CHAPTER 3

PROFILE OF AREA OF RESEARCH

3.1 Macro Profile
3.2 Micro Profile
3.1 Macro Profile

Asia, one of the seven continents is the world's largest and most diverse place which covers about 30 percent of the land area on Earth. The eastern four-fifths of the giant Eurasian landmass, Asia is more a geographic term than a homogeneous continent. It has the greatest range of land elevation and the longest coastline of any continent, is subject overall to the world's widest climatic extremes, and, consequently, produces the most varied forms of vegetation and animal life on Earth. The total area of Asia, including the Caucasian isthmus and excluding the island of New Guinea, amounts to about 44,614,000 square km. Because of a very diverse configuration, Asia's population is unevenly distributed. Asia is the most populous continent in the world, having over four billion people. That is, statistically, the continent is home to more than 60 percent of the world’s current population, and some of the world’s least and most developed nations are found here.

The Asia region encompasses East Asia (China, Japan, Korea, Mongolia), Southeast Asia (Brunei Darussalam, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Timor-Leste, Vietnam), South Asia (India, Bangladesh, Pakistan, Sri Lanka, Maldives, Nepal, Iran, Turkey), Central Asia (Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan), West Asia (Armenia, Azerbaijan, Cyprus, Georgia, Israel, Jordan, Lebanon, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen). There is concentration of population in western Asia as well as great concentrations in the Indo-Pakistan subcontinent and the eastern half of China and appreciable concentrations in the Pacific borderlands and on the islands; but vast areas of Central and North Asia have remained sparsely populated.
Asia is the region with a large number of countries characterized by different levels of development in terms of economic, cultural values, socio-demographic characteristics, preferences, production and consumption of food, and availability of food products. Richardson (1979) had distinguished between two basic economic regions namely homogeneous regions and functional regions. Amelung (1992) has defined functional regions as the outcome of analysis of the interactions between spatial units.

The interactions were estimated by using flow variables such as migration, trade, financial flows, merchandise trade, traffic, etc. Although, the concept was initially developed to analyse the formation of regions within a nation, also form a useful basis for analysis in the formation of regions encompassing groups of nations. Homogeneity in regions can be said to occur if they reveal a high degree of similarity with respect to a set of characteristics such as per capita income, natural resource endowments, climate, topography, consumption, etc. According to Amelung (1992), the area comprises a huge heterogeneity not only in trade links within the area but also for market size, resource endowment, outward orientation and income level. Hence, this heterogeneity of countries in the area helps to classify the geographical area as a functional rather than homogeneous unit. The functional regions are said to prevail when the intra-regional interactions were stronger than the inter-regional interactions. The heterogeneity evolves because of a high interaction concentrate on a few small centers within these regions. To understand the profile of Asia for different regions, the section further elaborates the same in detail.
3.1.1 Profile of East Asia

**China:** The People’s Republic of China was officially established on October 1, 1949, replacing the Republic of China government on mainland China. Usually described as part of East Asia, China is south of Mongolia and the Siberian land mass, west of the Korean Peninsula and insular Japan, north of Southeast Asia, and east of Central and South Asia. China has a total area of nearly 9,596,960 square kilometers which includes 9,326,410 square kilometers of land and 270,550 square kilometers of inland lakes and rivers. China has a total of 22,117 kilometers of land boundaries with 14 other nations.

China officially recognized the birth of its 1.3 billionth citizen (not counting Hong Kong, Macau, or Taiwan) on January 5, 2005. China has been the world’s most populous nation for many centuries. When China took its first post-1949 census in 1953, the population stood at 582 million; by the fifth census in 2000, the population had almost doubled, reaching 1.2 billion. There is also a serious gender imbalance. Census data obtained in 2000 revealed that 119 boys were born for every 100 girls, and among China’s “floating population” the ratio was as high as 128:100. In 2006 it was estimated that China was experiencing a -0.39 per 1,000 population net migration rate. A large number of people moving from the countryside to the city, from developed economic areas to underdeveloped areas, and from the central and western regions to the eastern coastal region, as a result of fast-paced reform-era economic development and modern agricultural practices that have reduced the need for a large agricultural labor force. Young and middle-aged people account for the vast majority of this floating population; those between 15 and 35 years of age account for more than 70 percent.
After more than a quarter century of reform and opening to the outside world, by 2005 China’s economy had become the second largest in the world after the United States when measured on a purchasing power parity (PPP) basis.

According to United Nations statistics, China’s cereal production is the largest in the world. In 2003 China produced 377 million tons, or 18.1 percent of total world production. Its plant oil crops at 15 million tons in 2003 are a close second to those of the United States and amounted to 12.6 percent of total world production. China’s principal crops in 2004 were rice, corn, sweet potatoes, wheat, sugarcane, and potatoes. Other grains such as barley, buckwheat, millet, oats, rye, sorghum, and triticale (a wheat-rye hybrid) added substantially to overall grain production. Crops of peanuts, rapeseed, soybeans, and sugar beets also were significant, as was vegetable production in 2004. Among the highest levels of production were cabbages, tomatoes, cucumbers, and dry onions. In 2004 fruit production also became a significant aspect of the agricultural market. China produced large crops of watermelons, cantaloupes, and other melons that year. Other significant orchard products were apples, citrus fruits, bananas, and mangoes.

As a result of China’s accession to the WTO in 2001, food export opportunities have developed and traditional areas such as grain production have decreased in favor of cash crops of vegetables and fruits. China’s livestock herds are the largest in the world, far outstripping all of Europe combined and about comparable in size to all African nations combined. China’s major livestock products in 2004 were pork, poultry eggs, cow’s milk, poultry meat, and beef and veal. Other meats of significant amounts
were mutton, lamb, and goat. China also leads the world in fish production with a caught of 16.7 million tons of fish in 2003. In the same year, China harvested 28.8 million tons of fish, an amount more than 10 times that of the second-ranked nation, India, which produced 2.2 million tons. The total fish production in 2003 was 45.6 million tons.

**Japan:** Japan is a country of islands, extends along the eastern or Pacific coast of Asia. The four main islands, running from north to south, are Hokkaido, Honshu (or the mainland), Shikoku, and Kyushu. About 73 percent of the county is mountainous, with a chain running though each of the main islands. Japan is has a total area of 377,835 sq. km. Japan’s population, currently is just over 127 million and experienced a phenomenal growth rate during the past 100 years as a result of scientific, industrial, and sociological changes, but has recently slowed due to falling birth rates.

Japan is an urban society with only about four percent of the labour force engaged in agriculture. About 80 million of the urban population is heavily concentrated on the Pacific shore of Honshu and in northern Kyushu. Japan is the world's third-largest economy and a major economic power both in Asia and globally. Estimated GDP in the year 2009 was $5.068 trillion and per capita GDP in PPP was $32,700. Japan's industrialized, free-market economy is the third-largest in the world. Its economy is highly efficient and competitive in areas linked to international trade, but productivity is far lower in protected areas such as agriculture, distribution, and services. The country has fish and few mineral natural resources, and trade helps it earn the foreign exchange needed to purchase raw materials for its economy. The basic agriculture products are listed as rice, vegetables, fruits, milk, meat,
silk and fish. Less than 15% of Japan's land is arable. The agricultural economy is highly subsidized and protected. With per hectare crop yields among the highest in the world, Japan maintains an overall agricultural self-sufficiency rate of about 40% on fewer than 4.6 million cultivated hectares (14 million acres). Japan normally produces a slight surplus of rice but imports large quantities of wheat, corn, sorghum, and soybeans, primarily from the United States.

