Structural Implications of Economic Liberalization on Agriculture and Rural Development

RuralStruc Program - Phase I

January 2007
The RuralStruc Program on the ‘Structural Dimensions of Liberalization in Agriculture and Rural Development’ is a joint initiative of the World Bank, the French Cooperation (the French Development Agency, the Ministry of Agriculture and Fisheries, the Ministry of Foreign and European Affairs, the Agricultural Research Centre for International Development (CIRAD) and the International Fund for Agricultural Development). It is managed by the World Bank.

With a duration of three years (2006-2009), its objective is to propose a renewed analysis of the processes of liberalization and economic integration – going beyond the only commercial dimension – and their impacts on agriculture and the rural sector of developing countries. It also has the mandate to bring an updated vision of the situation of rural economies in terms of levels of wealth and diversification. The results obtained will make it possible to improve the dialogue between national and international partners and to provide orientations for the agricultural and rural policy debates.

The Program adopts a comparative approach across seven countries – Mexico, Nicaragua, Morocco, Senegal, Mali, Kenya and Madagascar – which correspond to different stages of the process of liberalization and economic integration. The Program’s work is conducted with teams of national experts and researchers. Two phases were implemented: a first phase providing an overview of each country’s dynamics (2006-2007), and a second phase comprising sectoral and regional case studies, supported by rural household surveys (2007-2009).

http://www.worldbank.org/afr/ruralstruc

The present study bears the names of its authors and national program manager, which must be used and cited appropriately. The findings, interpretations and conclusions expressed in this document are entirely those of the authors and do not necessarily reflect the view of the World Bank, its Executive Directors, or the countries they represent, nor of the other contributing donors involved in the Program.
Structural Implications of Economic Liberalization on Agriculture and Rural Development

RuralStruc Program - Phase I

January 2007
INDEX

INDEX .................................................................................................................................................. I

AUTHORS .......................................................................................................................................... III

RESUMEN EJECUTIVO ..................................................................................................................... V

EXECUTIVE SUMMARY .................................................................................................................. XIII

PART I - PLACE AND ROLE OF AGRICULTURE IN THE NATIONAL CONFIGURATION ............... 1

CHAPTER 1 - HISTORICAL BENCHMARKS, MAIN AGGREGATES AND ECONOMIC DEVELOPMENT ..... 3
1. Historical Turning Points .................................................................................................................. 3
2. Demographic Characteristics ......................................................................................................... 5
3. The National Economy .................................................................................................................. 7

CHAPTER 2 - AN INITIAL OUTLINE OF THE MAIN CHARACTERISTICS OF NICARAGUA’S AGRICULTURAL SECTOR ............................................................................................................. 23
1. Agriculture’s Place in the National Economy ............................................................................... 23
2. Agrarian Structures ....................................................................................................................... 28

PART II - THE STRUCTURE AND EVOLUTION OF AGRICULTURAL AND AGRO-FOOD MARKETS .............................................................................................................................................. 39

CHAPTER 3 - AGRO-FOOD MARKETS ............................................................................................ 41
1. General Organization of Markets and Types of Sector .................................................................. 41
2. Commodity Chains in Nicaragua .................................................................................................. 42

CHAPTER 4 - THE FACTOR MARKETS: LAND, LABOR, INPUTS, CREDITS AND EXTENSION ....... 49
1. Inputs Market .................................................................................................................................. 49
2. The Credit Market ........................................................................................................................ 50
3. The Agricultural Extension Market .............................................................................................. 52
4. The Labor Market ......................................................................................................................... 53
5. The Land Market .......................................................................................................................... 55
6. Evolution of Relative Prices ......................................................................................................... 57

PART III - SEGMENTATION OF PRODUCTION STRUCTURES: TRENDS OBSERVED AND CONSEQUENCES ........................................................................................................................................... 61

CHAPTER 5 - FACTORS GENERATING STRUCTURAL CHANGES IN THE RURAL SECTOR .......... 63
1. Demography .................................................................................................................................... 63
2. Available Resources ...................................................................................................................... 67
3. Land Tenure and Property ............................................................................................................ 71
4. Domestic and International Prices ............................................................................................... 72
5. General Export Structure and Degree of Diversification .............................................................. 75

CHAPTER 6 - RE-STRUCTURING OF RURAL FAMILIES’ LIVELIHOOD STRATEGIES .............. 79
1. A Historical Review ....................................................................................................................... 79
2. Production Structure Segmentation: The Cases of Cheese and Coffee ....................................... 80

PART IV - IDENTIFIABLE RISKS AND IMPASSES, POSSIBILITIES FOR ADAPTATION AND RESTRUCTURING PROCESSES ........................................................................................................ 87

CHAPTER 7 - RECURRING PROBLEMS AND RISKS .................................................................... 89
1. Vulnerable Social Groups and Regions ......................................................................................... 89
2. Land Scarcity and the Extensive Production Systems .................................................................. 95

CHAPTER 8 - EXISTING EXIT OPTIONS AND ON-GOING PROCESSES OF CHANGE ............. 99
1. Developing Rural Non-farm Activities .......................................................................................... 99
2. Rural Depopulation and Urban Activities ................................................................................... 99
3. Migrations ..................................................................................................................................... 100
4. Reshaping of Rural Economies .................................................................................................... 107

PART V - CONCLUSIONS OF RURALSTRUC PHASE 1 IN NICARAGUA ............................... 111
REFERENCES .............................................................................................................................. 115
ACRONYMS ................................................................................................................................. 119
LIST OF FIGURES ......................................................................................................................... 121
LIST OF TABLES ............................................................................................................................ 125
TABLE OF CONTENTS .................................................................................................................. 127
AUTHORS

Arthur H. Grigsby V.,
Research and Development Institute Nitlapán

Francisco J. Perez,
Research and Development Institute Nitlapán
RESUMEN EJECUTIVO

Comprender los cambios estructurales en Nicaragua, significa entender de los cambios del sistema político del país en los últimos 30 años. Este sistema ha tenido cambios radicales de un sistema orientado por el mercado, con cierta intervención del estado en los mercados rurales antes de 1979, a una economía planificada y controlada por el estado en los años 80s, con reformas estructurales en la tenencia de la tierra, los mercados rurales y mercado laboral. En el año 1990 el sistema político y económico del país regreso a la economía de mercado, con una política de ajuste y estabilización que significó una fuerte reducción del rol del estado en la economía, convirtiéndose la política monetaria en el eje central de las políticas publicas. A inicios del año 2007, Nicaragua tiende regresar a un sistema en el cual el estado vuelve a jugar un papel importante en los mercados rurales.

A. El rol de la Agricultura en la Economía Nacional

A través de su historia la economía del país ha dependido de las dinámicas del sector, de esta manera la economía nacional se basaba en ganado y añil antes de los años 1870s, exportador de café desde 1890, y economía agro-exportadora (banano, algodón, café y azúcar) desde 1950. En Nicaragua se han implementado modelos de desarrollo que son contrastantes, incluyendo el de modernización de la economía nacional (1950-1979), economía mixta con alta intervención pública (1980-1990) y economía de libre mercado (1990-2006) en el presente periodo se espera un nuevo cambio en política económica con un mayor rol del estado. En el periodo 2000-2006 se considera que la agricultura es el sector mas importante de la economía nacional ya que según el BCN y la CEPAL genera el 34 % del empleo nacional, el 80 % de las exportaciones y el 17 % del PIB, el cual podría ser mayor si se toma en cuenta que el 70 % de la industria nacional es en realidad agroindustria.

De acuerdo al Censo 2005, Nicaragua se encuentra estancada en su proceso de transición demográfica rural-urbana. Las familias rurales representan el 44 % de la población total y 40 % de la PEA. De las 200,000 familias enumeradas en el CENAGRO, Nitlapán estima que el 59 % de las mismas son familias de Subsistencia, 31.7 familias campesinas, 6.6 % finqueros y 2.7 % son empresarios agrarios. A la vez, el país puede ser dividido en seis grandes macro-regiones con dinámicas socioeconómicas propias, dado que varían la infraestructura productiva, la distribución (concentración) de la tierra y el potencial productivo de las mismas. De acuerdo al INEC, en el año 2005, se estima que la agricultura genero unos 570,800 empleos lo cual representa el 34 % de la población ocupada y el 33 % de la PEA.

Nicaragua es parte de la iniciativa de reducción de deuda a los países altamente endeudados (HIPC) por lo que hay un enfoque de las políticas publicas en la reducción de la pobreza, la estabilidad macroeconómica el pago de la deuda externa e interna, el gasto publico en el sector agropecuario presenta entre 6 y el 7 % del gasto publico total. La agricultura se considera un sector elemental en la reducción de la pobreza y es por ello que se ha incluido en la estrategia nacional de desarrollo el fomento de cluster productivos de rubros como café, maní y soya, leche y sus derivados, carne, vegetales, granos y camarones, con esto se espera incrementar el aporte de la agricultura a la PIB, a las exportaciones y al empleo, reduciendo con ello la pobreza rural.

Los procesos de liberalización e integración comercial han abierto el mercado regional y con ello Centroamérica ha pasado a ser el principal socio hacia donde se exportan los productos nicaragüenses. Los Estados Unidos es el segundo socio hacia donde se dirigen las exportaciones y ambos mercados ha sido asegurado a través del proceso de integración y con la firma del CAFTA. Dada las políticas de liberalización comercial aplicadas en el periodo 1990-2005, Nicaragua tiene proyectada la segunda tarifa promedio de protección (1.6 %), mas
baja en la Región, únicamente El Salvador tiene mayor apertura a importaciones. Nicaragua ha firmado tratados de libre comercio con México, Chile, República Dominicana, Estados Unidos, Taiwán y actualmente negocia con Canadá, la Unión Europea y la iniciativa ALBA.

**La estructura y evolución de los mercados agrícolas.**

En los años 80s, el estado intervino los mercados agrícolas con el objetivo de controlar la el comercio de los insumos, maquinaria, equipos y productos agrícolas, además el estado intervino la distribución en áreas urbanas. Entre las políticas de intervención están: la creación de instituciones públicas de comercio exterior e interior. Las de comercio exterior controlaban la exportación de café, algodón, azúcar y carne, la de comercio interior la distribución de insumos, equipos, maquinarias, acopio de granos y distribución de los mismos en áreas urbanas. Además desde políticas macro se definieron políticas de precios y tasas de cambio que favorecieran las importaciones, junto a subsidio del crédito, insumos y la asistenta técnica. Con el cambio político y económico del año 1990 se inicio el proceso de privatización de las empresas públicas de comercio exterior e interior y para el año 1993 la política de precios había sido eliminada. A partir de entonces los precios de los productos agrícolas (excepto al azúcar) se definen en un contexto de la oferta y la demanda, en libre mercado.

Los precios internacionales de productos agrícolas han sido inestables en los últimos 15 años, en los cuales ha habido fuertes caídas de precios de café el cual es el principal rubro de exportación del país. Alternativas de mercados especiales, orgánicos y mercados justos se han generado como alternativas para obtener mayores precios. Los precios de la carne, maní, arroz y ajonjoli han sido relativamente estable, aunque se han reducido desde 1999. Sin embargo, los precios de las importaciones agrícolas como los fertilizantes nitrogenados han sido incrementados constantemente, con el incremento de los precios del petróleo tanto los fertilizantes, pesticidas y maquinaria agrícola ha incrementado su precio. Como resultado los términos de intercambio comercial agrícola se deterioran cada año.

Las cadenas de valor de productos exportables como el café, carne, azúcar, ajonjoli y maní tienden a ser monopolizadas en algunas de sus fases, principalmente en el primer o segundo grado de procesamiento y/o en la exportación. Las infraestructuras de limpieza, descortezado, beneficio, destace y empacado tienden a estar concentradas en un reducido número de empresas y/o grupos económicos, generando con ello una economía de oligopolios o carteles. Con la política de atracción de inversión han llegado al país nuevos actores extra-regionales que tienden a integrar verticalmente las cadenas de valor, estas inversiones se han dado principalmente en el sector financiero, pero ya hay claras señales en los mercados de productos agrícolas con la llegada de Walmart y Hortifruti, Cargill, Yoplait, Starbucks.

El mercado doméstico de productos agrícolas tienden a ser dominados por los sistemas tradicionales de intermediación, aunque a partir de algunos años los supermercados han incrementado su participación el mercado de frutas, verduras y vegetales. Los supermercados actualmente esta en el proceso de integración vertical a actores extra regionales como el caso de Walmart y la integración vertical la logran a través de Hortifruti, una empresa del grupo, esta manera se integra la intermediación con la producción y la distribución a las áreas urbanas, además incluyen actividades de procesamiento primario como limpieza y empacado de granos.

El mercado de insumos agrícolas es controlado en un 70 % por cuatro firmas comerciales, esto incluye la distribución y venta de semillas, fertilizantes y pesticidas en general. Los mercados financieros rurales han desarrollado la oferta crediticia con la presencia de bancos comerciales e instituciones de micro-finanças, una cartera agropecuaria de US$ 326 millones de dólares, representando el 17 % de la cartera nacional y 7.7 % de los clientes. Sin embargo, el crédito agropecuario aun presenta alta tasas de interés (mayores de 20 %), créditos de corto plazo (en el caso de ASOMIF el 74 % de la cartera esta ubicada en créditos menores de 24 meses). Otros
servicios financieros tienen un limitado desarrollo como el ahorro, transferencias, cambio de divisas, cambio de cheques fiscales, pago de servicios básicos fondos en administración y seguros.

Ante este contexto son necesarias políticas que permitan profundizar el crédito y desarrollar productos financieros en áreas claves para la agricultura como los seguros agrícolas (cosecha y precio), ya que estos son claves en el desarrollo de la agricultura de contrato. En el nuevo contexto, el gobierno de Nicaragua promueve el establecimiento de la banca de desarrollo como alternativa a esta situación, esta intervención debe tener claramente definidas los segmentos a los cuales se apoyara de manera que se los segmentos que ya accedan al crédito no absorban esta nueva fuente de financiamiento.

Los mercados de tierras han sido dinámicos en los últimos diez años, a pesar de los conflictos relacionados con la propiedad. Los precios de la tierra son variables por región e intra-regionales, siendo la gradiente desde el Pacífico donde se ha desarrollado la infraestructura productiva y de comunicación (US$ 4 a 7,000/ha) hacia la nueva frontera agrícola en el Caribe (US$ 60 a 80/ha) en donde hay serias limitantes de acceso y de comunicación. Se estima que en la siguiente década, la tierra será un recurso que tiende a ser escaso, por lo cual se iniciara un mayor proceso de concentración de tierra en la región del Caribe, a como sucedió en los años 50 y 60 en el pacífico, con la agravante que no habrá “salida agrícola” para los grupos desplazados.

En el caso de los mercados de asistencia técnica y capacitación, el estado ha subsidiado el establecimiento de un sistema de co-financiamiento de la misma (Programas FAT Occidente y Las Segovias), sin embargo esto no ha podido ser establecido entre otras cosas por intervenciones del estado que incluían la promoción de asistencia técnica totalmente gratuita (Libra por Libra), de manera que el estado llevaba dos discursos contradictorios entre sí a una misma población. La respuesta de la población rural tiende a ser diferenciada, los productores que en su racionalidad esta el aumento de sus ingresos para incrementar su niveles de capital (Campesinos Finqueros y Finqueros) y aquellos que tiene interés en incrementar la rentabilidad de su empresa (empresarios agrícolas) tienden a pagar por el servicio de asistencia técnica, los sectores de subsistencia tienden a priorizar practicas y actividades que le permitan estabilizar su flujo de ingreso anual, por lo que la asistencia técnica tiende a no ser una prioridad en sus gastos.

**Segmentación de las estructuras productivas: tendencias observadas y consecuencias**

El sector agrícola nicaragüense ha evolucionado en los últimos 16 años en un contexto de crisis internacional de los precios (algodón, café, ajonjoli, soja, maní) y de liberalización e integración comercial (reducción de tarifas, integración centroamericana, establecimiento de áreas de libre comercio). A nivel interno, el sector se ha adaptado a los cambios poblacionales relacionados al desempleo y la migración rural, los conflictos de la propiedad, el cambio climático con áreas altamente vulnerables a sequías (fenómeno El niñio), así como con un marco nacional de políticas que prioriza la atracción de la inversión hacia el sector servicios y el establecimiento de Zonas Francas de Exportación.

Luego del cambio político y económico de 1990, el comercio de productos agrícolas tanto a nivel interno como externo fue re estructurado dado a que las instituciones públicas que ejercieron estas funciones fueron eliminadas. Factores como las crisis de los precios, las políticas de liberalización de los mercados agrícolas, los conflictos de propiedad, los altos niveles de desempleo y los largos periodo de sequía configuraron un nuevo contexto político y económico para la definición de las estrategias de vida e inversión de las familias rurales.
Nicaragua puede ser considerada como una economía en transición, ya que aunque la población rural ha decrecido porcentualmente, esta reducción no es lo suficientemente grande como para reducir la presión existente sobre los recursos naturales (agua, tierra, bosques) por lo tanto los procesos migratorios, tanto a las ciudades como a los países vecinos tienden a ser incrementadas. Dado a que la migración rural tiende a ser temporal y la demanda de tierras fértiles es cada vez mayor, se puede prever una crisis agraria por la escasez de tierra fértil y agua en el mediano plazo.

En dependencia del sector social en que se encuentren las familias rurales, (obreros agrícolas, familias de subsistencia, Campesinos, Finqueros, Empresarios), ha adaptado sus unidades económicas al nuevo contexto con una combinación de actividades agrícolas y no agrícolas y con la integración en diferentes cadenas de valor que existen en los mercados de productos agrícolas (tradicional, supermercados, exportación a nivel regional o extra-regional).

En rubros como café, las familias de subsistencia y campesinas han sido beneficiadas por ONGs, la cooperación internacional e instituciones públicas para su integración a mercados alternativos como comercio con justicia y mercados orgánicos. En otros productos como la cadena de derivados de la leche, las familias de subsistencia e incluso las campesinas tienden a ser excluidas de las cadenas de mayor generación de valor, asociadas a la entrega de productos de mayor calidad. El acceso a créditos de corto plazo limita la inversión en infraestructura productiva, equipos e incluso en el mejoramiento tecnológico de los sistemas de producción (mejora genética de animales, variedades de cultivos, renovación de plantaciones).

Se puede concluir que existe una alta segmentación de las familias rurales que se refleja en la integración/exclusión de las diferentes cadenas de valor de los productos agrícolas. Los nuevos circuitos de las cadenas de valor (domésticas y de exportación) tienden a integrar a familias capitalizadas (campesinos, finqueros y empresarios) que tienen activos que les permite hacer cambios tecnológicos para cumplir con las exigencias de calidad y volumen. El resto de familias (aproximadamente 70 % de las familias rurales) tienden a ser excluidos por la poca capacidad de inversión para los cambios requeridos; sin embargo, estos son las principales fuentes de productos para los mercados tradicionales de las ciudades primarias, secundarias y terciarias, a los cuales acceden el segmentos más vulnerables y de menor ingreso de las familias urbanas. Una serie de políticas publicas para garantizar los requerimientos mínimos de calidad de los productos agrícolas con necesarias como las campañas masivas de vacunación del ganado mayor y menor, el establecimiento de centros de acopios de granos, vegetales, el fomento de la agricultura de contrato, la profundización del crédito para la inversión en infraestructura productiva en finca, los seguros agrícolas y políticas específicas para incremental los niveles de calidad de los productos que se comercializan a nivel de los mercados locales tradicionales.

**Riesgos e Bloqueos predecibles: posibilidades de procesos de adaptación y re-estructuración**

Cuatro procesos tienden a ser los principales bloqueos para los procesos de cambios de la situación actual de las familias rurales más vulnerables: la dinámica poblacional nicaragüense, la extensividad de la producción agropecuaria, la pobreza rural y las migraciones. La tasa de transición de la población rural a las ciudades, basado en el peso de la población rural en la población total, ha sido relativamente estable y contundencias a disminución. Esto por que al comparar el peso de la población rural en 1995 esta alcanza el 45.6 % y en el 2005 llega a 44.1, es decir en 10 años se redujo únicamente en 1.5 puntos porcentuales, lo se traduce en un aumento en términos absolutos de cantidad de población pasando de 2 a 2.3 millones de personas.
En base a este crecimiento absoluto y dado la actual forma de la pirámide poblacional se estima que unos 34,500 jóvenes entran anualmente a la población en edad de trabajo, lo que significa la necesidad de generar una cantidad similar de nuevos empleos anuales. A nivel nacional esta cifra se podría estimar a los 90,000 jóvenes entran a la edad laboral, en un país con 57 % de la población mayor de 10 años desocupada y con un peso del sector informal equivalente al 63 % de la población ocupada. Hasta ahora las alternativas de generación de empleo han tenido un ritmo muy inferior en la demanda laboral, por ejemplo el sector maquila necesito 10 años para generar 100,000 empleos, que es muy cerca a la cohorte anual nacional.

La pobreza rural es una limitación clave para los procesos de cambio tecnológico, inversión e integración a las cadenas de valor de mayor calidad. Como alternativa a la falta de capital, las familias pobres rurales utilizan practicas intensivas en mano de obra y la migración para la consecución de fondos ya sea a través de remesas o ahorro en las épocas de mayor demanda de fuerza de trabajo en Costa Rica y El Salvador. La migración interna hacia la frontera agrícola es cada vez más limitada, dado a que lo que resta por colonizar son las áreas núcleo de las áreas de reservas como Bosawas, Indio Maiz, Wawashan, las cuales enfrentan dos frentes pioneros, el tradicional del Pacífico-Centro hacia el Caribe, y el otro a partir de Kukra Hill y El Tortugero.

El patrón extensivo de la agricultura en el país tiene como principal efecto la incorporación anual de 106,000 hectáreas de bosques a la producción agropecuaria, lo cual es una tendencia insostenible para el país. En una primera etapa la escasez de la tierra desencadena un proceso de concentración de tierra absorbiendo con ella a la pequeña propiedad (consolidación de frontera agrícola), y en una segunda etapa generará grupos excluido a quienes habrá que darle una opción de salida, sino la tendencia a una crisis social agraria. Según el Banco mundial los niveles de concentración de la tierra alcanzan niveles de un índice de GINI de 0.86.

La agricultura extensiva es además un sistema de producción de baja inversión en tecnología y sus resultados están basados principalmente en la fertilidad natural del suelo la cual se disminuye drásticamente en el segundo y tercer año de explotación, se estima que en Nicaragua se generarán entre US$ 100 y 110 anuales por hectáreas. Políticas públicas para frenar este patrón son necesarias un impuesto progresivo en la tenencia de tierra por regiones, podría promover mayores niveles de inversión principalmente de los ganaderos en las áreas del Centro y Caribe del país.

La intensificación productiva es una opción de salida a la crisis rural para las familias rurales que dependen de la agricultura. Dependiendo de las actividades productivas que desarrollen las familias, estas pueden ser integradas a cadenas alternativas de valor (mercados justos, orgánicos, supermercados, mercados tradicionales mejorados). Este cambio tecnológico permitirá incrementar los rendimientos, volúmenes y calidad de la producción agrícola, en un mismo cantidad de área explotada. La intervención pública no debe limitarse únicamente al fomento tecnológico, sino también al establecimiento de normas y estándares de calidad, así como prácticas amigables al ambiente de los productos agrícolas que abastecen a los mercados domésticos tradicionales. Paralelamente, esto llevará a identificar una canasta mínima de inversiones a ser promovidas a través de los mercados financieros rurales.

Ligado a esto esta la promoción de los mercados alimentarios (GB, Lácteos, Carne) tradicionales internos y a nivel de la región centroamericana, la promoción de los Mercados Alternativos: orgánico, justo y la apertura de nuevos mercados que demandan alimentos (ALBA). Para que las familias de subsistencia se inserten exitosamente los mercados regionales, serán necesarias políticas para superar requerimientos mínimos fito-zoo sanitarios (campañas de vacunación). Estableciendo las categorías de calidad y laboratorios que sirvan de referentes en conflictos entre los productores y los acopiadores/procesadores.
Finalmente, entre las opciones agrarias deben incluirse políticas para disminuir los niveles de concentración de tierras, ya sea facilitando la inversión en tecnología e infraestructura productiva o a través del impuesto progresivo a la tenencia de la tierra.

En las salidas no agrarias se ubica principalmente en tema de migración, el cual es un proceso que por un lado permite a las familias sobrevivir a la crisis en lo rural, pero por otro limita la inversión de largo plazo en los sistemas de producción. De acuerdo a la CEPAL, la migración rural tiende a ser temporal, lo que permite a las familias aprovechar el periodo muerto de la agricultura para trabajar fuera del país y obtener un ingreso que le permite estabilizar su flujo de caja e iniciar el proceso productivo de la primera (Mayo/Junio). Se estima que anualmente migran de manera temporal 150,000 nicaragüenses, aproximadamente 44,400 son rurales. Un dato interesante es que el mercado laboral rural ocupa 75,000 nicaragüenses, por que lo unos 30,000 urbanos migran temporalmente a trabajar en actividades agrícolas. La migración permanente es un proceso en el cual, los miembros de la familia que toman riesgo y que están en su plenitud productiva salen del sistema de producción y se quedan las unidades de consumo, pasando de una unidad económica productiva a una de consumo. Aproximadamente el 42% de los remesas son destinadas a la compra de alimentos, 16% en gastos médicos, 10% en ropa y únicamente el 8% es dirigido a inversión. Políticas públicas para el fomento del ahorro y de la inversión en actividades económicas son necesarias, así como medidas para el incremento del salario rural nacional, ya que el promedio nacional es 4.7 veces menor que el de Costa Rica.

Dada las limitaciones estructurales de la agricultura, es necesario analizar el rol de las actividades económicas rurales no agropecuarias en el ingreso de las familias, incluyendo la artesanía (madera, barro, cuero, textil), el turismo rural, el comercio y los servicios comunitarios y personales. Un análisis partiendo desde los sectores sociales más vulnerables, sin tierras y familias de subsistencia, es necesario para identificar el impacto real de los bloqueos mencionados y las opciones de salida a la crisis rural. Esto dará pautas de políticas para promover la integración de los sectores más pobres a los mercados rurales en general y no únicamente a los mercados de productos agrícolas.

_A manera de Conclusiones:_

La Economía nicaragüense depende altamente de lo rural (aproximadamente 30% del PIB, 40% de la PEA, 80% de las Exportaciones Totales)

El proceso de Liberalización comercial y de integración económica regional ha re estructurados los mercados rurales y estos tienden a ser monopolizados u oligopolizados en las fases de procesamiento y/o exportación, importación.

Este contexto ha facilitado la integración vertical de algunos productos a cadenas globales y otros a cadenas de mayor valor en los mercados internos (supermercados). Nuevos actores extra-regionales tienden a gobernar las cadenas de valor re-estructuradas.

Aproximadamente un 20% de los Hogares rurales podrían ser integradas a las cadenas de valor dinámicas, un 28% estarían integrados en las cadenas tradiciones y aun no hay claridad sobre el potencial del 52% restante.

Existen serios bloqueos a las salidas de la crisis agraria entre ellos:

- Estancamiento de la transición rural-urbano
- La generación de empleo y las dinámicas demográficas (cohorte)
• Limitadas áreas de expansión y alta concentración de la tierra

• Serios problemas de acceso a agua y concentración de las áreas con potencial de riego.

• Modelos de producción agropecuaria extensiva, con bajos niveles de inversión en tecnología.

• Alta incidencia de pobreza y extrema pobreza rural que limita el desencadenamiento de dinámicas económicas territoriales que generen empleo y eleven el salario rural

• El incremento del comercio regional de productos alimentarios de consumo popular podría ser una opción para las familias de subsistencia y campesinos finqueros.

• Sin embargo, la agricultura se enfrenta a un contexto de alta competitividad, con el cumplimiento de las fases de liberalización con países como México, Chile, RD y USA

• La reducción de la pobreza en el país, pasa por la construcción de una política de desarrollo rural que logre integrar a ese 70 % a dinámicas económicas territoriales.
EXECUTIVE SUMMARY

Understanding structural changes in Nicaragua, means understand latest 30 years of political changes. Nicaragua political system has gone from a market oriented economy before 1980s, to a State centered economy in 1980s, with structural reforms on land tenure, trade system and employment. After 1990, Nicaragua turned back to free market economy and monetary policy became the central action axis for public policies with structural adjustment and privatization as main tools. By 2007, Nicaragua has a left oriented government which is opposed to market oriented economy and privatization process.

Place and role of agriculture in the national configuration

Nicaragua’s way of development has been defined by its agricultural sector throughout history: cattle and indigo producers before 1890, coffee producer since 1890, agro-industrial country (bananas, cotton, coffee and sugar) after 1950s. Contrasting economic models has been implemented including modernization of economy (1950-1979), state-centered model (1980-1989), and free-market oriented economy (1990-2006). Nowadays, it is expected to have a political and economical model change. By 2000s, Agriculture sector is the most important economic activity for its contribution to GDP (17 %), employment (34 %) and share of total exports (80 %). Agriculture share of total exports in the last 15 years (70 – 80 %) is a clear tendency of the role of agriculture in Nicaraguans economy.

According to National Census (2005), Nicaragua is in a demographic transition. Rural population represents 44 % of total population, and 40.4 % of total EAP. Based on Agrarian Census (2001), there are 200,000 farms, 59 % are subsistence families, 31.7 % peasants, 6.6 % Farmers and 2.7 % agrarian capitalist. Nicaragua can be divided in six macro-regions with different socioeconomic dynamics, since productive infrastructure, land distribution and agricultural potential are specific for every one of them. By 2005, Agriculture generates 570,820 jobs which represents 34 % of total occupied population and 33 % of total EAP (INEC, 2006).

Nicaragua is part of the HIPC initiative and public policies are focused on poverty reduction and debt services. Expenditures on agriculture sector represent 6 – 7 % of total public expenditures. A National strategy for development has been developed based on productive clusters, specifically: coffee, peanut and soybean, dairy, meat, vegetables, grains and shrimp. This strategy pretends to increase agriculture contribution to GDP, employment and exports as the main way to reduce rural poverty.

Trade liberation has opened regional markets, and Central America is the main partner for agricultural exports for Nicaragua. The USA is the second partner and a free trade agreement has been signed. Nicaraguan tariff protection is the second lowest in the region after El Salvador. By 2021 it is expected that average tariff will be 1.6 %. Nicaragua has signed FTA with Mexico and Chile and it is negotiating with Canada, Taiwan, European Union and ALBA Group.

The structure and evolution of agricultural and agro-food markets

In 1980s there was a strong public intervention in order to control trade and distribution of products and inputs. The Sandinista government developed several institutions for trading coffee, rice, cotton, meat and sugar. After 1990, price controls were eliminated and market institutions were privatized, as a result commercial chains were reconfigured. Currently,
Agricultural production is trade by market mechanisms of offer and demand. There are not controlled prices or direct public intervention for fixing prices.

Agricultural product prices have been unstable during the last 16 years. Gourmet and organic coffee have offered alternatives with higher prices. Meat, rice, peanut and sesame prices have been relatively stable, but the general tendency has been downward since 1999. The prices of inputs such as nitrogen-based fertilizers are linked to petroleum prices, which are currently rising. As a consequence, the terms of trade for agricultural production have been deteriorating with every passing year.

Export products value chain such as coffee, meat, sugar, sesame and peanut tend to be monopolized either in processing and/or exporting process. Infrastructure facilities for cleaning, pealing, parchment stage, cutting, and packing tend to be concentrated in few economic groups. There is a regional integration process through foreign investment in products such as peanut, sesame and cheese. There are initial levels of integration to global networks such as Starbucks (coffee), and Cargill (Poultry and Pork) and Walt-mart through Hortifruti (fruits and vegetables)

Traditional markets tend to dominate domestic trade; however, supermarkets are incrementing their share of vegetable markets. Supermarkets are part of a global integration with USA network, mainly through Walt-mart. A regional company Horti-fruti tends to monopolize supermarket supply of fruit and vegetables. This company belongs to the Walt-mart group as well.

