SELF-RELIANCE AS A DEVELOPMENT STRATEGY FOR LOW-INCOME COUNTRIES

by

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Abstract

The growth-based neoclassical economic paradigm, which is being adopted by virtually all countries as a development model, has created enormous wealth for some. Yet, more than a billion people still live in absolute poverty, and the disparity between the rich and the poor, both within and between countries, is growing. As well, the Earth’s ecosystems, the ones on which humans and countless other species depend for life, are becoming severely stressed and sometimes irreversibly damaged, a clear testimony to our unsustainable behavior as a species. The global population is increasing by some 80 million per year, and with this expansion comes a rise in material and energy demands. Although the Ecological Footprint of the affluent countries alone is already larger than the planet, economists are counting on another round of economic growth to alleviate poverty, protect the “environment” and improve quality of life everywhere. This raises questions as to what lies ahead for low-income countries, and what kind of future awaits our planet.

The challenge of development today is to improve quality of life, especially for those who need it most, within the carrying capacity of the planet. Thus, the purpose of this thesis is to expose the weaknesses of neoclassical economics, and to propose self-reliance as a development strategy, particularly for low-income countries, as a means to address today’s ecological and socio-economic reality. The concept of self-reliance is based on ecological economics, a more equitable and ecologically sensitive development paradigm that leads to sustainable development. Self-reliance is discussed with special emphasis on self-sufficiency in food, water and energy. Self-reliance is measured against the two extremes, self-sufficiency at one end of the spectrum, and interdependence at the other. Mahatma Gandhi’s philosophy of swadeshi illustrates how adopting self-reliance as a way of life can solidify the bonds within a community, and can improve the citizens’ overall well-being. Two policy
tools are proposed that will help society to become more self-reliant: ecological tax reform, and the closing of the "ecological loop". The southern Indian state, Kerala, demonstrates that it is possible to enjoy a high quality of life without high rates of growth and consumption of resources. But because the State is currently facing some development challenges, it is shown how a policy of self-reliance may solve some of its problems.
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Il faut cultiver notre jardin
- Voltaire
Chapter 1

Introduction

The introduction is composed of four parts. The first sets the tone of the thesis by depicting some of the current trends in development, as well as some of the challenges faced by humanity. The second section highlights the purpose and objectives of the research. The third section describes the methods used to undertake the research, and the fourth section establishes the structure of the thesis.

1.1 Problem Statement

One of the biggest challenges facing humanity at present is recognizing that the ecosphere’s carrying capacity\(^1\) has limits, and that more material growth (throughput), will not in itself increase overall welfare, reduce inequity, and overcome a polluted environment. The world is seeing accelerating ecological destruction, exacerbated by an exploding population whose ever-increasing material demands cannot be sustained even at current rates\(^2\), ultimately undermining the very life-support systems on which we depend, and augmenting geopolitical instability. The economic model that has shaped the development of

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\(^1\) Carrying capacity can be defined as “the maximum population of a given species that can be supported indefinitely in a specified habitat without permanently impairing the productivity of that habitat” (Wackernagel and Rees 1995: 49). Limits to the carrying capacity of regions and the ecosphere will be discussed in conjunction with Ecological Footprint analysis in a further section.

\(^2\) The measurable criterion to establish such a claim is the “Ecological Footprint”, a concept devised by William Rees and Mathis Wackernagel, which will be discussed in a following chapter. A similar concept, “environmental space”, has been devised by Michael Carley and Philippe Spapens (see Sharing the World 1998).
Western society over the last two hundred years has produced enormous wealth for some, enabling nations such as the United States to achieve levels of consumption and prosperity unsurpassed anywhere else on Earth. At the same time, other countries that are not so fortunate and whose populations seek a satisfactory material standard of living, simply struggle to survive in an increasingly aggressive and competitive global economy. The powerful phenomenon of globalization, attuned to market liberalization at the global scale, is supposedly creating new economic opportunities for both the “developed” and the “developing” nations. Countries are urged to find their particular production “niche”, and buy other goods and services they may require from the rest of the world, making everyone dependant on everyone else through trade. Where societies once were naturally self-sufficient, and had become so through evolutionary processes, economic globalization has created today a web of interdependent, yet competitive, nations and states that rely on each other for even the most basic necessities.

Wackernagel and Rees (1995) suggest that the economy, more specifically economic growth, has progressively become an end in itself rather than a means to a better quality of life (142). The position held by ordinary people in the development scheme has equally shifted; many are no longer the beneficiaries of growth, but have been reduced to one of the means of achieving it. Those who do not or cannot contribute to the economy are ignored by the system and suffer the consequences of joblessness, alienation, and declining social services. Leaders everywhere are being elected on the promise of increases in GDP, while social issues in many countries are no longer on the government’s agenda. Politically, it is no longer acceptable to invest directly in the social sector, because it is “economically inefficient”; rather, the free working of markets is considered the most efficient and effective means to increase wealth in a society. Why invest in social housing when building
condominiums for the rich will generate higher profits, the benefits of which will supposedly trickle down to everybody else?

International lending institutions have also changed their philosophy towards development. The World Bank, for example, while under the leadership of Robert McNamara (1968-81), began to shift from project-based lending to policy-based lending. This led to Structural Adjustment Programs (SAPs), whereby “the ultimate aim of the Bank was to achieve a new form of macroeconomic management which would successfully integrate the borrowing nation into the global system of trade, finance, and investment” (Cypher and Dietz 1997: 579). Globalization suddenly became a normalizing force, where economic powerhouses such as the United States more or less coerced a number of poor countries into the global market system (Daly and Cobb 1994: 289; Goldsmith 1996: 263). Unfortunately, such efforts have mostly succeeded in making low-income countries worse off: “Economically, financially, and technologically, Third World countries were sucked deeper and deeper into the whirlpool of the world economic system and consequently lost or are losing their indigenous skills, their capacity of self-reliance, their confidence, and, in many cases, the very resource base on which their survival depends” (Khor 1996: 48). Except for a few isolated cases such as Kenya, structural adjustment loans (SALs), particularly in Sub-Saharan Africa, have not had the beneficial results that had been expected; in fact, their overall impact has been generally devastating:

Today, the countries that went along with [McNamara] are saddled with silted-up megadams, useless crumbling roads to nowhere, empty high-rise office buildings, ravaged forests and fields, and the overwhelming, unpayable debt to Western bankers that makes up much of the legacy of World Bank policy from McNamara to now. (Mander 1996: 14)

Even Kerala, the southern Indian state of some 30 million people, considered an “anomaly” according to conventional modernization and development theory for the apparent
paradox of impressive quality of life indicators despite a very low gross domestic product (GDP) per capita, is not immune to the forces of globalization. Although many anthropologists, ecologists, sociologists and others have hailed it as one of the few examples of a society practicing sustainable development on a large scale, this situation might not last much longer, because Kerala, like many other parts of the world, is being swept by the tide of consumerism and growth-based economic thought. Despite the fact that the globalization of society is not by any means a new phenomenon there, the globalization of the economy is a recent development, and part of the pressure comes from New Delhi’s 1991 fiscal policies, which are opening the doors of the Indian economy to the world market, forcing Kerala to adapt as best it can to the new conditions (George 1993; Prakash 1999).

To claim that conventional economics has failed humanity appears to be an overstatement. Yet, there is considerable evidence that this is the case, ranging anywhere from the acute poverty that still plagues a quarter of the world’s population to the disintegration of ecosystems resulting from an overly stressed environment. Despite economists’ optimistic outlook, “a quarter of humanity still lives in poverty, the human family is expanding by 90 million a year, and material demands everywhere are rising” (Rees 1995: 343). The world’s ecosystems, upon which we and millions of other species depend for our survival, are eroding away. The widening disparity between the world’s rich and poor, even within the rich countries themselves, is also testimony to the limits of neoclassical economics. The concept of “sustainable development” has been introduced fairly recently as a response to the planet’s social and ecological ills, but the term itself has had many interpretations, and the approaches to sustainability have been contradictory, to say the least. Some interpretations have delayed efforts towards real change.
The limits to growth have been reached, indeed they have been surpassed and irreversible damage has been done, but our economy continues to drive us to produce more and consume more if only to keep the rate of unemployment down and prevent firms from going bankrupt. The overconsumption of resources by a rich minority is already ecologically unsustainable at the global scale, and prevents the low-income majority from achieving a similar quality of life. Virtually all rich countries have long surpassed their own carrying capacity and are appropriating others' through trade in the case of resources, or irresponsibility in the case of pollution. This led some analysts to believe that local carrying capacity is not a limiting factor to economic growth. From a global sustainability point of view, however, it must be recognized that it is impossible for all countries to survive by appropriating the ecologically productive land of others. As Herman Daly emphasizes in *Steady-State Economics* (1991), “we need to recognize [...] that a U.S.-style high-mass consumption, growth-dominated economy for a world of 4 billion [now 6 billion] people is impossible” (6), or at least, not for very long. Indeed, it is estimated that we would need at least three\(^3\) additional planet Earth to sustain us if humans were all to live with North American lifestyles! (Wackernagel and Rees 1995: 15). Rees and Wackernagel (1995) admonish that “as the world becomes ecologically overloaded, conventional economic development actually becomes self-destructive and impoverishing” (2). Yet, “most economists and development planners still insist that global sustainability is achievable only through large increases in the consumption of goods and services in both the rich and poor countries” (Rees 1995: 353). What, then, lies ahead for low-income countries, and what kind of future awaits our planet?

\(^3\) In 1995, *Our Ecological Footprint* put the figure at two additional planets; today, according to Dr. Rees (1999), the figure has gone up to three.
The neoclassical economic model does not recognize any ecological or other limits to economic growth, and treating the economy as a system separate from the "environment" is at the heart of the environment-economy conundrum. However, some economists are beginning to recognize that, if economic growth is to continue, at least for some time, then throughput growth, or material and energy use, must be reduced because of resource limits and ecological constraints. Given a certain level of consumption, this implies an increase in efficiency of production. Over the past decades, and in certain sectors of the economy, technology has indeed contributed to this improvement in efficiency, for example, through the considerable reduction in the size of electronic components. Nevertheless, the "technological fix" can only take us so far, and even if economic growth could continue, it has failed to improve the quality of life of most people, except for an increasingly smaller minority, and has led to an impoverished environment, our real source of wealth. Thus, the need for new development paradigms—both for the "developing" and the "developed" world—is no longer a metaphysical issue, but a necessary and pressing one. A recent publication by the United Nations Environment Programme, *Global Environmental Outlook 2000*, concludes that "the present course is unsustainable, and postponing action is no longer an option" (UNEP 1999: 364). Addressing the problems raised above will require reexamining not only our values as a society, but more fundamentally the economic models on which we base our development policies today.

1.2 Purpose and Objectives

Because sustainable development is considered an important goal for the well-being of humanity, the aim of this thesis is to propose self-reliance as a development strategy,
particularly for low-income countries, as a means to address today's ecological and socio-economic reality.

**Specific objectives to achieve this goal are to:**

- trace the origin of neoclassical economic thought;
- highlight the main assumptions of neoclassical economics;
- expose why neoclassical economics fails as a development model for affluent countries, and why it cannot succeed in raising the living standards of the rest of the world;
- propose ecological economics as a better framework to achieve ecologically sustainable development for all countries;
- describe how self-reliance is key to create a new economic order that is both socially and ecologically sensitive;
- suggest two policy tools that will help a country or region to become more self-reliant;
- use Kerala as an illustrative example to demonstrate that it is possible for a society to enjoy a high quality of life without high rates of material and energy consumption; and
- recommend self-reliance as a partial solution to Kerala's current economic difficulties.

**1.3 Methods**

Most of the research for this thesis is qualitative, and has been undertaken through an extensive literature review of both published and unpublished documents. The literature includes international development planning theories, ecological planning modeling, government statistics, reviews and analyses of environmental and social conditions around the world, and numerous other documents.

The information on Kerala comes from a combination of literature research and the experiences gathered during a one month study trip. In order to gain first-hand knowledge about the socio-economic conditions in Kerala, and get acquainted with some of the opportunities and threats faced by the State, I conducted some informal interviews. I met with a variety of Keralites, such as sociologists, economists, State Planners, students, and more casually with several residents of Kerala, in order to gather a variety of perspectives. Although the information collected through these discussions has not been used directly in
the thesis, it proved extremely important, nevertheless, in helping me understand how this 
society is changing, and how it is being affected by consumerism and economic globalization.

1.4 Thesis Structure

The thesis is structured to meet the objectives described above. The first chapter 
highlights the main impacts and trends of conventional development, and calls attention to the 
need for a new approach to development. It also states the purpose and objectives of the 
thesis, and describes the method used to achieve these objectives. Chapter 2 traces the root of 
liberal thought, and describes the origins of neoclassical economics. This leads to Chapter 3, 
which explains some of the fundamental aspects and assumptions of the neoclassical 
economic model today. It explores such concepts as economic growth, globalization, free 
trade and weak sustainability.

Chapter 4 is the turning point in the thesis. It looks at how development is 
conventionally defined, and how it ought to be defined. Chapter 5 specifies development 
goals, establishes judgmental criteria and evaluates neoclassical economics as a development 
paradigm. Chapter 6 proposes ecological economics as an alternative paradigm, one that is 
conducive to sustainable development. The role of technology, steady-state economics and 
Ecological Footprints are some of the topics that are studied in that chapter. Self-reliance, 
described in Chapter 7, then becomes a logical extension of ecological economics. The need 
for self-sufficiency in food, water and energy is raised, particularly for low-income countries. 
As well, Mahatma Gandhi's philosophy of swadeshi is used to illustrate self-reliance. Then, 
two policy tools that will help a society become more ecological and self-reliant are proposed: 
ecological tax reform and closing the "ecological loop". Finally, in the same chapter, Kerala 
is introduced as a real-life example of a society that practices sustainable development. It is
shown briefly how the concept of self-reliance can be applied there in order to maintain and enhance the Keralites’ quality of life. A discussion and the conclusion make up Chapter 8.
Chapter 2

The Leading Up to Neoclassical Economics

Appreciating sustainable development and its implications for planning, such as fostering self-reliance in both high- and low-income countries, requires a basic understanding of the current dominant economic paradigm, what we call today "neoclassical economics", and the history behind it that has led to this school of thought. The purpose of the following section is to examine how the rise of Western scientific thought, starting from approximately the sixteenth century, began shaping our view of the world, and how the philosophy of liberalism and ultimately neoclassical economic thought, which is now governing development policies almost everywhere, emerged as a result. A few key thinkers who have had a tremendous impact on shaping the ideology of neoclassical economics will be studied briefly as well.

2.1 Humans and the World: a New Relationship

The understanding of the relationship between humankind and nature in Western society has changed dramatically since the sixteenth century, and the ideas that have emerged during this time gave rise to the liberal political values of the West. Shaped by the development of the scientific method, our view of the world came about largely as a result of the technological advances that have been made throughout the Renaissance. Scientific analysis gave us knowledge which could then be used to dominate nature, where truth about nature could finally be revealed as it was made up of mathematical fact. Newtonian physics likened the world to a machine, whose mechanically-linked parts combined to form a working whole. Grounded in the scientific method, whereby the human observer was necessarily detached and neutral in an attempt to be completely objective, research became highly
reductionist, focusing on the study of small fragments of reality, the sum of which would supposedly reveal a bigger picture. Admittedly, this analysis greatly expanded knowledge, but at the same time, it “also marginalized a spiritual, emotional or holistic perception of the relationship of humankind to nature, as had been common in earlier civilizations” (Carley and Christie 1993: 63). The observer was no longer part of nature, but separate from it, and René Descartes was a leading catalyst for the mechanistic reductionist model, when he divided “all of reality into separate realms of mind and matter” (Wackernagel and Rees 1995: 139). The fundamental trust in science became characteristic of Western culture, and the view that human progress could best be achieved through the increasing domination of the natural world became prevalent (Carley and Christie 1993: 69).

2.2 Classical Economics and The Rise of Liberal Thinking in the West

The application of the scientific method in the natural sciences naturally led to its extension into the social sciences. The ideas that took shape during the Enlightenment period during the seventeenth century had a profound influence on how we perceive the relationship between the individual and society. In non-Western cultures, and indeed, as in Europe before the Middle Ages, humankind is viewed as intrinsically linked to its surroundings; people are but a fragment of some larger and somewhat mysterious system. After the sixteenth century, however, this perception began to change. In the West, “Homo Sapiens is taken to be nature’s highest achievement” (Morris 1996: 220); humankind placed itself at the peak of the system, a “right” suddenly assumed by its seeming ability to dominate nature. This new position in the hierarchy in many ways legitimized our actions, whatever they may be: couldn’t we do as we pleased due to our “superiority”? However, we do not exist in isolation; our actions do affect others and vice-versa. We are surrounded by individuals with their own interests, and
together we form society. Thus, political philosophy became interested in the relationship between the individual and society, leading to discussions on the trade-off between freedom of the person and control by government authority: to what extent should freedom of the individual be restrained in the interest of the common good? Although there are no absolute answers to this question, philosophers have debated this issue, and Western society has, for the most part, relied on democratic mediation to find some sort of a balance between the two.

Hence, during the early nineteenth century, emerged the philosophy of liberalism, a political and economic doctrine that was to shape the ideological framework of classical economics. The most prominent figures were Adam Smith and David Ricardo, who developed the notion of the market economy, but others also played an important role in the development of liberal economic thought, such as Thomas Robert Malthus, who warned against the discrepancies between exponential population growth and limited food supplies, and John Stuart Mill, who discussed the notion of private property as a necessary bastion against exploitation. The underlying assumption of liberalism is that a natural economic order spontaneously establishes itself through the self-interested and unrestrained actions of individuals. Indeed, "economic man" (*homo oeconomicus*), interested in meeting his own needs, acts in a fashion that maximizes his economic self-interest. In so doing, he is said to indirectly help society, for "those who benefit themselves are taken to benefit the nation as a whole" (Carley and Christie 1993: 88). Developed by Jeremy Bentham (1742-1832), this notion, called utilitarianism, was a very important aspect of liberalism that would lead to the free market capitalism ideology: "Utilitarian liberalism became the philosophy of capitalism, with science and technology providing the means for the commodification of nature and industrialism on a world scale" (Carley and Christie 1993: 80). Bentham rejected any moral dimension to the economy, as he claimed the natural mechanistic workings of the market
would be satisfactory in creating the greatest good for the most people. Utilitarianism, therefore, had no comment to make about the negative impacts of industrialism and exploitation of people, for what was good for the individual had to be good for society.

2.3 Neoclassical Economics: a More “Scientific” Approach to Economics

Neoclassical economics began to evolve around the 1870's, and like classical economics, the model is based on some fundamental assumptions regarding human behavior: that humans are highly rational and self-interested individuals who have insatiable wants. Essentially, this means that people act in a manner that maximizes their well-being given a certain set of circumstances, such as income, availability of resources, price, etc. It is generally agreed upon by neoclassical economists that self-interested, competitive behavior is more rational, thus more beneficial, for the individual as for society, than cooperative behavior.

Unlike classical economics, however, this “new economics” started relying on mathematical models to explain fluctuations in supply and demand, and to help establish the point of market equilibrium. Yet, it became apparent that many problems in the economy, such as unemployment, could not be explained satisfactorily through the simple mechanics of supply and demand. With the advent of the 1929 economic crisis, known as the Great Depression, which affected mostly the industrialized countries of the world, the need to understand the causes of unemployment became urgent. It was John Maynard Keynes, therefore, who introduced the idea that responsibility laid on the state in ensuring maximum employment. Although neoclassical economics, like classical economics, believes that market forces allocate resources most efficiently, in cases where markets fail in this regard, governments are to intervene in the national economy to correct the situation. Over time, the
neoclassical economic model became more refined, and economists such as Colin Clark and Simon Kuznets studied the phases of economic development a country must undergo to become “developed”, and introduced economic indicators to measure the level of development achieved.

2.4 Important Economic Theorists

Although many contributed to the rationalization of the economic model that has evolved into neoclassical economics, certain key individuals played a decisive role in the model’s development.

2.4.1 Adam Smith

The roots of classical liberal economic thought can be traced back to the theorist Adam Smith (1723-1790), who published *The Wealth of Nations* in 1776. In his book, Smith outlines the tenets of an economic system based on competition between individuals, which he believed would result in the optimal allocation of society’s resources, leading to the welfare of all. Work, he thought, was the source of all wealth and gave value to goods. The “natural” price of a good, which includes the costs of labor, wages and rent, is exactly what this item is worth. However, the natural price could differ from the market price. In a competitive economy, comprised of many small buyers and sellers, the market price of goods would be determined through the interplay of supply and demand. The forces of the market automatically regulate economic activity through what Smith called the “invisible hand”, by attracting new producers when market prices are above natural prices, thus increasing the supply of goods and subsequently reducing their market price, and vice-versa.

The working of the market was deemed most efficient in the absence of any outside interference; this required economic as well as political freedom of the individual, leading to
the philosophy of laissez-faire economics. Smith had confidence that “markets alone could assemble and convey essential information about scarcity and value, and therefore must be left alone to allocate resources” (Carley and Christie 1993: 88). In *The Wealth of Nations*, Smith critiques business monopolies and government intervention in the economy, although he did acknowledge that the government played a definite, albeit limited, role for society, such as protecting the rights of private property. In his conception of the economy, Smith assumed that producers would want to sell their products locally, giving them control over capital which would be immobile, a fundamental aspect for the proper working of the invisible hand. Indeed, local investments would benefit the community as well as be much easier to supervise. Along similar lines, Smith also believed that market efficiency depended on the fact that capitalists should have a direct involvement in the management of their assets, as they would be more responsible than managers who have no ownership stake. These ideas arose from Smith’s own observations of artisans and small craftsmen, who were both owners and operators of their businesses.

2.4.2 David Ricardo

Particularly interested in the distribution of wealth and income, the British economist David Ricardo (1772-1823) was one of the earliest proponents of free trade. The underlying assumptions on which he based his theories were very similar to those of Adam Smith’s: he considered that work was the source of all wealth, and took it for granted that the factors of production (manufactured capital and labor) would not be internationally mobile. Using the liberal market system ideology as a starting point, Ricardo wanted to improve on the notion of economic efficiency, defined as minimizing the cost of whatever is produced, by integrating national economies into a global one. He noticed that, as a result of different technologies, customs and resources, countries have a “comparative advantage” over others by incurring
different costs to manufacture the same products. Therefore, it is in the interest of every nation to manufacture what it does best and trade for products it does not have, assuming, of course, that labor and capital could not move freely across national boundaries.

Two types of comparative advantage exist: absolute and relative. Absolute comparative advantage simply means that one country has an absolute advantage over the other in terms of climate and natural resources, so that a country like Costa Rica should raise bananas and France should produce wine. Relative comparative advantage is a somewhat more subtle, “but ultimately more powerful concept” (Morris 1996: 220), and constitutes the main argument to push for free trade agreements between countries today. Relative comparative advantage stipulates that, even though a country may have an absolute advantage over another in, say, both raising bananas and producing wine, it is in each country’s economic interest to specialize in producing what it does best. For example, let us assume that two countries, A and B, can both manufacture cars and computers, and that country A can produce both cheaper than country B. Country A can make cars for half the cost, but can only save 20 per cent on the manufacturing cost of computers. It would therefore be in the interest of both countries that A focus entirely on manufacturing cars, and B on computers. Then, they would trade for each other's products and both countries would be better off: economic efficiency has been maximized.