**Korea Republic:** The Republic of Korea (ROK) was founded in the south in August 1948 and the Democratic People's Republic of Korea (DPRK) in the north in September the same year. The ROK covers about 99,222 sq km of area with a total population 48.747 million, estimated in the year 2009. The Republic of Korea forms the southern half of the Korean peninsula that lies between China and Japan, and so is often referred to as South Korea. The Demilitarised Zone (DMZ), that separates the ROK from the Democratic People's Republic of Korea (DPRK) to the north, is a 250-mile long strip of land, running from west to east, close to the 38th Parallel. Mountains or upland account for 70% of the ROK (compared to 80% in the DPRK). The ROK has relatively few natural resources but, having more cultivable land, warmer weather and more rain than the DPRK, its agricultural sector is relatively productive.

The ROK was one of the Asian 'miracle' economies. With its economy based on agriculture, it was probably the poorer of the two Koreas until the start of the 1970s. However, from the start of the first economic development plans in 1962, the republic of Korea was able to maintain annual growth at an average of 8% for three decades. With this rapid growth, it was the world's
eleventh largest economy by 1997. The Republic of Korea was ranked the 15th largest economy in the world in GDP terms in 2009 (source World Bank).

**Korea Democratic People Republic:** North Korea is located in the northern half of the Korean Peninsula, which extends southward from the northeastern part of the Asian continent and is surrounded on three sides by water. North Korea is bordered by the Republic of Korea (South Korea) to the south, China to the north and northwest, and Russia to the northeast. North Korea occupies about 55 percent of the total land area of the Korean Peninsula, or approximately 120,410 square kilometers of land area and 130 square kilometers of water area. Approximately 80 percent of the land area is made up of mountain ranges separated by deep, narrow valleys. All mountains on the Korean Peninsula higher than 2,000 meters above sea level are in North Korea.

About 80 percent of North Korea’s land is mountainous. According to U.S. Government estimates, only 22.4 percent of the land is arable, and only 1.6 percent is in permanent crops. Based on 2002 Food and Agriculture Organization (FAO) estimates, 20.7 percent of the land, or 25,000 square kilometers, is arable. Of this arable land, about 8 percent is in permanent crops. North Korea has long had a socialized, centrally planned, and primarily industrialized command economy isolated from the rest of the world. The means of production, which are largely obsolete, are owned by the state through state-run enterprises or collectivized farms. Based on 2006 estimates, the GDP growth rate was 1 percent per annum and it purchasing parity power was US$40 billion. An estimated 30 percent of the land was in agricultural use in 2002, and agriculture produces approximately 30 percent
of gross domestic product. The principal crops, according to the size of the yield in 2002, are rice, potatoes, corn, cabbages, apples, soybeans, pulses, and sweet potatoes. Other vegetables, fruits, and berries also make up important parts of the annual crop. Livestock production, in order of volume, includes pork, eggs, cows’ milk, poultry meat, beef and veal, and goat meat. North Korea has always been faced with food shortages, but since the mid-1990s they have become more severe. Fishing provides an important supplement to the diet and for export. The catch in 2001 totaled 200,000 tons of fresh and saltwater fish, shellfish, and mollusks and about 63,700 tons produced using aquaculture.

**Mongolia:** Long a province of China, Mongolia won its independence in 1921 with Soviet backing. A communist regime was installed in 1924. It is a landlocked country located in between China and Russia. It occupies around 1,566,500 sq km and 2.9 million inhabitants (estimated 2008 figures) live in Mongolia. It is one of the highest countries in the world, with an average elevation of 1580m. It encompasses six distinct geographical zones, high mountains, steppe, forest steppe, desert steppe, taiga and desert.

The Mongolian economy has experienced strong growth in recent years, but was showing signs of faltering even before the global economic downturn. Despite a period of strong GDP growth, there has been little decrease in the number of people living in poverty, which is estimated at between 30-35% of the population. The figure rises to 40% in rural areas. At the same time, the richest 30% of the population have a 65% share of the income. Agriculture still accounts for more than a fifth of GDP. Some 40% of the Mongolian workforce is employed in traditional nomadic livestock
herding. The livestock herd - predominantly sheep, cattle and goats - grew to 40 million in response to higher cashmere prices, increased demand for meat and other animal products.

Mongolia has rich natural resources, principally gold, copper, coal, and rare earth minerals. The country’s gold and copper reserves are believed to be among the largest in the world. The mining sector accounts for about 20% of Mongolia's GDP and half the country’s exports, and attracts the majority of foreign investment.

The livelihoods and wellbeing of Mongolia’s 2.5 million people depend mainly on livestock and on milk in particular. Cows, camels, yaks, sheep, goats and horses are all milked at certain times of the year and number over 30 million head. Nomadic herding and traditional dairy products making are at the core of Mongolian society providing the biggest share of national income and employment (Od and Dugdill, 2006)

3.1.2 Profile of South-East Asia

Brunei-Darussalam: Brunei is a small country, located in Southeast Asia, bordering the South China Sea and Malaysia. Brunei is geographically divided by Malaysia into two unconnected parts. Brunei has an area of 5,770 square kilometers and a total coastline of 161 kilometers. It has the lowest population in ASEAN with an estimated value of 336,376 in 2000, with a growth rate estimated at 2.17 percent. The country enjoys a high standard of living with a per capita income of about USD 35,000 in 2007. Malay people comprise 62 percent of Brunei’s population, with Chinese accounting for 15
percent, indigenous people 6 percent, and other groups 17 percent. Islam is Brunei's official religion and Muslims account for 67 percent of the population.

Fish is an important part of the local diet. The fishing sector, comprising catch, aquaculture, and seafood processing, contributed about 0.5 percent to the total GDP in 1998. In 1996 more than 60 percent of fish and prawns sold in Brunei were imported. Oil and natural gas mining is the backbone of Brunei's economy. In 1998 the oil and gas sector contributed an estimated 34 percent to GDP and dominated exports. Brunei is the third largest oil producer in Southeast Asia and the fourteenth largest in the world; it ranks fourth in production of natural gas.

**Indonesia:** Indonesia is located in Southeast Asia lying between the Indian and Pacific oceans and between the continents of Asia and Australia, south of Malaysia and the Philippines, and northwest of Australia. According to the government officials, the total land area is 1.9 million square kilometers and total sea area, 7.9 million square kilometers, including an exclusive economic zone. Indonesia is the largest archipelagic nation in the world. It encompasses more than 17,000 islands (17,508 according to the Indonesian Hydro-Oceanographic Office). Petroleum and natural gas are among Indonesia's most important natural resources and makes it the world's largest exporter of liquefied natural gas. Because of the geographic conditions, the country is vulnerable to severe flooding, unpredictable drought and plant pest attacks, volcanic activity, and earthquakes, which are sometimes associated with tidal waves (tsunami).
Indonesia stands fourth in the largest population figures after China, India, and the United States, totaling an estimated 238,452,952 individuals in 2004, with a 1.5 percent annual population growth rate. Sixty-nine percent of the population lives in rural areas. Java is one of the most densely populated areas in the world, with more than 120 million people, or some 945 persons per square kilometer. Agriculture represented a declining share from 20.6 percent in 1996 to 17.5 percent in 2004 of GDP. Rice dominates food production, but cassava, corn, fruits, sweet potatoes, and vegetables also are important subsistence crops. Cash crops include cocoa, coffee, copra, palm oil, peanuts, rubber, soybeans, sugar, tea, and tobacco. Animal husbandry (dairy and beef cattle, poultry and eggs, and pigs) and fishing are small but valuable parts of the agricultural sector.

