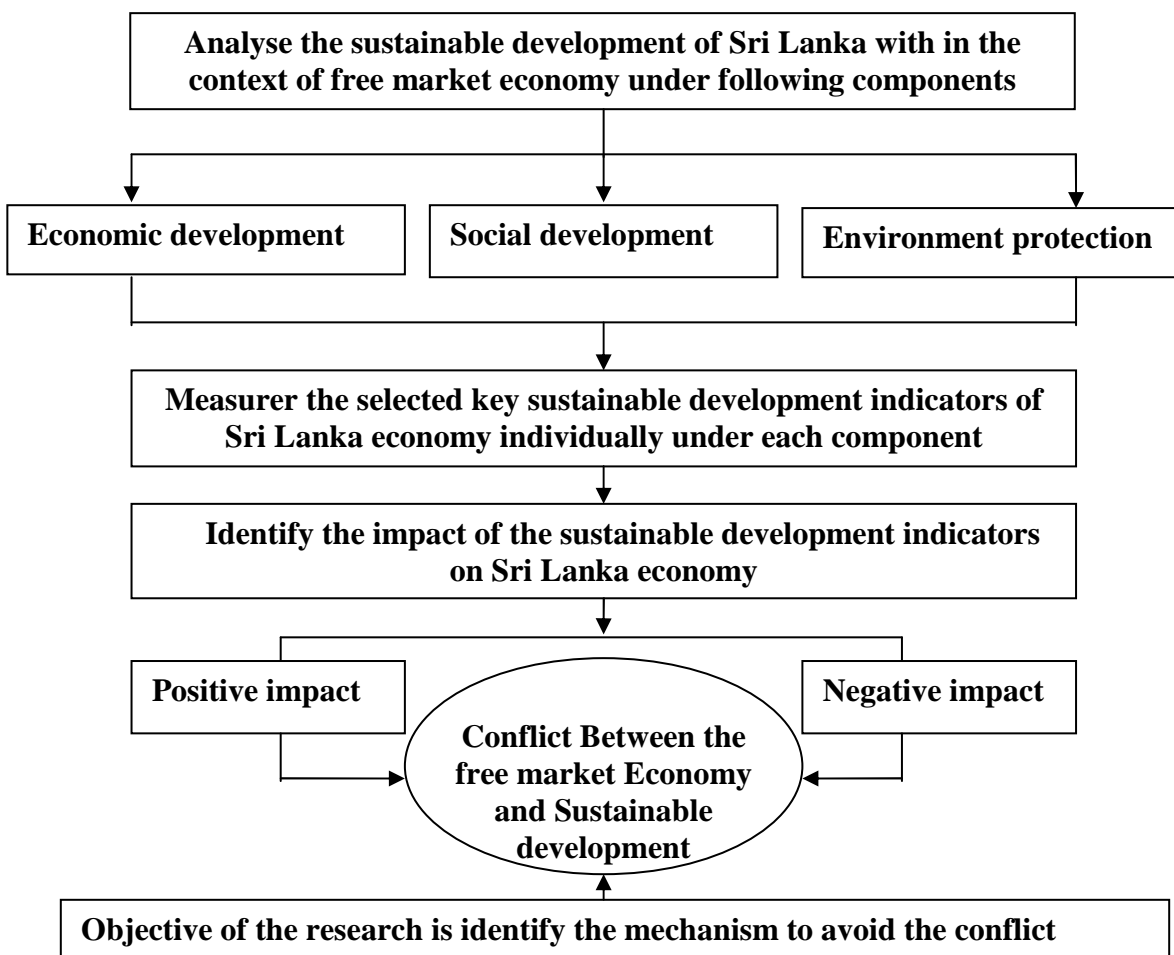


Figure 21: Research step three

The research step three studied the remaining part of the second module of the research. It is focused to do a case study of the sustainable development of Sri Lanka with in the context of free market economy on selected key sustainable development indicators which are strongly related to the development process of Sri Lanka. It is clearly concentrated to analyse the negative and positive impact of the free market policies on sustainable development in Sri Lanka on secondary data. Finally did a comparative study between negative and positive impacts to understand whether there is a conflict between sustainable development policies and free market economic policies while implement both concepts simultaneously.

CHAPTER 9

RESULTS AND DISCUSSION

9.1. Research Questions

In this research primarily concerned four research question, and four hypotheses. Regarding that following results were identified

9.1.1. Research question one

Is there a confrontation between sustainable development policies and Free Market Economic policies while implementing simultaneously particularly in developing economies?

- *Hypothesis for question I*

It is assumed that there is a conflict between free markets oriented development process and sustainable development in implementing simultaneously particularly in developing Economies.

- *Results*

While implementing sustainable development programme and free market economic policies simultaneously in development process in developing countries both concepts confront each other.

- *Discussion*

Sri Lanka is a developing country which experienced 30 years of free market economy in the development process. The depth analytical study of the development of Sri Lanka proves there is a magnificent economic growth under free market economy. But contrary to that economical, social and environmental problems have increased and adverse impact of them declines the living standard of the people and imposes barriers to reach sustainable development goals. This negative and positive out comes indicates that there is a conflict between these two concepts while implement together. Therefore to reach sustainable development goals it is essential to avoid or /and decrease the negative impacts on development. In that event to avoid this adverse impacts if government intervene in to economy investors get discourage and development go on reverse. Declines the investments, decrease GDP, per capita income, increase unemployment, poverty, malnutrition and more socio economic and

environmental issues. There for both these concepts confront each other while implement simultaneously within the context of free market economy particularly in developing countries.

9.1.2. Research question two

Why society should consider sustainable development?

- ***Hypothesis for question II***

It is assumed economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development.

- ***Results***

Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development.

