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Chapter 8: Latin America

8.1 Introduction

Latin America is the southern part of the large continent of the Americas that lies between the Pacific and Atlantic Oceans. Although some divide this continent into the two regions of North America (Canada, the US and Mexico) and South America (all the countries south of Mexico), Latin America includes Mexico with South America to form a world region of considerable physical and social coherence covering more than 8 million square miles (convert to km2) and with 30 independent countries, more than 17 islands still under the political control of the US, UK, France and the Netherlands, as well as indigenous groups seeking autonomy as nations.

The term "Latin America" was coined by the French in the 19th century who wished to discourage British interests and justify their own (imperial/colonial?) ambitions in the area by claiming the shared "latin" languages of Spanish, French and Portuguese as the defining characteristic of the region. The islands of the Caribbean are often included within the Latin American region because of the physiographic links from the island chains to the South American mainland, because Spanish is spoken by many Caribbean inhabitants, and because of a shared legacy of European colonial domination.

Much of Latin America can be characterised by a common experience of **colonialism** resulted in the dominance of the Spanish and Portuguese languages, of the Catholic religion, of Iberian legal and political institutions, and of resource extraction, trade links and economic control by Europe. In the twentieth century Latin America has shared a trajectory that includes rapid integration into global markets and the transtition from revolutionary and military to democratic governments throughout the region. In this century, Latin America has also been seen as within the U.S., rather than the European sphere of political and economic influence.

Colonialism - see chapter ?

Despite an apparent physical coherence and a shared historical experience of colonialism and economic development, like many other world regions, the regional definition of Latin America is contested and unclear. The clearest physical breaks between North America and South America probably occur at two narrow isthmuses (narrow necks of land between major seas) - in Mexico at the Isthmus of Tehuantepec, or where the Panama canal now cuts the Isthmus of Panama. And the islands of the Caribbean are a chain of volcanic peaks and coral reefs that are physiographically linked to the US state of Florida to the north as well as to Venezuela in the south, ringing the seas of the Caribbean and the Gulf of Mexico.

In some texts the Latin American region is defined only by those countries where Spanish and Portuguese are the official language, thus excluding those countries colonised by other European powers including the French speaking islands of the Caribbean such as Haiti and the country of French Guiana; the English speaking countries such as the Caribbean islands of Jamaica and Barbados and mainland countries of Belize and Guyana; and the former Dutch mainland colony of Suriname and Caribbean islands still under Dutch political

control such as Bonaire and Curaçao. A legacy of Spanish colonialism and language could also bring the southwestern region of the United States into Latin America.

Even within the Spanish and Portuguese speaking countries, there are many people who speak only indigenous or other languages, who are not Catholic, who are of Asian or African heritage, and where economic integration into world markets or democractic government are not in place.

Thus the definition of the Latin American world region arose from the period of global integration associated with European colonialism but oversimplifies the physical and social diversity within the region, and the links with many regions of the world other than Europe and North America. In contemporary popular culture the term "Latin American" or "Caribbean" is more often associated with musical trends such as salsa and reggae, with certain foods and fashions, or with stereotypical images of tropical cultures and ethnicity (party loving, fiestas, black or brown skin, colorful fashions, strong sexuality - for example the image of 'carnival'). While these stereotypes may be embraced for purposes of identity or tourism, for some people lumping this diverse region under a single definition and perception of Latin America is a false or oversimplified classification with unacceptable echoes of colonialism, racism and environmental determinism.

Figure 0-1: Location Map

8.2 Physical and Environmental context

Latin America's physical environments include vast areas of forests, grasslands, mountains and deserts that at first glance seem minimally transformed by human activity. There are also areas of intensive human occupance where the physical limits of aridity and disease have been apparently overcome by technologies such as irrigation, plant breeding, air conditioning and medicine.

However research has shown that many of the seemingly pristine forests were cleared centuries ago, the grasslands selectively burned or grazed, the mountains carved into terraces, and the infrequent waters of the deserts stored or diverted and thus that Latin American physical geography and vegetation have long been transformed by humans. Similarly, studies show that human settlements and high technology agriculture are extremely vulnerable to natural disasters and epidemics and therefore that the human geography of Latin America continues to be guided by environmental conditions and events.

Thus an understanding of the physical and environmental context and the ways they have been modified by people is integral to understanding the historical and contemporary human geography of the Latin American region amd the challenges to the sustainability.

8.2.1 Major Physiographic Regions and Geological features

Andes - the mountain chain that parallels the west coast of South America

The two largest scale physical features in Latin America are the **Andes** Mountains and the Amazon basin or **Amazonia**, both easily seen from space The Andes comprise a 5000 miles long chain of high altitude peaks and valle

that for the most part parallel the west coast of South America. The highest peak, Aconcagua at 22,825 feet, is a dramatic pinnacle revered and admired by indigenous peoples, tourists and mountain climbers [photo]. The Amazon tributaries flow downwards and eastwards from the Andes into an enormous river network that covers a basin of more than 6 million square kilometers. The Amazon river flow carries 20% of the worlds freshwater and provides water, sediment and fish that support the agriculture and diets of the peoples of the basin as well as offering a transport network. The river also nourishes the Amazon rainforest called by some the "lungs' of the world because of its key role in recycling the oxygen, carbon and water resources that are critical to life on the planet and which hosts a store of biodiversity of more than 100,000 different species.

Figure 0-2: Satellite Image of the Region

Other important physical features include the mountainous spines of Mexico and Central America and the high altitude flatter areas or plateaus that lie between or adjacent to the mountain ridges. The Andean plateau, the **Altiplano**, and the Mexican plateau or Mesa Central, are important areas of human occupance, because they provide flatter, cooler and wetter environments for agriculture and settlement than the adjacent steep sloped mountains, dry lowland deserts, and humid lowlands. The Caribbean basin has large areas of limestone geology where water tends to flow underground and create large cave systems such as those in the Yucatan peninsula of Mexico and in Puerto Rico. Where the surface collapses into limestone caverns, deep, crystal clear ponds occur and are called **cenotes** in Mexico and blue holes in the Bahamas. Coral reefs are also a key feature of the Caribbean landscape, created when living coral organisms build colonies in warm shallow oceans. Corals are fragile ecosystems, hosts to a myriad of other marine animals, and are easily damaged by boats, divers, pollution and environmental change.

Altiplano - the set of high plateaus and basins that lie between the Andean mountains at altitudes of over 10,000 feet

Figure 0-3: Photos of physical landscapes

Cenotes - natural well or reservoir, common in the Yucatán Peninsula, formed when a limestone surface collapses, exposing water underneath

The configuration of high and low land areas and the location of island chains have emerged from a long history of tectonic activity in the region. Latin America is on and near several major **continental plates**. The region south of Panama sits on the South American plate where the slow westward drift of the South American plate is colliding with the adjacent Nazca plate, causing a folding and uplifting of the western edge of the South American plate into the Andes mountains, and forcing the Nazca plate downwards and under (subduction) South America. Similarly, Mexico sits on the North American continental plate, also drifting westward and causing the subduction of the Cocos plate and the uplift and folding of the Sierra Madre mountains. The Caribbean plate, in contrast, is moving eastward, pulling away from the Cocos, moving under the South and North American plates and producing geological tensions and cracks that produce earthquakes and volcanic activity in Central America as well as the formation of several volcanic islands in the Caribbean.

Continental plates - see Chapter?

This geological activity and history of Latin America has affected human history and activity in many important ways. The mineral wealth of Latin America is typically found on the older shields and in those areas where crustal folding

brings older rocks near to the surface. The most important precious metal mining districts in the region include the Peruvian and Bolivian Andes where mountains of silver were excavated in the colonial period at Cerro de Pasco and Potosi and lead, zinc and tin are still important, the silver region of the Mexican Mesa Central, and the gold mines at Carajas on the edge of the Brazilian plateau. World class iron deposits are found on southern edge of the Brazilian shield at Itabira, on the northern edge of the Guyana shield at Cerro Bolivar and in northern Mexico. Copper is the geological treasure of the southern Andes, especially northern Chile and is also important in northern Mexico. The shores of the Caribbean including the Guyanas and Jamaica have important bauxite deposits (used in the aluminum industry). These minerals, especially gold and silver, were foundations of the European colonial economies, and now dominate the export economies of countries such as Chile and Bolivia. They are a focus of foreign interference and ownership and have often transformed local labor and environmental conditions. The other critical resources associated with Latin America's geology are oil, gas and coal. The earliest oil booms and later gas developments occurred on Mexico's Gulf Coast and in Venezuela around Lake Maracaibo contributing to national economic growth but also to a cycle of indebtedness and crisis. New finds in the Ecuadorian Amazon and southern Mexico have sparked boundary disputes and raised concerns of environmentalists and indigenous peoples.

Figure 0-4: Mineral resources of Latin America

Geology also affects soil fertility and agricultural potential through the influence of parent rock and volcanic activity. The older shields often bear less fertile soil whereas volcanic ash provides important nutrients. Some mineral deposits produce soils that are toxic and cannot be used for agriculture.

But volcanic activity also poses threats to human activity when eruptions and ash destroy crops and lives. Throughout Mexico, Central America, the southern Caribbean and the Andes volcanoes have frequently threatened settlements and the archaeological and historical record documents many major disasters. The tensions associated with shifting plates have also produced devastating earthquakes such as those in Mexico City, Managua, Guatemala City, and Santiago. Such natural disasters can not be blamed solely on geophysical conditions. The greatest damages occur when people become vulnerable because they are forced to live in unsafe houses or on unstable slopes because they lack the money or power to live in safer places, purchase insurance or obtain warnings of events.

8.2.1.1 [GEOGRAPHY MATTERS: Natural disaster vulnerability in Latin America]

8.2.2 Climate and Hydrology

The geological configurations also influence the climate and hydrology of Latin America. The overall climates of the region are determined by global atmospheric circulation including the positions of the equatorial high and tropical low pressure zones and the major global wind belts (see Ch 1). Because Latin America straddles the equator, reaching north of the tropic of Cancer in the northern hemisphere and south almost to the Antarctic, climatic patterns are

relatively simple to understand and provide good general examples of how global circulation affects regional climate, vegetation and human activity.
[Some of the following section probably needs to go in an introductory chapter where global atmospheric circulation is described - and plate tectonics.. I found some good web sites and diagrams at ems.psu.edu that may help]
The constant high inputs of solar radiation at the equator produce warm temperatures throughout the year and this warmer air has a tendency to rise into the atmosphere, creating low pressure at ground level, and cooling and condensing into clouds that eventually generate heavy rainfall. These equatorial zones of high temperatures and rainfall provide conditions for the rapid growth of vegetation in the form of the rainforests of the Amazon. Rainfall in the Amazon basin ranges from 60 to 80 inches a year. The cooler air moves out from the equator towards the poles high in the atmosphere but eventually sinks over tropical latitudes (23.5 degrees N and S) creating a zone of high pressure. As the air moves towards the surface it becomes warmer and drier, holding so little moisture by the time it reaches ground level that these regions are characterized by the very low rainfall, sparse vegetation and dry conditions of deserts. In Latin America, the Sonoran and Chihuahuan deserts of Mexico, and the Atacama of Chile, are partly associated with this type of large-scale atmospheric subsidence.

When the sinking air reaches ground level it diverges and some of the air flows back towards the equator where it converges and rises with the heated air. This vertical circulation of air from the equator to the tropics is called the Hadley cell and the zone of convergence near the equator is called the **Inter Tropical Convergence Zone**. The seasonal variation associated with the tilt of the earth's axis and associated changing orientation of the northern and southern hemispheres towards the sun (the northern hemisphere facing the sun more directly in June than in December) means that the zones of rising and sinking air move northward in June and southward in December with corresponding shifts in the zones of rainfall and dry conditions.

Intertropical convergence zone - see chapter?

The spin of the earth drags air flowing back from the tropical latitudes to the equator into a more east-west flow and creates a major wind belt, blowing from east to west between the dry tropics and the equator called the **trade winds**. Air moving pole ward from the tropics towards the poles is similarly pulled by the earth's spin into a major west to east flow called the **westerly winds**. Within each of these major wind belts more complex processes produce high speed jet streams that can meander across the continents driving weather systems and the paths of major storms.

Westerly winds

Trade Winds

When winds blow across warmer oceans they tend to pick up moisture and when they encounter a land mass, especially coastal mountains, moist air rises and condenses into rainfall or snow. Thus the trade winds flow across the Atlantic and frequently produce rain on the Caribbean islands and east coasts of Central America in the Northern Hemisphere. In southern Latin America the trades bring rain to the east coast of Brazil but with shifts north and south associated with the global circulation. The regions on the margins of the trades, and of the equatorial rainfall zone, have highly seasonal climates with a distinct rainy season.

The westerly winds bring heavy rains to southern South America, especially Chile. Seasonal shifts in pressure and wind belts mean that the westerlies move

nearer the equator in December and to the pole in June, resulting in distinct wet and dry seasons on the margins of the westerly circulation. When the global circulation shifts southward in December, storms spinning out of the northern hemisphere westerlies usually bring rain to northern Mexico.

Latin America's extensive grasslands occur where seasonal shifts in wind and pressure belts result in a distinct rainy season, especially on the margins where the rains are fairly moderate.

The coastal mountain chains of Latin America clearly illustrate the role of topography in regional climate. First of all, ocean winds that encounter coastal mountains are forced to rise even higher, cooling to the point that they release most of their moisture in rain and snow. This is a very clear feature of the Andean climate but also explains the high rainfall of highland Central America and Mexico. The high precipitation over the Andes feeds the rivers that water the lowlands east of the mountains, most notably the Amazon. However, mountains also create a "**rainshadow**" effect because winds passing over mountains from the coast to the interior lose their moisture over the higher altitudes and then become warmer and drier as they descend to the interior creating arid conditions to the leeward of mountain ranges such as the Andes in Patagonia and Mexican Sierra Madre oriental.