After 1990, the agricultural input market is controlled, an oligopoly import and distribute 70% of seeds, fertilizers and pesticides. Nitrogenous fertilizers and pesticides are the main intermediate imports for agriculture. Financial markets are developed with commercial banks and micro-finance institutions with approximately US$ 220 million in agriculture loans, covering between 15 and 20% of producers. However, credits are mainly for short term and with interest rate higher than 25%. The new Government will have a public intervention on rural finances market, but it is not clear the implementation process.

Nicaragua has a dynamic land markets, although there are serious property conflicts. Land prices varies from US$ 4 – 7,000/ha at the well connected pacific areas to US$ 60 -80/ha at the new agricultural frontier. In the next decade, land will be a scarce resource and an aggressive land concentration process will be trigged.

Agriculture extension and agricultural insurances markets are not developed. Extension programs are subsidized by public funds and international cooperation. There is not public policies to create an insurance markets, and this is a serious restriction for a farm-contracting system. Approximately 30 to 40,000 persons from Rural EAP find no job in agriculture every year. According to National Census 2005, every year approximately 9,000 new workers are inserted on Rural EAP, agriculture should generate 40,000 new jobs every year in order to hire this new economic population.

Segmentation of production structures: trends observed and consequences

Agricultural sector has developed in an international context of prices crisis (cotton, coffee, sesame, and peanut) and commercial liberalization (Economic Integration, Free Trade areas). At the same time, agriculture has adapted to internal factors such as demographic transition with rural population share reduction, land property conflicts due to several agrarian reform processes, climate change with high vulnerability to droughts, public policies focused on
attracting investment to services and exporting production zones, and high level of open unemployment and informal sector.

After 1990, international and domestic trade was reconfigured since public institutions were dismantled. International prices crisis, free market policies, property conflicts, high levels of unemployment, and large periods of droughts generated a new socioeconomic context for rural families. Nicaragua is on a transition phase, rural population growth has decreased, but it is not enough for reduce pressure for natural resources, thus, internal migration will continue. In the short run fertile land and water sources will be scarce.

Depending on the social sector, (rural workers, subsistence families, peasants, farmers or agrarian capitalist), families have adapted their economic units to the new context. In some crops such as coffee, peasant and subsistence families can be benefited by NGOs, international cooperation and public institutions in order to be integrated on alternative markets. In other products such as cheese, subsistence families and even peasants might be excluded of the quality value chains, since they have no capital to meet all requirements. They can access to credits, but for short term and high interest rate, a situation that disincentive investment on cattle.

It can be stated that there are process of segmentation of rural families. There are social sectors that have been integrated to the new commercial circuits. There are social sector, mainly subsistence families and peasant who has been excluded of certain new commercial circuits. Public policies to facility technical changes in order to accomplish quality requirements such as: vaccines, productive and gathering infrastructure are needed.

_Identifiable risks and impasses, possibilities for adaptation and restructuring processes_

Three main blockades for rural families are discussed in this section: Nicaraguan demography, poverty trends, extensive path of agriculture and migrations. Agriculture does not generate enough jobs for rural EAP; around 30 to 40,000 persons find no job every year in agriculture. According to National Census 2005, every year approximately 9,000 new workers are inserted on Rural EAP, agriculture should generate 40,000 new jobs every year in order to hire this new economic population. Rural poverty is also a serious limitation for technical change, investment and market integration of rural families. Poverty is a condition that forces subsistence families to use labor intensive practices and migrate. Internal migrations tend to be limited for limited access to land. The New agricultural frontier in at the limit of natural reserves cores, indigenous communities and swamps of the Caribbean areas. International migrations have been an exit for the urban and rural crisis; however, new regulations on Costa Rica and USA will blockade migrant flows.

The extensive path of agrarian system is incorporating 106,000 hectares a year to agriculture. It is an unsustainable path which is consuming the whole fertile land. In a first stage this factor will blockade internal migration. In a second stage will trigger an aggressive land concentration process in which subsistence families will be the most vulnerable. Extensive path is to produce without technical practices to increment yields. Subsistence families tend to rely on natural soil fertility and after two or three year, yields decrease significantly. Public policies to restrain this extensive path such as a progressive tax on land tenure, might force to intensify cattle producers at the Old and new agricultural frontier.
Intensification is an important exit for rural families, depending on their system families might be integrated to fair trade, quality and organic markets. Technical change will increase yields, obtaining higher volumes in the same area. It is necessary to norm quality standards for agricultural product and to promote environmental practices for production. At the same time, develop a series of minimum requirement (infrastructure, inputs). The highest Agr GDP/Land ratio in the 1989-2002 period is US$ 84.5 per hectare. This shows the level of production/investment applied in Nicaraguan agriculture. This is not the same situation throughout the country. Pacific Plains tends to be intensive with production system based on crops. The Dry areas and the cattle production areas at the Old and New agricultural frontiers tend to be worse with large farms with few cattle. This tendency is a serious risk since land is not more an available resource. In the long run, with no areas to colonize, families will come landless or will increase conflict at reserves and indigenous community’s lands; a situation that already started (Gomez and Munk, 2006).

Temporal migration has been an important exit for rural families. Temporal migration allows families to migrate in harvesting season to Costa Rica and/or El Salvador in order to obtain funds for sowing in May. For these activities, families organize their labor force and funds to take advantages of migration. Alternatives for saving and investment should be promoted by public policies, in order to generate accumulation process on families. Local farms offer a low salary for agricultural activities that have higher remuneration in Costa Rica and El Salvador, the difference of rural salaries is so high that migration is a worthy strategy. By 2002 the difference between rural salaries in Costa Rica (US$ 8.1/day) and Nicaragua (US$1.1/day) was seven dollars per day, and 181.6 dollars per month. It is estimated that Nicaraguan migrants represent 60 % of agricultural labor force in Costa Rica, mainly in export products such as: sugar cane (83 %), coffee (63.2 %), Banana (45.7 %), and melons (50 %). It is also important for local consumption products such as orange (66.7 %) and beans (75 %) Permanent migration tends to be an urban phenomenon. Due to distance migrate to USA tend to be a permanent migration and only 11.6 % of rural migrants moves to this destiny. CEPAL estimates that only 9 % of Nicaraguan migrants in USA and 35 % of permanent migrant in Costa Rica are from rural areas.

The new configuration of the livelihood strategies in rural sector are linked with international migration. Rural workers and subsistence families included temporal internal migration in their annual strategy. Nowadays, this strategy changed to an international migration with a longer period and tends to be permanent in Costa Rica. Low middle income families who have a high level of economic mobility tend to temporary migrate to Costa Rica in order to finance their productive cycle. There is a lack of information about remittances in rural areas, and its role in the familial cash flows.

Agriculture is the main economic activity in Nicaragua, since its contributions to national economy are higher than communitarian services, trade and manufacture. Agriculture generates 570,820 jobs which represents 34 % of total occupied population and 33 % of total EAP, 30 % of total GDP and Agro-industries represent 70 % of manufacture’s GDP.

According to National Census 2005, Rural population represents 44 % of total population, and 40.4 % of total EAP. There are around 200,000 farms, 59 % are subsistence families, 31.7 % peasants, 6.6 % Farmers and 2.7 % agrarian capitalist. Nicaragua can be divided in six macro-regions with different socioeconomic dynamics, since productive infrastructure, land distribution and agricultural potential are specific for every one of them.
Trade liberation has opened regional markets, and Central America is the main partner for agricultural exports for Nicaragua. The USA is the second partner and a free trade agreement has been signed. Nicaraguan tariff protection is the second lowest in the region after El Salvador. By 2021 it is expected that average tariff will be 1.6%. Nicaragua has signed FTA with Mexico and Chile and it is negotiating with Canada, Taiwan and European Union.

Agricultural products chains are highly segmented. Products such as cheese with a low standards product for low income families, and high standard product for supermarket and export create a segmented rural sector. Due to quality requirements subsistence families and a sector of peasants tend to be excluded from high value and high prices commercial circuits; same situation can be observed on vegetables and fruits chains. Agro industrial products tend to have oligopoly phases of processing and exports. Coffee, sesame, banana, peanut and seafood are clear cut examples of this situation.

After 1990, the agricultural input market is controlled, an oligopoly import and distribute 70% of seeds, fertilizers and pesticides. Nitrogenous fertilizers and pesticides are the main intermediate imports for agriculture. Financial markets are developed with commercial banks and micro-finance institutions with approximately US$ 220 million in agriculture loans, covering between 15 and 20% of producers. However, credits are mainly for short term and with interest rate higher than 25%. The new Government will have a public intervention on rural finances market, but it is not clear the implementation process.

Agriculture extension and agricultural insurances markets are not developed. Extension programs are subsidized by public funds and international cooperation. There is not public policies to create an insurance markets, and this is a serious restriction for a farm-contracting system.

Agriculture does not generate enough jobs for rural EAP; around 30 to 40,000 persons find no job every year in agriculture. According to National Census 2005, every year approximately 9,000 new workers are inserted on Rural EAP, agriculture should generate 40,000 new jobs every year in order to hire this new economic population.

It can be stated that there are process of segmentation of rural families. There are social sectors that have been integrated to the new commercial circuits. There are social sector, mainly subsistence families and peasant who has been excluded of certain new commercial circuits. Public policies to facility technical changes in order to accomplish quality requirements such as: vaccines, productive and gathering infrastructure are needed.

Depending on the social sector, (rural workers, subsistence families, peasants, farmers or agrarian capitalist), families have adapted their economic units to the new context. In some crops such as coffee, peasant and subsistence families can be benefited by NGOs, international cooperation and public institutions in order to be integrated on alternative markets. In other products such as cheese, subsistence families and even peasants might be excluded of the quality value chains, since they have no capital to meet all requirements.

Three main blockades for rural families are discussed in this section: poverty, extensive path of agriculture and migrations. Rural poverty is a serious limitation for technical change, investment and market integration of rural families. Poverty is a condition that forces subsistence families to use labor intensive practices and migrate. Internal migrations tend to be limited for limited access to land. The New agricultural frontier in at the limit of natural reserves cores, indigenous communities and swamps of the Caribbean areas. International migrations have been an exit for the urban and rural crisis; however, new regulations on Costa Rica and USA will blockade migrant flows.
Intensification is an important exit for rural families, depending on their system families might be integrated to fair trade, quality and organic markets. Technical change will increase yields, obtaining higher volumes in the same area. It is necessary to norm quality standards for agricultural product and to promote environmental practices for production. At the same time, develop a series of minimum requirement (infrastructure, inputs to be promoted by rural financial markets.

Temporal migration has been an important exit for rural families. Temporal migration allows families to migrate in harvesting season to Costa Rica and/or El Salvador in order to obtain funds for sowing in May. For these activities, families organize their labor force and funds to take advantages of migration. Alternatives for saving and investment should be promoted by public policies, in order to generate accumulation process on families.
PART I -

PLACE AND ROLE OF AGRICULTURE IN THE NATIONAL CONFIGURATION
CHAPTER 1 - HISTORICAL BENCHMARKS, MAIN AGGREGATES AND ECONOMIC DEVELOPMENT

Central America obtained its independence 185 years ago, and Nicaragua has 168 as a Republic. Since independence there has been a series of civil wars and invasion by the United States. Nicaragua is located in Central America and was the first option for the inter-oceanic channel that was eventually built in Panama. Nicaragua’s geographical position was considered strategic for the United States’ interests since 1856. At the time, local elites fought between themselves for be rulers under USA stewardship.

1. Historical Turning Points

The four main periods of time of national history are: the liberal revolution in 1890s, the Somoza Dictatorships between 1934 and 1979, the Sandinista Revolution 1979 -1990 and the neo-liberal policies period (1990-2006).

Liberal Revolution, 1890s

The Liberal revolution introduced Nicaragua to the international markets through coffee production, built the Pacific area infrastructure, and incorporated Caribbean areas, which were a British colony at the time. This nationalist government pretended to built the inter-oceanic channel with mix capitals from Europe, Asian and America; however, the USA intervened (1908 – 1933) to overthrow national government and as a result local elites developed a series of civil wars (1998-1912; 1926-1932, 1934). On 1934 the chief of army, with the approval of the US embassy, overthrew the constitutional president and established a 45 years dictatorship.

Somoza Dictatorships, 1934-1979

The Somoza dictatorships drove Nicaragua to dualistic development with a strong capitalist sector with agro export and industrial production and a highly segmented peasant sector with low level of production and technology. Politically, it was repressive and generated several military movements. During the 45 years of rule a high level of inequity was set in the country. A point in fact, 4.9 % of landowners occupied 60 % of total land. Additionally, Somoza family was not only an agrarian capitalist group, but were also involved in financial services (banks), tourism (hotels), industrial production (dairy, cement, timber, chemicals, shoes) and transport (airplanes, ships). The government family competed with the private sector often eliminating all competitors. In 1979 Somoza was overthrow with support of the industrial, services and agrarian capitalists. After defeat Somoza, a new alternative model to reduce inequities was launched.

Sandinista Revolution, 1979-1990

The Sandinista Revolution was a pro-socialist project, which developed a series of initiatives in land reform, education, social security, heath services, and subsidies to economic sectors for access to credit, technology and technical assistance. These public interventions also included the creation of public network for trade production. In this period Nicaragua was involved in the Cold war context and the USA was reluctant to allow a socialist country in Central America. From 1980 Nicaragua faced a civil war financed by the USA, and in a second stage
an International blockade was imposed by 1984. Nicaragua’s government tried to keep social benefits and financed its army for civil war. The result was a hyperinflation with rates above 33,500% in 1988 (BCN, 2006) and the economy suffered a strong shortage of food, cloth, fuel and electricity. By 1988, Sandinista Government started macroeconomic reform policies, but in 1990 was defeated on general elections by a pro capitalist political party.

**Implementation of Neo-Liberal Policies**

Lastly, between 1990 and 1993 IMF’s structural stabilization and adjustment program was put in place. Its main goal was to control inflation rates from 13,490% in 1990 and it was achieved by 1992 (3.5%). From 1994 to 1996 inflation was stabilized around 12%, and after 1996 it has been around 7%. This macroeconomic success brought along high unemployment rates, restriction on credit and technical assistance to productive sectors and reduction of public services such as education, health and social security. The first three years witnessed politically instability with riots and protest from every social sectors, and by 1994 migration became the main livelihood strategy for unemployed people. It is estimated that in 1990s 480,000 Nicaraguans migrated to USA and Costa Rica, which is 5.3 time higher than 1980s migrations.

As an alternative to high unemployment rates, the national government reformed the Exporting Production Zone (EPZ) policies in order to attract foreign investment. The EPZ are industrial cluster where foreign investor access to tax exceptions systems, but their products must be for international markets. Nicaragua’s economy is benefited by increasing jobs offer, and from 1995 to 2005 EPZ has grown with new industrial clusters and employment offers. However, since they are mostly textile industries, these are low paid jobs with salaries are seven times lower than Costa Rican and El Salvador.

Salvadorian labor markets are attractive to unemployed population since salaries in those countries are seven time higher than local salaries in rural areas, two times in construction sector and seven times in communitarian and private services. By 2003, permanent migration to USA and Costa Rica and temporal migration to Costa Rica and El Salvador are key livelihood strategies for urban and rural families. Remittances represent around 80% of total exports and 65% of commercial deficit and around 20% of total GDP. By 2005, Nicaragua is considered a remittance country in a block formed by Mexico, El Salvador, Honduras, Nicaragua, Guatemala, and Ecuador.

*Figure 1: Percentage of Families receiving Remittances by Origin*

![Percentage of families receiving remittances by origin](image)

*Source: CEPAL, 2006*
Remittances are becoming very important for low-income families. Permanent migrants tend to send money to their families for their basic consumption. According to CEPAL only 17% of rural families receive remittances, but these data are related only to permanent migration. Temporal migration is a key livelihood strategy to finance agricultural production and there are few data about how much money is sent from Costa Rica to Nicaragua. Yet, it’s estimated that 60,000 Nicaraguans are employed on sugar cane, coffee, orange, melon, banana and beans in Costa Rica (CEPAL, 2006). Orozco (2006) estimated that by 2005, temporal migrant transferred around US$ 120 million to Nicaragua.

To summarize, Nicaragua has experimented with several growth paths and models: feudalism before 1890s, liberal revolution and international markets insertion from 1890–1910, military dictatorships (1934-1954), and socialism (1979-1989) and neo-liberal era (1990-2006). Throughout history agricultural has driven Nicaragua’s development by international market insertions or/ and agrarian transformations. By 2006, agricultural exports represent 80 % of total exports and 70 % of rural families were under poverty line; a classic dualist development model of an agrarian society. EPZs and migration have become key labor markets phenomena facilitated by regional integration and free trade agreements.

2. Demographic Characteristics

At the early 1900, Nicaragua’s population grew at an annual rate of 2.48%, (Table 1) with most of this population growth linked to the economic stability and insertion to international markets— through coffee production. Coffee production stimulated the incorporation of new agricultural land and the colonization of Nicaragua’s northern-central region. Between 1906 and the 1940s, Nicaragua’s growth rate slowed due to socioeconomic factors, including two wars—the US invasion in 1908 and a civil war between 1926 and 1933.

The period between 1950 and 1977 saw the highest population growth rates in Nicaragua’s history; around 5.41 % in 1960s, and 3.78 in 1970s (Table 2) This population growth was associated with an era of “industrial crop production or agricultural modernization.” The introduction of cotton production, the vegetable oil processing industry and industrial slaughterhouses provided a strong incentive for land concentration, infrastructure investments (paved roads, electricity, telephone, transport) and urban growth. At the same time, the agricultural frontier was opened up to landless population from the Pacific region, with public policies encouraging the colonization of the country’s southern-central area.

Although there were strong subsidies for the agricultural sector and land reform during the 1980s, the civil war and the international trade embargo caused rural migration to the cities. During this period, the population growth rate decrease from an average of 3.76 between 1970 and 1980 to 2.91 in the following decade. The trade embargo stimulated the informal sector, something also encouraged by the Sandinista government as a way of importing merchandise from Honduras. As a result, urban areas became a focus for migratory inflows.

Nicaragua’s annual population growth rate has been falling over the last 15 years, with the rural growth rate dropping faster than the national rate. From 1980 to 1990, the rural population grew by an average of 2.19% a year, a figure that fell to 1.7% in the following decade and 1.13% in the first four years of the 2000s (Table 2). The rural population is clearly facing a severe crisis and temporal migration has represented an important and frequently used livelihood strategy. The urban population experienced an important period of growth in the 1960s and 1970s, a period in which there was important infrastructure development as a result of the modernization process. This tendency has slowed down toward the end of the 1990s and during the 2000s, a phenomenon explained by the reduction of the population growth rate and possibly urban flows of permanent migrants to Costa Rica. Rural Population has increased in
absolute population, but with lower rates than urban. Internal migration to cities during war period and international migration in 1990s and 2000s might explain this tendency to slow down rural population growth.

Table 1: Nicaragua’s Total Population and Average Annual Growth Rate, 1778 to 2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
<th>Annual Growth Rate</th>
<th>Rural Population</th>
<th>Annual Growth Rate</th>
<th>Urban Population</th>
<th>Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1778</td>
<td>106926</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1867</td>
<td>257000</td>
<td>1.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1906</td>
<td>505377</td>
<td>2.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>638119</td>
<td>1.88</td>
<td>419882</td>
<td>1.78</td>
<td>218237</td>
<td></td>
</tr>
<tr>
<td>1940</td>
<td>835686</td>
<td>1.55</td>
<td>569102</td>
<td>1.78</td>
<td>266584</td>
<td>1.11</td>
</tr>
<tr>
<td>1950</td>
<td>1049611</td>
<td>2.56</td>
<td>680583</td>
<td>1.96</td>
<td>369028</td>
<td>3.84</td>
</tr>
<tr>
<td>1960</td>
<td>1617234</td>
<td>5.41</td>
<td>977456</td>
<td>4.36</td>
<td>639778</td>
<td>7.34</td>
</tr>
<tr>
<td>1970</td>
<td>2228011</td>
<td>3.78</td>
<td>1180623</td>
<td>2.08</td>
<td>1047388</td>
<td>6.37</td>
</tr>
<tr>
<td>1980</td>
<td>3066660</td>
<td>3.76</td>
<td>1525050</td>
<td>2.92</td>
<td>1541610</td>
<td>4.72</td>
</tr>
<tr>
<td>1995</td>
<td>4426700</td>
<td>3.20</td>
<td>1986293</td>
<td>2.01</td>
<td>2370806</td>
<td>3.58</td>
</tr>
<tr>
<td>2005</td>
<td>5142098</td>
<td>1.70</td>
<td>2266548</td>
<td>1.41</td>
<td>2875550</td>
<td>2.13</td>
</tr>
</tbody>
</table>

Source: INEC, 2006, INEC 1996

According to INEC 2006, Nicaragua is a developing country with a young population—by 2005, 37.5 of the population is under 15 years old and 95.7% under 65. The economic population is growing in line with the total population, at an annual rate of 1.8% (Table 2). However, the number of elderly people is increasing by 4.3%, meaning that more people are leaving the system than entering it, which could increase the dependency ratio in the long term. This is a worrying tendency in a context in which migrants tend to be between 18 and 40 years old.

Table 2: Total Population and EAP Growth Rates, 1960 to 2005

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Annual Growth Rate</th>
<th>EAP</th>
<th>Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>1,541,700</td>
<td></td>
<td>483,500</td>
<td></td>
</tr>
<tr>
<td>1963</td>
<td>1,696,900</td>
<td>3.4</td>
<td>527,600</td>
<td>3.0</td>
</tr>
<tr>
<td>1971</td>
<td>2,193,000</td>
<td>3.7</td>
<td>626,900</td>
<td>2.4</td>
</tr>
<tr>
<td>1980</td>
<td>2,918,800</td>
<td>3.7</td>
<td>738,100</td>
<td>2.0</td>
</tr>
<tr>
<td>1990</td>
<td>3,823,700</td>
<td>3.1</td>
<td>1,214,200</td>
<td>6.5</td>
</tr>
<tr>
<td>1995</td>
<td>4,426,700</td>
<td>3.2</td>
<td>1,478,100</td>
<td>4.3</td>
</tr>
<tr>
<td>2005</td>
<td>5,142,098</td>
<td>1.7</td>
<td>1,748,759</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Source: BCN, 2001; INEC, 2006

The rural population has not been growing as fast as the urban or total populations, due to internal migration and the growth of urban centers, mainly in the Pacific region. According to INEC 2006, by 2005 the Pacific Region represents 54% of total population and 70.4% of total urban population while Central and Caribbean Region represented 67% of total rural population.
Table 3: Weight of Pacific Region on Total, Urban and Rural Population

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Weight on National data</th>
<th>Urban</th>
<th>Weight on National data</th>
<th>Rural</th>
<th>Weight on National data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicaragua</td>
<td>5142098</td>
<td>100</td>
<td>2875550</td>
<td>100</td>
<td>2266548</td>
<td>100</td>
</tr>
<tr>
<td>Pacific</td>
<td>2778257</td>
<td>54.0</td>
<td>2023082</td>
<td>70.4</td>
<td>755175</td>
<td>33.3</td>
</tr>
<tr>
<td>Managua</td>
<td>1262978</td>
<td>24.6</td>
<td>1142456</td>
<td>39.7</td>
<td>120522</td>
<td>5.3</td>
</tr>
<tr>
<td>Chinandega</td>
<td>378970</td>
<td>7.4</td>
<td>226070</td>
<td>7.9</td>
<td>152900</td>
<td>6.7</td>
</tr>
<tr>
<td>Leon</td>
<td>355779</td>
<td>6.9</td>
<td>209853</td>
<td>7.3</td>
<td>145926</td>
<td>6.4</td>
</tr>
<tr>
<td>Masaya</td>
<td>289988</td>
<td>5.6</td>
<td>160580</td>
<td>5.6</td>
<td>129408</td>
<td>5.7</td>
</tr>
<tr>
<td>Granada</td>
<td>168186</td>
<td>3.3</td>
<td>107574</td>
<td>3.7</td>
<td>60612</td>
<td>2.7</td>
</tr>
<tr>
<td>Carazo</td>
<td>166073</td>
<td>3.2</td>
<td>102522</td>
<td>3.6</td>
<td>63551</td>
<td>2.8</td>
</tr>
<tr>
<td>Rivas</td>
<td>156283</td>
<td>3.0</td>
<td>74027</td>
<td>2.6</td>
<td>82256</td>
<td>3.6</td>
</tr>
<tr>
<td>Central</td>
<td>1743201</td>
<td>33.9</td>
<td>651449</td>
<td>22.7</td>
<td>1091752</td>
<td>48.2</td>
</tr>
<tr>
<td>Caribbean</td>
<td>620640</td>
<td>12.1</td>
<td>201019</td>
<td>7.0</td>
<td>419621</td>
<td>18.5</td>
</tr>
</tbody>
</table>

Source: INEC, 2006

3. The National Economy

3.1. Debt

Nicaragua is a highly indebted country, which has benefited from several bilateral and multilateral debt negotiations. Like the other indices, the foreign debt was affected during the 1980s, when loans were used for several reasons, including the national reconstruction following the intense period of war in 1978-79 and the implementation of an economic plan which included large public enterprises, land reforms and agricultural subsidies for inputs and machinery. The period 1984-89 saw the economy affected by war, huge deficits and hyperinflation and as a result of the international embargo; Nicaragua decided not to make debt service payments, which increased the total debt.

After Nicaragua changed its economic model, the international embargo was lifted and the country was able to receive facilities from the IMF and World Bank and began to structurally adjust the economy. From 1990 to 1996, there was strong lobbying with bilateral lenders to cancel Nicaragua’s debts. These international negotiations successfully reduced the foreign debt from US$10.39 billion to US$5.961 billion, canceling a total of 58% of the total debt (Figure 2). By 1999/2000 Nicaragua had been included in the HIPC initiative to reduce its Paris Club debt by 80%. Nicaragua has been servicing its debt since 1990, during which time it has participated in two structural adjustment programs, three IMF shadow plans and two debt relief processes.
Figure 2: Nicaragua’s Total External Debt

Source: CBN, 2002; UNDP, 2002; CEPAL, 2006

The per capita foreign debt has followed the same path as the total debt, since the amounts were so high that the effect of population change on the ratio was imperceptible. Before 1979, Nicaragua’s foreign debt increased slowly and in the 1970s foreign debt was lower than the total GDP. This relationship changed in the 1980s, when foreign debt rose to double the GDP between 1980 and 1987.

Figure 3: Nicaragua: Relationship between External Debt and GDP

Sources: CBN, 2002; UNDP, 2002; CEPAL, 2006
During this period the GDP was relatively stable; there was a war economy and Nicaragua was suffering an international embargo, but subsidies, land reform and the informal sector were important in maintaining the local economy. By 1988, the Sandinista government had started to apply economic adjustment policies and the GDP was restrained.

From 1990 to 1993 the adjustment intensified and the economy suffered from a lack of jobs and financial services and GDP was also restrained. This combination of a restrained GDP and an increase in debt servicing charges increased the foreign debt/GDP ratio to 10.6.

In general public expenditure has been growing from US$ 622.5 in 1999 to 1,217 million in 2006. However, revenues are not growing at the same proportion, and public deficit has been growing as well (Figure 4). By 1999, expenditures increased due to reconstruction activities after Hurricane Mitch. Revenues decrease due to reduction on tariff to Central American imports and income taxes reduction. A second phase of the structural adjustment including privatization of the electricity, and social security system was implemented since 2000.

The coffee prices crisis in 2000 and 2001 and petroleum prices were main elements in taxes revenues reduction and increment of public deficit (BCN, 2002). By the end of 2001, an electoral year, there was a deep crisis which affected international reserves (BCN, 2003). A new monetary policy plan was implemented from 2002 in order to stabilize national economy. This was necessary to access to IMF facilities for three years (2002-2005). The HIPC initiative was framework to define expenditures, deficit and taxes (BCN, 2004).

Figure 4: Public Expenditure, Revenues and Public Balance 1990 - 2001

Public Revenues by taxes represent around 90% of total public budget while capital or public enterprises represent less than 10%. Among taxes, income and consumption taxes are the main source of revenues for public budget. By 2002, import taxes represented around 30% of total taxes revenues (Figure 5); their share has increased but they are relatively stable between US$ 160 and 170 million in 1997-2002 (BCN, 2003).
Although agriculture represents around 30% of total GDP and 80% of total exports, expenditure on this sector represent only 6 – 7% of total public expenditures (Table 4). Under HIPC framework there are two priorities: poverty and debt services. According to CBN, (2005), public spending on poverty relief is around 12.3% of total GDP and debt services (external and internal). External debt services tend to be reduced due to HIPC relief; however, internal debt services tend to increment their value and share (BCN, 2006).

### Table 4: Share of Rural expenditure and Debt Services on Total Public Expenditure

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Public Expenditure</td>
<td>822.6</td>
<td>1061.8</td>
<td>897.3</td>
<td>905.9</td>
<td>983.6</td>
<td>943.4</td>
<td>1217.0</td>
</tr>
<tr>
<td>Rural Public Expenditure</td>
<td>99.2</td>
<td>95.4</td>
<td>63.0</td>
<td>53.9</td>
<td>57.5</td>
<td>65.3</td>
<td>77.3</td>
</tr>
<tr>
<td>Debt Service</td>
<td>184.7</td>
<td>162.8</td>
<td>158</td>
<td>102.1</td>
<td>76.3</td>
<td>88.8</td>
<td>102.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Public Expenditure</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Rural Public Expenditure</td>
<td>12.1</td>
<td>9.0</td>
<td>7.0</td>
<td>6.0</td>
<td>5.8</td>
<td>6.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Debt Service</td>
<td>22.5</td>
<td>15.3</td>
<td>17.6</td>
<td>11.3</td>
<td>7.8</td>
<td>9.4</td>
<td>8.4</td>
</tr>
</tbody>
</table>


### 3.2. Household Income Structure and Poverty Incidence

Historically, Nicaragua’s per capita income has been relatively unstable due to political and economical changes. It grew during the 1960s and 1970s because of an increase in agro-exports, mainly cotton, coffee, meat and sugar, reaching its peak in 1977 due to high coffee prices, despite the fact that cotton was decreasing as a percentage of the total economy. The 1960s and 1970s also saw growth in the service sector due to important levels of rural depopulation and migration to the country’s central region (Nitlapán, 1996).

The first unstable period was 1977 to 1980, when the civil war destroyed productive infrastructure and made rural areas insecure, thus limiting the coffee harvest and cattle production. From 1980 to 1983, the national reconstruction process started and agricultural
production recovered its former levels. However, 1983 saw an intensification of the civil war and a US-led international embargo. By 1988, hyperinflation and macroeconomic instability had reduced per capita income by 20% (Figure 6) Between 1988 and 1993 monetary reforms and structural adjustments were introduced to reduce inflation and the total public deficit. As a result, there was a period of stagnation in which the per capita GNI was relatively stable. From 1993 to 2003 there has been constant income growth, and by 1999 Nicaragua had a higher income level than in 1977. With the population growth rate tending to fall and the GDP growing at an annual rate of 2-4%, the per capita GNI is expected to continue growing.

Several authors agree that GDP and per capita GNI are limited indicators and do not necessarily reflect the real picture of the country’s poverty or prosperity. Based on that discussion, the World Bank implemented the LSMS in every country to find out how national income is distributed in the different population segments. According to UNDP 2002, Nicaragua has a high income concentration with a GINI index of 0.56\(^1\), which is similar to that of Guatemala (0.6), Honduras (0.55) and El Salvador (0.53), although the National Statistics Institute (2004) calculates the GINI index at 0.43, which is lower than Costa Rica (0.46), a country with lower poverty levels and strong redistribution policies in the areas of education and health.