- ***Discussion***

For well being of the society consumption should in crease. Development is the major driving force to increase the consumption. There are two major components contain in the development: social development and economic development. These two components are interdependent and reinforcing components of the development process because economic development influence the social development and social development influenced the economic development (Figure 22)

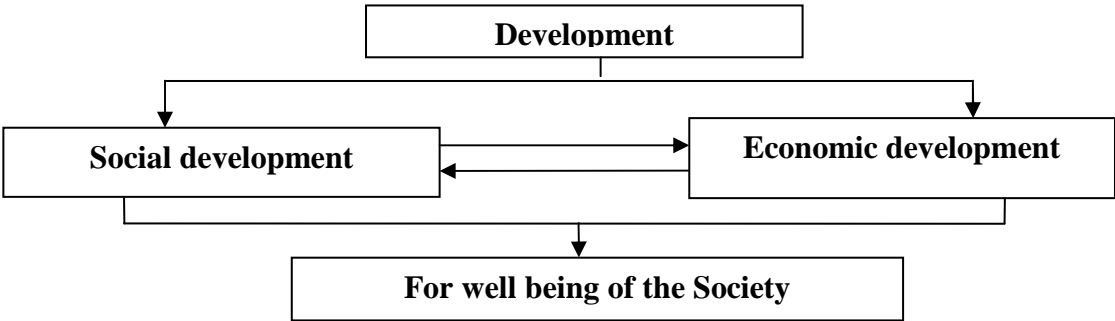


Figure 22: Development

Economic development and Social development based on human activities and the human activities link with the environment (Figure 23).

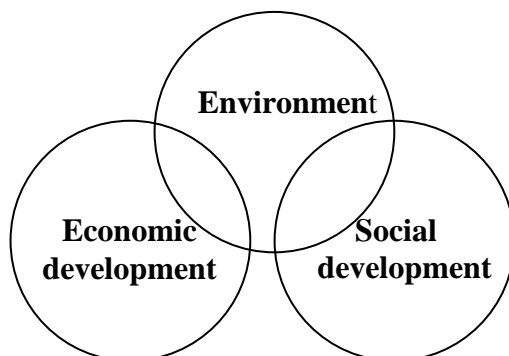


Figure 23: Environment link in development

Environment is an essential component for economic development and social development. Social development and economic development interact each and both leads to development goals (Figure 24)

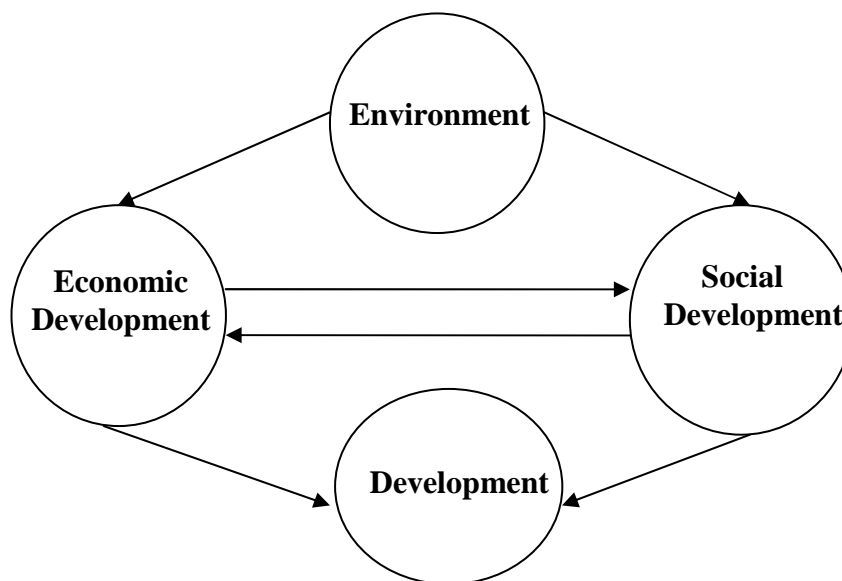


Figure 24: Major component of development

Therefore economic development social development and environmental protection are interdependent components in development process (Figure 25).

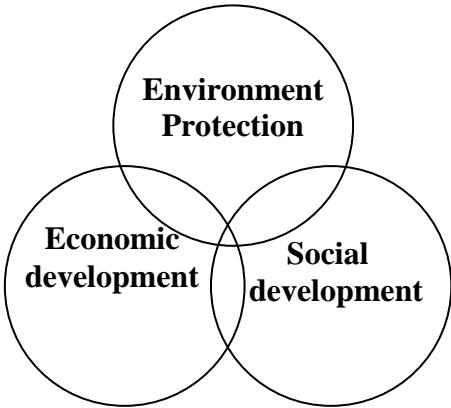


Figure 25: Interdependent components of development

Sustainable development is providing the basic needs to the people and protects the environment [1] thus economic development; social development and environment protection are the key components of sustainable development (Figure 26).

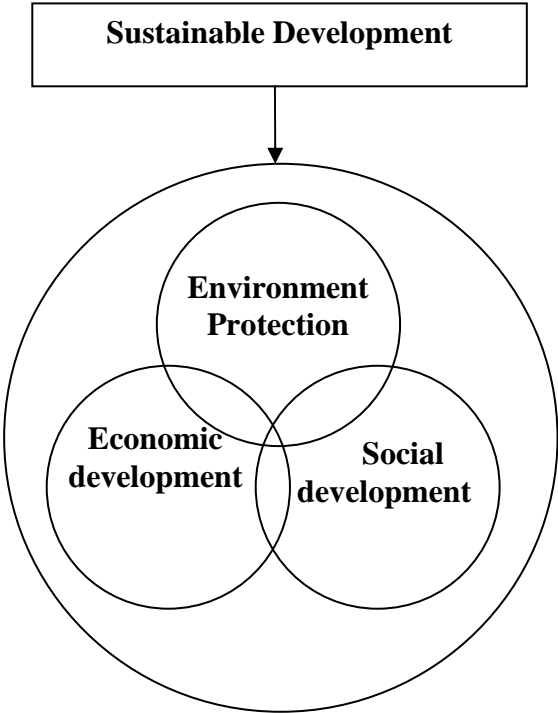


Figure 26: Key components of sustainable development

Economic development social development and environment protection are inter dependent and mutually reinforcing component of sustainable development, which is the frame work of humanist efforts to achieve peace, harmony, prosperity, and higher quality of life for present and future generation(Figure 27).