Laos: Laos is one of the East Asia’s poorest countries with 6.4 million population (UN, 2010) occupied in an area of 236,800 square kilometer. It is a landlocked country and among the least developed group of countries of the planet. Approximately 30 percent of the population lives under the poverty line, with 90 percent of the poor living in rural areas. Vast regions of Lao PDR have low population density, low-skilled rural populations, poor infrastructure and limited cash economy. Since the collapse of the Soviet Union in 1991 it has struggled to find its position within a changing political and economic landscape. Laos is a landlocked, mountainous country, widely covered by largely unspoilt tropical forest.

Land suitable for subsistence agriculture is less than five percent, which nevertheless provides around 80 percent of employment. The economy of Lao PDR is still largely supported by agriculture-based activities, with 80 percent of its workforce involved in agriculture, which generates 51 percent
of the GDP (Fukui and Llanto, 2003). The main crop is rice along with vegetables, fruit, spices and cotton are also grown.

**Malaysia:** Malaysia is a multi-ethnic, multi-religious, one of the highest standards of living, one of the wealthiest and most developed countries in Southeast Asia. However income distribution is very uneven, particularly in rural areas, and poverty is widespread. It consists of two geographical regions divided by the South China Sea: the peninsular Malaysia (or West Malaysia) on the Malay Peninsula bordered by Thailand on the north, and Malaysian Borneo (or East Malaysia) located on the northern part of the island of Borneo, bordering Indonesia and surrounding the Sultanate of Brunei. Malaysia's total land area is 329,758 square kilometers.

From 1960 to 2000, the total population grew from an estimated 8 million to 23.3 million persons and population density grew from 24 to 71 persons per square kilometer. According to the World Bank, from 1975 to 2004 the GDP (in current US$) grew from US$9.9 billion to US$118.3 billion, averaging 6.4 percent annual growth. According to Malaysian government, the agricultural sector provided 8.7 percent of the GDP in 2005 which was 22.6 percent in 1980. Productive outputs from agriculture, forestry, and fishing have not declined but have declined as a proportion of economic output. Malaysia is the world's top producer of palm oil and is a major producer of bananas, cocoa, coconuts, pepper, pineapples, rice, rubber, and tea.

Fishing accounted for 13.4 percent of the value of agricultural output in 2000 but declined to 11.8 percent by 2006. The fishing industry is hugely important, employing, either directly or in processing plants, up to 100,000
people, providing roughly half the country's animal protein consumption, and bringing in foreign exchange, particularly to rural communities.

**Myanmar:** Myanmar is located in the eastern part of the Asian continent with its geographical area rich in natural and mineral resources and provides significant economic potential. The country borders with Bangladesh, China, India, Lao PDR and Thailand and is member-state of the Association of South East Asian Nations (ASEAN). With a population of approximately 50 million, Myanmar has been subject to a political and economic crisis, since more than five decades that has alienated it from the international community and made it one of the ‘least developed nations’ in the world. According to HDI, Myanmar ranks 32 among a list of 50 least developed nations surveyed by the UN.

**Philippines:** The Philippines comprises an archipelago of some 7,107 islands located off Southeast Asia, between the South China Sea on the west and the Philippine Sea on the east. The total area is about 300,000 square kilometers, including about 298,000 square kilometers of land and about 2,000 square kilometers of water. The Philippines has no land boundaries while its nearby neighbors are Taiwan to the north, Malaysia and Indonesia to the south, Vietnam to the west, and China to the northwest. Philippines is prone to natural disasters, particularly typhoons, floods, landslides, volcanic eruptions, earthquakes, and tsunamis. The total population was 76.5 million, evenly divided between males and females, according to the census in 2000.

The Philippines is now one of the poorest countries from a position as one of the wealthiest countries in Asia after World War II. Since the 1970s, which were a relatively prosperous decade, the Philippines had failed to achieve a
sustained period of rapid economic growth and had suffered from recurring economic crises. In the year 2005, crops accounted for 46.4 percent of the value of all agricultural production, livestock and poultry for 28.8 percent, and fishing for 24.9 percent.

**Thailand:** Thailand is located in the center of peninsular Southeast Asia. Burma is to the west, Laos to the north and east, Cambodia to the southeast, and Malaysia to the south. U.S. government sources state that Thailand has a total of 511,770 square kilometers of land area and 2,230 square kilometers of water area for a total of 514,000 square kilometers. Its population was estimated at 64,631,595 in July 2006, making it the nineteenth most populous country in the world. By 2002 Thailand’s standard of living had returned to the level prevailing before the financial crisis. A long-term shift from agriculture to manufacturing and services continues, but about 39 percent of the workforce is still employed in agriculture, forestry, and fishing, although this sector is responsible for only 10 percent of gross domestic product (GDP).

**Timor-Leste:** The Democratic Republic of Timor-Leste is located in the eastern part of Timor Island with the western part belonging to the Republic of Indonesia as part of the East Nusa Tenggara province. It is bordered by the Water straits to the north and the Timor Sea in the South. It is one of the poorest countries in Asia with about 40 percent of the population living less than 55 cent a day. The country is not only low in income but also poor in performance on social indicators such as education, literacy and health. Timor-Leste has a land area of approximately 14,610 sq. km with a population of 9,23,198 (Census 2004). Due to its geographical location, Timor-Leste is highly vulnerable to natural disasters such as earthquakes and
associated phenomena such as tsunamis. Timor Leste is largely an agrarian society; in 2001, agriculture was the main source of income in 94 per cent of sucos.

**Vietnam:** Vietnam is located in Southeast Asia, bordered by the Gulf of Tonkin and the South China Sea to the east, China to the north, Laos and Cambodia to the west, and the Gulf of Thailand to the south. Vietnam is long and thin, with an area of 330,363 square kilometers. In 2004 Vietnam’s population was 82.2 million, and it was growing at a rate of about 1.2 percent per year. The average population density was 246 people per square kilometer, one of the highest levels in the world.

### 3.1.3 Profile of Central Asia

The Central Asian member countries – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan were all republics of the Soviet Union until they achieved independence in 1991. Before independence, the countries of the region were economically interdependent on each other and on the Soviet Union. There existed a central planning process for the production of food and agricultural commodities. Kazakhstan was one of the main exporters of food grains during those days while Tajikistan was net importer. After obtaining independence and collapse of interregional trade, each country was imposed to produce only the amount of grain needed by its population. This resulted in less trade, especially in food products. The effect of the break-up of regional and global trade was similar to each country but there also raised differences. The region successfully increased the production and consumption of cereals but failed to achieve the food security through calorie intake (Babu and Rhoe, 2001). Their high rates of
extreme poverty make them far less developed than other former Soviet countries.

The central Asian countries have abundant natural resources and growing economies, but their human development indicators are in general lacking because overall poverty has increased. If these natural resources are efficiently used it may result in higher crop productivity. A large portion of the population in Central Asia is dependent on Agriculture because 40 percent of Uzbekistan and 42 percent of Tajikistan’s population perform agricultural work (Tashmatov et al, 2000). The author further elaborates that 25 to 30 percent of Uzbekistan’s GDP is composed of agricultural sector and 55 percent of its foreign currency is collected through agricultural exports. This is the fact that central Asian countries continue to be plagued with poverty, malnutrition, and food insecurity (Green and Bauer, 1998) even after a decade of their independence.