Rainshadow

Higher altitudes are also cooler, so that despite the intensity of the sun there are large regions of the Latin American tropics with cooler temperatures more conducive to certain human activities and agricultural crops. The **altitudinal zonation** of climate, vegetation and human activity has led to a simple classification of Latin American mountain environments into the Tierra Caliente (0-800m, 20-35C), Tierra Templada (800-1200m, 10-25C) and Tierra Fria (1200-2000m, 0-20C). These zones are associated with characteristic vegetation types (e.g. forest in the Tierra Caliente and grasslands in the Tierra Fria) and with agricultural activities (tropical fruits in the Tierra Caliente, coffee in the Tierra Templada, potatoes in the Tierra Fria.

altitudinal zonation - changes in vegetation and human use of the environment according to elevation in mountainous regions

Figure 0-5: Altitude zonation

The highest and coldest parts of the Andes store precipitation in mountain glaciers that act as important natural storage for water resources. One of the indicators that global climate may be becoming warmer is the clear evidence that the Andean glaciers are melting and shrinking.

Latin America also provides a classic case of how the temperatures of the ocean can influence the climate of adjacent land masses. Colder air holds less moisture and promotes less evaporation that warm air and surfaces. Winds flowing across the very cold current that normally flows northward off the coast of Peru and Chile pick up very little moisture and exacerbate the already dry conditions promoted by descending air over the tropics. The Atacama Desert is one of the driest spots on earth.

In contrast, easterly winds moving across the warm Caribbean absorb a lot of moisture, especially during the fall when the sea surface is warmest. When storms start to circulate, the warm sea fuels both the moisture and energy of the

storms, producing the hurricanes that regularly cross the Atlantic coast of Latin America with some benefit to water resources but often threatening human settlements and lives with the power of their winds and the flooding from heavy rainfall.

One of the most significant features of Latin American climate is that it does not remain constant from one year to another. One of the most important causes of this interannual climate variability is the phenomenon known as **El Niño**. El Nino, which is now known to influence weather worldwide, occurs when the normally cold seas off Peru start to warm and winds shift across the Pacific in what is called the Southern Oscillation. The local effect of El Nino is to bring warmer and wetter winds to the coast of Peru and Ecuador with high rainfall and flooding. But the sensitivity of the global atmospheric circulation is such that the links between Pacific ocean temperatures and conditions elsewhere produce droughts in northeast Brazil, floods in southern Brazil and northern Mexico, a reduced hurricane season, as well as droughts in southern Africa, Australia and Indonesia. In some years, the ocean off Peru actually gets colder, and this produces a contrasting global pattern called La Nina, of floods in NE Brazil and drought in northern Mexico and of more intense Pacific hurricanes.

El Niño - a periodic warming of sea surface temperatures in the Pacific including the cold current off the coast of Peru that is associated with droughts, floods and other weather anomalies around the world.

One of the most exciting scientific developments in recent decades is an improved ability to monitor what is happening to sea surface temperatures in the Pacific and to forecast the onset of an El Nino up to a year in advance. These forecasts can help farmers and disaster relief agencies prepare for the droughts and floods associate with El Nino (or La Nina) and hopefully reduce losses, or even take advantage of the changed conditions by planting different crops.

8.2.2.1 [GEOGRAPHY MATTERS : The 1996-97 El Niñõ and its Impacts]

The spatial and seasonal variation in climate is reflected in the hydrology and natural vegetation of Latin America. The regions major rivers originate in higher rainfall areas but their flow can vary seasonally and from year to year as a result of factors such as El Niño or hurricane intensity.

The three largest river basins in Latin America are the Amazon, the Plata and the Orinoco, all flowing to the Atlantic Ocean. The flow of the rivers in the Plata basin (the Parana, Paraguay and Uruguay) originate in the Andes and the Brazilian highland shield and are much higher in (what season?) and are low in El Nino years. The Parana flows through the flooded wetlands of the Pantanal in Brazil and across the arid Pampas grasslands and has become an important source of energy through large hydroelectric dams such as the Itaipu. The Orinoco drains the Llanos grasslands of Colombia and Venezuela. The Amazon drains a vast basin that includes parts of Brazil, the Guianas, Colombia, Venezuela, Ecuador, Peru and Bolivia. In other parts of the region such as the western Andes, Mexico and Central America many smaller rivers drain from the mountains with highly seasonal flows. The rivers flowing from the Sierra Madre Oriental of Mexico provide water resources to the irrigated export agriculture on northwest Mexico; those flowing eastward to the Gulf of Mexico such as the Grijalva have been extensively dammed and developed for hydropower. In cities such as Bogota and Lima, increased water demands and climatic variations associated with El Nino have combined to threaten water and energy supplies with frequent droughts, water rationing and electricity brownouts.

Latin America has several large freshwater lakes including Lake Managua in Central America and Lake Titicaca at the border of Bolivia and Peru (see Sense of Place feature on Lake Titicaca). Major waterfalls such as Igacu Falls where Brazil, Argentina and Paraguay meet, and Angel Falls, Venezuela, the tallest fall in the world, have become increasingly popular tourist destinations.

Figure 0-6: Angel Falls

8.2.2.2 [SENSE OF PLACE: LAKE TITICACA]

8.2.3 Vegetation and Biodiversity

The diversity of Latin America's physical environments has produced a large variation in species or **biodiversity**. Latin America's biodiversity is large because of the size of the continent, the range in climates from north to south, altitudinal variations within short distances, and a comparatively long history of fairly stable climates and isolation from other world regions. Many people are attracted by the colorful birds and verdant plants associated with the tropical regions of the Americas (or **neotropics**).

Biodiversity - see chapter ?

The wetter climates of Latin America are associated with magnificent forest ecosystems including the tropical rainforests of the Amazon and Central America, and the temperate rainforests of southern Chile. The Amazon forest ecosystems are notable for the sheer number of species found within small areas of forest. The giant alerce trees of Chile resemble the redwoods of west coast of North America because both species rely on the heavy seasonal rains of westerly storms.

Neotropics - New World tropical climate and biogeoggraphical region characterized by warm temperatures throughout the year

The drier climates are associated with desert ecosystems where species have developed many interesting adaptations to water scarcity. "Xerophytic" or dryland plants such as cacti conserve water by having few leaves and waxy skins, shallow roots, storing water in their stems, and discouraging thirsty animals with sharp spines. Other plants, including many flowers, only bloom during the rains and are called "ephemerals". Animals such as lizards and rodents are only active in the cool of the night and live in burrows during the day.

Between the moist forests and dry deserts lie ecosystems where alternating wet and dry seasons produce vegetation ranging from scattered woodlands to dry grasslands. Grasslands are also found at higher altitudes where there is not enough precipitation or it is too cold to support highland forests such as the pine forests of northern Mexico. In Argentina, the **Pampas** grasslands cover x million hectares and have become important to the cattle economy. Other large grassland ecosystems include the llanos of Colombia and Venezuela and the cerrados of Brazil.

Pampas - grassland plains of southern South America

The long coasts of Latin America and the islands of the Caribbean include significant proportions of the worlds mangrove ecosystems, important in protecting the coasts from storms and in providing breeding areas for fish and other marine animals.

Figure 0-7: Collage of photos of ecosystems

8.2.4 Environment and Society

Latin America's natural environments offer both constraints and opportunities for human activity, especially agriculture. A study by the U.N. Food and Agricultural Organization on the carrying capacity of lands in the developing world found that up to 20% of Latin America was too dry for productive agriculture, up to 10% was too wet, and up to 10% was too cold. They found that poor soils and steep slopes were much more serious constraints on food production, with more than 50% of the land with soils that were infertile, toxic or poorly structured and about 10% of Latin American land too steep for agriculture. Some areas are much more productive than others, especially the flatter river valleys with annual renewal of soils by sediment deposition and easy access to water and regions where ash from volcanic activity provides nutrients to the soil.

Another constraint on human development, particularly in the warm and wet climates of much of Latin America, is the large diversity and prevalence of pests and diseases that weaken and kill plants, animals and humans in the tropics. For example, malaria is endemic in much of the Amazon basin and of lowland Central America.
As in Africa, Europeans found tropical climates arduous in tropical Latin America because they were vulnerable to disease and their crops and animals could not cope with local pests and literature of the 19th and 20th century portrays images of a lush but dangerous place. In Latin America, as we will see, European pests and diseases wrought far greater damage on indigenous ecology and peoples.

Despite the constraints posed by the natural environment in Latin America, any environmental determinism is unwarranted because the ability of humans to overcome many of these constraints is so clear throughout the region. Geographers such as Carl Sauer, William Denevan and Bill Turner use the approaches of **cultural ecology** to show how native Latin American populations used technology and social organization to adapt to harsh physical environments and take full advantage of more favorable environments.

Cultural Ecology - see Ch ?

8.2.5 Environmental History

Some of the most important adaptations were taken by early hunter gatherer populations who crossed the Bering land bridge more than 15,000 years ago and spread into the Americas. In Mexico, archaeologists find evidence of improvements in hunting technology such as the use of the more sophisticated Clovis hunting blade and the widespread use of fire for security, herding animals and encouraging vegetation palatable to desirable species.

Domestication - see Ch. ?

The most dramatic transformation of nature by early peoples in Latin America was the **domestication** of plants and animals through control and selective breeding of wild plants and animals starting more than 10,000 years ago. Several of the world's major food crops were domesticated by native Latin Americans including the staples of corn (maize), manioc, and potato, and vegetables and fruits such as tomato, peppers, squash, avocado, and pineapple. Tobacco, cacao (chocolate), vanilla, peanuts, and coca (cocaine) were also

domesticated in Latin America. In dry areas, people tried to ensure water supplies by building small dams and channels to bring water to these crops.

Figure 0-8: Map of centers of domestication

Latin America is noted for having very few domesticated animals - the llama (and its relatives the alpaca and vicuna) was tamed and bred for wool, milk, meat and transport and dogs and guinea pigs were also used for pets and meat. As in other regions of the world, the increased yields from domesticated crops created a surplus that permitted the specialization of tasks, the growth of settlements, and ultimately the development of highly complex societies and cultures. In Latin America, the complex societies included the great Maya, Inca and Aztec empires. These groups all modified their environment to increase agricultural production, and to exploit water, wood and minerals to support their cities, metal production and trade.

These environmental transformations were widespread, and in some cases, most notoriously the Maya, placed so much pressure on regional landscapes that environmental degradation resulted in social collapse. The Maya occupied the Yucatan Peninsula as well as a considerable portion of Guatemala and Honduras, with a period of expansion about 3000 BC reaching a peak of control and social development from about 600BC to 800AD during the Late Classic. Faced with rapid declines in the fertility of soils after clearing the rainforest they adapted by burning the forest to capture the nutrients in the trees through the ash, and then by moving on to clear another patch of forest once the declining fertility of the previous cleared area resulted in reduced yields. Up to 30 years would pass before returning to the original plot on which the forest would have regrown. This adaptation to rainforest environments mirrors those in other parts of the world and has been termed "slash and burn" or "swidden" agriculture. The Maya also developed methods for growing crops in wetland areas by building raised fields that lifted plants above flooding but took advantage of the rich soils and reliable moisture of wetland environments. There is evidence that the Maya cleared vast areas of forest during this period.

Between 500 AD and 1000AD the great Mayan cities such as Copan, Palenque, and Tikal were abandoned and overall population declined dramatically. Many scholars believe that one reason for the **Maya collapse** was their overuse of the soils. Population growth and tribute demands by the Maya elites required increases in agricultural production including the clearing of sloped lands, and there was no time to allow plots to recover before planting them again. Wide scale forest clearing has also been linked to regional changes in climate including increases in temperature and reductions in rainfall that would threaten agriculture. Soil erosion, droughts, and declining soil fertility would have contributed to a decline in food available to the large population and would cause some of the nutritional stresses that archaeologists have detected in human skeletons from the period of collapse.

Maya Collapse - the decline of populations and cultures of the Mayan society around 800 AD

The Inca also responded to the difficulties of living in a mountain environment in a variety of ways including through the construction of many miles of agricultural terraces on the steep hill slopes of the Andes during the height of their empire in 1400 that stretched from Northern Ecuador to Central Chile. These Andean

Terraces - flat stepped fields used in farming and irrigating steep slopes

terraces not only reduced soil erosion and provided a flat area for planting; they also reduced frost risks by breaking up downhill flows of cold air and allowed for irrigation canals to flow across the slopes in efficient ways. Geographer John Treacy has argued that the construction and maintenance of these terraces and irrigation systems required large scale social organization in which the Inca empire excelled. People were organized into small groups called Ayullu and labor for agriculture and mines was commanded through the *mita* labor system where communities were required to provide a certain number of days of work to the central authorities.

Figure 0-9: Map and pictures of Maya and Inca adaptations to environment

The Aztec, who settled in Central Mexico in the 1300s, were experts in the control of water and constructed an extensive network of dams, irrigation and drainage canals in the valley of Mexico to cope with the highly seasonal and variable rainfall pattern that produced droughts in some seasons and years, and large lakes and wetlands in others. They also developed the **chinampa** agricultural system that permits agricultural in lake and wetland environments. There is evidence that their clearing of forests in the basin of Mexico may have contributed to a drop in the water table and to a water crisis that led to the abandonment of some settlements.

Chinampa - small, stationary, artificial island built on a freshwater lake for agricultural purposes, mainly in Mexico

These widespread modifications of the environment of Latin America are evidence that has been used to debunk what geographer William Denevan has called the "**pristine myth**" of an untouched continent where native peoples lived in harmony with nature that was only degraded in the aftermath of European arrival in 1492.. The adaptations and environmental impacts of these earlier occupants of Latin America still echo in the traditional technologies used in some regions of Latin America and in the continual efforts to use technology to benefit from the physical environment and avoid its hazards. Geographers are among those who have pointed to the ways in which overuse of their environment contributed to the collapse of the Mayan society and the warning that this implies for current patterns of widespread deforestation, overuse of the land, and depletion of water resources.