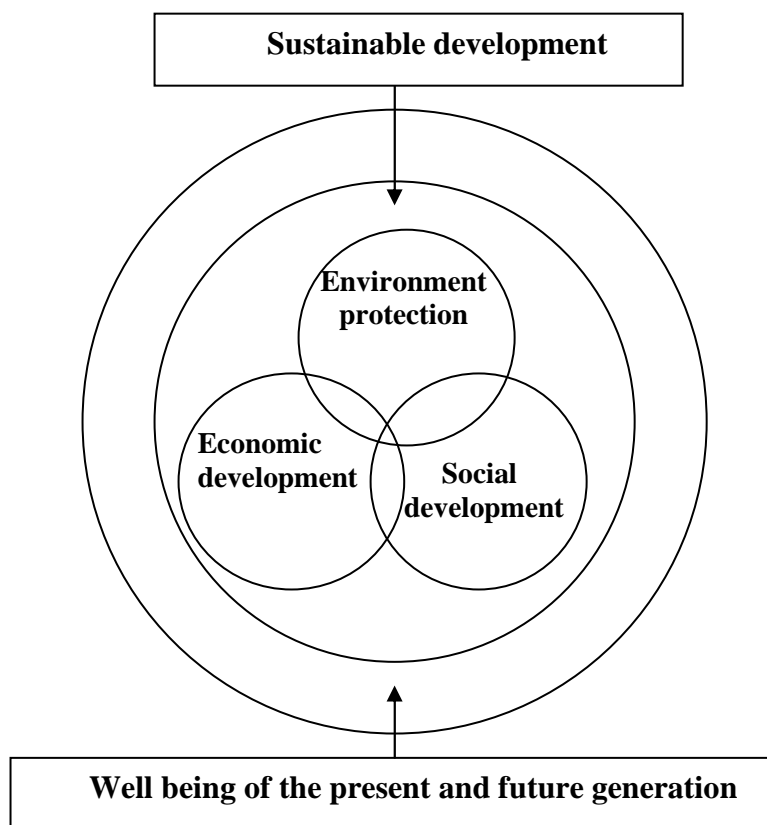


Figure 27: Sustainable development

9.1.3. Research questions three

What are the social responsibilities to reach the sustainable development goals?

- ***Hypothesis for research question III***

It is assumed social responsibilities in sustainable development emphasized in international law.

- ***Results***

Social responsibilities in sustainable development codified in international law.

- ***Discussion***

During last six decades development of international law established human rights and social obligations under for major components of Social justice, social equity Social security and environmental obligations, which are the base to generate the social responsibilities of sustainable development (Figure 28).

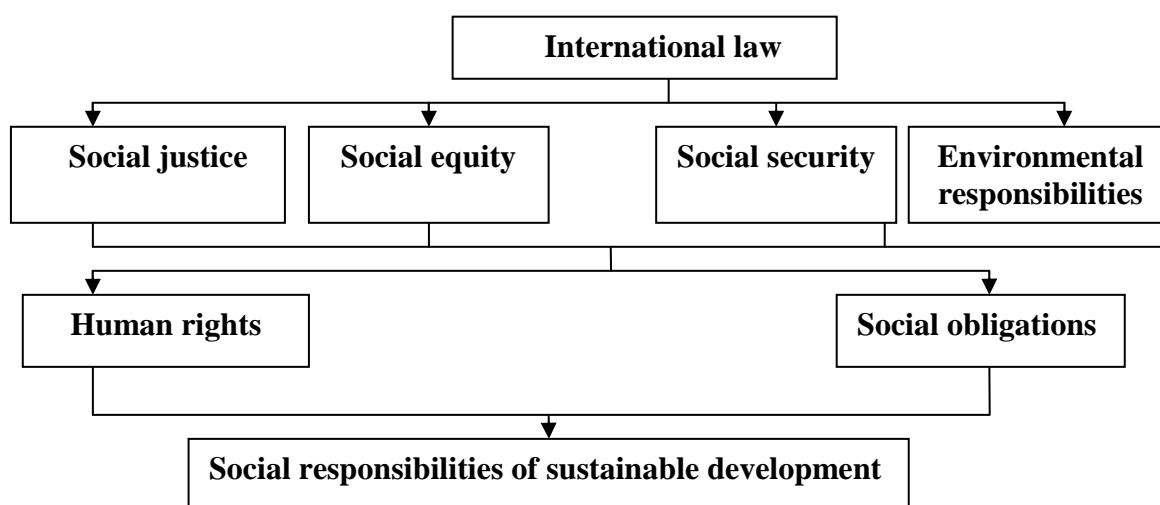


Figure 28: Social responsibilities of sustainable development

9.1.4. Research questions four

What are the strategies to reach sustainable development goals within the frame of free market oriented economic system?

- *Hypothesis for question IV*

It is assumed that international law play a vital role to reach sustainable development goals through free market oriented economic system particularly in developing countries.

- *Results*

Strategies to reach sustainable development are international law is the mechanism and international legal instruments are the tools.

- *Discussion*

During last six decades international law concerned many aspects of development process and established human rights and social obligation as social responsibilities for well being of the society and attempts to protect our common home for future generations Figure 29). On one hand International law guide the free trade policies to allocate the capital sustainably and to avoid the adverse impact on the society and On the other hand is attempting to make

sustainable development is a reality for wellbeing of the society and protect the planet for our future generation. Therefore to reach sustainable development goals through free market economy social responsibilities in international law are the strategies (Figure 29).

