Tungurahua: An alternative means of economic development Final report*

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CONTENTS

I. RESEARCH QUESTION

This research project draws on a previous study into Ecuadorian territorial economic dynamics which identified areas where there was evidence of socially inclusive economic growth (Larrea et al 2008). The study endeavoured to identify appropriate areas to select as case studies during the second phase of the research. Accordingly, the study analysed poverty, social inequality and local economic growth in Ecuador between 1990-1995 and 2001-2006. This was based on district social maps, drawn up with the aim of identifying territorial dynamics on a micro-regional scale. The research focused on three social variables, applied at district level: incidence of poverty and indigence; social inequality, as measured by the Gini coefficient; and family consumption per individual. Districts are the smallest administrative divisions in the country. In 1995 there were 995 districts in Ecuador – with the exception of towns, where a municipal scale is applied.

The first group of maps is based on the 1990 population census and the 1995 Living Conditions Survey (LCS), whereas the second combines the 2001 census and the 2006 LCS. The maps, which were developed by the World Bank, were drawn using mathematical regression-based models of estimation of small areas (Elbers, Lanjouw and Lanjouw 2003; 2005). The PovMap2.0[1] software was used for this purpose. Districts presenting statistically significant social advances in consumption per individual, and decline in poverty and/or inequality were identified by comparing each district's status during the 1990s and the current decade.

Noticeably, modest economic growth (0.5% of annual consumption *per capita*) and an increase in social inequality were experienced at national level during these two periods. Consequently, decline in poverty was limited and few districts presented a favourable combination of economic growth, decline in poverty and improvements in social equality. Areas which showed signs of inclusive economic growth were found in the main cities and in certain towns in the Sierra [the Central Highlands area of Ecuador – translator's note], including Ambato, capital of Tungurahua province. However, for the purpose of this project, the focus will be on rural areas comprising small to medium-sized towns, and thus mainly urban dynamics are excluded *a priori*.

Social and economic changes in districts can be categorised into two main groups. The *first* of these groups includes districts and cities that manifest economic growth and decline in poverty and inequality in terms of significant statistical values. Practically no rural districts are found in this group. However, the town of Ambato, among others, is included. It is recognised that an important part of Ambato's urban dynamics is based on its role as an agricultural commercial centre for local and regional markets in the central Sierra. This includes an endeavour to expand the market to the coastal region.

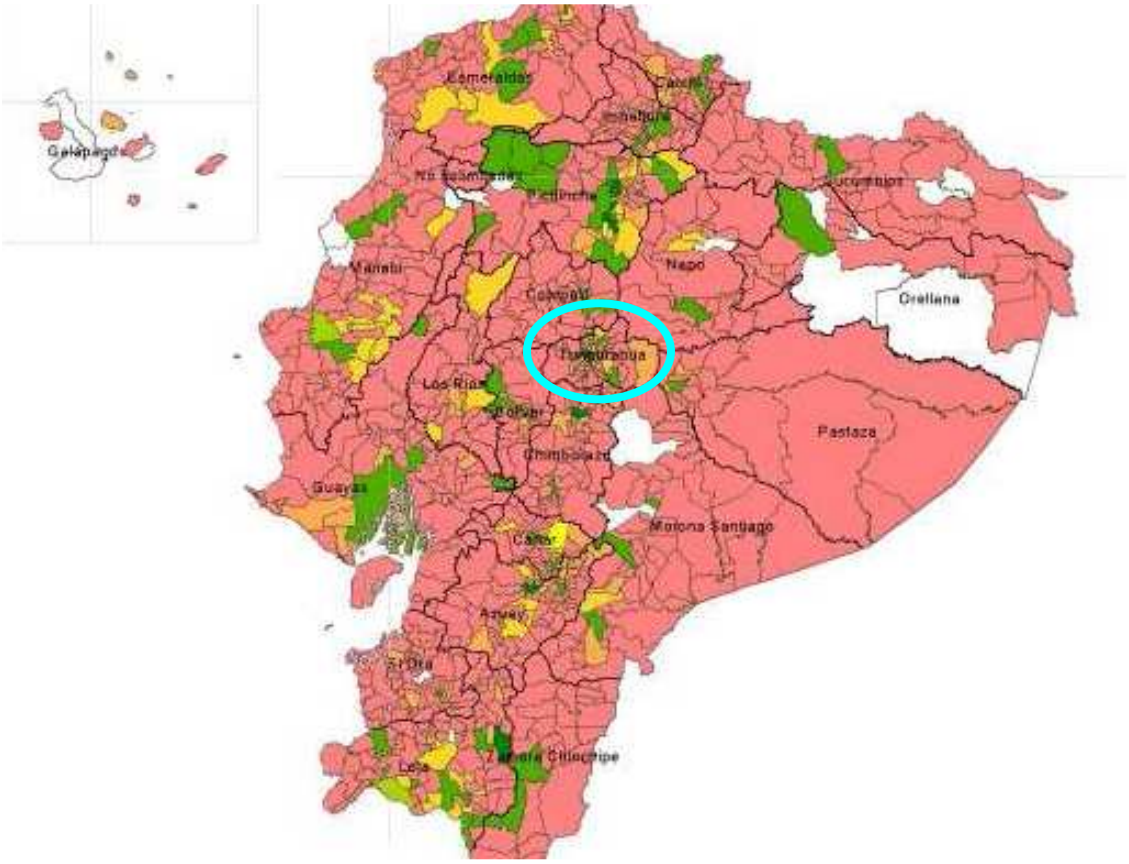
The *second* group of districts demonstrates economic growth and a decline in poverty, but without significant changes in the Gini coefficient. This second group does not include any districts in the coastal region, and thus the regional basis for the pre-selection of areas with inclusive growth is restricted to the Sierra. The Amazon region was not included in this group, due to the limited reliability of information on the region, as well as its limited total population. In this second group of districts, there are various significant cases in Tungurahua and its area of immediate influence. Among the districts that stand out are those in the municipalities of Pelileo, Píllaro, and in the area close to Salcedo and Pijulí (in the Cotopaxi province, neighbouring Tungurahua). The town and municipality of Baños, whose tourism dynamics have led to significant advancements, is in the same situation. The fact that these economic dynamics are present in areas of the

[1] The programme was designed by Qinghua Zhao and Yonfming Du, for the World Bank (http://iresearch.worldbank.org/PovMap/PovMap2/PovMap2Main.asp).

Tungurahua province as well as in Cotopaxi province implies a territorial configuration which extends beyond administrative thresholds.

There is an additional group of districts, such as Holguín (within the Salcedo municipality, Cotopaxi province), which did not experience significant changes in individual consumption, but did see a decline in poverty and social inequality. Finally, there are districts where a decline in poverty is palpable, but without significant change in the two remaining variables. This situation is evident within some rural districts of Tungurahua, namely Patate, Pacaihua, San Miguelito and Urbina (Píllaro).

Map 1: Ecuadorian districts combining economic growth, decline in poverty and decline in inequality (1990-95 to 2001-06).



Source: Larrea *et al* (2008: 19, Map 10)

The province of Tungurahua[2] was selected to serve as a case study of those areas which have experienced economic development alongside partially inclusive social dynamics. There are, of course, other areas of the Ecuadorian Sierra with similar characteristics, such as in the provinces of Cañar, Azuay and Loja (southern Sierra), in the vicinity of Quito, as well as in Imbabura and Carchi (northern Sierra). However, it is believed that the changes experienced in these areas are due to fundamentally *external* factors, such as migrant remittances (southern Sierra), trade involving neighbouring countries (Carchi and southern Sierra), or the metropolitan influence which Quito exerts. On the other hand, it can be argued that the factors favouring a more inclusive economic

[2] For the sake of clarity, we refer to the "province of Tungurahua", "region of Tungurahua" or the "area of Tungurahua's territorial dynamics" as interchangeable terms. It should be understood that the chosen areas of study are mostly within the province of Tungurahua, although some are outside of it. Furthermore, some specific areas of the province of Tungurahua have very low rates of economic growth or exclusive dynamics.

development in the province of Tungurahua are *internally* originated (these internal factors are always combined with external factors, but are more important here than in the previously mentioned cases) within the productive dynamics of agriculture, artisanal production and other services related to an idiosyncratic institutional and organisational tradition.

In brief, most of the indigenous areas of the central Ecuadorian Sierra face severe economic decline. Likewise, other relatively dynamic areas in the Sierra are experiencing economic development determined by external and fortuitous factors. However, the Tungurahua region seems to stand out because of the presence of varied economic activities, with moderately successful results, linked to a distinctive local history. The aim of this research project is thus to ***examine the conditions and factors which contribute towards such a result*** within a national context of highly unfavourable economic and social dynamics (over 20 years of economic stagnation and an increase in inequality throughout the country). Accordingly, the general research question can be summarised as follows:

> *What factors account for the "successful" developmental dynamics in the province of Tungurahua, those dynamics characterised by localised circles of economic growth, social inclusion and, possibly, environmental sustainability?*

In order to address this general research question, the first part of the paper aims to characterise the social and economic dynamics of the Tungurahua region. A general hypothesis as to the origins of these dynamics and the conditions responsible for its persistence is then suggested. The final part of this project attempts to offer a concise explanation of these distinctive economic dynamics and to make some observations regarding the future prospects of this territory.

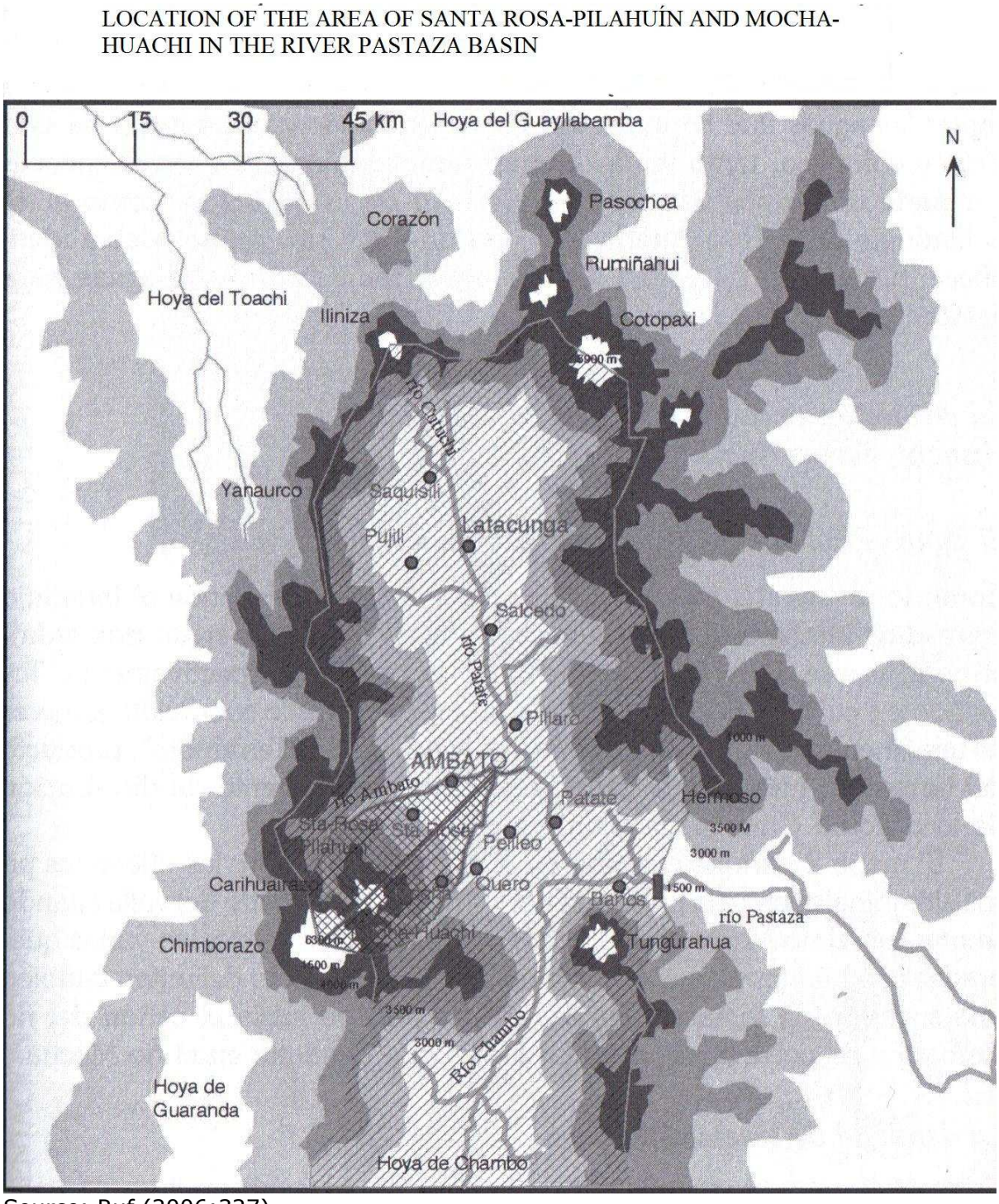
II. CHARACTERISATION

The province of Tungurahua, situated at the heart of the central Ecuadorian Sierra, had a population of almost 450,000 inhabitants at the beginning of the 21st century. At 3,855 km², it is the smallest and most densely populated province of the most densely populated country in South America (see Map 1).