Pristine Myth - false image of land unaffected by human activity

8.3 Latin America in the World

8.3.1 The Colonial experience in Latin America

The integration of Latin America into a global system of political, economic, ecological and social relationships began 500 years ago with the arrival of Spanish and Portuguese explorers at the end of the fifteenth century and their **colonial** activities. As described in Chapter 3, the fifteenth and sixteenth centuries were a period of innovation in Europe with changes in manufacturing technology and the organization of trade consolidating an economy of **merchant capitalism**. Improvements in shipbuilding and navigation allowed Europe to explore and expand trade to other regions of the world including east and south to Asia and Africa, and to sail to the west in search of new routes to Asia. The most famous of these explorers was **Christopher Columbus**, of an Italian family living in Portugal who was sponsored by Queen Isabella of Spain to search for territory and trading opportunities on a western route to the Indies (as Asia was

the known). Setting sail from southern Spain in August 1492 with three small sailing ships - the Santa María, Pinta and Niña - in October Columbus arrived in the Caribbean and landed in the Bahamas. On his first voyage he also visited Cuba and another that he called Hispaniola (now Haiti and the Dominican republic). Taking six locals, several parrots, and example of gold ornaments back to Spain, he left a colony of 21 volunteers. His second voyage in 1493 was much larger of 1500 men because he intended to establish permanent settlements but he was frustrated by divisions within his team and hostility from local residents. On his third and fourth voyages he explored the island of Trinidad and coast of Venezuela and the coast of Central America. With the promise of new lands in the western hemisphere the Spanish crown appealed to the pope for a ruling that would assign the new lands to Spain rather than Portugal. The resulting **Treaty of Tordesillas** in 1594 drew a demarcation line 370 leagues west of the Portuguese Azores (about 46 degrees W longitude) , granting non-Christian lands west of this to Spain, and east to Portugal including the as yet undiscovered territory of Brazil that jutted out eastward into the Atlantic from the Americas.

Treaty of Tordesillas - agreement that divided lands between Spain and Portugal at about 46 W longitude in 1594

Figure 0-10: Colonial voyages and Treaty of Tordesillas

Columbus was followed in subsequent decades by others seeking gold, territory and other resources in Latin America. The most notable explorers or "conquistadors" included Hernán Cortés who landed in Veracruz, Mexico in April 1519 and went on to conquer the Aztec empire and its capital of Tenochtitlan in the basin of Mexico; and Francisco Pizarro who seized control of the Inca empire centered in Cuzco, Peru in 1533. The Portuguese began their colonization of Brazil with the landing of Pedro Alvares Cabral in April 1500 near Bahia ?. The Spanish expanded and administered the new Latin American colonies through the two "*Vice Royalties*" of New Spain (Mexico and Central America) based in Mexico City and Peru (Andean and southern South America) based in Lima. These ViceRoyalties were subdivided into judicial regions called *audiencias*, administered from regional centers in Guatemala, Panama, Bogota, Caracas, Quito, La Paz, Santiago and Buenos Aires. The contemporary significance of this political organization is dramatic in that these centers, and the boundaries of the *audiencias* that they controlled, are now the capitals of many of the independent countries of Latin America. The Spanish charged the new administrators with obtaining gold and silver for the Spanish crown, converting the native people to the Catholic religion, and making the colonies as self sufficient as possible through the use of local land and labor. The Spanish crown demanded 20% of all mine profits, the so called *Quinto Real* or royal fifth. These goals were based in concepts of nature as a commodity, with a secular identity to be governed by humans, and of land as a private property right (see Chapter 2).

Demographic collapse - dramatic fall in indigenous population as a result of diseases in the aftermath of European arrival

The search for local labor to work in the mines and fields of the Spanish colonizers was frustrated by one of the most immediate and significant impacts the European arrival in Latin America, the **demographic collapse** of indigenous populations as a result of diseases brought by the Europeans. Because of the long isolation of the Americas from other continents native peoples lacked resistance and immunity to European diseases such as smallpox, influenza and measles. When they caught these diseases from Europeans and then from each

other mortality rates were very high. Researchers have estimated that up to 75% of the population of Latin America died in epidemics in the century or so after contact. This massive mortality demoralized local people, led to the abandonment of their settlements and fields, and meant that there was a scarcity of labor to work in the mines, missions and agricultural activities with which the Spanish, for example, hoped to support their colonial enterprise.

The introduction of European diseases into the Americas is just one example of the interaction between the ecologies of the two continents that historian Alfred Crosby has called the **Columbian Exchange.** When the Spanish and other colonial powers arrived in new lands they brought with them favorite plants and animals that they planned to introduce into the new colonies, but also, unintentionally, diseases, weeds and pests such as rats that were stowaways or the ships. In return, the explorers and colonists collected species that they hoped could be sold or traded back to Europe and elsewhere. In Latin America, the Spanish introduced the crops and domesticated animals of their homeland - especially wheat and cattle, but also fruit and olive trees, horses, sheep, and pigs. Sugar, rice, citrus, coffee, cotton and bananas had actually been brought to Spain from North Africa and the Middle East after the Moorish invasions of the sixth century and were then transferred to the Americas. They took back corn, potatoes, tomatoes, tobacco, and inadvertently the human disease of syphilis. Over longer periods these exchanges caused other important effects. The clearing of land for European crops such as wheat and sugar, and the overgrazing by cattle, contributed to soil erosion and deforestation in Latin America. Rats, pigs and cats ate and out competed local species, especially ground dwelling birds. One of many species of Andean potatoes became the foundation of the Irish diet and the cause of a famine and migration to the Americas when disease destroyed potato harvests in Ireland. Corn and manioc were introduced into Africa and became new staples, whereas peanuts and cacao were the basis of new African export economies. Cotton was introduced to India and grown for British textile mills, pineapple was distributed to the Pacific, including Hawaii, and tobacco became an addictive habit, eventually throughout the world.

Columbian Exchange - the transfer of plants and animals between the Americas and Europe as a result of European exploration

Table 0-1: Columbian exchange

In order to wrest profits and products from their new lands, the Spanish introduced several new forms of land tenure and labor relations into Latin America that still influence contemporary landscapes. Where they wished to directly control the land they granted land rights over large areas to Spanish colonists, often military leaders and to the Catholic church, ignoring traditional local uses and establishing fixed property boundaries. These "latifundio" often occupied the best land, forcing other farmers onto small plots of land or "minifundio". Large estates called **haciendas** were established to raise cattle, wheat, olives, and fruit to support the mines, missions, and for minor export back to Europe. But the major export sector was the **plantation**, where single crops such as sugar or tobacco, were grown for export, mainly in the wetter coastal areas. Labor for the haciendas, plantations and mines was obtained initially through the institution of encomienda in which local people were brought under the "protection" of Spanish authorities and given small plots of land in return for

Hacienda - large landholding established by Spanish in Latin America mostly used to raise cattle and crops for local markets and mines

tribute in the form of crops or other commodities, and a certain number of days or men assigned to work in the mines and fields of the Europeans. Because some colonists abused the system, using those under their control as slaves, this form of labor control was replaced in 1542 by the slightly more flexible institution of **repartimiento** where indigenous communities received some autonomy and land in return for sending some of their members to work for the Europeans.

Figure 0-11: Hacienda and plantation

Nevertheless, these forms of labor control did not produce a large enough workforce, especially in the tropics where the demographic collapse had devastated local populations that may have been small to begin with, and where the Europeans wanted to establish export plantations with high labor requirements. In this case, colonial trading routes were used to import slaves, mainly from Africa, to the Caribbean, Central America and Brazilian plantations to work in the production of sugar. Slave imports from Africa to Latin America eventually totaled more than 5 million people, including 3.5 million to Brazil and 3/4 million to Cuba.

The Spanish also maintained strict control over the ports through which goods were shipped (e.g. Veracruz, Mexico) and over who could participate in maritime trade. They made profits not only from resource extraction from the Americas through agriculture, mining and taxation, but also from goods that were imported only from Spain into Latin America for sale to both European settlers and local peoples.

It is important to recognize that the colonial effort in Latin America was a process that took place over at least two centuries, with some places incorporated earlier than others and some regions never really coming under complete colonial control because of their remoteness (the Amazon) and local resistance (parts of the Andes). Although many writers portray the Spanish conquest of the Americas in wholly negative terms (the "Black Legend" of Spanish greed, cruelty, environmental destruction and insensitivity to local peoples) there were Spanish settlers, such as the conquistador turned priest Bartolme de las Casas and Jesuits in Brazil and Paraguay, who were concerned about the rights of local people. There were also indigenous local leaders and groups who joined the Europeans in exploiting labor and conquering their rivals such as the Tlaxcalans who helped Cortés vanquish the Aztec in Mexico. In some cases, the Spanish were able to capitalize on existing traditional hierarchies that demanded tribute and labor from local people, such as the Inca system of *mita* labor that required all communities in the empire to provide labor for mines and maintenance of terraces and other infrastructures.

As Europe consolidated colonial control of Latin America, changes occurred in global and regional economies and political geographies that brought new colonial powers, trading patterns and institutions to the countries of Latin America.

During the 16th century, the Portuguese expanded their interests in Brazil from a few trading stations on the coast, exporting dyewood to Europe to the

development of large coastal sugar plantations using forced Indian labor. When disease and retreat to the interior created a labor scarcity, the Portuguese expanded their role in the slave trade along the African coast and started importing thousands of African slaves to Brazil. The Portuguese crown controlled the licenses for shipping both sugar to Europe and slaves from Africa and Portuguese Brazil, in general, was more integrated into and oriented to global markets at this time than Spanish America where the focus was more on domestic production and export of precious metals to Spain. In the Caribbean, the growing maritime and economic power of the British, French and Dutch resulted in several early efforts to wrest control from the Spanish through piracy or state supported expeditions.

The most important export commodities in Spanish colonial America were silver, produced mainly from mines in Mexico and Bolivia; sugar, grown on plantations in Cuba and southern Mexico; tobacco from Cuba; gold from Colombia; cacao (for chocolate) from Venezuela and Guatemala; and indigo, a deep blue dye, from Central America. In the first phase of the developed colonial economy (1540-1620), Spain derived enormous wealth from the bonanza of the silver mines at Potosi (now within Bolivia) that produced half of the worlds silver in 16th century, but this led to inflation in Europe with the rapid influx of money and Spanish industry suffered as upper classes in both Spain and the colonies chose to purchase luxuries from other parts of Europe. By 1620, however, Spain was embroiled in expensive wars with England, France and Germany, partly over control of trade with the Americas, and the demographic collapse and exhaustion of surface silver deposits was resulting in lower revenues from the colonies. Merchants and landowners in the colonies were also starting to resent the strict control of trade and taxation by Spain and were using positions of power and smuggling to keep revenue for themselves contributing to the overall weakening of Spanish power and economy. The last phase of colonial political and economic control is associated with the **Bourbon Reforms** that occurred when the French won the war to succeed the last Spanish Hapsburg king in 1713. These reforms were a significant step in Latin America's integration into the global economy because they expanded the number of ports that could be used for export, initiating, for example, the growth of Buenos Aires as a key city, while increasing taxes and professionalising the colonial administration and military to prevent corruption and defend against other European interests. They produced economic growth, especially on the frontiers of the Spanish Empire, but also created growing resentment among those settlers and local people who had benefited from previous relaxed controls.

Bourbon Reforms - changes in the administration and trade of Latin America introduced by the French after 1713 including expansion of trade and tighter control of colonies

8.3.2 Independence and the Export Boom

Independence movements were catalyzed in Latin America when in 1808 Napoleon conquered Spain and threatened to tighten trade controls. Revolutionaries, drawn from both Spanish American and indigenous leaders, set out to liberate Latin America from Spain, partly inspired by the French and American Revolutions. Between September 16th 1812, when the peasant leader Manuel Hidalgo called for Mexican independence in the famous "Grito" (cry) and 1824, when the "liberator" Símon Bolívar finally led northern South America to independence a series of regional revolts resulted in independent republics in based in Mexico, Argentina, Peru, Colombia, Chile and Brazil. The boundaries

and capital cities of most of these new countries originated in the colonial system of Vice Royalties and *Audiencias* and this legacy was reinforced further, when, in the instability following independence, the republics of Venezuela and Ecuador split off from Colombia, Bolivia and Paraguay from Argentina, and the Central American countries from Mexico.

An important geopolitical step was taken in 1823 when U.S. President James Monroe issued his "**Monroe Doctrine**" declaring that any further European colonization or interference in the Western Hemisphere, including Latin America would be considered a threat to the peace and security of the United States and a hostile act, and that in return, the US would not involve itself in European affairs. This set the stage for subsequent U.S. involvement and intervention in Latin America and the growth of U.S. economic and political dominance in the region. Soon after, in 1848, Mexico suffered a devastating loss of territory to the United States in the U.S.-Mexican War, ceding large portions of the states of Arizona, California, Colorado, Nevada, New Mexico and Texas, but leaving an enduring Hispanic cultural legacy.

Monroe Doctrine - U.S. declaration of unilateral interest over western hemisphere in 1823 that aimed to end European influence

The loss of colonial trade routes and protections against competition, civil wars led by regional strongmen known as "caudillos" within Latin America, a reluctance of foreign capital to invest in the new and unstable republics, and a brain drain of skilled Spaniards back to Europe all combined to produce an economic decline in Latin America in the first half of the 19th century. But as the political situation stabilized around 1850, and industrialization in Europe and North America created investment profits and new demands and consumers, capital became available for the Latin American economies in which liberal political thought supported free trade and foreign investment.

Terms of trade - see Ch ?

Capital invested in developing export economies for nitrate (used to make fertilizer) and copper in Chile; livestock in Argentina; coffee in Brazil, Colombia, and Central America; bananas in Central America and Ecuador; tin in Bolivia; and silver and henequen (a fiber used in making sacks and matting) in Mexico. Foreign owned companies, mostly British in the 19th century, ran many of the new export activities. The subsequent export boom led to some modernization of production methods, improved transportation and some investment in local light industries such as textiles and food processing. But many of the foreign companies made little effort to promote local markets and infrastructure and the bulk of the profits were sent back to their home countries rather than reinvested locally. The basic mineral and agricultural exports did not receive high prices in relation to the cost of manufactured imports (poor **terms of trade**) and were very vulnerable to changes in world prices. Countries that relied on these exports developed economies highly dependent on and linked to a volatile world market for these commodities that is still evident today in the vulnerabilities of Honduras (bananas), El Salvador (coffee), and Chile (copper). This period also saw the emergence of a middle class as well as urban and rural working classes and related challenges to political systems dominated by elites whose power stemmed from pre-independence colonial structures, their links to Spain, and large landholdings.

8.3.3 United States dominance, Latin American Revolutions and the Cold War

The First World War (1914-1918) was a positive stimulus to Latin America's industrial development because of an increased demand for raw materials and accelerated development of manufacturing industry to fill hemispheric demands. During this period, Latin America was drawn more explicitly into the new United States political and economic sphere of influence with US interventions to maintain stability and economic access in Cuba (1896-1922), Haiti (1915-1934), Nicaragua (1909-1933) and Panama (1903 onwards to control the canal).