With the objective of initiating some targeting of export markets, the Central Asian countries joined Azerbaijan, Afghanistan, Pakistan, Iran and Turkey to form the Economic Cooperation Organization in the mid 1990s. According to Elebaev (2000), the Economic Cooperation Organization strengthened the cooperation in transportation, supply lines, commerce, and power engineering but failed to strengthen the cooperation in agriculture. To allow moving freely the goods, services, capital, and workers among Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan, the Central Asia Union became the Central Asia Economic Union in 1998. In the same year, other than these countries Armenia, Belarus, Georgia, Moldova, Russian Federation and Ukraine established the Agreement on the Common Agrarian Market which allowed for the free flow of food produce, foodstuffs,
scientific and technical goods, technology, means of production, and services for the agricultural sector.

The five countries of the region are following different approaches to the transformation in their markets. While Kazakhstan and Kyrgyzstan are well progressing in the same, the other three countries are slow and has ultimately restricted the liberalization of their trade policies.

**Kazakhstan** lies in the north of the Central Asian republics and is geographically bounded by Russia in the north, China in the east, Kyrgyzstan and Uzbekistan in the south, and the Caspian Sea and part of Turkmenistan in the west. It has almost 1,894 km of coastline on the Caspian Sea. The Kazakh Republic was formed as an autonomous Republic within the Russian Federation in August 1920 and became a Republic of the Soviet Union in December 1936. The country is spread in an area of 2,699,800 km² with a population of 15.97 million in 2009. The country mainly exports Uranium, petroleum, gas, grain and metals. Kazakhstan is rich in natural mineral resources. Oil reserves in the sector of the Caspian Sea alone are estimated at 8 billion tons. Kazakhstan was considered as one of the main exporters of cereals to the other republics prior to independence. But after the adoption of food self-sufficiency policy by the republic countries, Kazakhstan has focused on the production of other crops to meet their food needs with a reduction in the production of wheat. This ultimately has affected the exports of Kazakhstan.

**Kyrgyzstan:** Kyrgyzstan, the second-smallest of the Central Asian republics in both area and population, is located between two giants: Kazakhstan to its north and China to its south and east. Kyrgyzstan, ranked as the second-
poorest republic in Central Asia, possesses a more limited range of natural resources than its neighbors. After independence, Kyrgyzstan suffered one of the worst economic declines among the CIS states.

**Turkmenistan:** Turkmenistan was known for most of its history as a loosely defined geographic region of independent tribes. Now it is a landlocked, mostly desert nation of only about 3.8 million people (the smallest population of the Central Asian republics in the second-largest land mass). The country remains quite isolated on the eastern shore of the Caspian Sea, largely occupied by the Qizilqum (Kyzyl Kum) Desert. Agriculture contributes about half of Turkmenistan's CDP, whereas industry accounts for only about one-fifth. Turkmenistan played a vital role in the Soviet system as a natural gas supplier. In the mid-1990s, Turkmenistan's economic policy continued to rely heavily on the West's demand for natural gas. Many recent economic indicators can only be approximated because Turkmenistan has not issued precise statistics. It refused membership in the Central Asian customs union established by Kazakhstan, Kyrgyzstan, and Uzbekistan in 1994, and in the Central Asian Economic Union that sprang from the initial agreement.

**Uzbekistan:** Uzbekistan is the third-largest of the Central Asian republics in area and the first in population, estimated at 23 million in 1994 and growing at the fastest rate in Central Asia. Uzbekistan is completely landlocked between Kazakhstan to the north, Turkmenistan to the south, and Kyrgyzstan and Tajikistan to the east. It shares the Aral Sea, and hence the environmental problems of that area, with Kazakhstan. Besides the agricultural base that yields cotton, vegetables, and grain, Uzbekistan's economy is blessed with gold, several other valuable minerals, and
substantial reserves of energy resources, especially natural gas. In the mid-1990s, the economy still is based primarily on agriculture, following substantial increases in irrigation-dependent output in the 1970s and 1980s. Uzbekistan's economy is one of the most stable in the Central Asian region, and foreign investment activity there has been the highest in the region.

3.1.4 Profile of West Asia

West Asia covers a large geographical area from Armenia, Azerbaijan, Cyprus, Israel, Lebanon, Turkey, United Arab Emirates, Yemen to the Mediterranean sea, including Syria, Jordan, Iran, Iraq and the Saudi peninsula. There exists a great cultural diversity is the western region of Asia which can be illustrated by the figures as Afghanistan alone has 19 ethnically distinct groups. Iraq is 76% Arabic, 19% Kurd, with the remaining 5% comprising Turkomans, Assyrians, Armenians, and various smaller groups. Each group has its own language.

The Republic of Armenia is the smallest; second most densely populated and most ethnically homogenous nation of the former Soviet republics. Situated in the south-western part of Asia, between the Caucasus, the Black Sea and the Caspian Sea, the country is bordered by Georgia on the north, Azerbaijan on the east, Iran on the south, the Azerbaijani exclave of Nakhichevan on the south-west, and Turkey on the west. The country has a population of 3.1 million in the year 2004 with a rural population of 35 percent (NSS, 2004a; IMF, 2003) and agricultural land occupies 49 percent of the total land area of around 29743 km². In 2003, agriculture contributed 24 percent of Armenia's GDP (WB, World Development Indicators Database).
After becoming independent in 1991, Armenia suffered a difficult transition to a market economy. Factors such as the 1989-94 Nagorno-Karabakh conflict, earthquakes and droughts further affected the socio-economic situation. Agricultural reforms implemented after independence did not succeed in enhancing the sector’s low productivity.

Armenia is a low income food deficit country. The 5 major food and agricultural commodities produced by Armenia in 2002 were cow milk, potatoes, wheat, tomatoes and other vegetables (FAO, Statistics Division). Milk is used both as animal feed and for human consumption, while potatoes, tomatoes, other vegetables and wheat are mainly for local human consumption. (FAO, FAOSTAT Database). The food consumed by Armenians includes the diet rich in carbohydrates as cereals, starchy roots and sweeteners provide more than two thirds of the energy. While consumption of meat and fish is low, that of milk and eggs as well as fruit and vegetables, is substantial.

In Armenia staple foods are cereals, principally wheat bread and also potatoes, rice and pasta. In mountainous areas, potatoes can be cheaper than wheat and become the staple (FAO, GIEWS & WFP, 2000). Fruits (apple, pear and grapes), vegetables (carrots, cabbage, red beets and onions) and nuts, in season, complement the staples. Imported fruit are high-cost products are rarely consumed by most people. Consumption of home made canned fruit and vegetables mainly during winter and spring seasons are common. The consumption of meat and fish is limited. Meat is mainly constituted of poultry and beef products. The cost of meat is the main
limiting factor to frequent consumption. Eggs are an animal food product that is more frequently consumed. Cheese and traditional plain yoghurt (matsun) are the most frequently consumed dairy products. A majority of the population use animal fat and vegetable oil as an affordable and accessible source of fat for cooking. Fat and oil consumption other than for cooking purposes is limited to butter, margarine and mayonnaise. Among vulnerable communities, the main source of food is self-produced plant foods, milk and dairy products.

The Armenian diet is considered as a high in fat. Fats and oils, canned and processed foods are common in the diet (O'Grady & Channon, 2001). During the winter, the situation is exacerbated with high consumption of high sugar jams and canned fruit, salt and oil-rich canned vegetables, and canned meat which is high in saturated fats, cholesterol and sodium, which is also frequently boiled in lard.