For the purpose of this investigation, it is helpful to consider five structural characteristics of the region. *Firstly*, from a physical point of view, the province's environmental heritage is similar to that of any other province or region in the Ecuadorian Sierra. It is not *naturally* endowed with a distinct advantage in terms of environmental resources. Furthermore, there are indications that this heritage has endured significant pressures which compromise its sustainability, and continues to do so.

In orographic terms, the province of Tungurahua forms part of one of the interandine *hoyas,* the *"Hoya de Patate"*, which marks the area of the Ecuadorian Sierra to the north of the Azuay *nudo,* or transversal mountain spur (southern Sierra). *Hoyas* are longitudinal orographic formations (running from north to south) comprised of valleys which are flanked by two mountain ranges to the east and west, and closed in by transversal mountain spurs to the north and south. Ecuadorian interandine valleys rise to between 1,500 and 2,800 metres above sea level. The river situated in its central area cuts across the mountain range in one of its directions, either to flow into the Pacific coast (to the west) or into the Amazonian basin (to the east). The *hoya de Patate* cuts across the mountain range towards the east, where the Patate and Chambo rivers meet to form the Pastaza river (see Map 2). Those areas close to the intersection across the mountain range tend to be lower, warmer and drier. This dry area is where the province of Tungurahua is located. As a result, the province's water supply is limited.

Map 2: The interandine *hoya* of the Patate River.

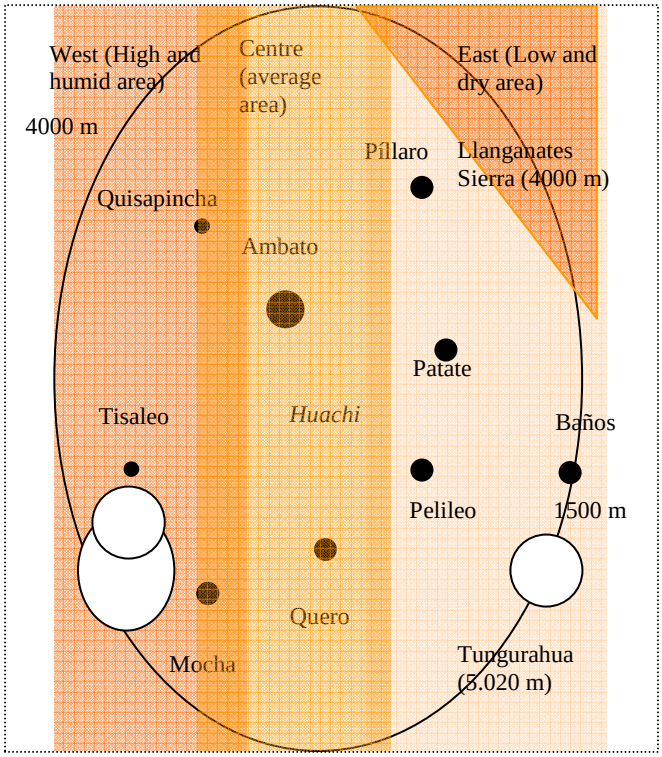


Source: Ruf (2006:327)

> *The annual deficit in water supply needed to cater for the demands and requirements of the province has reached alarming figures (close to 800 million m^3 per annum). The water supply during periods of drought barely reaches 1,156 m^3, whereas the annual water demand comes close to 1,930,000,000 m^3* (Provincial Government of Tungurahua 2007a: 10) [our translation].

By way of comparison, Ecuador enjoys a surplus water supply: it can mobilise 40,000 m^3 per person, or, in other words, 2.5 times more than the world average. This is equivalent to 21,000m^3/ha – the highest amount on the continent (Récalt 2008: 17). Water availability in each province varies according to the gradient of humidity, which decreases from the west to the east (see Diagram 1). Historically, irrigation systems in the area collected water from high-altitude western areas (thawed water from the Chimborazo and Carihuairazo volcanos), in order to make supplies available to the middle and lower eastern areas of the province. These central and eastern areas have shown greater economic dynamism and consequently accommodate the majority of the population. On the other hand, the high-altitude western areas, with increased levels of humidity, are poorer.

Diagram 1: Gradient of humidity (Tungurahua province).



The province of Tungurahua is not only at a disadvantage from a hydrological point of view, but also in terms of the quality of its land. Table 1 presents the results of a study into agricultural (rich soil) and pastoral (medium soil) land capacity as a percentage of the province's total surface area. In fact, within the Ecuadorian Sierra, only the provinces of Carchi, Imbabura and Chimborazo are less fertile than Tungurahua. In short, this is not a naturally gifted province.

Table 1: Land agricultural capacity (in km^2).

PROVINCE	Suitable for farming	Suitable for pasture	Total province surface	% of land suitable for farming and pasture	% of land suitable for farming
AZUAY	710.7	2470.5	8001.0	39.8	8.9
BOLIVAR	1216.7	196.7	3937.5	35.9	30.9
CAÑAR	661.0	530.7	3165.4	37.6	20.9
CARCHI	338.1	643.3	3769.3	26.0	9.0
COTOPAXI	1605.0	827.4	5958.8	40.8	26.9
CHIMBORAZO	550.6	854.6	6503.9	21.6	8.5
ESMERALDAS	5494.1	3146.1	15,547.6	55.6	35.3
GUAYAS	13,218.5	1088.6	19,571.9	73.1	67.5
IMBABURA	438.5	876.4	4626.7	28.4	9.5
LOJA	1463.5	2394.1	11,083.5	34.8	13.2
MANABI	10,682.5	1521.1	18,777.2	65.0	56.9
MORONA SANTIAGO	6511.3	1298.8	24,401.8	32.0	26.7
NAPO	5875.0	803.3	33,504.6	19.9	17.5
EL ORO	2165.0	543.9	5770.6	46.9	37.5
PASTAZA	3618.2	1213.5	30,182.9	16.0	12.0
PICHINCHA	5002.9	2120.4	13,075.5	54.5	38.3
LOS RIOS	6451.0	152.8	7208.9	91.6	89.5
SUCUMBIOS	4937.3	8.8	17,967.2	27.5	27.5
TUNGURAHUA	**487.9**	**719.7**	**3481.7**	**34.7**	**14.0**
ZAMORA CHINCHIPE	450.4	1684.0	17,272.6	12.4	2.6
TOTAL	**73,040.4**	**23,108.2**	**255,294.2**	**37.7**	**28.6**

Source: Digital Processing of Agricultural Aptitude (ORSTOM-PRONAREG 1983). Analysis carried out by Fundación Natura (1998),

The land in the province is not particularly suited for agricultural purposes, and there are many indicators to suggest that the territorial economic dynamics are not environmentally sustainable. There are many signs of deterioration in the territory's natural heritage. The current water supply situation has been revealed through the 2004 *Water Resources Inventory*, whose conclusions on water shortage are explicit:

> *Finally, in view of the increase in future demands for different uses of water, the introduction of new irrigation systems is considered inconvenient, as its service to the population would be reduced (only regulatory and usage-efficiency systems can be improved)* Provincial Council of Tungurahua, CNRH, PROMACH, IEDECA, CESA 2004: Annexe I, Hydrological Study, p. 43) [our translation].

It is also worth noting that, according to the 2000 Agricultural Census, although 63% of the agricultural production units included irrigation systems, only 12% of agricultural land actually underwent an irrigation process. Water shortage is one of the main problems in the province, as corroborated by the plans developed by the provincial government since this date (Provincial Government of Tungurahua 2007).

The figures on water pollution are also far from encouraging. The 2004 provincial water inventory established that out of the 20 samples of water tested, 20% are suitable for the preservation of wildlife, 25% are suitable for human consumption and 67% are suitable for agricultural purposes. Critical areas, due to waste disposal, erosion and deforestation, are found in the towns of Pelileo and Ambato, the lower and middle basins of the Pachanlica river (Quero, Cevallos, fruit-growing areas and the centre of the GELEC S.A. industry) and the upper basin of the Pastaza river (Provincial Council of

Tungurahua, CNRH, PROMACH, IEDECA, CESA 2004: Annexe III, Diagnosis of the quality of water resources, p. 62). Overall, both artisanal and industrial economic activities contribute to water pollution by disposing of their waste products in rivers: for example, in the case of leather (Bermeo 2004) and jeans (Martinez and North 2009), as well as chemicals used in agricultural production.

Similarly, current land conditions do not contribute towards sustainability. Although derived from different methodologies, the available studies all confirm that land exploitation, carried out more intensively than physical conditions allow, is predominant in these areas. According to results obtained in 1992 by Fundacion Natura, 31.6% of land in Tungurahua province is overused. This means Tungurahua falls within the regional average, exceeding Cotopaxi and Bolivar, whilst Chimborazo remains the province with the highest surface area of overused land (given that it is the province in the Sierra with the smallest percentage of fertile land).

Table 2: Overused agricultural land in the provinces of the Sierra, 1992.

PROVINCE	PROVINCE SURFACE AREA	SURFACE OF LAND EXPLOITATION	
		KM^2	%
CHIMBORAZO	6503.92	2813.80	43.26
LOJA	11,083.50	4020.15	36.27
IMBABURA	4626.72	1591.06	34.39
CARHI	3769.27	1236.92	32.82
TUNGURAHUA	3481.69	1098.33	31.55
COTOPAXI	5958.78	1735.84	29.13
AZUAY	8000.97	2312.57	28.90
CAÑAR	3165.37	801.16	25.31
PICHINCHA	13,075.50	2898.36	22.17
BOLIVAR	3937.46	855.01	21.71
REGIONAL AVERAGE			**30.55**

Source: Digital Processing of Agricultural Aptitude and Current Use 1983 (ORSTOM-PRONAREG 1983) and 1992 (CLIRSEN 1992). Analysis performed by Fundación Natura (1998).

This results in the expansion of agriculture into protected land and, consequently, the reduction of *páramos,* or moorland. A study into the south-western area of the province shows that in Mocha, Tisaleo and Quero there has been a progressive reduction of moorland, by an estimated 15%, from 1990 to 2005. In Tisaleo, the *Pampas de Salasaca* moor area has been reduced by approximately 11% from 1990 to 2005 (183 hectares). In Quero, the *Igualata* moor area has been reduced by approximately 19% from 1990 to 2005 (676 hectares). In Mocha, the *Sachaguayco* moor area has been reduced by approximately 4% from 1990 to 2005 (105 hectares) (Delgado Aquilar 2006). *Las Abras* moor area is in the same municipality and has undergone a reduction of approximately 29% from 1990 to 2005 (400 hectares) (Delgado Aquilar 2006).

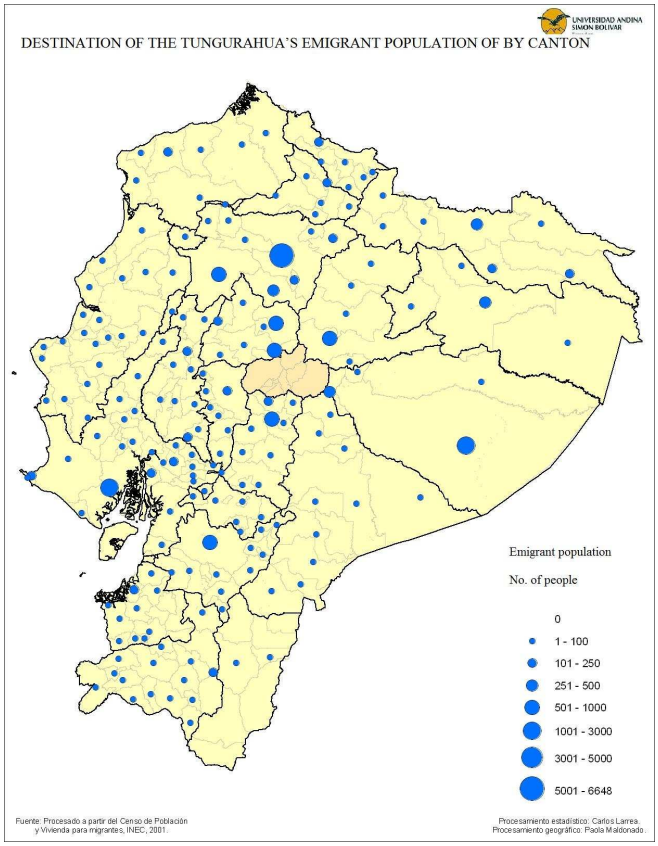
The ***second*** characteristic of particular importance for the purpose of this paper is the fact that the Tungurahua province is not only *physically* located in the centre of the country, but is also at the *special* junction of itineraries and flows connecting all other regions in Ecuador. *Geographical space* can be socially defined as the material and symbolic itineraries and flows which tie physical places together. Furthermore, structures within geographical spaces can be defined as networks of *relations* for the purpose of connecting *places*. These networks of relations are routes via which people, material

goods and ideas travel. This is achieved by means of communication and transport. To a certain extent, these can be considered as *itineraries* (Dollfus 1980, 1991; Deler 2007 [1981]). The geographical characterisation of a territory is thus the identification and valuation of material and symbolic flows, which vary according to changes in their respective establishing societies. In accordance with this perspective,

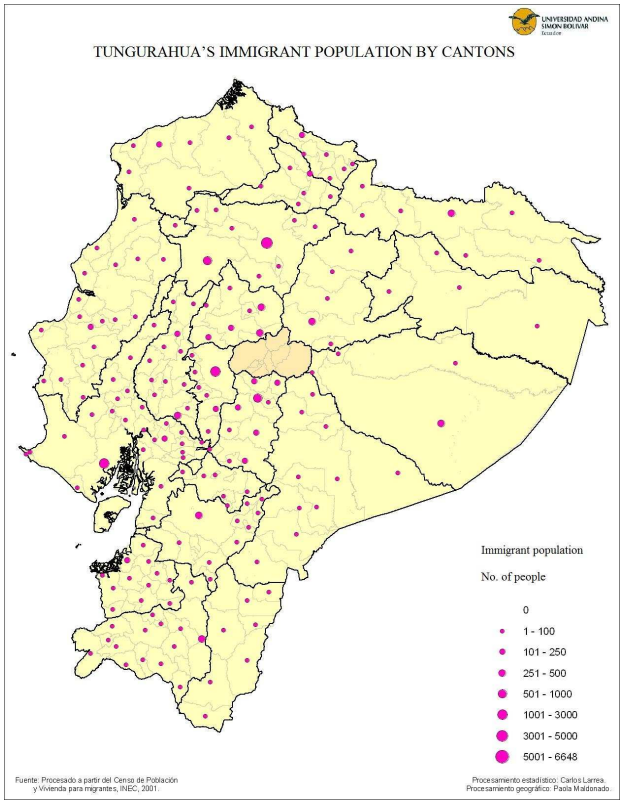
> *The town [of Ambato] benefits from its geographical location in the heart of the central Andes. It is located in the longitudinal axis running though the interandine valley, where the railway was built, the traditional access route towards Guaranda and Babahoyo, and to Amazonia via the valley of Pastaza. The town controlled a densely populated agricultural region specialising in high commercial value products for urban consumption (fruit and vegetables) (Deler 1983: 216; the author refers to the 1920s)* [our translation].