However, internal tensions between elites and other groups, especially landless peasants, complicated relationships with the United States, especially as the Cold War intensified in the 1950s. A series of twentieth century revolutions in Mexico, Guatemala, Cuba, Chile and Nicaragua reverberated around the world and the hemisphere. The Mexican Revolution had complex origins in the demands of landless peasants for land and the desires of regional factions to overthrow the centralized, US and foreign capital oriented dictatorships that had arisen in independent Mexico.

Figure 0-12: US interventions and Latin American Revolutions (map)

8.3.4 ISI and the Debt Crisis

The worldwide depression that was initiated with the 1929 stock market crash demonstrated the extent to which Latin America was by this time integrated into the global economy because its impact reverberated throughout the region in declines in exports, restrictions on investment, and general economic crisis. This, together with a general awareness that foreign ownership and poor terms of trade for unprocessed exports made Latin American economies vulnerable to world conditions, led to the development of the new economic strategy of **Import Substitution Industrialization (ISI)** and the critical views of global integration espoused by **dependency theorists** [I'm assuming Sallie is defining and discussing these].

Mexico, Brazil and Argentina moved aggressively to implement ISI policies from the 1930s to the 1960s, including protection of domestic industries through tariffs and import quotas, and state investment in or nationalization of new manufacturing industries to produce chemicals, steel, automobiles, and electrical goods. ISI temporarily slowed Latin America's integration into global markets and stimulated the growth of domestic industry and workforce in regions such as northeastern Mexico (steel), Mexico's gulf coast (petrochemicals), and Sao Paulo, Brazil (autos ?).

Growing criticisms of ISI highlighted an oversized bureaucracy and high costs of subsidizing industries made inefficient and poor quality by a lack of competition and protectionism. A return to philosophies of free trade and reduced government intervention was led by young economists trained in the U.S. (the so-called "**Chicago boys**", many of them Chilean and trained by Milton Friedman at the University of Chicago).

Chicago Boys - young Latin American economists trained at the University of Chicago and other U.S. institutions to promote free trade and redduced government spending

A new infusion of capital into the world economy associated with the oil profits from the formation of the OPEC cartel [will this be dealt with in intro?] brought banks to Latin America seeking to invest "petrodollars" into what were perceived as stable and rapidly growing economies. Mexico, with the promise of its own oil bonanza and industrial expansion, as well as the more industrialized countries of Brazil and Chile were offered the largest loans, but almost all Latin American governments took advantage of the initially low interest loans to support development and other projects. When in the 1980s, interest rates rose and debt payments soared, Latin American governments were unwilling to cut back on popular subsidies and programs and instead borrowed more money, ran budget deficits and overvalued their currencies. The resulting over inflation and increased debt reached unprecedented levels - by 1989 Mexico owed $104 billion, Brazil $111 billion and Venezuela $33 billion with annual payments reaching more than half of the annual GNP. Bolivia had an annual rate of inflation of 23,000% in 1985. The 1980s have been called Latin America's "**lost decade**" because of the slowdown in growth and deterioration in living standards that occurred.

Lost decade - period when debt and inflation slowed economic growth and increased poverty in Latin America in the 1980s

The resulting decline in purchasing power and living standards, and the likelihood that debt moratoriums and default (especially in Mexico) would destabilize the international financial system, brought the full force of international financial institutions and the US government to seek a solution to Latin America's debt crisis. The U.S. Baker plan (date?) extended repayment and lent more money, while the International Monetary Fund moved to restructure loans on conditions of stabilization and structural adjustment [defined in intro??]. Mexico got a $48billion bailout (for bankers). **Stabilization** set out to curb inflation by cutting public spending on government jobs and services, increasing interest rates, controlling wages and devaluing currencies to increase exports. **Structural adjustment policies** required the removal of subsidies and trade barriers, the privatization of government owned enterprises such as telephone and oil companies, reductions in the power of unions to demand higher wages, and an overall focus on export expansion. These policies, while reducing inflation and debt in some countries, had some very negative effects on some people and sectors. Increased food prices and reduced health and education services as a result of withdrawal of subsidies, as well as unemployment as government jobs were cut, hit the poor particularly hard with increases in malnutrition and destitution. As a result of structural adjustment in Peru in 1990, gas prices went from 10 cents to $2 per gallon.

SAPs - see Ch?

8.3.5 Neoliberalism and Free Trade

Free trade policies were introduced in many countries as political power shifted to those with a belief in **neoliberalism**, echoing those of the 19th century liberals who believed in free trade and reduced government. Neoliberal governments were open to the possibility of expanding free trade through regional agreements that would take down barriers between partners.

Neoliberalism - see Ch?

The most dramatic step was taken by Mexico, who in 1994 joined the **North American Free Trade Agreement (NAFTA)** with the United States and Canada,

NAFTA - North American Free Trade Agreement between the US, Mexico and Canada implemented in 1994 to

creating a free trade region of 400 million people with a combined GNP of more than $9 trillion. Other initiatives include MERCOSUR, in 1995 linking Chile, Argentina, Brazil, Paraguay and Uruguay in a trade agreement; CARICOM to create a trade zone in the Caribbean; and the Andean Pact to link Peru, Ecuador and Bolivia?. Andean Pact and Cartagena Andean group agreement - Col, V, E, P and B. Chile withdrew.

8.3.5.1 GEOGRAPHY MATTERS: NAFTA

8.4 The Peoples and Cultures of Latin America and the Caribbean

8.4.1 History and composition of the people of Latin America

Prior to the arrival of the Europeans around 1500, Latin America is estimated to have had a population of around x million people, including large concentrations within the empires of the Aztec and Inca, and many smaller groups of hunters, gatherers and agricultural communities. The demographic collapse dramatically reduced indigenous populations, but significant Indian populations remained in Mexico and northern Central America and the Andes.

Colonialism changed the demographic profile of Latin America through the intermixing of European and Indian peoples, and the importation of slaves from Africa to the Americas. Few European women accompanied the early Spanish and Portuguese explorers and settlers, and many of the newcomers fathered children with Indian women through force, cohabitation or marriage. The resulting mixed race populations were called "*castas*" or castes and classified according to their exact racial mix. The most common category was that of "**mestizo**", indicating someone of half Spanish and half Indian heritage and others included "*mulatto*" (Spanish/African) and "*zambo*" (African/Indian). These racial categories reflected racist perceptions that permeated society and correlated strongly with social class and culture. Even the Spanish divided themselves between *peninsulares* (those born in Spain) and *criollos* (those born in the Americas), with the elite claiming closest links to Spain and sending their pregnant wives to Spain to ensure their children of elite status.

Mestizo - person of mixed Indian and European blood

Because "whiteness" carried social and economic advantages, some mixed race families tried to change their class through dressing, talking and eating like those of whiter skin and higher class, wearing shoes rather than sandals and eating wheat bread rather than corn tortillas, for example. The construction of race by styles of dress and diet continued into the twentieth century. The 1930 Mexican census includes wearing sandals and eating corn tortillas, together with indigenous language as an indicator of Indian race and of lower class.

Slave imports to Latin America from Africa totaled more than 5 million people during the colonial period, including 3.6 million to Brazil, and 700,000 to Cuba. Many of the Caribbean Islands such as Haiti or Trinidad, with very small indigenous and European populations, had a large number of African slaves working on plantations, and African populations also settled along the plantation coasts of Mexico, Central America, northern South America, and Ecuador. Although slavery was not abolished until the mid 1800s (1888 in Brazil), escaped

and freed slaves formed communities as early as ????, most famously the African community of "Palmares" in the Brazilian interior. Racial mixing occurred between European, Indian and African populations, especially in Brazil, where by the twentieth century some scholars were promoting an image of Brazilian racial democracy and equality **where** skin color had merged to coffee, and musical, religious and dietary traditions had merged into a uniquely Brazilian culture.

This "myth of racial democracy" is contradicted by evidence of continuing racism in Brazil and other Latin American countries. Studies show that race and class correlate strongly with Afro-Brazilians poorer, less healthy, less educated and discriminated against in employment and housing. In Mexico, the media has tended to promote lighter skin as more desirable through the choice of more European looking actors in commercials and other programs, and job advertisements still ask for "good appearance" - hinting at a preference for non-indigenous features.

There is a legacy of other **diasporas** in contemporary Latin American populations. Asian immigration to the region began during the colonial period and after the end of slavery with Chinese, Indian and Japanese workers brought to work on plantations and in construction as indentured workers. Europeans other than the Spanish and Portuguese settled in the more temperate climates, especially in Argentina, where many families have German, Italian or British names, and some regions, such as Patagonia, are associated with Welsh immigration and culture. [Italians/spanish indentured 6m to Argentina, Recent resettlement of Hmong from Indochina in French Guiana]

Diaspora - see Ch

Recent population censuses have attempted to record race and ethnicity and show some general patterns that correlate with the population history as described above. Brazil, Cuba and Haiti record large proportions of people of African heritage, and Argentina and Costa Rica report significant numbers of Europeans. Peru, Ecuador, Bolivia and Guatemala have a significant percentage of their population defined as Indian, and Colombia, Chile, Venezuela and Mexico are more than half *mestizo.*

Figure 0-13: Ethnic and racial compositions of LA populations

These numbers hide subtle differences in how different countries record, construct and perceive race and ethnicity. For example, a tendency to identify with Europe may increase the proportion of those who report themselves as European in Argentina, whereas a national pride in *mestizo* heritage increases self-identification as of mixed race heritage in Mexico.

8.4.2 Population growth and urbanization

The overall population of contemporary Latin America totals about 500 million people [check] and the distribution is clustered around the historical highland settlements of Central America and the Andes, and the coastal colonial ports and cities. Geographer John Augelli talks about the "mainland" population of highland Mexico and Central America and the "rimland" populations around the coast and in the Andes of South America, with relatively unpopulated interiors including the Amazon.

Figure 0-14: Population distribution of Latin America

Population has grown rapidly since 1900, when the regional total was 100 million, mainly as a result of high birth rates and improvements in healthcare. Brazil (162m) and Mexico (97.5m) have the largest populations and fertility rates reach as high as 4.8 children per woman in Bolivia. Although many countries are still growing at more than 2% per year, placing pressure on food, water, housing and infrastructure with population doubling times of less than 35 years, fertility rates have declined through much of the region. High fertility is characteristic of poorer, rural regions where infant mortality is high, children can contribute labor in the fields, and women do not have access to education, employment or contraception. Fertility has tended to drop as people move into the cities, health care improves, and more women work and are formally educated. A map of Mexico illustrates this pattern with lower fertility in urban, industrial and higher income states near Mexico City and the U.S. border, and high fertility in the poorer, more rural southern states. Attitudes towards family size in Latin America are also affected by the Catholic church's position against contraception and the culture of machismo that sees high male fertility as a measure of status.

Figure 0-15: Map of fertility rates in Mexico

Urban primacy - see Ch ?

Most people in Latin America now live in cities and the levels of urbanization are among the highest in the world ranging from about 50% in most of Central America to more than 80% in Argentina, Chile, Uruguay, Venezuela compared to a regional average of only 10% in 1900. The region also hosts three of the world's ten largest cities including Sao Paulo at ?, Mexico City at 20 million and Rio de Janeiro at ?. Geographer Alan Gilbert characterizes these as **megacities**. The major cause of urban growth is migration, although the redefinition of city boundaries (to include metropolitan regions) and internal population growth have also played a role. In many countries, one city dominates the country and this so-called **urban primacy** is characteristic of Mexico (Mexico City has % of the population), Peru (Lima %), Chile (Santiago %) and Argentina (Buenos Aires %). This concentration of population and development in one or two cities within a country can create problems when physical and human resources, political power, and pollution are all focused in one major settlement.

Megacity- see Ch ?

8.4.3 Migration

More than 150 million people are estimated to have moved from rural areas to cities in Latin America in this century. The reasons for this massive rural-urban migration include factors that tend to push people out of the countryside and others that pull people to the cities. People leave rural areas because wages are low, services such as safe drinking water, healthcare and education are absent or limited, or because they do not have access to land to produce or market food. Unemployment as a result of agricultural mechanization, price increases for agricultural inputs, and the loss of crop and food subsidies have also driven people from rural areas to the cities. Other push factors have been

environmental degradation and natural disasters, such as Hurricane Mitch in Honduras, as well as long running civil war or military repression of rural people as in Guatemala.

Urban bias- see Ch ?

Cities pull migrants because they are perceived to offer high wages and more employment opportunities, as well as access to education, health, housing and a wider range of consumer goods. Governments often have an **urban bias** in providing services and investment to cities that are seen as the engines of growth and the locus of social unrest. Social factors that encourage migration to the cities include the promotion of urban lifestyles and consumption habits through television and other media, and long standing social networks of friends and families that link rural communities with people in cities who can provide housing, contacts and information to new migrants.

Although most people have migrated to cities within their own country, there are several other important migration flows within the Latin American region. Several countries have encouraged the colonization of remote frontier regions by providing cheap land and other incentives to migrants. For example, the building of roads and availability of land in the Amazon created a stream of migrants from coastal regions of Brazil to the interior and the development of irrigation in Mexico and Chile attracted migrants to desert regions. People have moved between countries in Latin America in search of work and fleeing war and repression, with major population movements out of the Andes to work in mining, agriculture and oil in Argentina and Venezuela; from Central America to Mexico as refugees and seeking higher wages. Some of the smaller migrant streams have included better off sectors of society, for example, the intellectuals that left Chile, Argentina and Brazil for Mexico, Venezuela and Costa Rica during military government repression of leftists and students.

Latin Americans have also left the overall region in considerable numbers, creating a global "latin" and Caribbean diaspora. The United States hosts the largest number of people who define themselves as of Latin American or Hispanic heritage. Many Mexican families became part of the United States when territory was transferred to the southwest US in the aftermath of the US-Mexican war in 1848. They use the phrase "the border crossed us, we didn't cross the border" to emphasize that they are not migrants but longstanding residents. From 1900-1930 1.5 million Mexicans (10% of the total population) migrated to the U.S. to fill a labor shortage created by the First World War and to escape the chaos of the Mexican Revolution. Although 400,000 Mexicans (some of them US citizens) were deported during the depression, the growth of the U.S. economy from about 1940 onwards created such a demand for low cost labor, especially in agriculture, that the US and Mexican governments introduced a formal guest farmworker program, called the **Bracero program**, that distributed 4.6 million temporary work permits for Mexicans to work in the United States between 1942 and 1964. Many braceros never returned to Mexico and migration continued after the program ended and U.S. immigration restrictions tightened. Migrants are still pulled by higher wages in the U.S., increasingly in the service sector with jobs for women, and by strong social networks that linked communities in Mexico to family and friends in the U.S.