**Figure 6: GNI per capita based on US$**

The richest 10% of the Nicaraguan population has increased its share of total income from 42.4% in 1993 to 46.1% (an annual growth of 0.46%) and is expected to have increased its share again in the 2005 survey (Table 5). Families living in extreme poverty, which account for around 30% of the population, have minimally increased their share of total income from 5.3% to 6.7% (an annual growth of 0.175%).

---

\(^1\) The third highest income concentration rate in the world.
Table 5: Income Distribution According to the Living Standards Measure Data in 1993, 1998 and 2001

<table>
<thead>
<tr>
<th>Quintiles</th>
<th>UNDP, 2002</th>
<th>INEC, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>2.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Second</td>
<td>7.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Third</td>
<td>12.0</td>
<td>11.3</td>
</tr>
<tr>
<td>Fourth</td>
<td>20.3</td>
<td>18.8</td>
</tr>
<tr>
<td>Fifth</td>
<td>58.4</td>
<td>60.5</td>
</tr>
<tr>
<td>Top 1 %</td>
<td>13.2</td>
<td>15.6</td>
</tr>
<tr>
<td>GINI</td>
<td>0.57</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Sources: INEC, 2004; UNDP, 2002

In other words, the richest are concentrating income at a higher rate, thus demonstrating that the redistribution policies are not accomplishing their goals. The poor population (excluding those living in extreme poverty), which represents around 40% of the total population, has seen a drop in its share from 24.8% to 22.9% and the non-poor population has also suffered a reduction from 27.5% to 24.8%, meaning that income has been transferred from the middle income strata to the wealthiest and extremely poor populations. It is expected that in the long term highly mobile and vulnerable middle-income families will be absorbed into the poor and extremely poor families.

The above World Bank and UNDP statistics are somewhat contradicted by official statistics, which show a reduction in the populations affected by poverty, from 50.3% to 45.8%, and extreme poverty from 19.4% to 15.1% (Table 6). Nevertheless, even if analysis is based on the national statistics, extreme poverty was only reduced by 4.3% in eight years, at an annual average of 0.54% a year. This raises questions as to the efficiency and efficacy of the public funds, loans and cooperation invested in poverty reduction projects. There is also a need to determine exactly how remittances are affecting poverty reduction in order to identify the real effects of public policies.

It is possible to say that poverty has a rural face in Nicaragua, with around 70% of the rural population living under the US$2 a day poverty line (Table 7). According to INEC, 2004, rural poverty has fallen from 76.1% to 67.8% of rural families (around 250,000 families). Extreme poverty has been falling as well, from 36.8% to 27.4% of rural families (around 102,000 families). Rural poverty and extreme poverty are linked to the tropical dry zone where crop production is vulnerable to rainfall deficits and employment options are very limited. Important clusters of rural landless families are gathered around labor-intensive systems such as coffee, banana and sugar cane cultivation. However, Nicaragua has one of the lowest agricultural wages in Central America, around US$1.43 a day (CEPAL, 2006), which is below the US$2 a day poverty line and close to the extreme poverty line, meaning that the system itself will continue to maintain the poverty levels.

Urban poverty levels are clearly lower than rural poverty levels, with only 30% from urban areas living in poverty and 7% in extreme poverty. Around 150,000 urban families are living under the US$2 poverty line, the equivalent of only 60% of the total poor rural families (Table 1.2.2.d). The difference is even greater in relation to extreme poverty, with only around 31,000 urban families living under the US$1 poverty line, the equivalent of only 30% of the corresponding figure for rural families. The urban sector has the informal economy as an alternative for income and survival. According INEC, 2004, urban poverty and extreme poverty have been relatively stable during recent years, with just a 0.8% change in poverty levels and a 1.1% change in extreme poverty levels between 1993 and 2001. This can be
explained by rural migrants who travel to urban areas but fail to find work and by the way in which poverty is measured based only on consumption power.


<table>
<thead>
<tr>
<th>Year</th>
<th>Poverty Rate</th>
<th>Extreme Poverty Rate</th>
<th>Total Population</th>
<th>Population under Poverty Line</th>
<th>Population under Extreme Poverty</th>
<th>Balance on Poverty</th>
<th>Balance on Extreme Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>50.3</td>
<td>19.4</td>
<td>4,174,900</td>
<td>2,099,975</td>
<td>809,931</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>47.9</td>
<td>17.3</td>
<td>4,560,526</td>
<td>2,184,492</td>
<td>788,971</td>
<td>84,517</td>
<td>-20,960</td>
</tr>
<tr>
<td>2001</td>
<td>45.8</td>
<td>15.1</td>
<td>4,801,251</td>
<td>2,198,973</td>
<td>724,989</td>
<td>14,481</td>
<td>-63,982</td>
</tr>
<tr>
<td>2003</td>
<td>45.1</td>
<td>16.2</td>
<td>4,968,753</td>
<td>2,240,907</td>
<td>804,149</td>
<td>41,934</td>
<td>79,160</td>
</tr>
<tr>
<td>2005</td>
<td>47.1</td>
<td>16.0</td>
<td>5,142,098</td>
<td>2,421,928</td>
<td>822,736</td>
<td>181,021</td>
<td>18,587</td>
</tr>
</tbody>
</table>

Sources: INEC, 2006, 2006a, 2004; UNDP, 2002

Table 7: Rural Poverty and Extreme poverty Levels According to Living Standards Measure Surveys in 1993, 1998, and 2001

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>76.1</td>
<td>36.8</td>
<td>1,924,629</td>
<td>1,464,643</td>
<td>708,263</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>68.5</td>
<td>28.9</td>
<td>2,031,259</td>
<td>1,391,412</td>
<td>587,034</td>
<td>-73,231</td>
<td>-121,230</td>
</tr>
<tr>
<td>2001</td>
<td>67.8</td>
<td>27.4</td>
<td>2,087,104</td>
<td>1,415,056</td>
<td>571,866</td>
<td>23,644</td>
<td>-15,167</td>
</tr>
</tbody>
</table>

Sources: INEC 2004; UNDP, 2002


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>31.9</td>
<td>7.3</td>
<td>2,250,271</td>
<td>717,836</td>
<td>164,270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>30.5</td>
<td>7.7</td>
<td>2,529,268</td>
<td>771,427</td>
<td>194,754</td>
<td>53,590</td>
<td>30,484</td>
</tr>
<tr>
<td>2001</td>
<td>30.1</td>
<td>6.2</td>
<td>2,714,147</td>
<td>816,958</td>
<td>168,277</td>
<td>45,532</td>
<td>-26,477</td>
</tr>
</tbody>
</table>

Sources: INEC, 2004; UNDP, 2002

Public policies to reduce poverty and extreme poverty seem to have impact on extreme poverty at rural and urban areas. The reduction of number of families in extreme poverty is a tendency in absolute and relative numbers until 2001. However, there is a tiny reduction in terms of relative numbers but an increment of the number of families (INEC, 2006). Public policies had tiny effects on poverty, since in 10 years poverty was reduced 5.2 %, which means 0.52 % annually; meanwhile population grew at 3.2 %. As result, families under poverty line have been growing in absolute number since 1993.

3.3. Foreign Trade Structure – International Insertion

Historically, Nicaragua has imported more than it has exported. However, the trade deficit has displayed different behaviors in three separate stages. In the 1960s, increased agro-industrial exports (coffee, meat and sugar cane) meant that the trade deficit was an average of 18% of
total exports, although for three years it was over 30% due to a reduction of cotton exports. In the 1970s, the average deficit was reduced to 8.1% of total exports, possibly due to the large volume of coffee and sugar exports in 1976 and 1977 and the high prices they fetched at that time.

The second stage corresponds to the 1980s when the trade deficit increased to an average of 142%, due to a reduction of total exports, low prices, the international embargo, the civil war and massive agricultural support programs. The deficit increased steadily from 97% of total exports in 1980 to 242% in 1988, coinciding with the expansion policies and hyperinflation. In 1989 and 1990 a monetary reform and structural adjustment policies reduced the trade deficit to 1980 levels.

The third stage started in 1990 with the changes made to the political and economic model, introducing free market policies and unilateral tariff reductions to establish an open economy. At the same time, the international embargo was lifted, so imports grew faster than exports, increasing the trade deficit. The trade deficit was an average of 168.5% of total exports from 1990 to 2004, which is higher than in the 1980s. In the first years of the new century it has tended to be over 200%, given the negotiation of free trade agreements dictating low import protection levels in Nicaragua (average tariffs will be 1.6% in 2021).

**Figure 7: Nicaragua’s Trade balance on Goods**

![Figure 7: Nicaragua’s Trade balance on Goods](image)

**Sources:** CBN, 2002; WDI, 2004

### 3.3.1. Trade Partners

Following the lifting of the economic embargo in 1990, Nicaragua opened trade relations with several regions of the world. The USA was the main export target between 1990 and 1996. Latin America and the Central American region were in second place during that same period and became the main target in 1998-2002. The European Union declined as a target market in the early 1990s, followed by an increase in exports there for three years up until 1996, since when they have been steadily falling again. The demand for food from El Salvador and Costa Rica has provided an important incentive for intra-regional trade.
Mexico and Central America have become key trading partners for Nicaragua, together accounting for 38.6% of total exports. This region is the key market for products such as livestock (99%), roasted coffee (97%), cheese (88%), beans (87%) peanuts (70%) and meat (49%). The Central American economic integration process and the Puebla-Panama Plan (PPP) will enhance the region’s importance as a destination for the country’s agricultural exports. Most of the value chains have a production stage based on peasant production, as is the case with beans, cheese, livestock and meat. Peanuts have an industrial and agrarian capitalist chain, with Mexico the main destination (54.7%). It can therefore be said that the Central American common market is a target for the production of small- and medium-scale farmers.

The USA is the second biggest export destination, representing 32.0% of total exports. It is a key market for products such as bananas (99%), lobster (89.5%), fresh fish (78%), shrimp (47%), sugar (35.1%), coffee (35.2%) and meat (35.5%). The DR-CAFTA will increase quotas for sugar and meat, making it possible to increase these specific exports. Seafood is the main product group exported to the USA, accounting for 22.6% of exports, which in 2005 represented a total of US$62.2 million. The production stage is performed in different regions: shrimp in the Pacific, lobster in the Caribbean and fresh fish in both the Pacific and the Caribbean. Shrimp production is mixed, involving both middle income family production through cooperatives (68), which account for 40% of total production, and high investment enterprises (85). It is therefore possible for middle income families to be incorporated into this particular cluster.

Seafood processing is basically an oligopoly, as there are only eight industrial plants in the Pacific and eight in the Caribbean region. Coffee is the second biggest product exported to the USA, accounting for 15.8% of exports to that market, worth a total of US$43.6 million. This chain contains small, medium and large farms. Small farmers (less than 14 hectares) account for 67% of producers and 29% of plantations and medium farmers (14.1 to 35 hectares) for 19% of producers and 18% of plantations. Coffee production is an economic activity open to peasant production, with peasants representing 86% of producers and 47% of total plantations.

<table>
<thead>
<tr>
<th>Table 9: Average Weight per Region on Export</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>ALADI</td>
</tr>
<tr>
<td>Mercosur</td>
</tr>
<tr>
<td>Andean Group</td>
</tr>
<tr>
<td>MCCA</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>European Union</td>
</tr>
<tr>
<td>Asia</td>
</tr>
</tbody>
</table>

Source: ECLAC, 2006/MIFIC, 2000

Europe is the third largest export destination, with 15.7% of total exports. It is a key market for coffee (55.7%), shrimp (48.3%), sugar (20.7%), peanuts (22.5%) and lobster (21.7%). Initial free trade agreement negotiations are currently under way to facilitate export quotas for this region. Other Latin American countries (5.7%) and Asia (3.9%) represent relatively small markets.
### Table 10: Average Weight per Region on Imports

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$ Million</td>
<td>% of Total Imports</td>
<td>US$ Million</td>
</tr>
<tr>
<td>ALADI</td>
<td>135.5</td>
<td>17.6</td>
<td>188.6</td>
</tr>
<tr>
<td>Mercosur</td>
<td>8.9</td>
<td>1.2</td>
<td>18.5</td>
</tr>
<tr>
<td>Andean Group</td>
<td>99.8</td>
<td>12.9</td>
<td>102.6</td>
</tr>
<tr>
<td>MCCA</td>
<td>168.1</td>
<td>21.6</td>
<td>351.4</td>
</tr>
<tr>
<td>USA</td>
<td>179.2</td>
<td>23.0</td>
<td>451.4</td>
</tr>
<tr>
<td>European Union</td>
<td>88.4</td>
<td>11.8</td>
<td>105.1</td>
</tr>
<tr>
<td>Asia</td>
<td>82.8</td>
<td>10.9</td>
<td>117.9</td>
</tr>
</tbody>
</table>

*Sources: ECLAC, 2006; MIFIC, 2000*

Nicaragua’s trade balance is broadly negative, mainly due to non-agricultural imports. In terms of individual countries, the USA (20.1%), Costa Rica (8.9%) and Mexico (8.3%) are key sources of imported merchandise for Nicaragua, while the main sources in terms of economic blocks are NAFTA (29.3%), Central America (23.1%), other Latin American and Caribbean countries (23.7%) and Asia (15.3%). The fact that Central America, the USA and Mexico and Canada are key export and import partners for Nicaragua was one of the main reasons for signing free trade agreements with the USA and Mexico and opening negotiations with Canada.

The agricultural sector in general represents only around 4 to 5% of total imports, including raw materials and capital goods, which is interesting considering that food represents around 8% of total imports, more than double the figure for imported materials and machinery for food production (Figure 8). Agriculture represents 10.8% of total imported raw materials. Fertilizers (40.7%) and pesticides (40%) are the main imported products, with other smaller imports including seeds, soybean meal and chickens. In terms of countries, the USA (23%) and Costa Rica (13.5%) are the main sources of imported raw materials for agriculture, while Europe (28.6%) is the most important regional source, with other key partners including the NAFTA countries (26.5%) and Central America (20.16%).

According to CBN, 2002, 2006, MIFIC, 2000s, and CEPAL, 2006, Agriculture accounts for only 5.4% of imported capital goods, while industry (56%) and the transport sector (38.6%) are the major destinations for total imports in this area. Tractors (37.3%) and grass cutters (20%) are the main capital products imported for agriculture, although grass cutters are used more for gardening and in public areas. Small-scale imports of feed cutters and seed-sowing and milking machinery represent only 15% of capital goods for agriculture. The limited weight of agricultural capital goods demonstrates the low level of investment in this sector.
### 3.3.2. Trade Agreements and Preferential Regimes (Protection Rates)

Nicaragua has historically developed a series of trade agreements to protect and/or promote its agricultural production. Trade liberalization has been considered a key element of the neoliberal model and Nicaragua has been applying it since 1990. Generally speaking, Central America unilaterally reduced its tariffs at the end of the 1980s and the beginning of the 1990s as a way to attract foreign investment.

Nicaragua reduced its average tariffs from 54% in 1985 to 10.9% in 2000 (Figure 9). During the same period, its trade deficit increased from 183% to 211% of total exports, while agricultural imports increased from US$101.7 to US$288.7 million and total imports from US$892 to US$1.805 billion. Agriculture imports increased 2.8 times, but this growth was basically in intermediate goods: fertilizers and pesticides. Total exports increased 2.02 times based on consumption and intermediate industrial goods. It can therefore be concluded that while trade liberalization has significantly increased the total volume traded in Nicaragua; this is actually based on an increase in imports.
Nicaragua has historically benefited from certain agreements and preferential tariff policies such as Europe and Canada’s GPT policies and the USA’s Caribbean Basin Initiative (CBI). Being a low-income country, WTO rules also allow Nicaragua certain protection levels and it is also a Most Favored Nation. Furthermore, Nicaragua has been involved in a series of free trade and partial agreement negotiations, which are beginning to represent a serious administration cost (Table 11).

Nicaragua has signed three key free trade agreements for integration into larger economic blocks linked to the USA market. Central America was included in the Caribbean Basin Initiative (CBI) in 1983. Having initially been excluded from this mechanism for unilateral US preferential treatment when the USA was heading an embargo against the country, Nicaragua finally accessed its benefits in 1990. Manufacturing was a key sector to develop as there were several GPTs and it was an attractive sector for foreign investment. After Mexico was incorporated into NAFTA, the Central American region considered the signing of a free trade agreement with Mexico as a strategic way to guarantee a certain level of competitiveness with its northern neighbor and ensure markets for its peanut crops and livestock.

The difficulties experienced in obtaining an extension of the preferential tariff treatment through the CBI and the initiative’s 2008 deadline were the strong reasons behind Central America’s request of a Free Trade Agreement with the USA. President Clinton did not agree with the idea, however President George W. Bush launched the Free Trade Area of the Americas, Central America started intensive negotiations with the USA. The Dominican Republic (DR), which was highly favored by the CBI and an observer of the Central American economic integration process, joined the Central American region in negotiations with USA and a free trade agreement was signed to consolidate the whole region for negotiations with the USA. The DR-CAFTA agreement was finally signed in 2005 and implemented in 2006.
Central America has a strategy for improving its trade conditions with other regions. Chile was the first southern country to sign a free trade agreement with the region, a partial agreement has also been signed with Venezuela and negotiations are currently under way with the Andean Block. In order to obtain similar treatment within NAFTA, a free trade agreement was also negotiated with Canada, a country which had favored Nicaragua with GPT treatment since 1974 and is a key partner in relation to gold, sugar and coffee. Finally initial negotiations are being held for a free trade agreement with the European Union, which is a key partner for coffee, seafood and sugar exports.

Table 11: Trade and Economic Agreements Signed between 1960 and 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Agreement Description</th>
<th>Valid/Effective Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>Central American Economic Integration</td>
<td>Valid in 1963</td>
</tr>
<tr>
<td>1971</td>
<td>General System of Preferences, General Preference Tariffs with Europe</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>Free and Preferential Trade Agreement between Costa Rica, Nicaragua and Panama</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>Free and Preferential Trade Agreement between Nicaragua and Panama</td>
<td>Valid in 1974</td>
</tr>
<tr>
<td>1974</td>
<td>General System of Preferences, General Preference Tariffs with Canada</td>
<td>Valid from 1974</td>
</tr>
<tr>
<td>1984</td>
<td>Economic complementarity agreement, Nicaragua and Colombia</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>Partial Agreement on Trade, Nicaragua and Mexico</td>
<td></td>
</tr>
<tr>
<td>1986</td>
<td>Partial Agreement on Trade, Nicaragua and Venezuela,</td>
<td>Ratified in 1993</td>
</tr>
<tr>
<td>1992</td>
<td>Central American Tariffs and Custom Union Agreement</td>
<td>Valid in 1993</td>
</tr>
<tr>
<td>1995</td>
<td>General System of Preferences Reform, Europe and Canada Ni...</td>
<td>Valid in 2001</td>
</tr>
<tr>
<td>1997</td>
<td>Free Trade Agreement with Mexico</td>
<td>Valid in 1998</td>
</tr>
<tr>
<td>1998</td>
<td>Free Trade Agreement with Dominican Republic</td>
<td>Valid in 2001</td>
</tr>
<tr>
<td>1999</td>
<td>Free Trade Agreement CA-Chile</td>
<td>Valid in 2002</td>
</tr>
<tr>
<td>2001</td>
<td>Nicaragua signed Plan Puebla-Panama (Mexico, Central America and Panama)</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Canadian General System of Preferences Reform</td>
<td>Valid in 2002</td>
</tr>
<tr>
<td>2005</td>
<td>DR-CAFTA Free Trade Agreement with the USA</td>
<td>Valid in 2006</td>
</tr>
</tbody>
</table>

Source: MIFIC, 2005

Although the results of each negotiation are presented as a positive step for Nicaragua, some studies question this positive spin, considering that Nicaragua is not receiving the same degree of market access that it is offering to other countries. For instance, ECLAC argues that the benefits of the Nicaragua-Mexico FTA are not so clear, as Mexico is liberalizing 14% more Nicaraguan imports than previously (63%), while Nicaragua is liberalizing 45% more Mexican imports than before. During the first period, Nicaragua will liberalize 33% and Mexico 3%, and in the second period Nicaragua will liberalize 19% and Mexico 6% (Table 12).
Table 12: Mexico and Nicaragua’s Agreement on Terms of Product Liberalization

<table>
<thead>
<tr>
<th></th>
<th>Nicaraguan liberalization</th>
<th>Mexican liberalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Trade</td>
<td>Melon, Watermelon, Cucumber, Strawberry, Roast Coffee, Fertilizers, Drugs, Synthetic fibers, Cotton cloth, Refrigerators, Radios and TV sets</td>
<td>Rum, Leather, Pork, Peanut, Lobsters, Manioc, Pitahaya, Crafts</td>
</tr>
<tr>
<td>5 years</td>
<td>Tomatoes, Onions, Apples, Garlic, Avocados, Toys, canned food, Biscuits, Cars, Trucks, Stoves</td>
<td>Pineapples, Mangos, Guava, Shrimp</td>
</tr>
<tr>
<td>10 years</td>
<td>Chicken meat, Flour, Vegetable oils, Chocolates, Beers, Cloth, Furniture</td>
<td>Rice, Cocoa, Cheese, Sorghum, Soybean, Timber</td>
</tr>
<tr>
<td>15 years</td>
<td>Detergents, Freezers, Gypsum</td>
<td>Corn</td>
</tr>
<tr>
<td>Out of agreement</td>
<td>Coffee, Sugar and Plantains</td>
<td>Coffee, Sugar and Plantains</td>
</tr>
</tbody>
</table>

Source: ECLAC, 2000

Meanwhile the IFPRI (2006) considers that in the short term CAFTA will have a low or minimal impact as quotas and tariffs will still have a significant impact on prices. On the other hand, CAFTA has eliminated serious barriers to agricultural products compared with the CBI, although Nicaragua was granted important quotas on beef and peanuts. The textile industry comes out a winner with permanent tariff concessions and flexible rules of origin, the same treatment as granted to Mexico. This is important in the international context of the growing Chinese economy. However, rice, pork and poultry prices will be affected in the long term due to low protection levels, which will produce high levels of competitiveness.

DR- CAFTA classified all goods in 12 categories with different levels of liberalization. In categories A and B, ("prime cuts of beef, fish, flowers, various fresh fruits and vegetables, potatoes, and inputs to processed food such as soups and dog food.") Nicaragua has high levels of competitiveness and a positive commercial balance for most of the products in category A where it has a positive balance (Table 13). The USA already has 196 products with a zero tariff rate and a huge positive trade balance. Nicaragua will reduce its average tariffs from 9.49% to 1.6% in 2021, the lowest level of protection in Central America after Guatemala (Figure 10).

In 1988 Nicaragua initiated an economic liberalization process which included two monetary reforms, the promotion of exports and a free and open market economy since 1990. Nicaragua reduced its average tariffs on imports from 54% to 10%. In order to guarantee markets with preferential tariff treatment, Nicaragua signed free trade agreements with Chile, Mexico, the USA and the Dominican Republic, while negotiations are currently under way with Canada, Taiwan and the European Union. At the same time an economic integration process is allowing free trade within the Common Market, mainly with El Salvador, Guatemala, the USA and Mexico, which represent the main export destinations.

2 IFPRI, 2006 p. 17
Figure 10: Nicaragua: Estimated Average Tariff According to CAFTA

![Graph showing Nicaragua: Average tariffs by CAFTA product categories and years]

Source: IFPRI, 2006

Table 13: Imports, Exports and the Number of Products according to DR-CAFTA-defined Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Imports US$ Million</th>
<th>Exports US$ Million</th>
<th>No. prod</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>21.9</td>
<td>106.3</td>
<td>311</td>
<td>Immediate tariff reduction to zero</td>
</tr>
<tr>
<td>B</td>
<td>5.5</td>
<td>7.2</td>
<td>190</td>
<td>Linear reduction of tariffs to zero over five years</td>
</tr>
<tr>
<td>C</td>
<td>7.4</td>
<td>0.4</td>
<td>205</td>
<td>Linear reduction of tariffs over ten years</td>
</tr>
<tr>
<td>D</td>
<td>14.5</td>
<td>68.6</td>
<td>139</td>
<td>Linear reduction of tariffs over fifteen years</td>
</tr>
<tr>
<td>F</td>
<td>0.2</td>
<td>0.4</td>
<td>11</td>
<td>Ten year grace period, then linear reduction to zero over the next ten years.</td>
</tr>
<tr>
<td>G</td>
<td>58.3</td>
<td>0.2</td>
<td>196</td>
<td>Goods in this category already have zero tariff rate</td>
</tr>
<tr>
<td>N</td>
<td>5.6</td>
<td>0.7</td>
<td>27</td>
<td>Elimination of tariffs in 12 equal annual steps.</td>
</tr>
<tr>
<td>Q</td>
<td>0.9</td>
<td>46.4</td>
<td>10</td>
<td>Elimination over 15 years. 15% in 1st year, 33% from the 4th to the 8th year and 67% from 9th to the 15th year.</td>
</tr>
<tr>
<td>Quota</td>
<td>10.7</td>
<td>2.1</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>124.1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IFPRI, 2006
CHAPTER 2 - AN INITIAL OUTLINE OF THE MAIN CHARACTERISTICS OF NICARAGUA’S AGRICULTURAL SECTOR

1. Agriculture’s Place in the National Economy

There are four clear stages in Nicaragua’s recent economic growth (Figure 12). The first is from 1950 to 1977, when the modernization of the economy, cotton production and vegetable oil processing saw the country grow at an average annual rate of 5.98%. By 1979, two years of intense civil war and the destruction of infrastructure led to a fall in the GDP of 32.7% compared to 1977. Although there was positive growth in 1980 and 1981, there was no further growth in the eighties. The average annual growth rate for this period is minus 1.2% and by 1989 Nicaragua’s GDP was 12.8% lower than in 1980. This was caused by a number of factors, particularly the civil war, the international embargo, a reduction in exports and hyperinflation. The third period began in 1990 when the political and economic model was changed. The stabilization process between 1990 and 1993 reduced the negative growth rate tendency from 1980s and Nicaragua has had a stable positive growth rate since 1994. The four years of stabilization were marked by a reduction of public workers, credit and subsidies, which reduced both production and employment (CBN, 2002, UNDP, 2002).

The general structure of the GDP has been relatively stable over the latest 40 years; the whole structure has developed same four stages mentioned above. In the 2000s, according BCN and CEPAL 2006 working with constant Cordoba’s, agriculture have accounted for around 18.6 % of the total GDP, manufacturing 17.2 % and services around 53.9 %. According to WDI, 2005 this behavior is similar but with different data, for Word Bank Agriculture accounts for 17 % of Total GDP and services sector for 58 %. Finally, the 2005 Annual Report (CBN, 2006) changed 2003 official data of agriculture contribution from 20.7 to 16.3 % and for 2004 and 2005 this figure is similar.

Figure 11: GDP Structure by Economic Sectors

Figure 12: GDP and GDP Growth Rate

![Graph showing GDP and GDP Growth Rate for Nicaragua, 1960-1999. The graph includes a line chart for GDP in US$ from 1960 to 2000, with data points for even years. There is also a line chart for GDP Growth Rate from 1961 to 2001, with data points for odd years.](image)

Source: CBN, 2002

Table 14: Contribution of the Agro-industry to the Manufacture’s GDP

<table>
<thead>
<tr>
<th>Manufacture</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foods, beverages and Tobacco</td>
<td>8227.4</td>
<td>8,891.20</td>
<td>9,238.00</td>
<td>9891.1</td>
<td>10,204.30</td>
</tr>
<tr>
<td>Forestry</td>
<td>1156.9</td>
<td>1,039.60</td>
<td>1,021.70</td>
<td>954.1</td>
<td>982.90</td>
</tr>
<tr>
<td>Subs total Agro-industries</td>
<td>9,384.30</td>
<td>9,930.80</td>
<td>10,259.70</td>
<td>10,845.20</td>
<td>11,187.20</td>
</tr>
<tr>
<td>Total Manufacture</td>
<td>13701.5</td>
<td>14,067.00</td>
<td>14,436.40</td>
<td>15,446.40</td>
<td>16,044.70</td>
</tr>
<tr>
<td>Weight of Agro-Industries on Manufacture (%)</td>
<td>68.5</td>
<td>70.6</td>
<td>71.1</td>
<td>70.2</td>
<td>69.7</td>
</tr>
</tbody>
</table>


There is not any clear definition of the real agriculture’s share of the GDP as food processing and manufacturing is classified under industry and an important share of services are linked to agricultural, including credit, inputs and product commercial chains. In the case of manufacturing agro-industry, according to CBN (2002, 2003, 2004, 2005 and 2006), agro-industry represents 70% in average of total manufacture gross production (Table 4). Rural
production including production and processing agricultural products might represents between 33 and 35% of National GDP.

### 1.1. Food, Agriculture and Agro-food Imports/Exports (Quantity and Value)

Nicaragua’s main agricultural products are coffee, sugar, meat and seafood, which together represent over 60% of agricultural exports. Coffee’s share of total exports has been falling in the last eight years, due to unstable international prices, the 1992 crisis when coffee plantation areas shrank, and temporary rural migration, which creates a labor force deficit at harvest time. Meat is increasing as a share of total exports and is favored by agrarian and trade policies. Coffee and cattle production are sectors in which small and medium farmers participate and can share in the benefits of agricultural production. Seafood has a different dynamic, linked as it is to national and international companies with ships and equipment for catching, processing and freezing fish, lobsters and crustaceans, making it hard to link it up to small and medium-sized enterprises.

*Figure 13: Nicaragua’s Traditional Agricultural Exports in US$ million*

Nicaraguan agricultural and food imports have revolved around rice, dairy products, wheat, fixed vegetable oils, soybean oil and animal feed, which together represent around 81% of total food imports. There are also small-scale imports of chocolate, fish, cereals, meat, sugar and teas. Wheat is a structural import (US$ 26 million, 3.5% of intermediate import) as Nicaragua lacks the environmental conditions to produce it. Rice is also a structural import (US$ 36 million dollars annually, 5% of consumption imports) given that Nicaragua does not produce enough to cover national consumption (BCN, 2006). Finally, the 1995-1996 a soybean crisis led to a reduction in the vegetable oil industry’s production for national markets. The extraction and processing of vegetable oil now takes place outside Nicaragua and there is only a packaging and distribution company inside Nicaragua, making vegetable oil a structural import as well. Dairy products and animal feed are produced on the national level, but dairy products
are destined for tourism and high-income sectors. Animal feed tends to be bought by middle to high-income families, which is facilitated by supermarket chains.

Generally speaking, Nicaragua has a positive trade balance in agriculture and food, which is normal given that Nicaragua is a primary producer, 80% of total exports are agricultural products and only 3-5% of total imports are used by the agricultural sector. Due to the increase of sugar, meat, banana and coffee exports in the 1960s and 1970s, the trade balance in this area was widely positive. In the 1980s, the reduction of exports closed this gap and during the structural adjustment period increased food imports added to the coffee price crisis and restricted credit produced a negative balance in 1992. A second period of negative food balance was triggered in 1998-1999 by Hurricane Mitch, which destroyed productive infrastructure and flooded extensive areas of land in the Pacific and Central regions. Sugar cane, peanut, soybean, rice and vegetable production were badly affected and it took two years to recover the 1997 production levels. At the present moment, Nicaragua’s balance is beginning to turn positive again.

Food imports are mainly related to structural limitations in relation to the production or processing of certain levels of products such as wheat, rice and vegetable oil. Other products such as dairy products and animal feed tend to be linked to supermarket chains. Although Nicaragua has a positive trade balance as far as food is concerned, it is vulnerable to price fluctuations and environmental disasters.