The province and its capital, Ambato, maintain strong trade links with all provinces in Ecuador. It is important to stress that these links are not established exclusively at regional level (e.g. central Sierra), but rather throughout the whole national territory. A contemporary example of geographical mobility shall suffice to shed light on this point. Choice of residency location is an indirect indication of the most frequent links between territories. Maps 3 and 4 show migrant destinations outside the province, as well as the origins of immigrants who lived in Tungurahua in 2001. The findings reveal an astonishing distribution in both cases, as they cover practically all the municipalities in Ecuador. Based on the 1990 Population Census, Juan Bernardo León (1997: 33-34) carried out a similar study for the cities of Quito, Guayaquil, Machala and Cuenca. The results are much more regionalised: the majority of immigrants in Quito originally come from the Sierra, just as the majority of immigrants in Guayaquil come from the area around the Guayas river basin (see Map 5: Quito and Guayaquil).

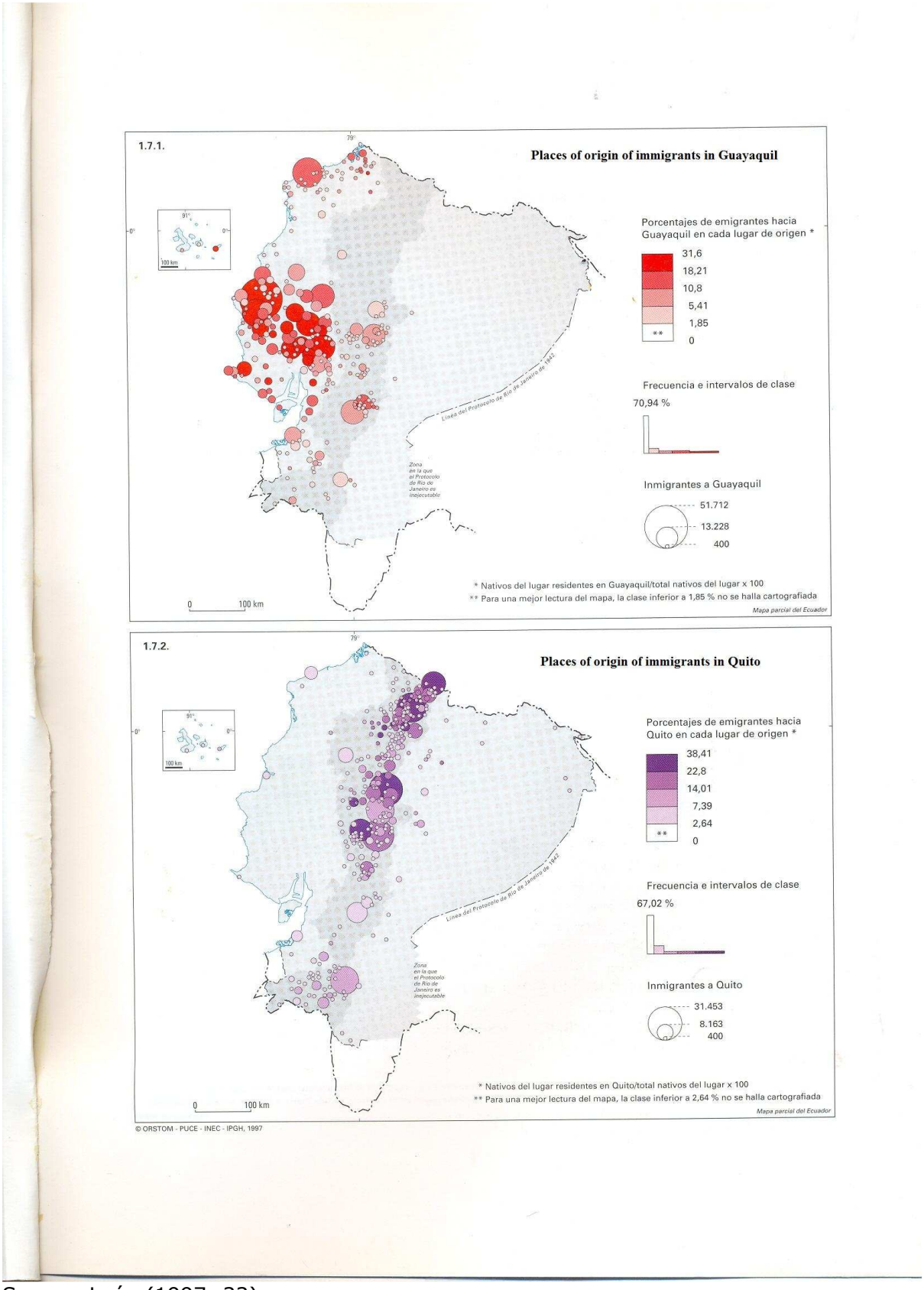
Map 3



Map 4


UNIVERSIDAD ANDINA SIMON BOLIVAR
TUNGURAHUA'S IMMIGRANT POPULATION BY CANTONS
Immigrant population
No. of people
0
1 - 100
101 - 250
251 - 500
501 - 1000
1001 - 3000
3001 - 5000
5001 - 6648
Fuente: Procesado a partir del Censo de Población y Vivienda para migrantes, INEC, 2001.
Procesamiento estadístico: Carlos Larrea.
Procesamiento geográfico: Paola Maldonado.

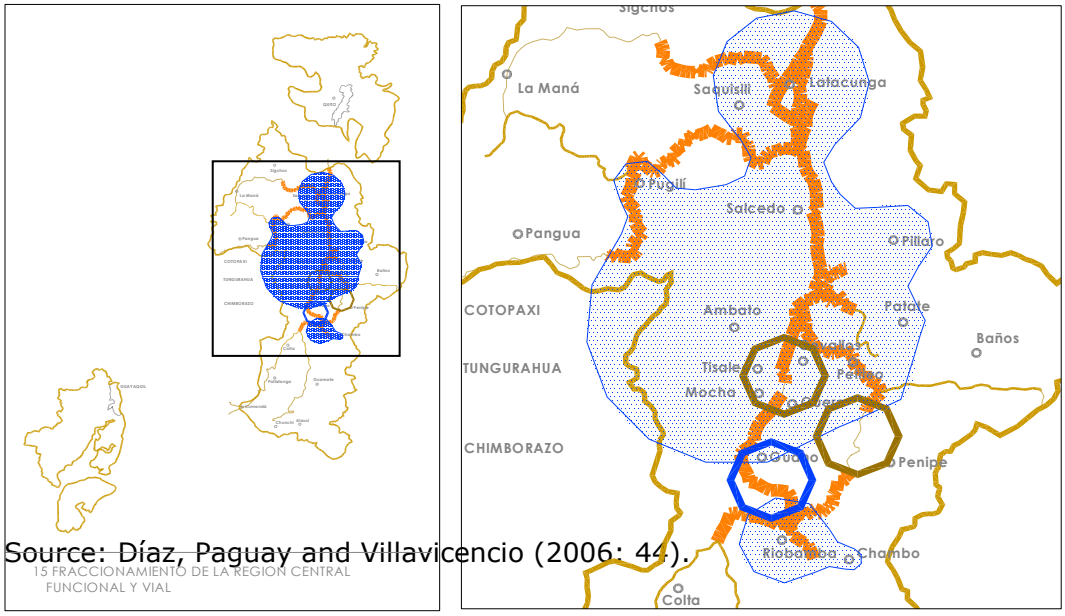
Map 5



Source: León (1997: 33).

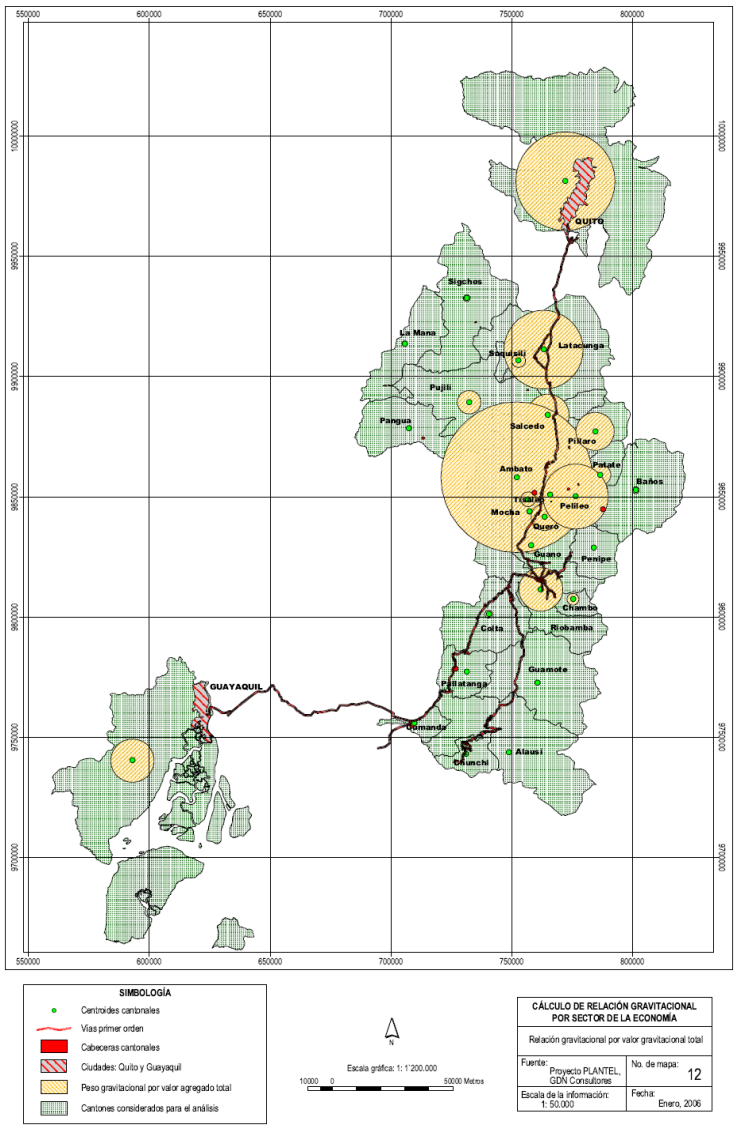
The *region* of Tungurahua, whose centre is Ambato and which offers links to all corners of the country, does not coincide exactly with the *province*. A study carried out by the PLANTEL project into the central Ecuadorian Sierra, based on the territorial "gravitation" economics technique, concludes that the flows in the area are clearly divided by the north (Ambato – Latacunga) and the south (Riobamba) (Diagram 2). The western municipality of Baños is less integrated in territorial economic dynamics, whereas the municipality of Salcedo (towards the south of Cotopaxi) plays a much more active role in Ambato's "gravitation" process. Lastly, territorial economic links or flows between the central Sierra and Quito and Guayaquil are paramount in regional dynamics (Map 6).

Diagram 2



Source: Díaz, Paguay and Villavicencio (2006: 44).

Map 6



Source: Díaz, Paguay and Villavicencio (2006: map 12).

The ***third*** characteristic of the province consists of a significant diversification of its production system. Its economic dynamism is not defined by a particular activity, but rather by a remarkable array of small and medium-sized endeavours of various kinds, from agricultural activities to a wide range of manufacturing and craftwork. The underlying principle of Tungurahua's regional dynamics is, above all, this diversity and flexibility, which allows it to adapt to sudden changes in market conditions. In order to understand the region's territorial dynamics, it is important to explain its production diversity *in lieu* of one specific activity.

Table 3: Production regions in Tungurahua (decade of 2000).