2.4.3 John Maynard Keynes

John Maynard Keynes (1883-1946) was probably the most influential economic theorist of the early twentieth century, and his book, *The General Theory of Employment, Interest and Money* (1935), has left a definite mark on contemporary economic thought. Keynes is best known for studying the causes of unemployment and supporting state intervention in the economy in order to minimize the disturbances to a steady economic
growth. During a recession, the number of jobs decreases substantially, and Keynes determined that this is the result of insufficient aggregate demand for goods, which leads to a decrease in production, and consequently an even greater loss of jobs, and so forth. Unchecked, the downward economic trend could lead to a disaster, such as the Great Depression that started in 1929, which only ended with the intense manufacturing of the Second World War. In the United States, for example, production, but most importantly employment, dropped considerably, where at the worst of times up to a third of the population was out of work. Since there are no automatic corrective mechanisms in the liberal market system to prevent unemployment, Keynes believed that it was the responsibility of the government to maintain full employment, and this could be achieved by lowering interest rates, investing in public works projects such as building roads and infrastructure, and instituting protectionist policies that would favor national production.

By the 1920s, Keynes was very much in favor of free trade: who could argue against the logic of comparative advantage? But some ten years later, his position shifted radically. He came to appreciate the conflict between community needs and the impacts of free trade (Daly and Cobb 1994), and was adamant about the importance of national production for national consumption. Trade could indeed be beneficial, he thought, so long as it neither dominated a country's economy, nor resulted in social and ecological destruction. The words of Keynes illustrate this clearly:

I sympathize, therefore, with those who would minimize, rather than those who could maximize economic entanglement between nations. Ideas, knowledge, art, hospitality, travel—these are the things which should of their nature be international. But let goods be homespun whenever it is reasonably and conveniently possible; and, above all, let finance be primarily national. (J. Keynes, as quoted by Daly 1996: 230)
2.4.4 Simon Kuznets and Colin Clark

The now widely accepted theory that pertains to the evolution of a national economy was developed by two economists: Simon Kuznets (1901-1985) and Colin Clark (1905-). Kuznets studied the effects of economic growth on income distribution, and received the Nobel Prize in economics in 1971 for introducing the concept of the Gross National Product (GNP) as a unit of measure for prosperity. The GNP includes revenues from foreign trade, meaning that the income of, say, a German corporation located in the Philippines is counted as part of the German national income. But in the 1980s, countries have generally shifted to using the gross domestic product (GDP), which only registers the economic activity that takes place within a country itself, regardless of whether a corporation may be foreign-owned and its profits are transferred abroad. It must be noted that, although he strongly promoted calculating non-monetary economic activity such as unpaid housework into the GNP, Kuznets’ recommendations have been, to this day, turned down by the U.S. Department of Commerce. Clark’s contributions include distinguishing between the three main sectors of a country’s economy: primary (agricultural), secondary (industrial) and tertiary (service). He also made a major contribution to the quantitative comparison in economic levels reached by different countries.

In general terms, Kuznets and Clark stipulated that a country passes through three stages of development. At first, a country’s economy is largely agriculturally-based, where most employment is found in the primary sector; thus, this pre-industrial economy is labeled as “developing”. Then, as the economy grows, resulting from exports of raw materials, a country can shift to the second stage of development, the industrialization phase, where polluting and environmentally damaging industries, for example, are an inevitable but necessary step in the quest for even greater rates of economic growth. To boost productivity,
machines replace human labor progressively in the agricultural sector; as a consequence, people are forced away from the land and into cities to find employment in factories, which produce mainly for export. The third and final stage is supposedly the pinnacle of development, where the growth in economic throughput resulting from industrialization enables the economy to shift even further, to the service or tertiary sector. Incomes are high, and a wide variety of goods and services become available (Surendran 1999: 29). It is generally accepted that only during this post-industrial phase can a country properly invest in the social sector in order to improve its human development, and eventually “afford” to protect and repair the environment. Thus, industrialization is a precondition for social development. However, a situation where the service sector of the economy has become developed does not mean *ipso facto* that the agricultural or industrial sectors no longer exist, only that, economically-speaking, they contribute less to the GDP than previously.
Chapter 3

Neoclassical Economics: The Model Today

Today's dominant paradigm is neoclassical economics, whose ideology is quickly spreading around the world through economic globalization, promoted by international institutions such as the World Bank, the International Monetary Fund (IMF), the General Agreement on Tariffs and Trade (GATT)—reborn in 1995 as the World Trade Organization (WTO)—and transnational corporations (TNC's). The fundamental and most critical aspect of neoclassical economics is that it treats the human economy as a separate system from the ecosphere. Indeed, the "environment" is "out there", and nature is mostly valued as a source of resources and a sink for wastes. This economic system is free of any constraints, biophysical or other, making it infinitely expandable, as follows:

Figure 1. Neoclassical Model

This growth-based economic system is simple, linear and deterministic (Rees 1995: 345), and its prime focus lies in the seemingly self-generating money flow that circulates between households and businesses, as measured by GDP. Economists believe that quality of life and human progress improve with economic growth, which can be achieved by
maximizing economic efficiency through trade and technological innovation, and by encouraging an ever-increasing consumption of goods and services. Although they do not believe that an optimal macroeconomic scale exists, economists attempt to overcome economic stagnation and unemployment by encouraging even greater rates of consumption, usually through advertising. The "saturation" of local or national markets lead to the search for new markets abroad. Economic efficiency can, in due course, be further enhanced by liberalizing the economy (e.g. reducing government intervention in the market), by privatizing social services and by promoting free trade agreements. Ultimately, national economies become interdependent through trade, where each country exports products in which it has a comparative advantage over the others, and depends on imports for the goods it does not produce itself. Finally, so-called "externalities", negative economic, social or ecological impacts are unaccounted for in the price mechanism, such as air pollution and the loss of species, are eliminated by incorporating them in the economic system using taxes and other fiscal measures, such as the privatization of wildlife, thus ensuring their protection.

3.1 Economic Growth

Economic growth is of utmost importance in neoclassical economics, for it is thought to be "the foundation of human progress and is essential to alleviate poverty and protect the environment" (Korten 1996: 184). Economists assume that an increase in economic turnover increases wealth, and brings about development (although the term "development" is never clearly defined): a higher production results in a greater number of goods that are available on the market, and raises the living standards for all. This strategy applies for both rich and poor countries alike. There are no perceived limits to material comfort and wants; unquestionably, the GDP has to increase, because "more is better".
Economic growth is also absolutely necessary if only to avoid unemployment, which leads to a drop in aggregate demand, invariably resulting in more layoffs and, ultimately, a recession. Growth, therefore, is the surest path to follow in order to avoid such problems, and to quote President Eisenhower giving advice to the Americans about what to do in periods of low economic throughput: “Buy anything” (As quoted by Trainer 1996: 29). Unemployment is also related to mechanization and, once again, growth overcomes the problem. As time goes by, human labor is progressively being replaced by cheaper, more efficient and productive machine labor, so to keep the number of jobs constant, consumption of goods and services must constantly be on the rise. Finally, capitalism is about accumulation and making profits, and investments made by capitalists keep the system running. The lure of greater economic returns entices them to make investments, and this can only happen if the economy expands: “unless those with capital can expect to get back more than they invest, they will not continue to invest” (Trainer 1996: 11). The most important types of investments, therefore, are the ones that generate the most GDP, and for this reason, these are considered “economically efficient”.

3.2 Trickle Down

The idea of “trickle down” is intimately connected to economic growth. Based on utilitarian philosophy, and similar to the notion of the invisible hand, the trickle down theory encourages self-interested individuals to fulfill their wants, because, in so doing, they inadvertently benefit society at large. Although the trickle-down effect may not be immediate, over time, national wealth will have increased, and the benefits will eventually make their way to all, even though, according to Kuznets, inequality between and within countries has a tendency to rise for a while during periods of economic growth, before
declining later (Trainer 1989: 45). The trickle-down effect can be illustrated through the following example: a capitalist entrepreneur, in his quest to make money, hires people to construct and run a factory, paying them a wage. Labor and other taxes are levied, giving the government a new source of income for health care, education, environmental protection and other programs. As well, the newly built factory produces goods which were previously unavailable, so clearly, everyone is better off than before, both the capitalist, who now has more wealth, and the many others involved, whose capacity to consume has now increased, creating a demand for even more goods and services.

Often, we hear economists talking about “baking a bigger cake”, where this metaphorical pastry represents the aggregate wealth of a nation and individual slices represent peoples’ share. For the smaller shares to become larger, and at the same time to ensure that the already large ones do not get any smaller in the process (for obvious political reasons), the solution is to increase everyone’s share by making the cake bigger. For this to happen, the economy needs to grow. Therefore, it is in the interest of the poor to let the rich get richer as much as possible and as quickly as possible, because the greater the rate of growth, the more wealth will trickle down to everyone.

3.3 Globalization

The emerging trend of economic globalization, the “development of a unified, integrated and deregulated global economy” (Trainer 1996: 101), is in a strong sense the ultimate push towards economic efficiency under the banner of liberal capitalism. The goal of this process is to lead towards one big, unified and open world market, creating new opportunities for capitalist investments worldwide and letting the magic of trickle down raise the poor out of poverty. The globalization of economies means a new round of economic
growth for all participants—the developing as well as the developed countries—raising living standards across the board. By participating in the global economy, the Third World will be able to sell its resources and cheap labor to earn valuable foreign exchange which, in turn, will enable it to industrialize and develop, as proclaimed by Kuznets, as well as pay back the loans it may have received from international lending institutions. Developed countries will also benefit greatly, enjoying unprecedented wealth and higher lifestyles stemming from increases in production and consumption.

3.4 Free Trade and Foreign Investment

The notion of free trade has almost become synonymous with globalization, and is an important principle of modern economic theory. Indeed, many believe that “free trade is an inevitable development of our market system” (Morris 1996: 220), and therefore cannot (and should not) be stopped. The purpose of unfettered trade is to maximize economic efficiency and productivity which, it is thought, naturally leads to prosperity for the players involved. As discussed earlier, the ideology behind free trade is based on Ricardo’s notion of relative comparative advantage and specialization, which confer competitive advantage in the global market place to countries which specialize in what they do best. In the tough and competitive global market of today, however, gaining the upper hand through competitive advantage means cutting manufacturing costs. In order to benefit from the savings derived from economies of scale, and to improve efficiency, firms must become larger through mergers, strategic alliances or mere growth. Therefore, because they are the true engines of economic growth and wealth creation of a nation, multinational corporations should be encouraged to prosper, with help in the form of tax cuts and subsidies, for example.
It is generally thought that the development of the Third World depends highly on free trade. By engaging in trade that is unhindered by tariff restrictions, poor countries that lack capital for their development can derive precious earnings from commodity exports, usually raw materials. Developing countries can further enhance their earnings through the creation of free trade zones, establishing favorable conditions for foreign investment that attract international corporations by granting them tax advantages, and providing them with cheap labor, energy and rent (Trainer 1989: 91). These corporations bring capital, jobs and technology, so every effort must be made to entice them over. It must be noted, however, that despite the supposed positive benefits free trade will have on low-income countries, economists tend to believe that a serious barrier to the development of these countries is their lack of “modern” Western values, and the rampant corruption of their governments: development can only truly occur once these problems have been overcome. Efficiency in production has to be maximized, and to do so, people “must become punctual, hard working, competitive, achievement-oriented, disciplined, and concerned to raise their material living standards” (Trainer 1989: 61). This is usually not the case in developing countries.

3.5 Environmentalism and Sustainable Development

Many economists are beginning to recognize that the Earth is facing a growing number of problems due to human activity. The truth remains that, despite the promises of economic growth and trickle down, a fifth of all people on Earth still live in absolute poverty and misery, and the environment is being severely stressed to accommodate ever-increasing material aspirations of the world’s growing population, expected to reach somewhere between 10 and 14 billion by the end of the twenty-first century. Although growth is still seen by
many economists as the surest path towards prosperity, questions about limits to growth have been raised during the last twenty to thirty years. The United Nations Conference on the Human Environment hosted by Stockholm in 1972 was probably one of the first significant attempts at addressing global environmental issues, particularly those that arise from industrialization. During the conference, the idea of sustainable development began to emerge as a key area of concern, with the general view that development and environment should somehow be combined into one framework, although no concrete method to achieve this had been proposed.

The term “sustainable development” became popular among planning and political circles after the UN’s World Commission on Environment and Development publication of *Our Common Future* in 1987, known as the Brundtland Report, which defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: 43). The Report was a breakthrough because, rather than only exploring environmental issues, it “places elements of the sustainable development debate within the economic and political context of international development” (Adams 1990: 58). For the first time, development and environmental issues were considered inseparable, where poverty was both a cause and an effect of global environmental problems. In *Our Common Future*, the UN’s Commission acknowledged that the environment has limits, but that these limits are not absolute and can be overcome through better technology and social organization; “in other words the sustainable development of *Our Common Future* is defined by the achievement of certain social and economic objectives and not by some notional measurement of the “health” of the environment” (Adams 1990:

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4 With respect to neoclassical economics, “limits to growth” is not so much questioning the sustainability of economic growth *per se*, but rather the concept of “throughput” growth. Consumption and incomes could continue to rise, but the use of energy and matter should be simultaneously reduced.
The main focus of the Report, therefore, revolves around economic growth as the strategy to alleviate poverty, which will, in turn, curtail environmental destruction. The Report talks about a revitalizing the world economy, which translates into "more rapid economic growth in both industrial and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows, both concessional and commercial (Brundtland 1987: 60). The growth talked about in the Report\(^5\), however, would be qualitatively different than previous growth: it must be sustainable, environmentally sensitive and egalitarian.

### 3.6 Weak Sustainability

The "sustainable development" neoclassical economists talk about is based on the notion of weak sustainability, which can be summarized as maintaining constant the aggregate stock of natural and manufactured capital. Conventional economics assume that manufactured and natural capital are closely substitutable (Daly and Cobb 1994: 72; Rees 1995: 351), and this leads to the belief that development is economically sustainable, and the liquidation of the environment is acceptable, as long as a portion of the proceeds is reinvested in manufactured capital of equal value. It is perfectly acceptable to cut down the Brazilian forest as long as it is replaced by crops or cattle of equal or greater economic value. Constant stocks are evaluated in terms of monetary analyses, and price helps determine ecological scarcity. As natural resources become depleted, it is expected that their price will soar. However, over the last hundred years or so, real prices of natural resources have remained

\(^5\) *Our Common Future* calls for a five- to tenfold increase in global economic activity to relieve poverty and to achieve a stable world population sometime in the twenty-first century. In order to do this without exacerbating the world’s environmental problems, the growth in economic throughput must be accompanied by an equivalent reduction in matter and energy throughput. Some analysts call for a 90% reduction in material intensity of economic output, known as the "factor-10" economy, in order to grow within the Earth’s ecological means (Rees 1995: 354).
stable or have decreased rather than increased. As a result, an economic analysis would suggest that environmental scarcity does not appear to be a serious threat to economic development any time soon (Rees 1995: 347).

3.7 Technology

Technology has an important role to play in the economy, and especially in the issue of sustainability. Technological innovation helps overcome resource scarcity because it increases the efficiency of resource use; essentially, we “do more with less”. Theoretically, efficiency in manufacturing enables humans to produce ever more while relying ever less on the environment, and this “dematerialization” leads some to conclude that: “If it is very easy to substitute other factors for natural resources, then … [t]he world can, in effect, get along without natural resources” (Robert Solow 1974, as quoted by Rees 1995: 347). The underlying assumption, then, is that resources will be conserved, and that consumption will be reduced.
Chapter 4

Understanding Development

The previous section looked at the model of neoclassical economics and its underlying assumptions. Because the goal of this model is to increase “development”, we need to define “development” before we can assess neoclassical economics.

4.1 Defining “Development”

As neoclassical economics becomes the dominant paradigm of our increasingly globalized world, it would seem that the term “development” has all but lost its original meaning. We no longer talk about equity, justice, morality, happiness and quality of life, but of free trade, productivity, efficiency, prosperity and lifestyle. Essentially, “development” has been reduced to “economic development”, or more specifically “economic growth”, as measured by the per capita GDP reached by a country. The underlying assumption here is that growth correlates with quality of life, or living standards, the true measures of development. Yet, development is more than just the growth of the economy: it is a general concept that includes a social and ecological component as well. It is a type of growth that implies a betterment, one that leads to a happier society, and just as it is possible to grow without developing, it is also possible to develop without growing. According to the United Nations Development Programme, “the purpose of development is to create an enabling environment for people to enjoy long, healthy and creative lives” (UNDP 1999, quoting the Human Development Report 1990). In other words, “the most basic question to ask of any social system or practice is whether or not it increases the experienced quality of life” (Trainer 1996: 31). In Towards a Sustainable Economy: the Need for Fundamental Change (1996),
Ted Trainer highlights the fact that we have made a grave mistake in assuming that economic growth leads to increased social welfare. He explains that what matters is the development of a society, not just the development of an economy. What about the satisfactory development of the political system, community, social cohesion, the ecology, culture and values, the arts and urban and rural geography? When economic development is made the supreme or sole goal most of these other systems are actually damaged. (67)

As is demonstrated time and again in our economic policies of globalization and free trade, and in our quest to maximize efficiency and productivity, far too much emphasis has been placed on production, consumption, wealth creation and economic turnover, to the detriment of true development. For this very reason, Carley and Christie, in *Managing Sustainable Development* (1993), condemn the use of “developed” and “developing”, as a label for countries with respective high and low GDPs, for they consider these terms paternalistic. The use of these terms only perpetuates the notion that wealthy citizens are somehow more advanced than the rest, and makes it difficult to promote a development model that is not based on modernization theory and industrialization, but rather that recognizes the relevance and tremendous knowledge of indigenous cultures. Therefore, Carley and Christie favor the terms “low-income” and “high-income”, which have been used throughout this thesis as less derogatory and value-laden.

4.2 Development and the Ends-Means Continuum

In *Steady-State Economics*, Herman Daly attributes the confusion about development and economic growth to the incomplete analysis of what he refers to as an ends-means

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6 It must be noted, however, that to remain true to the language of conventional economics, the terms “developed” and “developing” have sometimes been used in the sections that describe the ideology behind neoclassical economics.
continuum. Economics, as a Western discipline, deals only with intermediate ends and means, not absolute ones, which are so important for the proper functioning of the human economy and its long-term sustainability. Not only is his analysis plausible in explaining why quality of life is not being maximized in our present economic system, but it is also helpful in revealing why the ecosphere might be facing an environmental crisis.

As Daly explains, "the standard textbook definition somewhat ponderously states that economics is the study of the allocation of scarce means among competing ends, where the object of the allocation is the maximization of the attainment of those ends" (Daly 1991: 18); in other words, economics (or more precisely, neoclassical economics) is only about intermediate ends and means, not the "greater picture". Intermediate ends include food, education, health, leisure, comfort, wealth, etc., and intermediate means, such as labor, manufacturing, and artifacts, for example, are what help us achieve these intermediate ends. Unfortunately, the absolutes found at each end of the spectrum are not dealt with because they lie outside the economic model's frame of reference. The ultimate means consists of available matter and energy. The ultimate end is defined by Daly as "that which is intrinsically good in and of itself and does not derive its value from being instrumental in achieving some other end" (Daly 1991: 19). Although Daly uses "religion" as the ultimate end in his diagram of the ends-means continuum, "quality of life", "welfare" and "fulfillment" seem to be better suited because they are all-encompassing. Some cultures might dispute this, but neoclassical economics is becoming the universally-accepted economic model, and because it is a Western model based on Western values, quality of life and fulfillment, in this regard, are appropriate.

Using an end-means analysis is useful in the sense that it shows how fundamentally flawed neoclassical economics really is, and why "development" has been reduced to
economic terms. The range of the model is too restricted because it does not reach out to the extreme ends of the continuum, and this has detrimental consequences in terms of resources and pollution at one end, and a feeling of unfulfillment at the other. Today, in promoting development, countries attempt to achieve an intermediate end only (e.g. wealth), without considering the broader context: the “means to the end” has become the end itself. If an economic model included the spectrum’s absolutes, then wealth, for example, would only be considered one of many intermediate factors that lead to welfare and fulfillment. Meanwhile, too much emphasis on wealth while other important factors are neglected, such as community well-being, job satisfaction and ecological integrity, may actually be detrimental to the ultimate end. The same reasoning can be applied to resources and ecosystems: if available matter and energy, as well as the ecological services provided by the ecosphere, constitute the ultimate limiting factor to development, then any sensible economic model should be designed first and foremost around these, rather than treat them as mere externalities.
Assessing the Neoclassical Economic Model

Chapter 4 showed that neoclassical economics attempts to promote development, and measures it mainly in terms of economic output. Thus, a growing economy is equated to higher development. However, is this process leading to higher welfare? The question is whether the current paradigm is an adequate one for development. This is a fundamental point. The following section evaluates neoclassical economics, and determines whether we are in fact seeing development, in terms of some of the criteria that are raised below.

5.1 Criteria to Assess Neoclassical Economics

In order to judge whether neoclassical economics has resulted in the true development defined in Chapter 4, we need to review some of the major goals of development. These cover basic human needs, and have been taken from the literature used in this thesis, particularly from the United Nations Development Programme’s *Human Development Report 1999.*

**Goals of development:**

- food security
- basic shelter and some material comfort
- health
- satisfactory and secure employment
- feeling of acceptance and sense of place
- intra- and inter-generational equity
- emotionally and spiritually fulfilling life
- stable and healthy ecosystems

Having established a list of major development goals, we can now formulate the judgemental criteria that will help us to determine whether these goals have been met.
Development should:

- ensure that basic food is available to all, regardless of the state of the global economy;
- provide basic shelter and a satisfactory material standard for all;
- enable access to healthcare and other social services;
- reduce income disparity between and within countries;
- minimize unemployment;
- enhance the opportunity for people to develop as members of their community;
- minimize inequities;
- encourage emotional and spiritual values; and
- ensure that ecologically productive land per capita remains constant or increases over time.

Even before we assess whether neoclassical economics have helped meet the goals of development, we should examine if the basic assumptions of the model are valid, in particular those pertaining to human behavior and to markets. Because neoclassical economics uses the GDP per capita as an all-encompassing indicator to measure the level of development achieved, we need to question whether the GDP is, in itself, a reliable measure of development. As well, the fact that conventional economics depends on infinite economic expansion in order to sustain itself raises a number of issues that pertain to growth. We should ask ourselves whether a growing economy increases development, and whether there are limits to growth. Economic growth is expected to generate trickle-down benefits, but is trickle down having the desired outcome in terms of development? The arguments for promoting globalization and free trade are to maximize economic efficiency for all parties involved, but is this promoting development, and how are the high- and low-income countries affected? What are the impacts of international development agency loans and foreign investment in the form of transnational corporations settling in low-income countries? These are a few of the essential questions that need to be asked in order to determine whether we should rely on neoclassical economics as a development paradigm, and trust the model to
bring about balance, equality and well-being to the world. The questions, as well as the
development goals, are examined in the sections below.

5.2 Assumptions of the Model

Neoclassical economics is based on certain assumptions on human nature and on the
market.

5.2.1 Assumptions Regarding Human Nature

Probably two of the most deep-rooted problems with neoclassical economics are the
assumptions that self-interest governs human economic activities, and that it is a “rational
behavior”. In his book On Ethics and Economics (1999), which explores the concept of
rationality of behavior, Nobel Laureate Amartya Sen begs the question: “Does the so-called
“economic man”, pursuing his own interests, provide the best approximation to the behavior
of human beings, at least in economic matters?” (16). Some researchers have recently
brought forth the view that the axiom of self-interest is a creation by economists to suit their
own purposes, and that these economists, above everyone else, actually behave more self-
interestedly, or selfishly, than non-economists! (see Frank, Gilovich and Regan 1993).
Reality shows that, in his acquisition of goods and services, the “economic man” does not
always pursue his own short-term interest. Some people might forego opportunities, for
instance investments, because of excessive risks. Others will trade short-term rewards for
long-term perceived benefits, and attend university rather than take a job. Yet others might
prefer security and comfort to the higher economic benefits that they could derive from other
activities. Or they might consider the interest of their children rather than their own.
Occasionally, homo oeconomicus will be altruistic, and help others in the face of a severe
threat, such as a natural disaster or a war. The "economic man" is thus far from being exclusively selfish.