*Figure 14: Trade Balance on Goods*

![Graph showing trade balance on goods for Nicaragua.](image)

*Sources: MIFIC, 2000; FAO, 2005*

**1.2. Agricultural Population Dynamics**

The agricultural population has been decreasing over the last 50 years, tending to be concentrated in the Central and Caribbean regions. The agricultural population’s highest negative growth rate was registered from 1983 to 1989, coinciding with the worst years of the civil war. It rose again from 1990 to 1994 as a result of the peace process and the land distribution included as a mechanism for disarming army and rebel soldiers. From 1995, the agricultural population started to drop again, this time due to an agrarian crisis mainly triggered by plummeting coffee prices.
Figure 15: Economic Active Population by Origin as Absolute Numbers and Percentages

Sources: INEC, 1996, 2006; Gomez, 2005
According to the Central Bank (2000, 2004, 2005, 2006), from 1997 to 2005 agricultural production was the main source of employment as economic activity, providing more jobs (40% in 1990s and 30% in 2000s) than even trade or service sector. This is interesting as the service sector accounted for the largest proportion of the GDP. However, since 2002 there has been an increase in jobs supplied by the industrial sector (manufacturing). Community and personal services are also an important source of jobs, while the construction sector has been growing, particularly after Hurricane Mitch, when the whole road system was reconstructed. However, the number of jobs supplied in the urban centers is not enough to cover the urban economically active population, let alone absorb the surplus rural labor force. Manufacturing—particularly the maquila exporting processing zones—is the alternative growth sector, with industrial clusters in 20 cities providing 75,000 jobs (around 4.3% of the 2005 total EAP).

2. Agrarian Structures

Nicaragua’s agrarian history is closely linked to its inclusion in international markets. From 1502 to 1821 the Pacific areas of Nicaragua formed part of Spain’s American colonies and belonged to the province of Guatemala. The Caribbean area was under British influence and the Central region was a depopulated area, where an indigenous population survived. After independence, Nicaragua was involved in regional trade through cattle and indigo. By the 1870s and 1880s, Central America was involved in a “Liberal revolution.” This involved public intervention to create roads, railways and a telegraph system and integrate the country into international markets through coffee production. European investors from Belgium and Germany were encouraged to invest in new lands for coffee plantations through public incentives.

In Nicaragua, the population was concentrated in the Pacific region, originally around major cities such as León and Granada and later around Managua. Coffee plantations were initially
located around Managua and later established in the central region in the fertile highlands around Matagalpa. By the 1940s, several regions had defined production systems: coffee in the south Pacific highlands and the north-central region, diversified agriculture in peasant areas of the Pacific and in north-western municipalities, and cattle production in south-central areas, near the lakes and around Boaco and Juigalpa. In the 1950s, the Korean War created a market opportunity and Nicaragua developed cotton production. There was strong infrastructure investment in paved roads and the industrial development of both cotton and meat processing. This agro-industrial development generated a strong process of land concentration in the Pacific Plains, displacing peasant families. Social conflict and pressure for land had intensified so much by 1963 that with USAID funds the government started a land reform program in the central region. By 1978, that land reform process had involved 210,780 hectares of land, around 4% of total agricultural land (CBN, 2005c).

The land reform in fact amounted to a program for the colonization of the south-central and central regions that opened up two key areas: Nueva Guinea and Matigúas. The colonization took place along three key corridors: from Juigalpa to Nueva Guinea in the south, from Boaco to Matigúas and Río Blanco in the central area and from Matagalpa to La Dalia, El Cúa and Wiwilí in the north. This area is known as the agricultural frontier of the 1960s and forms the main axis of the central region: Wiwilí, El Cúa – Matigúas, Río Blanco – Nueva Guinea, El Rama.

The agricultural frontier was relatively stable in the 1980s because the civil war was concentrated in this region. During the Socialist period, a transformation of the land structure was being implemented in two stages: first, large public enterprises were created and, second, a land reform program was implemented mainly in Pacific and northern areas. During this period 2.05 million hectares, around 31% of total land, were distributed to rural families (Sandino, 2006). Other policies in this period were related to the financial markets, including the creation of a public bank for agricultural production, which along with peasant organization made it possible to implement a massive technical and credit program. Trade policies were a point of contention between producers and the state. For domestic agricultural markets, specific public institutions were set up to trade grains and produce in general. There were also price controls and a parallel market developed. For international markets, specific enterprises were set up for specific crops, particularly for coffee production, processing and exportation. All of these policies were implemented in a context of civil war and hyperinflation. In 1988, a monetary and economic reform changed credit and market policies, allowing parallel markets with supply and demand mechanisms, restricting credit and reducing public institutions.

Elections were held in 1990, following several years of civil conflict, and the new government changed the political and economic model. The new policies included macroeconomic stabilization, free market policies, the elimination of public intermediation companies and land distribution as part of the peace process. During the first three years the economy was constrained by structural adjustment. The recovery process started in 1993 and it was expected to be led by the Pacific region and agro-industrial production. In the Pacific region there was a land concentration process and a general reconfiguration of agrarian structures and dynamics. In the event, however, the recovery process was led by coffee and cattle production in the central region, where middle income farms tended to be consolidated.

By the end of the 1990s, there were six macro agrarian regions, each with several different internal dynamics. Each agrarian region is the result of its own particular historical local

---

3 Sandino A. 2006 Radiografía actual del Problema de la Tierra en Nicaragua. El Observador Económico, No 166 Managua, Nicaragua. pp 14-17
development, ecological and agricultural potential and predominant social sectors. Nitlapán (1996, 2001, 2005) has proposed the following seven macro regions:

- Suburban production areas are located around Managua, some 40-60 minutes away from any of the city’s markets. This region covers less than a thousand square kilometers and, being a high-density area, includes 12,000 families. Farms tend to be small (90% have less than 14 hectares) and production systems are diversified, combining grains, fruits and vegetables. The proximity to Managua’s markets allows the trading of fresh fruit and vegetables, while the fertile soil and favorable climate allow sowing to take place during three seasons every year. There is a relatively high level of land concentration, since the richest 10% of the population owns 71% of the total land.

Figure 17: Suburban Production Areas Located Around Managua

![Map showing suburban production areas around Managua](source)

Source: Nitlapán, 2005

- The Pacific plains and highlands are an area of capitalist sugar cane, cotton (peanut, soybean) and cattle production. These lands are considered the most fertile in the country. Covering 6,000 square kilometers and 50,000 families, this is a high density region. It is the area that has most benefited from public funds and industrial development. It also includes the largest markets in Nicaragua: Managua, Chinandega, León, and Masaya.
There are two different dynamics in this region: capitalist production areas partially affected by land reform; and the highlands with traditional peasants with crops production. Plains with irrigation potential represent the main national-level production areas for peanuts, soybeans, bananas, sugar cane and irrigated rice. This area includes 16,023 farms, covering 352,600 hectares with high levels of land concentration (3% of the total farms concentrate 63% of the total land). Rural workers are the main source of labor for this system, accounting for 60% of rural families. The Pacific highland area produces coffee, fruits and beans and is located 40 minutes from Managua, providing access to the largest markets. This region includes 2,979 farms covering 32,530 hectares. It also has high levels of land concentration, with 6% of farms concentrating 66% of the total land.

The tropical dry region forms a large “X” that covers part of the northern, central and Pacific regions. It covers approximately 16,000 square kilometers and 60,000 families. Rainfall is scarce and dispersed, providing only 800 to 1,100 millimeters of precipitation per year. It includes four micro regions: the Pacific coast area with tourism potential, a milk production zone, areas of extensive production and areas of peasant production. The milk production zone includes only 2,380 farms covering 121,610 hectares, 47% of which is pastureland. This is a well-connected region with paved roads and productive infrastructure. There is land concentration, with the biggest 9% of farms owning 74% of the total land, while 56% of the farms only access 6% of the total land.

The extensive cattle production areas are related to areas of land concentration, since greater volumes are obtained by incorporating new areas. This area covers 25,000 farms and 826,320 hectares, 49% of which is pastureland. This zone also produces 12.9% of the country’s total cattle. There are high levels of land
concentration, with 61% of the total farms accessing only to 10% of the total land, while the biggest 9% accessing 60% of the land.

- The zone of peasant production includes 15,000 farms with 229,650 hectares, 47% of them dedicated to pasture and 18% to crop production. The dry zone tends to have high levels of land concentration, with the top 8% accessing 54% of the total land, while 44% of the families access only 5% of the land. Peasants and farmers who farm extensively form the main group in the social structure and the area produces important amounts of sorghum, beans, sesame and cattle.

Figure 19: The Tropical Dry Region

Source: Nitlapán, 2005

- The capitalist coffee and cattle production area has a concentration of fertile land and is located in the central region. These areas were colonized before 1900 and were linked up to the rest of the country through paved roads and productive infrastructure. There are two specific zones: highlands 600 meters above sea level with the potential for coffee production; and lowlands less than 400 meters above sea level with potential for cattle production. The coffee production areas include 13,300 farms with 234,220 hectares, 16% of which is coffee plantations. According to Agrarian Census in 2001 and Nitlapán 2005, there is a high level of land concentration, with 80% of total farms containing less than 14 hectares and accessing only 20% of total land, while the biggest 5% of farms access 53% of the total land. The cattle production area—known as the “milky basin”—is a region linked to local and foreign markets with paved
roads, gathering centers, milk processing industries and industrial slaughterhouses. It has approximately 13% of country’s total cattle in 554,660 hectares, 76% of which is pastureland and only 7% of which is dedicated to crop production. There are high levels of land concentration, with 51% of the total farms accessing only 7% of the total land, while the biggest 12% access 62%. Both areas are dominated by agrarian capitalists, making it a capitalist production region.

**Figure 20: The Capitalist Coffee and Cattle Production Region**

- The old agricultural frontier is located in the central region and was colonized between the 1940s and the 1970s. This region has an extension of 10,000 square kilometers and includes 75,000 farms. There are several micro-regions within the central region, including: a peasant coffee production zone, cattle production in the highland zone and cattle production in lowland areas. According to Agrarian Census in 2001 and Nitlapán 2005, the coffee production areas include around 14,600 farms with a relatively low level of land concentration. Cattle production in the highland zone includes around 51,000 farms and 2.02 million hectares, 58% of which is covered in pasture. This zone has a certain level of land concentration, with 11% of farms containing over 70 hectares, accounting for 51% of the total land and 39% of the total cattle. The cattle production in lowland areas corresponds to recently colonized land that covers approximately 661,314 hectares, 55% of which is pastureland. This zone has a certain level of land concentration as well, as farms with over 70 hectares account for 28% of all farms, 69% of the total land and 12% of the total cattle.

*Source: Nitlapán, 2005*
A new agricultural frontier that has only been colonized for 10 to 15 years is located in the Caribbean region. It has a low density and productive infrastructure, but is practically isolated in the rainy season. There are three kinds of area: indigenous properties, settlements and waterways and coast. These areas are linked to the central region through the Boaco-Matigúas and Matagalpa-La Dalia highways. This zone forms part of the tropical humid zone, with 2,000-4000 millimeters of precipitation a year. Around 45% of the total area is forest land, 40% is covered by pastureland and 12% is used for crop production. Farms with between 14 and 280 hectares account for 76% of total farms and 67% of the total land, which indicates low levels of land concentration. According to Nitlapán, there are two predominant social sectors: subsistence families, which represent 79% of the total families and access 49% of the total land; and extensive peasant farmers, representing 13% of the families and accessing 20% of the total land.
Overall, Nicaragua has around 199,549 farms, and 6.28 million hectares, for an average of 31.47 hectares per farm and 8.8 ha/Rural EAP. However, within the country, average land will change depending on the agrarian dynamic: suburban production, capitalist agro-export production, and/or traditional peasant production Table 15). Most of rural families (54.7 %) are located at the Old Agricultural Frontier and Tropical Dry Areas. Sub urban areas close connected to urban markets and the new Agricultural Frontier where new settlers are moving in, are important areas for pro-peasant policies (INEC, 2002; Nitlapán, 2005). There are not general policies to fit all the possible combinations of crops, social sector and market dynamics.
### Table 15: Socioeconomic Structure of Nicaraguan Rural Families

<table>
<thead>
<tr>
<th>Regions/Type of Families</th>
<th>Suburban production areas</th>
<th>The Pacific plains</th>
<th>The Tropical Dry region</th>
<th>The capitalist coffee and cattle production</th>
<th>The Old agricultural frontier</th>
<th>The New agricultural frontier</th>
<th>Total National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence Families</td>
<td>14924</td>
<td>11559</td>
<td>17867</td>
<td>16482</td>
<td>40913</td>
<td>14684</td>
<td>116429</td>
</tr>
<tr>
<td>Peasants</td>
<td>5579</td>
<td>5277</td>
<td>19062</td>
<td>7406</td>
<td>19171</td>
<td>6030</td>
<td>62525</td>
</tr>
<tr>
<td>Farmers</td>
<td>747</td>
<td>1019</td>
<td>3705</td>
<td>1684</td>
<td>4737</td>
<td>1125</td>
<td>13017</td>
</tr>
<tr>
<td>Agrarian Capitalist</td>
<td>490</td>
<td>949</td>
<td>1402</td>
<td>714</td>
<td>1140</td>
<td>675</td>
<td>5370</td>
</tr>
<tr>
<td><strong>Total Region</strong></td>
<td><strong>21740</strong></td>
<td><strong>18804</strong></td>
<td><strong>42036</strong></td>
<td><strong>26286</strong></td>
<td><strong>65961</strong></td>
<td><strong>22514</strong></td>
<td><strong>197341</strong></td>
</tr>
<tr>
<td>Subsistence Families</td>
<td>68.6</td>
<td>61.5</td>
<td>42.5</td>
<td>62.7</td>
<td>62.0</td>
<td>65.2</td>
<td>59.0</td>
</tr>
<tr>
<td>Peasants</td>
<td>25.7</td>
<td>28.1</td>
<td>45.3</td>
<td>28.2</td>
<td>29.1</td>
<td>26.8</td>
<td>31.7</td>
</tr>
<tr>
<td>Farmers</td>
<td>3.4</td>
<td>5.4</td>
<td>8.8</td>
<td>6.4</td>
<td>7.2</td>
<td>5.0</td>
<td>6.6</td>
</tr>
<tr>
<td>Agrarian Capitalist</td>
<td>2.3</td>
<td>5.0</td>
<td>3.3</td>
<td>2.7</td>
<td>1.7</td>
<td>3.0</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Total Region</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>% of National</td>
<td>11.0</td>
<td>9.5</td>
<td>21.3</td>
<td>13.3</td>
<td>33.4</td>
<td>11.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Nitlapan-FAO, 2005

**There are cases with inconsistent data out of the classification process

**Conclusions**

Nicaragua’s way of development has been defined by its agricultural sector throughout history: cattle and indigo producers before 1890, coffee producer since 1890, agro-industrial country (bananas, cotton, coffee and sugar) after 1950s. Contrasting economic models has been implemented including modernization of economy (1950-1979), state-centered model (1980-1989), and free-market oriented economy (1990-2006). Nowadays, it is expected to have a political and economical model change. By 2000s, Agriculture sector is the most important economic activity for its contribution to GDP, employment and share of total exports. Agriculture share of total exports (80%) in the last 15 years is a clear tendency of the role of agriculture in Nicaraguans economy.

According to National Census (2005), Rural population represents 44% of total population, and 40.4% of total EAP. There are around 200,000 farms, 59% are subsistence families, 31.7% peasants, 6.6% Farmers and 2.7% agrarian capitalist. Nicaragua can be divided in six macro-regions with different socioeconomic dynamics, since productive infrastructure, land distribution and agricultural potential are specific for every one of them. Agriculture generates 570, 820 jobs, which represents 34% of total occupied population and 33% of total EAP.

Trade liberation has opened regional markets, and Central America is the main partner for agricultural exports for Nicaragua. The USA is the second partner and a free trade agreement has been signed. Nicaraguan tariff protection is the second lowest in the region after El Salvador. By 2021 it is expected that average tariff will be 1.6%. Nicaragua has signed FTA with Mexico and Chile and it is negotiating with Canada, Taiwan and European Union.

There are high levels of inequalities due to a dualistic development path; 47.1% of total population lives below poverty line and 16% on extreme poverty. While top 20% of population access around 50% of total income, as consequence GINI index is around 0.43 (INEC) and 0.57 (UNDP). Poverty has a rural face since 67.8% of rural families are below poverty line and 27.4 lives in extreme poverty.
Nicaragua is part of the HIPC initiative and public policies are focused on poverty reduction and debt services. Expenditures on agriculture sector represent 6 – 7 % of total public expenditures. A National strategy for development has been developed based on productive clusters, specifically: coffee, peanut and soybean, dairy, meat, vegetables, grains and shrimp. This strategy pretends to increase agriculture contribution to GDP, employment and exports as the main way to reduce rural poverty.
PART II -

THE STRUCTURE AND EVOLUTION OF AGRICULTURAL AND AGRO-FOOD MARKETS
CHAPTER 3 - AGRO-FOOD MARKETS

1. General Organization of Markets and Types of Sector

In 1990, Nicaragua freed up the domestic and foreign commercialization of agricultural products. In the 1980s public enterprises bought up grains from the producers and distributed them to urban areas. This system created a parallel market of agricultural products and many producers protested. There were also public enterprises dedicated to exporting specific crops. Producers therefore did not have the chance to access the markets directly. This also generated serious contradictions between the government and producers, particularly coffee producers (Kaimowitz, 1988; Nitlapán, 1996; Spoor, 2005).

The political change in the 1990s was accompanied by a profound economic change. The new government was politically and economically conservative and its economic policies were based on a market-oriented economy. Its first policies therefore addressed the implementation of market mechanisms, the elimination of the public enterprises trading agricultural products, the reduction of export transactions and incentives to increase traditional and non-traditional exports. Other policies freed up internal markets by eliminating the public companies dedicated to domestic agricultural commercialization and price controls, implementing a market-driven price system and reducing tariffs on imports (CEPAL, 2000).

The changes in the 1990s reconfigured all of the domestic and foreign chains of value. The privatization process covered the public agricultural production companies, the domestic and foreign trade companies, and the urban distribution networks associated which were created in 1980s by the Sandinista Government for prices control and foodstuff distribution (Spoor, 1995; Nitlapán, 2005). The agricultural reactivation in 1993-1996 brought with it new companies for international trade. Domestic trade was initially based on the informal sector, which grew in the 1980s as an alternative (parallel) market for buying products at higher prices than in the regulated markets. By the end of 1990, supermarkets began playing an important role in the intermediation of agricultural products and there has been constant movement in this area. Initially just Nicaraguan enterprises were involved. Then in a second level of integration, Costa Rican enterprises established a competitive supermarket chain. At the same time, regional enterprises like Hortifruti were playing middleman between supermarkets and producers. Finally a third level of integration was established in the 2000s when Wall-mart bought up regional supermarkets and intermediary companies such as Pali, La Union, Paiz and Hortifruti (MAGFOR, 2004f).

There are two kinds of market for domestic consumption. The first is supermarket chains, with 20 % of total market of consumers demand quality standards and pay higher prices to producers (MAGFOR, 2004f). The regional trade company Hortifruti tends to monopolize intermediation between producers and supermarkets. Initially linked to the marketing of fruit and vegetables, Hortifruti is currently trading, cleaning, packing and selling beans and has been bought by the Wall-mart group. The second type of market consists of the traditional marketplaces with traditional networks of middlemen who buy from the producer and sell on to the main Managua markets. There is also a third stage, in which retailers buy grains, dairy products, fruit and vegetables to sell on to consumers.

There are several different tendencies when it comes to international trade, but the Central American region has increased its importance during the last decade. The Salvadoran economy demands agricultural products and Guatemala and Nicaragua tend to be the main food suppliers in the region. At the same time, Costa Rica demands certain products such as beans and Nicaragua accounts for 80% of Costa Rica’s total bean imports (MIFIC, 2004). This intra-
regional movement is facilitated by the regional integration of financial and trade enterprises. Supermarkets were regionally integrated at the end of the 1990s, initially through a Costa Rican initiative (Mas X Menos), then through a Salvadoran one (SIMANS, PAIZ) and finally through a US investment that entered the region in the 2000s facilitated by DR-CAFTA. Supermarket chains and intermediary enterprises therefore create a vertical integration with the international market.

Outside the region, there are several ways of integrating into the international markets, depending on which crop is being traded. Coffee is Nicaragua’s main export product. It can be traded as gourmet, organic, free-trade and traditional coffee and in every chain there are several levels of intermediation. However, there is a certain level of oligopoly in the parchment stage and traditional coffee trading, while the Nicaraguan company CAFÉ SOLUBLE industry has a monopoly on coffee processing for instant roasted coffee (see 3.2). Dairy products are different to coffee, since Salvadoran and Honduran investors progressed from being retailers to being importers, and then in a second stage became local middlemen and developed processing industries. At the same time, PARMALAT is the most important milk purchaser and distributor at the national and local level. The regional financial group La FISE has also become an exporter of agricultural products such as coffee, beans and dairy products and owns a large stake in PARMALAT.

2. Commodity Chains in Nicaragua

Value chains can be described according to several phases and circuits depending on the products’ final destination. National and local markets with no quality standards tend to be short circuit chains with an initial labor-intensive production stage, middlemen who buy directly from the producers and transport and sell on to national or local markets, and retailers who buy at the national and local markets to sell on to the consumers. Supermarkets have quality standard requirements and NGOs negotiate their beneficiaries’ integration into this chain in order to achieve higher prices. Since the supermarkets and intermediaries have been integrated into a single group, this is basically an oligopoly tending towards a monopoly, in which Hortifrutí (Wal-mart) is becoming the key player.

Export products have similar stages but different kinds of players. There is a production stage, differentiated by organic, traditional or free-trade chains. Traditional production has export enterprises, which buy from producers, perform first and/or second level processing, and negotiate export contracts. As processing machinery is a big investment (coffee, peanut, seafood, sesame, dairy, fruits, rice), processing tends to be an oligopolistic or monopolistic process. Fair trade options tend to offer an alternative process as a way of breaking down this tendency.

After 1990, there was a rapid structural change from public to private enterprises. This has segmented producers as they have been integrated into different commercial circuits. Every chain has different quality standards, which demand specific technological processes, e.g. organic, seed varieties, fertilizers and specific products and practices for clean production.

The processing and exporting phase tends to be an oligopoly or monopoly depending on the product. Regional integration (Central American) tends to monopolize the consumption of middle- and high-income urban families. Meanwhile, traditional markets and middlemen are inclined to respond to supply and demand mechanisms and to offer seasonal and competitive markets in which producers obtain low prices. In the case of coffee, sesame, sugar, meat and peanut, although these products have a high number of producers at production, first processing tends to be monopolized by few players (table 2.2.1a, and b). As a consequence there is a group who has market power to define prices and to enhance profits.
Sesame is a great example, there are 40,000 producers, but only a group for cleaning and peeling, this group concentrate 98% of total sesame exports. Coffee is an example for exporting broker’s maker power. In the coffee case, there are 95 enterprises for parchment stage (1 for every 453 producers), there are some competition at this level, but only four exports companies concentrate 80% of total exports. Meat and sugar are part of agro-industries, and there are three groups on sugar processing and four industrial slaughterhouses for 97,000 cattle producers.

Cheese is a dynamic sector highly competitive with different actors: large companies such as Parmalat and Eskimo-Yoplait, local cooperatives and Central American investors from Salvador and Guatemala. However, in the long run cooperatives tend to be integrated to the fluid milk value chain were large players having comparative advantages of industrial installation, and capital will enforce their oligopoly.

Traditional middlemen dominate the domestic markets in most of the crops (Tables 18 and 19). Supermarkets represent around 20% on vegetables, but grains such as corn, beans, sorghum and rice are sold mostly at traditional markets. In the case of vegetables, there is more sensibility about sanitary conditions, then, supermarkets have a window of opportunity. Supermarket supply chain is monopolized by Hortifruti, a company which is part of Walt-mart with two out three supermarket chains (MAGFOR 2004 b and f). Regional market (Central American) is demanding vegetables and beans. Beans went from US$ 12 to 28 million dollars in 4 years (MIFIC, CBN, 2006). This facts attracted financial groups such as LA FISE and it will be an interesting market to explore.

Although there is integration to regional and global networks there are two main restrictions for rural markets: insurance and contracts. There are no companies offering agricultural insurance and this fact rise level of risk on contacting production volumes and prices. Public policies to create an agricultural or harvesting insurance market are necessaries. Norms for contracting production, and to establish quality standards are necessaries as well.
### Table 16: Export Products: Value Chains Integrated into Local and International Markets

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
<th>Primary product commercial chain</th>
<th>Processing level</th>
<th>National Distribution</th>
<th>International markets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coffee</strong></td>
<td>43,000 farms, 108,700 hectares, with an average yield of 970.4 kg/ha. Small farmers (less than 14 hectares) account for 67% of producers and 29% of plantations, medium farmers for 19% of farms and 18% of plantations, peasants for 86% of farms and 47% of plantations.</td>
<td>Network which links commercialization, processing and exporting led by CISA, Neumann, VOLCAFE, CON Group. Traditional networks in isolated areas.</td>
<td>Humid processing on 21,000 farms, mostly high-income rural families. 95 enterprises for parchment stage, transformation as roasted coffee mostly outside of coffee plantation areas</td>
<td>One national entreprise: CAFÉ SOLUBLE. Ground and instant coffee commercialization network to retailers.</td>
<td>Parchment coffee to USA (41.4%), Germany (16.7%), Japan (8.14%), Italy (7.9%), Belgium (5.2%). Prices: US$ 0.858/kg for traditional coffee, US$ 1.848/kg for Certificated Fair Trade Coffee. CAFÉ SOLUBLE exports transformed coffee to Central American Market</td>
</tr>
<tr>
<td><strong>Cheese</strong></td>
<td>96,000 farms, 2.6 million animals, 616,000 cows, 20,000 MT of cheese. Small and medium production accounts for 86.8% of total farms and 39% of total animals.</td>
<td>Traditional network collecting low quality milk. ESKIMO, PARMALAT, PROLACSA-Nestle, collecting frozen and high quality milk.</td>
<td>Second and tertiary level processes: ESKIMO, PARMALAT, PROLACSA-Nestle, LACTOSAM. Cooperatives processing cheese for Salvadoran markets. Traditional industry and in-farm processing for local markets</td>
<td>4,300 small businesses and 150 large businesses, most linked to PARMALAT and ESKIMO, which are linked with supermarkets and retailers. Traditional middlemen linked to traditional industry and in-farm production transport to major national markets and retailers.</td>
<td>El Salvador 80% of total dairy exports, USA 4.2%</td>
</tr>
<tr>
<td><strong>Peanuts</strong></td>
<td>Annual production of 49,223 MT. 16,625 hectares. Medium farms with 35 to 140 hectares, large farms with over 140 hectares integrated into the industrial sector. Crop with strong machinery investment, 95% of total area financed by commercial banks</td>
<td>Oligopoly in first, second and third processing levels: SAGCOMSA, COMASA and IMANISA</td>
<td>Oligopoly in first, second and third processing levels: SAGCOMSA, COMASA and IMANISA</td>
<td>Network of local middlemen for local markets. Processing plants linked to supermarkets and bakery and pastry industry</td>
<td>Central America (17.1%), UK (8.9%), Mexico (52%) and USA (22%)</td>
</tr>
</tbody>
</table>

*Source: MAGFOR 2004e, h,g ; Perez, 2006*
Table 17: Table Export Products: Value Chains Integrated into Local and International Markets

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
<th>Primary product commercial chain</th>
<th>Processing level</th>
<th>National Distribution</th>
<th>International markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sesame</td>
<td>40,000 farms, 5,620 hectares, 3,318 MT. Crop produced by small and medium farmers. National average sesame area is 2.2 hectares.</td>
<td>Local network selling to processing plants, La Danesia group with four quality categories. Salvadorean middlemen</td>
<td>First level of processing for seed exports: Alpha Industries and Sirama with 8,180 MT per year, 98% for export. Second and third level of processing for vegetable oil at national level, 2% of total production.</td>
<td>Processing plants linked to supermarkets and national markets.</td>
<td>98% of total production is for export: Guatemala (21%), EU (36%) and USA (32%), Japan (organic seed). Fair trade, organic seed</td>
</tr>
<tr>
<td>Meat</td>
<td>96,994 farms (47% of total farms) with approximately 3.5 million animals. Small cattle producers (less than 10 animals) account for 51.5% of farms and 8.8% of animals, medium cattle producers (11 to 50 animals) for 35.3% of farms and 30.2% of total animals, large cattle producers (more than 50 animals) for only 13.2% of farms, but 61% of total animals</td>
<td>Local middlemen (around 400 in Pacific and 1,600 in Central region) selling to gathering enterprises, municipal slaughterhouses and industrial slaughterhouses. Salvadorean middlemen for live animals</td>
<td>98 municipal slaughterhouses linked with traditional local middlemen and local (municipal) markets. Industrial slaughterhouses: SN MARTIN, NUEVO CARNIC, MACESA, PROINCAS</td>
<td>Municipal slaughterhouses supply products to local markets. Industrial slaughterhouses supply products to supermarkets</td>
<td>El Salvador (36.7%), USA (35.5%), Puerto Rico (11.8%), Honduras (4.2%), Guatemala (3.9%)</td>
</tr>
</tbody>
</table>

Sources: MAGFOR, 2004d; NITLAPAN, 2006
Table 18: Agricultural Products: Value Chains Integrated into National and Regional Markets

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
<th>Primary product commercial chain</th>
<th>Processing level</th>
<th>National Distribution</th>
<th>International markets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegetables</strong></td>
<td>11,100 farms with 3,750 hectares of vegetables for export and 11,250 for national distribution. National production based on small farmers with less than 1 hectare dedicated to vegetables. Export production uses high levels of technology including greenhouses, controlled irrigation and mechanical sowing.</td>
<td>Six gathering enterprises selling to Hortifruti, La Colonia,(both now Wall-Mart owned) APRONOT, Los Robles, V Pack, traditional middlemen.</td>
<td>First level processing: Hortifruti, APRONOT, V Pack, Second level processing: Torres Valle group, La Matagalpa, Briomol products and Eskimo</td>
<td>Hortifruti, Pali, La Colonia, La Union (Wall-mart) linked to supermarkets, restaurants, hotels (25% of total national production). Traditional middlemen linked to local and national markets (75% of total national production)</td>
<td>Melon, watermelon, yellow onion to USA, white onion to Guatemala, tomatoes to El Salvador. HORTIFRUTI linked to Central America, organic production</td>
</tr>
<tr>
<td><strong>Fruit</strong></td>
<td>National production is based on small farmers with less than 3.5 hectares of fruit. Export production uses high levels of technology, including freezing technology.</td>
<td>Hortifruti, La Colonia, APRONOT linked with export chains and supermarkets selling fresh fruits. Traditional middlemen linked with local and national markets with fresh fruits</td>
<td>Tertiary level processing: Induquinisa and Bell products, both vinegar for national market; Callejas and APPEN, jelly products for national market. First level processing: Hortifruti, APRONOT</td>
<td>Hortifruti, Pali, La Colonia, La Union, (Wall-Mart) linked to supermarkets, restaurants, hotels. Traditional middlemen linked to local market.</td>
<td>Fresh fruit: USA, Canada and EU. USA through Wall-mart, Kmart and Krugger. Pawpaws to Costa Rica, Honduras and El Salvador</td>
</tr>
</tbody>
</table>

*Source: MAGFOR2004b,f*
Table 19: Agricultural Products: Value Chains Integrated into National and Regional Markets

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
<th>Primary product commercial chain</th>
<th>Processing level</th>
<th>National Distribution</th>
<th>International markets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beans</strong></td>
<td>115,000 farms, 229,705 hectare Annual production of 177,273 MT, s. This is a peasant crop: small producers (less than 3.5 hectares) account for 25% of total farms and 13% of total bean area, medium farmers (3.6 to 35 hectare) for 54% of farms and 52% of area, peasant production (less than 70 hectares) for 91% of total farms and 81% of bean area</td>
<td>Local network of middlemen linked with local and national markets. Hortifruti linked with supermarkets and regional markets, brokers for US exports</td>
<td>First level processing: Hortifruti</td>
<td>Hortifruti, Pali, La Colonia, La Union, (Wal-Mart) linked to supermarkets, restaurants, hotels. Traditional middlemen linked to local market. Agricorp, Hortifruti, Agricorp, La FISE, BAGSA, for Central American market.</td>
<td>Exports of 32,074 MT to Costa Rica and El Salvador, 5,000 MT to Mexico.</td>
</tr>
<tr>
<td><strong>Corn</strong></td>
<td>141,348 producers (71% of total farms), 394,000 hectares, 357,050 MT total production. 35% small farmers (less than 7 hectares), 37% middle income farms (7.1 to 35 hectares)</td>
<td>Local network of middlemen, Cooperatives such as UCOSD in Matagalpa, CCAJ and UGAQ in Nueva Segovia</td>
<td>Large markets in urban centers such as Managua, Chinandega, Matagalpa and Esteli. Demand from industrial coffee and cereal processing enterprises; CAFÉ SOLUBLE, CARACOL, LA NATURALEZA, CEREALES SUPREMO</td>
<td></td>
<td>Exports to Central American markets.</td>
</tr>
</tbody>
</table>

*Sources: MAGFOR 2004a; NITLAPAN, 2006*
CHAPTER 4 - THE FACTOR MARKETS: LAND, LABOR, INPUTS, CREDITS AND EXTENSION

1. Inputs Market

The agrochemical (input) markets in Nicaragua tend to be oligopolistic, consisting of six main enterprises (CISA, SAGSA, RAMAC, FORMUNICA, BAYER, San Cristobal) which are importers and distributors. They represent 70% of the total agrochemical market (seeds, pesticides, fertilizers) and thus have the market power to define prices and allocate resources. According to MIFIC, 2000, CEPAL 2006, fertilizer imports are worth approximately US$21 million and 83% is nitrogen-based. Pesticide imports are worth approximately US$27.5 million. This type of agro-chemical was first imported in the 1980s and is a clear indicator of the importance of pest management in Nicaragua. Generally speaking, the last 16 years can be divided into two main stages. In the initial period, public enterprises were privatized and credit restricted, reducing agricultural input imports from US$37.6 million in 1990 to US$12.1 million in 1992. Since 1993, with market mechanisms, private import enterprises and economic stability, input imports increased again to US$43.5 million in 1997. Agrochemical demand fell in 1998 due to the effects of Hurricane Mitch, which destroyed most of the productive infrastructure in sugar cane, peanut, sesame and rice producing areas. By 2004, however, imports had reached similar levels to 1997 with a tendency to continue growing.