Area	Agrigultural production	Artisan manufacturing	Observations
Píllaro	Dairy cattle, guinea pigs, pork, potatoes, white onion, fruit.	Rural cheesery, two savings and credit cooperatives (two bank subsidiaries).	
South-western area: Cevallos, Mocha, Quero, Tisaleo	Potatoes, fruit, onions, barley, corn, peas, beans, livestock (pork, cattle, dairy cattle); guinea pigs, especially in Cevallos.	Rural cheesery, shoe shop (home-based), carpentry.	In 2000 there were still plums, peaches, apples and blackberries. Migration in certain areas, such as Cevallos.
Ambato	Potatoes, onions, fruit, vegetables, beans.	Shoe shop, textiles, trade, services, at least three savings and credit cooperatives, industrial park (metal mechanical).	"Industrial production grew since the prohibition of importation of 4x4 vehicles and the production of packing cases began here. It is also a place for first-class footwear manufacturing, butchers and leather, and is second in textile and clothes production."*
Pilahuín (Quisapincha, Santa Rosa, Pasa and San Fernando)	Potatoes, beans, barley, geese, sheep livestock, cattle livestock, blackberries.	Leather products in Quisapincha, shirts in Pasa.	Temporary migration to cities (Cuenca, Quito, Ambato). Development of savings and credit cooperatives.
Patate	Fruit, poultry, livestock, guinea pigs..	Fruit liqueurs, agritourism, fish farming, one building society (and a bank subsidiary).	
Baños	Sugar cane.	Sweets and toffee, tourism, one building society (and two bank subsidiaries).	
Pelileo	Onions, tomatoes, sweetcorn, barley.	Jeans, milk pasteuriser.	Home-based jeans production.
Huambaló		Furniture	
Salasaca	Corn, wheat, barley, oats, potatoes, *melloco*, geese,	Fabrics, wool dying, fique craftwork, footwear (footwear is better paid than fique).	Home-based footwear production, subject to machine availability. Otherwise made in workshops in Ambato and

	beans, dairy cattle, broiler livestock, guinea pigs and rabbits, tomatoes.		Cevallos. Seasonal migration to the coastal region and to the Oriente [Ecuador's eastern region – translator's note]. Labourers.

Source: Provincial government of Tungurahua (2007); Metais (2000), on cooperatives in 2000, see DINAREN – MAG (2002: 96).[3]
* Interview with Mauricio Molina, CORPOAMBATO (Ambato, 24 January 2008).

However, the dynamics of the local manufacturing sector are particularly noteworthy in the context of such diversity. In 2006, the proportion of Tungurahua's Economically Active Population (EAP) involved in the manufacturing sector was almost double the average for Ecuador. No other region had a greater EAP, not even Pichincha, Imbabura or Azuay. The production of manufactured goods in the province prevailed during a period when the majority of the country's provinces were suffering a decline. Effectively, the value of the manufacturing industry in the province has been significant since 1962, although three provinces experienced greater prosperity at that time. Manufacturing industry in the area consisted of independent artisanal activities. This was corroborated by the fact that the female population employed in this sector was comparatively[4] higher than that of their male counterparts. Its decline within Ecuador highlights the general weakening of these autonomous economies.

Table 4: Manufacturing EAP per province in the Sierra (% of gender and age).

Province	**Gender**	**1962**	**1982**	**2001**	**2006**
Azuay	Male	14.52	18.08	17.22	20.64%
	Female	34.47	26.18	18.63	13.97%
	Total	20.17	20.35	17.76	17.27%
Bolívar	Male	5.18	2.9	5.81	3.09%
	Female	7.39	3.85	4.84	1.78%
	Total	5.51	3.06	5.52	2.45%
Cañar	Male	8.7	9.64	9.74	10.22%
	Female	59.52	31.32	9.51	6.69%
	Total	23.1	14.63	9.66	8.42%
Carchi	Male	9.27	4.55	5.29	7.34%
	Female	29.27	12.21	11.41	10.33%
	Total	13.49	5.88	6.95	8.63%
Cotopaxi	Male	10.13	10.15	10.19	9.10%
	Female	34.2	10.14	8.76	7.44%
	Total	14.84	10.15	9.68	8.27%
Chimborazo	Male	8.49	9.18	8.46	10.16%
	Female	23.71	14.51	7.66	6.39%
	Total	11.03	10.26	8.14	8.25%
Imbabura	Male	24.37	16.45	16.28	18.54%

[3] In 2000, however, 85% of agricultural credit was concentrated in the canton of Ambato. Only the San Francisco and OSCUS Ltd. Cooperatives submitted agricultural credit in Baños, Pelileo and Píllaro.
[4] "Comparatively" because this does not represent the absolute majority of the EAP, but rather the respective percentages of the male and the female EAPs. Since the female EAP was much less than the male EAP, the total male population working in the manufacturing industry has always been higher than the female.

	Female	42.96	24.37	19.72	18.55%
	Total	28.32	17.89	17.44	18.55%
Loja	Male	4.53	3.91	4.99	6.47%
	Female	40.93	8.1	5.72	4.53%
	Total	10.67	4.59	5.18	5.61%
Pichincha	Male	20.05	17.67	14.2	14.18%
	Female	18.99	14.86	12.49	9.56%
	Total	19.79	16.87	13.56	12.19%
Tungurahua	Male	**16.23**	**16.58**	**17.88**	**22.10%**
	Female	**19.6**	**19.2**	**16.64**	**15.31%**
	Total	**16.96**	**17.17**	**17.4**	**18.71%**
Total	Male	**11.04**	**11.44**	**10.15**	**11.50%**
	Female	**25.34**	**15.16**	**10.58**	**8.93%**
	Total	**13.6**	**12.2**	**10.28**	**10.40%**

Source: INEC, Population and Housing Census, 1962, 1982, 2001, Living standards survey, fifth round, 2006.
Design: Carlos Larrea, Ana Isabel Larrea and Paola Maldonado.

There are many qualitative indicators of this remarkable production diversity. Although small- and medium-scale industry is primarily located in Ambato, some specialised manufacturing centres are found in other areas: furniture in Huambaló (Pelileo), leather in Quisapincha, footwear in Cevallos and jeans in Pelileo. It is estimated that around 10,000 employees work in the metal mechanical industry and 50,000 in the leather industry (Proyecto EMPRENDER 2006). Of the registered industrial companies, 128 are considered small-scale industries, whereas only four are considered large-scale industries. Furthermore, of the existing companies in the small- and medium-scale industries, 65% are corporate bodies, 17% are limited companies and 16% are public limited companies (EMPRENDER project 2006).

Tungurahua, for instance, is Ecuador's largest leather producer: 80% of the country's leather is processed in the province. The majority of male workers operate in the tannery sector, whereas female workers are employed in the production of clothing and footwear aimed at a popular market, albeit with low quality criteria.

Table 5: Footwear industry in Tungurahua.

1998	**2004**
2640 people	7604 people
289 companies	376 companies
Average number of workers per company: 9.1	Average number of workers per company: 20.2
19% work in administration, 75% in production and 6% in trade.	11% are public limited companies, 13% are limited companies and 76% are corporate bodies. 44% are microenterprises, 40% are small-scale enterprises, 15% are medium-scale enterprises and 1% are large-scale enterprises.

Source: Bermeo (2004).

We conclude with two well-known examples, the first of which concerns Ambato's chocolate production. This is essentially home-based and family-orientated, and is concentrated in the district of Huachi, to the south of Ambato. It is estimated that there are around 35 workers in the district, most of whom are women, dedicated to home-made production, generally as a complementary occupation (Troya 2009: 55-61).

The second example concerns the production of jeans in Pelileo, recently studied by Luciano Martínez and Liisa North (2009: chapter 2). At its peak during the 1990s, this industry employed at least 8,000 workers (around 30% of the canton's EAP). The banking crisis and the dollarisation process towards the end of the 20th century led to major bankruptcy (affecting up to 40% of companies). In order to survive, those affected sought alternative means of income:

> *Some traded bananas from the coast; others worked in agricultural activities; others became taxi or lorry drivers; some went to prison for their debts; some left for Spain. Some sold their machinery and others had theirs seized due to debts and could not recover as a result of capital loss* (Interview in *El Tambo*, April 2000, cited in Martinez and North 2009: chapter 2).

The subsistence of manufacturing companies is underpinned by its connection to agriculture. This is contextualised in the following statement from a clothing manufacturer: "People in this region now work in agriculture as there aren't any opportunities in the town." Commercial reconstruction in the area is another characteristic of local resistance: "Two or three years ago, 80% of the jeans that were sold in Pelileo came from Peru; now 80% is manufactured locally and only 20% is imported (Interview in *El Tambo*, March 2005, cited in Martinez and North 2009: chapter 2). The industry was booming by 2005. Diversification and flexibility are two basic characteristics of Tungurahua's territorial dynamics which are highlighted by its idiosyncratic activities.

However, from an economical perspective, trading is undoubtedly the most important activity within the general context of the province's remarkable diversification. This is confirmed by the study into provincial GDP carried out by the Central Bank of Ecuador: in 2007, trade and transport represented almost 38% of the provincial GDP.

Table 6: Tungurahua's added value, 2007 (in thousands of dollars).

Economic activity	Added value	Subtotal per sector	% of provincial total	%
Agriculture, stockbreeding, hunting and forestry	48,618	49,426	7.95	7.8
Fishing	138			0.0
Mine and quarry Works	669			0.1
Manufacturing industries (excluding oil refining)	102,976	196,057	31.53	16.6
Fabrication of oil-refining products	0			0.0
Electricity and water suplí	16,020			2.6
Construction	77,060			12.4
Wholesale and retail Trading	124,776	376,272	60.52	20.1
Hotels and restaurants	9,107			1.5
Transport, storage and communications	109,531			17.6
Financial brokerage	15,329			2.5
Property, business and rental activities	44,323			7.1
Public and defence administration; compulsory social security scheme	36,858			5.9
Teaching, social services, health services and other community, social and personal services	35,727			5.7
Private property with domestic services	620			0.1
Indirectly measured financial Brokerage	0			0.0

TOTAL	**621,755**	**621,755**	**100.00**	**100.0**

Source: Central Bank of Ecuador, www.bce.fin.ec

Additional indications corroborate the crucial role of trade in the province's recent economic configuration. In 2005, more than 57% of companies registered with the Office for the Control of Business Organisations – all of which are large enterprises – were involved in trade and transport (see Table 7). As a final observation, of the one thousand largest enterprises in Ecuador, 12 were based in Tungurahua. These were equally divided into commercial and industrial firms, three of which were state-owned (see Table 8).

Table 7: Number of registered companies in Tungurahua, by activity (2005).

	Tungurahua	Total	% of total	% of Tungurahua
Agriculture	12	2354	0.5	3.1
Mines and cantenes	0	276	0.0	0.0
Industries	71	2675	2.7	18.6
Electricity	4	107	3.7	1.0
Construction	12	1510	0.8	3.1
Trade	140	8673	1.6	36.6
Transport communication	80	2789	2.9	20.9
Services to firms	29	11,083	0.3	7.6
Personal services	34	1139	3.0	8.9
TOTAL	**382**	**30,826**	**1.2**	**100.0**

Source: Office for the Control of Business Organisations of Ecuador 2006. *Información Empresarial 2005, Quito.* Office for the Control of Business Organisations.

Table 8: Companies in Tungurahua amongst the 1000 largest companies in the country (2005).

Company	**Activity**	**Ranking**
Hidroagoyán (public)	Electricity	17
Hidropastaza (public)	Electricity	33
Empresa Eléctrica Ambato Regional Centro Norte (public)	Electricity	68
Plasticaucho Industrial S.A.	Industry	142
Automotores de la Sierra S.A.	Trade	190
Ecuatoriana de Motores, MOTOREC C.L.	Trade	226
Ambacar C.L.	Trade	558
Autos y Servicios de la Sierra, Autosierra S.A.	Trade	855
Comercial Cisneros, Importadora Kumho, C.L.	Trade	883
Gelec, S.A.	Industry (Pelileo)	893
Automotores del Pacífico S.A. Autollegasa	Trade	936
Textiles industriales ambateños S.A., TEIMSA	Industry	995

Source: Office for the Control of Business Organisations of Ecuador 2006. *Información Empresarial 2005.* Office for the Control of Business Organisations.

The ***fourth*** characteristic is the pronounced diversity within the region. Moreover, dominant territorial economic dynamics are marked by the subregions of the lower, central and central-oriental valleys. The underlying definition of "space" or "territory" chosen for the purpose of this paper refers to physical areas which maintain strong links with each other, as opposed to a definition based on the homogeneity of social,

economic or cultural conditions. From a socio-economic perspective, areas which display great diversity are liable to support each other, as well as maintain strong regional exchanges, thereby creating a unique "territory", in spite of their profound structural differences.