Self-interest, in addition, is no longer a rational behavior. This basic human trait has been identified by Adam Smith as being supremely important in his founding of market economics. Indeed, he showed how self-interest could be rationalized because of its benefits to society, particularly in terms of the "invisible hand". When Smith formulated his ideas, self-interest was rational because, during that time, a person who wanted to become richer could only do so by increasing the total amount of goods and services available to society. While some form of covetous behavior was certainly tolerated, Western society was governed by a number of other values and traditions, which maintained an equilibrium between individual wants and societal welfare. In an affluent society, however, personal gain no longer requires the creation of new goods and services which might improve the welfare of society. For instance, fortunes are created through mere financial speculation, and a vast number of unnecessary items are produced and peddled through mass advertising. Self-interest is, therefore, no longer rational behavior, at least not in terms of benefiting society at large. Even from a personal point of view, an individual may acquire goods and services in what appears to be an irrational way, for instance when guided by overwhelming emotions which have little to do with economic logic.

Thus, neoclassical economics is flawed on two counts: 1) rationality and self-interest constitute only a small part of the "greater picture" regarding human behavior; and 2) rationality and self-interest are not the same. Therefore, neoclassical economic model is a simplistic distortion of reality, and this aspect alone might be sufficient reason to consider this economic model irrelevant to us, and thus warrant its dismissal.
5.2.2 Assumptions Regarding the Nature of Markets: the Betrayal of Basic Principles

The second important point to raise about neoclassical economics is the fact that the basic postulates of Smith and Ricardo, that were deemed so crucial for the proper functioning of the market during the eighteenth century, have not been achieved, even though modern economists like to think that free market capitalism, as it is experienced today, is intimately related to these early economists' ideas. Smith, for example, was a proponent of an economic system consisting of a large number of small buyers and sellers, yet the present market economy is quite different from the original model; in many ways, it is the very opposite of what he envisioned, and ultimately contrary to the public interest. In his article "The Mythic Victory of Market Capitalism", published in *The Case Against the Global Economy* (1996), Korten exposes how Smith's original ideas of a market economy have been transformed:

What today's economic liberalists fail to report is that the economic system they are now creating in Smith's name bears a far greater resemblance to the monopolistic market system he condemned than it does to the theoretical competitive market system he hypothesized would result in an optimal allocation of society's resources. (186)

The invisible hand of a highly competitive market economy will ensure that the natural prices approximate the market prices, satisfying both buyers and sellers, and maximizing resource allocation for society, but that is no longer the case in a system consisting of a few large corporate monopolies and oligopolies.

According to Smith, important to the invisible hand concept was the notion that "the capitalist is first and foremost a member of the national community" (Daly and Cobb 1994: 215). This means that if the capitalist feels strong ties within the community, he has neither inclination nor need to invest abroad, but would rather invest domestically, promoting local production for local consumption, and thus indirectly promoting the welfare of others within the nation. Locally owned capital means that costs that arise as a result of the investment are
visible, much more so than when the capital is located far away. Thus, just as the benefits of employment and other positive impacts are shared within the community, so are the costs. At least, “the local people who are forced to bear them know who the investor is and are more likely to have personal access to that person” (Korten 1996: 187). Today, the growing global economy is made up of large transnational corporations that dominate markets and have no attachments to any place, and shift from one country to the next as they please, accountable to no one. On an equally important note, there are no longer a few owners in charge and directly able to supervise their assets, but rather a whole host of partial owners in the form of shareholders, located in far corners of the world, whose only demands are that they be paid dividends, and that the value of their stocks increase.

Both Smith and Ricardo believed that the factors of production and capital would be internationally immobile, and under this assumption, Ricardo pointed out the benefits of free trade through relative comparative advantage. Unfortunately, even though the law of comparative advantage is the main argument used by economists to promote free trade at present, the condition of immobile capital is no longer valid. Billions of dollars are transferred instantly between different regions of the world on a daily basis, and corporations are encouraged to settle in low-income countries in the name of promoting economic development there. When firms relocate their capital to regions that supply cheaper labor, the new host countries no longer have a relative comparative advantage, but an absolute one, meaning that, although world output goes up, there is no guarantee that all countries involved benefit. What tends to happen is that, although the private corporations that have relocated are better off economically, the home nation becomes worse off, for it suffers the loss of capital, as well as jobs. Even the new host nation is not necessarily better off because, despite the possibility that some jobs have been created, most inputs are imported, thus not much
economic activity is generated locally. In some cases, the country may even have invested more than it will ever get back from the corporations (Trainer 1989: 92). "In short, free traders are using an argument that hinges on the impermeability of national boundaries to capital in order to support a policy aimed at making those same boundaries increasingly permeable to both capital and goods!" (Daly 1996: 231). In light of this, Daly and Cobb (1994) suggest that Smith and Ricardo would not be advocating free trade if they were alive today (215).

Keynes, too, has been betrayed. Despite the fact that he was a fervent defender of free trade during his early years, it is often forgotten that his stance changed radically when he realized the problems caused by what is known as “flight of capital”—when companies would leave the country and invest elsewhere. Modern economic texts, however, make no mention of factor, or capital, immobility in their discussions on free trade. He also warned against the dangers of opening one’s economy to the investments and resources of foreign capitalists. This would erode national sovereignty, which people tend to perceive as essential to preserve their identity and freedom. Another item of concern for him was the separation of ownership from management, a situation where the shareholders “buy their interest today and sell it tomorrow and lack altogether both knowledge and responsibility towards what they momentarily own” (Keynes, as quoted by Daly and Cobb 1994: 216). In summary, aware of the serious side effects that could be induced by free trade, Keynes advocated an economic system that would benefit the community and would first and foremost support national self-reliance.
5.3 GDP and GNP: Flawed Indicators of Progress and Welfare

As a national index of well-being and progress, the GDP is a grossly distorted indicator that ignores income distribution, inadequately measures prosperity, and fails to account for the ecological and other costs of a sustained increase in material and energy throughput. The GDP does not acknowledge the value of human activity that lies outside the formal economy, such as housework, volunteer work, participation in community activities and the raising healthy children, so vital in fostering a good quality of life. The GDP does not reflect the loss of environmental wealth, and the extraction of natural resources is considered income rather than a depletion of assets. The ecosystems, for example, on which we depend for life and the operation of our economy, remain outside the scope of the GDP. Meanwhile, the spending required to repair environmental damages as well as natural or human-induced disasters is counted as a positive entry. Finally, the money costs associated with an increase in accidents, thefts and violent crimes, which arise as a result of social breakdown, are also positive entries in the GDP accounts.

Essentially, the GDP “denies what people intuitively know—that just because more money is changing hands does not mean that life is getting better” (Halstead and Cobb 1994: 198). It is a balance sheet that has no “costs” column, and adds up indiscriminately all money transactions, even expenditures which result in reductions of national welfare, a phenomenon Daly calls “growthmania”. Hence, while the GDP goes up, quality of life may actually be declining. In fact, Daly and Cobb (1996) propose in For the Common Good, a new welfare indicator that shows that quality of life in the US has been declining over the last twenty years, and that wages, in real terms, have fallen since 1972, despite the large increases in GDP between then and now.
Using the GDP as a measure of progress has been particularly devastating for low-income countries. Firstly, a significant portion of a non-industrialized economy is informal, occurring mostly at the household or community level, where no money changes hands or transactions of goods and services are not formally recorded. This "underground" economy can be as important as the one reported by the GDP. Some affluent countries, such as Italy, are notorious for their large underground economies. For this reason, although "official" unemployment figures may be staggeringly high, by no means are people idle. On the contrary, they run sidewalk stands selling food and clothing, help neighbors, family and friends with various tasks, and are generally busy undertaking a host of activities that lie outside the realm of the formal economy. Other activities, equally unreported, are non-monetary in nature. For instance, the long and arduous hours of work done by women in their households is unrecognized in the national accounting system.

Of significant importance as well, the 1980s saw a quiet shift from the GNP, itself a flawed indicator of societal well-being, in favor for the GDP, and this seemingly unimportant transition had a tremendous positive impact on the national accounts of low-income countries, at least superficially. Indeed, under the GNP, the profits of foreign companies were recorded in the accounting system of those corporations' countries of origin. With the advent of the GDP, however, the low-income countries suddenly counted the profits of multinationals as part of their own income, greatly exaggerating the benefits of foreign investments and the role of transnational corporations in the development of the local economy. The consequence was that "the bookkeeping maneuver made it appear that southern countries were growing in wealth and well-being when actually the multinationals were simply walking off with their resources for the benefit of northern investors" (Halstead and Cobb 1994: 205).
5.4 Limits to Growth

The late 1980s saw the collapse of the Soviet empire, and with it the demise of Marxist socialism. This was seen as a victory for free market capitalism, and "many concluded that the full forces of the market could now be unleashed to focus human attention exclusively on the production and consumption of endless material wealth" (Korten 1996: 183). Indeed, as far as capitalist ideology is concerned, the benefits of unrestrained economic growth leading to a fully integrated global economy would be a "panacea for our ills" (Mander 1996: 3). The pursuit of self-interest would naturally benefit everyone by "raising all boats" through the magic of the "invisible hand". Despite the billions of people who have yet to gain from the present system, and the threat of the impeding ecological crisis that is looming over the horizon, have the promises of growth and a free market economy substantiated themselves?

The most powerful argument with respect to limits to growth is an ecological one, and the following descriptions are but a tiny fraction of some of our planet's major environmental threats. Over the last two hundred years, humans have transformed their world through industrialism, drawing heavily on natural resources and releasing tremendous amounts of pollution—at rates that threaten biodiversity and the integrity of ecosystems. By 1900, the scale of the world economy had reached $60 billion; by the mid-1990s, the figure had risen to $20 trillion, and the economy now grows at the rate of $30 billion a year (Goodland 1996: 208). The world's population has increased five-fold in the last two hundred years and continues to increase by some 80 million a year. With more people come the pressures of land degradation, urbanization and greater rates of consumption and waste discharge. Human activity has expanded so much it now diverts "40 per cent of terrestrial and 25 per cent of continental shelf photosynthesis to its own use" (Rees 1995: 343).
During the 1970s, it was thought that source limits would bring about constraints on growth, as suggested by the Club of Rome (1972); today, however, concerns revolve principally around sink limits, the most significant being for carbon dioxide—to say nothing of other airborne pollutants, such as methane, CFCs and nitrous oxide, much more powerful, but released in lesser quantities. The threat of global climate change from the so-called “greenhouse effect”, testimony to the degree to which we interact with the ecosphere, is a direct consequence of the industrial processes of the human economy and its dependence on fossil fuels. North America alone, with six per cent of the global population, emits 23 per cent of the world’s carbon dioxide. Robert Goodland (1996) warns us that “the costs of rejecting the greenhouse hypothesis if it proves to be true are vastly greater than the costs of accepting the hypothesis if it is false” (210).

Deforestation is a serious issue, where in the tropics, for example, 55 per cent of forests have already been destroyed, and approximately 168,000 km² are further degraded annually, causing severe erosion, soil fertility loss, as well as a decrease in carbon dioxide absorption capability (Goodland 1996: 214). The most rapid deforestation occurs in Africa, where 72 % of forests have already been cut down, mainly for export (Carley and Christie 1993: 22). Urbanization, too, is a threat to ecosystems; urban sprawl encroaches on agricultural land, reducing ever more our food supply despite the growing number of mouths to feed. As well, rural poverty and unemployment is forcing millions of people into urban areas, where it is expected that in the next few years, half of the world will be living in cities. Cities, however, appropriate vast quantities of resources from the hinterland and create quasi-insurmountable garbage problems, yet some cities such as São Paulo and Mexico City are expected to reach populations of 23 and 24 million, respectively, by the year 2000!
Clearly, social and ecological limits are being exceeded—local ones from rampant poverty and population pressures, and global ones from the insatiable metabolism of rich countries. Economists must wake up to the reality that more growth does not alleviate poverty and reduce inequity, but only exacerbates these problems. Even if growth did help in those spheres, more material and energy throughput is simply not ecologically possible, for fear of causing irreversible and critical damage to our global life-support systems. The fundamental weakness of neoclassical economics is that, because the model is disconnected from the environment (see Figure 1), it lacks "any representation of the biophysical "infrastructure" and the time-dependent processes upon which the economy depends" (Wackernagel and Rees 1995: 41), and has no way of measuring remaining stocks of natural capital that are necessary for life to exist. Indeed, this has been an almost insurmountable question to deal with. Not only are there no economic signals to warn us whether global carrying capacity is being exceeded, but also using local carrying capacity as an indicator, as has been traditionally done, is quite ineffective when it comes to the human economy, for reasons explained later. Often, the lack of significant, quantitative and scientific "proof" that global or local ecological limits are being exceeded results in society's skepticism towards and rejection of environmentalists' concerns, considered to be unsubstantiated. In the last few years, however, an indicator has been developed by William Rees and Mathis Wackernagel of the University of British Columbia, called "Ecological Footprint Analysis", which looks at the human load on the environment, and will be explored in greater depth in another chapter.

Although at the global scale more throughput is simply not sustainable, some countries or regions would benefit immensely from an expansion in economic activity (Daly 1991; Carley and Spapens 1998). "Indeed, [...] growth is a pressing moral imperative for those whose needs are not being met" (Wackernagel and Rees 1995: 144). The low-income
countries that currently underutilize their “fair share” of ecological goods and services have arguably a legitimate right to greater rates of consumption if their quality of life improves in so doing. Daly reveals that qualitatively, a change in money flow in the economy benefits low-income countries to a greater extent than high-income ones. For example, “growth in GNP in a poor country means more food, clothing, shelter, basic education, and security, whereas for the rich country it means more electric toothbrushes, yet another brand of cigarettes, more tension and insecurity, and more force-feeding through more advertising” (Daly 1980: 14).

Because further growth by everyone is a physical impossibility, the onus of change, then, lies with the high-income countries to reduce consumption substantially or redistribute some of their wealth, enabling the others to “catch up”. Admittedly, however, this “solution” is virtually impossible to implement for political reasons: how realistic is it to expect that the rich will give up part of what they already have or what they could get for the sake of the poor? Daly affirms, nevertheless, that “if we are serious about helping the poor, we shall have to face up to the moral issue of redistribution and stop sweeping it under the rug of aggregate growth” (Daly 1991: 8).

5.5 Inefficiency and Immorality of Trickle Down

Relying on trickle down to raise the living standards of the poor is inefficient, and may be completely ineffective or even impoverish. During the 1980s, the world’s wealth increased substantially as a whole but, at the same time, the poor in low-income countries have had to endure a marked deterioration in living standards, where problems of unemployment, debt and poverty have become aggravated: “More than 80 countries still have per capita incomes lower than they were a decade or more ago” (UNDP 1999: 2). In the period between 1980
and 1985, the GDP per capita of Africa fell by 11 per cent, while in the Middle East it fell by 19.2 per cent (Trainer 1989: 41), and “while 40 countries have sustained average per capita income growth for more than 3% a year since 1990, 55 countries, mostly in Sub-Saharan Africa and Eastern Europe and the Commonwealth of Independent States (CIS), have had declining per capita incomes” (UNDP 1999: 2). The obvious conclusion is: how can there be any trickle down in the economies that are stagnant, or even declining? Even at times of high GDP growth rates in both rich and poor countries, there is no guarantee that the wealth created will make its way to all people. In fact, virtually all the benefits go to the powerful and already rich, in part through corruption, while only a few “crumbs” eventually make their way to the ones who are most in need: “Typically these advances for the elite are accompanied by a widening gap with the majority of the citizens. Sometimes the majority become progressively worse off as the elite grow more prosperous” (Daly and Cobb 1994: 289). Many African countries illustrate this point, for instance Nigeria, Gabon and, to a lesser degree, Tanzania. Using trickle down as a development strategy avoids any discussion of appropriate development or the need to redistribute productive capacity.

Even if some amount of trickle down is occurring, the rate at which it is happening is unsatisfactory. Although many high- and low-income countries have experienced tremendous rates of economic growth since World War II, especially during the boom of the 1950-1970 period, Trainer qualifies this as “the most remarkable and atypical period in the entire three hundred year history of the world capitalist system” (Trainer 1989: 41), and shows that even during such “good times”, the rates of growth were still much too slow to have any beneficial impact of decreasing the overall level of poverty. He brings to our attention the fact that, on average, per capita incomes in the poorest half of the world increase by some $10 per year, while the other half of the world increases its wealth by $400 per year (1996: 52). In
Developed to Death, Trainer states that half of the Third World's income goes to the richest 20 per cent of the population, while the poorest 40 per cent receive about 15 per cent of that income: "This suggests that the world's poorest 520 million people average annual incomes of $87, and that over the twenty years of the boom these incomes increased only by an average of 73 cents p.a." (1989: 39). Clearly, such a slow growth rate is unacceptable to raise the living standards of the poor in a reasonable amount of time, especially in the face of the vast wealth that already exists. Despite the indication that there is some per capita growth, this is only an average, so we must realize that the wealth created is not distributed evenly, and that in fact the incomes of hundreds of millions of people actually fall every year. Nonetheless, according to conventional development theory, the world's rich need to consume substantially more in order for some wealth to trickle down to the ones who need it. To put this highly inefficient and immoral strategy into perspective, Robert McNamara, ex-president of the World Bank, conceded that even if growth rates in low-income countries doubled, only seven countries would attain Western living standards in 100 years, and nine in 1000 years! (Trainer 1989: 39).

5.6 Disparities Between the Rich and the Poor

The growing disparity between the world's rich and poor—both within and between countries—is a very powerful indicator which demonstrates that the current economic system was designed by the rich countries to benefit them (Mikesell 1992). It is therefore essential that politics play a role in reducing this disparity through a redistribution program based on taxation and social policies. Yet, politicians are adopting the economists' recommendations to let the market forces operate without constraint, and minimize government intervention. The solution as prescribed by conventional economists, economic growth and trickle down,
do not overcome by themselves the issues of misallocation and maldistribution, but are the source of these problems and simply expand the wedge between the “haves” and “have nots”.

Letting inequities grow between people is immoral, causes great conflict, and is simply not conducive to a healthy and sustainable society. Let us examine this issue by citing some examples of disparities that exist. The world’s richest one fifth now appropriates 85 per cent of the world’s income (Carley and Spapens 1998: 3). Also, “the world’s 200 richest people more than doubled their net worth in the four years to 1998, to more than $1 trillion. The assets of the top three billionaires are more than the combined GNP of all least developed countries and their 600 million people” (UNDP 1999: 3). Every year, three quarter of all resources are consumed by the richest 20 per cent of the world’s population; yet, at the same time, one billion people still live in absolute poverty. The average Ethiopian’s consumption of oil per year, for example, is 1/13th of a barrel, which represents only 0.5 per cent of the 14 barrels consumed by residents of a rich country (Trainer 1996). The US alone consumes per capita 55 times more energy than the average for the 80 poorest countries of the world (Trainer 1996). Disparities in incomes have also been growing. In 1960, the per capita GDP of high-income countries in comparison with low-income ones was 20:1. In 1980, it grew to 46:1, by 1990, it reached 60:1, and today, it is about 100:1. Even within rich countries, income and wealth disparity is on the rise. For example, “in the USA, a mere 0.5 per cent of people own almost half of all [manufactured] capital, 500 times as much as 90 per cent of the people” (Trainer 1996: 49).

5.7 Globalization: the Domination of Western Culture

The phenomenon of globalization is as old as humanity itself. For thousands of years, people have traveled to distant lands, bringing with them artifacts and ideas from their own
cultures. Progressively, trading by sea and by land became widespread in many parts of Asia, Africa and the Mediterranean region. Although exchanges grew, people still lived in largely self-sufficient communities, providing for themselves using local materials and resources. This, however, changed radically with colonial rule, which brought Western materials, technology and, most importantly, an entirely new economic system into the “Third World”, which became so dependent on the global economy that even after independence, it continued along the same path (Khor 1996: 48). In an effort to help poor countries modernize and industrialize during the 1970s and early 1980s, international lending institutions lent billions of dollars to poor countries to help build massive infrastructure projects—mega dams, roads, skyscrapers and large-scale agricultural initiatives—which not only have created huge and unrepayable debts that represent a serious threat to the world economy, but also have generally benefited no one. When these institutions admitted the inefficacy of such infrastructure, a new form of aid was provided, structural adjustment loans (SALs), which were designed to weave the economies of low-income countries into the global one. Accepting these loans simply meant turning the national economy over to such institutions as the World Bank and the IMF, which infused their liberal market ideology. Their approach to restructure these countries’ economy included devaluing the local currency, privatizing state enterprises, reorienting the economy in general towards exports, and cutting social spending on health, education and welfare in an effort to raise the necessary funds to service the country’s debt. From the conventional economic perspective, the impacts of SALs may be labeled as successful, since the countries involved have moved toward integrating themselves into the world economic system. In terms of reducing poverty, debt, hunger, disease, unemployment and improving overall quality of life, however, the real measures of
development, SALs have been failures and have only left countries worse off (Bello 1996: 293).

The trend towards a global economy needs to be recognized for what it is: a destructive force that undermines community, cultural diversity and local productive capacity, whose ultimate goal is to coerce everyone, including the largely self-sufficient communities of low-income countries, to adopt the values and culture of Western society. These merely promote industrialism and consumerism as positive and essential aspects of development. Industrialism is seen as the key to prosperity, and as synonymous with progress. Now that telecommunications and advertising are reaching the planet’s most remote places, the perceived importance of industrialization, despite its ecological impacts, becomes dominant amongst peoples, and often leads to the feeling of embarrassment and the rejection of one’s own native culture. The trend of consumerism, spread through globalization, is an equally worrisome threat. Indeed, status, success, living standards and ultimately happiness, become associated with a steadily-increasing income and the accumulation of luxury items, causing people to misinterpret the nature of their needs, and making them feel constantly inadequate in the face of the ever-growing selection of products and services available on the market (Sooryamoorthy 1997). Culturally, the impact of consumerism is disastrous, as rich, traditional local cultures slowly get pushed aside in favor of the now global Western culture: “Today’s flow of culture is unbalanced, heavily weighted in one direction, from rich countries to poor” (UNDP 1999). Most importantly, however, is the fact that for the majority, consumerism will necessarily remain a futile dream. Firstly, the entire world cannot possibly hope to ever have the necessary wealth that will permit everyone to consume at North American rates. Secondly, assuming that everyone could afford to indulge in consumption
that goes way beyond meeting basic needs, this situation would be outright ecologically impossible to sustain for six billion people.

5.8 The Dangers of Free Trade

Free trade is based on the erroneous assumption that an increase in economic turnover naturally leads to increased welfare for all. The economy, however, is more than mere money flow, and economists tend to forget that the voluntary and unpaid sector in any country is substantial, perhaps even as large as the paid economy (Morris 1996). Generally speaking, the purported benefits of free trade have been highly exaggerated, and although such deregulated commerce has some merits, it also causes enormous ecological, economic and social problems, which need to be addressed for the proper development of a society to occur. Free trade means that nations no longer produce a variety of items, but focus on a few for export, and in so doing lose their overall self-reliance. They become dependent on foreign nations for their sustenance, and such a situation needs be considered a liability, especially in the highly competitive world we live in (Daly 1996: 231).