Figure 23: Nicaragua’s Agricultural Input Imports

According to the national census in 2001, herbicides are the agrochemicals most demanded for agricultural production, with 55% of all farms applying this type of product. There is also a great demand from producers for fertilizers (48%) and insecticides (45%). It is clear that farmers try to increase their production through pest and weed control and by using fertilizers to restore soil fertility. But although this sounds logical, in the long-term ecological damage to the soil and water and pest resistance means that the production system tends to demand more fertilizers and pesticides, significantly increasing production costs. Cotton production suffered
from this phenomenon in the 1970s and 1980s and farmers stopped producing the crop altogether in the 1990s.

Cattle producers tend to demand vaccines (52%), vitamins (46%) and anti-parasite drugs (35%), which are the equivalent to the pesticides and fertilizers used in crop production. Nicaraguan producers tend to establish extensive production systems. Only 17% of cattle producers give their animal’s food supplements and only 1% practice artificial insemination to improve the cattle’s genetic characteristics. Meanwhile, only 18% of farmers sow certified seeds. This low level of investment is reflected in low yields of maize (1.3 Tn/ha), beans (0.75 Tn/ha), coffee (0.5 Tn/ha) and rice (1.8 Tn/ha) and increasing areas of agrarian land, an average of 106,000 ha.

2. The Credit Market

Financing the agricultural sector was a way to stimulate private investment in the sector in the 1940s. The creation of the National Bank developed rural credit markets and in the 1950s commercial banks financed agro-industrial crops on the Pacific plains. Calley Dagnal and the Nicaraguan bank financed coffee and cotton and the Bank of America and Central American Bank financed sugar cane. Credit use was related to agricultural inputs, machinery and productive services. In the 1960s there was a certain level of integration between producers and industry, using credit and commercialization contracts e.g. TANIC with tobacco and Nestlé with liquid milk. The green revolution gave small farmers the chance to integrate into the rural financial markets. In the 1970s, 9,000 small corn and bean farmers received credits and technical assistance to promote new varieties as the result of a USAID initiative. Since the banking structure was very limited, peasant cooperatives were promoted in order to facilitate productive services. Doligez (2001) estimates that by 1978 only 4% of peasants had access to financial markets, with credit concentrated among agrarian capitalists linked to agro-export crops.

Nicaragua experienced a radical change in the 1980s under a socialist government. Four public institutions were created, one for each sector, based on 17 institutions, confiscation and fusion. BANADES had 38 offices and was the institution created to finance agriculture. In the first three years and with low interest rates, BANADES tripled the total amount of credit and agriculture’s share of total credit rose from 5% to 23%. Doligez estimates that around 100,000 families accessed productive credits during this period. There was a strong emphasis on peasant organization in cooperatives, specific crop based associations, and sectoral organizations to facilitate productive services. The civil war and the international embargo affected the Nicaraguan economy between 1983 and 1987, but credit policies kept interest rates at 8% although inflation was running at 300%. In 1988, the government implemented a monetary reform and started a structural adjustment program. As a result, the total portfolio was reduced by 80% and interest rates were indexed to inflation. By the end of 1988, credit had contracted and there had been a reduction in both inputs per hectare and production areas.

Nicaragua’s financial market dynamic has been transformed in the last 15 years. Between 1979 and 1991 the financial market consisted of public institutions, which were used to promote and subsidize agricultural production. Once the national economy had been opened up and adjusted, the national government allowed private commercial banks to operate in Nicaragua. By 1996 there were 15 commercial banks, twelve of them private. However, eight of them went bankrupt between 1998 and 2002 and the public banks were eliminated. As a result of these failures, in both the private and public banks, the Nicaraguan state had to borrow US$500 million to prevent economic instability, which significantly increased the country’s domestic debt. In this context, most of the commercial banks tended to be averse to taking risks and restricted their loans to high-income rural families. As a result, there was a huge demand for
credit in rural areas. International cooperation promoted the establishment of microfinance institutions as a way to provide small loans to people who did not fulfill the banking system’s requirements. Microfinance institutions are currently the most dynamic and growing industry, working not only with cooperation funds, but also with public and private bank funds.

The agricultural sector has increased its access to financial institutions in the last decade. In 1998 only 20% of rural families had access to credit, but by 2001 this had increased to 26%. Microfinance institutions (MFs) are a growing industry in this sector, increasing their number of clients from 16% to 31% during the same period and their portfolio from US$36.8 million in 1999 to US$108 million in 2004. Agricultural cooperatives also increased their number of clients and their share of total clients from 12% to 14%. Both increases were made possible by a reduction in the commercial banks’ portfolio and clients, from 33% to 15% of total credits.

According to the national census in 2001, only 63% of producers who applied to financial institutions for credits received a positive answer. Credit can be given in either cash or in kind (mainly fertilizers and pesticides), and only 58% of credits were given in cash. This could be explained by the fact that only 14% of credits were from commercial banks and 28% were from cooperatives and community banks. NGOs account for 36% of cash loans and public programs for 16%. NGOs, cooperatives and public programs provide credits in both cash and kind, with the in-kind modality used with approximately 42% of the farms that received credits. The financial markets currently give credit mainly to men (86%), which is related to land property rights and female exclusion from the productive processes in the rural sector. Young people are also excluded from the system: only 2.6% of total clients are under the age of 25 and only 18% are younger than 35. This is an indicator that capital accumulation is slow among rural families. Fulfilling all requirements for accessing credit implies having a sufficient level of fixed capital, including land and animals, which according to the national census is only possible for a rural client after the age of 35 (INEC, 2002.)

According to ASOMIF (2006), the commercial banking sector consists of seven banks and two financial institutions. They have around 732,430 clients and a portfolio of US$1.130 billion, which is mainly used for consumption (26.5%) and commercial activities (31%). Geographically speaking, 83% of the portfolio and 90% of the clients are located in Managua. The banking network consists of 209 offices located in the main urban centers. The agricultural portfolio includes 11,748 clients and loans worth US$180.97 million, so agricultural loans represent only 12% of the total portfolio and 1.6% of total clients, with an average loan of US$15,404. Most agricultural loans are approved for large companies in Managua and finance agrarian capitalist production systems linked to sugar cane, coffee, peanut and irrigated rice. Most of their credits have long-term payment periods, since 69% must be paid over a period of more than 18 months and 90% over a period of more than 12 months. Active interest rates are around 12.35% for short-term loans and 18.21% for long-term loans. These interest rates have been falling since 2001, when they were 18.55% and 19.53% respectively.

Commercial banks are averse to taking risks, and the cost of agricultural credits means that they tend to concentrate their loans on the urban population in areas such as housing, cars, credit cards and furniture. They also obtain high revenues from trade and tourism in the tertiary sector.

According to ASOMIF (2006), approximately 278 NGOs have credit interventions and 93 of them are microfinance institutions. By 2001, ASOMIF accounted for 70% of the total NGO credit portfolio. Using their data, it is possible to obtain a good idea of this sector’s dynamics. By 2005, ASOMIF contained the 20 largest MFs with 204 offices, 268,141 clients and a portfolio of US$124.5 million, which is more than double its 2001 portfolio of US$51.8 million, giving an annual growth rate of 35% in terms of the portfolio and 26.7% in terms of clients. Since the MFs were initially NGOs and mainly supported by international cooperation,
Issues such as gender are important, this explains why women account for 66% of the clients and 51% of the portfolio. Agricultural production is important as well, accounting for 32% of the total portfolio. However, just like the commercial banking sector, commerce and consumption are the main sectors financed, covering 65% of clients and 45.5% of the total portfolio.

MFs differ from commercial banks not just in terms of gender issues, but also in terms of payment. Most of the clients (73.2%, covering 43.8% of the portfolio) access loans with a payment period of less than 12 months. This is possible because they are small loans averaging US$273. Only 15.1% of the clients have loans whose payment periods exceed 18 months, which represent 37.3% of the portfolio with an average loan of US$1,121.5. Microfinance institutions tend to cover excluded social sectors in urban and rural areas and they have to deal with problems in two directions: allocating credits (agricultural risk and collaterals), and accessing funds from secondary-level financial institutions (ASOMIF, 2006).

The reduced supply of long-term credit is a key factor. The active interest rates are higher than those of commercial banks: between 18% and 30%, not including commission and legal costs. This is the result of the high cost of money and high management costs for small loans. Nicaragua has efficient management (8-8.5%) compared to other Central American countries, but the cost of money could be somewhere between 6% and 7%, making the break-even point around 16%. Microfinance institutions are calling for public interventions to play a secondary level role in order to reduce the cost of money and the payment period. (Microfinanza Rating, 2005)

Public interventions in rural finance markets are as excessively dispersed. Funds are administered by 11 public institutions with 55 projects and 220 counterparts, with a combination of donations and credit. The legal framework governing the financial markets needs to be reformed in relation to areas such as collateral, leasing, solvency and microfinance.

3. The Agricultural Extension Market

Nicaragua has been developing extension services since 1927 as part of the country's public services. In the 1960s, agricultural extension increased as the result of comprehensive rural development projects funded by USAID to facilitate the colonization of the central region. At the same time, important public investments were made to develop cotton production technology in the Pacific region. In the 1980s, technical assistance was part of the land reform process and the Ministry of Agriculture increased the number of technicians and established mass access to agricultural education on the basic and higher levels (engineers).

Agricultural extension was one of the areas most affected by the reduction of the Nicaraguan state in 1990. However, there were still several rural development projects associated with the peace and land distribution processes. As a result, public intervention in agricultural extension was disaggregated. In 1994 one of the institutions from the 1970s was restored and public funds were provided to the National Agricultural Technology Institute (INTA) for technology generation and transfer. The reduction of the state allowed NGOs to grow and intermediate international cooperation funds for technical assistance. Such organizations have proliferated and by 2000 there were more than a thousand NGOs working on rural issues. By 1996, eleven public institutions had technical assistance programs and the INTA was subjected to a reduction process, creating private enterprises to deliver this service (Nitlapán, 2001b; IDERU, 2001; Perez, 2005).

In 1999, the World Bank and the IFAD started a 16-year, US$180-million program to establish technical assistance service markets. The idea was to develop a demand-driven service in
which farmers would contract technicians or companies. Public intervention was designed on the demand side to transfer money to farmers so that they could pay suppliers and on the supply side to increase the institutional capacity of the private companies through equipment and training. The farmers would have to pay part of the total bill, which would increase every four years so that by the end of the 16 years the farmers would have paid off the total price of the extension services. In the event, only one of the program’s four stages was actually implemented. This was a seed distribution program which, contradicting the program’s philosophy, provided free technical assistance and was prioritized in order to generate political revenue (MAGFOR, 2000).

According to the national census in 2001 only 12% of total landowners received technical assistance in 2001. NGOs (40%), public institutions (37%) and cooperatives (20%) are the main sources of such services. Private technical assistance only covered 10% of the total landowners who received technical assistance in 2001. However, these companies also receive public funds and it is hard to define whether they really are private, with private supply and demand, or whether it is combination of peasants paying 5% of the total bill with the other 95% footed by public funds. Pest management (93%), fertilizers (53%), seed selection and soil conservation (45%) are the main subjects on the national extension agenda. Other subjects include animal-related sanitary practices, animal nutrition, forestry, economic diversification and irrigation. Training on agricultural issues has developed along similar lines, with only 12% of total land owners trained on a very similar agenda (INEC, 2002.)

The main reasons for not receiving technical assistance were the absence of the service (67%) or the fact that the farmers found the agenda unattractive or not relevant to their problems (20%). The cost of the services was considered a limitation by only 6% of the landowners who did not receive any such services, which is probably an accurate reflection given that most of the technical assistance is paid for by the government or international cooperation. Accessing the assistance depends more on rural development programs than market mechanisms.

In 2006, several public technical assistance interventions for rural families are still being implemented by the Ministry of Agriculture, INTA, the Rural Development Institute, the Environment Ministry, the Foundation for Technology Innovation, the Presidency’s Competitiveness Program and the Institute for Small and Medium Enterprises. There are also private enterprises that receive public funds to provide technical assistance, as INTA only has 150 technicians. Finally, a large number of NGOs receive funds from international cooperation to deliver the same service. Given this context, the conditions are currently adverse for developing agricultural technical assistance markets.

4. The Labor Market

According to the National Census (2005), Nicaraguan economy generates 1,675,550 jobs, thus occupied population representing 96 % of total EAP. Agriculture generates 570,820 jobs which represent 34 % of total occupied population and 80 % of Rural EAP. Other important economic sectors are: Communitarian and personal services (22.9 %), trade (18.9 %) and manufacturing (12.4 %). Construction (5.3 %) and transport (3.9 %) are economic sector with small share of occupied population (INEC, 2006). These results confirm agriculture as the main economic activity for employment, however, services and manufacturing are sector which are enhancing their share. It is important to note that 70 % of manufacturing is produced by Agro-industries, thus, agriculture generate more jobs than it is reflected on primary production national account.
In the period 2000-2005, average salaries have a positive tendency, in córdobas and dollars; from US$ 1.16 in 2000s to US$ 1.28/hour in 2005\(^4\). However, there has been a reduction for agriculture and manufacture while, communitarian services and trade have incremented their average salary (table 2.2.4.a). Agriculture average wage includes professionals, technicians and bureaucrats at public offices and NGOs, and in average is below national salary. Minimal wage is an important data to check, since 166,125 persons (23.5 % of Rural EAP) are occupied on rural jobs with no qualification (INEC, 2006). This population tends to earn a minimal wage of up to US$ 1.8 a day and they are part of the rural workers, and subsistence families.

Trade and services are growing sectors; in the last six years (2000-2005) services generated 115,500 new jobs, and trade 78,800). Manufacture and agriculture generated new jobs as well, but in minor proportions, between 2000 and 2005, Manufacturing generated 54,500 jobs and agriculture 20,400 (BCN 2001, 2006). The Central Bank calculates an unemployment rate of 6.5 % in average and 5.4 % in 2005 (BCN, 2006). However, this statistics includes temporal, partial and sub-employment, in a context in which 63 % of total occupied population is part of the informal sector (BCN, 2003, 2005, 2006; INEC, 2006). This employment instability is reflected by the bank when state that only 51.2 % of occupied population is full employed.

<table>
<thead>
<tr>
<th>Table 20: Average and Minimum Wages in Nicaragua by Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2000</strong></td>
</tr>
<tr>
<td><strong>Monthly Average Salaries US$</strong></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
</tr>
<tr>
<td><strong>Manufacture</strong></td>
</tr>
<tr>
<td><strong>Trade</strong></td>
</tr>
<tr>
<td><strong>Communitarian and personal services</strong></td>
</tr>
<tr>
<td><strong>Monthly Minimal wage US$</strong></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
</tr>
<tr>
<td><strong>Manufacture</strong></td>
</tr>
<tr>
<td><strong>Trade</strong></td>
</tr>
<tr>
<td><strong>Communitarian and personal services</strong></td>
</tr>
<tr>
<td><strong>Central Government</strong></td>
</tr>
</tbody>
</table>


The employment deficit is absorbed by the urban informal sector and migration to Costa Rica. Migration to Costa Rica is an attractive option, given that the rural salary there increased from US$6.0 to US$8.1 a day during 1993-2002, while in Nicaragua the rural salary actually fell from US$1.60 to US$1.10 per day due to exchange rate (Figure 24). Costa Rica provides around 100,000 temporary jobs in agriculture activities, 60% of which are occupied by temporary Nicaraguan migrants. Since the Costa Rican work force is skilled and trained as the result of heavy investment in public education, there is a limited local agricultural work force, thus providing an opportunity for Nicaraguans.

---

\(^4\) Monthly salary divided by 22 days, and after by 8 hours
5. The Land Market

The property problem is a political issue that has not been successfully resolved over the last 16 years. There have been three phases in the rural property conflict. The first was during the 1980s when there was a policy of expropriation linked to the implementation of an agrarian reform program. During this period, the expropriations and land distribution were implemented without any clear registry of the properties involved. In 1990, the new government found that legally speaking the land distribution did not exist: neither the families’ property deeds nor the land expropriations had actually been registered. This created a highly insecure environment as there was foreign pressure to return lands or provide some form of compensation. Since then, there have been several conflicts among indigenous communities and between indigenous communities and the Nicaraguan state or new settlers. There have also been conflicts between expropriated families and the Nicaraguan state or land reform beneficiaries and even among the beneficiaries themselves. This has represented a serious limitation to developing land markets, since the insecurity surrounding land tenure has restricted the sale and purchase of land.

1996 and 1997 saw important changes in the Nicaraguan legislation on land tenure. Changes made to the land reform law mean that since 1996 it has been possible for reformed land to be included in the land markets. Under the former law, reformed land could not be sold, but the new legislation allowed it to be both bought and sold, thus facilitating the land market dynamic. IRAM, 2000 estimates that between 1990 and 2000 a total of 33% of the reformed land was sold to private new landlords, with similar percentages for every sector: 33% of cooperatives land, 30% individual land, 35% of former irregular force’s land, and 33% of rural workers’ common property.
According to Central Bank (2005) 30% of total land has changed from being reformed, community or indigenous land to individual private property. From 1990 to 1994, 15% of the total land was privatized (around 828,000 hectares), a phenomenon linked mainly to the insecurity surrounding the land tenure and titles issued by the government in the 1980s. A second wave took place after 1996, reflected in the fact that from 1994 to 2002 another 15% of the total land became individual private property. Although the percentage is the same as in 1990-1994, there is an increase in the actual amount of land involved as the total land covered a greater area in 1994 than in 1990. During this second wave, 1.33 million hectares were bought by private individuals. In summary, it can be stated that Nicaragua’s land markets have been very dynamic over the last 12 years, with average annual transactions (formal and informal markets) involving 180,000 hectares.

Families who benefited from the land distribution and have not sold their plots are those whose land allows the production of basic crops such as beans, corn, sorghum, rice and vegetables such as tomatoes, lettuce, cabbage and peppers. Families who had no water sources for production were the most vulnerable, selling their land to become rural workers. In the 1980s, reformed land increased tenfold as a percentage of total land, from 4% to 40%. But 12 years after the end of that decade it dropped back down to 10%, with a tendency to fall back to 1978 levels; there is no evidence that these lands have been bought by former landlords (IRAM, 2000).

Land prices depend on agricultural potential and access to highways and productive infrastructure. Given these criteria, Pacific lands tend to be more expensive than those in the central and Caribbean regions. Within the Pacific region, fertile plain lands for industrial crops and suburban areas for fruit production are more expensive than tropical dry areas with potential for cattle production. In the central region, coffee plantation areas in the north connected to urban centers such as Matagalpa tend to be expensive, as do the milk processing areas in the south near Boaco, Juigalpa and Nueva Guinea. Areas with no access to secondary or tertiary roads tend to be cheaper. Finally, the Caribbean region is known as new agricultural frontier and has a deficient road infrastructure. So in these areas land tends to be cheap, allowing extensive cattle production on farms that can be over 700 hectares in size. For instance in suburban areas prices are approximately US$ 4,300 per ha, while in the new agricultural frontier prices are around US$ 60 – 150 per hectare. At the central region, in the cattle production areas, a farm without paved way access might be sold at US$ 500 per hectare, thus, a subsistence family with 20 hectares might obtain US$ 10,000 which means around 170 hectares at agricultural frontier.
Nicaragua developed an extensive production model because there was land available. But there is no longer enough available land to increase production by adding more land. The new agricultural frontier is near to the Caribbean coast and swamps, so renewed social pressure for land can be expected in the next decade. Policies should be designed to enforce investment in intensive production systems to increase the productivity of land, capital and labor in the agricultural sector.

**Figure 26: The Dynamic of Private and Reformed Land**

<table>
<thead>
<tr>
<th>Year</th>
<th>Private</th>
<th>Reformed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>5.5</td>
<td>0.2</td>
</tr>
<tr>
<td>1990</td>
<td>3.1</td>
<td>0.7</td>
</tr>
<tr>
<td>1994</td>
<td>3.9</td>
<td>1.8</td>
</tr>
<tr>
<td>2002</td>
<td>5.3</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Source: MHCP, 2001; ECLAC, 2006

**Figure 27: Share of Total Land by Type of Property**

<table>
<thead>
<tr>
<th>Year</th>
<th>Private</th>
<th>Reformed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>96%</td>
<td>4%</td>
</tr>
<tr>
<td>1990</td>
<td>69%</td>
<td>31%</td>
</tr>
<tr>
<td>1994</td>
<td>84%</td>
<td>16%</td>
</tr>
<tr>
<td>2002</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

MHCP, 2001, WB 2006

6. **Evolution of Relative Prices**

Agricultural product prices have been unstable during the last 16 years. Coffee is the most important export product and its price has oscillated from US$1.4 to $3.3 to $1.0 per kilogram (Figure 28). Gourmet and organic coffee have offered alternatives with higher prices. Meat, rice, peanut and sesame prices have been relatively stable, but the general tendency has been
downward since 1999. The prices of inputs such as nitrogen-based fertilizers are linked to petroleum prices, which are currently rising. As a consequence, the terms of trade for agricultural production have been deteriorating with every passing year. Since Nicaragua depends on primary products, thus, it is susceptible to new players (producers such Vietnam) or price crashes (such as petroleum and coffee). With respect to agricultural machinery, the terms of trade are very unequal. Nicaragua is a classic example for dependency theory: change in production technology for primary products will raise production and prices will go down, while industrial products maintain or even raise their prices, having net deteriorated terms of trade.

**Figure 28: Price of Fertilizers, Coffee, Peanut, Sesame and Beans**

![Graph showing prices of fertilizers, coffee, peanut, sesame, and beans in Nicaragua](image)

Sources: FAO-stat; ECLAC/WB 2006

Agricultural prices tend to be lower than imported inputs. Coffee and beans have positive terms of trade. On average a coffee producer can buy 3.7 kilograms of fertilizer with one kilogram of coffee. However, in recent years this ratio has been getting closer to one kilogram of coffee to one of fertilizer. Meanwhile, bean prices have increased and this product’s terms of trade have therefore improved since 1995, so a producer can buy 1.5 kilograms of fertilizer with a kilogram of beans. Tractor prices have remained relatively stable, but the relationship has been deteriorating over the past decade. The terms of trade are not favorable for Nicaragua with respect to machinery (Table 21).

**Table 21: Relationship between Agricultural Exports and Imports**

<table>
<thead>
<tr>
<th></th>
<th>Coffee</th>
<th>Peanuts</th>
<th>Sesame</th>
<th>Beans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor (unity)</td>
<td>21.8 MT</td>
<td>55.5 MT</td>
<td>36.7 MT</td>
<td>33.4 MT</td>
</tr>
<tr>
<td>Fertilizers Kg</td>
<td>0.4 kg</td>
<td>3.3 kg</td>
<td>1.3 kg</td>
<td>1 kg</td>
</tr>
</tbody>
</table>

A lack of data for 2001 to 2005 has created serious limitations when it comes to determining the effect of the “petroleum crisis” on fertilizer prices and their relationship to agricultural exports.

**Conclusions**

Currently, agricultural production is trade by market mechanisms of offer and demand. There are not controlled prices or direct public intervention for fixing prices. However, 1980s there was a strong
public intervention in order to control trade and distribution of products and inputs. The Sandinista government developed several institutions for trading coffee, rice, cotton, meat and sugar. After 1990, price controls were eliminated and market institutions were privatized, as a result commercial chains were reconfigured.

Export products value chain such as coffee, meat, sugar, sesame and peanut tend to be monopolized either in processing and/or exporting process. Infrastructure facilities for cleaning, pealing, parchment stage, cutting, and packing tend to be concentrated in few economic groups. There is a regional integration process through foreign investment in products such as peanut, sesame and cheese. There are initial levels of integration to global networks such as Starbucks (coffee), Cargill (Poultry and Pork) and Walt-mart through Hortifrutí (fruits and vegetables).

Traditional markets tend to dominate domestic trade; however, supermarkets are incrementing their share of vegetable markets. Supermarkets are part of a global integration with USA network, mainly through Walt-mart. A regional company Horti-frutí tends to monopolize supermarket supply of fruit and vegetables. This company belongs to the Walt-mart group as well.

After 1990, the agricultural input market is controlled, an oligopoly import and distribute 70% of seeds, fertilizers and pesticides. Nitrogenous fertilizers and pesticides are the main intermediate imports for agriculture. Financial markets are developed with commercial banks and micro-finance institutions with approximately US$ 220 million in agriculture loans, covering between 15 and 20% of producers. However, credits are mainly for short term and with interest rate higher than 25%. The new Government will have a public intervention on rural finances market, but it is not clear the implementation process.

Nicaragua has a dynamic land markets, although there are serious property conflicts. Land prices varies from US$ 4 – 7,000/ha at the well connected pacific areas to US$ 60 -80/ha at the new agricultural frontier. In the next decade, land will be a scarce resource and an aggressive land concentration process will be trigged.

Agriculture extension and agricultural insurances markets are not developed. Extension programs are subsidized by public funds and international cooperation. There is not public policies to create an insurance markets, and this is a serious restriction for a farm-contracting system.

Agriculture does not generate enough jobs for rural EAP; around 30 to 40,000 persons find no job every year in agriculture. According to National Census 2005, every year approximately 9,000 new workers are inserted on Rural EAP, agriculture should generate 40,000 new jobs every year in order to hire this new economic population.

Agricultural product prices have been unstable during the last 16 years. Gourmet and organic coffee have offered alternatives with higher prices. Meat, rice, peanut and sesame prices have been relatively stable, but the general tendency has been downward since 1999. The prices of inputs such as nitrogen-based fertilizers are linked to petroleum prices, which are currently rising. As a consequence, the terms of trade for agricultural production have been deteriorating with every passing year.
PART III - SEGMENTATION OF PRODUCTION STRUCTURES: TRENDS OBSERVED AND CONSEQUENCES
CHAPTER 5 - FACTORS GENERATING STRUCTURAL CHANGES IN THE RURAL SECTOR

In the latest 30 years Nicaragua has gone through different political changes with structural consequences (see Chapter 1 -). Before 1980s Nicaragua was a market-oriented economy with a growing urban population. In 1980s, there was a serious twist to State centered economy, with structural reforms on land tenure, trade system and employment. After 1990, Nicaragua turned back to free market economy and monetary policy became the central action axis for public policies.

Agriculture has been key factor in country development, generating most of exports (80 %), and employment 30 %. Current agricultural sector has developed in an international context of prices crisis (cotton, coffee, sesame, and peanut) and commercial liberalization (Economic Integration, Free Trade areas). At the same time, agriculture has adapted to internal factors such as demographic transition with rural population share reduction, land property conflicts due to several agrarian reform processes, climate change with high vulnerability to droughts, public policies focused on attracting investment to services and exporting production zones, and high level of open unemployment and informal sector (Table 22). This is the new context in which rural families developed their activities and generate wealth for their next generations.

In order to adapt their livelihoods to this context of free market and limited public intervention, rural families have to change their labor calendar and money inflows and outflows. They also have to reorganize their labor force and resources in order to take advantages and/or to resist the new economic environment. Depending on their assets, they can be integrated to a specific value chain such as gourmet coffee or quality milk, or they can be excluded from the high prices alternatives. Final results will depend on the product, competitors, technical and quality requirement and the access to knowledge and funds for be integrated on a new value chains.