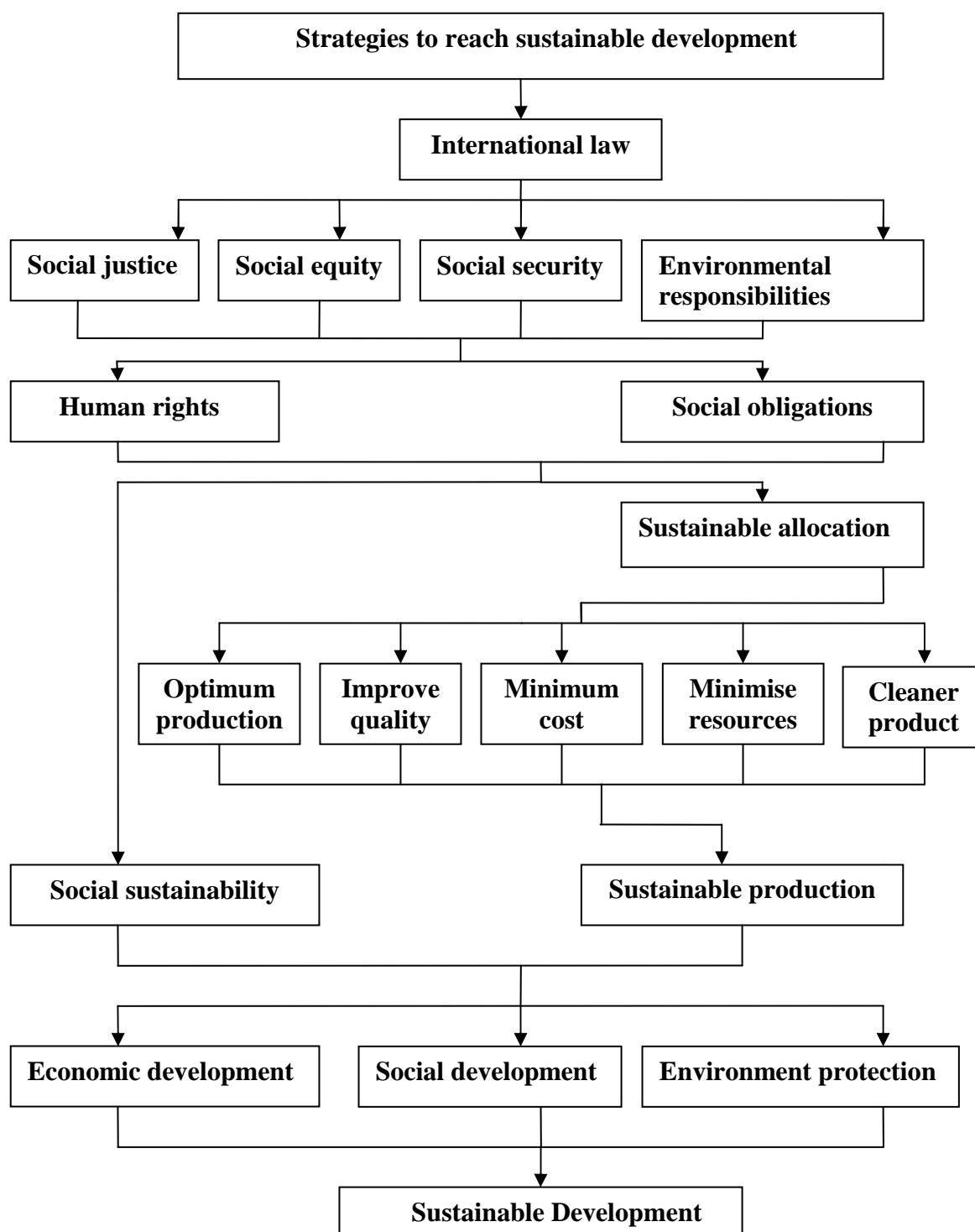


Figure 29: Strategy for sustainable development

CHAPTER 10

CONTRIBUTION OF THE THESIS TO SCIENCE AND PRACTISE

This study identified “Human rights” and “Social obligations” in international law as social responsibilities of sustainable development. Within the context of any economic or political system it is an inalienable legitimate responsibility of the Governments to implement them. That is the most fruitful method to reach sustainable development goals under free market economy.

This research is a case study which based on grounded theory and on inductive research method and did an analytical study in a wide area of sustainable development, free market economy and international law. Hence the final out come of the research is not just logic or an argument, indeed it is a reality. Because this research identified a real social problem and built a theory to guide the society to practise the social responsibilities to reach sustainable development within the context of free market economy and avoid the frequent confrontation between those two concepts.

Nature of the socio economic and political system and the environment is changing them time to time and place to place. Therefore implementing sustainable development responsibilities should tally with such changes. Responsibilities of the society are identifying the changes and provide solutions for the problems of sustainable development. To that end, the final out come of this research have provided a new perspective, proper guidance, concrete frame work and practicable theory to lead the development process particularly in developing countries to reach sustainable development goals within the context of free market economy.

CHAPTER 11

CONCLUSION

Development is not a new concept. It is as old as the human evolution. Concept of Development link with the Human culture and Human civilization and these three concepts interact and influence each other. Development coherent with two dimensions: economic development and social development and both these developments link with the environment because to begins and continue the development process it is essential to allocate the natural resources. As a consequences of that natural resources will decline and frequently and it creates an adverse impact on environment. Adverse impact on environment more adversely affects the human life and human society on variety of ways. The situation will adversely affect the survival of living been in the Globe. Therefore contrary to the economic and social development protection of the environment is a key component in development process for well being of the present and future generation.

Concept of free market economy produce by consumption thinking of managers in entrepreneurial organizations, which is maximization of short-term profit, reflects the goal of their entrepreneurial intention. Ultimate result of the developing economies is much more influent by unethical management. Production process progressed by simplified methods, which minimized cost to reach higher margin of the profits but do not concern the adverse impact on social and ecological area. But the concept of sustainable development considers generating the innovative management in every aspect of the society particularly in social economic development and environment protection because prime objective of sustainable development is provides at least the basic needs to improve the living standard and protect the environment and natural resources. Thus implementing sustainable development policies it is imposing limitations for free market economy and impose the pressure on managers to limit the profit margin. Hence free market economy and the Sustainable development are two concepts distinct from each other which would act on the contrary to a greater extent in its implementation.

Free market concept focused politics and development process is as two different conceptions and in practice both concepts should construct separately. Meaning of that is free market expect Government should not in intervene in to economic matters and existing issues in the market should resolve by “invisible hand”: that is demand and supply principal. But the reality is quite different. The Development process and the political process cannot be separated from each, which is just like two sides of one coin. Though on prima-facia those two concepts visible as two different phenomena, in practice both combine together

frequently to success the motives and objectives of each concept. There is no political theory success without an economic policies as well as there is no economic policies success without combining a political system. That situation clearly emphasised by the development of modern international law. International legal instruments impose inalienable common responsibilities on societies, including Governments, organisations and individuals in economic development, social development and environment protection. These common social responsibilities in international law are gradual development of the base of humanity, which cannot be refused by the civilise nations. Therefore whatever the political theory or system should consider that social responsibilities of sustainable development in international law and should practice as a part of their own political and economic system. That is an inalienable responsibility of the Governments and National States. Although political systems and economic systems generating from two different fields in practise the both amalgamate together that is the nature of the development process. Imposing social responsibilities that situation very clearly emphasized by the international law because not a single society can refuse the social responsibilities which emphasized in international law and it links the political process and the development process.