Although free trade is predicated on the notion of promoting economic efficiency, actual trading practices introduce new inefficiencies, and ignoring these is bad economics, pure and simple. One important aspect of efficiency in neoclassical economics is counting all costs. Trading to distant places requires the consumption of a lot of energy for transport, especially fossil fuels, whose ecological and other costs are not included in the price of goods exchanged, but rather “externalized”, that is, borne by all the biota, now and in the future. As well, not only is energy subsidized, but in many countries, labor, waste disposal and materials are so highly subsidized that making any realistic and accurate comparison between the price of goods in different countries through comparative advantage becomes impossible. If
production costs are not internalized into the price mechanism, then trade between nations
becomes highly unjust, because someone other than the immediate beneficiaries of the
transaction must bear those “externalized” costs.

According to the law of comparative advantage, countries should produce what they
do best, but Daly affirms that “more than half of all international trade involves the
simultaneous import and export of essentially the same goods” (Daly 1996: 231). With so
many countries engaging in trade, very similar or even identical products are traveling
thousands of kilometers, polluting the atmosphere, blocking roads, and utilizing vast amounts
of resources and energy, on the sole basis of personal preference or that it is monetarily
cheaper to do so, without any regard to the true costs of such trade. For instance,
governments often help exports by providing financial incentives to foreign buyers. Thus,
corporations in two countries might each find it advantageous to purchase the same good
produced in the other country.

How can we compare the efficiency and productivity of manufacturing between
nations with large disparities in income that have nothing to do with human productivity? At
the time when productivity was defined with respect to output per hour of human labor, it was
fairly straightforward to determine where the comparative advantage lay, but now, wage-rate
inequities are sometimes enormous—as large as 30 to 1—enough as to completely overwhelm
even the most productive worker of one country earning substantially more than a less skilled
worker in another (Morris 1996). A worker in Canada, for example, may earn $12 per hour,
while a worker in Mexico only earns $1 per hour for the same type of work, even though the
Canadian worker is only marginally more productive than his Mexican counterpart, meaning
that either the Canadian is overpaid, or the Mexican is exploited. The disparity in wages
between nations is especially problematic when it arises as a result of a particular country’s
repressive political regime, such as China, where forced labor enables it to produce goods very cheaply, hence creating an unfair and morally repugnant advantage over others. Surely, trading with such partners is a disservice to the citizens of all parties involved.

Although free trade spurs competition, which is assumed to result in lower prices, its major flaw is that the gains tend not come so much from an increase in efficiency in the production process, but rather that standards in general have simply been lowered. Indeed, in order to become competitive, a country may choose to cut its environmental and social standards, or at least not to enforce them, which not only results in that country’s ability to sell cheaper goods, but also entices foreign corporations to establish themselves there, where regulations are less strict than in the home country, in order to increase their profit margins. In addition, the drop of standards in some countries puts pressure on the others to lower their own standards in order to remain competitive internationally. Then, to the extent that trade is subsidized and that true costs are not reflected in the price of goods, we have no way of determining whether long distance trade is actually less costly ecologically, economically and socially than manufacturing items or growing food locally.

5.8.1 Free Trade and High-Income Countries

Free trade’s negative impact is not limited to low-income countries, but is beginning to affect high-income ones as well, particularly in terms of jobs and wages. Indeed, free trade tends to equalize wages between low-income and high-income trading nations. Capital and labor mobility means that capital which employs expensive labor can go to countries where labor is cheaper, driving up the low wages there, and that labor, although less mobile than capital, can move to the countries where wages are higher, driving down the high wages at home. Therefore, “those who advocate free trade and free capital mobility are simultaneously advocating the equalization of wages” (Daly and Cobb 1994: 219). Although wage
equalization may somewhat increase wages in poor countries, proportionately, wages in the affluent countries will fall much more than they will ever rise in the Third World (Daly and Cobb 1994). This will be particularly noticeable in low-skilled and low-paying jobs, which will be lost to foreign countries that supply virtually unlimited cheap labor. Consequently, we will see an increasing shift in the categories of work available in the high-income countries, since the remaining jobs will tend to be those which require high levels of skill and education.

5.8.2 Free Trade and Low-Income Countries

The World Bank and IMF have been encouraging low-income countries to borrow money in order to build infrastructure that would help those countries specialize in their particular comparative advantage, or trade niche. The funds raised through exports would supposedly be sufficient to repay the debt and the interest on the debt, as well as propel the country into a phase of modernization and industrialization. Beginning in the 1960s, the idea that low-income countries needed to export natural resources and manufactured goods in order to industrialize began to emerge. To maximize their earnings based on the premise of comparative advantage, according to this concept, these countries should specialize in a very limited number of commodity exports. This situation, however, is not only very precarious, particularly for pre-industrialized, or agriculturally-based, economies, but also "represents perhaps the most important form of wealth transfer from the poor to the rich" (Trainer 1989: 112), for two reasons. Firstly, the richest agricultural lands that could be used for local needs become diverted to growing such export crops as peanuts, coconuts, coffee, fruits and even flowers, to be purchased by the already well-fed inhabitants of high-income countries. As farmers replace food crops for more profitable export crops, the country progressively loses its overall self-reliance in food, and becomes highly dependent on the forces and whims of the global economy. A fall in world prices for exports, or an increase in prices of imports, can
then suddenly devastate a national economy and may precipitate a famine, because the field
workers and others who have depended on the income earned from exports suddenly find they
can no longer afford to buy imported food when, at one time, they were immune to such
problems by growing their own (Carley and Christie 1993: 114).

Secondly, virtually all low-income countries are attempting to follow the same
blueprint for development. The result is that the world is seeing an increasing supply of
goods and natural resources on the market, which is not only destroying ecosystems at
unprecedented rates, but also creating an overall slump in commodity prices. In fact, we see
today that the price of primary commodities have "fallen to their lowest in a century and a
half" (UNDP 1999: 2). As more countries enter the global economy, goods and resources
become available in larger quantities and at cheaper prices, giving the false impression that
the absolute abundance of resources is increasing! This has two consequences: it discourages
the consumers from being more frugal in their rate of resource consumption and, as a result of
so much supply, the poor countries' earnings fall considerably short of what had been
originally anticipated. To repay their debts, therefore, countries attempt to sell even more
resources, driving prices down further and thus minimizing their economic returns. Some
countries become so dependent on the global economy that "in the global village, a nation
survives by starving its people" (Morris 1996: 223). Even in the face of severe malnutrition,
promoting exports of high quality food takes precedent over important national concerns in a
desperate attempt to earn foreign currency. Brazil, for example, has seen a 13 per cent drop in
the production of basic foodstuffs between 1977 and 1984, while exports of cash crops have
increased by 15 per cent. Yet, half of the population suffers malnutrition (Morris 1996).
Surely, Ricardo could never have imagined that free trade would reach such degrees of
absurdity. All these consequences lead Trainer (1989) to conclude that "the export cropping
phenomenon is probably the most glaringly repugnant consequence of the conventional approach to development" (113).

What can we make, then, of the “Newly Industrializing Countries” (NICs), such as Hong Kong, Singapore and Taiwan, that have experienced high rates of growth and have enriched themselves following the conventional path of development? Firstly, the successes obtained by a few nations in developing their economy does not, in any way, imply that all low-income countries can follow the same export and growth-based route; in fact, it has been demonstrated in this thesis why they possibly cannot. Secondly, the situation with Singapore and Hong Kong is unique; they are cities rather than nations, which means that they are not faced with the huge costs of rampant urban-rural migrations so common in almost every low-income country undergoing industrialization and modernization. Thirdly, we must look at the type of “development” that occurred in the NICs; it is not true development, but almost pure economic growth, and this “success” has been achieved at the expense of the environment and human rights. Indeed, in South Korea, for example, the average work week was 53 hours in 1987, enabling it to out compete others in export sales (Trainer 1989: 50). As well, the success of NICs does not come from the natural workings of the liberal market economy, as it is often claimed, but rather from careful state planning through government support, helping these countries be more competitive on the global stage. Finally, the export-based economy of NICs is definitely not sustainable due to its precarious nature of dependence on external factors, such as a strong global financial system.

5.9 The Myth of Foreign Investment

In order to stimulate their economies, many low-income countries are trying to attract foreign investors and corporations. Experience shows, however, that these types of schemes
are very short-sighted, and do not improve the quality of life of most citizens in the host country. Foreign investment may not necessarily bring wealth to a poor country, and may in fact diminish some of the wealth that was there already; it can lead to the depletion of resources, as the profits generated by the foreign corporations generally flow back to their home countries, sometimes to the rate of three times the amount of investment flowing in (Trainer 1989). Economists claim that foreign investment creates jobs; indeed, jobs are created and “no doubt the host country is better off by gaining foreign exchange from its supplying of labor to the factories” (Daly and Cobb 1994: 288). But, because foreign corporations tend to establish themselves in free trade zones, they are of little benefit to the host economy aside from providing a few jobs, as factories import most if not all their equipment and raw materials from abroad, and export their earnings. The classic example of such a situation are the *maquiladoras* of Mexico, which are free trade zones that “consist mainly of U.S.-owned factories that import U.S. materials for assembly and re-export” (Goldsmith 1996: 268). In the *maquiladoras*, women are the workers of choice, and they make up about half of the workforce, because their wages, which tend to be less than $1 per day, are lower than that of men. Also, in terms of employment, transnational corporations offer only a minuscule fraction of the jobs needed to meet an overwhelming demand for work. Furthermore, although wages paid by foreign companies may be somewhat higher than local ones, they still remain substantially lower than in rich countries, raising moral issues about who really reaps most of the benefits of foreign investment.

One of the side effects of establishing an enterprise in a poor country is that it renders obsolete, and puts out of business, local craftsmen and firms, who are no longer able to compete against these larger, more “efficient” corporations. In terms of taxes, foreign companies pay very little, if any, because of the favorable conditions proposed by low-income
countries to entice foreign firms in the first instance, meaning that governments receive little or no revenue with which to address such issues as health, education and famine. When these favorable conditions change, or when it suddenly becomes in their economic advantage to do so, transnational corporations simply leave and relocate elsewhere, as they have no obligations whatsoever towards the communities in which they operate. Finally, the biggest problem with foreign investment is that it does not go to what people need most; multinational corporations only invest in whatever generates the greatest economic returns. In economic parlance, "rational" behavior means maximizing returns on your investment, and this is done through the production and sale of luxury goods destined to the wealthy, such as expensive clothing, cars, jewelry and cosmetics, leaving the poor to fend for themselves. Although firms could make a profit, albeit small, on important development projects that ensure clean water and a local food supply, for example, they do not invest in such sectors. Thus, Daly and Cobb (1994) conclude that: "we have come, as have many others, to the painful conclusion that very little of First World development effort in the Third World, and even less of business investment, has been actually beneficial to the majority of the Third World’s people" (289).

5.10 The Dangers of Market Forces

The market may be very effective at making certain day-to-day decisions, such as deciding whether more red sweaters should be produced than blue ones, but it is terribly ineffective at ensuring that basic needs are met, as well as ensuring that scarce resources are distributed fairly in society. The forces of the market, left unchecked, tend to produce highly inappropriate development. Unfortunately, any governmental interference, regulation, or attempt to discuss what basic necessities should be produced in the economy to improve
overall quality of life for all, is regarded with great suspicion and is considered inefficient. By its very nature, a market system is amoral; it allocates according to ability to pay, not according to need, so essentially, “a market economy is an ingenious device for ensuring that when things become scarce only the rich can get them” (Trainer 1989: 64). This is why public government is important: it is needed to redistribute the wealth generated by the amoral workings of the market. Demand is the driving force that determines what is to be produced in our economy, and purchasing power determines how the benefits are to be distributed. As the demand of a particular item increases, so does the price, enticing manufacturers to produce more of it, as their underlying goal is to maximize profits. As a result, industries produce relatively useless things for the wealthy, ignoring the needs of those who do not have any effective demand, or money. Capitalism concentrates on profits, not on the quality of life for all, so people with capital invest it in whatever generates the greatest returns, typically expensive luxury items, rather than in what is actually beneficial to meet society’s needs, such as affordable housing, local agricultural projects, sustainable energy sources or rural health clinics.

This system leads to catastrophic consequences, such as the immoral and growing gap between the world’s rich and poor, and more importantly, the fact that basic human needs are simply not being met for the vast majority of the world’s population. One of the fundamental tenets for the proper working of the market economy is that purchasing power be equal, or close to equal, between participants. Yet, this is not the case at all, as incomes and wealth vary greatly both within and between countries. In fact, inequity becomes greater over time when the market is allowed to function freely. The tragic consequence of uneven purchasing

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7 In this instance, “efficiency” has nothing to do with the optimal allocation of resources for a better society, but is defined only in terms of that which maximizes the monetary returns on an investment.
power is that the rich appropriate most of the resources, because they can always outbid the poor, leaving them empty-handed. While some consume a great deal more than they need, most are deprived of a sufficient share. Trainer (1989) puts the dramatic outcome of uneven purchasing power into perspective in the following example:

> While at least a hundred million Cokes are consumed daily, according to UNICEF more than 40,000 children die every day because they are deprived of resources. Lack of access to clean water probably takes ten million lives each year. Hundreds of millions are in need of fuel to sterilize dangerous drinking water but must do without it, while people in rich countries can drive ski boats, because we can offer more money for the fuel. (63)

The reality of the market is sobering indeed! It must be noted, however, that the wealthy have no conscious or malicious intent to deprive the rest of the world, but that they inevitably and unintentionally squander resources as a result of "natural" market forces. Unfortunately, the real tragedy is that, persuaded by conventional economists, people believe that they are actually furthering development and helping the poor by engaging in conspicuous consumption, without realizing that they are largely responsible for exacerbating poverty by depriving others of their faire share of resources and wealth!

5.11 The "Third World" Problem: Deprivation

The reasons for "underdevelopment" in low-income countries are often blamed on the countries themselves. Corruption, laziness and lack of Western values are often cited as major factors, but the issue runs much deeper than this: it is one of deprivation. Trainer (1989), suggests that probably all poor countries have, or could soon have, the capacity to produce enough to meet the basic needs of all people, if labor, capital and land were in fact devoted to ensuring these needs. Unfortunately, as a result of unrestrained market forces, much of the low-income countries’ productive capacity goes into producing for the rich: "it is
the normal functioning of the global market economy which delivers the available resources and deprives the majority” (Trainer 1989: 73). In their quest for growth, poor countries focus on industrialization and exports, channeling all their resources in these sectors, as prescribed by conventional economic theory. This may increase the rate of economic activity, but it inevitably leaves poor people worse off as they become deprived of the resources they once had (Trainer 1996). No longer is production local and decentralized, catering to what the community needs, but instead, productive capacity becomes centralized and in the hands of a few capitalists, whose investment schemes revolve around maximizing profits by producing what the wealthy want to buy. As a result, basic needs are not being met, and there are no mechanisms in place to ensure that they do get met. Many societies that are still currently living in self-reliant ways, the ones neoclassical economics would consider the “poorest” as a result of their low GDP, or GDP per capita, actually need very little in terms of extra goods and services to improve their quality of life substantially. Yet, we are all so conditioned to equate “progress” and “development” to “growth” and “modernization”, that we fail to realize these still “healthy” societies stand only to lose out when they become dependent on the global economic system.

The obvious conclusion, therefore, is that appropriate, more just and ecologically sensitive development for all countries is only possible with a radical reform of the global economic system and, in the words of Trainer (1996), “we cannot hope to solve the Third World problem, or the other major and accelerating global problems, unless and until we in the rich countries face up to fundamental social change” (Trainer 1989: 6). Low-income countries, just as high-income ones, have an important role to play in the sustainability issue, which is developed in the following section. Sustainability requires that we ask certain fundamental questions which seem to have fallen by the way side and “that we reclaim the
economy in the service of people and their communities” (Wackernagel and Rees 1995: 143). Although low-income countries may have a moral right to growth, the goal of development there cannot be to rise to the living standards of rich countries, because it is a physical impossibility for all to attain such affluence. That said, the already overdeveloped countries cannot continue to consume substantially more than their fair share of the world’s resources while so many remain deprived of even the most basic necessities. It is unacceptable and ecologically impossible to count on growth and the trickle down effect to alleviate poverty. An important first step, then, is to redistribute some wealth from the rich to the destitute, and to ensure that the poor actually receive a portion of society’s productive capacity, particularly land, in order to be able to produce for themselves and not have to wait for a growing economy to raise their quality of life (Trainer 1989: 80). This is a major role for politicians.
Chapter 6

A Better System: Ecological Economics

Neoclassical economics is based on flawed assumptions about human nature and about market forces, and relies on the impossible situation of ongoing growth. The practice has failed, increasing disparity between the rich and the poor, and depriving the world of its resources while degrading ecosystems. A more realistic model needs to be introduced. An alternative to neoclassical economics is "ecological economics", which offers a more holistic and accurate interpretation of reality, primarily because the conceptual framework of this economic paradigm is designed around the ecosphere. Indeed, ecological economists "see the economy not in isolation, but rather as an inextricably integrated, completely contained, and wholly dependent subsystem of the ecosphere" (Rees 1995: 347). Rooted in the second law of thermodynamics, this paradigm recognizes the human economy as a "dissipative structure", an "open" system maintained by a throughput consisting of the "unidirectional and thermodynamically irreversible flows of useful matter and energy from the ecosphere through the economic subsystem and back to the ecosphere in degraded form" (Rees 1995: 348), as illustrated in the following diagram:

Figure 2. Ecological Model

Reproduced from Rees 1995.
6.1 Sustainable Development

Admittedly, *Our Common Future* was an important first step in acknowledging the growing ecological crisis faced by the ecosphere. However, the Report’s definition inspires controversy because it does not explicitly differentiate between neoclassical and ecological economics, whose approaches to sustainability are as radically different as the paradigms themselves, and “the problem is that not all interpretations of sustainability can be equally valid” (Wackernagel and Rees 1995: 36). The Brundtland Report encourages greater rates of economic growth for both the low- and high-income countries, but greater expansionism “is a purely technical response to a systemic crisis, one that ignores social and cultural context and accepts unquestioned the fundamental values of the consumer society” (Rees 1995: 357). So far, most “solutions” to our social, economic and ecological woes have been predominantly reactive, in the form of technological fixes, but society’s basic beliefs and assumptions have not been sufficiently brought into question.

Ecologists, on the contrary, believe that “sustainable growth is an impossibility” (Costanza and Daly 1991: 7). Indeed, they claim that the very unsustainability of growth is at the root of our ecological, and hence socio-economic problems, arguing that “many of the assumptions and beliefs of conventional economics are responsible for, or at least aggravate, the sustainability crisis” (Rees 1995: 347). Sustainable development, from the ecological perspective, means “ecologically sound development” (Lélé 1991: 608), manifesting itself as “an improvement in the quality of life without necessarily causing an increase in quantity of resources consumed” (Costanza and Daly 1991: 7). In general terms, sustainable development is the application of ecological principles to traditional development objectives. Being conceptually holistic, this type of development is able to conciliate the tensions that currently exist between the ecosphere, society and the economy. It provides an attractive
alternative to the growth-oriented expansionist paradigm of neoclassical economics, and deals with both intra- and inter-generational equity; furthermore, it seeks to resolve issues related to development on a deeper plane. Ecological economists are very clear about the bottom line of sustainability, which entails consuming renewable resources and ecological services at a rate compatible with nature’s capacity to regenerate them, and emitting waste at a rate no greater than can be assimilated by nature. In summary, to achieve sustainability, humans can no longer afford to liquidate natural capital, but must learn to live off the "interest", or "Hicksian income"\(^8\), generated by it. Certainly, such criteria, predicated on the possibility of a better and more equitable life for everyone, pose an exciting challenge to future development, for both the low- and high-income countries.

In terms of planning and development, sustainability has three components: social, economic and ecological. The conventional approach to sustainable development considers sustainability to be tradeoffs, as follows:

**Figure 3. Sustainable Development (Conventional)**

![Diagram](image)

This model shows that there is a strong interaction between economic, environmental and

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\(^8\) Sir John Hicks, a British economist who won the Nobel Prize in 1972, established that income is sustainable if the level of consumption can be “maintained from one period to the next without reducing real wealth (productive capital)” (Rees 1995: 351).
social goals, and that these are not always compatible. Sustainability, from this perspective, requires a difficult and rare balance between these three sets of goals. Ecological economics takes a different approach to sustainable development. From the ecological perspective, sustainability is a much simpler concept, whereby sustainable development can only occur once ecological sustainability has first and foremost been secured. Once ecological sustainability has been achieved, only then is it possible to reach economic sustainability, which can be loosely defined as the proper working of an economic system in the long run. A healthy environment and a functioning economy lead to a better society, one in which people have jobs, feel secure, can enjoy a satisfactory material standard of living and are generally happy. If this condition can be maintained in the long run, then social sustainability has been attained, and development is sustainable. This is shown below in Figure 4:

Figure 4. Sustainable Development (Ecological)

6.2 Strong Sustainability

Both neoclassical and ecological economists agree that “no development path is sustainable if it depends on the exhaustion of productive assets” (Rees 1995: 350), but the
degree to which manufactured capital can act as a substitute for natural capital is hotly contested. Conventional economists assume that natural and manufactured capital are interchangeable, that the depletion of the former poses no problem as long as some of the proceeds are invested in the latter. As well, under “weak sustainability”, the monetarily unquantifiable services rendered by nature remain unaccounted for.

Ecologists, on the other hand, believe that natural capital complements, or more accurately is a prerequisite for, manufactured capital. For example, replacing a depleting fish stock with a growing number of fishing vessels is nonsensical, because ultimately, an entire fleet of fishing boats is useless without the fish! By the same token, life-support and other services provided by nature are recognized as being vital and irreplaceable. The ozone layer, for example, has a huge positive economic value because it provides health services, and its loss would obliterate any benefits gained from its destruction. This stance reflects the “strong sustainability” point of view, whose main premise is that “each generation should inherit an adequate *per capita* stock of both manufactured assets and self-producing natural assets no less than the stock of such assets inherited by the previous generation” (Rees 1995: 350). This means that there should be more and more protected areas for wildlife and for natural resources such as forests and clean lakes as the population increases.

### 6.3 Technology

Mainstream economists promise that technology will increase global commerce and will bring material abundance to all, although employment rates may drop for a while due to short-term adjustments of the market. Experience, however, is showing that the loss of jobs is in fact a permanent situation, and one that only stands to deteriorate with time. Jeremy Rifkin, in his essay “New Technology and the End of Jobs”, a chapter from *The Case Against*
the Global Economy (1996), warns that machines are rapidly replacing humans "in virtually every sector and industry in the global economy" (108). He points out that globally, approximately 800 million people are unemployed or underemployed, and that the situation will only get worse. This reveals the need and importance for nations to debate the question of appropriate technology in development, that is job-sensitive, yet improves overall quality of life.

Despite the important role technology will play to increase the efficiency of resource and energy use, ecological economists remain skeptical of its ability to solve our problems. Our scientific culture relies heavily on ever-increasing technological sophistication, which we tend to associate with progress, to the detriment of indigenous skills and local knowledge. Modern life has tended to separate us from nature and obscure the thermodynamic flows and transformations that take place during any form of consumption. City life, for example, has all but eliminated our connectivity with our surroundings; food is bought from a store, and waste is flushed down the toilet, but the processes that occur before and after are no longer of concern to us. As a result, we often assume that we can get along without natural resources. The fact remains, however, that "humanity lives in a state of obligate dependence on the ecosphere for both the production of usable energy and matter, and for waste assimilation and other life-support services" (Rees 1995: 348). Technology definitely has an important role in development, especially if it reduces society's demands on nature, but often it simply leads to higher rates of consumption by reducing the costs of inputs, overriding any gain in efficiency. Thus, technological sophistication "must be accompanied by policy measures in order to ensure that the efficiency gains are not redirected to alternative forms of consumption" (Wackernagel and Rees 1995: 25).
Instead of relying on technology, ecological economists favor changes in consumer behavior and values as the best way to resolve our increasing demands on nature. Ecological economics is very much concerned about supporting a healthy society and economy, but these objectives can only be achieved by maintaining the integrity of ecosystems and their services. Planning for sustainability “will remain a hard sell until we can show that people have more to gain than to lose by changing their ways” (Wackernagel and Rees 1995: 137). It requires a paradigm shift, a reexamination of our fundamental outlook on life, which has, for example, largely failed to appreciate the intrinsic value of all species, and has led to situations of geopolitical unrest resulting from inequalities and misunderstandings between people.