Bracero program - guest farmworker program that brought Mexicans to work in the United State between 1942 and 1964

In the last 50 years, Latin American migration to the U.S. has been dominated by Mexicans (about 40% of the total), but has also included large numbers from Cuba (15%) and Central America (10%). Significant Latin American populations can also be found in Canada and Europe (especially Spain).

The Caribbean diaspora includes migration to the United States (mainly from Cuba, Jamaica and Puerto Rico) but because of colonial links to Britain has included large out migrations to Europe and Commonwealth countries, especially from Jamaica and Barbados to Britain and Canada.

Figure 0-16: Baseball and cricket players in the Latin American and Caribbean Diasporas

The money that is sent back to Latin America from people working temporarily or permanently in other countries is called **remittances** and can be an important contribution to national and local economies. Many communities in the Caribbean and Mexico rely on these funds to build houses, purchase agricultural inputs or educate their children. They are one of the new but informal flows of international financial capital in the global economy.

Remittances - funds sent back to their home communities by migrants

8.4.4 Language and Cultural Traditions

The mixed racial and ethnic composition of Latin America echoes in many aspects of cultural heritage and practices in the region. Indigenous culture, including traditional dress, crafts, ceremonies, and religious beliefs, persists in regions such as highland Guatemala and Peru partly as a result of colonial policies that kept Indian communities separate while demanding tribute and labor and of resistance to the adoption of European culture by conservative indigenous religious and political leaders. Cultural traditions are now promoted to tourists, and revalued through indigenous social movements seeking political rights and recognition. For example, indigenous Mayan centers such as Quetzaltenango in Guatemala are promoted as tourist destinations where traditional crafts may be purchased and photos taken (often for a price) of women and children in traditional colorful woven garments.

Indigenous languages endure in several regions. The most widely spoken languages are Quechua in the Andean region (13 million), Maya in Guatemala and southern Mexico (1.7 million), Guarani in Paraguay (4.6m), Aymara in the Andes (2.2m), Nahuatl in Mexico (1.3m) and English and French Creole in the Caribbean (10m).

Figure 0-17: Map of languages

8.4.5 Family and gender roles

Certain cultural views of the family and gender roles are characteristic of Latin America including the importance of family where multiple generations live and work together and individual interests are subsumed to those of the family, and the traditions of machismo and marianismo that define gender roles within the family and the society. **Machismo** constructs the ideal Latin American man as fathering many children, promiscuous, dominant within the family, proud and

fearless. **Mariansmo** constructs the ideal woman in the image of the Virgin Mary as chaste, submissive, maternal, dependent on men and closeted within the family. Latin American society is generally patriarchal, with many institutions that have prohibited or limited women's right to land, vote, divorce and education. These stereotypes are, of course, contradicted by individual cases, and are breaking down in the face of new geographies and global cultures. Family links are weakened through migration and the privatized small spaces of many urban environments. Men's and women's roles have changed as fertility declines, and women enter the workforce and politics. Latin American feminists have organized to obtain the vote, for changes in divorce, rape and property laws, for access to education and jobs, and to elect women to political office.

8.4.6 Cuisine, Music and the Arts

The foods of Latin America blend indigenous crops such as corn or potatoes with European influences, especially from Spain. Although Mexico is associated with spicy dishes that include chile, the food is quite mild in the rest of Latin America. In livestock producing areas, such as Argentina, grilled meat is extremely popular, but in much of Latin America, the poor eat simple meals of rice, corn, potatoes and beans for protein. Modified versions of Mexican cuisine have diffused throughout North America and include many chain restaurants.

Latin American art and literature has incredible variety and regional specialization. Traditional textiles, pottery, and folk art are sold to tourists and by import stores in North America and Europe. Literary traditions include magical realism (where authors such as Gabriel Garcia Marquez blend imaginary and mystical themes into their fiction) and Latin American and Caribbean authors have won x Nobel prizes for literature. Twentieth century art has produced the Mexican muralists, including Diego Rivera, and the complex paintings of his companion Frieda Kahlo.

In the 1990s, several strands of Latin American music became popular. Traditional music, such as the Andean pipes of the group Inti Illimani, was heard in documentaries and sold through new global labels such as Putamayo. The music of Nueva Cancion or New Song movement, with its social conscience and singers who had fled repression such as Mercedes Sosa, emerged onto the global folk music scene. Caribbean global influences include the reggae of Jamaica and steel bands of Trinidad, resonant of Africa. But the biggest boom was in Latin pop and rock music, where stars such as Gloria Estefan, Ricky Martin, Carlos Santana and Enrique Iglesias produced worldwide hits from companies based mainly in Latin America's business capital in the United States - Miami, Florida. Elements of Latin popular music derive from the traditional and contemporary dance rhythms of salsa, merengue, and tango, the latter closely associated with the nation of Argentina.

8.4.7 Religion

One of the main objectives of Spanish and Portuguese colonialism was the conversion of indigenous peoples to Catholicism. While some indigenous people fiercely resisted missionary efforts, others found ways to blend their own traditions with those of the Catholic church. The process of conversion was

facilitated by the vision of a brown skinned Virgin of Guadeloupe and by the efforts of some priests to protect local communities from the Spanish efforts to obtain land, tribute and labor by force.

The slave trade brought African religious traditions to Latin America and the Caribbean and these eventually merged with indigenous and Catholic beliefs to construct contemporary rituals of Candomble and Umbanda in Brazil, Voodoo in Haiti and Santería in Cuba and other islands.

In recent decades evangelical protestant groups with fundamentalist Christian beliefs have grown and spread rapidly in Latin America. Their message of literacy, education, clean living, frugality and personal salvation has become very popular in many rural areas and estimates suggest that up to 40 million Latin Americans are now members of such churches.

The emergence of a new form of Catholic practice, **liberation theology**, focused on the poor and disadvantaged, informed by the perceived preference of Jesus for the poor and helpless and by the writings of Karl Marx and other revolutionaries on inequality and oppression. This new orientation to the poor was espoused by the Vatican 2 meeting in 1962. Priests preached grassroots self help to organized "christian base communities" and often spoke out against repression and authoritarianism. In some cases, such as that of Bishop Romero in El Salvador, they were murdered by powerful interests who saw liberation theology as revolutionary and communist.

Liberation theology - version of Catholicism that focused on helping the poor and oppressed through social action and that was criticized for its links to Marxist thought

There is also a strong thread of anti-clericalism in many Latin American countries. This partly originates in the authority given by the Pope to the Spanish crown, the control of land and labor by the missions, and the Catholic church's alliance with the landowners and political leaders in the colonial and post-independence conservative administrations. After the Mexican Revolution, for example, there was a strict separation of church and state, with priests, for example, forbidden to wear their robes on the street.

8.5 Regional Change and Interdependence

Latin America is a dynamic world region where economic, political and social changes have been rapid in the twentieth century and have varied in their nature and impact among and within countries.

8.5.1 Political change and democratization

In the twentieth century Latin American countries have taken divergent political paths that have included socialist and military governments; authoritarian, single and multiparty systems; and highly centralized and localized administration. The challenges of creating functioning national governments and promoting economic growth dominated the post-independence period in the nineteenth century. The 20th century saw regional factions, the working class and the poor demanding reform through revolution and populism, and threats to economic growth and elite power met by military and authoritarian rule. One of the most dramatic shifts has been from a continent dominated by military and authoritarian governments in 1970 to region wide democratic systems in 2000.

In the latter half of the 19th century, many Latin American countries were ruled by the military strongmen (called caudillos) who had fought violent struggles for independence. The two main political attitudes were those of conservatives who favored strong central governments controlled by the landowning elites with allegiance to the Catholic church, and the liberals who desired more regional federalist systems of government and egalitarian sharing of power with the separation of church and state and privatization of church lands. The liberals also promoted exports and foreign investment and over time many were willing to sacrifice liberty, equality and democracy in the name of order, progress and economic development moving towards more dictatorial forms of leadership. Although the liberals dominated most Latin American governments by 1900, conflict between conservatives and liberals continued in places such as Colombia ending in the 1960s after a long period of violence and civil war called "La Violencia".

Increasing concentration of land and wealth and expanding foreign ownership and export orientation at the beginning of the 20th century produced growing frustration among the poor, landless and opposition or regional factions in several countries.

Urbanization and industrialization also created an urban middle and working class who wanted a role in governments that were dominated by the **oligarchies** often a small group of powerful and wealthy families. In Central America these oligarchies included large coffee producing landowners of El Salvador and the political elite that managed Guatemala and Honduras in the interests of the multinational fruit companies, as so called Banana Republics.

Oligarchy- government by the few, especially despotic power exercised by a small and privileged group for corrupt or selfish purposes

In Mexico regional and social tensions resulted in the turmoil of the Mexican Revolution that finally produced after 1920 a new post revolutionary constitution and government that promised land reform, workers rights, the separation of church and state, and expropriation of foreign owned resources and firms such as oil and copper. The Institutional Revolutionary Party (PRI), consolidated its power through government-sponsored unions, media, and patronage programs, and was able to control Mexican politics at all levels for 70 years.

The Cuban revolution of 1959 had more complex origins in an independence from Spain in 1898 that resulted in active political intervention by the United States, a dependence on a sugar export economy to the U.S., and political leadership that concentrated wealth and power, most notably under the Batistas. Leftist leaders, led by Fidel Castro, successfully organized a rural rebellion and established a communist government that nationalized corporations, redistributed land, and managed almost all aspects of everyday life under state control and subsidy. Partly in response to a US invasion in 1961 (the Bay of Pigs), Cuba came under the Soviet sphere of Cold War influence, fuelling hemispheric anti-communist alarm and inspiring other revolutionary movements in the region.

The spread of socialist ideas about working class activism and the need for land reform, led to the election of leftist governments in Guatemala in 1954 and Chile in 1970. In both cases, redistribution of land and nationalization of key industries threatened the wealthy and U.S. interests to the extent that the US was

implicated in assassinations and military coups that overthrew the leftist leaders Jacobo Arbenz and Salvador Allende within three years of their election.

In Nicaragua, concentration of wealth and land under the Somoza dictatorship fostered rebellion that resulted in the establishment of the socialist Sandinista government in 1979. Again, cold war anti-communist sentiments led the US to covertly support a counter-revolutionary movement called the "contras". When funding to the contras by the Reagan administration was linked to illegal arms deals with Iraq, the resulting domestic and international opposition to US covert operations, led the US government to change tactics and instead support opposition candidates in elections that overthrew the contras in 1989. Guerrilla movements, inspired by socialist and communist ideas, also emerged in El Salvador, Colombia, Peru and Bolivia, and were severely and often violently repressed by ruling governments.

In other parts of the region, political aspirants appealed to the working classes with strong nationalist rhetoric that attacked the landholders and foreign ownership. Juan Peron, who ruled Argentina from 1946-55 and 1973-76, epitomized populism and the style of Latin American government that relied on the personal charisma of leadership (or of the Presidents spouse in the case of Evita Peron).

The dual threats of economic instability and communist ideas contributed to an increase in authoritarianism and military governments in the 1960s and 1970s. Seeking financial order and control of socialist movements, the military took control of government in Brazil in 1964, Chile and Uruguay in 1973, and Argentina in 1976. These governments have been termed "bureaucratic authoritarian" states because they were based on an alliance of the military, professionals and international business who sought to promote economic growth, often through opening markets and scientific management by the civil service and by severe control of opposition and unrest. While central authoritarian control did provide some economic stability and growth, the military governments aggressively kept social order by repressing dissent, especially among students and workers perceived as having leftist ideals. In Argentina, the military government's "Dirty War" is claimed to have killed 15,000 people and forced many others to leave the country. In Chile, the military government of General Augusto Pinochet has been accused of similar disappearances and human rights abuses.

Public and international offense at authoritarian repression and human rights abuses, the inability of military governments to solve economic problems, the recession of Cold War fears and rhetoric, and international and internal pressures that linked economic globalization to democratic governance, resulted in gradual transitions to democratic governments in Argentina in 1983, Brazil in 1985, and Chile in 1989. In Argentina, the departure of the military government was hastened by the loss of a war with Britain when Argentina invaded the Falkland Islands in 1982 (called the Malvinas in Latin America).

Figure 0-18: Political change in LA map

Social movement - a group of people organized to campaign for social change or other political goals such as environmental protection

Political opposition and activism has often taken the form of organized **social movements** that have also pressured for specific resources and issues such as housing, water, human rights or environmental protection. Geographer Tony Bebbington argues that social movements have also filled a gap left in service provision and local administration created by the economic crisis and neoliberal policies that have shrunk government in many Latin American countries.

8.5.2 Drugs

Colombia remains the country with the most serious political conflict with several guerrilla movements controlling large zones opposed by military units. Because the conflicts are fueled by the drug economy, the US is at risk of becoming involved in the strife through its support for the Colombian government's anti-drug activities. The drug economy threatens to destabilize other Latin American countries such as Bolivia, Peru and Mexico, because the drug traffickers, called "narcos" increasingly control production areas and influence the police, army and political leaders through intimidation or bribery.

Latin America produces drugs that are illegal in many countries including cocaine, heroin and marijuana. Cocaine derives from coca, a plant whose leaves have been chewed by Andean residents for centuries to provide energy and alleviate the effects of high altitude. Latin American farmers have been convinced to grow drugs because of their high price compared to other agricultural products, and because of the power of the drug cartels in remote rural regions. In regions where crop yields are low, people have only small plots of land, and market prices do not cover production costs, drug production is an attractive or even necessary survival option. Most of the drug export is controlled by powerful families in Colombia and in Mexico who manage the transport systems from rural Latin America by land, air and boat into the main distribution and consumption centers in the United States such as Los Angeles and Miami. Analysts argue that farmers will continue to produce drugs until they can obtain a better living from other crops or employment or until the demand is controlled in the United States. They argue that the United States should be focusing on the control of demand within its own country, or even on limited legalization of consumption, rather than fighting a "war on drugs" in Latin America.