Azerbaijan, with a total area of 86,600 km², is located on the southeastern slopes of the Caucasus Mountains. It is bordered to the east by the Caspian Sea, to the south by the Islamic Republic of Iran, to the southwest by Turkey, to the west by Armenia, to the northwest by Georgia and to the north by the Russian Federation. The total population is 8.4 million (2005), around 50 percent of which is rural. The average population density is 97 inhabitants / km². Agriculture plays an important role in the Azerbaijan's development and in guaranteeing the supply of staples and constitutes one of the main sectors of the economy. In 2007, the Gross Domestic Product (GDP) was US$31.3 billion. The share of agriculture dropped from 39 percent in 1990 to 6 percent in 2007, due to extensive industrial
development from 1995 to 2004. In 2004, the harvested irrigated area was 13,91,521 ha. Annual crops represent 93 percent of this area and permanent crops 7 percent. The main irrigated crops are wheat (44 percent), barley (11 percent), cotton (5.6 percent) and vegetables (5.6 percent), while the most important permanent crops are tea, bananas, olives, grapes and strawberries.

**Cyprus:** Republic of Cyprus is located at the East Mediterranean basin, 75 km south of Turkey, 105 km west of Syria, 380 km north of Egypt, 380 km east of Rhodes (Greece). Cyprus is the third largest island in the Mediterranean. The total area of Cyprus is 9,251 km², of which approximately 18% is covered by forests. The main temporary crops are cereals with 65 percent of the total area under temporary crops, followed by fodder crops with 25 percent and vegetables with 8.9 percent. The main permanent crops are olives and carobs with 35.4 percent of the total area under permanent crops, followed by grapes with 28.9 percent, citrus and nuts at the same place with 13.1 percent and fruits with 9.3 percent. Cyprus is self-sufficient as regards marine fish fry, which are produced by 4 private commercial hatcheries. A considerable number of fry is exported, about 6.3 million in 1998 and about 13 million in 1999. Fry production exhibits an on growing trend.

**Georgia** has a total area of 69,700 km² and has a population of 4.6 million. It is located in the Caucasus region and is bordered by the Russian Federation to the north and northeast, Azerbaijan to the southeast, Armenia and Turkey to the south, and the Black Sea to the west for a distance of 309 km. The total population is estimated at 4.47 million (2005), of which 48.5 percent is rural. The average population density is 64 inhabitants / km². In
2007, the national Gross Domestic Product (GDP) of Georgia was US$10.2 billion of which agriculture accounted for 11 percent. Agriculture employs about 55 percent of the population and is the main economic safety net for the majority of the population, though the sector provides only about 9 percent of GDP. On average, food accounts for 75 percent of a household’s annual expenditure. Wheat flour accounts for 50% of total food consumption (FAO/UNICEF/WEP)

Iraq: Iraq covers a geographic area of 435,052 km. It is bordered by Turkey in the north; Iran in the east; Syria, Jordan and Saudi Arabia in the west; and Kuwait and Saudi Arabia and the Gulf in the south. The population of Iraq is estimated to be 29.6 million [July 2007]. The average population density is estimated at 61/km².

Israel: Once called the “land of milk and honey” in the Bible, Israel lies in the Middle East along the Mediterranean, wedged between Egypt and Lebanon, spread in the area of 21,056 km². Israel also boasts of one of the fastest growing economies in the developed world, largely due to the country’s remarkable growth in the advanced hi-tech sector. Israel rests upon a global stage supporting a diverse population and varied cultures. Israel has a large portion of the population living under very modest conditions and surviving only on government aid. Although Israel has one of the highest living standards in the Middle East, the people, especially Palestinians and immigrants, do not benefit.

Israel is a small economy by international standards made-up of nearly 7 million people, 341 inhabitants per square kilometer and a couple of very specific primary resources (i.e. basically phosphates), located in the distant
periphery of the EU's economic core. Lying by the Mediterranean Sea and being still economically boycotted, whether by Egypt or Saudi Arabia or Syria, by most of the Arab world including its poor neighbours (but for the exception of Jordan), it functions by and large as an island.

**Jordan:** Jordan is located in the Middle East with Israel and the West Bank to the west, Syria to the north, Iraq to the northeast, and Saudi Arabia to the east and south. It encompasses a total land area of 92,300 square kilometers (91,971 square kilometer of land and 329 square kilometers of water). Jordan’s population was 5.1 million according to the 2004 census, up substantially from the 4.1 million recorded in the 1994 census. The country has a relatively low population density in comparison to the rest of the region around 62 people per square kilometer. Approximately 98 percent of Jordanians are Arabs; the remaining 2 percent of the population is split among Circassian, Chechen, and Armenian minority groups.

Jordan is a small country with limited agricultural, water, and domestic energy resources—deficiencies that have hampered economic development and improvements in the standard of living. Jordan’s total GDP for 2005 was US$12.9 billion, up from US$11.5 billion in 2004 and US$10.2 billion in 2003. Agriculture provided just 2.4 percent of GDP. The most profitable segment of Jordan’s agriculture is fruit and vegetable production (including tomatoes, cucumbers, citrus fruit, and bananas) in the Jordan Valley. Because of inconsistent rainfall the rest of crop production, especially cereal production remains volatile.
There are studies, which relate to change in food consumption in Jordan. According to Musaiger (2007) and Musaiger (2010), the food consumption pattern has changed in Middle Eastern countries, including Jordan in the last half century of 2000. According to some studies and surveys (Alwan and Khabsheh, 2006; FAO, 2003) in Jordan, on food consumption during first half century of 2000 have shown that the contribution of different food groups to energy and nutrients has changed. These studies have revealed that the change in contribution can be assumed to be attributed due to many factors which include change in life style and changes in socioeconomic status.

These changes have lead to nutrition transition for Middle Eastern countries including Jordan. Based on the facts that crude death rate has been decreased to 7/1000 population, the infant mortality rate has been decreased to 24.0/1000 live births and the life expectancy has increased to 71.7 years, it could be said that there has been an improvement in health indicators. Increase in the rate of migration from rural to urban areas (46.3 in 1960 to 82.6 percent in 2006) along with decrease in rural and Bedouin population (from 53.7 in 1960 to 17.4 percent in 2006) (DOS, 2008) can be looked as one of the factors for changing consumption pattern of food in Jordan. The consumption of fast foods as well as the number of meals taken outside home has increased (Musaiger, 2009; FAO/WHO, 2006).

**Lebanon:** The territory of the Lebanese Republic covers 10, 400 km², extending 217 km from North to South and 80 km from east to West. It is bounded by Syria on both the North and East, by Israel on the South and by the Mediterranean Sea on the West. The main agricultural region is a narrow
plain running along the seacoast. The population of Lebanon is 3.398 million in 2000 with 13 percent of the people living in rural area. Although agriculture contributed only an estimated 13 percent of the total GDP in 2004, it is considered essential to the economy of the country, mainly as a source of food and foreign exchange earnings, generated by the export of fruit, vegetables, eggs, cereals, sugar, vegetable oils and livestock products (WB, 2005).

In 1999, the major food crops were cereals, fruit, olives and vegetables (MOE, 2001). The 5 major food and agriculture commodities produced in Lebanon in 2002 were potatoes, tomatoes, cow milk, olives and oranges (FAO, Statistics Division). Tomatoes, cow milk and olives were mainly destined to local human consumption; potatoes and oranges were for local consumption and export (FAO, FAOSTAT food balance sheets). Livestock is either locally raised or imported. Livestock production faces many constraints concerning feeding, health, genetics, socio-economics, and environmental factors (Hilal, 2000). Nonetheless, the total number of livestock has increased by about 38 percent from 1980 to 1999 (MOE, 2001). The staple foods are wheat (often consumed as flat bread pita) and rice. Common accompanying foods include meat (usually lamb and chicken) or fish and vegetables, often stuffed. There are some regional variations in consumption pattern, the northern region consumes fats in high content and southern region consumes food rich in rice and meat.