6.4 The Optimal Scale of the Economy

Contrary to neoclassical economics, ecological economics places great importance on the optimal scale of the human economic subsystem. There are economic limits to growth, because the economy can only exist thanks to the resources and services provided by the ecosphere and its ecosystems. As a result of “functional transparency”, however, such as the inability to price the loss of ecological systems, economists “forget” about the law of diminishing returns—that there are rising marginal costs with every additional development project, and that at one point, the costs of further growth exceed any benefit. In addition, the depletion of nature cannot go on forever; whatever the level of technological sophistication, some minimum amount of remaining natural capital stock is necessary to sustain economic activity, and more importantly, life on Earth. As seen in Figure 5, it is theoretically possible for an economy to “overdevelop”, in which case the total costs (TC) of extra economic activity exceed the total benefits (TB). Economic growth, therefore, is only beneficial to society, and should continue, so long as the marginal benefits (MB) of further quantitative
development are greater than the marginal costs (MC). The optimal long-term economic scale is reached when marginal benefits equal marginal costs, the "point in the development process when the difference between total benefits and total costs of development is maximized" (Rees 1995: 352). Beyond this point, further development of the ecosphere is counterproductive and ecologically unsustainable, in which case economic activity should be scaled back.

**Figure 5. Optimal Scale of Economy**

Admittedly, the above diagram is a purely theoretical analysis; the smoothness of the curves, for example, implies complete reversibility of the "system". In reality, however, ecological systems are complex and dynamic, making them unpredictable and seemingly chaotic: "Ecological and complex systems theory suggest that cumulative losses of an ecosystem's function or its components may reach (invisible) critical points of no return beyond which systems structure and behavior change critically and irreversibly" (Rees 1995: 353). Also, the curves in Figure 5 give the impression that "all costs and benefits can be identified, quantified, and monetized" (Rees 1995: 352). Although measuring the immediate benefits of a development project may be fairly straightforward, accounting for its full, long-term costs is a very difficult, if not impossible, process. Traditional benefit-cost analyses, for example, will more often than not determine that a project under review is indeed beneficial,
and hence should proceed; the private gains of jobs and income generation seem vastly more important than the marginal negative ecological impacts that affect society in the short run, and Garrett Hardin (1968) calls this social dilemma "the tragedy of the commons". Yet, because each project affects the ecosphere in various ways, it is plausible to think that, at one point, the cumulative impact of development projects may be doing more harm than good, even though individually, the projects may appear to be worthwhile. Unfortunately, it is extremely difficult to identify all costs and assign a dollar value to the loss of ecosystem services, and under the current economic paradigm the future is heavily discounted; this explains why the "total cost" curve in Figure 5 is often ignored outright by neoclassical economists, although it does exist in one form or another.

6.5 Steady-State Economics

Reaching the optimal economic scale and maintaining it indefinitely may lead to a no-growth, ecologically sustainable development path, which Daly calls a steady-state economy, "defined in terms of constant stocks (a quantity measured at a point in time, like an inventory), not flows (a quantity measured over an interval of time, like annual sales)" (Daly 1991: 18). The idea of a steady-state economy is not new; indeed, John Stuart Mill, whose book Principles of Political Economy (1848) influenced Daly, devised a similar concept, the "stationary state". The basic requirements for a steady-state economy include keeping both the population and capital (manufactured and natural) constant. In order to clarify the concept of "steady-state", Daly (1996) makes an important distinction between the terms "growth" and "development", one that is generally ignored by traditional economists, who use the terms interchangeably. Daly specifies that, while "growth" is used to mean quantitative change,

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“development” signifies qualitative change. With this difference in mind, he states that, “like our planet, the economy may continue forever to develop qualitatively, but it cannot grow indefinitely and must eventually settle into a steady state in its physical dimensions” (237).

Monetary analyses alone are not acceptable in measuring economic welfare; steady-state economics requires a new set of indicators, ones that recognize the importance of ecosystems and their services (Rees 1995: 351; Wackernagel and Rees 1995). The matter and energy that is needed to sustain the human economy comes from natural capital, so ultimately, it is the total stock of that natural capital which is the limiting factor in developing the economy further, not the throughput of matter and energy; in light of this, the GDP is an irrelevant unit of measure in a steady-state economy. Instead, what is needed is an indicator that gives us a glimpse as to the general state of the biophysical “infrastructure” of the ecosphere and the size of remaining stocks of natural capital.

6.6 Ecological Footprint Analysis: Measuring Ecological Sustainability

For thousands of years, the connection between humans and land has been a subject of concern (Wackernagel and Rees 1995: 48). As far back as Plato, the question of how many people a given piece of land could sustain forever, a concept known today as “carrying capacity”, has been widely discussed. Carrying capacity can be defined as “the maximum rate of resource consumption and waste that can be sustained indefinitely in a region without impairing ecological productivity and integrity” (Carley and Christie 1993: 43). The emphasis here lies in the biological processes that take place on a specific piece of land, such as food harvesting and waste absorption by nature. Therefore, to a certain extent, the carrying capacity of a region can serve as some sort of biophysical indicator as to that area’s ability to support a given population of a particular species. If, for example, natural capital is being
depleted faster than it can regenerate itself, then clearly the "load" that is imposed on nature cannot be sustained in the long run, and that species' survival, and indirectly perhaps others' as well, will be at risk.

However, using carrying capacity to measure the health of ecosystems and to establish whether our development path is ecologically sustainable has its limitations. Although helpful in determining the optimal size of an animal population that a particular region can support, carrying capacity fails to determine the optimal scale of the human population in a given environment because it ignores the matter and energy flows that are exchanged between the human economy and the ecosphere. Our consumption is very much a product of such factors as culture and income. Indeed, because of our industrial metabolism, our per capita consumption extends well beyond our immediate biological needs; "the bulk of human material consumption consists of manufactured non-food items such as energy, clothing, automobiles and a vast array of other consumer goods" (Wackernagel and Rees 1995: 51). Furthermore, technology and trade seem to overcome the barriers of local carrying capacity, and these two factors often incite conventional economists to dismiss outright the concept of limits. Hong Kong, for example, is able to support an extremely dense population by importing most of what it needs from abroad, and by relying on forests in foreign countries to absorb its carbon dioxide. It must be noted, however, that although local carrying capacity can be overcome (by reducing it somewhere else), global carrying capacity is finite, and in terms of looking at the whole ecosphere, "shrinking carrying capacity may soon become the single most important issue confronting humanity" (Wackernagel and Rees 1995: 50). The result is that not all countries will have the luxury to appropriate goods from "somewhere else".
Clearly, carrying capacity is inadequate in establishing measurable criteria upon which to evaluate the sustainability of development initiatives. Flipping the carrying capacity ratio around, however, leads to a much more useful way of assessing the quality of development of the human economy in terms of ecological processes. This idea has evolved into what is known as “Ecological Footprint Analysis”, which serves as an “accounting tool that enables us to estimate the resource consumption and waste assimilation requirements of a defined human population or economy in terms of a corresponding productive land area” (Wackernagel and Rees 1995: 9). The Ecological Footprint assesses the natural capital requirements of consumption; in other words, it measures a population’s current “load” (population multiplied by per capita consumption) on the ecosphere. Unlike carrying capacity, the Ecological Footprint looks at Hicksian natural capital and income flows, that is, the “interest” provided by natural capital, whose sustainable consumption is fundamental in maintaining an ecologically sensitive development path once the steady-state economy has been achieved.

In the Ecological Footprint analysis of a population, land area is used as a proxy to natural capital (Wackernagel and Rees 1995: 351). It is taken for granted that all matter and energy exchanges with the ecosphere require a given amount of ecologically productive land to supply the resources and energy needed, and absorb the waste created by, the human economic subsystem. Thus, “using productive land area as a measurement unit makes Ecological Footprint analysis consistent with the basic laws of physics, especially the laws of mass balance and thermodynamics” (Wackernagel and Rees 1995: 55). The land need not be physically close to where the consumption is taking place; in fact, most of the affluent countries today, for example, are already appropriating the carrying capacity of other countries, as they have long surpassed their own: “Modern cities and industrial regions are
dependent for survival and growth on a vast and increasingly global hinterland of ecologically productive landscapes” (Wackernagel and Rees 1995: 29). For example, the Ecological Footprint of London, UK, is calculated to be 120 times the surface area of the city proper. This means that an area larger than the UK’s ecologically productive landscape is necessary to sustain the consumption and absorb the waste of Londoners alone!

**6.7 Fair Earthshares and Ecological Deficits**

To understand the significance of Ecological Footprints in development, let us begin by examining the idea of the “fair Earthshare”. This represents the *per capita* availability of ecologically productive land of the ecosphere in a perfectly equitable world; if this land were divided equally amongst all inhabitants of the Earth, everyone would be limited to an estimated 1.5 hectares, or 122m x 122m, only of which 0.25 hectares is arable, to satisfy all his or her needs and wants, a figure that has decreased from approximately 5 to 6 hectares at the turn of the century (Wackernagel and Rees 1995: 88). There is also only 0.5 hectares of productive aquatic (marine) ecosystem available *per capita*. As the population grows, and at the same time as more and more land becomes degraded (i.e. no longer available for nature’s production) to make room for buildings and roads, this Earthshare becomes evidently smaller. Assuming the Earth’s population reaches the expected 10 billion people by year 2040, then the fair Earthshare drops to 0.9 hectares (Wackernagel and Rees 1995: 13).

Let us put this dramatic outcome into perspective. It is estimated that the Ecological Footprint imposed on the ecosphere by the human economy today is already 30 percent larger than the Earth’s long run carrying capacity, where “consumption by the affluent 1.1 billion people alone claims more than the entire carrying capacity of the planet” (Wackernagel and Rees 1995: 102), testimony to the unsustainability of our present economic system. Despite
the fact that much of the developing world is surviving on a fraction of its fair Earthshare, the Ecological Footprint (including the marine component) of the average North American (excluding Mexico) is in the range of 7 to 10 hectares—up to five times his or her fair Earthshare at present! The obvious result of such disproportionate consumption by one segment of the population is that, were humans to live within the means of nature in order to be ecologically sustainable, several people somewhere else on the planet would have to content themselves with a fraction of their fair Earthshare, because “a world upon which everyone imposed an over-sized Ecological Footprint would not be sustainable—the Ecological Footprint of humanity as a whole must be smaller than the ecologically productive portion of the planet’s surface” (Wackernagel and Rees 1995: 15). Indeed, if everyone were to adopt the North American lifestyle, as is being promoted by international development agencies, we would require at least four planet Earths to achieve global sustainability! Ecological Footprint analysis, in this respect, is a very useful tool in determining the “ecological deficit”, or “overshoot”, defined as “the amount by which humanity’s total Ecological Footprint is bigger than the global carrying capacity” (Wackernagel and Rees 1995: 55).

6.8 An Alternative to Fair Earthshares: National Carrying Capacity

Dividing the ecologically productive land of the world into fair Earthshares is the most equitable means by which to establish a framework for ecologically sensitive development at the global scale. This would give the same rights to people in rich and poor countries. However, it is somewhat unrealistic, because, as we have established earlier, a single Earth does not have the capacity to sustain the world population at the level of wealth already attained by the high-income countries, and it is fair to assume that people in these countries
would not be prepared to lower their standards of living to accommodate the aspirations of the poor, at least not in the near future. This leads to the concept of “national carrying capacity”, which postulates that each country may not use the ecologically productive space of another, and must restrain its economic activity to levels that it can sustain within its own borders. Despite the fact that it is much less equitable than the Earthshare due to the widely different population densities and land productivity between regions around the world, this method still provides a starting point in assessing the degree to which humans can realistically consume nature’s resources at a sustainable rate in terms of regional carrying capacity. Using such a measure today gives some sort of idea as to that region’s self-reliance, or lack thereof, by examining “the extent to which local carrying capacity has been exceeded, and therefore the population’s dependence on trade” (Wackernagel and Rees 1995: 53).

Ecological Footprint analysis indicates that the majority of rich countries appropriate productive land in a quantity that far exceeds that which is available within their own borders; “in short, large ecological deficits are the rule for industrialized regions and countries” (Wackernagel and Rees 1995: 96). The Netherlands, for example, whose per capita Footprint is in the range of 3 to 4 hectares, requires a land area 15 times greater than its own to satisfy the needs of its 15 million inhabitants in terms of resources and ecological services. There are, however, exceptions to the rule; Canada and Australia are two of the very few industrialized countries whose Ecological Footprints still remain within the limits of their national carrying capacity, due to a relatively small population compared to their respective land area. It must be noted, however, that the Footprints of other countries extend into Canada, appropriating any ecological surplus untapped within Canada. It is in the interest of the world, therefore, to ensure that Canada’s population remains small so that the surplus of
natural resources and ecological services can continue to be available to countries who depend on imports for their sustenance.

Ecological Footprints that extend beyond national carrying capacity is a reality not only for high-income countries, but for an increasing number of low-income ones as well. India, for example, strictly in terms of national carrying capacity, already runs an ecological deficit, as exemplified by a Footprint that extends beyond its borders. The per capita Footprint of India is comparatively low, covering an area of about 0.38 hectares (of which the poorest half the population actually have Footprints of 0.2 hectares)—figures that fall significantly short of the supposed fair Earthshare of 1.9 hectares. Yet, because of the sheer size of the population, which has very recently reached 1 billion, the aggregate Footprints of India is 346 million hectares. Considering the fact that there are 250 million hectares of ecologically productive land in India, the country has overshot its national carrying capacity by 96 million hectares, which have been "appropriated" from the rest of the world, including Canada, for example, through trade and in the form of CO₂ assimilation capacity (Wackernagel and Rees 1995: 99).

6.9 The Politics of Ecological Footprints

Ecological Footprint analysis is, without any doubt, a very controversial tool because it raises issues that have simply been ignored far too long or that have been dismissed outright. Ecological Footprint analysis itself has been dismissed in some circles for the same reasons. As a unit of measure, not only does Footprint analysis reveal the ecological costs associated with indiscriminate economic growth and industrialization, but it also makes evident the disproportionate consumption that occurs between high- and low-income countries, thus exposing the inefficacy of untrammeled neoclassical economics and traditional
development. Footprint analysis shows explicitly that the world’s rich are appropriating much more than their sustainable fair share of resources, while the poor consume substantially below theirs, thus raising the need for distributive justice. It can be very disturbing to many, therefore, especially those in the overdeveloped countries, to be confronted with these sorts of fundamental issues that have conveniently been swept under the rug, but that will inevitably resurface as a result of the information that Ecological Footprint analysis provides. The affluent must somehow face up to the undeniable fact that a reduction in their material standard of living is necessary for the development of the low-income countries to occur within the world’s ecological limits (Trainer 1996: 69; Wackernagel and Rees 1995: 100).

Additionally, it may be disturbing for the countries and organizations which have held the upper hand with respect to trade agreements, to suddenly have to relinquish some of their decision-making power to countries that have historically received the short end of the stick, not by choice but by necessity. Using Ecological Footprint analysis as the basis for their arguments, low-income countries gain much more leverage in international discussions on development and can therefore demand much fairer terms of trade based on ecological flows, not just money ones, as well as make a solid case for some wealth redistribution. This leverage is further enhanced when it is made plain that even if virtually all the rich countries reduced their Footprint to the equitable Earthshare, they would still be unable to live within their own borders and would depend on the ecological surplus of other countries for their sustenance. In a previous paragraph, the Netherlands has been cited as an example of a typical high-income country whose aggregate Footprint currently covers an area 15 times that of its national surface area, where most of this “ghost acreage” is located in the Third World (Trainer 1996: 61). Assuming, however, that the Dutch consumed their fair Earthshare of 1.5 hectares instead of the 3 to 4 hectares currently appropriated, the Ecological Footprint of the
country would still exceed its geographical area. Because of growing populations and the declining availability of arable and ecologically productive land around the world, countries are appropriating others' productivity by sheer necessity, even when consumption at home is severely restrained such as in India.
Chapter 7

Self-Reliance

The following section on self-reliance consists of four parts. The first investigates the general concept of self-reliance, as opposed to self-sufficiency, and outlines three categories that are important for self-reliance in low-income countries in particular: food, water and energy. The second looks briefly at Mahatma Gandhi's *swadeshi* philosophy of community self-reliance in India, which represents a large-scale attempt at breaking the bonds of dependence, and explores some of the key issues that pertain to self-reliance. The third explores two policy tools that will help move a society towards self-reliance: ecological tax reform and closing the "ecological loop". The last puts the notion of ecological sustainability and self-reliance in the proper context by using the Southern Indian state Kerala as an illustrative example.

7.1 Self-Reliance: the Concept

We have seen how economic globalization and unrestricted free trade, based on the concept of unlimited growth and trickle down, have failed to provide the destitute with basic necessities, while causing tremendous and sometimes irreversible ecological damage. In particular, we have seen how the global economy is shifting to accommodate corporate interests, to the detriment of communities everywhere whose self-reliance is being undermined. In low-income countries in particular, "Westernization", through modernization and industrialization, take precedent over any other form of "development". One of the consequences is that the perception of people *vis-à-vis* their community changes: there is no longer a feeling of pride, but one of shame, as village life appears to be primitive and dull, pushing those who worked the land to leave the countryside in hopes of finding "real" jobs in
the city. People become alienated from themselves, each other and their ecosystem, as the
growing wave of consumerism, driven through the media in the form of glamorous
advertisements, creates artificial scarcities in which "wants" become confused with "needs".
Eventually, this leads to the rejection of one's own culture in favor of the homogenized global
one. Because inequities continue to grow, hundreds of millions of people go hungry in a
world whose aggregate Ecological Footprint extends beyond the entire planet. We now have
little choice but to change our behavior radically as a species if we wish to avert an
"ecodisaster", and to restore the people-to-people relations that are fundamental in securing an
emotionally and spiritually fulfilling life.

If globalization and free trade are at one end of the spectrum of economic policies,
self-sufficiency, or autarky, is at the other. Self-sufficiency is characterized by subsistence
farmers, or hunter and gatherer tribes (Daly and Cobb 1994: 268). Although more growth and
global economic integration are not the answer to our ills, complete economic independence,
through the elimination of all trade and the removal of all ties with the rest of the world in the
name of sustainability, is not a solution either. Trying to achieve this level of independence
through complete self-sufficiency is just another extreme goal that is neither possible nor
desirable. What is desirable, however, is to seek a balance between global interdependence
and complete autonomy by promoting economic localization, or self-reliance, which involves
the breaking down of global and centralized economic activities into smaller, more
manageable units. The goal of self-reliance is simple: it seeks to create a new economic and
social order by reclaiming the economy for the benefit of the people, all within an
ecologically sustainable development framework. The rationale behind self-reliance is
ensuring that a society is able to meet its basic needs without having to rely on the global
economy: "The purpose of economic activity should be to foster material security where
people live rather than to promote mindless consumption to maintain the world’s financial centers at the expense of the ecosphere” (Wackernagel and Rees 1995: 143). If a country or region depends mostly on food, energy or even resources that come from halfway around the world, then it is very vulnerable to external forces over which it has no control, such as an increase in commodity prices or a drop in supply. A sudden rise in oil prices, for example, as happened twice in the 1970s, can destabilize and overwhelm even the strongest economies if these are not self-reliant to a certain degree. Ultimately, self-reliance is a way to improve quality of life everywhere.

One of the fundamental issues regarding self-reliance is scale: at what level should a society become self-reliant? The move towards self-reliance can be initiated at any level, from the individual to the nation. In terms of development and planning, however, self-reliance is probably most effective if it is instituted at the local or even regional scale, where cities need to be seen as one with the hinterland. The most ecological way to plan for self-reliance is surely through “bioregionalism”, which takes an ecosystems approach to development: “A bioregional economy would seek first to maintain rather than use up the natural world, to adapt to the environment rather than exploit it or manipulate it, and to conserve not only the resources but also the relationships and systems of the natural world” (Sale 1996: 480). The edges of a bioregion are defined in terms of physical and biological features, the classic example being the watershed. Traditional regional, state or even national boundaries, are often purely “arbitrary” straight lines that do not reflect the true nature of the landscape or the cultural and ethnic identities. These artificial boundaries may generate complicated social, political and ecological issues as a result. This is the case with Africa: during the mid-nineteenth century, European nations drew lines across the land to establish their individual colonies, ignoring completely natural drainage patterns, pre-established tribal
territories, and migration patterns of animals. Consequently, the region inhabited by the Masaai of East Africa, for example, finds itself split in half between Kenya and Tanzania, which makes it difficult to maintain a cultural identity and to manage resources properly. Such problems can be avoided, and planning for ecological sustainability can be enhanced, by recasting political jurisdictions around bioregions.

While self-sufficiency, whether at the scale of the nation or even at a smaller scale, is understood to mean complete autonomy, self-reliance implies a certain degree of openness and connectedness with other places. Information and ideas, for example, should be able to flow freely across borders, while capital should remained fixed in place, and be used to satisfy local consumption needs. This goes back to Keynes' idea that goods should be "homespun" whenever possible, which does not preclude ipso facto any form of trade. Indeed, trade can continue to play an important role in any economy, but must not come to dominate it. Too much specialization of an economy means dependence on others for basic necessities, which leads to poor terms of trade and a dangerous situation to be in with respect to food security. Self-reliance, on the other hand, can enhance the benefits of trade. When a region is able to meet most of its needs, then it can trade to its own advantage, because it gains much more leverage in formulating trade agreements and setting trade rules. As a result, a lot of people benefit, as well as the environment, particularly if trade balances are measured in terms of ecological flows rather than monetary ones.

The idea of self-reliance stems from the need for self-management, where economic policies are conceived in terms of community, and take the form of a bottom-up approach to development. It is a reaction against both cultural homogeneity and centralized authority, where the policy makers are spatially and psychologically removed from the impacts of their decisions. Thus, the devolution of certain powers from the national government to the local
one, such as planning and management, is important for self-reliance to be effective: "An economics for community holds that political power must be vested at the level at which economic power is located" (Daly and Cobb 1994: 293). Although economic and political decentralization are desirable, some fundamental matters should remain centralized, such as ensuring that human rights are not being violated, and that basic needs are being met throughout the country. In a decentralized system, people (other than corporate interests) are in charge of local resources, and they play a critical role in tending the ecosystems that support them. Essential resources and energy, which must be used sustainably, come mainly from the region. Local production for local consumption, generating local employment, takes precedence over imported goods and services. The impacts of consumption and waste disposal become regional issues that cannot be ignored or externalized to other parts of the planet, and this creates a strong incentive to protect the land and the resources on which communities depend. Thus, people live "in place" rather than all over the world, reducing or keeping low their overall Ecological Footprint.