8.5.3 Green Revolution and Agrarian Reform

The difficult rural conditions that often promote drug production might be improved, in theory, by increasing the yields and value of legal agricultural crops or by giving people larger plots of more productive land. For the first part of the twentieth century the yields of most agricultural crops in Latin America were very low (less than 1 ton per hectare) and farmers with small plots of land could not produce enough to feed themselves, let alone sell in the market. As population and urban consumption demands increased, countries such as Mexico and Brazil had to import basic foods such as wheat and corn. The legacy of large landholdings from the colonial period was compounded by the accumulation of land by the wealthy and foreign companies in the late nineteenth century. This had produced widespread rural poverty, landlessness and frustration that aided uprisings such as the Mexican and Cuban Revolutions and the election of socialist governments in Chile and Guatemala. In addition, many large

landholdings were being used for extensive ranching, export or low productivity crops and were not contributing to the food needs of the growing urban populations.

Land reform - the redistribution of land with a goal of increasing productivity and reducing social unrest - was seen as a solution and was implemented by both revolutionary governments and others seeking to reduce the risk of rural uprising. Mexico's post revolutionary land reform redistributed expropriated and government lands to 52% of rural households between 1917 and 1980. In many cases, the land was distributed in the form of **ejidos**, communal lands given to groups of landless peasants who could farm collectively or as individuals but could not rent or sell the land outside the ejido. Bolivia redistributed land to 79% of rural households between 1953 and 1975. The socialist governments of Guatemala (1952), Chile (1972) and Nicaragua (1979) distributed land to at least one fifth of rural households, but some of these lands were subsequently returned to large landholders under military or more conservative governments. Pressure for land reform continues throughout the region. For example, in Brazil, the landless movement "Movimiento sim terra" has forced land redistribution by occupying more than 20 million hectares and subsequently demanding legal rights and political change with considerable public support. The success of land reform in Latin American is hotly debated with some believing that the reform sector is inefficient and that communal lands should be privatized and others arguing that land reform has increased rural stability and agricultural production. Most have recognized that land reform on it own can be ineffective unless it is part of an overall agrarian reform package that also provides technical advice, inputs, credit and market access to the new landowners.

Ejidos - lands redistributed to communities and landless peasants after the Mexican Revolution

A second solution to low productivity and poverty in rural areas was the **Green Revolution** - the process of agricultural modernization that used a technological package of irrigation, high yielding seeds, fertilizers, pesticides and mechanization to increase crop yields in several world regions. Mexico was a global center for Green Revolution technology, hosting the International Center for Wheat and Maize Improvement near Mexico City. Scientists at the center, funded by the Rockefeller Foundation and Mexican and US governments used advanced plant breeding techniques to produce new varieties of grains that resisted disease and responded to fertilizer and irrigation with very high yields. Norman Borlaug, who led the plant breeding effort, was awarded the Nobel Peace prize in 1970 for services to ending world hunger. Farmers, especially in irrigation districts in Northern Mexico were quick to adopt the new crop varieties, and national production of corn and wheat soared, turning Mexico into a major grain exporter by the 1970s. Other Latin American countries such as Argentina and Brazil also promoted Green Revolution agricultural modernization, including other key crops such as rice and soybeans.

Figure 0-19: Photos of Green Revolution in Mexico

Although the Green Revolution increased crop production in many parts of Latin America it was not an unqualified success because of its role in increasing inequality and in environmental degradation. The Green Revolution has been criticized because it increased the dependence on the imports of chemicals and

machines from foreign companies and thus contributed to the debt problem. The benefits tended to accrue to wealthy farmers who could afford the new inputs and to irrigated regions, and poorer, rainfed farmers fell behind or sold their land. In some cases, such as in Southeastern Brazil, machines replaced workers creating unemployment, and geographer Judith Carney has demonstrated that Green Revolution technology and training tended to exclude women who play important roles in food production. The new agricultural chemicals, especially pesticides, contributed to ecosystem pollution and worker poisonings, and the more intensive use of irrigation created problems of salt buildup in soils (salinization) and water scarcity. The most serious criticism of the Green Revolution, voiced early by geographer Carl Sauer, was that it contributed to the worldwide loss of genetic diversity by replacing a wide range of local crops and varieties with a narrow range of high yielding varieties of a few crops. Planting single varieties over large areas also made agriculture vulnerable to disease and pests.

Economic crisis, the reduction of government programs, and opening of trade have slowed the progress of the Green Revolution in many countries. Fertilizer use in countries such as Brazil and Mexico has declined with high prices, less subsidies, and increased competition from imported corn and wheat, especially from the US. Many governments have shifted from prioritizing self sufficiency in basic grains to encouraging crops that are apparently more competitive in international trade such as fruit, vegetables, and flowers. These so-called **non traditional agricultural exports** have become increasingly important in areas of Mexico, Central America, Colombia and Chile replacing grain production and traditional exports such as coffee and cotton. These new crops do obtain high prices, but also require heavy applications of pesticides and water to meet export quality standards. They are vulnerable to climatic variation and to the vagaries of the international market including changing tastes for foods such as asparagus and health scares such as pesticide or biological contamination of Chilean grapes and Guatemalan raspberries.

NTAE - non traditional export crops such as fruit and vegetables

Figure 0-20: Graph of crop production trends

8.5.4 Inequality

Political change and economic restructuring have not necessarily resulted in reductions in poverty and inequality in Latin America. In fact, some indicators of inequality show some Latin American countries as having the greatest concentrations of wealth and land within a majority of poor and landless in the world. The highest average national incomes in Trinidad and Tobago and Venezuela are about 50% of those in the developed world, whereas the poorest, including Haiti and Nicaragua are less than 10% of the average in the developed world.

Recent reports from the Inter American Development Bank suggest that 25% of all income in Latin America is received by only 5% of the population, compared to 16% in Southeast Asia and 13% in developed countries. At the other end of the scale, the poorest 30% of Latin Americans receive only 7.5% of total income, compared to more than 10% in the rest of the world. The Gini index of income inequality that integrates income inequality information into a single index ranging

from 0 (most equal distribution of income) to 1.0 (unequal). According to this measure inequality in Latin America ranged from almost 0.6 in Brazil to 0.45 in Costa Rica, whereas the world average was about 0.4 in 1996. Although income distribution became more equal from 1960 to 1982, conditions became more unequal during the lost decade and have no recovered significantly since. These high levels of inequality are associated with high levels of poverty where more than 150 million Latin Americans earn less than a subsistence income of $2 U.S. per day.

Figure 0-21: Inequality in Latin America (IADB report)

The vast gap between the richest 10% and the poorest 30% is also reflected in other social measures. For example, the richest heads of households average 11.3 years of education and the poorest 4.3 years with even larger gaps of 9 years in Mexico and Brazil. Those in the richest 10% tend to work in professional and technical occupations or to own their own businesses, whereas the majority of the poorest 10% work in the informal sector.

Informal economy - see ch?

The informal sector or **informal economy** in Latin America comprises a variety of activities that do not appear in standard economic accounts including street selling, shoe shining, garbage picking, street entertainment, prostitution, crime, begging and guarding or cleaning cars.

Surveys suggest that most Latin Americans feel that economic conditions have deteriorated and that inequality is widespread. Sixty percent feel that their parents lived better, 50% consider the current economic situation to be bad or very bad, and 75% think that income distribution is unfair or very unfair. These levels of dissatisfaction can produce cynicism with democratic politics, energize social movements and civil unrest, and promote migration within and beyond the region.

Social and health conditions are often considered a better measure of overall inequality within and between countries than economic measures. National improvements in life expectancy, infant mortality and literacy, for example, tend to reflect improvements at the lower end of the scale rather than for the better off segments of the population. Latin America tends to compare more favorably to the rest of the world on social and health indicators than on measures of income and income inequality. For example, life expectancy averages 70 years, higher than any other region in the developing world, and compared to a world average of 66.9. Literacy rates are also relatively high averaging 88%, compared to 59% in Africa, 54% in South Asia, and 79% worldwide. According to the United Nations Children's Fund (UNICEF) only 10% of children under 5 are defined as underweight in Latin America, compared to 30% worldwide.

However, there are wide gaps in social and health conditions within Latin America. Haiti, Central America and the Andes tend to have much worse conditions than the southern cone, northern South America, Costa Rica, Mexico and the English speaking Caribbean. For example, the average Haitian only lives to 54 and the level of literacy is only 48% compared to a life expectancy of 73 years in Argentina with literacy reaching 97%.

Figure 0-22: Social conditions in Latin America

These national indicators also hide large variations in economic and social conditions within Latin American countries. In Mexico, the southern regions of the country have lower incomes and life expectancy than the northern and central areas of the country. In Brazil, the northeastern and Amazon zones have higher infant mortality and lower life expectancy and average monthly incomes than the south. Each Latin American country has its own geography of inequality, with the more rural regions generally with lower social and economic conditions.

Gender inequality is also widespread in Latin America. Women tend to earn much less on average than men. In Ecuador, for example, female GDP per capita was $1,173 in 1998 compared to $4,818 for men. Female literacy, on average, is 2 to 15% less than that of male populations. This inequality has been associated with systematic institutional biases that denied women in many countries the vote or right to marital property until the 1950s, with cultural traditions that discourage more than a few years of education for women, and with employment structures that pay women less than men or pay less for traditionally female work such as domestic service work and food processing.

8.6 Core Regions and Key Cities

The core regions and key cities of contemporary Latin America have been centers of production and political power since the colonial period and have emerged to become important players in the new global economy. The most important regions are those with high concentrations of population, industry and services, and the agricultural heartlands that produce for domestic and global markets.

8.6.1 Mexico City

Mexico City is the center of the dynamic agricultural and industrial zone of Central Mexico located in the highland basins of the Mesa Central. A primate city, it is the economic, cultural and political center of Mexico and is one of the largest urban complexes in the world. The city houses almost 20% of the country's population, most government functions, and produces % of the gross national product. Mexico City is located at the sites of the old Aztec Empire in the basin of Mexico and was the center of Spanish colonial viceroyalty administration of New Spain. On a clear day, the view from the top of the Torre Latina includes elegant colonial plazas and administrative buildings, modern skyscrapers owned by international corporations, and the gleaming snowy peaks of the volcanoes that ring the basin.

Figure 0-23: Mexico City (map and photo)

Like most colonial cities, Mexico City's colonial center was designed around a main square or plaza formed by government buildings and the main Catholic cathedral, and surrounded by the villas of the colonial elite and small specialized commercial zones for artisans. In the nineteenth century, wide avenues and

elegant parks were constructed influenced by French urban design. The city grew very rapidly throughout the twentieth century from a population of 500,000 in 1900 to almost 20 million in 2000, expanding from only 27 to 1000 square km in spatial extent to include many satellite communities. Migrants who were pushed out of rural areas and attracted by the opportunities of the city drove most of the growth. Although the business core emerged in the central city, and the main industrial plants were located to the northwest, Mexican geographer Adrian Aguilar has used the census to document a spatial deconcentration of manufacturing in recent years, with factories locating in neighboring cities such as Puebla and Cuernavaca. Business centers have grown up along the main north-south road and subway route of Insurgentes, and around the "Periférico" highway that rings the city.

As with other large Latin American cities, many of the new migrants to Mexico City could not afford to rent or purchase homes and settled in irregular settlements or *barrios* that surround the city. As much as 50% of the housing stock is defined as self-help construction ranging from cardboard and plastic shanties to sturdier wood and bricks with aluminum or tile roof. Many of these settlements occupy steep hillslopes, valley bottoms and dry lakebeds that are vulnerable to flooding, landslides and duststorms. The barrio of Nezahualcõyotl houses more than 3 million people on the shores of Lake Texcoco and has been acknowledged and regularized by the government through land titling, provision of electricity and water, and even the recent construction of a subway line.

The City has always faced water management challenges because of highly seasonal rainfall that regularly floods the basin. The Aztecs constructed a sophisticated system of drainage and dams, as well as the agricultural system of the chinampas to feed the city. In the rainy season enormous pumps now drain the city, but the major problem is now water scarcity for the large population and drinking water is now pumped from 100 km away over considerable physical barriers. The pumping of the groundwater reservoir (or aquifer) under the city has caused serious subsidence of parts of the city including a drop of more than 4?m under the magnificent opera house of "Bellas Artes".

The location of Mexico City on a former lake bed, with unconsolidated sediment, adds to the risks from earthquakes in this seismically active zone. The earthquake that woke residents in the early hours of the morning in October 1985 killed as many as 10,000 people and destroyed thousands (how many? of homes. Public outrage at shoddy construction of public housing and at the governments slow response to those left homeless contributed to growing political opposition and mobilization of social activism in the city. In addition to earthquakes, the city is at risk from the 22,000 foot volcano Popocatapetl that overlooks the southern part of the basin.

Mexico City's most infamous environmental problem is its air pollution, which currently reaches levels dangerous to human health on more than 100 days a year. Thousands of automobiles, trucks and buses, many with inadequate emission controls, are responsible for about 75% of the air pollution, with dust, fires, industrial plants and energy use responsible for the remainder. The location of the city adds to the pollution problem because polluted air is often trapped in the basin by the surrounding mountains and by inversions where

warm air traps cold air near the ground. The high altitude of the city at more than 6000 feet means that fuel burns less efficiently and humans must breathe more air because of the lower oxygen levels. Public protest and media attention to the air pollution crisis prompted the Mexican federal government to introduce a number of policies in the last twenty years including lead free gasoline, emissions testing, closure of a major oil refinery and a program called "hoy no circula" which requires city residents to leave their car at home at least one day a week. Unfortunately the continuing growth of the city and of car ownership has prevented any significant decline in pollution levels.

Migration rates to Mexico City have declined slightly in the 1990s and the most rapid urbanization and industrialization is now occurring at nearby locations in Central Mexico. For example, the popular tourist and language school destination of Cuernavaca now has a population of almost a million people and a major industrial zone producing chemicals, electronics and other manufactured products. This growth of secondary cities in central Mexico has placed considerable pressure on the high quality agricultural land that has fed the region for centuries. Geographer Lenom Cajuste estimates that up to 800 sq km of prime agricultural land has been lost to urbanization in the last 20 years.