According to the modern international law it is a primary responsibility of the States to attain sustainable development goals. To that end States should:

- Directly or through competent international organizations, formulate and elaborate international rules, standards and recommended practices and procedures;
- Lay the foundation for a new kind of global partnership to achieve sustainable development and lend impetus to search for a policy framework that would seek to promote economic efficiency , social development and environment improvement;
- Exchange of relevant innovative technologies, skills, knowledge and experience in sustainable development and acquire the assistance from advance research and academic institutions;
- Make programs to get the financial assistance from international financial institutions and developed countries for implementation of such programs in order to ensure sustained economic growth and sustainable development.
- Inject the social responsibilities of sustainable development in international law to the State law.
- Prepare national level programmes to allocate capital stocks sustainably and monitor them.
- Build the cooperation among the countries, international and regional organizations, NGOs and private sector to exchange the financial assistance, innovative technology and sustainable development programs;

- Build the sustainable development as a common interest within the society and among the societies.
- As key actors of international arena states should come forward to solve sustainable development issues through diplomatic negotiations or international tribunals.

These are some key responsibilities imposed on societies by modern international law to implement social responsibilities of sustainable development. These responsibilities indicate sustainable development is neither completely political nor completely technical. It is partly political and partly technical. Reality is sustainable development is an inseparable combination of political and technological aspects. Since States should not just allow the economies to freely behave on the basis of demand and supply principal and Governments should intervene to the economic system at least on the basis of decision making, planning and implementation within the scope of modern international law to make a reality the social responsibilities of sustainable development. It doesn't mean States imposes limitations for free market economy. It means, in development process States implementing an inalienable legitimate responsibility to lead the development to reach sustainable development goals because economic development social development and environmental protection are interdependent and mutually reinforcing component of sustainable development which is the frame work of humanity efforts to achieve peace, harmony, prosperity, well being of the society and higher quality of life for present and future generations.

BIBLIOGRAPHY

- [1] U.N.WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT -1987. Sections 01, Chapter II A/42/427, Our Common Future: Report of the U.N. www.un-documents.net/wced-ocf.htm [Quoted June -2007]
- [2] COPENHAGEN DECLARATION ON SOCIAL DEVELOPMENT (World Summit for Social Development) - 2000. Section 06 of the Introduction (2000 www.un.org/esa/socdev/wssd [Quoted June -2007]
- [3] U.N.DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, COMMISSION ON SUSTAINABLE DEVELOPMENT Ninth Session. April 2001, New York Indicators of sustainable development: framework and methodologies. www.un.org/esa/sustdev/csd/csd9_indi_bp3.pdf [Quoted in June 2007]
- [4] NEVA R. GOODWIN Global Development and Environment Institute Encyclopaedia of Earth www.eoearth.org/article/Capital [Quoted in November 2007]
- [5] FINANCIAL CAPITAL - Wikipedia, the free encyclopaedia en.wikipedia.org/wiki/Financial_capital [Quoted in May 2007]
- [6] CONSERVATION ECONOMY. NET PATTERN BROWSER NATURAL CAPITAL www.conservationaleconomy.net/natural_capital.html
- [7] Production theory basics - Wikipedia, the free encyclopedia en.wikipedia.org/wiki/Production_theory_basics [Quoted in November 2007.]
- [8] What is effectiveness? www.anecdote.com.au/archives/2008/11/what_is_effecti.html [Quoted in January 2008]
- [9] INTERNATIONAL DECLARATION ON CLEANER PRODUCTION published by the United Nations Environmental Programme (UNEP) in 1997. www.unep.org/OurPlanet/imgversn/104/declare.html - [Quoted in Aug 2007]
- [10] Production Possibility Frontier (PPF) www.investopedia.com/terms/p/productionpossibilityfrontier.asp [Quoted in May 2007].
- [11] FOOD AND AGRICULTURE ORGANISATION. The Right to Food in Theory & Practice www.fao.org/Legal/rtf/bkl.htm [Quoted January 2008].

[12] What is Quality Control? www.wisegeek.com/what-is-quality-control.htm [Quoted in Sep 2008].

[13] GENERAL AGREEMENT ON TARIFFS AND TRADE. en.wikipedia.org/wiki/General_Agreement_on_Tariffs_and_Trade [Quoted in April 2007].

[14] An introduction to the WTO and GATT chicagofed.org/publications/economicperspectives/2003/4qeppart4.pdf [Quoted in April 2007].

[15] Market Access for Developing Countries' Exports Prepared by the Staffs of the IMF and the World Bank- www.worldbank.org/economics/marketaccess.pdf

[16] KELEGAMA, S. Ready-Made Garment Industry in Sri Lanka: Preparing to Face the Global Challenges -Asia-Pacific Trade and Investment Review Vol. 1, No. 1, April 2005].

[17] Sri Lanka Garments-The Apparel of Digest Issue no; 83 pp.36

[18] GLOBAL ISSUES- Last Updated Saturday, November 22, 2008 <http://www.globalissues.org/article/4/poverty-around-the-world>. [Quoted in January 2009]

[19] INTERNATIONAL LABOUR ORGANISATION. Reports Record World Unemployment www.unwire.org/unwire/20030124/31646_story.asp [Quoted in January 2007]

[20]INTERNATIONAL PLANT PROTECTION CONVENTION (Preamble) ROME, 6 December 1951. sedac.ciesin.org/entri/texts/intl.plant.protection.1951.html [Quoted in August 2007]

[21] U.N. CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA United States, on 3 March 1973. Article 2 www.cites.org [Quoted in August 2007]

[22] THE U.N. CONVENTION OF MIGRATORY SPECIES OF WILD ANIMALS, was sign in Bonn in June 1979. Article ii. www.cms.int/documents/convtxt/cms_convtxt.htm [Quoted in June 2007]

[23] CONVENTION ON WETLANDS OF INTERNATIONAL IMPORTANCE ESPECIALLY AS WATERFOWL HABITAT. Article 2 – 4. Ramsar, Iran, 1971 www.ramsar.org/key_conv_e.htm .[Quoted in June 2007]

[24] WORLD HEALTH ORGANIZATION | Public health and environment www.who.int/phe/en .[Quoted in November 2007]

[25] Principle 2-21 DECLARATION OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT. Stockholm-1972. Principle 2-21 www.who.int/phe/en. [Quoted in November 2007]

[26] UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED), Rio de Janeiro, Brazil. Principal 1-27 eearth.org/article/United_Nations_Conference_on_Environment_and_De... - Cached [Quoted in June 2008]

[27] THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTE. Section 2. (Discription) 1989 www.american.edu/projects/mandala/TED/basel.htm [Quoated in June 2007].