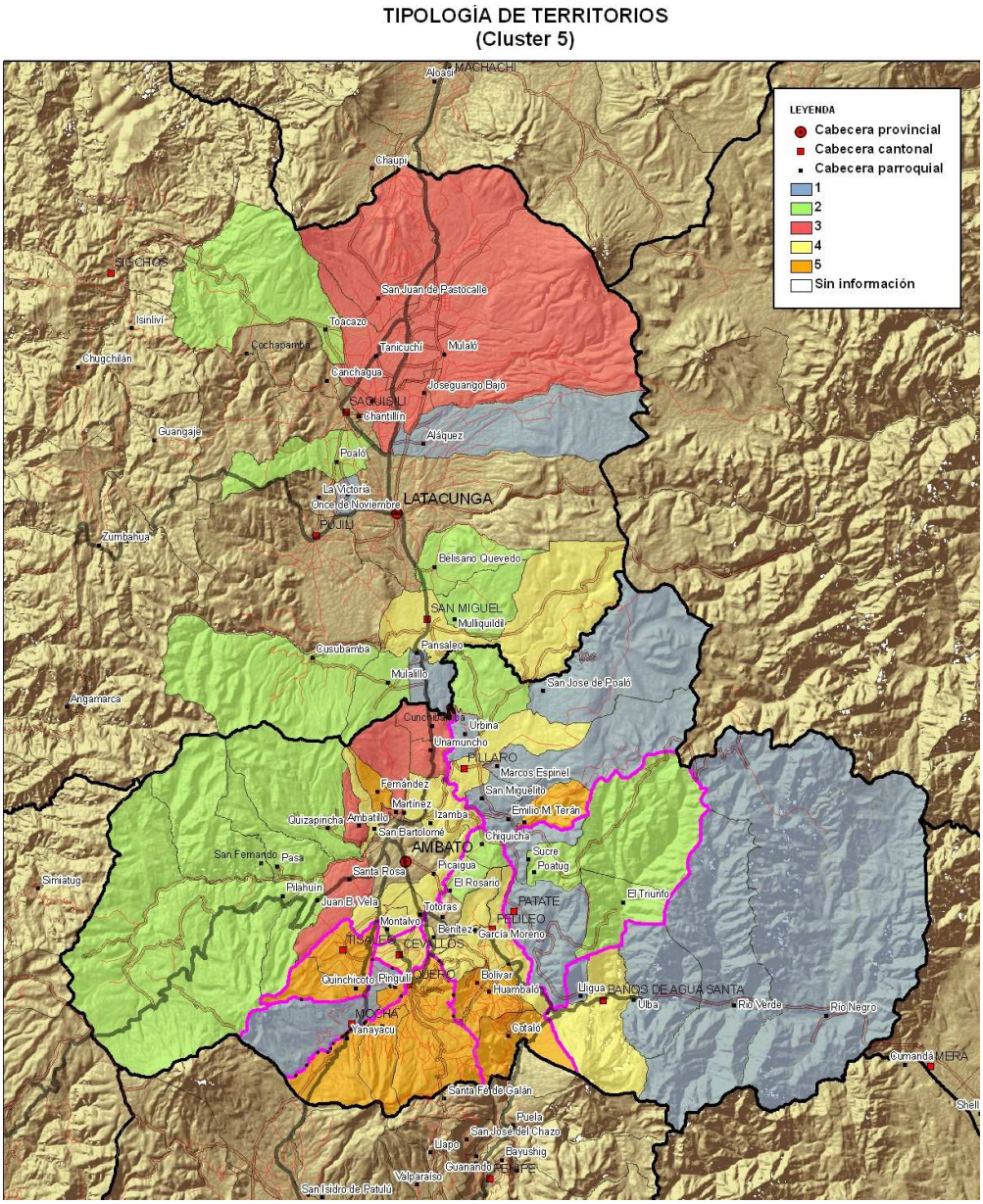
In an attempt to understand these differences in Tungurahua and its surrounding areas, we shall devise a varied typology of districts. In accordance with a fixed group of relevant variables, this typology shall aim to define a number of homogeneous and heterogeneous groups. The typology has been developed through the use of cluster analysis, using the two-dimensional Euclidean distance as a measuring system and the *Ward* method as the algorithm for its type formation. The variables have been standardised beforehand, using z markers to avoid distortions which could arise with the use of different measuring systems. The territory comprises the totality of Tungurahua's province, including the cantons of Latacunga and Salcedo in the northern province of Cotopaxi. Urban districts within the province's capitals (Latacunga and Ambato) which are integrated into the studied territory have been excluded.

For the purpose of this typology, 17 variables were selected. This was achieved by means of principal component analysis (PCA) exploratory techniques, taking correlation matrices into account. With the exception of certain situations which account for themselves, the variables correspond to the 2001 Population and Housing Census and to the 2000 Agricultural Survey Census. The chosen variables belong to the following fields:

- *Education*: literacy, years of schooling, net rate of primary, secondary and further education attendance and rate of access to further education;
- *Employment*: percentage of agriculture in the EAP, percentage of manufacturing in the EAP, ratio of females in the EAP, ratio of wage-earners in the agricultural EAP, ratio of wage-earners in the manufacturing EAP, and percentage of non wage-earners in the tertiary sector of the EAP;
- *Agrarian structure*: cantonal Gini coefficient of land tenancy (no data exist at district level), average size of the cantonal family UNIDAD DE PRODUCCIÓN AGROPECUARIA (UPA) and cantonal land productivity (World Bank, following the 2000 Agricultural Census);
- *Demographic*: 1990-2001 annual population growth rate and proportion of indigenous population (defined per household, simultaneously considering spoken language and self-definition as criteria).

A five-group typology was selected (see Map 7 and Table 9). Group 1 concerns districts with a high EAP ratio dedicated to agriculture, a high proportion of *mestizo* [people of mixed European and Amerindian ancestry – translator's note] farmers, low population growth, greater land availability, and a relatively higher proportion of agricultural wage-earners. Group 2 concerns districts with extensive predominance of indigenous rural agriculture, a higher propotion of females in the workforce, greater population growth, low schooling rates and low land productivity. Group 3 concerns districts with capitalist agriculture, high productivity and stronger presence of capitalist industries (based on paid labour). Group 4 concerns districts with productive diversity in manufacture and services, relatively low agriculture and very high formal education rates. Group 5 concerns *mestizo* agricultural districts with relatively low land concentration, smaller landholdings, low schooling rates and a lower proportion of females in the workforce.

Map 7: Varied typology of territories and districts in Tungurahua.



Source: INEC. 1990 and 2001 censuses, 2000 Agricultural census.
Design: Carlos Larrea, Ana Isabel Larrea and Paola Maldonado.

Table 9: Variables selected for the purpose of the five-group typology.

	Group	Years of schooling	Access to further education	Secondary education attendance rate	Primary education attendance rate	EAP in manufacturing	EAP in agriculture	Ratio of women in EAP	Ratio of wage-earners in manufacturing
Limited rural *mestizo* agriculture	1	5.3	6.1	47.4	9.2	7.4	64.0	38.4	50.1
Indigenous rural agriculture	2	3.4	2.8	26.8	3.8	6.0	73.0	44.3	39.6
Capitalist manufacturing and agriculture	3	4.7	4.6	35.1	5.4	16.7	51.6	40.6	56.6
Manufacturing and tertiary sector with high education rates	4	6.3	12.0	46.4	12.4	18.3	35.3	40.6	48.4
Mestizo agriculture	5	4.7	3.5	28.8	4.5	10.8	70.0	36.6	43.0
	Total	**5.0**	**6.8**	**37.7**	**7.8**	**13.0**	**54.5**	**40.8**	**47.4**
	Group	Ratio of wage-earners in agriculture	Population growth rate	Land Gini	Ratio of non-wage-earners in the tertiary sector	Indigenous population	Land produce	Average size of UPA	
Limited rural *mestizo* agriculture	1	17.6	0.1	0.83	0.116	0.05	593.4	5.9	
Indigenous rural agriculture	2	7.7	2.3	0.82	0.090	0.59	699.5	3.2	
Capitalist manufacturing and agriculture	3	28.6	1.7	0.84	0.129	0.19	771.5	3.4	
Manufacturing and tertiary sector with high education rates	4	13.4	1.9	0.77	0.215	0.12	730.2	3.3	
Mestizo agriculture	5	14.8	1.0	0.68	0.087	0.05	496.3	2.2	
	Total	**15.5**	**1.6**	**0.79**	**0.143**	**0.2**	**688.8**	**3.5**	

Source: INEC. 1990 and 2001 censuses, 2000 Agricultural census. Design: Carlos Larrea, Ana Isabel Larrea and Paola Maldonado.

Groups 3, 4 and 5 correspond to the areas in the province's central and eastern valleys, whereas groups 1 and 2 are situated in its peripheries, at a higher altitude and with less productive infrastructure. Group 2, consisting of *mestizo* farmers, has a higher degree of land and education, whereas the indigenous population (group 1) has a higher population growth rate, greater female participation in the EAP, less land and less formal education. It is within this last group of districts that the greatest social disadvantages are found.

The ***fifth*** characteristic of the region is an agrarian structure, with a relative absence of large landholdings since the third decade of the 20th century. This relatively balanced agrarian structure incorporated an extensive irrigation infrastructure within small-scale agricultural areas. Finally, rural areas in the province have the highest rate of *mestizos* in the central Sierra: Tungurahua is surrounded by the mainly indigenous areas of the provinces of Bolívar (to the west), Cotopaxi (to the north) and Chimborazo (to the south).

During the mid-20th century, prior to agrarian reform, this extraordinary land distribution was a distinguishing characteristic for studious observers:

> *An advantage is immediately revealed. Upon an in-depth evaluative observation into rural and, in particular, indigenous social phenomena, it turns out that, owing to a consecutive process of land subdivision which originated many years ago, the majority, if not all of them, are categorised as autonomous landowners (...). In addition, there is an old tendency to preserve autonomy under the protection of the* comunas *(municipalities) which has often been sustained by bloody revolts, such as in the case of the Quisapincha and Píllaro Indians* (Sostales, Peñaherrera and Jordan 1961: 173) [our translation].[5]

However, this characteristic was noted even earlier than this, as seen from the following statement by the governor of Tungurahua in 1894:

> *...In this province, landholdings are subdivided to such an extent that, with the exception of half a dozen individuals, citizens are neither rich nor poor. The majority of the population has enough means to survive under semi-decent conditions* (cited by Ibarra 1987: 29) [our translation].

The transition towards a more egalitarian agrarian structure started during the 1870s (Ibarra 1987: vi). The expansion of smallholdings was not carried out at the expense of the larger landholdings, although it did hinder their development. Smallholdings expanded at the expense of medium-sized landholdings and land reforms of those communities affected by the 1865 Law of Uncultivated Land (Ibarra 1987: 57-68). By 1930, community land was preserved mainly in Santa Rosa, Pilahún and Quisapincha, namely, to the west of the province, where, to this date, indigenous communities prevail (Ibarra 1987: 67-69). The acceleration of the land subdivision process for market purposes (and for the subdivision of haciendas [large landed estates – translator's note] as inheritance[6]) reached its peak in the 1920s, amid inflation and increasing food demands in the coastal region as a result of the crisis. Owners of small and medium-sized landholdings were thus better positioned to benefit from the new economic situation: at this point, Ambato marginally exceeded Riobamba in population size, but had yet to overcome it permanently.

[5] In 1967, a document from the Planning Council stated that: "As this province is the smallest and most densely populated, it does not offer cases of large property ownership. The only properties which can be considered as such are Leito in the canton of Baños and Llangahua de Álvarez" (Dubly and Erazo 1967: 5).
[6] Hernán Ibarra (1987: 115) has highlighted the importance of the subdivisión of the haciendas by inheritance, but also the reduction of *huasipungueros* [tenant farmers] and the growing number of *huasipungueros* who rose to become landowners and who combined their access to tenant land with ownership of pieces of land outside the hacienda.

At the same time, during the second half of the 19th century, investment in irrigation channels increased alongside the active land market, which allowed the development of small and medium-sized landholdings. Who carried out these new investments? There is evidence that coalitions of small and medium-sized landholders participated in the construction of some irrigation channels, and Ibarra (1987: 53) finds that, at least in the case of Picaihua's irrigation ditches, smallholding owners involved in irrigation system works also worked as mule-drivers. However, the more general picture that emerges is somewhat different.

Investment in irrigation channelling schemes predates the period when the importance of the haciendas began to subside. Effectively, the corpus compiled by Pablo Núñez and Juan Vega (1992: 88-144) shows that, during the first half of the 19th century, up until 1860, the vast majority of registered investments were derived from landowner initiatives, supported by the 1832[7] legislation. Historically, the population located in the lower areas constructed irrigation systems which provided water for fruit and alfalfa cultivation purposes. This was achieved by collecting water from western or northern areas (Metais 2000:10-11; Núñez and Vega 1992; Ruf 2001 and 2006). Schematically, irrigation systems collected water from western areas (high-altitude and humid areas, supplied by thawed water from the Chimborazo and Carihuarizo volcanos) and made it available in eastern areas (lower, drier and suitable for fruit and alfalfa cultivation). Since 1698, the *Toalló* system, the oldest yet most important of these systems, conducted thawed water from Carihuarizo (from the Ambato River) to the haciendas in the Huachi area (south of Ambato). Following arduous judicial and local struggles, this water was shared with the lower *(mestizo)* area of Santa Rosa. In summary, in spite of the evident dominance of the landowner initiative in the construction of irrigation systems during the first half of the 19th century, these systems were built in collaboration with rural communities and towns such as Mocha, Santa Rosa and Ambato itself.

During the second half of the 19th century, investment in irrigation soared. Hernán Ibarra (1987: 51 and 138) links this growth in irrigation investment to the increase in commercial activity:

> *After the second half of the 19th century, the entire province experienced an increase in the construction of irrigation canals. This points to a boost in income and a flourishing commercial activity, which served to promote the search for means of increasing agricultural cultivation in the semi-desert areas across the valleys* [our translation].