8.6.2 Rio de Janeiro-Saõ Paulo-Belo Horizonte

The triangle that encompasses the cities of Rio de Janeiro, Belo Horizonte and Saõ Paulo is the powerhouse of a Brazilian industrial economy that ranks as the 8th in the world, the location of a dynamic global business and cultural center, and the home of more than 30 million people. This important core region had its origins in the founding a major Portuguese colonial port at Rio, the discovery of gold and silver in the 18th century and the development of coffee production around Saõ Paulo in the 19th century.

The establishment of the Volta Redonda steelworks in 1946 relied on iron deposits in the region and was the basis of import substitution projects to develop the Brazilian automobile and aircraft industries. Brazilian geographer Milton Santos reports that Saõ Paulo now employs more than 2 million manufacturing workers and produces 30% of Brazil's gross national product, having moved from a commercial to manufacturing to service and information core for the global economy. It has also become a major financial center for Brazilian and international banks and has recently developed a large telecommunication and information sector with more than a million technical and scientific workers. Geographer Ane Schjolden has shown how the Brazilian telecommunications sector, initially protected by import tariffs and supported by government investment in research and development, has been taken over by global firms in the aftermath of trade liberalization and privatization.

While Rio has been shadowed by the economic growth of its rival Saõ Paulo, 250 km to the west, it continues to be the cultural and media center of Brazil. It was the capital of Brazil from 1822 to 1960 and the urban structure includes an older city center with a wealthier residential zone towards the south and the beaches such as Copacabana, and apoorer more industrial zone to the north. The magnificent landscape of Rio's harbor and beaches draws worldwide attention during the festival of "Carnival", where the influence of African traditions emerges

in music and dance, and is a major tourist destination. The commercial harbor is now a center for shipbuilding and for agricultural exports from the southeast of Brazil including soybeans and orange juice in specially constructed tankers. In both Rio and Saõ Paulo, massive football (soccer) stadiums holding up to 200,000 people, are a focus of city pride and entertainment.

Rio and Saõ Paulo followed the same pattern as other Latin American cities, attracting millions of migrants who settled in informal settlements around the urban core. The "favelas" as they are called in Brazil lack good housing and services. In Saõ Paulo, 28% of residents have no drinking water and 50% have no sanitation. The crowding, land costs, crime, poverty and pollution of the city are starting to reduce the attractions of the cities and economic development is starting to shift to smaller neighboring cities. In 1956, concern about the concentration of population and development in this core region led the Brazilian government to move the nation's capital from Rio to Brasilia, a new city located 600 km inland. This relocation is an example of growth pole development policies where government invests in a region to stimulate economic growth or to encourage decentralization from central cities. The policy has been moderately successful in that Brasilia has grown to almost 2 million people and houses many government bureaucracies, but the Rio- Saõ Paulo axis continues to be the hub of the economy.

8.6.3 US-Mexico border

Northern Mexico, especially the cities that border the United States, has become an increasingly important economic zone that is often used to exemplify the impacts of free trade and foreign investment in Latin America. The border region includes major cities, such as Tijuana and Ciudad Juarez with populations over 1 million people and irrigated agricultural regions that produce a large percentage of Mexico's domestic and export crops. The industrial and commercial center focused on Monterrey can also be seen as part of this core region, although it is much further from the border. Monterrey emerged as part of an important industrial region including a major steel industry at Monclova that used local coal and iron resources, and has now grown to become a center for business, services and high technology with a population of 1.5 million. The agricultural regions, such as the irrigation districts of Sonora and the lower Rio Grande valley (called the Rio Bravo in Mexico), are consummate cases of Green Revolution technology and of new horticultural exports, with intensive use of pesticides and new seed varieties.

The border region is closely associated with **maquiladora** manufacturing, where companies can produce goods free of customs tariffs for export to the U.S. and elsewhere. In many cases the basic components are imported and the products are just assembled in Mexico using low cost labor. There are now more than 500,000 people employed in 400 maquiladoras in northern Mexico, in industrial plants that produce everything from clothes to computers. Geographers have analyzed the social and environmental impacts of the maquiladoras. For example, Altha Cravey has described the new employment opportunities for young women, but under poor working conditions of low pay, exposure to toxics, and restrictions on unionization. One of the authors of this book, Diana Liverman, has described the problems of pollution and waste associated with

Maquiladora or maquila manufacturing plants that import and assemble duty-free components for export typically on the US-Mexico border

urban and industrial development along the border between the US and Mexico and the variety of non-governmental organizations and community groups that have grown to demand improved environmental protection. In Nogales, Sonora, women in informal colonia settlements have organized to demand safe drinking water, cleanup of wastes from factories, and have created a recycling and tree planting program.

8.6.3.1 DAY IN THE LIFE: Child living on Mexican border

8.6.4 Central Chile

Central Chile is one of the most important agricultural export zones in Latin America, and is increasingly compared to the U.S. State of California with which it shares a moderate Mediterranean climate of warm, wet winters and moderate summer temperatures. Spanish land grants distributed the fertile land of the Central Valley into large haciendas that produced wheat and raised cattle in the colonial period, especially for the growing cities of Santiago, Valpariso and Concepcion. Wheat became an important export after independence but the major boost to exports came in the 20th century with the development of refrigerated and air transport. This allowed Chile to take advantage of the hemispheric contrast in seasons, and to sell fruit and vegetables grown in the Chilean summer (November to March) to North American winter markets. Production and export of fruit and vegetables grew dramatically, especially, fresh grapes, apples, peaches and berries, together with fruit packing and processing industries that employed thousands of people. Agricultural expansion has been aided by the Green Revolution package of technologies and by some land reforms that provided plots of land to those who will farm it intensively. Chile has also developed a wine industry that exports more than 400 million tons worldwide.

Figure 0-24: Graph of crops in Chile

Agricultural exports have only partially compensated for Chile's economic dependence on exports of copper and other minerals. Chile is the world's largest producer of copper and is extremely vulnerable to variations in the prices. The main copper area is north of the central zone, with gigantic mines, owned by multinational corporations, producing more than $5 billion a year of copper. This area was also a global center for nitrate production, used in fertilizers, until the First World War, when synthetic alternatives were discovered.

The coastal zones of Central and Southern Chile are also important producers of timber for world, especially Japanese, markets. The forest industry has started to encroach on the groves of towering old growth trees, similar to the redwoods of the western U.S. Conservationists have been able to obtain some protection through environmental legislation and purchase of remaining forest land. One of the more controversial conservation efforts, is that of U.S. millionaire, Douglas Tompkins , who has purchased and protected a swath of 700,000 acres of forest land that almost cuts across the width of Chile.

8.6.5 Oil regions

Because of their significance in national economies and international trade, the oil production regions of Latin America are of considerable interest and include the Gulf coast of Mexico, the Lake Maraicaibo region of Venezuela, and most, recently the lowland Amazon regions of Ecuador and Peru. Oil was discovered in Venezuela in 1917 and the country became one of the founding members of the Organization of Petroleum Exporting Countries (OPEC) in 1961. Oil became an important foundation of the national economy and was nationalized in 1976 but the benefits of oil reached only about 20% of the population. Lake Maracaibo is now crowded with thousands of oil derricks that produce about 2/3 of national oil output and include about 4% of world reserves. Some profits were used to invest in new industrial centers such as the Ciudad Guyana steel and aluminum complex, and Ciudad Bolivar, but oil also encouraged international lenders to loan money to Venezuela and the country suffered particularly hard from the debt crisis and lost decade of the 1980s. Nevertheless, Venezuela has the highest GNP in South America.

Figure 0-25: Oil development

The Mexican oil deposits were first commercially exploited in the 1890s and were nationalized in the 1930s under the government oil company, PEMEX (Petroleos Mexicanos). PEMEX developed petrochemical industries, but the debt crisis and possible corruption limited the investments and benefits from Mexico's oil resources. The most recent oil developments are in the Amazon where oil was discovered in 1967. The Amazonian oil deposits are mostly in remote forest areas where indigenous land rights are not secure, and have resulted in conflicts between Peru and Ecuador and between governments, corporations and indigenous groups. In all of Latin America's oil regions, environmental pollution has been a serious problem, with waste oil contaminating waterways, ecosystem damage and serious health problems among local residents.

8.7 Distinctive Regions and Landscapes

8.7.1 Amazon Basin

The vast forests of the Amazon basin are perhaps, Latin America's most distinctive regional landscape. Covering more than 1.2 billion acres, the Amazon basin contains water, forest, mineral and other resources of great value, yet has had relatively low population density until recent years. [quote from someone about the Amazon]. Although most people tend to associate the Amazon basin only with Brazil, the river basin and forests also include large parts of Ecuador, Peru, Bolivia, Colombia, Venezuela and the Guyanas.

The ancestral economy of the Amazon is based on **extractive** uses such as the collection of plants, animals and products from the forest including fish, nuts, and traditional medicines. These resources are renewable and do not destroy the forest and have been used for centuries by Amazonian indigenous groups such as the Yanomani.

Extractive use - collection of plants, animals and products such as rubber with minimal disturbance to forests

The colonial image of the Amazon basin varied from a vision of a tropical Eden with untapped resources, to an impenetrable disease-ridden jungle hell of savage tribes. The region was of botanical but little economic interest until the late

nineteenth century when the development of the automobile industry in the US and Europe exploded the demand for rubber, a product obtained by tapping the latex sap of scattered rubber trees in the forest. Local rubber tappers, or seringuieros, sold the rubber to middlemen who traded with the "rubber barons" who constructed enormous mansions and a magnificent opera house in the Amazonian port of Manaus. The end of the rubber boom is said to have occurred when Henry Wickham shipped thousands of seeds from Brazil to Kew Gardens, in England, where they were cultivated and transported to Southeast Asia. The success of the more efficient Asian plantations, especially in Malaysia, drove the Amazon into decline because Brazilian trees were too susceptible to disease when grown on plantations.

Amazonian development became a focus of Brazilian government policy in the 1970s because it was seen as a pressure valve for landless and impoverished peasants in other regions and as a way of securing national territory through settlement. Several highways were built across the Amazon including the Trans-Amazon from Recife to the Peruvian border and the Polonoreste from Brasilia to Belem at the mouth of the Amazon.

Government policy was specifically designed to colonize the Amazon. They saw it as a **frontier region** similar to that of the western U.S. in the nineteenth century. Landless peasants were given title to plots of land if they promised to develop them productively and migrated in thousands along the new roads. As geographer Susannah Hecht has shown, much of the land was actually acquired by large landholders who took advantage of favorable fiscal and tax breaks to develop ranches for speculation and tax havens. Her fieldwork also found that when both small holders and large ranches cleared the land of forest, often by burning, soil fertility declined rapidly and this led to further deforestation as farms and pastures were abandoned.

The process of Amazonian deforestation can be seen in satellite images of the region where the networks of new roads and associated forest clearance can be clearly seen. Satellites also show the thousands of fires that are set each year to clear land and that produce a dense layer of smoke that closes airports and chokes local residents. But they also show that the pattern of development and deforestation varies spatially with some remote areas still relatively untouched and others along roads and around cities almost totally transformed to agriculture.

Figure 0-26: Satellite images of deforestation

Figure 0-27: Map of development in Amazon

Estimates of the rate of deforestation of the Amazon basin do not always agree because of differences in the way in which forests are defined and satellite images are classified, and because clouds and smoke prevent accurate assessments in some regions. But the general consensus is that perhaps 15% of the Amazon forest has been cleared and that the current rate is about 50,000 sq miles a year. The fate of the Amazon has attracted global attention, led by scientists and environmental organizations that are concerned about the impacts of such large-scale forest loss on biodiversity and climate. The Brazilian

government has responded by removing some of the tax breaks for development, by intensifying monitoring and control of deforestation, and by establishing parks and reserves. One of the best known reserves is named for Chico Mendes, a rubber tapper, who organized resistance to deforestation by large ranchers and was murdered in 19??. He pushed for the establishment of areas that were protected for appropriate extractive uses. Other parks and reserves, such as Manu in Peru and Cuyabeno in Ecuador are becoming important ecotourism destinations where international tourists are offered jungle lodge experiences and opportunities to observe the rich bird and animal life of the forest.

The Brazilians have argued that it is not appropriate for countries, like the US and many in Europe, who cleared and developed their territory in previous centuries to criticize Brazil for trying to grow its own economy. National and international campaigns have also sought to protect the indigenous peoples of the Amazon who have lost their traditional hunting and gathering lands to development and who are vulnerable to the diseases and cultures of the new immigrants. The international musician Sting has held annual "rainforest concerts" to draw attention and raise money for the plight of the Amazon ecology and peoples.

The military government also sponsored mineral exploration and rich resources of iron were discovered around Carajás and gold at nearby Serra Pelada. By 1982 more than 100,000 people had moved to the area to work in the new mines. Other controversial developments include large dam projects such as Tucuri, and projects that replace diverse ecosystems with monocrop plantations. The discovery of oil in the western Amazon has increased the significance of the region to national economies but has also degraded the forests of Ecuador, Colombia and Peru and led to boundary conflicts between countries and with indigenous groups.

8.7.2 The Andes

Its high elevations, indigenous cultures, distinctive agriculture, mining economy, and relative poverty characterize the Andean region. Mountains and volcanoes, reaching over 20,000 feet, overlook the high plateau or **altiplano**, where Latin America's largest lake, Lake Titicaca lies at the border of Peru and Bolivia at more than 12,500 feet. The Andean residents include large populations of indigenous Aymara and Quechua speakers who have maintained traditional rituals, clothing and crafts.

The traditional crops domesticated in the Andean region include the potato and a high protein grain, quinoa. The most important animals were the llama and alpaca, used for transport, wool and milk. Cultural ecologists such as Stephen Brush have described the vertical zonation of Andean agriculture. Communities have fields scattered at different elevations to take advantage of different climatic and soil conditions for grazing and potatoes at higher altitudes, then grains such as wheat and corn, and vegetables and fruits at lower levels with more tropical climates. Natural ecosystems also vary with elevation and include the "**paramo**" of the northern Andes with unusual cold adapted plants called frailejón. Most agricultural production is for subsistence or local markets except for coca, a

traditional crop used to alleviate altitude, but which is now exported to Colombia where it is turned into cocaine. Crop yields are low because of poor soils and cold, dry climates but some groups still use the intensive raised field and terrace systems of the Incas to reduce agricultural risks. The latifundio (large landholdings), established by the Spanish created a system where most indigenous people were given small plots of land around the large haciendas where they were forced, often through debt to the owner, to work much of the time. Despite some efforts at land reform, this legacy of inequality lingers in poverty and discrimination against many Andean Indians and resentments have fueled rural revolt, illegal coca production, and some support for guerrilla movements such as the Shining Path (Sendero Luminoso) in Peru. Many young people now choose to migrate to the coasts to seek work and opportunities still not available in remoter Andean communities.