[28] AGREEMENT FOR THE IMPLEMENTATION OF THE PROVISIONS OF THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA of 10 December 1982 - un.org/Depts/los/.../convention_overview_convention.htm - Cached [Quoted in June 2007]

[29] Impacts of Ozone Depletion. www.ace.mmu.ac.uk/eae/Ozone_Depletion/Younger/Impacts.html [Quoted in Nonmember 2008]

[30] THE VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER NOVEMBER – 2001. Article 1 – 4. www.unep.org/ozone/viennaconvention2002.pdf [Quoted in June 2007]

[31] THE WORLD DECLARATION ON NUTRITION AND PLAN OF ACTION FOR 1992-ROME [Sections 1-21. Plan action for nutrition [part 2. overall objectives]

[32] U.N. DECLARATIONS ON WORLD FOOD SECURITY. Rome Italy 1996, Article 2. www.fao.org/docrep/003/w3613e/w3613e00.htm [Quoted in June 2007]

[33] INTERNATIONAL CODE OF CONDUCT ON THE HUMAN RIGHT TO ADEQUATE FOOD. SEPTEMBER 1997. [Article 6.1 – 6.4 PART III

Corresponding Obligations Section A
www.foodfirst.org/progs/humanrts/conduct.html [Quoted in June 2007]

[34] VANCOUVER DECLARATION ON HUMAN SETTLEMENTS
VANCOUVER, CANADA, 31 MAY TO 11 JUNE 1976. II General principals
01 – 17 [Quoted in June 2007] habitat.igc.org/vancouver/van-decl.htm

[35] ISTANBUL DECLARATION ON HUMAN SETTLEMENTS
(HABITAT II) ISTANBUL TURKEY –JUNE 1996. Preamble 1-21.
[earthsummit2002.org/toolkits/.../un-doku/un-conf/habitat 2 decl-2.html](http://earthsummit2002.org/toolkits/.../un-doku/un-conf/habitat%20decl-2.html)] [Quoted
in June 2007]

[36] DECLARATION ON CITIES AND OTHER HUMAN SETTLEMENT.
NEW MILLENNIUM. Adopted by the U.N. General Assembly 6th planetary
meeting S-25/2. 9 June 2001, Article 1 -14. www.un-documents.net/s25r2.htm
[Quoted in June 2007]

[37] CONVENTION ON THE ELIMINATION OF ALL FORMS OF
DISCRIMINATION AGAINST WOMEN 1981. Article 3 Article 7. [G.A. res.
34/180, 34 U.N. GAOR Supp. (No. 46) at 193, U.N. Doc. A/34/46, entered into
force Sept. 3, 1981] www.hrweb.org/legal/cdw.html [Quoted in June 2007]

[38] BEIJING DECLARATION AND PLATFORM FOR ACTION.
FOURTH WORLD CONFERENCE ON WOMEN,15 SEPTEMBER 1995.
Article 1 – 60 A/CONF.177/20 (1995) and A/CONF.177/20/Add.1(1995)
www.umn.edu/humanrts/instree/beijing4.htm [Quoted in June 2007]].

[39] INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND
CULTURAL RIGHTS – 1976, Article 2. PART II. General Assembly
resolution 2200A (XXI) of 16 December 1966 entry into force 3 January 1976.
untreaty.un.org/English/TreatyEvent2001/pdf/08e.pdf [Quoted in June 2007]

[40]COPENHAGEN DECLARATION ON SOCIAL DEVELOPMENT. [U.
N. World Summit for social development]. Copenhagen, Denmark March
1995. Section 25 [GENERAL A/CONF. 166/9, 19 April 1995.
www.un.org/esa/socdev/wssd] [Quoted in August 2007].

[41]UNFPA: POPULATION ISSUES: Meeting Development
Goalswww.unfpa.org/pds/urbanization.htm] [Quoted in August2007].

[42]INTERNATIONAL CONFERENCE ON POPULATION AND
DEVELOPMENT- CAIRO, EGYPT, SEPTEMBER 1994. Principal 1 – 15,
www.un.org/popin/icpd2.htm [Quoted in August 2007].

[43] WORLD BANK, based on EIH 1989, ENSD 1989, INEGI 1989, PLSS 1991 - Indigenous Peoples and Sustainable Development: www.iadb.org/sds/doc/IND-97101E.PDF [Quoted in July 2007].

[44]. CONVENTION CONCERNING INDIGENOUS AND TRIBAL PEOPLES IN INDEPENDENT COUNTRIES. (NO. 169) JUNE 1989. Article 5 – 27. General Conference of the International Labour Organisation [ILO] at its seventy-sixth session. entry into force 5 September 1991 www.unhchr.ch/html/menu3/b/62.htm [Quoted in July 2007].

[45] UN DECLARATION ON THE RIGHT TO DEVELOPMENT-1986. Article 1 – 10, Adopted by the General Assembly at the 41st session. A/RES/41/128-4 December 1986] www.unhchr.ch/html/menu3/b/74.htm [Quoted in August 2007].

[46] Social justice, sometimes called civil justice. en.wikipedia.org/wiki/Social_justice [Quoted in October 2007].

[47] what is social justice? : Saint Louis University : SLU www.slu.edu/x12275.xml - [Quoted in March 2009].

[48] GREEN PARTY OF CANADA . Social Justice | www.greenparty.ca [Quoted in July 2007].

[49] Rawls on Justice: www.wku.edu/~jan.garrett/ethics/johnrawl.htm - [Quoted in January 2009].

[50] C118 EQUALITY OF TREATMENT CONVENTION, OF ILO 1962. Article 1 of [www.unhcr.org/refworld/type, MULTILATERALTREATY, ILO,,3ddb6a614,0.html](http://www.unhcr.org/refworld/type,MULTILATERALTREATY,ILO,,3ddb6a614,0.html) [Quoted in October 2007].

[51] What is Social Security www.aflcio.org/issues/retirementsecurity/socialsecurity/ss_whatiscfm www.un-documents.net/wced-ocf.htm [Quoted June -2007].

[52] Social security as a human right Module 11 (continued) www.umn.edu/humanrts/edumat/IHRIP/circle/modules/module11b.htm www.un-documents.net/wced-ocf.htm [Quoted June -2007]

[53] MALCOM N.S. International Law Published by Cambridge University press. 2005 The Edinburg Building, Cambridge, CB2RU, UK-2005, pp.378.