In low-income countries in particular, self-reliance is a very attractive development path, because it is a way to ensure that a small economy does not become hopelessly entangled in the global one, for all the reasons explored in this thesis. To be most effective, self-reliance in those countries should be thought of specifically in terms of self-sufficiency, i.e. total independence, in three key areas: food, water and energy. Although this might not always be possible, trying to ensure an adequate and secure domestic supply in these categories can improve substantially the vast majority of the people's quality of life, without having to resort to widespread industrialization, and wait for trickle down benefits, and hope that the benefits will be distributed evenly rather than go to the already wealthy.
7.1.1 Food

Ensuring food security is of primary importance, because food is the source of life, and “a community’s complete dependency on outsiders for its mere survival weakens it” (Daly and Cobb 1994: 268). Although the reality is that too many countries and regions depend on external sources for food, making it a top priority for governments to ensure that their people can feed themselves could end most world hunger. Today, virtually all countries have the ability to feed themselves, if only they reclaimed their land that is currently devoted to exports (Daly and Cobb 1994: 279). One of the fundamental policy goals of a nation, then, should be to make sure that it is self-sufficient in food production. A number of steps can be taken to move in this direction. Firstly, society’s attitude towards farming has to change. To many, working the land is considered backward and demeaning, especially in comparison with the high-tech or other “urban” jobs that are available. We must not forget, however, that we depend on agriculture for our very survival. Therefore, it is essential that governments help farmers whenever required to avoid the collapse of farming areas. Secondly, agriculturally productive lands around communities need to be set aside permanently for growing subsistence crops, irrespective of the market value of certain cash crops, or the pressures to “develop” it for commercial or residential purposes. Thirdly, the price of many input factors, such as chemical fertilizers and oil, should be taxed in order to reduce pollution, both to place human labor at a comparative advantage over mechanized labor, and to encourage sustainable and ecologically responsible agriculture.

7.1.2 Water

Proper water management is also a fundamental component of self-reliance. Fresh water represents only a fraction of the Earth’s overall water supply, and for this reason it is particularly sought after; it supports six billion humans, as well as a vast number of other
species and ecosystems. The biggest share of water use worldwide is devoted to agriculture, which represents 69 per cent of total usage, and can reach up to 90 per cent in arid regions with hot climates. Industry appropriates 23 per cent of fresh water, and domestic use adds up to 8 per cent (World Resource Institute 1993). The impact of water varies in low-income countries depending on their geographical conditions. Some countries or regions suffer from too much water, such as southern India and the west coast of Sumatra, where abundant rainfall erodes fertile soil, affecting agricultural production. As well, the available fresh water, although present in large quantities, may be unsuitable for drinking. Other countries, mainly in the Middle East and sub-Saharan Africa, have very little access to fresh water, and depend mostly, if not entirely, on deep, non-renewable water tables for their supply. Equally, many countries are critically dependent on shared waterways, raising the need for transboundary management. These are concerns which need to be addressed in order to formulate the appropriate policy response in an effort to maximize self-sufficiency in water.

Fresh water becomes increasingly scarce as the population grows and as living standards rise. Rising water scarcity has many impacts, and tends to hit the poorest strata of society the hardest. One negative impact is on agriculture. When water costs more because it is increasingly difficult to obtain, then crops not only become more expensive, but farmers may be forced out of business, affecting a region’s ability to be self-sufficient in food. Therefore, ensuring equitable access to, and the sustainable use of, water must be a central policy goal when planning for self-reliance. For its use to be sustainable, water has to be exploited in a way that respects the hydrological cycle, that is, be extracted at a rate which is equal to or less than that at which it is replenished. Maximizing the efficient use of fresh water can be achieved in large part through demand management. For example, fresh water can be metered and priced under an exponential pricing policy so that, while all families are
assured to have virtually free access to some minimum amount, those consumers who desire more water have to pay accordingly. As well, waste water can be treated and used for irrigation purposes, thus freeing up some precious fresh water for domestic consumption.

7.1.3 Energy

Energy is the third critical sector in which self-sufficiency should be sought in low-income countries. Today, the world's industrial societies are characterized by high energy throughput, and this energy comes mainly from centralized sources, such as oil from the Persian Gulf and electricity from nuclear power plants. Although low-income countries are trying to emulate the Western model of development, their use of energy still remains substantially below that of their high-income counterparts. One of the underlying objectives of self-reliance is to decentralize fuel supplies, and adopt local, renewable sources instead. In this respect, those societies that have not yet industrialized, or rendered their economy entirely dependent on fossil fuels or nuclear energy, have a tremendous opportunity to develop decentralized, ecologically sound forms of energy right from the start. This will mean organizing an economy mainly around solar, wind, geothermal and hydro power. Solar energy is a particularly attractive alternative to fossil fuels in low-income countries, as most are blessed with abundant sunshine. Photovoltaic cells, which harness the sun's energy, are simple to use and require very little maintenance. Similarly, solar ovens are also an alternative technology that eliminate the need to cut precious wood for cooking during daytime in hot and dry places. Offshore windmills, as already issued by the Dutch and the Danes, and tide mills, are other options. It is, of course, in the interest of all countries to become self-sufficient in energy, but the transition will be admittedly more difficult for those ones that have already invested a lot of money in infrastructure, particularly the rich countries that depend heavily on energy imports.
Self-sufficiency in energy is best promoted through the reduction of demand, either via an improvement in efficiency, or a switch to a lifestyle less dependent on energy, rather than through an increase in supply. Effective city design can contribute significantly in curbing energy consumption. Higher densities, for example, reduce the need for cars, as people live closer to work and to shopping areas. Alternative housing arrangements that are highly energy efficient need to be included in city plans, such as cooperative or multifamily housing, whereby appliances, tools and even vehicles can be shared (Saunders 1997: 113). Environmentally-benign or less damaging forms of transportation need to be encouraged, such as walking, cycling and using public transit, rather than relying on the private car. With densely-built urban areas, food will not have to be transported long distances, as produce will come from regional or local family farms, or even community-garden plots within the city. Of course, the industries that currently require a lot of energy will have to reduce their consumption, and can do so partly by shifting from mechanized to human labor, which would have the positive side effect of increasing employment in the community. The overall scale of industries will also have to be reduced, in line with the smaller scale imposed by self-reliance. This will ensure that production is integrated with the local availability of energy. In the end, not only will such schemes reduce energy intensity, but they will also make cities more livable.

7.2 Self-reliance in India: Gandhi's Swadeshi

Perhaps one of the most illustrious attempts at breaking the bonds of dependence and trying to adopt self-reliance as a way of life comes from India during the first half of the twentieth century. The great spiritual leader, Mahatma Gandhi, known mostly for his fight against British colonialism, was very much aware of the dire consequences a globalized
economy brings about, especially the ensuing high rates of consumption, which led him to beg the question: “How many planets will a country like India require if it took Britain half the resources of the planet to achieve its prosperity?” (as quoted by Bartelmus 1994: 88). He fought hard to maintain India’s distinct culture and vitality by denouncing, for example, the centralized and mechanized modes of production of the British, which were unjust and exploitative, particularly those associated with industrialization.

Industrialization raises productivity, but the inevitable result is the division of labor during the manufacturing process, rendering work mechanical and dull. Workers are reduced to repeating the same task over and over, and such a degree of specialization dehumanizes them. As well, industrialization destroys the strong bonds that exist between the inhabitants within communities, forcing them away from the land and into cities: “Instead of dignified human beings and members of a self-respecting village community, people become cogs in the machine, standing at the conveyor belt, living in shanty towns, and depending on the mercy of the bosses” (Kumar 1996: 420). In Gandhi’s view, mass production, driven by the cult of the individual, typifies greed and the desire for personal and corporate profit. This mode of production can only bring strife; in time, as the industrialists seek greater returns through higher productivity, human labor is replaced by faster and more efficient machines, resulting in ever-increasing rates of unemployment, and uneven wealth distribution. For these very reasons, Gandhi foresaw limits to economic growth.

Gandhi also expressed philosophical limits to growth. Because it is generally assumed that happiness is directly proportional to the material goods one has, a growing economy that enables consumerism is considered beneficial to society, and indeed, Western culture is founded on this paradigm. Mass consumption, however, fuels individualism, and material values only bring an illusion of happiness, thus making it futile to look for inner fulfillment
and meet non-material needs through consumerism. Although he acknowledged that reaching some sort of material comfort level is desirable, Gandhi warned of material excesses, which inevitably lead to decadence. He explained that “a certain degree of physical comfort is necessary but above a certain level it becomes a hindrance instead of a help; therefore the ideal of creating an unlimited number of wants and satisfying them, seems to be a delusion and a trap” (as quoted from Kumar 1996: 421).

Historically, the people of India have had a strong tradition of living close to the land, of cultivating their own food, and of depending on local resources for their needs, but this way of life was disappearing as a result of the British influence. The British imported manufactured goods that destroyed locally-based economies; the local textile artisans, for example, could no longer compete against the machines that mass-produced inexpensive cloth in Great Britain. The loss of employment in villages precipitated the inhabitants to leave their land and search for work in the factories, thus becoming dependent on an income for their livelihood and being vulnerable to the forces of the market. To counter the growing trend of economic globalization and consumerism, Gandhi focused on India’s village communities: “The true India is to be found not in its few cities but in its seven hundred thousand villages. If the villages perish, India will perish too” (as quoted by Kumar 1996: 418). As an answer to Western influence, Gandhi, through his principle of “swadeshi”, or local self-sufficiency, strived to restore the health of communities by giving them maximum economic and political power. He envisioned a free India as “a confederation of self-governing, self-reliant, self-employed people living in village communities, deriving their right livelihood from the products of their homesteads” (Kumar 1996: 419). According to the principles of swadeshi, communities would be self-reliant to the utmost degree, indeed as they had been in the past before colonialism.
Strengthening the village’s economic base was an important first step in ensuring that it could satisfy most of its needs. Products manufactured locally were to be used by the community. Trade, restricted to a minimum, would enable villages to exchange goods and services that were not otherwise available. The underlying goal of swadeshi was to eliminate dependence on external sources for food and other goods, as well as enable a local decision-making process. Through self-reliance, a community is less vulnerable to volatile market forces, and at the same time, a “locally based economy enhances community spirit, community relationships, and community well-being” (Kumar 1996: 420). While globalization pushes people to fight each other and strive for materialistic success, swadeshi leads to mutual aid and co-operation between the members of the community, and instills a sense of belonging.

Gandhi was assassinated six months after India’s independence in 1947, and with him disappeared the swadeshi principle. India’s new ruler, Nehru, dismissed swadeshi, as he “found Gandhian thinking too idealistic, too philosophical, too slow, and too spiritual” (Kumar 1996: 423). Surrounded by Western-trained bureaucrats, Nehru took the opposite path, the path of industrialization and of large development projects, so thus continued the country’s economic colonialization and dependence on the global economy. Despite India’s move away from local self-reliance, the world can still learn a great deal from Gandhi’s insightful philosophies. For the sake of the environment and our own well-being, we must become aware of the costs of consumerism, which include excessive individualism and the disintegration of community life. We need to promote sufficiency in consumption and conciliate individual wants with community needs by fostering self-reliance.
7.3 Two Policy Tools Towards Self-Reliance

One of the biggest challenges facing humanity at present is trying to move towards sustainability. This is no easy task, because any effort must have the support of the affected people, who are naturally weary of change (Wackernagel and Rees 1995: 134). Fears can be abated, however, if it can be shown that there is more to gain than to lose by changing behavior today, rather than waiting for a possible catastrophe. An iterative, transparent and participatory decision-making process is key in getting public support for plans and policies. People must not only become aware of problems affecting them and others, but must also become part of the solution: “Indeed, perhaps the most critical social condition for sustainability is a shared commitment to community cohesion (both global and local), and a sense of collective responsibility for the future” (Wackernagel and Rees 1995: 137).

Although implementing a “paradigm shift” may appear to be a daunting task, certain policy tools can go a long way in helping to foster a secure and fulfilling life within the ecological means of the ecosphere. In terms of ecological and socioeconomic sustainability, self-reliance is a desirable objective, but how does society move in that direction? This thesis looks at two policy tools in particular, ecological tax reform and the closing of the “ecological loop”, which together constitute an important first step in reducing Ecological Footprints, and create the necessary environment to encourage appropriate development.

7.3.1 Ecological Tax Reform

Ecological tax reform is not just another “green”, or environmental tax. Generally speaking, taxes that have an environmental label attached to them are supposed to help pay for the costs of pollution and ecological damage. Unfortunately, these taxes create problems. Firstly, they tend to have a negative effect on the economy by adding an extra burden on
taxpayers. Secondly, although such taxes are supposed to have a positive effect on the environment, the government is predisposed to putting the funds raised by environmental taxes into "general revenue", thus using them for purposes not related to the environment. Thirdly, a general tax shared by everyone does not entice polluters to change their behavior. In fact, such a tax may even have the reverse effect if people feel that they now have a right to pollute since they have already paid the tax. A better concept that addresses these issues is the "user and polluter pays" principle, whereby a special charge is levied on certain types of resources and pollution. In this case, the specific aim of the tax has three goals: to raise money for the clean up costs, to create a financial incentive to change behavior that has a detrimental impact on the environment, and to reduce consumption of some specific resources. By themselves, though, such taxes still have their shortcomings, for they ignore the resulting social impacts that result from a sudden jump in the cost of resources or of the disposal of pollution. In particular, entire sectors of certain industries might be critically curtailed, which could, in turn, cause the loss of jobs, create inflation and foster social unrest.

In light of this, ecological tax reform addresses the shortcomings of conventional environmental taxes. The purpose of ecological tax reform is to conserve resources and energy, as well as reduce pollution, while keeping social considerations in mind. Through the use of economic incentives, ecological tax reform has a directional effect, reorienting the economy away from its dependence on non-renewable resources, and decreasing the pressures on the environment, by internalizing some of the costs that have so far been left out of the price mechanism. When the price of goods and services are raised to reflect their true costs to society, industries and individuals have an incentive to minimize their material and energy throughput. To make its implementation as politically acceptable as possible, one of the selling points of ecological tax reform is that it is revenue neutral, which means that the
overall fiscal burden of firms or individuals does not increase, and may even decrease (von Weizsäcker and Jesinghaus 1992: 18). Essentially, it is a tax redistribution, whereby pollution and waste are taxed, but where corporate, value-added and income taxes are reduced by an equivalent amount, making the ones who change their behavior “better off” than before. It is, then, in everyone’s economic interest to reduce consumption and energy use as much as possible. For instance, the person who continues to drive to work after the ecological tax reform is implemented would not see much of a change in total spending at the end of the month, because even though the price of fuel would be greater, his or her income tax would drop by an equivalent amount. Should this driver switch to public transport, however, his or her savings will be considerable in comparison to what they would have been if ecological tax reform had not been introduced.

One of the positive side effects of ecological tax reform is that it may increase the demand for labor. Although at first glance it might be expected that a firm whose energy prices go up would have to lay off people in order to remain competitive and keep its profit margin, lower labor costs offer an appealing substitute to machinery which either pollutes or consumes excessive resources, and “it should gradually become more profitable to ‘lay off’ kilowatt hours and barrels of oil’ than to lay off people (von Weizsäcker 1994: 134). As well, because ecological tax reform means higher prices on both energy and materials, it spurs efficiency in resource use, and encourages repair, reuse and recycling, “all of which are less material intensive and more labor intensive than replacement manufacturing” (Rees 1995: 354). Politicians would do well to consider, promote and implement such a constructive proposition as ecological tax reform.

An important aspect of implementing an ecological tax reform is to take a gradualist approach. The first step should be to cut the state subsidies that exist on energy, resources,
private transport, waste disposal, agriculture and forestry, before higher prices are imposed on them (Carley and Spapens 1998: 180; von Weizsäcker and Jesinghaus 1992: 22). Currently, energy and ecologically important resources such as water, petroleum and coal, are subsidized in practically every country of the world (von Weizsäcker and Jesinghaus 1992: 21). Cars, too, are both directly and indirectly subsidized, up to $2,500 per year per vehicle (Rees 1995: 356). These subsidies allow the manufacturers and producers to lower their prices, which in turn contributes to overuse, which may result in an increase in pollution, or in the consumption of the related resources. If the government policy is to conserve natural resources and minimize the ecological damage of certain types of industries, it is essential to eliminate the subsidies given to firms that have a detrimental impact on the environment.

The second step is to introduce the ecological tax reform progressively, giving ample time for industry and individuals to adapt to the new conditions. In *Earth Politics*, von Weizsäcker proposes a 5 per cent increase on the real price of input factors such as fuel, for example, over a period of some 20 to 40 years (134). At this rate, the price will double in fourteen years and, because the increase is predictable over the long term, firms and the general public can make the necessary adjustments, such as adopting new technologies and making appropriate lifestyle changes. Von Weizsäcker (1994) explains what could happen if there is a gradual increase in the price of gasoline over a number of years:

> After 40 years hardly a gallon of mineral fuel could be sold, but it can be expected that overall mobility has not suffered due to the gradual introduction of highly fuel efficient solar and hydrogen vehicles and new technologies combining individual and collective transport. (136)

Even though ecological tax reform is an attractive solution, naturally it raises some fears. One concern is that, as ecological tax reform attains its objective, the tax yield might diminish over time; as industry steers away from petroleum fuels, for instance, the tax
revenue is likely to decrease. Admittedly, this could happen, but the whole point of ecological tax reform is to reduce the costs to society of environmental damage. Once this is achieved, the government will see a significant reduction in the costs of repairing the environment, as well as in health expenses, so it will not need to raise the same amount of funds as before but, if need be, the state can add new environmental taxes to increase its revenue. We must keep in mind that, unlike fossil fuels, the consumption of many taxable factors, such as water, resources and energy, will not tend to zero; some minimum amount of consumption will always remain, thus ensuring revenue for the government into the future.

Another concern is that some segments of the population will feel the impact of new taxes relatively harder than others. Because there is a strong social dimension to ecological tax reform, its implementation must be just. Hardships endured, particularly by lower-income households, should be compensated through measures, such as “negative income taxes”. However, the higher costs to the poor of the newly taxed resources and energy could very well be offset by the proportionately higher benefits that a healthier environment brings about. More importantly, the poor will enjoy a reduction in income taxes, and benefit from an increase in the number of jobs. Undeniably, some industries will be hard hit, and will not be able to continue functioning in their present form. These include oil companies, mining companies, metal smelting plants, and the many other firms that consume tremendous amounts of material and energy. Thus, provisions should be made to help transform these sectors of the economy, such as retraining the personnel who will have to look for different types of work.

Ecological tax reform can play a very important role in fostering self-reliance. It has been stated that free trade, as it is practiced today, hides many of the true environmental and social costs that have to be borne by society. If we start to include some of these costs in the
price of goods and services, liberalized trade will no longer be such an attractive proposition. The steady increase in fossil fuel price will progressively make it relatively cheaper to manufacture items and grow food locally than to import everything from abroad. The price of food may rise, “but if that food is produced near at hand and sold through local farmers markets, the many savings involved may counterbalance that added cost” (Daly and Cobb 1994: 279). Of course, an increase in resource and energy prices may have tremendous repercussions, particularly on low-income countries or regions that depend heavily on raw material imports or exports. Ultimately, ecological tax reform will work best if it were harmonized in both low- and high-income countries, “but if the assumption is correct that ecological tax reform produces macro-economic benefits rather than losses, the need for harmonization is much less than with costly pollution control measures” (von Weizsäcker 1994: 134). But what happens in low-income countries when ecological tax reform is implemented, firstly in rich countries only, and secondly in both rich and poor countries?

- If taxes in rich countries are raised on raw materials, particularly fuel, then overall demand for imports will decrease, and prices on the world market will also fall. This reduction in price will benefit the poor countries that continue to depend on imports, although these countries should probably consider becoming more self-reliant. They may increase their consumption slightly, thus improving their quality of life, while not impacting the environment significantly because of modest usage. Of course, those low-income countries that are net exporters of raw materials, particularly to the high-income countries, will see a significant drop in their revenues. By definition, however, countries that depend on exports do not have a sustainable economy, and a reduction in exports will encourage them to move towards a more self-reliant and ecologically sustainable economic system.
• If taxes are raised in both high- and low-income countries, the tax would act in a similar fashion as import duties in countries that depend on imports, making goods and energy that come from abroad more expensive, thus reducing the overall demand. Unlike import duties, however, the purpose is not to improve balance of payments vis-à-vis other countries, but to reduce the consumption of whatever causes ecological degradation. Most damage is caused by the burning of fossil fuels, and this is clearly evident in many cities such as Mumbai, Mexico City and Cairo. Because the majority of all low-income countries are net importers of petroleum (von Weizsäcker 1994: 74), higher energy prices would not only have a positive impact on the environment, for instance by substantially reducing car use, but it will also improve equity: excessive consumption by the rich will be curtailed, and the poor will benefit from an increase in jobs, as well as a possible redistribution of tax revenues to cushion their losses. Resistance, though, can be expected from the wealthy and the elites, who stand the greatest chance to lose from ecological tax reform, which would increase their cost of living and force them to change lifestyles. They will need to be convinced that, like education, ecological tax reform is a long-term investment: the short-term pains will be offset by the medium- and long-term ecological and social benefits (von Weizsäcker and Jesinghaus 1992: 78). As for the low-income countries that depend on exports, ecological tax reform will reduce the domestic and foreign demand for its products in the face of higher prices, and this will conserve resources for the future generations. In this particular case, the need for international agreements becomes evident, where poor countries that depend almost entirely on resource exports to the rich, can be compensated for their economic losses.
In conclusion, ecological tax reform is a good, albeit partial, solution to mitigate our unsustainable behavior. It rewards long-term investment in technologies that are resource efficient, as well as rewards those who change their behavior in favor of a more sustainable lifestyle. Ultimately, ecological tax reform works to reduce, and possibly even reverse, the trend towards economic globalization and free trade by encouraging countries and regions to become increasingly self-reliant. This will be of particular benefit to developing countries, because they are the most at risk when sudden major price increases occur, as was the case during the 1974 and 1979 oil crises. Ecological tax reform is more than a theoretical concept: not long ago, Sweden put a tax on sulphur dioxide emissions, which has reduced the sulphur content of fuels in that country by 40 per cent in just two years (Carley and Spapens 1998: 182). Other European countries have also implemented some form of ecological tax reform, including Germany, Denmark and Britain. The European Community is looking into putting in effect a carbon and energy tax to both reduce greenhouse gas emissions and to improve energy efficiency, where 50 per cent of the tax would vary according to different carbon contents per unit of energy (von Weizsäcker 1994: 132). It must be clear, though, that ecological tax reform is not a paradigm shift, but is simply a mechanism that attempts to change peoples’ consumption patterns through economic incentives. It works within the framework of a liberal market economy, in which people respond practically solely to prices, thus there is no fundamental moral or ethical decision being made by the “consumer” to avoid emitting pollution, or consuming an excessive amount of resources and energy.

7.3.2 Closing the “Ecological Loop”

Closing the so-called “ecological loop” is also a partial solution that would help minimize unecological consumption and waste production. All physical and chemical processes in the world are subject to the second law of thermodynamics, which states that
"every energy or material transformation produces an increase in net entropy—a permanent degradation of available energy and the dissipation of matter (resource depletion and pollution)” (Rees 1995: 348). Humans in particular, regardless of the economic system in which they function, draw upon natural resources, transform these resources through various processes, and release in the environment waste material, including heat (see Figure 7.1). Although the ecosphere is able to absorb and recycle a certain amount of waste matter, technological advances, which brought about industrialization, have enabled humans to accelerate economic activity to a level beyond that which can be supported by the ecosystems in the long term. In other words, the human economy’s aggregate consumption of resources and production of waste is unsustainable in its present form. Although technology may help to decouple material and energy throughput somewhat from economic activity, the gradual increase in technological sophistication tends to worsen the human “load” on the ecosphere, such as in agriculture, forestry and mining (Wackernagel and Rees 1995: 127). Whereas “non-industrial societies have little choice but to live in harmony with the land” (Pearson 1995: 71), industrialized ones are often destructive, a situation that is clearly visible, for example, in their fishing or deforestation practices, as well as in their overproduction of carbon dioxide and other pollutants.