From a social point of view, the most decisive change seems to be that investment in irrigation was no longer motivated solely by the aim of irrigating land belonging to the haciendas. There was now the additional aim of conducting business by selling either the water rights or the high-value irrigated lands, sometimes subdividing them. Two further observations can be made from this date: the emergence of "shareholders" associations for the construction of irrigation canals – including the involvement of moneylenders – and an intense process of buying and selling haciendas in higher-altitude areas in order to monopolise the water higher up in the moorlands. This was a common practice for Pablo Albornoz and Juan Elías Bucheli, two hacienda owners involved in banking (the Bank of Quito and subsequently the establishment of the Bank of Tungurahua in 1921). They each constructed three irrigation ditches, sometimes for use in their respective haciendas and sometimes with the intention of selling parts of these lands or the water

[7] This legislation permitted water rights to the aqueduct. In other words, it allowed water to be removed using outside funds, prior to compensation; and "this marks the beginning of a surge in the construction of hydraulics works in the country and specifically in Tungurahua" (Núñez and Vega 1992: 86).

rights at much higher rates.[8] This was also the case for Manuel Fiallos and Constantino Fernandez[9] (one irrigation system bears his name today), two moneylenders with limited amounts of land (Ibarra 1987: 53). In brief, commercial capital intervenes in the autonomous business of agrarian activity – in other words, an activity which is no longer subordinate to the action of hacienda owners, which, in effect, could have contributed to the subdivision of large landholdings.

This is perhaps the main explanation regarding our findings on the construction of irrigation canals. Although these constructions were not fundamentally the work of small and medium-sized landholders, they are not exclusively attributed to large landowners. During the construction of irrigation ditches, the population grew in rural and indigenous areas, as well as in the medium-sized landholdings in the high-altitude areas, which demanded the water which they shared with the haciendas in the lower areas (this was experienced particularly in western areas, in the springs of the Ambato River). Moreover, haciendas with a water supply in central and eastern areas (including the division in Huachi) started to subdivide, due to inheritance and sales, thereby exacerbating the outlook for users of irrigation systems.[10] The haciendas and their irrigation systems were gradually sold to small and medium-sized landholders. Buyers needed to be able to produce the financial means prior to their acquisition.

However, this egalitarian structure seems to have come under fierce pressure recently, due to consolidation of large landholdings and a substantial transformation of the size of smallholdings. Effectively, the information provided by the three agricultural censuses reveals a significant increase – of over 100% between the census – in the number of producers, compared with an increase in land surface area of barely 37% over the same period. This denotes a polarisation process within the landholdings. The greatest increase, in terms of both surface area and number of producers, did not exceed 20 hectares. In fact, between 1954 and 2000, the average size of the UPAs in the province decreased from 4.5 to 2.9 hectares. Meanwhile, there was an increase in the average size of landholdings whose surface area exceeded 20 hectares. In light of this, it can be argued that there was a consolidation among the larger landholdings, which consequently achieved economic viability. However, as Forster (1990) asserts, larger landholdings seemed to be divided between private properties and communal lands, situated mostly in moorland. Around 50% of the land in UPAs larger than 100 hectares is composed of moorland.

Table 10: Land distribution according to UPA size (in % of total).

Size of UPAs	1954	1974	2000
1-20 ha	30.39	30.21	43.73
20-100 ha	14.34	13.1	13.49
100 ha and above	55.28	56.69	42.79

Source: INEC, 1954, 1964 and 2000 Agricultural censuses.

[8] This is our understanding of the conflicts over water and the buying and selling of land which involve Pablo Albornoz, Elías Bucheli and Casimiro Pazmiño (Núñez and Vega 1992: 90-118 and 122-135; for more information on these business transactions see Ibarra 1987: 44-46 and 53-55).

[9] In 1872, "turmoil" prevented the construction of an irrigation ditch which Constantino Fernández intended to build. As Fernández himself asserted, "their aim was to forcefully prevent me from working on the irrigation .ditch, because as the water and the moorland belonged to them, they said that I was trying to become the owner of these things that belonged to the community. I made clear to them that my only object was to remove the water, and that I could not own the moorland which belonged to them."

[10] The process of subdivision of the immense Huachi hacienda and the complex of haciendas belonging to the San Ildefonso sawmill is well documented in the 19th century (Núñez and Vega 1992: 88-122).

Table 11: Average size of landholdings in hectares (Tungurahua).

	1954	1974	2000
Total	4.5	4.9	2.9
< a 1 ha	0.4	0.4	0.4
1 a < 5 ha	2.0	2.1	2.0
5 a < 10 ha	6.5	6.8	6.9
10 a < 20 ha	12.8	16.3	13.6
20 a < 50 ha	23.3	30.0	29.7
50 a < 100 ha	57.6	60.9	68.7
100 a < 200 ha	124.6	124.4	138.3
200 ha and above	911.8	1333.8	1168.8

Source: INEC, 1954, 1964 and 2000 Agricultural censuses.

These historical figures complete a brief characterisation of the territorial dynamics surrounding the town of Ambato. A satisfactory explanation for these territorial dynamics in Tungurahua and its areas of influence should address the reasons for the five aforementioned characteristics and their respective relations. More specifically, it should aim to explain why such a notable diversification of production has occurred, based on highly flexible small-scale enterprises oriented towards intensive labour; and why indigenous areas of the agricultural and livestock peripheries have integrated into these dominant economic and territorial dynamics at such disadvantage. It should also endeavour to explain how a region without noticeable natural advantages successfully became the coordination centre for the Ecuadorian national territory. Finally, it should shed light on the links between Ambato's central role and the economic polarisation between lower, diversified areas and higher, impoverished areas. Up to this point, our characterisation of the area has been purely descriptive. We must now attempt to find an overarching explanation for these characteristics.

III. EXPLANATIONS

III. 1 Markets and territory

The first part of our explanation for Tungurahua's peculiar economic dynamic is that the market network centred around the town of Ambato constitutes a powerful incentive for production. Indeed, ***demand for products stored in Ambato and destined for the whole of the national market constitutes a stimulus for direct producers from the immediate hinterland,*** reducing the cost of transport and brokerage.

In Ambato there is demand for almost any product which can be taken to the markets. As Michel Portais (1987:152-53) states:

> *The commercial function of Ambato is not limited to the food market: some importers of consumer goods or construction materials have a client base which extends far beyond the provincial frontiers* [our translation].

In the 1980s, geographical and economic studies confirmed Ambato's overwhelming predominance in the interregional commercial flow:

> *Regional products generally converge, in the first instance, at the nearest urban markets which function as "storage centres" to later be redistributed in other provinces ... These large towns play the role of "concentrating" the flow of goods in relation to the areas of production but, unlike end-user or consumer markets,*

> *their role is that of a nucleus of dispersion**...** The role of Ambato is exceptional in the country. Its unique position is revealed in the fact that it is the only town in Ecuador that boasts a great number of wholesale markets specialising in food products. Its principal role is to supply the mobile wholesalers who, in turn, distribute the products in various provinces* (Cazamajor 1987:248-49) [our translation].

Although many interviewees in the province complain about brokerage, and affirm that they want to be allowed to sell directly to the consumer, producers prefer to sell in Ambato rather than in Guaranda. This is because selling costs in Ambato are lower, *due to the fact that they can sell a great amount of produce in very few hours,* while in Guaranda the selling process can take much longer, as they must take part in retail trade**.** Retail trade incurs greater costs in terms of overnight stays, food, etc. (Jacinto Pacari, Chibuleo San Pedro- Juan Benigno Vela, 04/09/09). Another interviewee account from Pilahuín confirms this opinion:

> *We have to sell in the wholesale market, and then it gets sent on to wherever it goes to from there (...) We have to sell in Ambato because if we sell in Guaranda there's a lot of difference, if you go to Ambato with 10,000 lbs of carrots one middleman will buy it all from you, while if you go to Guaranda there aren't many people there and you have to sell unit by unit and you can be there for two days finishing off (...) in Guaranda there are two ways of trading in the market, retail selling or selling to the middleman, but it's more work* (Francisco Toalombo, Comunidad Tamboloma-Pilahuín,14 July 2009) [our translation].

In short, *the success of the agricultural or manufacturing producers of Tungurahua is due to the connection they have managed to make with long distance trade.* If the Ambato market had served only to supply the inhabitants of the narrow region around Ambato with food, there would have been no incentive for all the producers in the area to go there to sell their produce. The Ambato market (and those in its surrounding area) became a place where long-distance traders came to buy goods at wholesale prices, in order to divide them amongst other markets in the coastal and Sierra regions. *What the network of markets in Tungurahua achieved, in other words, was to move the national market towards Ambato, reducing the costs of transport and brokering for the direct producers.* Ambato is, therefore, a storage centre for local production, which then redistributes these products to the rest of the country.

To give an idea of the importance of this wholesale "storage" function carried out by Ambato, the following table presents data relating to the comparative dimensions of the wholesale markets in Ambato and Riobamba. As you will see, the most notable difference between them is the daily average number of heavy vehicles entering the market: 254 per day in Ambato and only 19 per day in Riobamba. Therefore, the difference between the two markets is not so much the size of the retail trade, but rather the much greater scale of the wholesale activities in Ambato.

Table 12. Dimension comparison of the wholesale markets in Riobamba and Ambato.

	Riobamba	**Ambato**
Number of traders registered	633	1,544 ***
Surface area of trading platforms	7,200 m2	16,000 m2
Total surface area (including recreational areas, parking, roads, etc.)	50,000	140,000 m2
Daily average of small vehicles entering the market	1,902 *	2,327 **
Daily average of medium-sized vehicles entering the market	236 *	220 **
Daily average of large vehicles entering the market	**19 ***	**254 ****

Source: Administration of the Ambato and Riombamba wholesale markets.
* Averages for 2007.
** Averages taken between November 2008 and August 2009.
*** Shops and permanent traders' stalls.

The function of Ambato's market network is, therefore, *to concentrate* the produce from the surrounding region (and sometimes from much more distant areas) and to *distribute* the products to the whole country. We will briefly examine both dimensions of its commercial function. In 2002 it was estimated that, while the supply of potatoes in Ambato's wholesale market was 21,295 tons, it was 1204 tons in the Condamine market in Riobamba, and 10,692 tons in the Quero[11] market (Ministry of Agriculture and Livestock 2005). The following two tables demonstrate the extent to which the Ambato market "concentrates" the agricultural and artisanal produce from its rural *hinterland.*

Table 13. Central Sierra region: concentration of trade to Ambato (in % of destination of traded products).

Markets	Destination Ambato	Other destinations
Ambato	33	16 Guayaquil, 8 Portoviejo, 5 Puyo, 4 Quito
Cevallos	28	27 Quero, 45 Cevallos
Quero	41	43 Quero, 6 Cevallos, 5 Pelileo, 5 Riobamba
Mocha	67	20 Riobamba, 13 Mocha
Tisaleo	80	20 Tisaleo
Saquisilí	35	35 Quito, 20 Latacunga, 10 Santo Domingo
Latacunga	7	55 Latacunga, 21 Saquisilí, 8 Machachi, 6 Salcedo
Salcedo	19	61 Salcedo
Baños*	60	25 Pelileo, 10 Riobamba, 5 Puyo

Sources: PLANTEL; * Data from CEPEIGE

Note: The research carried out by the PLANTEL project on these markets was based on 635 surveys of small markets, large markets and mobile traders from Saquisilí, Latacunga and Salcedo (Cotopaxi); from Ambato, Cevallos, Quero, Tisaleo and Mocha (Tungurahua); and from Riobamba, Guano and Penipe (Chimborazo).

Table 14. Main destinations of the products sold in the Ambato markets (in % of destination of traded products).

Type of trade	Destinations (by %)
Food	51 Tungurahua, 11 Guayas, 11 Chimborazo, 13 Pichincha, 8 Pastaza, 6 Cotopaxi
Textiles	51 Tungurahua, 17 Quito, 14 Guayaquil, 5 Riobamba
Leather	27 Quito, 27 Ambato, 18 Quisapincha, 7 Cuenca, 7 Perú
Tannery	52 Tungurahua, 14 Cotopaxi, 14 Chimborazo, 10 Oriente, 5 Cotacachi, 5 Quito
Footwear	44 Ambato, 21 Quito, 14 Colombia, 12 Guayaquil, 5 Oriente

Source: PLANTEL (see note from previous table).

How does Ambato carry out this *concentration* of agricultural and artisanal production from across the whole region? At least 60 markets take place every week in the province of Tungurahua, whether selling food, small animals, flowers, fruit or livestock. The town of Ambato is where the bulk of the markets take place. The only place where six markets take place during one week is at the Mercado Minorista América (America Retail Market)

[11] The Quero market boasts strong links to Ambato, cf. later in this paper.

(Patricio Toscano, interview in Ambato, 3 February 2009). On Sundays, 14 markets take place in sites distributed throughout the province, with the exception of Pelileo (and Pelileo Grande). In this town, the main market days are Tuesday and Saturday, with a smaller market on Thursday. This could be an indicator of the commercial attraction of Pelileo. All the markets that take place on Monday and Friday are based in Ambato, meaning that in this town 11 markets take place on Monday, 10 markets take place on Friday, two on Wednesday, one on Sunday and one on Saturday. This highlights the dynamic of commercialisation in the province from Sunday onwards, later becoming concentrated in Ambato on Mondays.