[54] DISPUTE SETTLEMENT GATEWAY www.wto.org/english/tratop_e/dispu_e/dispu_e.htm

[55]Chapter 2: The Dispute Resolution Mechanism
internationalecon.com/wto/ch2.php

[56]THE STATUTE OF INTERNATIONAL COURT OF JUSTICE. Article 36 www.icj-cij.org/documents/index.php?p1=4&p2=2&p3=0 [Quoted January 2009]

[57]TRIBUNAL OF INTERNATIONAL COURT OF ENVIRONMENTAL ARBITRATION AND CONCILIATION-1994. Article 10. Environmental Arbitration and Conciliation <http://iceac.sarenet.es> [Quoted January -2009]

[58]STATISTICAL BOOK 2007. Department of Census and Statistics –Sri Lanka. ISBN978-955-577-603-5

[59]SRI LANKA : COUNTRY STUDIES - Federal Research Division, Library of ...lcweb2.loc.gov/frd/cs/lktoc.html

[60]MICHAEL MICHAELY, & ARMEANE M. CHOKSI Liberalizing Foreign Trade: Indonesia, Pakistan, and Sri Lanka. (1989) Basil Blackwell: Mass. Pp. 377.

[61]GODFREY GUNATILLEKE, Development and Liberalisation in Sri Lanka: Trends & Prospects. (1993) Marga Institute: Sri Lanka. Pp. 35.

[62]Annual Report of Central Bank of Sri Lanka. From 2001 to 2007(Statistical Appendix- foreign investments)

[63]Annual Report of Central Bank of Sri Lanka.(Statistical Appendix Table3-2007

[64]BROHIER, R L. Ancient Irrigation Works in Ceylon. Ceylon Government Press-1934. Colombo, Ceylon 79pp.

[65]DEPARTMENT OF CENSUS AND STATISTICS IN SRI LANKA. Statistical book -2007. ISBN-955-577-453-6.

[66]UNITED NATIONS ENVIRONMENTAL PROGRAMME Environmental issues Part III State of Environment, Sri Lanka 2001 pollution of inland waters. www.rrcap.unep.org/reports/soe/indiasoe.cf [Quoted June-2007]

[67]CENTRAL ENVIRONMENTAL AUTHORITY REPORT OF SRI LANKA (CEA 1994): Anuradhpura tanks. Wetland Site report, Colombo Sri Lanka.

[68]AZMY, DE ALWIS ALWIS, AND DASSANAYAKE N. H. 1993: Water Quality in the Irrigation Network of the Mahaweli H system. Annual 1993 scientific sessions of National Aquatic Resources Agency).

[69]PHILIP J, SHAN BHUVENDRALINGAM, PRADEEP LAYANAMAHA, SANATH RANAWANA: An economic analysis of policy options for managing water pollution in the Kelani River-1993. USAID/Natural resources and environmental policy project, International Resources group (NAREPP/IRG).

[70]UNITED NATIONS ENVIRONMENTAL PROGRAMME Environmental issues Part III State of Environment, Sri Lanka 2001 pollution [Land degradation] www.rrcap.unep.org/reports/soe/indiasoe.cf [Quoted June-2007]

[71]UNITED NATIONS ENVIRONMENTAL PROGRAMME Environmental issues Part III State of Environment, Sri Lanka 2001 pollution [Waste management] www.rrcap.unep.org/reports/soe/indiasoe.cf [June 2007]

[72]UNITED NATIONS ENVIRONMENTAL PROGRAMME Environmental issues Part III State of Environment, Sri Lanka 2001 pollution [Depletion of coastal recoveries] www.rrcap.unep.org/reports/soe/indiasoe.cf

[73]COAST CONSERVATION DEPARTMENT, SRI LANKA. The coastal zone management plan: 1997 coast conservation department, Sri Lanka.

[74]EKARATNE, S.U.K Research and Training for Conservation and Sustainable Management of Coral Reef Ecosystems in Sri Lanka: Present Status and Future Directions, Review Paper for “Year of the Reef” Regional Workshop on the Conservation & Sustainable Management of Coral Reefs, December 15th to 19th, 1997. M.S. Swami Nathan Research Foundation, Chennai, India. .

[75]COAST CONSERVATION DEPARTMENT, COLOMBO SRI LANKA The Coastal Zone Management Plan: 1997. gefweb.org/Documents/.../MSP_Proposals/srilanka.pdf [Quoted in November 2007]

[76]Air pollution kills, but prevented. www.cnn.com/NATURE/9908/30/air.pollution.enn/index.html . [Quoted in May 2007]

[77]CHANDRALATHA, S. An overview of air pollution and respiratory illnesses in Sri Lanka, yorku.ca/bunchmj/ICEH/proceedings/Senarth_C_ICEH_papers_489to_501.pdf [Quoted in July 2007]

[78] Sri Lanka Environmental Profile www.mongabay.com/20srilanka.htm
[Quoted June 2007]

[79]DEPARTMENT OF CENSUS AND STATISTICS SRI LANKA-
Nutritional steps of Pre school children in Sri Lanka- 2003.] Official web site.
www.statistics.gov.lk quoted in March – 2008.

[80] TRENDS IN KEY ECONOMIC VARIABLES .Annual report of the
Central Bank of Sri Lanka-2007. Trends in key economic variables (Special
Statistical Appendix, Table – 01)-2007

[81]RTMENT OF CENSUS AND STATISTICS OF SRI LANKA -
Employment and unemployment in Sri Lanka -Trends, Issues, and Options-
2002. Pp 40 -46.]