Lebanon is a middle-income country with substantial strengths, but whose government institutions have been weakened by complex political divides and problems of governance. Distribution of income is highly unequal.
Among vulnerable groups, which include Palestinian refugees, poverty levels are high. There are more than 400,000 Palestinian refugees registered in Lebanon, about 215,000 of them in 12 camps throughout the country. Economically, the country relies on the service sector, which accounted for about two-thirds of GDP in 2004. But sectors such as banking and tourism are highly sensitive to political instability. Investment is limited by instability combined with corruption and regulatory complexities.

According to the national household budget survey conducted in 1997, there was a high consumption in terms of weight of food of fruits and vegetables including potatoes, followed by cereals, dairy products, meat and poultry and sodas/juice/sugary beverages. While the consumption of fish and seafood was low, that of sugar and sugar derivatives, fats and oils was high. According to the review of Baba (2000) of various studies over several decades there was a major shift in the food consumption patterns, towards increased intake of fat, milk and animal products and a decrease in the consumption of cereal products.

**Saudi Arab Emirates:** Saudi Arabia, with a total area of about 2.15 million square kilometers (km²), is by far the largest country in the Arabian Peninsula. It is bordered in the north by Jordan, Iraq, and Kuwait, in the east by the Persian Gulf with a coastline of 480 kilometers (km), in the south-east and south by Qatar, the United Arab Emirates, Oman, and Yemen, and in the west by the Red Sea with a coastline of 1,750 km. The total population is 17.9 million (1995) of which 20% is rural. In 1992, about 73% were estimated to be Saudi nationals
Syrian Arab Republic: The Syrian Arab Republic, located in the Near East, is bounded on the north by Turkey, on the east by Iraq, on the south by Jordan and Israel and on the west by Lebanon and the Mediterranean Sea. It has an area of 185,180 km². Syria is a middle-income country with a population of 16.813 million in the year 2000. 50 percent of the population lives in rural area. The country has 75 percent of agricultural area in the year 2002. Despite the difficult conditions of limited rainfall and scarcity of water resources, agricultural production has increased notably during the last decades.

Turkey: Turkey is a country which is primarily based on agriculture. The country has a suitable climate and nature for producing various products. Crop production contributes 73.5 percent to the agricultural production and wheat contributes 67 percent in grains. Turkish people are dependent mainly on wheat as a staple food. Milk is frequently consumed in the form of yogurt. There is a wide consumption of fresh fruits and vegetables which is available throughout the year. The consumption of oil and fats reflects some variation within the country. Western and southern parts of the country mostly consume olive oil. According to FAO Food Balance Sheets dietary energy supply was estimated as 3500 kcal per person. The total protein consumption per capita was estimated as high, but maldistribution and the poor quality of much of the food consumed in Turkey are not properly demonstrated in food balance sheets (Pekcan, 2006).

United Arab Emirates: The UAE is situated on the Arabian Peninsula between Oman and Saudi Arabia and bordering the Gulf of Oman and the Persian Gulf. The UAE government estimates the total area of the country to
be 83,600 square kilometers. Thirty years ago the country was one of the least developed countries of the world. The country has developed in the recent years to the level which could be compared to industrialized nations. According to the official census conducted in 2005, estimates for the UAE’s population for that year range from 4.1 million to 4.6 million; the population is estimated to increase to 4.9 million in 2006. The majority of the population (2.5 million) is urban and lives in the two largest emirates—Abu Dhabi and Dubai. Dubai has the fastest growing population, with an average annual growth rate of 8.5 percent between the years 2000 and 2005. The UAE’s population is predominantly young. According to U.S. government estimates based on a total population of 4.4 million, more than 75 percent of the population (about 3.4 million) is 15 to 64 years of age, roughly 20 percent (about 900,000) is less than 14 years of age, and less than 1 percent (about 38,000) is 65 and older. The population is male dominant, with males numbering 3 million and females, 1.4 million.

Oil and natural gas are the primary natural resources in the UAE, and petroleum production is the most important industry. The total area of land under agriculture and forestry constitutes less than 1.5 per cent of the total land area of the UAE. Agriculture has made only a small contribution to GDP (3.8 per cent in 1999).

**Yemen:** North Yemen gained independence from the Ottoman Empire in November 1918, and South Yemen became independent from Britain on November 30, 1967. The modern Republic of Yemen was born in 1990 when traditionalist North Yemen and Marxist South Yemen merged after years of border wars and skirmishes. Yemen lies at the southern end of the
Arabian Peninsula and has frontiers with Saudi Arabia and Oman and controls the strategic straits at the Southern entrance to the Red Sea (Bab al Mendab). The country has a population of 24.3 million (UN, 2010) and covers an area of 536,869 sq km. Yemen’s population has more than doubled since 1975 and has grown approximately 35 percent since the 1994 census, making Yemen the second most populous country on the Arabian Peninsula. According to U.S. government and United Nations estimates, in 2007, the population is predominantly young and was almost equally divided between males and females. The country is poorest in the Middle East with GDP per capita less than $1000 per annum, reflecting a weak economy and a rapidly expanding population. The country had lowest HDI ranking among the Arab states. The population is poor and largely rural, but there has been large-scale urbanisation in the last decade and almost half of the population now live in towns. Agriculture is the mainstay of Yemen’s economy, generating more than 20 percent of gross domestic product (GDP) since 1990 (20.4 percent in 2005 according to the Central Bank of Yemen) and employing more than half (54.2 percent in 2003) of the working population.

Yemen’s principal natural resources are oil and natural gas as well as agriculturally productive land in the west. Other natural resources include fish and seafood, rock salt, marble, and minor deposits of coal, gold, lead, nickel, and copper. Most of the country’s revenue depends on oil, which was discovered in the country in 1984. Corruption, smuggling and insecurity, along with the growing problem of increased piracy off the coast of Yemen in the Gulf of Aden, have damaged investor confidence and the economy is not recovering quickly.
Yemen is subject to sandstorms and dust storms, resulting in soil erosion and crop damage. The country has very limited natural freshwater and consequently inadequate supplies of potable water. Desertification (land degradation caused by aridity) and overgrazing are also problems. The use of irrigation has made fruit and vegetables Yemen’s primary cash crops. With the rise in the output of irrigated crops, the production of traditional rain-fed crops such as cereals has declined. According to the Central Bank of Yemen, in 2005 the production of qat, a mildly narcotic and heavily cultivated plant that produces natural stimulants when its leaves are chewed, rose 6.7 percent and accounted for 5.8 percent of GDP with its widespread usage in Yemen. The fishing industry is relatively underdeveloped and consists largely of individual fishermen in small boats. Fish and fish products constitute only 1.7 percent of Yemen’s GDP but are the second largest export.

International economists have reported that Yemen’s services sector constituted 52.6 percent of gross domestic product (GDP) in 2004 and 53.1 percent of GDP in 2005.

3.1.5 Profile of South Asia

**Bangladesh:** Before the independence of India and Pakistan, the territory formed part of the Indian provinces of Bengal and Assam. Following partition in 1947, East Bengal, with a Muslim majority population, emerged as the eastern wing of Pakistan. It occupies 144,000 sq km with 156 million inhabitants living in the country. Bangladesh is the most densely populated major country in the world. Bangladesh has the 3rd largest Muslim population and the 7th largest overall population in the world. It is enclosed
by Indian territory except for a short south-eastern frontier with Burma and borders the Bay of Bengal in the south. Bangladesh is one of the countries with the most at risk from climate change. The prospect of rising sea levels and melting glaciers makes this low-lying country particularly vulnerable. Arable land is extremely fertile. Bangladesh's principal natural resource is natural gas.