1. Demography

In the last fifteen years the economically active population (EAP) has been growing faster than the population growth rate, influenced by an increase in the birth rate and a reduction in causes of death. In early 1990 EAP grew more than double respect population, by 1995 EAP was growing 1.3 times higher than population, and between census 1995 and 2005 EAP grew more than population as well. However, there has been a reduction of the gap and the rate in general, since population growth rate is falling dramatically from 3.1 to 1.7 % (Table 23). According to INEC, 1996, 2006, Rural EAP share has been relatively stable, since in the last 15 years, it has reduce from 42.5 to 40.4 % of total EAP, which is a 0.14 % annual reduction.
### Table 22: Factors Generating Structural Changes in the Rural Sector

<table>
<thead>
<tr>
<th>Factors</th>
<th>Facts</th>
<th>Processes trigged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demography</td>
<td>Rural population is growing at rate of 1.5 % annually, compared with 2.0 in 1985 and 2.6 in 1975. Economic Rural Population rate growth is around 4 %. By 2000, 19 % of the population has move to CR and USA</td>
<td>Nicaragua is on a transition phase, rural population growth has decreased, but it is not enough for reduce pressure for natural resources.</td>
</tr>
<tr>
<td>Land Property</td>
<td>Average farm size declining from 47.88 ha in 1971 to 31.45 ha in 2001. Total arable land went up from 4.16 million hectares in 1971 to 6.28 million ha in 2001 (a 51 % increment)</td>
<td>There is a tendency to divide farms because of demographic pressures; at the same time, there is a process of partial or even total reversal of the agrarian reform which has led to land concentration</td>
</tr>
<tr>
<td>Available Resources</td>
<td>In general Land as restricted resource, water as restricted resource in dry zone, El Niño effect become a two year cycle phenomenon</td>
<td>There is a risk of social instability due to increment of landless families. There are serious limitation for crops production in Tropical dry zones and at the same high level of vulnerability to drought period provoked by El Niño</td>
</tr>
<tr>
<td>International Prices</td>
<td>Collapse of cotton, Crisis in coffee prices. However, little diversification of the export structure. Peanuts are the only new significant export crop. Nicaragua export products went from 31 in 1970 to 20 in 1990, 30 in 1995 and 36 in 2004</td>
<td>Coffee (30 % in 1989 to 20 % of Ag. Exports in 2004), cattle (stable at 17 %) and sugar (stable at 5.5 %). Seafood increased its share from 6.7 % in 1989 to 19 % in 2004, Dairy products increased its share from 0.03 % in 1989 to 4.5 % in 2004, live animals have a similar path from 0.3 % to 5.3 % of exports</td>
</tr>
<tr>
<td>Trade Policy Re-structure of sector</td>
<td>As result of the liberalization and integration to the Central American market and Mexico: alive cattle, dairy products, foreign investment. Average tariff went down from 54 % in 1985, to 10.7 % in 1995, 10.9 % in 2000.</td>
<td>There has been a parallel process of traditional products upgrading and diversification. Coffee and dairy products are the most important examples of this trend. Organic and gourmet coffee, cheese and yogurt exports to Central American and US markets,</td>
</tr>
<tr>
<td>Public Policies for Investment</td>
<td>Non agricultural alternatives as places in rural areas such as Exporting Production Zones. Temporal migration as a way to finance productive cycle</td>
<td>There is a Re-structure of rural families livelihoods</td>
</tr>
</tbody>
</table>
Table 23: Nicaragua: Economic Active Population, and EAP Growth Rate by Origin

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>EAP National</th>
<th>Urban EAP</th>
<th>Rural EAP</th>
<th>% of Total EAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>3824</td>
<td>1214</td>
<td>698</td>
<td>516</td>
<td>42.5</td>
</tr>
<tr>
<td>1995</td>
<td>4427</td>
<td>1478</td>
<td>849</td>
<td>629</td>
<td>42.6</td>
</tr>
<tr>
<td>2005</td>
<td>5142</td>
<td>1749</td>
<td>1042</td>
<td>707</td>
<td>40.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Año</th>
<th>Population Growth</th>
<th>EAP Growth rate</th>
<th>Urban EAP Growth rate</th>
<th>Rural EAP Growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>3.1</td>
<td>6.5</td>
<td>6.9</td>
<td>5.9</td>
</tr>
<tr>
<td>1995</td>
<td>3.2</td>
<td>4.3</td>
<td>4.3</td>
<td>4.4</td>
</tr>
<tr>
<td>2005</td>
<td>1.7</td>
<td>1.8</td>
<td>2.3</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Sources: INEC, 1996, 2006; Gomez, 2005

In the fifteen year, national unemployment rate had three clear-cut stages: 1980s with 5.1 % in average, as result of an important increment of public jobs (from 40,000 in 1980 to 107,000 in 1989). A second stage at 1990s with 12.9 % average; in the early 1990s, unemployment was a direct result of the structural adjustment involving the reduction of the state and credits and the privatization of public companies (Spoor, 1995). And a third stage at 2000s with employment rates similar to those in 1980s between 5.6 and 7.8 %.

Figure 29: Unemployment Rates 1980-2005


Unemployment could be even higher, but temporary migration flows has been an exit which allow rural families to finance economic activities or self-employment and informal sector is an important share of occupied population. According to CBN (2000, 2003, 2004 and 2006), informal sector represent around 63 % of total occupied population. Formal sector with stable jobs and social security represents only around 37 %; as a consequence, it is possible to have higher rates in periods of time (Table 24). For instance, according to CBN (2006) in 2005 only 51.2 % of occupied population had a job the whole year, 13.2 % had a partial job, 30 % was sub-employed (had a job for a week or two) and 5.6 % was unemployed.
Table 24: Weight of the Informal Sector in the Economy

<table>
<thead>
<tr>
<th>Year</th>
<th>Formal Sector</th>
<th>Informal Sector</th>
<th>% Formal</th>
<th>% Informal</th>
<th>Unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>672000</td>
<td>1137000</td>
<td>37.1</td>
<td>62.9</td>
<td>6.0</td>
</tr>
<tr>
<td>2003</td>
<td>651000</td>
<td>1266000</td>
<td>34.0</td>
<td>66.0</td>
<td>7.8</td>
</tr>
<tr>
<td>2004</td>
<td>732000</td>
<td>1241000</td>
<td>37.1</td>
<td>62.9</td>
<td>6.5</td>
</tr>
<tr>
<td>2005</td>
<td>763000</td>
<td>1318000</td>
<td>36.7</td>
<td>63.3</td>
<td>5.6</td>
</tr>
</tbody>
</table>


Rural EAP is growing in absolute and relative numbers. In 2000s around 9,000 persons has been added to the active population every year (Table 25; Figure 30). Rural unemployment rate tends to be higher than national; for instance in 1995 rural was 13.7 % and National 11.8, in 2000 12.6 % in rural and 6 % in national. 2005 is a different path, since national unemployment is higher than rural. This might be explained by temporal migration and by the sub-employed population rate, however, this study did not accessed to this level of detail.

Table 25: Rural Jobs Annual Deficit

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural EAP</th>
<th>Annual Cohort</th>
<th>Occupied rural Population</th>
<th>Rural Jobs Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>% of Rural EAP</td>
</tr>
<tr>
<td>1991</td>
<td>536000</td>
<td>20000</td>
<td>463000</td>
<td>86.4</td>
</tr>
<tr>
<td>1995</td>
<td>629000</td>
<td>29000</td>
<td>543000</td>
<td>86.3</td>
</tr>
<tr>
<td>2000</td>
<td>664309</td>
<td>8256</td>
<td>580600</td>
<td>87.4</td>
</tr>
<tr>
<td>2005</td>
<td>707176</td>
<td>8789</td>
<td>675880</td>
<td>95.6</td>
</tr>
</tbody>
</table>

Source: INEC, 1996, 2006

Figure 30: Rural EAP Tendencies, 1990-2005

2. Available Resources

The area of Nicaraguan territory covered by agricultural land has been growing since the 1950s, although it did stagnate in the 1980s due to the civil war. In 1963, an agrarian census calculated that there were 3.84 million hectares of agricultural land. Eight years later the figure was 4.16 million hectares, meaning that a further 40,000 hectares had been incorporated into agricultural production every year. In 2001, the agrarian census reported a total of 6.28 million hectares, with an average of 106,000 hectares incorporated into agricultural production every year.

An analysis of forestry areas between 1983 and 2000 (MARENA, 2004) shows that the central region was hardly deforested at all in 1980s. This idea supports the hypothesis that high levels of deforestation took place after 1990 with peace process and agriculture reactivation policies. The new agricultural frontier only excludes core natural reserve and swamp areas (Figure 31). Nowadays, there are limited areas that can be converted to agricultural land and the number of land tenure conflicts is expected to rise, as the agricultural frontier is bordering indigenous communities and natural reserve areas (Nitlapán, 2005).

Figure 31: Nicaraguan Forestry Areas, 1983-2000

According to the 2001 National Census, cattle production is the main form of land use, with pastureland accounting for 47.7% of the total agricultural land. This is mainly located in the tropical dry zone in the Pacific region and in all Central and Caribbean regions for milk and meat production. Most areas of the Central and Caribbean regions are located in tropical humid zones and therefore have waterways and pastureland for cattle production. Forest areas represent the second main use, occupying 14.2% of total agricultural land. These are located in the Caribbean zone, mostly around natural reserves, although there are also limited areas in the Pacific and Central regions; most of them natural reserves around volcanoes (INEC 2002; Nitlapán, 2005). Annual crop production accounts for 10.7% of total agricultural land and perennial crops for only 4.7%. Meanwhile, 19% of the land is fallow, recovering a certain level of fertility or pasture. Fallow land therefore covers a larger area than perennial crops and forestry land added together. According to this data, 1.2 million hectares are not
used by Nicaraguan farmers in any strategy of rotating areas, which is key to understanding land efficiency and productivity in Nicaragua (INEC, 2002).

**Figure 32: Nicaraguan Land Use, Agrarian Census 2001**

![Nicaragua: Land use for agricultural Production as percentage of total land](image)

![Nicaragua: Land use for agricultural Production in million hectares](image)

*Source: INEC, 2002*

**Water Resources and Irrigation**

There are two main sources of water for agricultural production: rainfall and subterranean water (Figure 33 and Figure 35). There are three basic areas in terms of rainfall: the tropical humid zone, which covers most areas of the central region and the whole Caribbean region. This area has no risk of drought and has coffee, cocoa, rice and cattle production systems. The second consists of tropical areas with two defined seasons: six months with rain and six months without. Farmers can sow twice in a year in May and September and farmers with irrigation can also sow at the end of November/early December. The Pacific and northern areas form part of this tropical zone, which could be affected by droughts related to the El Niño phenomenon. Finally, the tropical dry zone covers an area in the form of an X, which includes areas of the northern Pacific and the lake areas. It
is a zone with a severe risk of drought (MAGFOR-SIG, 2006, Nitlapán, 2005). Farmers tend to sow once a year, while extensive cattle production systems have also been established, encouraging a land concentration process. This zone has a high percentage of poor families, who tend to migrate to Costa Rica (Nitlapán, 2005; CEPAL; 2006).

The annual agricultural cycle has three main seasons: May, September and November. In every season there is a sowing period that depends on the rainfall. There are four areas with different drought risk levels. In the last 15 years, the tropical dry zone has been the most affected by droughts linked to the El Niño phenomenon. According to INEC, this is also the area with the highest migration levels. This rural population has only one production season (September), as there is limited rainfall during May and November. The dry zone has developed severe droughts since 1992 and rainfall and waterways are scarce due high levels of deforestation and the extensive cattle production system. The Pacific plains and the central region are productive areas with low drought risk levels. The Pacific plains are an agro-industrial production area in which sugar cane, peanuts, sesame and soybeans are the main production systems. These production systems encourage land concentration in order to introduce machinery and economies of scale at harvest time. The central region has a high-risk area around the lakes. This is an extensive cattle production area with land concentration (as in the Pacific), which is forcing the local population to migrate internally to the Caribbean coast or externally to the USA. Being a tropical humid zone, the Caribbean region has no risk of drought, but it does have high levels of deforestation.

Figure 33: Average Rainfall

Source: SIG-MAGFOR, 2006
Subterranean water for irrigation is a key asset on the Pacific plains. There are also some such water sources in the central region, mainly in valleys such as Sébaco, San Pedro de Lovago and Santo Tomas. Irrigation areas, around 97,000 hectares according to Census 2001, in the Pacific region have historically been owned by agrarian capitalists and were initially used for cotton production. They are currently used to produce sugar, peanuts, soybeans and tobacco. In the central region, such areas are also owned by agrarian capitalists producing rice, onions, and fresh vegetables in the north and cattle in the south.

Pressure for land and resources such as water and inputs has involved three clear stages. From 1950 to the 1970s, pressure for land in the Pacific region forced an internal migration to the central region from 1960 to 1979. During this period large amounts of fertilizer were imported and there were high levels of public investment to colonize the central and southern central regions. During the second period, there was an increase in the number of farms and the importation of pesticides, tractors and fertilizers, but the central region became a war zone. As a result, there was a low level of pressure for land, with rural migration to urban or populated centers (Nitlapán, 1996). After 1990, the peace process facilitated the return of rural families to the central region. Once the central region had been repopulated and the land distribution process implemented, the land markets started to concentrate land in cattle production areas in the southern central region, stimulating rural migration to Caribbean areas. In 1983, the forest areas were very similar to those in the 1970s, but in the 2000s the areas covered by forestland mark the new agricultural frontier (MARENA, 2004). The land between the two frontiers (1983 and 2000) corresponds to the old agricultural frontier and now forms the central region.
3. Land Tenure and Property

In the last 40 years, Nicaragua had almost doubled its number of farms, from 102,201 to 199,549 (95%). However, there have been two phases. From 1963 to 1971 there was an increase in agricultural land, but the number of farms fell by 15%. This could be interpreted as a land concentration process consistent with the expansion of agro-industrial crops in the Pacific region. From 1971 to 2001 there was a 130% increase in the number of farms. At the same time, the total amount of agricultural land increased from 4.16 to 6.28 million hectares, with an average annual increase of 106,000 hectares and an annual growth rate of 1.7% (INEC, 2002). This was made possible by policies aimed at encouraging the colonization of the agricultural frontier in the 1960s and 1970s, the land reform process during the 1980s and the land distribution linked to the peace process in 1990-1994. It is possible that there were more farms in 1995, but in 1996 reformed areas were sold when the Agrarian Reform Law was amended to ensure land tenure and facilitate rural markets. However, Nicaragua did not carry out any agrarian census between 1971 and 2001 and there is no record of the change in the agrarian structure during the 1980s.

Table 26: Land Tenure Structure, 1963-2001

<table>
<thead>
<tr>
<th>Size</th>
<th>1963</th>
<th>1971</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Area</td>
<td>Number</td>
</tr>
<tr>
<td>0 to 7 ha</td>
<td>50.8</td>
<td>3.5</td>
<td>44.3</td>
</tr>
<tr>
<td>7.1 to 35 ha</td>
<td>27.4</td>
<td>11.2</td>
<td>31.5</td>
</tr>
<tr>
<td>35.1 to 70 ha</td>
<td>10.7</td>
<td>12.4</td>
<td>12.1</td>
</tr>
<tr>
<td>70.1 to 140 ha</td>
<td>6.2</td>
<td>14.1</td>
<td>6.5</td>
</tr>
<tr>
<td>140.1 to 350 ha</td>
<td>3.5</td>
<td>17.6</td>
<td>3.7</td>
</tr>
<tr>
<td>more than 350 ha</td>
<td>1.5</td>
<td>41.2</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
There have been three stages to land distribution. The first was from 1963 to 1971, when 70% of the population accessed only 10% of agricultural land. The number of farms with less than seven hectares was reduced by 26%, while the number of farms with more than 350 hectares rose by 10.4%. This can therefore be labeled an anti-peasant period, which is consistent with an agro-industrial period involving the monoculture of cotton, cattle, bananas and coffee. There were important changes in land distribution from 1971-2001, the most important of which is the share corresponding to the biggest 10% of farms, which was 71% in 1963, increased to 73% in 1971, but then fell to 60% in 2001. The number of farms with less than 70 hectares increased by more than 100% and the number of farms with more than 350 hectares fell by 3.4% (Strama, 1999; IRAM 2000; Perez, 2001). Despite the land reform process of the 1980s and early 1990s, Nicaragua still has an unequal land distribution with high levels of concentration, which tends to reduce small and medium farmers’ access to land.

After 1990s, land property became a central issue for agriculture, since most of the 1980s titles were not part of the property register and exist areas with more than an owner. According to IRAM,(2000) property conflict are related to: internal conflicts for indigenous properties, conflicts between central government and indigenous communities, conflict between new settlers and indigenous communities.

Figure 36: Lorenz Curve for Land Tenure 1963, 1971 and 2001

Source: CBN, 2006

at the agricultural frontier, conflicts for same areas or farms, conflict between central government and landlords affected by agrarian reforms and internal conflicts among cooperatives member for individual property. Bastiaensen et al, (2006) consider this situation as “substantial chaos” which forces rural population and rural markets to adapt itself under informal relationship and transactions, based only on local social capital.

4. Domestic and International Prices

Local prices have been mainly affected by monetary policies, particularly the management of the deficit and inflation. The main structural changes with respect to inflationary processes are linked to the public policies of the 1980s. During the 1980s there were price control policies and parallel
markets, which boosted the informal sector. The war economy, subsidies to agriculture and industry and the size of the Nicaraguan state put the country on the road to hyperinflation. From 1984 to 1985 prices rose by 217% and then inflation skyrocketed to a world record between 1987 and 1988 when prices increased by 14,497.5%. This led to a situation in which the currency was being devalued twice a week.

In 1988 Nicaragua started introducing monetary policies to control inflation, including a new currency, state reduction, deficit controls and the reduction of the price control policies. As a result, inflation fell to a relatively low level (4,709%) compared with 1988 (Figure 37). Structural adjustment policies were applied starting in 1990, including a reduction of the Nicaraguan state, privatization, a new currency, commercial liberalization and the elimination of state-run export and import companies. The public companies created for domestic trade were also eliminated and prices are therefore market-driven. However, sugar, meat and dairy products were protected from the international markets as key export and job-creation industries.

*Figure 37: Nicaragua’s Inflation Rates, 1961-2003*

![Nicaragua: Inflation rates Central Bank of Nicaragua](image)


In 1991, important monetary policies were applied leading to a major devaluation—from 1 “Córdoba Oro” per dollar, to five per dollar—and the establishment of a controlled devaluation rate. There were also incentives to increase exports and attract foreign investment. As a result, inflation has remained under 20% since 1994 and there has been a reduction of the speculative currency and goods markets. It is important to note that Nicaragua also accessed IMF facilities for the application of structural adjustment programs. At the same time, from 1990 to 1996 the country’s bilateral foreign debt was cancelled by several countries, significantly reducing debt service payments as the total debt fell from US$11.996 billion dollars in 1994 to US$5.961 billion in 1996, representing a reduction of 50.3%. In 2000, Nicaragua was included in the Highly Indebted Poor Countries initiative aimed at canceling 80% of its total debt with the Paris Club. This process culminated in 2006.

International prices have also generated structural changes in Nicaragua. Cotton production led to agricultural modernization in the 1950s and 1960s and cotton was the main export product until 1976. During the 1980s and 1990s, however, cotton prices were low and production costs increased every year due to pest management. By 1993 cotton production had ground to a stop, creating a rural crisis in the Pacific plains. Soybean was the first replacement, but the local vegetable oil industry went bust
in 1995 leaving producers without a buyer. Peanut production was the second alternative and became
the main crop in the Pacific plains. This time the processing industry was developed initially by local
private and public investment. Then after 2000 there was foreign investment in the processing and
exportation to the US and Central American markets.

Coffee became the main export product in 1977 and has driven agricultural exports ever since. In the
1980s coffee prices were favorable for the producers, but the exporting process was controlled by
public enterprises and coffee growers received no market incentives. The coffee plantations were
located in war zones in the central region and the urban labor force was mobilized to harvest and
protect the production. By the 1990s, there were public policies to promote coffee plantations,
including long-term credits from the public banks. However, international prices were unstable during
this period (Figure 38). In 1991 and 1992 prices dropped to US$45.9 and US$47.6 respectively for a
45.4 kg bag. In 1996 and 1997 they rose again to US$149.1 and US$130.4, but in 2000/2001 Vietnam
became a major player in the traditional coffee market, producing low-cost coffee, and as a result
international prices fell again to US$43.2 and US$46.5. This instability led to a market change, with
Nicaragua introducing a process of product differentiation aimed at the gourmet and organic markets.

Figure 38: International Prices for Agricultural Products

Source: CBN, 2002

Meat prices have been stable over the last decade. There are incentives to change the way in which
meat is traded. Initially, the main buyers were industrial slaughterhouses, but since 1998 Mexican and
Salvadoran middlemen have been buying live animals, increasing exports from US$8 million to
US$36 million. Dairy products are being differentiated by markets. Cheese production has been
segmented into three types of market: high quality markets such as Mexico and the USA; markets
demanding basic international standards, such as El Salvador and Honduras; and local supermarket
networks and domestic markets. Between 1997 and 2004, the value of dairy exports has doubled from
US$2.11 million to US$4.53 million. This market changes has promoted family’s adaptation to new
markets (see cases of cheese and coffee)
5. General Export Structure and Degree of Diversification

The World Bank considers export diversification to be an indicator of successful trade policies. Countries whose exports are based on few crops will grow slower and be vulnerable to price fluctuations or environmental disasters. According to the Work Bank (2005), since 1997 Nicaragua has increased its share of non-traditional products and textile manufacturing, with a tendency to concentrate exports in the latter. Nicaraguan exports have historically depended on agricultural exports and are therefore vulnerable to coffee price crashes and the environmental effects of phenomena such as El Niño or hurricanes. From 1960 to 1992 agriculture represented more than 70% of total exports. Since 2000, agriculture has recovered its previous levels and currently represents more than 80% of total exports, displaying a behavior similar to the days of the cotton boom (Table 27).

Table 27: Share of Agriculture on Total Exports in US$ Million and Relative Numbers

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Exports</td>
<td>605.0</td>
<td>516.0</td>
<td>604.5</td>
<td>755.6</td>
<td>857.9</td>
</tr>
<tr>
<td>Agriculture Products</td>
<td>482.1</td>
<td>446.0</td>
<td>487.4</td>
<td>613.8</td>
<td>691.6</td>
</tr>
<tr>
<td>Crops</td>
<td>213.1</td>
<td>177.8</td>
<td>201.7</td>
<td>266.4</td>
<td>292.6</td>
</tr>
<tr>
<td>Seafood</td>
<td>88.0</td>
<td>90.7</td>
<td>80.8</td>
<td>92.6</td>
<td>97.3</td>
</tr>
<tr>
<td>Agro-industry</td>
<td>169.0</td>
<td>164.1</td>
<td>184.4</td>
<td>232.6</td>
<td>277.8</td>
</tr>
<tr>
<td>Cheese</td>
<td>12.0</td>
<td>13.4</td>
<td>20.5</td>
<td>22.2</td>
<td>23.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Exports</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Agriculture Products</td>
<td>79.7</td>
<td>86.4</td>
<td>80.6</td>
<td>81.2</td>
<td>80.6</td>
</tr>
<tr>
<td>Crops</td>
<td>35.2</td>
<td>34.5</td>
<td>33.4</td>
<td>35.3</td>
<td>34.1</td>
</tr>
<tr>
<td>Seafood</td>
<td>14.5</td>
<td>17.6</td>
<td>13.4</td>
<td>12.3</td>
<td>11.3</td>
</tr>
<tr>
<td>Agro-industry (meat, sugar)</td>
<td>27.9</td>
<td>31.8</td>
<td>30.5</td>
<td>30.8</td>
<td>32.4</td>
</tr>
<tr>
<td>Cheese</td>
<td>2.0</td>
<td>2.6</td>
<td>3.4</td>
<td>2.9</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: CBN, 2006, 2005 and 2004

Agricultural exports are somewhat diversified, with more than 30 crops exported to several regions of the world (Figure 39). The USA is the main export destination country, but Central America is the most important regional area for international trade. Europe and the rest of Latin America also account for an important share of Nicaraguan exports. Meanwhile, Nicaragua is trying to open new markets in Chile, Taiwan, Japan and Mexico.

Although Nicaragua exports over 30 products, just five of them account for between 60% and 75% of the total value of agricultural exports: coffee, meat, fresh fish, crustaceans and sugar cane. Coffee is the most important export product for the Nicaraguan economy (20-30% of total agricultural exports) but a recent price crisis has led to high levels of rural unemployment in coffee producing areas, a reduction of exports and an increase in the trade deficit. Cotton was a key export product until 1976. By the 1960s, cotton exports represented more than 40% of total exports, but after 1992 cotton exports plummeted and no crop replaced them. Meat is a growing sector and the free trade agreements with Mexico and the USA are encouraging this sector to increase the export of both live animals and manufactured products. As a result, Nicaragua’s economy currently depends on five basic products (coffee, seafood, meat, and sugar), making it a vulnerable and dependent economy (Figure 39).
Figure 39: Number of Nicaragua’s Agrarian Export Products.

![Graph showing the number of Nicaragua’s agrarian export products over time.](image)

Sources: MIFIC, 2000; FAO-Stat, 2006

Figure 40: Weight of Nicaragua’s Traditional and Non-traditional Export Products

![Graph showing the weight of traditional product exports on total exports.](image)
Nicaragua: Weight of Non-Traditional Export products on Total Exports

CHAPTER 6 - RE-STRUCTURING OF RURAL FAMILIES’ LIVELIHOOD STRATEGIES

1. A Historical Review

The segmentation of production structures and rural families is a long term process which can be traced to the colonial period. During the history, a small proportion of families has been accumulating land and capital, while most of rural families (81% by 2001) have become subsistence and landless families. During the colonial period and the first fifty years as Republic (1838–1890) there was cocoa, indigo, cattle and sugar producer landlords connected to local and regional markets. At the same time, there were a high proportion of rural families living on subsistence economy (Nitlapán, 1996). The Agrarian Reforms Laws in 1858, 1862 and 1877 were enacted in order to legalize farms from 350 to 1,400 hectares in public lands at the Pacific and Central areas for cattle producers (Perez, 2001).

From 1890 to 1920s Nicaragua was inserted on international market through coffee production and export. Public policies to attract external investors, mainly from Germany, and those policies excluded traditional peasants; a process that was repeated in 1950 and 1960s. Traditional peasants were connected to traditional markets chains of corn, beans, fruits, meat and vegetables (Nitlapán, 1996).

The 1950 to 1970s modernization era, segmented agrarian capitalist in three groups: a well diversified group which invest in financial markets, agro-industry and capital intensive production system. A second group, mainly agrarian investors with capital-intensive production system associated with cotton, sugar cane and banana at the Pacific Region. And a third group was associated with labor and land intensive production system such as coffee, and cattle at the Central region (Baumeister, 1982; Nuñez, 1980; Wheelock, 1975).

Nitlapán (1996) argues that there were not only agrarian capitalist and rural workers. Peasants and Farmers were segmented as well into two key groups: smallholders at Pacific region associated with grains and vegetable production, located at sloped areas in Pacific region. And a second group of settlers at Central region associated to corn, rice, cattle, milk, cheese, and coffee production. All of them, connected with different productive and value chains to urban cores. By 1980, Kaimowitz (1986) estimated that Farmers and Peasants represented around 23% and subsistence families 67%.

The 1980s Agrarian Reforms affected 31% of total land and new actors and production chains were established by Sandinista Government. Public enterprises and cooperatives were basic units for agrarian policies and rural market interventions focused on urban consumer protection (Spoor, 1995). There were approximately 76 agro-export public enterprises with 1.1 million hectares by 1982. Cooperatives initially were few, but by 1986 there were 1,093 owning 0.43 million hectares. On the supply side, credit, inputs and technical assistance was provided by public agencies with high level of subsidies such as Nicaraguan Agricultural Inputs Enterprise (ENIA), National Seed Enterprises (EMPROSEM), National Agricultural Machinery Enterprise (AGROMAQ), and National Enterprise for Agricultural Mechanization (AGROMEC).

On the demand side, the Sandinista government initially organized two main public institutions for domestic trade of grains (National Basic Foodstuffs Enterprise, ENABAS) and distribution (Ministry of Internal Trade), and several specific institutions for international trade such as Nicaraguan Coffee Enterprise (ENCAFE), National Rice Enterprise (ENARROZ), and Nicaraguan Cotton Enterprise (ENAL). However, traditional peasants and farmers did not accepted this new way of domestic and international trade. By 1985 with an international blockade and civil war, there was food scarcity and Sandinista government liberalized domestic trade, parallel markets became an alternative for...
traditional peasant and for urban consumers (Spoor, 1995). The market liberalization process was
deepened on 1988 and subsides were reduced, after 1990 with market openness a new rural social and
economic structure was established.

The structural adjustment and stabilization program in 1990-1992 reduced public intervention,
eliminated massive subsidies, privatized domestic and international trade institution and liberated
trade and prices of agricultural markets. Public policies were oriented to promote export products
mainly coffee, sugar, meat, banana and seafood. Property issue became essential and a serious
restriction for reformed areas families who have no collateral to access financial markets.

By 1994, there were an idea of the new social and economic structure and agrarian dynamics.
Nitlapán (1996) identified eight social sectors including: rural workers, subsistence families,
traditional peasants, farmers, agrarian reform beneficiaries and capitalist; all of them with different
levels of integration and/or exclusion of value chains. Besides, six macro-regions with different
dynamics were proposed. Every social sector have different dynamics depending on its macro-region
dynamics, by 1996, 21 different types of families with similar recourses, production system and
market integration.

The 2001 Census was an opportunity to test social sector and agrarian dynamic hypotheses. Due to
different conflicts and natural event, Nicaragua performed a census in 1963, a partial census in 1971
and for 30 years there was no census, only surveys and estimates. Agrarian Census allowed the
counting of farms (199,549), number of individual producers (196,909), and cooperatives (610) living
in those farms. Individual producers were classified (Nitlapán, 2005) and 59% of them are
subsistence families, who are mostly integrated to local markets of grains. These families depend on
labor markets to complete their annual income. Peasants represent 31.7 %, these are families whose
economic system depend on agricultural income. They generate enough employment for their
families and temporal jobs in labor picks period such as harvesting. Farmers represent 6.6 % of
families. This social sector is connected to transports and first processing services. They hire
permanent workers and tend to specialize in agro-industrial crops or cattle production. Finally,
Agrarian capitalist represent 2.7 %, and it is the most capitalized social sector, generally, connected
with export chains and with access to technical assistances and credit.

Depending on their actives, livelihood and specific crops, families might be integrated or excluded
from one or more value chain. For some families, it’s economically rational to be integrated to local
markets and excluded from international market. At the same time, there are types of families
integrated to traditional and high quality value chains, in order to reduce risks. There is not a general
rule for all crops and agricultural product, each case most be analyzed in their sub-sector and macro-
region (Perez, F. 2006).

2. Production Structure Segmentation: The Cases of Cheese
and Coffee

In the trade liberalization context, Nicaraguan rural policies have target-exporting chains as the main
areas to promote and support (MAGFOR, 2005). However, rural families have adapted their
economic system not only for export, but also for domestic markets. Depending on social sectors,
families might fit or not quality standards required by international markets. Two important products
for this analysis are coffee and cheese for the share of peasants and cooperatives on these production
systems (MAGFOR-IICA, 2004).

Coffee is not only the main export product for Nicaragua exports (14 – 15 % of total exports, 6 % of
GDP), but also it integrates 43,000 farms. There are interesting changes in this production system,
since coffee has several productive and value chains: gourmet, fair trade, and traditional and rural
families are adapting their production system to each chain requirements. The Cheese value chain is
one of the most dynamic in the last 10 years. International Cooperation and public funds have increase cooperative’s share on milk gathering and cheese transformation and exporting process. Cheese represents 90% of dairy exports and 44% of milk production (Nitlapán, 2004), exports went from US$ 12.0 in 2001 to 23.9 million in 2005 (CBN, 2006, 2005, 2004), a 99% increment in 4 years. Both productive chains were selected in order to show how families has been integrated or excluded of commercial chains, by type of product and social sector.

2.1. The Cheese Agro-industrial Value Chain

According ECG (2003), the dairy cluster represents around 7% of agricultural GDP and 2% of total GDP. This cluster includes 97,000 farms which generate an estimated of 100,000 permanent jobs. Dairy products and specifically cheese agro-industrial chain of value is one of the best examples to present the segmentation hypothesis. There are different cheese markets with different quality standards. Cheese for USA and Mexican markets has to accomplish several requirements such as: cows must be certificated as free of diseases; cows must be milked in a clean infrastructure with roof, water, and metallic containers. Processing plant should be certificated as well by sanitarian, environmental and Mexican and USA authorities (Figure 41, pink labels). Cheese for El Salvador has two qualities: a similar standard to USA and a low standards quality cheese market. This low standards chain does not require any type of certifications, therefore is a low cost system (Figure 41, yellow labels). Local markets have three main segments: supermarkets with quality standards (Mendoza, 2003), National and local markets without quality standards and retailers who are small business where low-income consumers buy this product (ECG, 2003, Flores and Artola, 2004).