[82]DEPARTMENT OF CENSUS AND STATISTICS SRI LANKA.
Colombo Consumer Price Index. Official web site. www.statistics.gov.lk
[quoted in March – 2008]

[83]POVERTY ENVIRONMENT PARTNERSHIP
|www.povertyenvironment.net/pep. [Quoted September 2008][84]HERMAN
DALY. “Scientific American” November 1993 Pp.50-57]

[85]MERRIAM, S.B.Qualitative research and case study applications in
education-1998 www.tesol.org/s_tesol/view.asp?CID=476&DID=2153 - 57k

[86]Etic and Emic Perspectivespersonalwebs. oakland.edu/~kitchens/150d/pike.html [Quoted March 2008]

[87]ELLE, U. "Emergence" vs. "Forcing" of Empirical Data? A Crucial
Problem of "Grounded Theory" Reconsidered. Forum Qualitative
Sozialforschung / Forum: [On-line Journal], 6(2), Art. 27, paragraphs 49 & 50. -
2005 en.wikipedia.org/wiki/Grounded_theory[Quoted March 2008]

[88]GLASER, B.G. STRAUSS. A. Discovery of Grounded Theory.
Strategies for Qualitative Research. Sociology Press [3], 1967 - (ISBN 0-202-
30260-1).Grounded theory - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Grounded_theory. [Quoted in March 2008]

[89]THE CASE STUDY AS A RESEARCH METHOD.
en.wikipedia.org/wiki/Case_study. [Quoted in March 2008]

[90]QUALITATIVE CASE STUDY RESEARCH METHOD.
www.angelfire.com/pop2/tai/method.htm [Quoted in March 2008]

PUBLICATIONS

[1] Jayawardene D.M.D.D.P. *Comparative Study of the Executive Power with reference to the Constitutions of United Kingdom, India and Sri Lanka*. University of Colombo Sri Lanka, 1997. (M.A. Degree course in International Relations)

[2] Jayawardene D.M.D.D.P. *Growth of GDP does not help to Improve the Living Standard of the People of Developing Countries, with reference to Sri Lanka*. Technical University in Liberec. Liberec economic forum, 11. 9. 2007.

[3] Jayawardene D.M.D.D.P. *Environment Cost is a Major Barrier for Sustainable Development in Developing Countries, with reference to Sri Lanka*. Evropská vědecká konference posluchačů doktorského studia, Mendelnet, Brno, 28. 11. 2007.

[4] Jayawardene D.M.D.D.P. *Post Harvest Losses are Major Barriers for Sustainable Development in Developing Countries, with reference to Sri Lanka*. International scientific Conference Knowledge Economics, Luhačovice, Czech Republic, November 2007.

[5] Jayawardene D.M.D.D.P. *Corporate Social Responsibility is an Important Dimension of Management Practices in Developing Countries for Sustainable Development*. International Ph.D. Research Conference, Czech University of Life Sciences, Faculty of Economics and Management, Prague 12. 2. 2008.

[6] Jayawardene D.M.D.D.P. *Social Responsibility on Human Settlements as a Key Indicator of Sustainable Development*. VII. International Doctorate Conference "Economical, political and legal matters of the international affairs in the year 2008", Faculty of International Relations in Bratislava, 6. 6. 2008.

[7] Jayawardene D.M.D.D.P. *Agro Forest Farming System is an Important Dimension to Reach the Sustainable Development Goals in Developing Countries*. Conference Commerce in Modern Society: Theory and Practice, University of Economics in Varna, Bulgaria, 11. 10. 2008.

[8] Jayawardene D.M.D.D.P. *Development of International Law imposed the Limitations for Free Market Economy*. International scientific conference for Ph.D. students and young researchs at Silesian University in Opava, School of Business Administration in Karvina, 14. 11. 2008

[9] Jayawardene D.M.D.D.P. *Development of International Law Indicates Protection of the Environment is the Key Component of Sustainable*

Development. Mandel Net Conference , Economic Faculty of the Leznizka University Berno Czech Republic, April 2009-03-24

[10] Jayawardene D.M.D.D.P. ***Market Economy is a risk for Developing countries to Reach Sustainable Development Goals.*** Bata Conferance, Tomas Bata University Zlin Czech Republic. April 2009. Research paper accepted, scheduled to published in April 2009.

[11] Jayawardene D.M.D.D.P. ***Reach to Sustainable Development is an Impossible Target for Developing Countries Under Free Market Economy.*** Eleventh International Conference –Meknon-2009. Faculty of Economics VSB Technical University, Ostrava Czech Republic. Research paper accepted and scheduled to published in May 2009.

[12] Jayawardene D.M.D.D.P. ***Right to Adequate Food is a Key Social Responsibility in International law.*** Higher humanities education in 21st century: “Challenges and perspectives” Ministry of Education and Science of the Russian Federation Federal Agency for Education. Samara State Pedagogi. Research paper accepted and scheduled to be published in May 2009.

[13] Jayawardene D.M.D.D.P. ***Tax System and Tax Policy Issues of Czech Republic and Slovak Republic and Its implication on the Sustainable Development.*** Eleventh International Conference of the “Society for Global Business and Economic Development” Montclair State University, Bratislava, Slovak Republic. Abstract accepted and scheduled to be published in May 2009
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Curriculum Vitae

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Educational Qualifications

Bachelors Degree of Laws (LL.B)
University of Colombo Sri Lanka, 1981

Masters Degree in International Relations
M.A., University of Colombo Sri Lanka,
1997

Masters Degree in Buddhist
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of Buddhist Studies University of
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Post Graduate Diploma in International
Affairs. - 1994 Bandaranaike Centre for
International Studies, Sri Lanka

Post Graduate Diploma in
Archaeology, 2001.
Kelaniya University Sri Lanka.

Post Graduate Diploma in Buddhist
Studies, 2001
Kelaniya University of Sri Lanka.

Diploma and Certificate Courses

Diploma in Federalism, 2000 Freeburg
University Switzerland

Course in International Law, 1998
Hague Academy -Netherlands

Course in Democracy and Human
Rights, 1998
Institute of International Law -Greece

Course in Human Rights in International
Law, 2002 International Institute of Human
Rights. Strasburg, France

Course in Diplomatic Training, 2003
Bandaranaike International Diplomatic Training Institute.
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Professional Qualifications

Passed the Final examination of Attorneys at Law, 1982

Sri Lanka Law College,
Sri Lanka

Experience

Enrolled as an **Attorney at law** of the Supreme Court of Sri Lanka in 1983 and gained 25 years experience up to now.

Director, Ceylon Ceramics Corporation
(Government owned Businesses enterprises)
From 03 Sep 2004 to 10 Nov 2006

Director. Lanka Cement Company Ltd.

Government owned business enterprises
From 19 Nov 2004 to 10 Nov 2006

Other activities

In 1991 I was elected as a **Member of a Local Government** in Gampaha District of Sri Lanka and served 07 years.

Served as a **Legal Adviser to the Minister of National Integration** Ethnic Affairs and for 04 Years in Sri Lanka. (1994 -1998)

Active member of the **International Lions Movement** and held key offices in Sri Lanka