Indonesia lies in southern Asia between the Himalayas and the India Ocean, forming a natural sub-continent. The country is the seventh largest, and the second most populous (after China), in the world. The total area is 3,287,590 km², this includes Sikkim in the Himalayas, and an area of 139,000 km² in Jammu and Kashmir in the far north-west of the country which is currently held by India. The country borders with China, Bhutan and Nepal in the north and with Myanmar (Burma) in the east. Bangladesh is surrounded by Indian territory except for a short frontier with Myanmar in the east.

India’s population in the year 2005 was estimated as 1,080,264,388 (US Bureau of Census) with annual growth rate of 1.6 percent. The average density of population was about 343 per km². About 12 percent of Indians are Hindu, about 14 percent of Indians are Muslims. They tend to live in the north and west of the country and form the majority in Jammu and Kashmir. About 0.7 percent of Indians are Buddhists, 0.5 percent are Jains, living mainly in Gujarat and Rajasthan. The Sikh religion followers are about 2 percent of the population live mainly in the Punjab. Less than 3 percent of Indians are Christian and in Mumbai there is a considerable minority of Parsees, adherents of Zoroastrianism.
India’s economy is the 12th largest in the world, and the third largest in Asia. Nevertheless, about 25 percent of the population lives below the poverty line, and nearly two-third of the population depends on agriculture for its livelihood. Agriculture accounts for around 22.8 percent of India’s GDP and provides a living for 59.6 percent of the workforce. The major crops are the staple cereals, particularly rice and wheat, whilst the main cash crops are jute, tea (of which India is the world’s largest producer), cotton, tobacco, coffee, oilseeds, cashew nuts, spices and cane sugar.

The consumption of food in India is changing with a fast speed. The demand for non-food grain and animal products in the diet of rural and urban has increased due to increase in income and urbanization (Amarsinghe et al, 2007). There are many studies which illustrate the emerging food consumption patterns in India (Chatterjee et al 2006, Bansil 1999, Rao 2000, Kumar 1998, Kumar and Mathur 1997, Radhakrishna and Ravi 1992). They noted that there has been a clear shift in recent decades from the grain consumption to non-grain food and animal products consumption. There is decrease in per capita grain consumption since 1980’s. The reasons for such a decline were income growth and urbanization and associated changes in life styles, changes in relative prices and the availability of non-grain food etc. It is generally recognized that the income and urbanization are two major drivers of changing consumption patterns (Amarsinghe et al, 2007).

People increase the nutritional intake through easily available crops, such as cereals and pulses. As income and the access to other foods increases, people diversify food consumption patterns (Radhakrishna & Ravi 1990). Between 1972/73 and 1993/94 the food basket has become much more
diversified. In particular, cereal shares have seen a dramatic decline of ten percentage points in most regions in both rural and urban India. Similarly, the share of meat and milk products, and vegetables and fruits has increased over time (Virmani and Rajeev, 2001). Although cereals continue to lead food expenditures, their importance has decreased over time. At the same time it is also noted that the rates of cereals have become cheaper in relation to other food groups.

**Pakistan:** Pakistan is located in South Asia, and borders Iran to the southwest, Afghanistan to the west and north, China to the northeast, and India to the east. The Arabian Sea marks Pakistan’s southern boundary. Pakistan’s exact size is debated because of its disputed border with India. According to the United Nations and the Pakistan government, the country has a total area of 796,095 square kilometers. Pakistan has a large, mostly rural population with a high rate of growth. The government estimates the population at 152.8 million as of December 2004, not including 1.2 million refugees from Afghanistan (2002 estimate). Agriculture employs the greatest proportion of the working population but accounts for less than 25 percent of gross domestic product (GDP). This discrepancy is the result of rapid growth in services and industry since the 1980s, although major industries, such as textiles and sugar, are heavily reliant on agriculture. Throughout the 1990s, Pakistan’s economy suffered for a number of reasons, but from 2002 to 2004 the economy has recovered as a result of changes in government policies and the resumption of international lending.

More than 40 percent of the working population is employed in agriculture, yet the per capita amount of agricultural land is declining, and there are
significant natural limitations to increasing the quantity of arable land. According to official sources, agriculture, livestock, fishing, and forestry produced an estimated 23.3 percent of gross domestic product (GDP) for the financial year 2004. The major crops are wheat, rice, sugarcane, and cotton.

**Iran Islam Republic:** Iran is located in the Middle East and is bounded to the north by Armenia, Azerbaijan and Turkmenistan and the Caspian Sea, to the east by Afghanistan and Pakistan, to the south by the Persian Gulf and the Gulf of Oman, and to the west by Iraq and Turkey. Iran’s total area is nearly 1.65 million square kilometers. Iran has rugged mountain chains surrounding several basins collectively known as the Central Plateau, which has an average elevation of about 900 meters. East of the Central Plateau are two large desert regions, a salt desert in the north and a rock and sand desert in the south. Iran has enormous reserves of oil and natural gas. Oil reserves are estimated at more than 130 billion barrels (third in the world behind Saudi Arabia and Iraq; about 11 percent of world proven reserves), and natural gas reserves are estimated at more than 32 trillion cubic meters (second in the world behind Russia).

Iran’s population is about 70 million according to preliminary data from the decennial census conducted in late 2006, of which approximately one-third is rural and two-thirds urban. Population density averages 42 people per square kilometer, but with significant regional variations. In 2007 Iran’s GDP (at the official exchange rate) was estimated at US$278.1 billion; GDP in terms of purchasing power parity (PPP) was US$852.6 billion, or US$12,300 per capita. The estimated GDP growth rate was 4.3 percent.
Industry contributed an estimated 45.3 percent, services 43.7 percent, and agriculture 11 percent of GDP.

Iran's diversity of terrain and climate enable cultivation of a variety of crops, but in 1998–2000 severe droughts cut agricultural production. Iran is a net importer of grains, especially rice and wheat, and a net exporter of fruits, nuts, and various specialty crops. Iranians grow a variety of crops, most notably wheat, barley, rice, pistachio nuts, cotton, sugar beets, and sugarcane. About one-third of agricultural income comes from livestock, chiefly chickens, sheep, beef cattle, and dairy cows. Iran has a long tradition of fishing in the Caspian Sea, in the Persian Gulf, and on inland rivers. In 2004 catches totaled more than 330,000 tons of fish.

**Maldives:** The Republic of Maldives was once a sultanate under Dutch and then British protection. It is composed of 1,190 islands in 20 atolls situated in the South-Southwest of India in the Indian Ocean. The Maldives became a republic in 1968, three years after acquiring independence from the United Kingdom. The population of 359,008 inhabitants (July 2006) consists of three major ethnic groups: South Indians, Sinhalese and Arabs.

Tourism is the Maldives' largest industry which accounts for 20% of the GDP and fishing is the second foremost production. The GDP has significantly risen during the last few decades and growth averages 8% per year. Per capita income is an estimated US$ 2500 and is the highest in South Asia. However, the economy is particularly vulnerable due to its high dependence on the tourism and fishing industries. The September 11, 2001 terrorist attacks in the United States as well as the December 2004 Asian
tsunami disaster negatively affected the country’s tourism and consequently impacted the GDP.