A population that is trying to achieve self-reliance at the community or regional scale faces certain constraints. Firstly, it must consume scarce local resources and energy at sustainable rates, which means that the resources must be used efficiently to maximize their utility. Secondly, it must also dispose of its waste in a way which is not detrimental to the people and the other species who depend on the surrounding ecosystems. A society can do this by closing the “ecological loop”, or respecting ecocycles, which can be loosely defined as using the output of one natural process as the input for another. Ecosystems have evolved
over millions of years to function in this manner and, for that reason, they are regenerative, self-regulating and sustainable (Pearson 1995: 72), with solar energy as the only continuous external input to maintain the process.

The so-called “modern” societies have all but broken down ecocycles in the name of “progress”. A good illustration is the production of wheat. It is grown for food and, while growing, it absorbs nutrients and minerals from the soil. Humans consume the food to absorb energy, then generate waste, which is extremely rich in nutrients. The waste is discarded out into water bodies, and the nutrients become dissolved and virtually irrecoverable. In the meantime the fields, having been “mined” of their minerals, need to be replenished. Petrochemical fertilizers are thus added to the soil to grow the next crop, and so the cycle continues. Clearly, this is unsustainable behavior, and in this instance, closing the ecological loop would mean recovering these nutrients, and using them as one of the inputs for the next crop. This is a simple and logical step that would have an enormous positive impact on ecosystems, and would not only help societies break their bonds of dependence on nonrenewable chemical inputs, but also reduce substantially the amount of unnecessary resources and energy currently used to grow food.

Closing the ecological loop can be carried out at any scale. At the local scale, it can begin through proper architectural design, for example. Admittedly, people and buildings “are part of the ecosystem and have a rightful place there, but within limits. Today, these limits have long been exceeded in the developed world—well beyond those of sustainability” (Pearson 1995: 73). Because of their nature, modern buildings have a tendency to act as parasites on the environment. Instead of being adapted to local conditions—dry, tropical, cold, sunny, windy, etc.—they are often built out of context, and depend heavily on foreign construction materials and energy supplies, which results in larger Ecological Footprints than
if ecocycles had been respected. The need to design ecological buildings, then, becomes an imperative, in the high-income countries where resources are being appropriated unnecessarily, but particularly in low-income countries where people do not have the luxury to waste resources in the first place.

Houses and other inhabitable structures should become self-sufficient, delinked from the urban infrastructure as much as possible in order to localize consumption and minimize waste production; they should harness the natural elements such as sunshine and rain, rather than try to overcome them. The loop can thus be closed when imported inputs are eliminated, and when most household waste can be recycled. The intense energy consumption used to disinfect water in a centralized location, for instance, is largely unnecessary. Currently in high-income countries, water that has been treated for drinking is piped into houses and used for all purposes, such as showering, doing laundry, washing dishes, watering the garden or washing the car. These activities, however, do not require such exceptionally high water quality, and filtered rain water collected from the roof would be perfectly suitable for such tasks. Along similar lines, the resulting waste water need not be discarded; it can be filtered naturally, by sedimentation, sand filtration and oxygenation among aquatic plants, and then be used to water crops near the building. The aquatic plants can themselves be harvested, to be used as an organic fertilizer for growing other plants or food; thus, the house becomes part of a larger permaculture\textsuperscript{10} system. Additionally, building orientation can minimize, if not eliminate, the need for imported energy to heat and cool the inside. In the appropriate regions, deciduous trees can provide shade on a building in the summer, while allowing sunlight in the winter once the leaves have fallen. As well, solar panels or wind turbines can

\textsuperscript{10} Permaculture is the recreation of agriculturally productive ecosystems, whether at the household or the bioregional scale. It involves, for example, growing food within and around cities.
provide the electricity needed to power small appliances and lights. These are but a few
alternatives in the face of a vast array of possibilities that can be incorporated into building
designs to minimize ecological impacts.

Interestingly, “indigenous” habitations are often the best adapted to a particular set of
local climatic conditions. They are naturally “ecological” for their use of local materials, and
their relative self-sufficiency. Yet, in the eyes of the increasingly urbanized and globalized
populations, these constructions appear to be primitive and “unsophisticated”. Residents
favor instead the more “international” style of architecture, symbolic of progress, wealth and
development. In Southern India, for example, houses used to be built from local palm tree
materials, where walls were made of mud or woven from palm leaves, and the roof was
thatched. The use of light, organic building materials facilitated the flow of air, making these
dwellings naturally cool and well ventilated, of significant importance in a region that is so
hot and humid. At the same time, the roof was resilient enough to keep out the water during
the rainy seasons. Unfortunately, the old ways have been set aside for more modern
construction methods and, today, the houses are virtually all made of concrete, making them
resource- and energy-intensive. Not only do these houses cost substantially more to build, but
the hot and stuffy rooms require air conditioning for cooling, and fans for constant air
circulation. Indigenous architecture has vital ecological lessons to teach us, such as how to
design for a particular climate, and how to use local resources effectively. The key here,
however, is not to glorify or idolize the past and try to return to it, but rather to learn from it
by drawing out important ideas which can then be combined with today’s technological
innovations, striking a balance between traditional savoir faire and modern design.

The examples given above showed how households can contribute to closing the
ecological loop, but the concept can be extended to include all levels of human activity. Recycling manufactured goods and their constituent parts is an important step in closing the ecological loop at the societal scale. Already in low-income countries, the people who have poor material standards of living have little choice but to recycle everything; in Tanzania, sandals are created out of worn out truck tires and, in Mali, toys are made of old tin cans. Although these people recycle out of necessity, their good example should be followed, and the concept of recycling whatever we no longer need should be followed at all levels. Even in high-income countries, people recycle when forced to; this was clearly evident during the Second World War after production dropped substantially, when the populace had to make due on whatever it could find. Civilians became very clever at repairing machines, rebuilding engines and recycling parts for other uses. Unfortunately, the natural tendency is for individuals to become complacent about reusing and recycling, as soon as their material standards allow them to do so. Recycling, therefore, needs to be encouraged through education, regulations and economic incentives, such as ecological tax reform.

In conclusion, closing the ecological loop is another of many important steps in the right direction towards promoting self-reliant communities and regions. Being self-reliant means that access to materials and energy will be inevitably more limited than in a situation of interdependency. In this light, every effort must be made to bring consumption to sustainable levels by increasing efficiency of material and energy use, which can be achieved partly through recycling. As in the case of ecological tax reform, price is an important factor in changing behavior. Currently, it is also often “rational” to throw away goods and buy new ones, rather than repair them, because the price of labor far exceeds the costs of new materials, just as the costs of disposing waste are currently being subsidized by society and nature. Clearly, these are not acceptable models for low-income countries to emulate. If
people do not adopt more sustainable lifestyles out of their own free will, then raising prices to reflect the true costs of consumption and waste disposal will be necessary to curb environmentally-taxing behavior.

7.4 Kerala: An Example of Sustainable Development in Southern India

The purpose of this section is twofold. Firstly, it aims to show how the state of Kerala, in southern India, challenges the current growth-based economic paradigm by demonstrating that it is possible to enjoy a long, healthy and fulfilling life without having to wait for a high \textit{per capita} income, and without having to consume vast amounts of energy and resources (Parayil 1996). Secondly, it attempts to demonstrate that, in the face of an uncertain economic future due to forces acting from both within and outside the State, Kerala could benefit from formulating a development framework that is based around self-reliance, mostly in food production, but in energy and clean drinking water as well.

7.4.1 Features of the "Kerala Model" of Development

Kerala has been attracting worldwide attention over the last thirty years for its unique social achievements. What is known as the "Kerala model" of development, whose basic characteristic is the apparent paradox of high social development in the face of economic stagnation and a weak industrial sector, has been much studied. This southern Indian state of 29 million people (1991 census) has a population slightly greater than that of Canada, concentrated in an area roughly the size of Vancouver Island, making it one of the most densely populated regions in the world at 749 persons per sq km (Parayil 1996: 942). Despite its exceptionally high population density, Kerala stands out not only from other regions of India, but also from other low-income nations around the world, because of its overall high quality of life. Indeed, Kerala’s accomplishments are remarkable by any account. Although
its *per capita* GDP is a mere US $300, compared to the United States’ *per capita* GDP of US $29,000 (Carley and Spapens 1998: 140), Kerala can boast of being the most literate state in India, of having a sex ratio that is favorable to women (a situation that is uncommon in other low-income regions where women tend to die earlier), of achieving low birth and infant mortality rates, and of enjoying a high life expectancy\(^\text{11}\). These impressive indicators are much more characteristic of high-income countries, yet Kerala, as a result of particular circumstances and events, has been able to attain similar standards than those attained by Europe and North America, with a fraction of the income.

The Kerala model is particularly interesting with respect to the concept of sustainability, for the State has been able to make great strides in the social sector without having to resort to widespread environmental destruction and industrialism. Because of its successful development thus far, Kerala demonstrates that it is possible for a nation or state to achieve a high quality of life, as expressed through various social indicators, without the high material and energy throughput typical of high-income countries, or “sustained” economic growth. For this reason, some scholars hail Kerala as an exceptional and rare example of a society that practices sustainable development (Parayil 1996: 941).

7.4.2 Understanding the Model

The success of Kerala comes largely from the fact that the State, ever since its inception in 1956, has decided to emphasize social development over industrial development, and thus spent its scarce resources directly on social issues, without waiting for the eventual and supposed benefits of growth and trickle down. To fund education and health care, the State relied on the primary sector of the economy, particularly on the export of cash crops

\(^{11}\) For an in-depth quantitative look at Kerala’s social, economic and ecological sectors, see Appendix A.
such as rubber and coconuts, and this explains partly how Kerala has been able to achieve high social development without having to industrialize. Indeed, if we look through the Clark-Kuznets lens of development theory, we can see that Kerala has been able to move directly from the agricultural phase of development into the service phase, all the while securing a high quality of life for its citizens, a situation that is usually considered unlikely. For this reason, from the perspective of the traditional development model, Kerala is considered a paradox: "The miracle of Kerala model of development is that development has occurred even before growth in productive sectors and domestic incomes" (Surendran 1999: 30). Thus, the State having bypassed almost entirely the environmentally taxing industrial phase, Kerala's ecosystems have remained largely unspoiled.

While Kerala might be labeled "ecologically sustainable" by some Western analysts, it has not become so consciously, however. In fact, "the Kerala model is not a planned one but evolved over the years due to peculiarities of the state" (Parayil 1996: 953; Surendran 1999: 42). Although economic development was not a top priority for Kerala around the time the State was formed (Prakash 1999: 28), it was expected that the agricultural sector would grow over time, increasing government revenues which could then be invested in the social sector. It was thought that social development would eventually trigger economic development\(^\text{12}\), which would, in turn, lead to industrialization and stimulate employment growth, creating the necessary wealth to increase welfare even further. However, it became increasingly clear that neither anticipated outcome was materializing: a high degree of social development had been achieved, but agricultural and industrial growth never picked up as had been originally predicted. The State decided to intervene and, since about the mid-seventies, it has been

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\(^{12}\) The belief that enhancing social welfare triggers economic development has been shown to be false (see George 1997: 193; Drèze and Sen 1999: 6).
quietly shifting its funding away from the social sector in favor of boosting the industrial sector, with the hope of increasing its domestic income (George 1996: 67).

Despite Kerala’s best efforts, industrialization has not grown, for a number of reasons. Firstly, the fact that so many people are educated means that they are aware of their rights, and are not afraid to fight for them. For example, workers ask for wages that reflect their knowledge, and are prepared to strike if their demands are not met. Kerala is famous in India for its very militant trade unions, which on the one hand have secured workers’ rights, but have equally frightened entrepreneurs from investing in this State. Foreign or even national firms establish themselves in other parts of India, where labor is cheaper and less demanding, despite the higher productivity and skill of the Keralite worker over the others. One of the unfortunate consequences is that unemployment in Kerala remains high. Secondly, because the job prospects at home are low, Keralites seek work elsewhere, and many are employed in the Persian Gulf, sending money back home to their families (see Appendix A). Although these foreign remittances are not included in the State income, they are estimated to reach up to 30 per cent of GDP (which, incidentally, may explain in part why the quality of life is so high while the “official” per capita income is so low). The money, however, is not invested in local production or manufacturing. In fact, much of it is spent on such items as houses, food, vehicles and imported luxury goods, or is simply deposited in foreign banks (Prakash 1999: 143). Kerala, therefore, profits little from the foreign income that makes its way into the local economy. Thirdly, the infrastructure provided by the State is inadequate for the needs of industry, especially the firms which are energy intensive. The demand for power, for example, constantly exceeds supply, forcing the Government to impose “load shedding”, or a power outage, on a daily basis to communities across Kerala. No firm, despite the economic
advantages offered by the Government in the form of subsidies and tax breaks, wants to deal with these constraints.

As a result of these three forces (militant trade unions, the lack of investment in industry and insufficient infrastructure) and others, the productive capacity of Kerala increases very little over time, and it becomes apparent that Kerala's near steady-state economy and its inability to industrialize can only be considered a "regrettable situation" from its own point of view, rather than being the planned outcome of a conscious attempt at ecological sustainability.

7.4.3 Kerala Today: What is Happening?

The resilience of the Kerala model is being increasingly questioned in the face of increasing economic woes (George 1993). Indeed, there is a growing concern that the little money that has been available to the Government over the years is dwindling, as demonstrated by the State's growing revenue deficit, both in absolute terms and as a percentage of state GDP (Kurian and Abraham 1999). Therefore, questions are being raised as to whether the Kerala model can continue to function in its present form. The high unemployment rate is raising the demands on the State, while fewer people can contribute to the system from the foregone income taxes (Matthew 1999; Kurian and Abraham 1999). As well, the recent economic liberalization policies of the Central Government in New Delhi are putting tremendous strain on the Kerala economy (Prakash 1999; Ramachandran Nair 1999). Furthermore, the Gulf Boom of the 1970s and 80s that employed so many Keralites is losing its momentum, reducing the cash flow injection that has been enjoyed by Kerala over many years (Prakash 1999). At the same time, the State must face the pressures of an increase in the number of migrants returning from the Gulf. Finally, as a result of a shrinking real income from periodic high inflation rates and a substantial drop in the price of certain cash
crops for exports (due partly to various free trade agreements—see Ramachandran Nair 1999), its most important sector in the economy, the State is in dire need to find a sustainable source of income to support the social sector.

Another negative consequence of Kerala’s shrinking income must be seen in terms of declining food security. This growing problem can be traced to the land reforms instigated by Kerala’s Communist Government in 1969. The reforms have been highly successful, eliminating the exploitation of laborers by a small number of landlords, and giving land to the tiller through tenancy legislation. Since the early 1970s, the land holdings, which used to be quite large, have been divided into small fragments, the majority being under one hectare (100m x 100m) (Surendran 1999: 17). One of the underlying goals of land reform was to ensure that all families could feed themselves by growing their own rice, the main staple of Kerala. Indeed, one of the goals during Kerala’s first few five-year plans was to attain self-reliance in food, which became one of the fundamental aspects of the Kerala model (Prakash 1999: 28). However, when faced with the option of what to grow on their plots, many households prefer, instead, to grow profitable non-food agricultural products for export. Because cultivating rice in Kerala is more costly than in other parts of India, families see it as their comparative advantage to buy rice with the income generated through the sale of cash crops. This state of affairs creates obvious risks. Arguably, households are indeed better off so long as the income generated from exports is equal to, or greater than, the cost of importing rice, and so long as the exporters of rice are willing to sell rice to Kerala. What happens, though, when the tables turn and Kerala cannot afford to buy any rice, or even find a supplier? The cultivation of rice has been steadily decreasing since the 1970s, and between 1972 and 1997, the total area devoted to rice has dropped by more than 50 percent (Surendran 1999: 17). Currently, Kerala’s domestic rice production represents only 20 per cent of the State’s
requirements (Surendran 1999: 43). As has been discussed in a previous section, an important aspect of quality of life is to ensure that basic needs are met, such as having access to sufficient food. If these needs, however, can no longer be met as a result of circumstances that are beyond the control of individuals or the State, then the consequences may prove to be catastrophic, and the situation should be addressed.

The serious and growing fiscal crisis facing Kerala may be undermining its development achievements (see Drèze and Sen 1999; George 1993; Pillai and Shanta 1997; Prakash 1999; Surendran 1999), and is pressuring the State government to resolve the current economic and unemployment situation, perhaps at any cost. Drèze and Sen (1999) emphasize that “the persistence of the crisis is understood as being a threat to the polity and society, and the question has also been raised, by persons in politics, journalists, scholars, and others, whether the development achievements of Kerala’s people can be sustained if the employment and production situations are not transformed” (212). Indeed, many analysts who have studied Kerala share a similar point of view (see Economic Review 1998; Franke and Chasin 1990; George 1993, 1996; Parayil 1996; Pillai and Shanta 1997; Sooryamoorthy 1997; Surendran 1999). Kerala thus finds itself at a critical point in time, and many questions are being raised about the State’s options and future development path. The conundrum, therefore, lies in Kerala determining its best course of action given its present situation, and George (1996) summarizes the problem in the following way: “It appears that the Kerala economy and society have reached a cross-road not knowing whether to continue following its past model or to retrace the steps and follow the conventional paths of development followed elsewhere” (66).
7.4.4 Industrialization for Kerala: the Conventional Development Strategy

Admittedly, development in Kerala has been able to support the social sector despite a lag in the productive sector, making it a unique model for that very reason. However, the unique situation of Kerala in development is sometimes simply dismissed by conventional economists as an “anomaly”. This mode of thinking leads to a general belief that “the disquieting truth is that the miracles have been achieved at the expense of productive sectors” (Surendran 1999: 42), where the situation of high social development without industrialization is simply not possible to maintain in the long term. Unquestionably, the present economic situation needs to be addressed, and it seems that conventional economists almost unanimously agree that Kerala should promote industrialization, which it is hoped will spur economic growth to fund social programs while simultaneously reducing unemployment. Oommen (1993) states, for example, that “building the production base of the economy is the key to the development strategy of the nineties” (211). The Kerala State planners agree with this way of thinking, even though they have not been very successful in the past. In their Economic Review 1998 report, for example, they declare that “accelerated industrial growth is the objective of the State’s economic policy. The State Government has formulated a new industrial policy so as to make the State investment-friendly to ensure 9 percent average annual industrial growth” (Economic Review 1998: 101).

7.4.5 Problems With Industrialization

Unfortunately, with industrialization comes a host of problems and threats, mainly in the form of ecological degradation and pollution that in turn affect society and the economy. George (1993), in his book Limits to Kerala Model of Development, which outlines Kerala’s fiscal crisis and its implications, cautions that
the State may be taking a major risk in changing its expenditure priorities to solve its fiscal crisis—present and future. The State may lose whatever advantage it has already got while the gains on the economic front may be uncertain, given the all-India policy framework in which the State's economy operates. (127)

Indeed, Kerala is faced with a very delicate situation where new economic development policies might do more harm than good by undermining, for example, the environment and the State's social achievements, all the while failing to secure a growing domestic income. Kerala is eager to industrialize, at the proposed rate of 9 per cent per annum, since it is assumed that industrialization will promote economic growth and reduce unemployment, but this strategy raises important questions. Will economic growth be one of the outcomes of industrialization? How will the benefits of growth be distributed? Are there other ways to create employment? Can the state afford to divert funds from the social sector in the hopes of launching a successful wave of industrialization? If economic growth is deemed necessary to improve quality of life, are there other ways of inducing it besides industrialization? How will Kerala's ecology be affected? These are some of the key questions which need to be answered for proper development to occur in Kerala, particularly in the long run.

7.4.6 An Alternative: Fostering Self-Reliance

The development of Kerala has been, for the most part, exemplary. Although it may not be entirely replicable or perfect, the Kerala model offers nevertheless some invaluable insights which can be useful in establishing development policies for other countries and regions, particularly low-income ones. From an ecological point of view, high social welfare despite low industrialization and economic growth is not a paradox. Rather, it is a desirable state of affairs that is fundamental for sustainability. In this light, the State should recognize the domestic "no growth" economic situation as a long-term asset, even though the question of unemployment and budget deficit need to be resolved in the short term. This will require
some form of economic development, preferably with the help of high-income countries in order to minimize the need for industrialization.

A large segment of this thesis has been devoted to show that globally, the world economy has already surpassed the sustainable rate of energy and material throughput. Overall, the world has a tremendous amount of wealth, but it is concentrated in the hands of a few. Ecological Footprint analysis, particularly the concept of the fair Earthshare, would suggest that countries and regions such as Kerala, currently consuming substantially less than their fair share, should have an equitable access to the world’s resources. This implies a lower per capita consumption of material and energy in high-income countries, as well as some form of wealth distribution which will enable Kerala to improve the welfare of its citizens without widespread industrialization, and therefore with minimal detrimental effect to its own ecology or to that of the planet as a whole. However, because it is more realistic to assume that the high-income countries will not restrict their consumption in the near future, and that Kerala will be left on its own to develop its economy, the safest route for the State to follow is probably to refrain from getting too involved with, and dependent on, the global economy, and to keep many of its resources as well as most of its productive capacity to meet its own needs, in the spirit of Gandhi’s swadeshi. Thus, quality of life can be maintained or enhanced, although the per capita GDP may remain very low. Trade can continue to supplement the State’s income, but preferably only once basic necessities, such as food, clean drinking water and energy, can be secured domestically.

Kerala must be lauded for implementing a program of political decentralization, a very important first step in moving towards self-reliance, so that communities across the State can have more control over their own destiny. Despite this effort, Kerala is growing increasingly dependent on both Indian and foreign sources for food and consumer items while, during
thousands of years, it has relied mostly on local resources for its subsistence. As well, community has always been a very important part of daily life in Kerala, but globalization in the form of Western ideals and economic visions of free markets are eroding these values, and the local Kerala economy is being slowly dismantled under the global market forces (see Ramachandran Nair 1999). Policy tools, such as ecological tax reform and closure of the “ecological loop”, can reverse these trends and help Kerala rediscover the benefits of self-reliance. One of the main challenges that Kerala faces, however, should it decide to become more self-reliant, is balancing the needs of its communities on the one hand, with New Delhi’s economic liberalization policies on the other, since Kerala’s economy operates within the macroeconomic framework of the Central Government. The difficulty lies in the fact that fostering self-reliance and community-building is incompatible with the development of the market.

The truly amazing situation with respect to Kerala is that it is already one big step ahead of virtually all other low-income regions of the world on a number of fronts: its demographic and other social achievements are practically at par with those of high-income countries; it has a fairly pristine environment; it is blessed with all the water it could want; its land is very productive; and its citizens are politically active and take great interest in the development of their State. In this light, Kerala, already a model in the realm of social development, has a fabulous opportunity to plan for an ecologically sensitive development path, and become a model for the world in sustainable development and regional self-reliance.

7.4.7 A Final Note

We live in a time where the destructive market, free enterprise ideology is becoming the only ideology. As a consequence, we desperately need to find alternative societal arrangements that restore the social and ecological branches of development that have been
left out by the capitalist system. This is why the world needs to embrace the Kerala model: it illustrates perfectly that there are other, successful, ways of organizing a society. From my own experience, Keralites seem genuinely happy and fulfilled in every respect, despite their relatively simple lifestyle. They have enough to eat, and the state provides health care and education. Keralites enjoy life to the fullest, spending time with family and friends, and taking the time to talk to neighbors, rather than sitting hours alone at home in front of the television set or going shopping as a way to give meaning to their existence. Most are not (yet) caught up in the vortex of consumerism and material values, and do not feel inadequate or ashamed vis-à-vis the West, its values and its extravagant lifestyle. The people of Kerala are very proud of, and celebrate, their culture, and are extremely tolerant and respectful of others’.