Table 15. Number of markets by location (2009).

Place **No. of markets**

LUGAR	FERIAS
Ambato	25
Pelileo	9
Píllaro	3
Baños	2
Cevallos	2
Mocha	2
Pasa	2
Patate	2
Quero	2
San Fernando	2
Huambaló	1
Izamba	1
Llangahua	1
Pilaguín	1
Quisapincha	1
Salasaca	1
Santa Rosa	1
Tisaleo	1
Yatzaputzán	1
TOTAL	60

Sources: Field trip December-February2009, Naranjo et al (1992)

Table 16. Number of markets by day (2009).

Day **No. of markets**

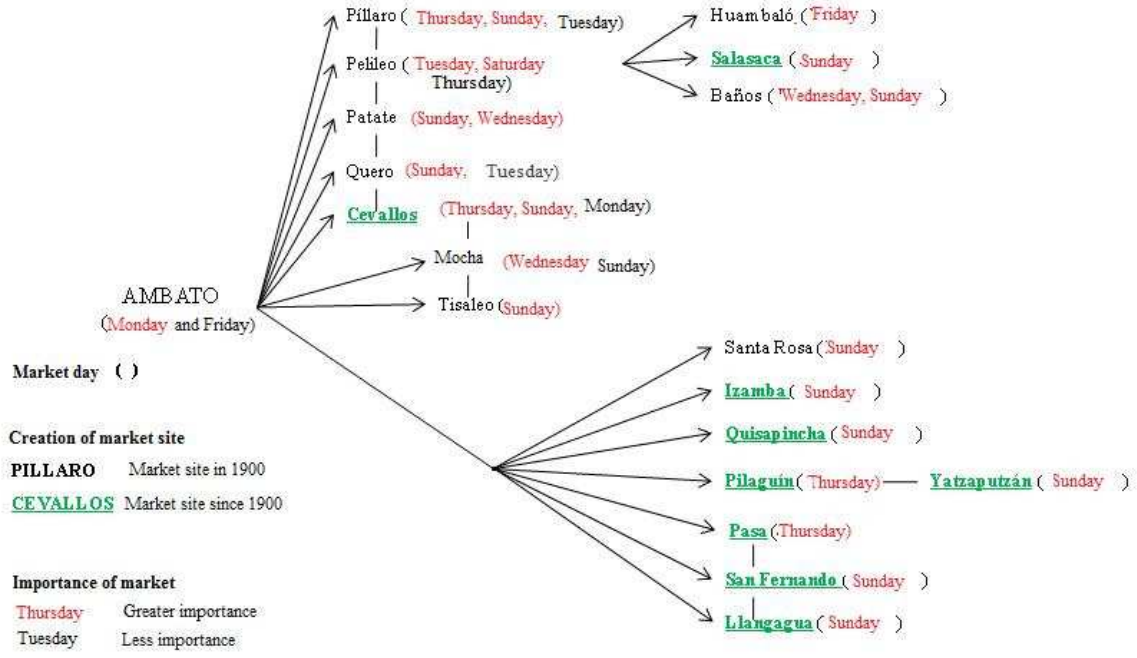
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

DÍA	FERIAS
Lunes	11
Martes	6
MiΘrcoles	8
Jueves	5
Viernes	11
Sßbado	5
Domingo	14
TOTAL	60

Sources: Field trip December-February2009, Naranjo et al (1992)

Bromley (1975) presents a simplified diagram of the "integration structure" of markets in the central Sierra in 1900. If we make a comparison with the network of present-day markets, we find a significant increase in the number of existing markets. Inspired by his designs, we have created a new simplified diagram of the integration structure of markets based on field data collection and the analysis carried out by Alba Moya (1987) (see Diagram 3).

DIAGRAM 3: **MARKET SITES AND MARKET DAYS. MARKET SITES BEFORE AND AFTER 1900**



Source: Fieldwork collection: December - February 2009

HANSSEN-BAUER. 1982. Plaza Pachano, *Market Integration, Intermediaries and Rural differentiation in Tungurahua, Ecuador.*
MOYA, Alba, 1987. *Ambato-ciudad mercado*. En El espacio urbano en el Ecuador, Quito, CEDIG

In 1900 there were nine market sites; today there are 19. The market sites which have been kept are those in Píllaro, Pelileo, Patate, Quero, Huambaló, Tisaleo and Mocha. The majority of the market sites which have been added have direct links to Ambato, but are less important than the traditional sites. With the increase in market sites there has also been a diversification of market days, meaning a much greater commercial dynamic. The predominant market day is still Sunday, and Ambato continues to hold its most important market on Mondays, but Friday has also been added as an important market day. Other markets which have appeared since 1900 are those in Salasaca and Cotaló. Both are directly connected to Pelileo, but Salasaca also has a privileged relationship with Ambato. In recent years the Cotaló market has been dissolved as a result of the eruptions from the Tungurahua volcano. Pelileo continues to hold its own as a market centre of provincial and national importance. Quisapincha is another market which has been set up since 1900, with direct links to Ambato.

Finally, the last site which has appeared as a market centre is Izamba, where the market opens every day, apart from Tuesday and Saturday. The main market day is Sunday. This district is a centre of attraction, providing services to distant districts such as Unamuncho and Cunchibamba**.** Traders arrive from Guayaquil, Quito, Milagro and Santo Domingo. Izamba is not described as a market centre in Moya's studies, meaning that its commercial dynamics are recent and, according to an interview carried out by the District Council, very intense.

Pasa and San Fernando are two more new sites, both specialising in the production of shirts. As well as their relationship with Ambato, they also have strong links with Guaranda and the coastal region, to which they are connected by the road leading to El Corazón. The Llangahua market is also situated on this road. This site stands out for its wholesale potato trading and its links to Ambato and Guaranda (Moya 1987). There was formerly only one market site on the new road to Guaranda, in Santa Rosa, but now Pilahuín and Yatzaputzán have also appeared. The communities in the Pilahuín district demonstrate strong signs of a commercial and social dynamic. The community of

Tamboloma is based in the same area, less than one kilometre away. From here, members of the community have worked together to form the Carihuairazo transport pre-cooperative, which has not yet been legalised, but is still currently functioning. This cooperative connects the local communities with Ambato and travels daily direct to Guaranda. There is also an abattoir in this area, signalling its importance as a cattle-breeding zone. In the interviews carried out with members of the Tamboloma community, we are told that they sell their products on Sundays in Yatzaputzán, but also at more distant markets of provincial importance; they travel to Ambato or Guaranda to sell agricultural products and to Latacunga, Salcedo or Riobamba to sell cattle.

In the south, the communities of Mocha, Tisaleo, Quero and Cevallos have a strong relationship with each other. They are all market centres, but Cevallos (established since 1900) is the most important, holding its agricultural market on Tuesdays and its small animal market on Thursdays. In the 1980s, Cevallos grew in importance as a centre for the potato wholesale trade, replacing Quero (Moya 1987). There are, however, three abattoirs left in Quero, one under municipal ownership and two under private ownership. The cattle market is held on Sundays. The interviews carried out in Quero and Mocha demonstrate the existence of active competition between these three towns and markets to centralise trade towards Ambato. This indirectly indicates the existence of a network of middlemen between this largely *mestizo* area and Ambato. In fact, in Mocha the producers have gone into business together to establish and promote a market specialising in cattle. The market has only been running since 2006 and the producers act as cattle traders. The fact that the market takes place on Wednesdays allows it to compete with the Ambato market, which takes place on Mondays. It appears that the Mocha cattle market contributed to the decline of the Quero market. Furthermore, the producers have started to travel directly to Ambato or to sell to traders who arrive to buy directly during the sowing season. The underlying theme is that a constant restructuring of the market system is taking place as a result of the development and improvement of the communication routes.

If all the agricultural and artisanal production in the region is concentrated and distributed in this complex web of 60 weekly markets in 19 different sites across the province, its objective is to *redistribute* the local produce to the rest of the country: practically every region in the country receives a part of the produce collected in Ambato, and this explains its role as a coordination centre of the national space (see Tables 13 and 14). Obviously, within this diversification of product destination, the territorial connections with Quito and Guayaquil are the most important, as these cities are the principal hubs of the Ecuadorian space.

III. 2. Markets and production diversification

The second part of the explanation of Tungurahua's economic dynamic is that ***this enormous regional market*** has not moved towards production specialisation, but rather, on the contrary, ***towards economic diversification of the surrounding area***. This is occurring as a result of two interrelated structural characteristics. The first, which we have previously mentioned, relates to the fact that it is a market that specialises in popular and middle sector consumer products, which require low investment in equipment, personnel and raw materials. In other words, there are low entry barriers for small-scale enterprises. The second is that, as a result of their specific structural position, certain social sectors, such as traders and women, become crucial agents of diversification.

The traders and trade are important factors in the diversification of the central Sierra region. A recent example of economic diversification is that of the savings and credit cooperatives in the indigenous western region of Tungurahua. During the 1970s and 1980s in Chibuleo, an area completely split into smallholdings, an important group of

indigenous garlic and onion producers became traders. At this time there were no access roads in the region, and trade required great effort. However, the Juan Benigno Vela district (the centre of trade in Chibuleo) is not as far from the town of Ambato as the high-altitude communities of Pilahuín. This has worked in Chibuleo's favour as a site of commercial activity, particularly in the communities of San Pedro, San Francisco and San Alfonso, which act as intermediaries as products are stored in Pilahuín and traded in Ambato.

> *For a while it has been this way, the people from Chibuleo have been the big players, in this case in garlic production. The people from Pilahuín used to produce a lot of garlic, they produced it but they didn't know how to trade, how or where to sell it, but the people from Chibuleo perhaps knew all of this. They went to buy it from the people of Pilahuín, they bought it because it was good for them to buy there and take it elsewhere to sell and earn more, you know? This also happened with the buying and selling of animals (…) and from this came the decision to set up a market in Pilahuín (…). Why don't the people of Pilahuín create a place to store products, to see if they* [the people from Chibuleo] *come to trade their products here? But this never happened: they produce it themselves; they sell it themselves and buy it themselves. And that's how it is with the people from Chibuleo. They go, buy the products and take them back to resell, it still happens this way. I don't know, in that sense we haven't improved, we just carry on the same way* (Vilma Til Pacari, Social campaigner in the central region, IEDECA, Institute of Ecology and Development in Andean Communities, Ambato, 17 July 2009) [our translation].

As a result of the accumulation of commercial capital, thanks to the brokering trade, the appearance of savings and credit cooperatives became possible in the 1990s.

> *Garlic in the Pilahuín region, Juan Benigno Vela and Santa Rosa…ten years ago they were garlic-producing places; garlic and onion, but this has diminished now. They have been replaced by the cooperatives and the savings banks, and people have encouraged business. It is easier for them to get involved in trading, to become middlemen. When garlic came in from Peru at a low price, they took it and began to sell it. They used to have their own garlic but it has been replaced with carrots and potatoes. Garlic is produced in other cantons, but there isn't a lot like there used to be (…) It was usually in Juan Benigno Vela, in Chibuleo, where the people who started the cooperatives come from. The majority of the savings and credit cooperatives come from this area, such as Mushuc Runa, which is from Chibuleo. They are all there and I believe that it has been the hub; a guide for the other indigenous groups to take the initiative of creating savings banks and savings and credit cooperatives so that there are credit and savings services for everyone here* (José Maria Ortega, expert for the Provincial Council of Tungurahua, Ambato, 13 July 2009)[12] [our translation].

The effects of this phenomenon are well known in Chibuleo. There has been substantial social differentiation between those who have directly benefited from the business, participating as sleeping partners, and the rest of the population, who have either benefited indirectly or not at all. The savings and credit cooperatives have created sources of work for the indigenous population. For example at *Mushuc Runa*, the biggest of the province's cooperatives, they do not employ *mestizos*. This has signalled an opportunity for many indigenous people, who leave their communities and traditional activities to enter a previously unknown world. There is a new social climate in Chibuleo, and new aspirations and needs are beginning to colour life plans: the desire to study, to borrow money, to invest, but also to consume or possess status symbols, upon which a part of people's wellbeing and self-worth sometimes depends.

[12] See also the interview with Eng. Bolívar Rendón, CESA, Ambato, 24 July 2009.

Here is another example: the role of traders in the diversification of production through a system of home-based workshops is well illustrated by the case of leather goods production in Quisapincha, to the west of Ambato. This is reflected by the following account:

> *I began working alone; I was given patterns that I made where they* [a shop in Ambato] *said they would buy from me. She* [the owner] *got me the jackets, I worked with her, and that's how I started out. Then I went on and built the little house that I have. They put a lot of trust in me, they lent me cloth, they gave me credit, and one of them did the selling and paid me.*
>
> *I worked on this machine, (…) in my house, my parents' house. That's where I used to work. I used to make cloth jackets; it was always jackets, warm ones for wearing outside (…). We stitched them and then returned them (…) They came here too, but the person that I told you about was from Ambato, where the shops are. There didn't use to be business here. It was just a small village, people worked in their houses behind closed doors and that was it. I went to drop off the work, to deliver it to the boss and it stopped there. It was a closed village, there was no business at all. Since the leather jackets came business has opened up. A man used to come from Tulcán to buy the jackets from us and we all went along to take them to him* (Isabel Hernández, producer of leather goods, Quisapincha 27 August 2009) [our translation].