**Nepal:** Nepal is located in the Himalaya Mountains of South Asia, with India to the east, south, and west and China to the north. Nepal’s mountainous terrain constrains land use options, and nearly one-third of the land area is unfit for agriculture or forestry. According to government figures for 2002, approximately 18 percent of the total land area was used for agriculture, of which 88.8 percent was categorized as arable land, 4.4 percent as land under permanent crops, and the remainder as pastures, woodlands, and other categories.

From 1911 to 2001, the country’s total population grew from an estimated 5.6 million to 23.2 million inhabitants and population density grew from 38.3 to 157.3 persons per square kilometer. According to the 2001 census demographically 50.1 percent of the population was male and 49.9 percent female, a proportion that has existed for decades. The agricultural sector has employed most of the labor force and provided the largest share of gross domestic product (GDP), but the sector’s shares of the labor force and GDP have declined since the 1970s. Agriculture is probably Nepal’s most important economic sector. Since at least the 1960s this sector has often provided nearly half of the gross domestic product (GDP) and employed most of the population. However, the sector’s contribution to the economy has declined. According to World Bank data, from 1965 to 2004 the agricultural sector declined from 65.5 percent of GDP to nearly 40.3 percent.
**Sri Lanka**: Sri Lanka, formerly known as Ceylon, is an island nation in the Indian Ocean, separated from India by a narrow strait. The northern part of the island consists of flat and gently rolling plains, while the south central region varies from hilly to mountainous. Most of Sri Lanka’s 20.4 million people live in the southwest and centre of the island, three-quarters of them in rural areas. The Portuguese, the Dutch and the British took it in turns to invade the island between 1505 and 1948 and were interested first in spices and later in plantation crops such as tea and rubber. Independence from Britain was gained peacefully in 1948. The traditional name “Sri Lanka”, meaning “resplendent island”, was adopted formally in 1972. The country occupies a total area of 65,610 sq km.

Sri Lanka is a middle income country with approximately 1 million people (6%) of the population living in poverty. The major cause of poverty and inequality has been the long running conflict. The Boxing Day tsunami in 2004 devastated Sri Lanka’s coastline, killing more than 30,000 people and leaving approximately 450,000 people displaced. Economic development has been hampered by ethnic conflict, poverty and unemployment. Agriculture employs more than 30 percent of the workforce. Tea is the leading export crop, grown on state owned plantations. Meals of rice with curry, vegetables and sometimes fish are cooked over an open fire or on a clay stove. Poorer urban neighbourhoods are crowded. Entire families may live in a single room, or several in a subdivided derelict house.

Pattern of food consumption is changing in most of the Asian countries. In general, as depicted from figure 1 and 2, the consumption of cereals is almost similar which is consumed as a major food category across Asia.
There is an increase in consumption of eggs in South, South-East and East Asia. Consumption of Fish has drastically increased in South Asia after 1998 while that of fruits, oil-crops, spices, sugar-crops and vegetables has increased significantly in South-East Asia since 2001. Central Asia shows an increasing trend in the consumption of potatoes and similar kind of trend can be seen in the consumption of stimulants for West Asia. There is a varied trend of the consumption of different food category within Asia. However there is a shift towards homogenization of the consumption pattern in long run. Despite such diversification, in aggregate, Asian diet is likely to achieve a common trend (Jore and Sharma, 2008). Many Asian countries are expected to undergo transformation in their economies and rapid urbanization in the coming years. Food consumption is likely to be influenced by the changes in tastes and lifestyles stimulated by urban living along with the strong documented effects of household incomes and food prices. Food consumption is also possibly influenced by the changes in marketing systems and occupational changes, closely linked with increasing gross national product (GNP) per capita.

Per capita food production in Asia and in the world as a whole has been increasing steadily over the past 50 years. According to FAO food production index, there is sufficient food to feed all the people in the world; however, food is not always available, affordable, or equally distributed to needy populations. In 2007, 850 million people worldwide were unable to access enough food to fulfill the minimum energy requirement. The economic and food crises in 2007 led to drastic price increases for agricultural inputs such as fertilizers and outputs such as grains and cereals.
Food and Agriculture Organization (FAO) has defined food security that all people, at all times, have access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active healthy life. The definition implies that food should be available, accessible, and consumed to meet nutritional needs. Food availability is actually the food for sale in markets, or food produced by consumers. This production is a combination of domestic production, commercial imports, aid, and domestic stocks. Access to food involves physical access, economic access and social access. Here physical access means access to a place where food is available while economic access is termed for the affordability of food in markets, and social access literally means access of food for all people, without discrimination against gender, age, or other social grouping.

3.2 Micro Profile

Indore has been touted as the commercial capital of Madhya Pradesh. Formerly a major trading centre, the city, along with its satellite townships of Pithampur and Dewas, has established itself as a strong industrial base. The era of liberalisation has seen Indore at the forefront of a number of privatisation initiatives which include the country's first toll road and private telephone network. In the midst of such vibrant industrial activity, the city still manages to maintain its link with its glorious past.

Indore is well connected by road, rail and air with the Agra-Mumbai highway passing through the city. It is strategically located, being in close proximity to Mumbai (593 kms.) and Delhi (807 kms.) both of which are connected by daily flights operated by Jet Airways and Indian Airlines.
Indore is situated on the southern edge of the Malwa plateau at an altitude of 553 m above sea level, on the banks of two small rivulets - the Saraswati and the Khan which are tributaries of the Shipra river. It is situated in the western region of Madhya Pradesh. It is located 190 km west of state capital Bhopal. It is the largest city in Madhya Pradesh state in central India and 15\textsuperscript{th} largest city in India. It serves as the headquarters of both the Indore district and Indore division. It is among the million+ population cities of India with a population of 1,516,918 (2001 census). It is the commercial capital of the state of Madhya Pradesh. Indore city presents a happy blend of historical past and promises of rapid future modernization. Due to its location in Central India (approx. 76\textdegree{} E, 23\textdegree{} N), far from the sea, Indore has a moderately extreme climate.

Over the years the city of Indore has welcomed people from all castes, creed, and colour. People from all corners of the country particularly Kerala have migrated & settled in the heart of M.P. for their livelihood, education or just for its peaceful culture. The people are highly social & progressive which is why all cultures from south, north, east & west have mingled in the life of Indorians. Indore reflects the true spirit of Unity in Diversity. The mixed culture can be invariably seen in the typical food habits ranging from South Indian 'Idli-Dosa', 'Vada-Sambhar' to 'Dal-Bafla' typical Malwa Food. Indore is known for its wide variety of "Namkeens", gujrati & chinese food restaurants, and bengali sweets.

The life in Indore starts early with tea along with ‘poha & Jalebi’ followed by delicious lunch which invariably includes popular 'besan preparations'. Later in the day one can easily find snacks like 'Khaman', 'Kachori - aaloo
kachori, dal kachori etc.', 'samosa', 'petis', 'Baked Samosa', 'Bhel puri', 'Pani Puri', 'mathri' etc. Numerous Shops of Sweets have enjoyed nice business in Indore. Late nights another market comes alive in Sarafa (the heart of city) where one finds lot of delicacies to enjoy after a nice dinner like - 'Gajak', 'Bhutta kis', 'Gulab Jamoon', 'garadu', 'Rabri', 'HOT BOILED MILK', 'aalo tikiya', 'Halua : - Gajar, Moong', icecreams, 'shakes' etc. and finally tasty 'paan' to end your day.

It is therefore useful at this juncture to examine trends in consumption patterns in Asian countries at macro level and in Indore city at micro level and deliberate on the potential of the food and agriculture sector to meet the demands and challenges posed by the dynamic environment.