The world needs alternative development paradigms, which explains why Kerala is so important and has to be protected from the negative forces of global integration. The Kerala model, despite its imperfections, is an ideological “lifeboat” which constitutes one of the last bastions of hope for humanity to change its unsustainable course; it is a “gem of wisdom” that needs to be protected at any cost. Currently, Kerala is faced with a growing number of social and economic woes, and if these are left unattended by the world community, the model may disappear if nothing is done to preserve it, to the detriment of all.
Chapter 8
Discussion and Conclusion

The first part of this section discusses the theme of self-reliance in terms of neoclassical economic theory, more specifically in terms of material efficiency and the role of government. The conclusion which follows reviews very briefly some of the main points covered in this thesis, brings to light some of the political fears that stand in the way for low-income countries to adopt self-reliance as a development strategy, and highlights the need for international agreements for self-reliance to be effective.

8.1 Discussion

Perhaps the most common objections by conventional economists against self-reliance relate to efficiency of production, or productivity. In a situation of self-reliance, productivity is not maximized because trade is limited. The purpose of free trade is to raise a country’s productivity above the level it would reach if it manufactured everything domestically. Indeed, as we have seen, the whole premise for free trade is that exchanges between countries, based on relative comparative advantage, enhance prosperity for the trading nations. More efficient production enables countries to reduce costs, and these savings can, in turn, be used to improve welfare. In this respect, self-reliance goes against the fundamental principles of conventional economic theory, which suggests implicitly that quality of life is being forfeited as a result of trade limitations and dependence on regional resources. This raises a number of issues about productivity, free trade, the common good and the role of government, which are discussed below.
8.1.1 Free Trade in a Perfect World

Assuming that labor and capital are immobile, that all costs are included in the price of items, that wages do reflect the productivity of workers, and that trade benefits a whole nation and not just the corporations involved, then the concept of free trade is logical because it increases productivity, one aspect of welfare. Distributive justice and equity would not be a problem. Neither would be exploitation, greed, the over-consumption of resources and environmental degradation, because this "perfect world" would be one that is equally preoccupied with social and ecological issues as it is with economic ones. In such a world, we could depend on others, even for basic necessities, because we would be assured that everyone is concerned about everyone else’s welfare. Thus, becoming self-reliant would be largely unnecessary and, from an economic point of view, inefficient.

We do not live in such a world, however, and therefore we need to question the validity of free trade (but not ipso facto all forms of trade, by any means), and its relevance to today’s reality. Under free trade, the rich nations are able to purchase the resources of other countries without any constraints, and flood them with their own goods and services. We have seen how, in the long run, this leads to the global depletion of some vital resources, and creates irreversible ecological damage. Free trade appears to be economically efficient, but only when some of the costs are externalized. This is why some countries, for example, export bananas, and later have to refertilize their soils at a greater expense, or create shrimp ponds, and then have to overcome the problems of seashore erosion once mangroves have been destroyed (see Appendix A). Even if most costs could be identified and included in the price mechanism, many countries would still find it in their economic interest to import resources, rather than do with what is available domestically, leading to a situation of dependence. We must be clearly aware of the inherent danger of relying increasingly on
imports for basic necessities, however, especially at a time when the global economy is
growing ever more aggressive and undemocratic. Interdependence may work in a "caring and
sharing" environment, but it is a risky situation when countries compete fiercely against each
other for jobs, food and markets. Self-reliance is a way to minimize the risks associated with
economic globalization, and offers a way to live within the means of nature.

8.1.2 The Common Good and the Role of Government

While self-reliance can reduce efficiency in theory, in reality the benefits may
outweigh the costs. Governments and economists should not be interested solely in pure
efficiency; their concern should revolve largely around welfare, a general concept that
encompasses a wide variety of values, of which material efficiency is only a small part. Free
trade, when the conditions are right, improves productivity, but what of all the other values
that are important for proper development, such as safe cities, economic diversity, pride of
place, secure and fulfilling jobs, stable ecosystems, public health, education, local security
and happiness? In most cases, these cannot be delivered by the market alone, whose forces
are concerned neither with the health of ecosystems nor with the fair allocation of resources.
The problem here is one of balancing individual and corporate wants with societal welfare.
Unfortunately, the language of economics is becoming the bottom line of politics, and the
concept of the common good is being abandoned. Economic theories are applied blindly,
with the assumption that minimum government intervention in the market is the most efficient
way of increasing everyone's well-being.

Governments, however, have an important role to play in development, beyond
correcting market failures. The primary goal of governments is to defend the public interest.
They are needed to redistribute the wealth generated by the amoral workings of the market,
and to restrict consumption and waste production to a level that is sustainable. Another role
of government, possibly as important, is to ensure that the long-term needs of the people are met. Yet, politicians tend to please voters in the short term by concentrating their efforts on stimulating the economy, in the hopes of creating jobs and improving the wealth of their constituents. It is less rewarding, and therefore less attractive, for elected officials to consider the public good in the long term, and redirect resources towards education, health and welfare. The classification introduced by Maslow some 50 years ago is still valid. Once people are physically comfortable, they want security for themselves and their family, and stability, for instance in terms of their job and the environment. Their next level of needs, before self-actualization and fulfillment, are psychological or social in nature, and include feelings of belonging to, and acceptance by a group or society, as well as the opportunity to love or be loved. None of these needs are considered by conventional economic theories, and yet they are vital to our ultimate feeling of well-being. Self-reliance may not be the most efficient way to increase the GDP, but it is effective in helping a country meet its noneconomic goals.

8.2 Conclusion

This thesis shows that the status quo in terms of development is neither ecologically possible nor politically acceptable. The world economy cannot continue to grow in an effort to overcome material poverty and ecological degradation. Ecological Footprint analysis demonstrates that we have already surpassed the ecosphere’s carrying capacity by 30 per cent, and that we would require four planet Earth to sustain a world population living at North American lifestyles. The flawed basic assumptions that make up the neoclassical economic theories are to blame for these failures, because the model relies heavily on the assumption that the Earth can support, indefinitely, unlimited growth, and that market forces create the most wealth and well-being when unrestricted by government intervention.
Yet the ecosphere has limits: material and energy throughput is limited by nature’s
capacity to regenerate itself and its ability to absorb waste. Also, government intervention is
essential to ensure that wealth is fairly redistributed, and that the long-term needs of the
population are met up to the ultimate end: fulfillment. The challenge of development today is
to improve quality of life, especially for those who need it most, within the carrying capacity
of the planet. In this light, policies that encourage self-reliance, particularly in terms of self-
sufficiency in food, water and energy for low-income countries, are an effective strategy in
fostering true development. Planning for self-reliance, though, may remain a daunting
proposition until it can be shown that people have more to gain in the longer term than they
might lose in the short term by limiting most economic activity to the regional scale.

Will low-income countries consider self-reliance as a development strategy? When
these countries face the pressures of solving immediate food, shelter, health and education
problems domestically in the face of rising external debts, then they may have reservations
about becoming self-reliant (even though the fact remains that many are not gaining the
desired benefits of export-led development) (UNDP 1999: 2). Instead, they might be tempted
follow the conventional path of development, for better or for worse, especially in the absence
of international agreements that would make self-reliance a more attractive and safe
proposition. Indeed, self-reliance would work best in the face of multilateral agreements
between the high- and low-income countries. These agreements are needed, for example, to
protect some of the vital resources the poor countries have from the risk of depletion by rich
ones. Such agreements are equally vital if the major importing countries decide themselves to
become self-reliant. In this case, the low-income countries would have great difficulties to
find markets for their resources and outputs. The most powerful countries have a moral
obligation to help poorer ones because they are the ones who have “persuaded or forced
[Third World nations] to abandon relative self-sufficiency for the international trade system” (Daly and Cobb 1994: 289).

This last point shows that, for the low-income countries, self-reliance is a double-edged sword. On the one hand, self-reliance will improve their terms of trade with other nations, decrease resource depletion and pollution, enhance national sovereignty and restore human-to-human relationships, which are best fostered at the local scale. On the other hand, it will result in a drop in the foreign income on which many of these countries are dependent for their growth, if the rich countries themselves ever decide to be self-sufficient and reduce their imports. At present, the affluent nations can no longer afford to be solely concerned with their immediate self-interest. The wealthy must become aware of the detrimental ecological, social and economic impacts that their economic behavior, particularly their continued quest for growth, has on low-income countries. Therefore, they should reduce their consumption accordingly, and share their wealth with the rest of the world, so that the regions such as Kerala that will benefit from an expanded economy can do so with minimum disruption to their own ecosystems, and at no greater cost to the planet as a whole.
Figure 6. Yo! Amigo!!

Source: Carley and Spapens 1998
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Appendix A: An Overview of Kerala

The information revealed in this section is mostly quantitative and without context. It is intended to give a basic understanding of Kerala through various facts and figures. The first part provides some general information about the state of Kerala. The second explores Kerala’s successes in the social sector, as demonstrated through four key socio-demographic indicators. The third takes a brief look at the State’s economy. Finally, the fourth section sheds some light on the current state of Kerala’s ecology.

General Information

Kerala, located on the southwestern coast of the Indian subcontinent, has an area of 38,863 sq km. Kerala is bordered by the Arabian Sea to the west and mountains to the east, the Western Ghats, and can generally be divided into three regions: the highland zone, the midland or interior region, and the coastal lowland. Two monsoon seasons—June-July and September-October—bless Kerala with abundant rainfall, which averaged 3120 mm for 1998, and explains the astounding greenness of the land. Its population hovers at just over 29 million (1991 census), of which 14.2 million is male and 14.8 million is female. This makes this region one of the most densely populated in the world (Parayil 1996: 942), at 749 per sq km, much higher than the Indian average of 257 per sq km. It is, in fact, the second most densely populated state of India, the first being West Bengal. In terms of religion, the population is roughly divided into Muslim, Christian and Hindu in the ratio of 20:20:60.

The State of Kerala came into being in 1956, following the unification of three Malayalam-speaking regions: Malabar, Travancore and Madras. The Communist Party has played a leading role from the 1930s to today in Kerala’s development by organizing mass political movements and pressing for social change (Drèze and Sen 1999: 211). The Party,
led by E.M.S. Namboodiripad, won the first elections in 1957 and became the first and only democratically elected Communist government in the world. Although it fluctuated in and out of power over the years, the Party “had a profound influence on social and political life and government policy in Kerala, and on the legislative agenda of the State since its formation” (Drèze and Sen 1999: 211). One of the main projects undertaken by the Communist Party, for example, was land reform in 1969, which transferred the land holdings from a minority of landlords to the cultivators who were being grossly exploited. The Public Distribution System was also a very important project undertaken by the Communists; today, it ensures that everyone has access to food and essential consumer products, such as rice, flour, sugar and cooking oil, at subsidized prices through fair-price shops located throughout Kerala.

Social Sector

Kerala’s biggest success lies in the social sector. Its outstanding achievements in improving people’s quality of life, as confirmed by key socio-demographic indicators, has turned Kerala into a world-renowned case study on successful development. Kerala’s position with respect to its health and education indicators began to improve substantially in the 1980s, surpassing not only India, but also catching up to “developed” countries. Drèze and Sen (1999) use four indicators to highlight the health and demographic changes that have occurred in Kerala society: life expectancy at birth, the infant mortality rate, and the birth and death rate. The following tables illustrate the historical trend of these four indicators.

Table 1 compares life expectancy at birth for males and females in Kerala and in India.
Table 1. Life expectancy at birth (in years)

<table>
<thead>
<tr>
<th>Row no.</th>
<th>Years</th>
<th>Males Kerala</th>
<th>Females Kerala</th>
<th>Males India</th>
<th>Females India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1911-20</td>
<td>25.5</td>
<td>27.4</td>
<td>22.6</td>
<td>23.3</td>
</tr>
<tr>
<td>2.</td>
<td>1921-31</td>
<td>29.5</td>
<td>32.7</td>
<td>26.9</td>
<td>26.6</td>
</tr>
<tr>
<td>3.</td>
<td>1951-61</td>
<td>44.3</td>
<td>57.4</td>
<td>45.3</td>
<td>43.5</td>
</tr>
<tr>
<td>4.</td>
<td>1961-71</td>
<td>54.1</td>
<td>62.6</td>
<td>43.2</td>
<td>49.3</td>
</tr>
<tr>
<td>5.</td>
<td>1971-81</td>
<td>60.6</td>
<td>67.4</td>
<td>49.8</td>
<td>51.8</td>
</tr>
<tr>
<td>6.</td>
<td>1971-75</td>
<td>60.5</td>
<td>63.0</td>
<td>49.7</td>
<td>48.3</td>
</tr>
<tr>
<td>7.</td>
<td>1976-80</td>
<td>63.5</td>
<td>67.4</td>
<td>51.7</td>
<td>54.9</td>
</tr>
<tr>
<td>8.</td>
<td>1981-85</td>
<td>65.2</td>
<td>71.5</td>
<td>54.5</td>
<td>56.5</td>
</tr>
<tr>
<td>9.</td>
<td>1986-90</td>
<td>67.5</td>
<td>73.0</td>
<td>56.0</td>
<td>59.4</td>
</tr>
<tr>
<td>10.</td>
<td>1990-92</td>
<td>68.8</td>
<td>74.4</td>
<td>59.0</td>
<td>59.4</td>
</tr>
</tbody>
</table>

Reproduced from Drèze and Sen 1999.

Table 1 shows that Kerala has systematically fared better than India as a whole in terms of life expectancy, both for men and women, since the turn of the century. Today's life expectancy at birth of a Keralite is about 69 years for a male and 74 for a female, as compared to the Indian average of 59 and 59, respectively. The sharp increase of life expectancy for both men and women during the decade 1961 to 1971 over the previous decade can be partly attributed to the sweeping social reforms which began in earnest during that period of time.

The trend in birth rates for both Kerala and India are highlighted in Table 2.
As Table 2 demonstrates, birth rates in Kerala have been lower than India as early as the 1930s. At present, birth rates in Kerala are down to 17.8 per 1000, while the Indian average remains at 29.5 per 1000. High levels of education, especially for women, the availability of birth control and the higher than average age of marriage of women in Kerala are some factors contributing to the low birth rate there.

The third important socio-demographic indicator is the death rate, represented in the following table.

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**Table 2. Birth Rates in Kerala and India (per 1000)**

<table>
<thead>
<tr>
<th>Years</th>
<th>Kerala</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-40</td>
<td>40.0</td>
<td>45.2</td>
</tr>
<tr>
<td>1941-50</td>
<td>39.8</td>
<td>39.9</td>
</tr>
<tr>
<td>1951-60</td>
<td>38.9</td>
<td>41.7</td>
</tr>
<tr>
<td>1970</td>
<td>31.6</td>
<td>36.8</td>
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<tr>
<td>1974</td>
<td>26.5</td>
<td>34.5</td>
</tr>
<tr>
<td>1977-9</td>
<td>25.7</td>
<td>33.1</td>
</tr>
<tr>
<td>1981-3</td>
<td>25.6</td>
<td>33.8</td>
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<tr>
<td>1983-5</td>
<td>23.7</td>
<td>33.6</td>
</tr>
<tr>
<td>1985-7</td>
<td>21.5</td>
<td>32.2</td>
</tr>
<tr>
<td>1987-9</td>
<td>20.7</td>
<td>31.5</td>
</tr>
<tr>
<td>1989-91</td>
<td>19.4</td>
<td>30.1</td>
</tr>
<tr>
<td>1990-2</td>
<td>18.5</td>
<td>29.5</td>
</tr>
<tr>
<td>1996$^{13}$</td>
<td>17.8</td>
<td>29.5</td>
</tr>
</tbody>
</table>

Reproduced from Drèze and Sen 1999.

$^{13}$ Latest available figures from *Economic Review 1998.*
Table 3. Death Rates in Kerala and India (per 1000)

<table>
<thead>
<tr>
<th>Years</th>
<th>Kerala</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911-20</td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td>1921-30</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>1931-40</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>1941-50</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>1951-60</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>1961-70</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>1971-5</td>
<td>8.6</td>
<td>15.5</td>
</tr>
<tr>
<td>1976-80</td>
<td>7.3</td>
<td>13.9</td>
</tr>
<tr>
<td>1981-3</td>
<td>6.6</td>
<td>12.1</td>
</tr>
<tr>
<td>1983-5</td>
<td>6.5</td>
<td>12.1</td>
</tr>
<tr>
<td>1985-7</td>
<td>6.2</td>
<td>11.2</td>
</tr>
<tr>
<td>1987-9</td>
<td>6.2</td>
<td>10.7</td>
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<tr>
<td>1989-91</td>
<td>6.0</td>
<td>9.9</td>
</tr>
<tr>
<td>1990-2</td>
<td>6.1</td>
<td>9.8</td>
</tr>
<tr>
<td>1996(^{14})</td>
<td>6.2</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Reproduced from Dreze and Sen 1999.  

Kerala has managed to reduce the death rate dramatically since the 1910s and seems to have been stabilizing since the mid-1980s. There is a direct relationship between death rate and longevity, so it is anticipated that death rate will continue to decrease as long as life expectancy keeps on increasing as more people live a longer life.

Finally, Table 4 highlights the dramatic decrease in infant mortality rate in Kerala and India.

\(^{14}\) Latest available figures from Economic Review 1998.
Table 4. Infant Mortality Rates in Kerala and India (per 1000 live births)

<table>
<thead>
<tr>
<th>Years</th>
<th>Kerala</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911-20</td>
<td>242</td>
<td>278</td>
</tr>
<tr>
<td>1921-30</td>
<td>210</td>
<td>228</td>
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<tr>
<td>1931-40</td>
<td>173</td>
<td>207</td>
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<td>1941-50</td>
<td>153</td>
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<tr>
<td>1951-60</td>
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<td>1961-70</td>
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<td>1971-80</td>
<td>52</td>
<td>129</td>
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<tr>
<td>1981</td>
<td>37</td>
<td>110</td>
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<td>1982</td>
<td>30</td>
<td>105</td>
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<td>1983</td>
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<td>1984</td>
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<td>1985</td>
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<td>97</td>
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<td>1986</td>
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<td>1988</td>
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<td>1989</td>
<td>22</td>
<td>91</td>
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<td>1990</td>
<td>17</td>
<td>80</td>
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<tr>
<td>1991</td>
<td>16</td>
<td>80</td>
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<td>1992</td>
<td>17</td>
<td>79</td>
</tr>
<tr>
<td>1996</td>
<td>13</td>
<td>80</td>
</tr>
</tbody>
</table>

Reproduced from Drèze and Sen 1999.

Infant mortality rate is a sensitive indicator of the care mothers give to their newborns and their ability to provide them with food, adequate clothing and medical attention (Alexander 1996: 4). Since the early 1900s, the infant mortality rates have been substantially reduced, from 242 per 1000 in the period 1911-1920, to about 13 today, a figure comparable to the United States 25 years ago. As a further comparison, Alexander (1996) contrasts Kerala’s infant mortality rate to those of African countries, some of which reach rates of 150 per 1000.

Sex ratio is a key indicator for the status of women and for the overall quality of life in a society (Drèze and Sen 1999: 250). The appreciation of female values leads to a natural ratio of women outnumbering men: “In the normal biology of humans the numbers of females

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15 The figures for this time period are a straight average of the individual years.
relative to the numbers of men increase as the well being and the life expectancy goes up” (Alexander 1997: 8). Kerala is the only state in India where women outnumber men. A 1991 census puts the number of females at 1036 for every 1000 males; India pales in comparison, with 927 females per 1000 males (Economic Review 1998: 18).

Kerala’s other notable achievements lie in the educational sector, in which the State “has achieved the highest effective literacy rate in the country” (Economic Review 1998: 9). The literacy rate in Kerala in 1991 was 89.81 per cent versus the all-India average of 52.21 per cent. The Kerala average breaks down into 86.17 per cent literacy rate for females, and 93.62 for males, while the Indian average was 39.29 per cent and 64.13 per cent, respectively.

Economic Sector

Kerala is one of the poorest states of India when it comes to State Domestic Product (SDP) and per capita State Income, the two traditional indicators used to measure a change in economic growth. Although the SDP growth rate of Kerala was 6.6 percent in 1997-98, the per capita State Income grew by 5.1 percent to Rs.10,936 (at current prices) over the previous year, placing it 14 percent below the national average (Economic Review 1998: 3).

Kerala’s economy depends largely on agriculture, and exports cash crops to the rest of India and the world “to earn valuable foreign exchange” (Surendran 1999: 16). In the early 1950s, the contribution of agriculture to State GDP was 66 percent, while for the last fifteen years, it has remained at around 30 percent. Kerala’s resources include abundant vegetation, such as banana plantations, coffee, tea, rubber, cashews, mangoes, rice paddies and coconut palms, of which there are so many that it is thought that the name “Kerala” is derived from “keram”, which means coconut (Sooryamoorthy 1997: 35). The predominant food crop is rice, but tuber crops, such as sweet potato and tapioca, and cereals, are grown as well. Other
natural resources include inland and marine fish, as well as a number of valuable minerals like graphite, iron-ore, quartz, limestone, silica, bauxite and glass sand (Surendran 1999: 14).

Despite the State’s outstanding achievements in the social domain, Kerala’s industrial sector remains very weak and accounts for about 24 percent of State GDP (Economic Review 1998: 14). Currently, Kerala imports virtually all manufactured goods from the rest of the country and faces the highest unemployment rate of India. The reasons behind Kerala’s industrial backwardness are many and range from militant unions, poor infrastructure, high wage costs and unavailability of raw materials (Sooryamoorthy 1997: 45; Sankaranarayanan 1985: 155).

Foreign remittances from the estimated 1.2 million Keralites working abroad, some 640,000 in the Gulf countries alone (Economic Review 1998: 17), account for the high per-capita consumption expenditure relative to income. Despite being one of the poorest states of India, Kerala’s per capita consumer expenditure for both rural and urban areas has been greater than the national average since the late 1980s (Drèze and Sen 1999: 221). Although they are not included in the State Domestic Income, remittances are estimated to range in magnitude from 15 to 30 percent of SDP and have “been sufficient to maintain the social and economic activities over and above the domestic production and income” (Surendran 1999: 31). Because of their good education, but low job prospects at home, Keralites have migrated outside the state, particularly to the Persian Gulf, in search of work.

Ecological Sector

Kerala’s tropical forests, rich in biodiversity and wildlife, play a key role in a healthy ecosystem. Unfortunately, tree cover in Kerala has been reduced substantially since the early 1900s, and reflects the growing environmental crisis there. In 1905, tree cover was estimated
at 44 per cent of the total land area (Franke and Chasin 1996: 11). According to the Forest Department, Kerala’s forests today cover an area of 11,126 sq km, or 28.6 per cent of the total geographical area, whereas INSAT (satellite) imagery (1995) places the figure at slightly lower figures of 26.5 per cent. In comparison, the national average is 19.5 per cent (Economic Review 1998: 61; Surendran 1999: 14).

There are no major industries in Kerala, therefore pollution related to industrialization is minimal at present. However, problems do exist, such as the present agitation surrounding the Gwalior Rayons plant, where emitted toxins pollute the atmosphere and the Chaliyar River. Also, Kerala has recently been giving shrimp farming development a high priority in the hopes of earning foreign exchange. Unfortunately, the move towards aquaculture, both coastal and inland, is devastating to Kerala’s ecology, and has had the effect of transforming “multi-user public coastal lands into single purpose private property” (Ramachandran Nair 1999: 378). Coastal aquaculture has destroyed mangroves, altered fish habitat, and increased the risk of flooding. Inland, the hazards of harvesting shrimp include the spreading of unknown diseases and the salination of adjacent paddy fields.

Overall, it is difficult to assess quantitatively the state of Kerala’s ecology because hardly any information is available on this subject. Although Kerala has faced environmental problems in the past, including overfishing, erosion, deforestation, and the flooding of valleys to build hydroelectric dams, new and more pressing issues will have to be dealt with today and in the future, such as air and noise pollution, water contamination, waste disposal and the depletion of natural resources, for example.