The mining industry is important in many parts of the Andes and includes copper in Chile and Peru, tin in Bolivia, emeralds in Colombia, and silver and gold in several countries. Despite some unionization and attempts to improve technology and working conditions, the life of many miners is still very difficult with high levels of respiratory diseases and accidents. The benefits of mining have also tended to concentrate in multinational corporations or in a few families that control the major companies and prices have been very volatile, recently falling to low levels on world markets.

Development efforts in the Andean region have included large-scale government projects of road building and tourist development. But the collapse of many national economies during the lost decade and the subsequent restructuring to reduce government spending means that in many areas the only external assistance now comes from non-governmental organizations (NGOs). Geographer Anthony Bebbington shows how NGOs can support local initiatives using indigenous technologies and appropriate social organizations so long as their approach is not too theoretical or controlling.

8.7.3 Caribbean islands

The Caribbean islands are a diverse mix of cultural traditions, political systems, and environments and include some of the poorest and wealthiest countries in South America. The distinctive physical geographies include extensive coral reefs and mangrove forests, small islands dominated by active volcanic peaks, and vulnerability to the hurricanes that arrive each fall. The Caribbean is divided into several subregions: the **Greater Antilles** with the islands of Cuba, Hispaniola (divided into Haiti and the Domincan Republic), Jamaica, and Puerto Rico; and the **Lesser Antilles** for the remaining smaller islands. Political groupings and affiliations include the many islands of the Bahamas, the former British colonies that remain within the Commonwealth, the French Protectorates of Guadelupe and Martinque; and the U.S. territory of Puerto Rico.

Caribbean culture is heavily influenced by the African traditions of the millions of slaves who were brought to the region as labor for the colonial plantations. Many countries, such as Haiti and Jamaica have a predominantly black population. Although most countries use the colonial languages of English, Dutch, French and Spanish as official languages millions of Caribbean residents speak versions

pidgin versions of colonial languages such as English and French that are spoken by local people

of **Creole**, languages that blend European with African or even indigenous words to create distinct languages such as Haitian patois. Reverberations of Africa are also found in Caribbean foods and music, and in spiritual traditions such as Voodoo, Santería and Rastafarianism (see section 12.4).

Some islands, such as Barbados, have many residents of European origin, and several have significant populations of Asian descent. After the end of slavery, workers were brought from South Asia as indentured labor where they were contracted to work for a plantation for a number of years. For example, 145,000 Indians were brought to Trinidad between 1838 and 1917 and the population is now 40% South Asian heritage with Hindi as an important religion and language and elements of Indian cuisine in local foods. Most of the Commonwealth countries such as Jamaica, the Bahamas and Trinidad share a passion for the British game of cricket; in Cuba and the Dominican Republic baseball is seen as the route to fame, with many players emigrating to work in the United States. The Caribbean has produced world famous writers such as V.S. Naipaul, Jamaica Kincaid and Derek Walcott.

The economy of the Caribbean still has strong echoes of the colonial past, with many islands specializing in plantation export crops such as sugar, tobacco and coffee. Sugarcane long dominated the land and economy of islands such as Cuba, Jamaica and the Dominican Republic but has declined with competition from sugar beets, and in Cuba's case the disintegration of Soviet markets, although the production of rum is still extremely important. Coffee is grown in the cooler highlands of countries such as Jamaica, Puerto Rica and Haiti with Jamaica's Blue Mountain coffee receiving premium prices on world markets. Tobacco is important in Cuba for its renowned cigar industry. Bananas are grown in the British Caribbean, such as St. Vincent, St. Lucia and Jamaica, because they have received preferential access to the European Union under the Lomé Agreements to assist former British colonies with trade. These preferences are likely to disappear with moves toward tariff removal and open markets within the European Union and under the World Trade Organization. In all cases these primary exports are vulnerable to world market fluctuations and to the tastes of global consumers.

Figure 0-28: Economic map of Caribbean

Jamaica, Trinidad and Tobago have economies where mineral and energy resources are important, including bauxite in Jamaica (exported for aluminum production) and oil and gas in Trinidad and Tobago where important exports include gas derivatives ammonia fertilizer and methanol.

The Caribbean has benefited and suffered from its location in "America's Backyard" where the impact of the Monroe doctrine (see 12.3.2) brought the region within the U.S. sphere of influence. The U.S. political goals have included protecting the route to the Panama Canal, preventing the spread of Communism, maintaining stability for U.S. corporations with assets in the region, and aligning trade in U.S. interests. Using these and other goals as justification the U.S. has intervened repeatedly in the Caribbean since the Spanish-American War of 1898 that freed Cuba from Spain and made Puerto Rico an American

colony. The U.S. sent troops to the Dominican Republic, Cuba and Haiti several times in the earlier part of the 20th century, invaded Grenada in 1983 to oust a socialist government and rescue U.S. medical students, and sent troops as peacekeepers to Haiti in 1994.

Perhaps the most controversial U.S. policies are the large military base at Guantánamo Bay in eastern Cuba, where high wire fences and mines separate the base from the rest of Communist Cuba, and the direct control of Puerto Rico as a Commonwealth of the United States. Puerto Rico, Spanish speaking with strong cultural links to the rest of Latin America, is managed by agencies of the U.S. Federal government and has received a large amount of U.S. investment and industrial development. Some Puerto Ricans seek independence from the United States, while others want full rights as a state within the U.S. federal system.

The U.S. investments in Puerto Rico were boosted under a program called "**Operation Bootstrap**" that provided tax exemptions and incentives for manufacturing as well as support for agriculture and tourism. Companies took advantage of the tax incentives and cheap labor to build factories, resembling the maquiladoras on the Mexican border with the U.S., to assemble electronics, make clothing, and produce pharmaceuticals. Geographer Deborah Berman-Santana has described the pollution and inadequacy of employment opportunities created under Operation Bootstrap in the community of Salinas, and the development of community resistance to this type of industrial development, especially to a proposed Monsanto plant that would manufacture herbicides.

Similar export manufacturing activities have developed in other Caribbean countries, especially where formal Free Trade Zones have been established with low or zero tax and customs charges. The Caribbean Development Initiative (CBI), designed to promote development and discourage civil unrest and socialism, guaranteed access to U.S. markets and resulted in the growth of export industries such as textiles and clothing.

Figure 0-29: Images of Caribbean

Although some countries and communities have benefited from export agriculture and new industrial development there is serious poverty and inequality in many Caribbean countries. Haiti is the poorest country in the whole Latin American region with high infant mortality, low life expectancy and difficult living conditions for most of the population that many blame on the semi-feudal concentration of wealth and land under the Duvalier dictatorship from 1957 to 1976. High population densities and a search for land to grow a few subsistence crops has driven people to clear forests on steep slopes where soil erosion can be so bad that agriculture is impossible and the land is left desertified and degraded. In contrast, geographer Lydia Pulsipher links the high literacy and relatively good health in the Commonwealth Caribbean to well establish education and medical systems and to strong community networks that have created enduring social capital.

Tourism and offshore financial services are the two new foundations of the Caribbean economy. An image of the Caribbean as a paradise of golden sands, warm turquoise seas, and friendly festive people has been constructed to attract more than 25 million tourists each year, 10 million of them on cruise ships. Almost half the population of the Bahamas and the Virgin Islands is employed in tourism in hotels, restaurants, bars, casinos, ocean sports such as diving and fishing, and small shops. The downsides of tourism include pollution of oceans, reefs and beaches by ships, competition for fresh water and higher food prices for local residents, cultural and social stresses from interactions between the wealthy visitors and poorer residents, and prostitution and drugs. Critics also point out that many profits flow out of the region because many tourist enterprises are foreign owned.

Offshore financial services offer tax exempt and confidential banking, insurance and investments services, and are an important economic sector in the Bahamas and the Cayman Islands. The latter has thousands of registered companies and with improved telecommunications is integrally tied to the global financial sector. The sector does not employ a large number of people, and is under suspicion of laundering drug money, but the fees support government programs that benefit local residents.

8.7.4 Central America

The landscapes of Central America include dense forests, vast export crop plantations, and bear the social and ecological scars of recent civil wars and natural disasters in many parts of the region. Central America provides a rich biological corridor between North and South America and hosts large indigenous populations including three million Maya in Guatemala, 150,000 Miskito in Nicaragua, and the Kuna of Panama. The Caribbean coast has extensive mangroves and flatter lands that were converted to plantations during the colonial period. The Pacific coast is drier because it lies in the rainshadow of the easterly trade winds but has some fertile soils associated with volcanic activity. The mountain spine of Central America has a natural vegetation that includes cloud forests (obtaining their moisture from mist and cloud) and vivid birds and animals such as the quetzal and jaguar.

The colonial economy of Central America was founded on the collection of cacao (chocolate) and indigo (a blue dye) for export to Europe. Agriculture then expanded during the 19th century into coffee production in the highlands and banana and sugar plantations on the coasts. In Costa Rica, coffee was produced on small European and Mestizo owned farms, but in El Salvador and Guatemala coffee land was consolidated into large operations controlled by a few families (known as the oligarchies). In Guatemala and Honduras, U.S. owned companies such as Standard and United Fruit took over large areas of land for the export production of tropical fruits, especially bananas. The influence of the fruit companies on the economy and politics was so great that these countries were sometimes called **Banana Republics** and force was used to drive peasants from livelihoods inland to provide cheap or indebted labor on the plantations. After the Second World War cotton and sugar production expanded and a boom in livestock herds began to provide meat for urban domestic and export refrigerated beef markets. This period also saw the increased use of imported

Circle of Poison - process by which pesticides made in the north are sold to Latin America and other developing countries and used on crops that are then exported back with toxic residues to northern consumers

pesticides on export cotton and fruit, with associated damage to ecosystems and workers health. When these products are then exported back to the countries that produce the pesticides the process has been termed the "**Circle of poison**".

Costa Rica is generally an exception to highly unequal distribution of land and wealth in Central America, where in 1976 8% of the population controlled 70% of the land and thousands of peasants had to live on small plots of land or move to seek work in plantations or on the coast. Costa Rica is noted for a long tradition of democracy since 1889, the lack of a standing army, and a higher standard of living than many other Latin American countries. Repressive military regimes or dictatorships in other Central American countries provoked unrest in the countryside that erupted into revolution in Nicaragua in 1979 and into guerrilla movements in El Salvador. In Guatemala, Mayan populations fled into neighboring Mexico or further northward, or retreated into remote mountains where the military, which did not differentiate between ordinary people and guerrillas, often annihilated whole communities. In El Salvador the attempts of powerful oligarchies to retain power were associated with massacres and murders, including the archbishop Romero of San Salvador. After the Sandinistas took power and initiated socialist reforms in Nicaragua, the U.S. funded covert efforts to overthrow the government including training counterrevolutionary forces or "contras" who crossed from Honduras. Several decades of unrest in these countries slowed the development of agriculture and the economy and it was not until political reforms and peace accords in the 1990s that funds and political will was generally available for economic and social development.

New economic activities include the development of shellfish production, especially shrimp aquaculture, which is of high economic value but has been shown to damage coastal mangroves and fish breeding sites in Honduras. The attempt to find higher value exports than the traditional crops of sugar, cotton and bananas have focused on new **Non Traditional Agricultural Exports** (NTAEs), especially fresh vegetables and flowers. Rather than grow these and other crops on large company landholdings, the current strategy is **contract farming**, where farmers are guaranteed a market if they produce crops to the exacting quality standards of the multinational corporations such as Del Monte.
Low wages in Central America have also attracted labor intensive manufacturing such as garment industries to urban areas in El Salvador and Honduras. Costa Rica, with a better-educated workforce and more stable economy, has lured high technology companies such as Microsoft, GE and Intel to build factories near San Jose.

Led by Costa Rica, Central America has also seen a boom in tourism, often geared to the natural attractions of the coasts and rainforests. Environmentally oriented tourism, or **ecotourism** is designed to provide employment opportunities for local people while protecting ecosystems. Geographer, Susan Place has shown that ecotourism has brought mixed benefits to rural areas of Costa Rica. The ecological diversity of Central America also supports biological prospecting, or **bioprospecting**, for new medicines and products with commercial uses. For example, Costa Rica has signed agreements with multinational pharmaceutical companies, such as Meertz, which allow them

rights to prospect and develop in return for a share of profits to the national government and to local people.

8.7.5 Summary and Conclusions

Latin America with its diverse lands and peoples has changed dramatically in recent years as the processes of market liberalization, economic integration, democratization, urbanization and environmental degradation have transformed the region and changed its relationships with other world regions. Each of these processes has interacted with local conditions to produce a new mosaic of distinct regional geographies throughout the region and has produced new opportunities and challenges for people and policy makers. As Latin America enters the third millennium the people of the region have expressed considerable optimism and energy in their search for better lives and participation in political decision making. The challenge of sustainable development for Latin America faces the continuing legacy of inequality and vulnerability, the resource demands and pollution emissions of new industrial development and farming technologies, and the pressures of new consumption habits and growing populations.

8.8 KEY TERMS

Altiplano
Altitudinal zonation
Amazonia
Andes
Bourbon Reforms
Bracero program
cenotes
Chicago boys
chinampa
Circle of poison
colonialism
Columbian Exchange
continental plates
Creole
cultural ecology
demographic collapse
diasporas
domestication
ecotourism
ejidos
El Niño
extractive uses
Greater Antilles
Green Revolution
haciendas
Import Substitution Industrialization
informal economy
Inter Tropical Convergence Zone
Land reform
Latin America
Lesser Antilles
liberation theology
lost decade
Machismo
maquiladora
Mariansmo
Maya collapse
megacities
mestizo
Monroe Doctrine
NAFTA
neoliberalism
neotropics
non traditional exports
Offshore financial services
oligarchies
Operation Bootstrap

Pampas
paramo
plantation
pristine myth
rainshadow
remittances
social movements
Structural adjustment policies
terms of trade
terraces
Treaty of Tordesillas
urban bias
urban primacy