Figure 41: Agro-Industrial Chain of Cheese: Rural Families and Commercial Circuits

Source: Perez, 2006
PARMALAT, an Italian investor group, is the main dairy products industrial processor in Nicaragua processing 25% of total milk production. ESKIMO a national group with a strategic alliance with YOPLAIT is the second and NESTLE is the third one. All of them have own milk gathering centers and contracts with agrarian capitalist and farmers with freezing systems. Producers associated to these gathering centers must accomplish quality standards and their milk is classified in three categories; depending on category prices are different (Dobson, 2003). Besides, PARMALT granted base prices for a quota in raining season when volumes are double. In order to fulfill all requirements in this chain of production, producers must invest around US$ 10,000 (Nitlapán, 2006); consequently, farmers and capitalist are social sectors integrated. Peasants and subsistence family have serious structural restrictions for accessing long term credits and milk prices are unstable, therefore they tend to be excluded. PARMALAT and ESKIMO not only exports, but also supply the supermarket chains and they have the own distribution system for urban retailers for fluid milk, ice cream, yogurt, acid cream and cheese.

Since 2000 two new actors are increasing their share of milk processing: cooperatives and Central American investors. In 1990s international cooperation, financed cooperative organization and gathering centers, by the end of 1990s, these cooperatives not only gathered milk but also started processing cheese for Salvadorian markets with public funds support. Cooperatives such as CAMOAPAN actually are exporting to El Salvador cheese with high quality, and at the same time, they supply the supermarket chain in domestic markets.

CAMOAPAN with other six cooperatives and private processors create the Dairy products production and commercial chamber (CENISLAC). Cooperatives are formed by peasants and farmers who have more than 10 cows and more than 20 hectares. Cooperatives facilitate credits for investment, inputs and technical assistances to their partners. However, most of cooperatives only offer gathering and freezing services. This second group of cooperatives has a double strategy for milk markets, since they supply to PARMALAT and CENISLAC and at the same time they supply to other chain with low quality standards or traditional cheese makers. Producers and traditional middlemen are suppliers to these cooperative gathering centers. (Elegeerd, 2001; Durstewitz and Escobar, 2006)

The second actors are Salvadorian, Honduran and Guatemalan investors who are cheese processors and own gathering centers as well. 80% of total exports of cheese is exported to El Salvador, and this is an expanding market; thus, there are Salvadorian entrepreneurs who want to monopolize the whole cheese chain from retailer, imports and production stages. Several Salvadorian cheese-processing centers have been established on milk production areas. This is a low standards quality chain of value with low prices for producers; however, most of subsistence families, peasant and traditional middlemen are their suppliers, since the average price offered by PARMALAT is not enough to justify the investment for a technical change to produce high quality milk (Nitlapán, 2006).

Domestic market can be divided into national markets located at Managua, where retailers from every part of Nicaragua go to buy cheese and local markets located at municipalities where families and retailers buy this product. Traditional cheese producers and isolated farmers are the main suppliers for domestic products. Traditional cheese processing plants have low level of technology and sanitary requirements. They are linked with rural and urban traditional middlemen; then, they can collect milk and access national markets. This is also a low prices chain of value but they gather milk from subsistence families and peasant with low level of capital (Flores and Artola, 2004; Nitlapán 2006; Perez, 2006).

At the new agricultural frontier there are important amount of isolated peasants whose farms are four to five hours from any road. This structural constraint forces them to process cheese in their farms and twice a week peasants trade their product in a point where vehicles from urban cores arrive to buy agricultural products and sell non agricultural ones. These urban middlemen supply local markets and some of them national markets.
Subsistence families, peasants, farmers and agrarian capitalists are inserted in different circuits of the agro-industrial chain of cheese. Due to quality requirements and the high cost of money for investment, agrarian capitalists, farmers and members of cooperatives are inserted to high prices chain of value. Subsistence families and low level of capital peasants are inserted in low prices chains and depend on middlemen. A single company does industrial cheese processing, dairy products processing by three, creating an oligopoly. Semi-industrial cheese processing is done by cooperatives and they are organized in a commercial chamber and form another oligopoly. Cheese commercial circuits are useful to show exclusion, and integration of different social sectors and the vertical integration to an oligopoly whose goal is to control Central American dairy markets (Nitlapán, 2006b).

2.2. The Coffee Agro-industrial Value Chain

According to INEC (2002), Coffee production areas represent 43,000 farms and 130,000 ha, 26 % of total farms and 15 % of arable land. Peasant production (lower than 14 ha) represents 67 % of coffee producer and 29 % of coffee plantations. This social sector with low levels of technology yields 114 to 500 kg/ha of coffee. Farms with 14 to 35 ha represent 19 % of total farms and 18 % of coffee plantations. This social sector has access to financial services and obtains 900 kg/ha of coffee. Finally, farms with more than 50 ha represent 13 % and 53 % of coffee plantations. This sector is well integrated to commercial chains for exports and rural markets of finances and technical assistances. In average, these farms yield 1,364 kg/ha (MAGFOR, 2004). Peasant production represents 47 % of coffee areas and 87 % of total farms, but their yields are significantly lower than agrarian capitalist. According to IICA (2003) 56 % of coffee plantations are managed under traditional system (low densities and use of inputs).

Figure 42: Agro-Industrial Coffee Chain: Rural Families and Commercial Circuits

<table>
<thead>
<tr>
<th>PRODUCTION</th>
<th>TRADING</th>
<th>PROCESSING</th>
<th>DESTINY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>Export Companies CISA, Atlantis</td>
<td>CAFÉ Soluble Ground Coffee</td>
<td>USA Starbucks Germany Japan USA</td>
</tr>
<tr>
<td>Peasants</td>
<td>Capitalist Parchment Stage</td>
<td></td>
<td>Central America</td>
</tr>
<tr>
<td>Subsistence Families</td>
<td>Cooperative Humid processing</td>
<td></td>
<td>Supermarkets</td>
</tr>
<tr>
<td></td>
<td>Cooperative Parchment Stage</td>
<td></td>
<td>Retailers</td>
</tr>
<tr>
<td></td>
<td>Organic Coffee</td>
<td></td>
<td>National Markets</td>
</tr>
<tr>
<td></td>
<td>NGOs such as CLUSA-USAID and Oxfam</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td>Fair Trade</td>
<td></td>
<td>Europe</td>
</tr>
</tbody>
</table>

Sources: Based on MAGFOR, 2004; IICA, 2003
Coffee is mainly a peasants and farmers production system; however, processing stages are concentrated on few companies, for every center of parchment stage, there are 310 coffee producers. Nicaragua exports in a berry stage several type of coffee: organic, free trade, gourmet and traditional. In a ground presentation Nicaragua only produces for domestic Central American markets. For coffee trading there is a social network that includes a farmer or agrarian who generally is the one who negotiate with exports companies (Figure 42, yellow labels). This farmer or agrarian capitalist has a gathering center, since he tends to perform humid processing stage. This is an alternative source of credits for small peasants, since farmers tend to loan money to this population with coffee as collateral. Traditional trade system account for 80% of total exports concentrated in four main companies (MAGFOR, 2004; IICA, 2003, Aburto, 2002).

After the 1992/1994 prices crisis, it was clear about the necessity of opening new markets. International cooperation and cooperatives started a process to certificate organic coffee, which had a great success in the 2000 price crisis. The second crisis and the organic production success force producers to find new markets such as gourmet coffee. At the same time, Oxfam promoted alternative model of trade known as “Fair Trade”. Most of the beneficiaries of organic markets through CLUSA and Fair trade through Oxfam were mainly cooperatives (Figure 42).

By 2005 Nicaragua’s government started a new alternative way to trade coffee through Internet, with international tasters who guarantee high quality of gourmet coffee. This initiative call “cup of coffee” brought high prices and recognition to Nicaragua coffee and attracted important companies such as Starbucks, which currently is not only buying coffee, but also financing gourmet coffee producers.

Coffee producers have several alternatives of integration to international markets; most of them are integrated to traditional network. However, there are alternatives such as organic and gourmet markets which promise higher prices and revenues (Figure 42, pink labels). A structural constraint in coffee chain is related to concentrated parchment processing stage and export. Gourmet and alternative coffees represent 20% of total exports, and its tendency is to increment their share on total coffee exports.

Conclusions

Agricultural sector has developed in an international context of prices crisis (cotton, coffee, sesame, and peanut) and commercial liberalization (Economic Integration, Free Trade areas). At the same time, agriculture has adapted to internal factors such as demographic transition with rural population share reduction, land property conflicts due to several agrarian reform processes, climate change with high vulnerability to droughts, public policies focused on attracting investment to services and exporting production zones, and high level of open unemployment and informal sector.

After 1990, international and domestic trade was reconfigured since public institutions were dismantled. International prices crisis, free market policies, property conflicts, high levels of unemployment, and large periods of droughts generated a new socioeconomic context for rural families. Nicaragua is on a transition phase, rural population growth has decreased, but it is not enough for reduce pressure for natural resources, thus, internal migration will continue. In the short run fertile land and water sources will be scarce.

Depending on the social sector, (rural workers, subsistence families, peasants, farmers or agrarian capitalist), families have adapted their economic units to the new context. In some crops such as coffee, peasant and subsistence families can benefit from NGOs, international cooperation and public institutions in order to be integrated on alternative markets. In other products such as cheese, subsistence families and even peasants might be excluded of the quality value chains, since they have no capital to meet all requirements. They can access to credits, but for short term and high interest rate, a situation that disincentive investment on cattle.
It can be stated that there are process of segmentation of rural families. There are social sectors that have been integrated to the new commercial circuits. There are social sector, mainly subsistence families and peasant who has been excluded of certain new commercial circuits. Public policies to facility technical changes in order to accomplish quality requirements such as: vaccines, productive and gathering infrastructure are needed.
PART IV - IDENTIFIABLE RISKS AND IMPASSES, POSSIBILITIES FOR ADAPTATION AND RESTRUCTURING PROCESSES
CHAPTER 7 - RECURRING PROBLEMS AND RISKS

1. Vulnerable Social Groups and Regions

1.1. Evolution of Rural Poverty

According to the UNDP 2002 and INEC 2004 poverty and extreme poverty in rural areas tends to decrease in little proportions. There has been an increment of the share of total income from the first to the third deciles; this maybe a first explanation of poverty reduction. The bottom 30 % of the population increased the share from 5.3 to 6.7 % of total income (Figure 43). The redistribution policy affected the population between the fourth and ninth deciles dropping from share 52.3 % to 47.7 % of total income. The top ten percent of the population increase its share from 42.4 to 46.1 % of total income, and the top 1 % increased as well from 13.2 to 18.4 %. It can be stated that public policies are not redistributing income; they are increasing vulnerability of the middle-income classes.

Figure 43: Income Distribution per Deciles of Population in 1993, 1998 and 2001

<table>
<thead>
<tr>
<th>Deciles</th>
<th>1993</th>
<th>1998</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>4</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>7</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>8</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>9</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>10</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Sources: INEC, 2004; UNDP, 2002

Poverty is not a homogenous phenomenon in Nicaragua. Managua and the Pacific region where the most populated cores and productive infrastructure are located ranks with lower levels of poverty and extreme poverty. The Central and Caribbean, with high levels of rural populations and lower investment on infrastructure than Pacific, are regions with high percentages of poverty and extreme poverty (Figure 44).

The Caribbean region is where poverty reports higher percentages; by 1993 77.3 % of population was under the poverty line. Since 83.6 of rural families in this region were poor, it can be stated that poverty is mainly a rural issue for this region. Eight years later, this region still has the higher level of poverty with 61.3 % of population reported as poor; poverty decreased 2 % per year.
The Central Region is a rural production area with high levels of poverty; most of their municipalities have medium to higher levels of extreme poverty. This is the region where poverty has been stable since between 1993 and 2001 poverty was only reduced from 62.1 to 59.9 %, 0.275 % per year (Figure 46). The Central and Caribbean regions share several geographical and socioeconomic characteristics, such as rural municipalities, low investment in infrastructure and high level of poverty.

The middle-income families are predominant in the Central and Caribbean regions; middle-income family’s area located between the fourth to the ninth deciles and they shares 52 % of total income. In the Caribbean region, between 1998 and 2001, the top 10 % and 1 % have reduced their share in total income from 48.4 to 39.6 % and from 18.4 to 10 %. The establishment of middle- and middle/high-
income at the agricultural frontier can explain this reduction. The Central Region has a relatively stable income structure, the top deciles shares 40.6 % of total income in 1998 and 39.8 % in 2001.

Figure 46: Income Distribution per Deciles of Population in Central Region

Sources: INEC, 2004; UNDP, 2002

The Pacific region of Nicaragua consists of the main cities of the country; therefore, the most populated cores. This region is well connected with paved roads, with access to Internet, global distribution network and educative infrastructure, including universities. Managua is the capital and the principal core; approximately 25 % of the total population lives in this city. If we use the hinterland approach Managua is a larger city since it is source of jobs and services for Masaya and Carazo (34 % of total population). Managua is located at the Pacific region and by 2001 only 20.2 % of its population was under the poverty line. Indeed there is no clear tendency about this city, since from 1993 to 1998 poverty was decreased from 29.9 to 18.5 %, but from 1998 to 2001 poverty increased to 20.2 %. The pacific region has a different behavior than the rest of the country. Despite of the region has the lower percentages of poverty, from 1993 to 1998 poverty increased by 3.5 %, by 2001 poverty was reduced as effect of Mitch’s aid from 52.9 to 46.1 %.

Figure 47: Income Distribution per Deciles of Population in Pacific Region and Managua

Sources: INEC, 2002; UNDP, 2002
The Pacific Region income structure represents the national tendency; therefore, it is the most influential in the national results. The bottom thirty percent of the population shares only 8.7% of the national income, while the top ten percent share 40% and the top 1% share 11.6%, higher than the bottom 30%. From 1998 to 2001, the bottom deciles (1-3) had increased their share in small proportion (from 7.1 to 8.7%), while the middle income families (4-9) reduced their share (from 55 to 51%) and the top deciles increased their share from 37.8 to 40%. Managua is the main urban core in the Pacific region and its income distribution influences the region’s one.

Between 1998 and 2001, Managua has a similar path, lower deciles that increase their share in small proportions (0.6%), middle-income families that reduce their share (3.1%), and the top ten percent increase from 48.6 to 50.8%. Public policies and investment in this region tend to increase the income share of the bottom families and the top ten percent of population. At the same time, these policies reduce the proportions of incomes of the middle-income classes which in the long run will increase inequalities.

In general, there is a tendency to reduce poverty in every region of the country. Rural poverty tends to be more than double than urban, and it is a worst situation for central and Caribbean region where most of the population lives in rural areas (Figure 48). The income distributions, 1998 and 2001, show that public policies redistribute income from middle classes to low income families. The top ten percent has increased their share every year; therefore, the gap between low and high-income families will be expanded.

*Figure 48: Nicaragua’s Poverty Levels by Municipality*
Connecting to global, regional or even national network demands investment on production system. The levels of poverty in Central and Caribbean region might exclude this population from quality production. This exclusion is due to low levels of assets to access to rural markets such as credit, land, machinery and inputs. These data support the hypothesis of dualism in rural areas. Central and Caribbean region are the main coffee, meat and dairy production areas, which represents 30% of total exports. These areas have higher level of functional illiterates, 34%, in 2001, (INEC, 2002) and it is expected that rural families tends to be unskilled labor force, thus they will earn minimal wage around US$ 1.9 per day. By definition, this will be a population below the poverty line and depending on the relation labor unit/consumption unit; a family easily is mobilized to extreme poverty. Under these conditions, these families will be excluded from any development process through market interventions.

The new government is generating a poverty reduction program in which rural families will access to minimal assets including land, cattle and inputs to generate self-consumption and in a second phase start an accumulation process. The IMF and WB can support this in the context of the Millennium Goals.

1.2. Characteristics of Vulnerable Farms

There are two main vulnerable groups in the rural areas, the landless and the subsistence peasant families. According to the national Census in 2005 the rural population was 2,266,548 of habitants, and 431 665 households with an average of 5.2 persons. According to the agrarian census (2001) there are approximately 199,549 families are landowners in different legal tenure. Consequently, landless families are approximately 232,116 and represents 54% of rural population. Subsistence families represent 59% of the landowner families according to the agrarian structure identified by Nitlapán (2005), and 27.1% of rural families (Figure 49). If the landless family is added, it can be stated that 81.2% of the rural families are vulnerable to economic and environmental shocks.

Figure 49: Socioeconomic Structure of Rural Population

According to the Agrarian Census in 2001, Subsistence families are located mainly at the Pacific and Central Region, in a lower proportion in the Caribbean (Figure 50). This is proportional to the rural population distribution, 46.7% are located at Central region, 40.7 in the Pacific and only 12.5% at the Caribbean region. However, subsistence families are the larger type of family after landless in
every region. High-income families are the smallest social sector in general (1.5%) and in every region; however, they access for more than 50% of productive land.

Rural workers tend to be families with areas lower than 0.175 hectares. They are located around labor-demand farms, such as coffee, banana and sugar plantations. Labor markets generate 80 to 100% of their annual income. This type of families tends to be larger, since every member means labor force to generate income. Females tend to be incorporated to the urban labor markets as maid and child labor is part of the livelihood strategies. The economic rationality for these families is to assure employment for all their members. These are families with structural vulnerability; their income depends on big farms efficiency and technology. In the coffee prices crisis (1991, 1992; 2000, 2001), there was a high level of unemployment and famine for these families, which brought along a social crisis in the northern region.

Subsistence families are vulnerable to prices shock in their commercial products (coffee, beans, vegetables). They have limited access to productive services and market information; thus their capital accumulation process is slow. Fertile land and available water tends to be a structural limitation for productive diversification and access to new markets. Depending on the region that they are located, the size of farm is variable.

For these families the agrarian income represents 40 to 50% of total income. In order to complement their income, these families tend to incorporate labor markets or land markets through renting natural pastures. In their production system there are two kinds of crops: maize, sorghum and roots for their consumption and beans, rice, vegetables and/or coffee as commercial product; bean is the principal crop for a subsistence family’s capitalization (Table 28). The economic rationality for these families is to increase the agricultural contribution to the total income in order to have a stable income along the year.

Figure 50: Socioeconomic Structure of Rural Families by Region

Sources: INEC, 2002; Nitlapán 2005
Table 28: Characteristics of Subsistence Families by Region

<table>
<thead>
<tr>
<th>Subsistence</th>
<th>Pacific (ha)</th>
<th>Central (ha)</th>
<th>Caribbean (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>1.8 - 3</td>
<td>1.8 - 2.9</td>
<td>10.0 - 15.0</td>
</tr>
<tr>
<td>Familial Labor Unit</td>
<td>2.25 - 3</td>
<td>2 - 3.5</td>
<td>2.0 - 3.0</td>
</tr>
<tr>
<td>Cattle (including cows)</td>
<td>0 - 5</td>
<td>3.0 - 5.0</td>
<td>4.0 - 6.0</td>
</tr>
<tr>
<td>Pigs</td>
<td></td>
<td>2.0 - 5.0</td>
<td>3.0 - 10.0</td>
</tr>
</tbody>
</table>

Crops:
- Maize, beans, sorghum
- Maize, beans, rice, coffee, vegetables, roots
- Maize, beans, rice, coffee, vegetables, roots

Source: Nitlapán 2005

Subsistence families represent 59% of the rural landowners in Nicaragua. Landless and subsistence families represent 81.2% of total rural families (Figure 50). They are the most frequent type of families in every region of the country. Both types of families have structural limitations for their economic development and conform the most vulnerable social sectors to economic and commercial shocks.

2. Land Scarcity and the Extensive Production Systems

Agricultural production in Nicaragua tends to be extensive, land and labor intensive with low levels of investment in technology, equipment and agrochemicals. Land productivity increased during the 1960s and 1970s due to investment in infrastructure, the industrial sector, airplanes and agricultural machinery, as well as land concentration to take advantage of economies of scale.

From 1978 to 1988 there was a reduction in land productivity due to reduced exports and warfare in coffee and cattle producing areas. During this period there was a high level of subsidies for agrochemicals and equipment, but this public investment failed to increase land productivity.

Land productivity has increased from 1989 (US$ 50/ha) to 1992 (US$ 82.4/ha) as the result of the end of the civil war; macroeconomic stability, however, coffee prices crisis in 1994 affected this ratio and there is a long period of stagnation linked with hurricane Mitch destruction on Pacific plains and road infrastructure for coffee processing. Agricultural labor productivity shows a similar tendency, with a strong reduction during the stagnation period between 1994 and 2000. However, it should be pointed out that labor productivity decreased in the non-agricultural sector from 1960 to 1994 and has been stable since 1995. The increase in urban labor and the urban population, urban unemployment and a rise in low-paid jobs in the urban economy might explain this.

The highest Agr GDP/Land ratio in the 1989-2002 period is US$ 84.5 per hectare. This shows the level of production/investment applied in Nicaraguan agriculture. This is not the same situation throughout the country. Pacific Plains tends to be intensive with production system based on crops. The Dry areas and the cattle production areas at the Old and New agricultural frontiers tend to be worse with large farms with few cattle. This tendency is a serious risk since land is not more an available resource. In the long run, with no areas to colonize, families will come landless or will increase conflict at reserves and indigenous community’s lands; a situation that already started (Gomez and Munk, 2006).

The intensity of production represented by the use of inputs such as pesticides, agrochemicals and tractors, has been variable over the last 40 years (section 2.2.1). Before 1979, fertilizers were the main input imported for agricultural production. From 1972 to 1974, the value of Nicaraguan fertilizer imports increased almost fourfold to support cotton and coffee production, which reached their
The highest export value in 1977. During the 1980s, pesticides became the main input for agricultural production. The importation of inputs displayed unstable tendencies during both periods, but in the 1980s there were incentives for the mass use of technology in agricultural production.

The rural sector’s investment in technology has not been enough to stimulate any increase in export crop yields (production per hectare). There have been important increases recently for peanuts and soybeans, both of which saw their yields reduced in 1998 due to the effects of Hurricane Mitch, but coffee, sesame, and tobacco yields have been relatively stable in the last decade. According to the FAO, sugar cane has gradually increased its yield from 61 MT/ha in 1991 to 89 MT/ha in 2004, the only blip being in 1998-2001 when Hurricane Mitch affected sugar cane production areas. Sugar cane is the only export product displaying a clear and prolonged increase in yields.

In general, the yields of crops for local consumption have decreased, a tendency set to continue for most of them. In the 1980s, per hectare grain production increased as a result of the land reform and subsidies, while vegetable and fruit production yields dropped. In the last decade, agricultural yields followed two paths: rice and sorghum have increased their yields from 1.8 to 2.4 tons per hectare and 1.56 to 2.2 tons per hectare respectively, while corn and bean yields have been relatively stable with small increases in productivity after 1999.

Figure 51: Land and Labor Productivity in Nicaragua
Figure 52: Yields of Grain for Local Consumption

Sources: UNDP 2002, ECLAC 2006
CHAPTER 8 - EXISTING EXIT OPTIONS AND ON-GOING PROCESSES OF CHANGE

1. Developing Rural Non-farm Activities

In Nicaragua’s national account, agricultural exports represent 80% of total exports and the 2004 National strategy is based on agricultural development. Other sectors are tourism and exporting products zones as services and industrial sector. It is important to note that most of the national industry is associated to milk, coffee, sugar and food production. Nicaragua national strategy define six main regions with potential to develop, five of them are based on agriculture. The region omitted from agriculture strategies is the one where drought is severe and frequent every year. As alternative, there are public funds to train rural families on crafters and non-agricultural activities such as plumbers, carpenters, and bricklayers. Craft development and incorporation to exporting zones are strategies to address women’s unemployment.

According to INEC, 2004, 26% of rural families carry out no-agrarian business. Most of them (54.1%) are related to small restaurants and housing. In a second level, rural families have manufacturing business (21.3%) and communal services 11%. Other activities are related to construction (4.8%), transport (3.9%) and technical services (3.2%). In general, all the non-agricultural alternatives are considered complementary: they are not substitutes. Since there are not a dynamic craft markets and low paid jobs on maquilas, these alternatives are taken by families who have stable agricultural production. Vulnerable families such as rural workers and subsistence families tend to use temporal and permanent migration, since salaries in Costa Rica are seven times higher than Nicaragua’s.

2. Rural Depopulation and Urban Activities

By 2005, rural population represents an important share of total population: 44% (INEC, 2006), it is a surprising statistics since 1963 rural population was 59%, which means that rural population have been relatively stable in this 42 years. According to both censuses, rural population decreased 15%, thus, rural depopulation rate is 0.36% annually. However, WDI (2005) shows another path with a 31% reduction between 1960 and 2005. Since most of the data between censuses are estimated, it is possible to overestimated demographic processes. It is clear that rural development policies should promote

According to the BCN, 2002 the agricultural sector is stable creating self-employment and temporal and permanent jobs. In the period 1996-2001, approximately 44.5% of employed population performed agrarian activities, including agricultural production, fishing and forestry and its tendency is to grow. However, 15% of the rural active economic population did not access to jobs in the sector, and it’s a pressure for urban jobs. In the same period, urban areas generated 55.5% of the total employment, which means that it is the principal engine for development (Figure 53). However, approximately 20% of the urban active economic population did not access to employment or self-employment. It can be stated that for this period 35% of the economically active population access neither urban nor rural stable job.

Three economic activities offer employment in urban areas for rural migrants: trade, communitarian and personal services and construction. Trade (commercial activities), communitarian and personal services are the main activities that create self-employment and temporal and permanent jobs in urban areas. Both sectors employed 35.7% of total workers in Nicaragua and 65% of urban jobs. Although trade and communitarian and personal services had increased in number of jobs (683,000 in 1996 to 894,000 in 2001), both sectors had decreased in percentages respect to total employment in Nicaragua.
In the same period, the construction sector is increasing jobs in number (53,800 to 105,200 jobs) and percentages (4.4 to 6.3 %). Construction had become the dynamic sector in the urban economy; however, its contribution to the total employment is relatively small (6.3 % of total jobs and 11.8 % of urban jobs). Industry and manufactures presents the same tendency than trade. This sector had increased the number of jobs (113,600 to 132,200), but it had decreased in percentages of total (9.3 to 7.9 %) and urban (16.6 to 14.8 %) employment.

Urban cores have no capacity to employ their population; consequently they have limited capacity to offer alternative jobs to rural migrants. In the 1990s, the Central Bank estimated that the formal sector represented only 30 % of total jobs in urban areas. This can be interpreted in a way that most of the commercial activities and communitarian services are performed by the informal sector. The informal sector is located in big cities and nowadays has large proportions. The Nicaraguan population has a deficit of employment on rural (15 %) and urban cores (20 %), with a weak economic growth; the main exit has been migration out of the country.

3. Migrations

3.1. Inter-regional Migrations

Rural migration between 1963 and 2005 has represented a shift in the location of national population of 15 %, who moved from rural to urban areas (INEC, 2006). There are three stages of rural migration to the cities, from 1960-1975 at the modernization era. A second stage is from 1976 to 1990 when rural population moves out the countryside for war and a third stage when rural families are moving back to their lands.

In the 60s and early 70s Nicaragua was involved in an agriculture modernization program, which launched agro-exports as the way to develop. The strategy included the insertion to the international markets through cotton and cattle. There was a heavy public investment developing highways and industries. At the same time, there was a land concentration process at the Pacific region. In this stage
there were two destinations: the agricultural frontier at the Central Region or to the urban cores at the Pacific. There was a public policy and investment for creating or strengthen new population cores such as Matigúas, Nueva Guinea, La Dalia, in the non-populated area of the country.

From 1979 to 1990, rural areas were the principal scenes of the civil war. There were internal migrations from isolated areas to populated cores where there was certain level of security. The central and Caribbean regions were the most affected in this period. There were four paths of migrations: refugees from Caribbean indigenous communities and northern population went to Honduras. Central and Pacific urban population went to Costa Rica and the USA, and some rural population was displaced to new populated cores. The main receptors in the pacific were Managua, Chinandega; in the Central Region were Matagalpa, Juigalpa and Estelí, and in the Caribbean Puerto Cabezas and Bluefields.

From 1990 to 1995 there was a peace process, which included land distribution and rural development programs. This process reopened the colonization process, at the central region there was a consolidation of rural middle income families, and for advancing to new areas, broaden the agrarian production areas to the east of the country. On the other hand, there was a land concentration process in the Pacific region. A sociopolitical aspect that boosted rural migrations was land insecurity. After the Sandinista government was defeated, the reformed land titles were not registered and there was international pressure for properties devolutions. In this context, several cooperatives and individuals sold their land as soon as possible. This two process, land colonization in Central and Caribbean and urban migration in Pacific, have as a result a stable rate of rural migrations at national level.

The third period of rural migration to the cities is after 1995. The coffee prices crisis in 1994/1995 and 1998-2001 boosted the agrarian crisis in the Central Region; further, the Niño phenomenon affected the tropical dry zone in the pacific areas. These two factors were critical to push out rural population from their territories. Two pull factors to migration ate the national politics of Free trade zones, between and available land in the agricultural frontier. From 1998 to 2005 there has been a rapid increment of industrial cluster from 5 to 25 in seven years, from 21 to 91 industries, incrementing their offer from 18,000 to 75,000 jobs. The shift to the cities is relatively low (0.7 – 0.9 %) due to international migrations, since in this decade international migrants were nearly 5.5 times higher than 1980s.

There are three types of internal migrations: temporal, for harvest season in coffee and sugar cane, permanent migration to cities and agricultural frontier. The temporal migration is performed from November to January, which is the rainless period. Families move to the central region for coffee harvest, and for sugar cane they move to the pacific. This type of migration is moving out the country, since the rural wages in Nicaragua are not competitive with those from Costa Rica and El Salvador. The agrarian capitalist in Nicaragua offer US$ 1.43/labor day, while Costa Rica they offer US$ 6.52/labor day. Temporary migration is a livelihood strategy that allows families to finance their production system, which start in April. At the same time is an important source of income for investment such as land, equipment and animals (cattle, pigs, chickens).

The first type of permanent migration is to agricultural frontier areas. According to MAGFOR municipalities such as El Castillo, San Carlos and Nueva Guinea in the South-Central Region and El Tortugero in the Caribbean region are municipalities with high level of immigration (25 to 50 % of recent immigrants). The other 15 Caribbean municipalities have low level of immigration (less tan 25 % of recent immigrants). Except Laguna de Perlas and Desembocadura del Rio Grande, Caribbean region is the receptor of internal migrations (Fig. 4.3.3.a). This can be explained by the fact that the Caribbean region is the agricultural frontier and home for Natural reserves such as Indio-Maiz, Bosawas and Wawashan.
In the cases of San Carlos and Cardenas, they are located in the southern borders (Figure 54). They are important areas to international migration to Costa Rica. This area is also a touristic attraction since there is a natural reserve for humid areas Los Guatuzos. The internal migrations to rural areas are due to the agrarian consolidation process at the Old Agriculture Frontier. In this consolidation process the middle and high income families tend to increase their land, as a result of this land market dynamic, a group of families sells its land in order to buy new and cheaper land in the frontier. However, Nicaragua has not the same land stock than 1960s; most of the new agrarian land is located at the border of reserve areas in the Caribbean region.

At Central region San Fernando, a coffee producer municipality is the only with high levels of immigration. Most of these immigrants come from tropical dry zone at the northern Segovias. Municipalities bordering the Caribbean region are municipalities with less than 25 % of recent immigrants. There is a path in migration from pacific to central to Caribbean, early 90s; the central region had municipalities with high immigration such as Matigúas, Rio Blanco, La Dalia, Waslala, El Cúa, Quilali and Wiwilí, drawing the agricultural frontier from North to South at the Central Region (Figure 54). Nowadays, these municipalities are source of migration; all of them have negative balance with up to 25 % of their population as migrants.

The second type of permanent rural migration is to urban cores. Tipitapa is the only municipality in the Pacific region, which receives high levels of immigrants. Municipalities around Managua have a second level of immigration; this can be explained by the location of Exporting Production Zones. This cluster of municipalities include: Nagarote, Mateare, Nindirí, Masaya and Ticuantepe (Figure 54). At the limit between Managua and Tipitapa there is the principal industrial cluster of maquilas, at the same time new industrial areas have been developed along the highway Managua-Mateare and Managua-Masaya.

*Figure 54: Municipal Levels of Migration*
There are EPZs in other main cores such as Estelí, Sébaco, Leon, Granada, Carazo, however, this new industrial clusters have not attracted high levels of migrations. The high level of urban unemployment can explain this; indeed EPZs strategy has been conceived in order to address unemployment in a short run. As effect of this urgency to generate jobs, most of industries are textile maquilas, which demand non-skilled labor force and offer low salaries.

3.2. International Migrations

There are several estimations about the number of Nicaraguan migrants either temporal or permanents. There have been three processes of migrations, before 1979, 1980s and 1990s. Before 1979, there was an international flow to Costa Rica and the USA, and there were approximately 49,126 persons abroad, near 1.6 % of total population. Since 1977, Nicaragua was involve in a civil war, this situation stimulated initial migrations to Costa Rica (60.7 %) as refugees and in 1978-1979 the USA was a second destination. This first stage of the migration process represented approximately 6 % of total migrants.

In 1980s, Nicaragua was part of the cold war or conflict east-west. As a result, Nicaragua suffered an international blockade from the USA and an internal civil war. From 1982 to 1990 the economy was destroyed, with hyperinflationary process and high level of destruction by the warfare. This period stimulated an internal migration, from war zones to cities and international migrations to Honduras, Costa Rica and USA. In this period the number of migrants was more than double than 1970s. This migration represented 3.14 % of total population with 107,153 persons. The USA became the principal destination, Costa Rica and Honduras as second and third, and there were initial movements to Canada and Europe.

In 1990 there was a political and economic model change and peace process was developed. The economic adjustment forced to reduce army and public institutions including those to address agricultural production. With high levels of unemployment and political crisis due to national riots, an important segment of Nicaraguans decided to migrate. The number of migrants in 1990s was more than four times the one during war period; total migrants went from 90,000 to 479,000 (Figure 55) USA and Costa Rica are the main destination; however, in 2000s El Salvador and Spain are new targets due to migration policies of Costa Rica and USA. By the end of 1990s 20 % of the populations were migrants and 79 % of them leave Nicaragua in 1990s.

*Figure 55: Nicaragua’s Estimated Migrations Figures per Decade*

![Nicaragua: Migration flows per decade](image)

*Source: CEPAL, 2006*
According INEC 2003, approximately 27% of total migrants are from rural areas; 60% of them are men and only 31% have studied more than seven years. However, these data might be linked to permanent migration. There are two types of international migration and the characteristics of migrants depend on this factor. Temporal migration tends to be a three to six month migration and their destinations are neighbor countries which offer temporal jobs, most of them agricultural harvesting season of coffee, sugar cane, oranges, and bananas. This type of migration is attractive to rural populations as a livelihood strategy to finance agricultural production; 92.3% of temporal migrants are from Pacific and Central region, and only 7.7% are from Managua.

Local farms offer a low salary for agricultural activities that have higher remuneration in Costa Rica and El Salvador, the difference of rural salaries is so high that migration is a worthy strategy. By 2002 the difference between rural salaries in Costa Rica (US$ 8.1/day) and Nicaragua (US$1.1/day) was seven dollars per day, and 181.6 dollars per month. It is estimated that Nicaraguan migrants represent 60% of agricultural labor force in Costa Rica, mainly in export products such as: sugar cane (83%), coffee (63.2%), Banana (45.7%), and melons (50%). It is also important for local consumption products such as orange (66.7%) and beans (75%) Permanent migration tends to be an urban phenomenon (Figure 56). Due to distance migrate to USA tend to be a permanent migration and only 11.6% of rural migrants moves to this destiny. The CEPAL estimates that only 9% of Nicaraguan migrants in USA and 35% of permanent migrant in Costa Rica are from rural areas.

Figure 56: Nicaraguan Migrants to Costa Rica and USA from Urban and Rural Areas

Source: CEPAL, 2006
Figure 57: Education Level of Nicaraguan Migrants

Source: CEPAL, 2006

Figure 58: Employment of Nicaraguan Migrants in Costa Rica and USA per Economic Activity

Source: CEPAL, 2006
Migrants tend to be part of the human capital of every territory, not only as labor force, but skilled one. More than half (55.3 %) migrants have at least seven years schooling, and 85 % at least four years schooling in a country with 23.7 % of illiterates as total population and 38 % of illiterates as rural population (INEC, 2006/). In general, population with more than seven years schooling depends on the destiny: Costa Rica (38.6 %), USA (75.1 %) and Canada (71.4 %). For rural population with the higher levels of illiteracy, means losing their leaders and innovative members.

The integrations of Nicaraguan migrants to labor markets in Costa Rica and USA have different paths. In Costa Rica Nicaraguans are part mainly of the agriculture (41.4 %), communitarian services (14.3), trade (13.8 %), industry (10.6 %) and construction (9.6). There are small proportion of migrants in finances, transport, mines and other labor markets (Figure 58). In USA Nicaraguans are inserted in services sectors mostly as domestic and clerks (29.3 %), industry and construction (19.3 %), Education and Health (15.9 %), trade (15.6 %) professional services (12 %) and finances and insurances (7.4 %), (Figure 58) The main differences are: in USA Nicaraguans in agriculture represent only 0.5 % while in Costa Rica are 41.4 %, and in USA professional services, health and education and finances and insurances which are middle income jobs are significant, while in Costa Rica low paid jobs.

This labor market incorporation explains the facts that 75 % of migrants to USA have at least seven years schooling; in addition, this population should understand a second language or learning it in order to be incorporated in higher level of income. This also explains why rural migrants prefer Costa Rica as destiny and just a small proportion prefer USA.
4. Reshaping of Rural Economies

4.1.1. Manifestations of the New Configuration of Rural Economies

There is a curve of the weight of agricultural income by social sectors. Subsistence families tend to depend more on non-agrarian income. For these families, non-agrarian income is based on their incorporation to labor markets. Females are incorporated to urban labor market, specifically in domestic services such as maids. Men are incorporated in rural labor markets as rural workers or in services sector in urban cores such as security, gardener, or in construction sector. In this type of family, agricultural income represent 30 to 60 % of total income (Nitlapán, 2005). Besides, this is a vulnerable social sector to international prices of agricultural product such as coffee, meat, milk and sugar cane due to these crops represent their main jobs source.

In the case of middle income rural families agricultural income tends to be near 90 % of total income. This type of families incorporates commercial activities with agricultural and no agricultural products. They are links between isolated families and urban cores, and they buy agricultural products to increase volume to trade with external middlemen. This social sector generates self-employment to the familial labor force and temporally jobs on harvest season. In a second stage with higher levels of income tends to invest on land, equipments, animals and/or vehicles. In this stage, agricultural income means 70 – 80 % of total income and non-agricultural income is product of commercial activities of agricultural products. Depending on the region this product might be coffee, cattle, sesame, beans and or fruits. They also offer services of processing humid coffee or transporting production. This sector diversifies its economy based on their assets and fix capital.

The new configuration of the livelihood strategies in rural sector are linked with international migration. Rural workers and subsistence families included temporal internal migration in their annual strategy. Nowadays, this strategy changed to an international migration with a longer period and tends to be permanent in Costa Rica. Low middle income families who have a high level of economic mobility tend to temporary migrate to Costa Rica in order to finance their productive cycle. There is a lack of information about remittances in rural areas, and its role in the familial cash flows.

4.1.2. Destination and Impact of Funds Transferred by Migrants

Remittances are an important source of economic stability for Nicaragua. Since 1995, has been growing from 75 to 825 million dollars in 2003 with an annual average growth rate of 125 % (Fig. 4.3.2.a). However, data might be inaccurate for in the 1990s remittances were not part of the national accounts. In 2003, the commercial deficit in Nicaragua was around US$ 1.1 billion dollar in a country with only a billion dollar as total exports of goods and services, which means that commercial deficit is 110 % of total exports. In this context, remittances are key factor to pay the import bill. Remittances in 2003 were approximately 825 million dollars, which meant 75 % of commercial deficit and this is the main indicators of the importance of this livelihood strategy for Nicaraguan’s economy.

According to INEC 2002 and CEPAL 2006, 20.5 % of total families receive remittances; most of them are located in Pacific region and Managua (Figure 60). Migrants from Costa Rica are the main source of remittances with permanent and temporal migrants sending money to their families. In average permanent migrants send around US$ 70 and temporal US$ 100 per month. Temporal migrants send more money, but their period in Costa Rica depend on harvesting season and it could be from three to five months. USA is the second source with 42 % of families who receive remittances from permanent migrants. Migrants from USA transfer US$ 160 per month and US$ 1,920 a year average.
Remittances has been a way to increase consumption, according to National surveys 80% are used to resolve issues such as food, clothing, health, personal care. Food is the most important issue, 42% of total remittances are destined to buy food, which confirms that migrants are mainly jobless population. Migration is not an optional strategy; it is a forced livelihood, an exit to the economic crisis in Nicaragua. Investment and loans payment represent only 12% of total remittances. This low level of investment shows the vulnerability of this strategy to migration policies in Costa Rica and Nicaragua. Furthermore, it shows that remittances are not a way of development.
Three main blockades for rural families are discussed in this section: poverty, extensive path of agriculture and migrations. Rural poverty is a serious limitation for technical change, investment and market integration of rural families. Poverty is a condition that forces subsistence families to use labor intensive practices and migrate. Internal migrations tend to be limited for limited access to land. The New agricultural frontier in at the limit of natural reserves cores, indigenous communities and swamps of the Caribbean areas. International migrations have been an exit for the urban and rural crisis; however, new regulations on Costa Rica and USA will blockade migrant flows.

The extensive path of agrarian system is incorporating 106,000 hectares a year to agriculture. It is an unsustainable path, which is consuming the whole fertile land. In a first stage this factor will blockade internal migration. In a second stage will trigger an aggressive land concentration process in which subsistence families will be the most vulnerable. Extensive path is to produce without technical practices to increment yields. Subsistence families tend to rely on natural soil fertility and after two or three year, yields decrease significantly. Public policies to restrain this extensive path such as a progressive tax on land tenure, might force to intensify cattle producers at the old and new agricultural frontier.

Intensification is an important exit for rural families, depending on their system families might be integrated to fair trade, quality and organic markets. Technical change will increase yields, obtaining higher volumes in the same area. It is necessary to norm quality standards for agricultural product and to promote environmental practices for production. At the same time, develop a series of minimum requirement (infrastructure, inputs,)

Temporal migration has been an important exit for rural families. Temporal migration allows families to migrate in harvesting season to Costa Rica and/or El Salvador in order to obtain funds for sowing in May. For these activities, families organize their labor force and funds to take advantages of
migration. Alternatives for saving and investment should be promoted by public policies, in order to generate accumulation process on families.
PART V -
CONCLUSIONS OF RURALSTRUC
PHASE 1 IN NICARAGUA
Agriculture is the main economic activity in Nicaragua, since its contributions to national economy are higher than communitarian services, trade and manufacture. Agriculture generates 570,820 jobs, which represent 34% of total occupied population and 33% of total EAP, 30% of total GDP and Agro-industries represent 70% of manufacture’s GDP.

According to National Census 2005, rural population represents 44% of total population, and 40.4% of total EAP. There are around 200,000 farms, 59% are subsistence families, 31.7% peasants, 6.6% Farmers and 2.7% agrarian capitalist. Nicaragua can be divided in six macro-regions with different socioeconomic dynamics, since productive infrastructure, land distribution and agricultural potential are specific for every one of them.

Trade liberation has opened regional markets, and Central America is the main partner for agricultural exports for Nicaragua. The USA is the second partner and a free trade agreement has been signed. Nicaraguan tariff protection is the second lowest in the region after El Salvador. By 2021 it is expected that average tariff will be 1.6%. Nicaragua has signed FTA with Mexico and Chile and it is negotiating with Canada, Taiwan and European Union.

Agricultural products chains are highly segmented. Products such as cheese with a low standards product for low-income families, and high standard product for supermarket and export create a segmented rural sector. Due to quality requirements subsistence families and a sector of peasants tend to be excluded from high value and high prices commercial circuits; same situation can be observed on vegetables and fruits chains. Agro industrial products tend to have oligopoly phases of processing and exports. Coffee, sesame, banana, peanut and seafood are clear-cut examples of this situation.

After 1990, the agricultural input market is controlled, an oligopoly import and distribute 70% of seeds, fertilizers and pesticides. Nitrogenous fertilizers and pesticides are the main intermediate imports for agriculture. Financial markets are developed with commercial banks and micro-finances institutions with approximately US$ 220 million in agriculture loans, covering between 15 and 20% of producers. However, credits are mainly for short term and with interest rate higher than 25%. The new Government will have a public intervention on rural finances market, but it is not clear the implementation process.

Agriculture extension and agricultural insurances markets are not developed. Extension programs are subsidized by public funds and international cooperation. There is not public policies to create an insurance markets, and this is a serious restriction for a farm-contracting system.

Agriculture does not generate enough jobs for rural EAP; around 30 to 40,000 persons find no job every year in agriculture. According to National Census 2005, every year approximately 9,000 new workers are inserted on Rural EAP, agriculture should generate 40,000 new jobs every year in order to hire this new economic population.

It can be stated that there are process of segmentation of rural families. There are social sectors that have been integrated to the new commercial circuits. There are social sector, mainly subsistence families and peasant who has been excluded of certain new commercial circuits. Public policies to facility technical changes in order to accomplish quality requirements such as: vaccines, productive and gathering infrastructure are needed.
Depending on the social sector, (rural workers, subsistence families, peasants, farmers or agrarian capitalist), families have adapted their economic units to the new context. In some crops such as coffee, peasant and subsistence families can benefit from NGOs, international cooperation and public institutions in order to be integrated on alternative markets. In other products such as cheese, subsistence families and even peasants might be excluded of the quality value chains, since they have no capital to meet all requirements.

Three main blockades for rural families are discussed in this section: poverty, extensive path of agriculture and migrations. Rural poverty is a serious limitation for technical change, investment and market integration of rural families. Poverty is a condition that forces subsistence families to use labor-intensive practices and migrate. Internal migrations tend to be limited for limited access to land. The new agricultural frontier in at the limit of natural reserves cores, indigenous communities and swamps of the Caribbean areas. International migrations have been an exit for the urban and rural crisis; however, new regulations on Costa Rica and USA will blockade migrant flows.

Intensification is an important exit for rural families, depending on their system families might be integrated to fair trade, quality and organic markets. Technical change will increase yields, obtaining higher volumes in the same area. It is necessary to norm quality standards for agricultural product and to promote environmental practices for production. At the same time, develop a series of minimum requirement (infrastructure, inputs, etc.)

Temporal migration has been an important exit for rural families. Temporal migration allows families to migrate in harvesting season to Costa Rica and/or El Salvador in order to obtain funds for sowing in May. For these activities, families organize their labor force and funds to take advantages of migration. Alternatives for saving and investment should be promoted by public policies, in order to generate accumulation process on families.
REFERENCES

CBN (20002b) 40 years of Macroeconomic Statistics 1960-1999
DURSTEWITZ P & G. ESCOBAR (2006) Linking smallholders to rural markets RIMISP Santiago de Chile
ECG (2003) Rethinking Nicaragua: The Dairy Cluster Profile Economic Competitiveness Group
FAO (2006) Nicaragua: Food and Agriculture Statistic
FENACOOP (2004) Analysis of CAFTA negotiations on rice, beans, corn, meat and dairy National Federation of Agricultural and Industrial Cooperatives Managua, Nicaragua 57 pp
IDERU (2001) Basis for a National Plan of Rural Development Initiative for a Rural Development Policy, Central American University IDERU-MAGFOR
INEC (1996) National Census of Population (VII) and Housing (III), Final Results
INEC (2002) Agrarian Census 2001 Final Results
INEC (2006) National Census of Population (VIII) and Housing (IV), Final Results
IRAM (2000) Studies on land tenure Section I and III Institut de Recherches et d’Applications des Méthodes de
Developpment IRAM.
KAIMOWITZ, D (1986) Agrarian Structure in Nicaragua and its Implications for Policies towards the Rural
Poor University of Wisconsin.
to the strategic alliance with the peasantry IN E.V.K. Fitzgerald & M. Wuyts.
MAGFOR (2005a) Beans: commercialization and rent margins MAGFOR, Managua, Nicaragua 36 pp
MAGFOR (2005b) Fruits: production and commercialization MAGFOR, Managua, Nicaragua 88 pp
MAGFOR (2005c) Seafood: production and commercialization MAGFOR, Managua, Nicaragua 40 pp
MAGFOR (2005d) The agro-industrial chain of sesame in Nicaragua MAGFOR-IICA-JICA, Managua,
Nicaragua 90 pp
MAGFOR (2004e) The agro-industrial chain of coffee in Nicaragua MAGFOR-IICA-JICA, Managua,
Nicaragua 90 pp
MAGFOR (2004f) The agro-industrial chain of vegetables in Nicaragua MAGFOR-IICA-JICA, Managua,
Nicaragua 139 pp
MAGFOR (2004g) The agro-industrial chain of peanut in Nicaragua MAGFOR-IICA-JICA, Managua,
Nicaragua 51 pp
MAGFOR (2004h) The agro-industrial chain of cheese in Nicaragua MAGFOR-IICA-JICA, Managua,
Nicaragua 63 pp
MAGFOR 2005 PRORURAL Productive Rural Development Policy Ministry of Agriculture and Forestry,
Managua, Nicaragua
Nicaragua. FIDAMERICA, Santiago de Chile
MORLEY, S (2006) Trade liberalization under CAFTA; an analysis of the Agreement with special reference to
agriculture and small holders in Central America IFPRI Development strategies and governancedivision Washington, DC. 58 pp
MHCP (2001) Annual National Budget of Public Income and Expenditures
MHCP (2003) Annual National Budget of Public Income and Expenditures
MHCP (2005) Annual National Budget of Public Income and Expenditures
MORLEY, S (2006) Trade liberalization under CAFTA; an analysis of the Agreement with special reference to
agriculture and small holders in Central America IFPRI Development strategies and governancedivision Washington, DC. 58 pp
MIFIC (2005) Commercial agreements negotiated by Nicaragua Economic Analysis Department Managua, Nicaragua 22 pp
Nitlapán (1996) Peasant to Farmers: the economic potential of the Nicaraguan Peasant
Nitlapán (2001) Peasant to Farmers: Developing the Central Region of Nicaragua
NITLAPÁN (2001b) Impact Evaluation and Monitoring System of the Program of Agricultural Technology MAGFOR-WB-IFAD
NITLAPÁN (2005) Peasants to farmers: Checking out the Agro. FAO-Nitlapan, Managua, Nicaragua.
NITLAPAN 2006 Impact of CAFTA on Smallholder producers. Cases of cheese, corn and meat value chains. Nitlapán - IFPRI
PEREZ, F.J. 2001 Notes for a Rural Development Policy: the land tenure in Nicaragua. Initiative for a Rural Development Policy, Central American University
PEREZ, F.J. 2005 Technical Capabilities and Cost of the technical assistance services at Las Segovias FUNICA-MAGFOR, IFAD.
WB (2005) DR-CAFTA: Challenges and Opportunities for Central America. Central America Department and Office of the Chief Economist Latin America and Caribbean Region WB, Mexico DF, Mexico, 215 pp
WB (2005) World Development Indicators
ACRONYMS

AGROMAQ  National Agricultural Machinery Enterprise
AGROMEC  National Enterprise for Agricultural Mechanization
ASOMIF  Association of Micro-finances Institutions
BANADES  National Development Bank
CBI  Caribbean Basin Initiative
CBN:  Central Bank of Nicaragua
CENISLAC:  Dairy products production and commercial chamber (CENISLAC:  Dairy products production and commercial chamber
CLUSA:  Cooperative League from USA.
DR-CAFTA  Dominican Republic- Central America Free Trade Agreement
ECLAC/CEPAL  Economic Commission for Latin American and Caribbean U.N.
EPZ:  Exporting Production Zone
EAP  Economic Active Population
ENCAFE  Nicaraguan Coffee Enterprise
ENARROZ:  National Rice Enterprise
ENAL  Nicaraguan Cotton Enterprise
ENIA  Nicaraguan Agricultural Inputs Enterprise
EMPROSEM  National Seed Enterprises
ENABAS  National Basic Foodstuffs Enterprise
GPT  General Preference Tarrif
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>Gross Domestic Products</td>
</tr>
<tr>
<td>HIPC</td>
<td>Highly Indebt Poor Countries Initiative</td>
</tr>
<tr>
<td>IICA</td>
<td>Inter-American Institute for Cooperation on Agriculture</td>
</tr>
<tr>
<td>IDERU</td>
<td>Initiative for Rural Development in Nicaragua</td>
</tr>
<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>INEC</td>
<td>National Institute of Statistics</td>
</tr>
<tr>
<td>INTA</td>
<td>Agricultural Technology Institute</td>
</tr>
<tr>
<td>IMF:</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>IRAM</td>
<td>Institut de Recherches et d’Applications des Méthodes de Développment</td>
</tr>
<tr>
<td>MARENIA</td>
<td>Ministry of Environment</td>
</tr>
<tr>
<td>MICOIN</td>
<td>Ministry of Internal Trade</td>
</tr>
<tr>
<td>MAGFOR</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>MIFIC</td>
<td>Ministry of Industry and Trade</td>
</tr>
<tr>
<td>MCCA</td>
<td>Central American Common Market</td>
</tr>
<tr>
<td>MHCP</td>
<td>Ministry of Economy</td>
</tr>
<tr>
<td>NAFTA</td>
<td>North America Free Trade Agreement</td>
</tr>
<tr>
<td>PPP</td>
<td>Puebla - Panama Plan</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nation Development Program</td>
</tr>
<tr>
<td>USAID</td>
<td>US- Cooperation Agency</td>
</tr>
<tr>
<td>WB</td>
<td>The World Bank Group</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1: Percentage of Families receiving Remittances by Origin ................................................. 4
Figure 2: Nicaragua’s Total External Debt .......................................................................................... 8
Figure 3: Nicaragua: Relationship between External Debt and GDP ................................................ 8
Figure 4: Public Expenditure, Revenues and Public Balance 1990 - 2001 ......................................... 9
Figure 5: Import Taxes Share on Total Revenues Budget 1980 - 2002 ................................................. 10
Figure 6: GNI per capita based on US$ ............................................................................................. 11
Figure 7: Nicaragua’s Trade balance on Goods .................................................................................. 14
Figure 8: Nicaragua: Share of Agricultural Imports (Capital and Raw Materials) on Total Imports 17
Figure 9: Average Tariff Levels in Central America from 1985 to 1999 ............................................. 18
Figure 10: Nicaragua: Estimated Average Tariff According to CAFTA ............................................. 21
Figure 11: GDP Structure by Economic Sectors .............................................................................. 23
Figure 12: GDP and GDP Growth Rate ............................................................................................ 24
Figure 13: Nicaragua’s Traditional Agricultural Exports in US$ million ......................................... 25
Figure 14: Trade Balance on Goods .................................................................................................. 26
Figure 15: Economic Active Population by Origin as Absolute Numbers and Percentages .......... 27
Figure 16: Occupied population by Economic Activities ................................................................. 28
Figure 17: Suburban Production Areas Located Around Managua .................................................... 30
Figure 18: The Pacific Plains and Highlands ..................................................................................... 31
Figure 19: The Tropical Dry Region .................................................................................................. 32
Figure 20: The Capitalist Coffee and Cattle Production Region ......................................................... 33
Figure 21: The Old Agricultural Frontier ......................................................................................... 34
Figure 22: The New Agricultural Frontier ....................................................................................... 35
Figure 23: Nicaragua’s Agricultural Input Imports ............................................................................ 49
Figure 24: Rural Salaries in US$ per day in Nicaragua and Costa Rica ............................................. 55
Figure 25: Land Reformed in Nicaragua .......................................................................................... 56
Figure 26: The Dynamic of Private and Reformed Land .................................................................. 57
LIST OF TABLES

Table 1: Nicaragua’s Total Population and Average Annual Growth Rate, 1778 to 2004 ................. 6
Table 2: Total Population and EAP Growth Rates, 1960 to 2005 .......................................................... 6
Table 3: Weight of Pacific Region on Total, Urban and Rural Population ............................................ 7
Table 4: Share of Rural expenditure and Debt Services on Total Public Expenditure ......................... 10
Table 5: Income Distribution According to the Living Standards Measure Data in 1993, 1998 and 2001 ............................................................................................................................................ 12
Table 7: Rural Poverty and Extreme poverty Levels According to Living Standards Measure Surveys in 1993, 1998, and 2001 ........................................................................................................ 13
Table 9: Average Weight per Region on Export ....................................................................................... 15
Table 10: Average Weight per Region on Imports .................................................................................... 16
Table 11: Trade and Economic Agreements Signed between 1960 and 2005 ........................................ 19
Table 12: Mexico and Nicaragua’s Agreement on Terms of Product Liberalization ........................ 20
Table 13: Imports, Exports and the Number of Products according to DR-CAFTA-defined Categories 21
Table 14: Contribution of the Agro-industry to the Manufacture’s GDP ............................................. 24
Table 15: Socioeconomic Structure of Nicaraguan Rural Families .......................................................... 36
Table 16: Export Products: Value Chains Integrated into Local and International Markets ................. 44
Table 17: Table Export Products: Value Chains Integrated into Local and International Markets .... 44
Table 18: Agricultural Products: Value Chains Integrated into National and Regional Markets ....... 46
Table 19: Agricultural Products: Value Chains Integrated into National and Regional Markets ....... 47
Table 20: Average and Minimum Wages in Nicaragua by Economic Activity ..................................... 54
Table 21: Relationship between Agricultural Exports and Imports ....................................................... 58
Table 22: Factors Generating Structural Changes in the Rural Sector .................................................. 64
Table 23: Nicaragua: Economic Active Population, and EAP Growth Rate by Origin ....................... 65
Table 24: Weight of the Informal Sector in the Economy ........................................................................ 66
Table 25: Rural Jobs Annual Deficit ......................................................................................................... 66

Table 26: Land Tenure Structure, 1963-2001 .......................................................................................... 71

Table 27: Share of Agriculture on Total Exports in US$ Million and Relative Numbers ............... 75

Table 28: Characteristics of Subsistence Families by Region ............................................................... 95
TABLE OF CONTENTS

INDEX ................................................................................................. I

AUTHORS ........................................................................................... III

RESUMEN EJECUTIVO ........................................................................ V

EXECUTIVE SUMMARY ...................................................................... XIII

PART I - PLACE AND ROLE OF AGRICULTURE IN THE NATIONAL CONFIGURATION ...... 1

CHAPTER 1 - HISTORICAL BENCHMARKS, MAIN AGGREGATES AND ECONOMIC DEVELOPMENT .......... 3

1. Historical Turning Points .................................................................................. 3
   Liberal Revolution, 1890s .................................................................................. 3
   Somoza Dictatorships, 1934-1979 ................................................................ 3
   Sandinista Revolution, 1979-1990 ................................................................ 3
   Implementation of Neo-Liberal Policies .......................................................... 4

2. Demographic Characteristics ........................................................................... 5

3. The National Economy .................................................................................. 7
   3.1. Debt ........................................................................................................ 7
   3.2. Household Income Structure and Poverty Incidence ......................... 10
   3.3. Foreign Trade Structure – International Insertion ............................... 13
       3.3.1. Trade Partners .............................................................................. 14
       3.3.2. Trade Agreements and Preferential Regimes (Protection Rates) .... 17

CHAPTER 2 - AN INITIAL OUTLINE OF THE MAIN CHARACTERISTICS OF NICARAGUA’S AGRICULTURAL SECTOR ......................................................... 23

1. Agriculture’s Place in the National Economy ........................................... 23
   1.1. Food, Agriculture and Agro-food Imports/Exports (Quantity and Value) ........................................ 25
   1.2. Agricultural Population Dynamics ....................................................... 26

2. Agrarian Structures .................................................................................... 28

PART II - THE STRUCTURE AND EVOLUTION OF AGRICULTURAL AND AGRO-FOOD MARKETS ........................................................................ 39

CHAPTER 3 - AGRO-FOOD MARKETS ......................................................... 41

1. General Organization of Markets and Types of Sector .......................... 41

2. Commodity Chains in Nicaragua ............................................................... 42

CHAPTER 4 - THE FACTOR MARKETS: LAND, LABOR, INPUTS, CREDITS AND EXTENSION ......................... 49

1. Inputs Market ........................................................................................... 49

2. The Credit Market ................................................................................... 50

3. The Agricultural Extension Market ......................................................... 52

4. The Labor Market .................................................................................... 53

5. The Land Market ................................................................................... 55

6. Evolution of Relative Prices ................................................................... 57

PART III - SEGMENTATION OF PRODUCTION STRUCTURES: TRENDS OBSERVED AND CONSEQUENCES ..................................................................... 61

CHAPTER 5 - FACTORS GENERATING STRUCTURAL CHANGES IN THE RURAL SECTOR .......................................... 63

1. Demography ............................................................................................ 63

2. Available Resources ................................................................................ 67
   Water Resources and Irrigation ................................................................. 68

3. Land Tenure and Property ...................................................................... 71

4. Domestic and International Prices ......................................................... 72

5. General Export Structure and Degree of Diversification .................... 75

CHAPTER 6 - RE-STRUCTURING OF RURAL FAMILIES’ LIVELIHOOD STRATEGIES .............................................. 79

1. A Historical Review .................................................................................. 79

2. Production Structure Segmentation: The Cases of Cheese and Coffee ........................................................................... 80
   2.1. The Cheese Agro-industrial Value Chain ........................................... 81
   2.2. The Coffee Agro-industrial Value Chain ............................................ 83
PART IV - IDENTIFIABLE RISKS AND IMPASSES, POSSIBILITIES FOR ADAPTATION AND
RESTRUCTURING PROCESSES ........................................................................................................... 87

CHAPTER 7 - RECURRING PROBLEMS AND RISKS .............................................................................. 89
1. Vulnerable Social Groups and Regions .......................................................................................... 89
   1.1. Evolution of Rural Poverty ........................................................................................................... 89
   1.2. Characteristics of Vulnerable Farms ........................................................................................... 93
2. Land Scarcity and the Extensive Production Systems ...................................................................... 95

CHAPTER 8 - EXISTING EXIT OPTIONS AND ON-GOING PROCESSES OF CHANGE ......................... 99
1. Developing Rural Non-farm Activities ............................................................................................ 99
2. Rural Depopulation and Urban Activities ...................................................................................... 99
3. Migrations ........................................................................................................................................ 100
   3.1. Inter-regional Migrations ........................................................................................................... 100
   3.2. International Migrations ............................................................................................................ 103
4. Reshaping of Rural Economies ....................................................................................................... 107
   4.1.1. Manifestations of the New Configuration of Rural Economies .................................................. 107
   4.1.2. Destination and Impact of Funds Transferred by Migrants ...................................................... 107

PART V - CONCLUSIONS OF RURALSTRUCT PHASE 1 IN NICARAGUA ........................................ 111
REFERENCES ......................................................................................................................................... 115
ACRONYMS ......................................................................................................................................... 119
LIST OF FIGURES ................................................................................................................................. 121
LIST OF TABLES ................................................................................................................................... 125
TABLE OF CONTENTS ......................................................................................................................... 127