The case of shirt production in the Pasa region, to the west of Ambato, highlights another important intervention made by the traders.[13] The following account is that of a former shirt maker who has returned to the trade, this time encouraged by renewed demand from the Ambato traders, who, in turn, were motivated by the recent purchasing of school uniforms by the Ministry of Education:

> *They* [the workers that had just been employed] *started work about three days ago. But they were a bit wary, and they said: "now you're going to start over again…" It's because I had 15 workers before. But then everything fell apart, and I was working for other people, so they're wary, and they ask: "Are you going to keep giving us work?" I say yes, of course, and that the owner* [of the shop in Ambato] *rang me and asked if the shirts are ready yet (…). He can sell at the Ferroviaria market in Ambato, and at the Condamine in Riobamba, and I don't know where else he sells, but I think that he's a wholesaler (…) I warned him about what I just said, I told him that the people who are going to help me are a bit wary and I asked: "Are you going to keep supplying materials?" "There's no need to worry about future work", he told me. He used to work before, during my time (…) and recently he started up his business again (…). He knew me from before, I got to know him here (…) so he saw me and asked if I knew how to do the work – and I said of course, I'm a tailor, bring me the pieces and I'll make the shirt exactly how you want it, all I need is the machinery. I need more work to see if I can buy more machinery, for example, I need a buttonholer, which is even more specialist, and I had to modify the shirts and come up with something better, so, I've pointed this out to the owner and he agreed…* (Sergio Rodriguez Villagrán, shirt maker, Pasa 17 September 2009) [14] [our translation].

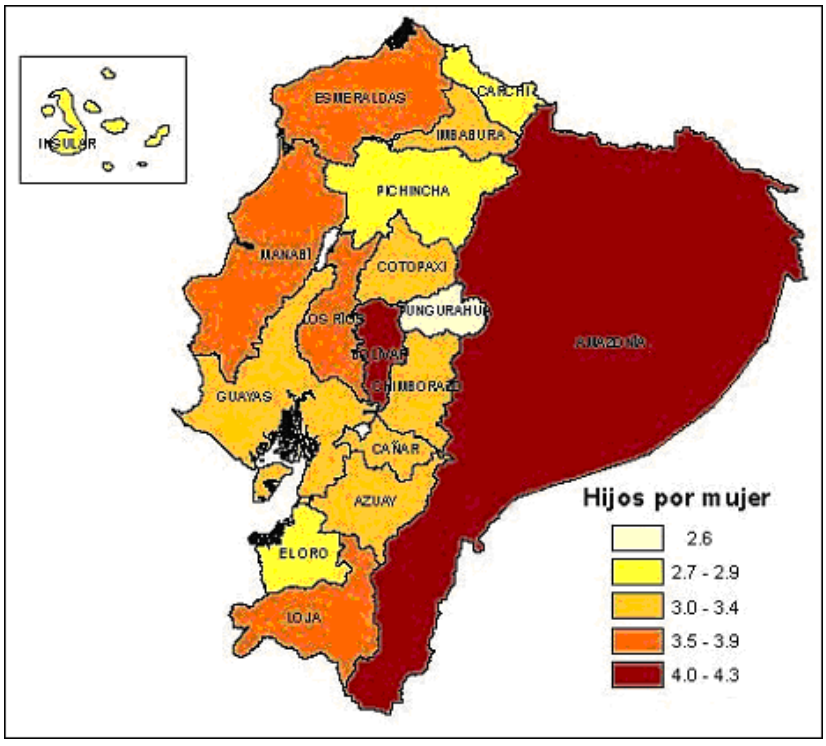
[13] The existence of a great number of home-based female workers in Tungurahua brings to mind the European *verlagsystem* of the preindustrial period, which aided the development of the manufacturing sector as a result of merchants who advanced money and prime materials to male and female agricultural workers, who worked at home during times of low agricultural employment, such as during the winter months (cf. Braudel 1979, vol. 2: 348-82).

[14] We do not want to provide an unnecessary number of examples. The role of traders in the development of the artisanal manufacturing industry in Tungurahua is also well-documented in the case of the Pelileo jean industry (Martínez and North 2009: 68-72) and in the case of home-based footwear production in Cevallos (Metais 2000: 45-49 and 73-76). This role is more visible in the case of home-based working.

Information taken from a survey of permanent traders in Ambato's wholesale market (MMA) carried out for this study shows that in the food market the traders supply very little credit to the producers.[15] Normally, it is only the largest traders that give any credit: only 5% of the traders asked (24 people) supplied credit to producers or middlemen and, of those, 17 were "large-scale" traders; in other words, traders that invest more than $500 per market (there are two or three markets per week, depending on the product). The same can be said of providing economic support to family members: only 10% of the traders said that they had helped a family member (basically siblings and children) to set up new businesses. The majority of the cases were of "large-scale" traders who helped their relatives to set up as new traders, and not as agricultural producers or manufacturers. The qualitative statements that we have from outside the wholesale market confirm that the traders who establish relationships which involve advancing money or products to home-based producers are, above all, owners of shops in the town; in other words, medium-sized traders of non-agricultural products.

We wish to draw attention to another rarely mentioned social group which has driven the process of production diversification in the region: women. The province of Tungurahua has the lowest general fertility rate in the country, an indicator normally related to two factors: an increase in education and an increase in female labour force participation.

Map 8. General fertility rate (GFR) by province (1999-2004).



Source: ENDEMAIN, 2004.
Taken from: www.cepar.org.ec/endemain_04

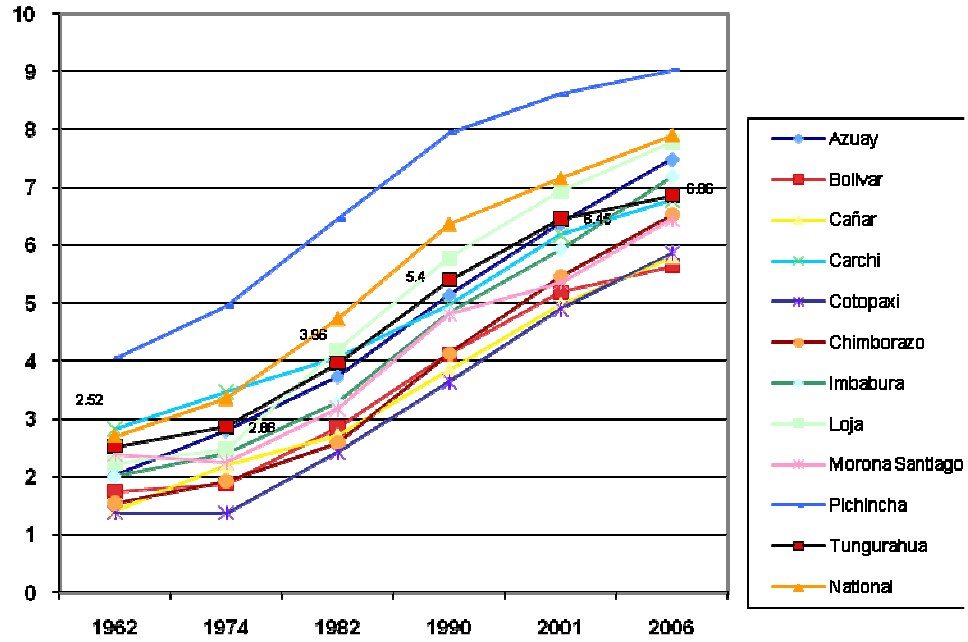
Key: Hijos por mujer = Number of children per woman.

The key difference compared to other provinces does not appear to be higher levels of education for women. In 1962, female illiteracy in Tungurahua was at 40% (25% for males), nine points below the average for the Sierra (49%), and much lower than in

[15] The survey was carried out in 2009. It surveyed 465 permanent traders with stalls and grocery shops, out of a total of 1543 registered traders in Ambato's wholesale market.

neighbouring provinces, such as Chimborazo and Cotopaxi, where the figure reached 64%, and 58%, respectively. However, the provinces of Carchi, Loja and Pichincha had illiteracy figures of around ten points less, without showing a lower fertility rate. For the year 2001, the pattern remains the same, in that female illiteracy in Tungurahua (14%) is double that of males (7%), which is still better than the regional figures and neighbouring provinces, but continues to be greater than Pichincha, Carchi, Cotopaxi and others. The general measurement of *years in education* also indicates a less than shining performance. In 1962, the rate was very low but close to the national average; it then gradually lost sight of it, eventually finding itself in the middle of the Sierra provinces (fifth place) and one year below the national average (exactly the same occurred with female education).

Graph 1: Years in education for women, provinces in the Sierra (1962-2006)



Source: INEC, National Institute of Statistics and Censuses, Housing and Population Census, 1962, 1974, 1982, 1990, 2001, Living Conditions Survey, fifth round, 2006.
Design: Carlos Larrea, Ana Isabel Larrea.

To summarise, the province does not demonstrate the best performance in education indicators, though it is placed higher than its neighbours and the regional average. Therefore, the most important factor affecting the fertility rate must be female labour force participation.

Indeed, this is where we discover an interesting point. Tungurahua currently has the largest female presence in its EAP out of the entire Sierra, and is far above the national average (see Table 27). Although, between 1962 and 1990, it was always above the national average, several other provinces in the Sierra have historically had a similar performance: for example, Azuay and Cañar, with high male emigration, and Pinchincha, which has a considerable amount of administrative activity.

Table 17. Female EAP by province (1962-2001) (% of total women).

	1962	1974	1982	1990	2001
Azuay	28.3	32.4	28.0	37.6	38.2
Bolívar	14.7	9.7	16.4	23.6	30.0
Cañar	28.3	23.5	23.0	32.2	35.9
Carchi	21.1	16.8	17.3	20.7	27.2
Cotopaxi	19.4	15.1	19.2	27.2	35.5
Chimborazo	16.6	16.5	20.3	31.8	40.3
El Oro	10.4	10.5	14.5	20.0	25.1
Esmeraldas	13.4	11.8	18.1	21.2	27.0
Guayas	16.2	17.2	20.6	25.4	27.8
Imbabura	21.2	16.3	18.1	26.0	33.6
Loja	16.8	11.1	16.1	20.6	26.6
Los Ríos	7.0	6.3	9.0	14.0	17.7
Manabí	11.6	9.6	12.7	16.6	19.9
Morona Santiago	10.8	8.1	15.0	28.0	33.7
Napo	10.3	11.4	10.6	24.4	35.2
Pastaza	12.2	11.5	16.9	27.9	32.3
Pichincha	24.9	25.2	28.6	34.1	37.2
Tungurahua	**21.7**	**17.8**	**22.7**	**31.1**	**38.8**
Zamora Chinchipe	10.5	7.0	10.1	15.4	21.9
Galápagos	13.8	13.0	20.5	22.3	29.9
National	**17.7**	**17.0**	**20.3**	**26.3**	**30.4**

Source: INEC, National Institute of Statistics and Censuses, Housing and Population Census, 1962, 1974, 1982, 1990, 2001.
Design: Carlos Larrea, Ana Isabel Larrea.

Nevertheless, according to the 2006 Urban and Rural Employment Survey, women's income in Tungurahua, when compared to that of males, was found to be among the lowest in the country. So, on one hand, the female EAP is very high, while on the other hand, women's average income in comparison with that of men is lower in Tungurahua than in any other province in the country except El Oro and Sucumbíos (where the predominantly masculine banana and oil industries could explain the difference).[16] How do we explain, then, that Tungurahua *simultaneously* has high female EAP, and extremely high negative discrimination between genders for income? Does this have any significance when explaining the province's economic dynamic?

Table 18. Labour participation and participation by income of females in comparison to males (2006).

	Proportion women/men in the EAP	Proportion women/men primary income*
Azuay	0.937	0.551
Bolívar	0.778	0.795
Cañar	0.927	0.598

[16] It can be argued that income obtained from family businesses may be registered in the survey as male income, despite the fact that the women support the company and work as much or even more than their partners. However, the detailed analysis of these questions which we carried out as part of the ENEMDUR survey (which we are unable to reproduce here) leads us to believe that a significant part of the total difference in income represents substantive factors and not problems with registration.

Carchi	0.592	0.665
Cotopaxi	0.850	0.663
Chimborazo	0.888	0.776
El Oro	0.544	0.410
Esmeraldas	0.529	0.893
Guayas	0.496	0.828
Imbabura	0.739	0.748
Loja	0.739	0.714
Los Ríos	0.359	0.536
Manabí	0.350	0.869
Morona Santiago	0.785	0.687
Napo	0.774	1.107
Pastaza	0.770	1.144
Pichincha	0.777	0.662
Tungurahua	0.879	0.501
Zamora Chinchipe	0.593	0.731
Sucumbíos	0.523	0.467
Orellana	0.497	0.528

Source: INEC (National Institute of Statistics and Censuses, Survey of Living Conditions, fifth round, 2006; ENEMDUR, National Survey of Urban and Rural Employment, 2006 for primary income.
* "Primary income" is defined as the sum of individual earnings for wage-earning or self-employed work, for both first and second jobs. It excludes income in kind, income deriving from capital, income from retirement funds or pensions, gifts or donations, income received from abroad, human development vouchers and income from credit or borrowing.

Our point of departure in responding to this question, that is, in highlighting the role of women within the dynamic of economic diversification in Tungurahua, is Rosa Luxemburg's famous observation:

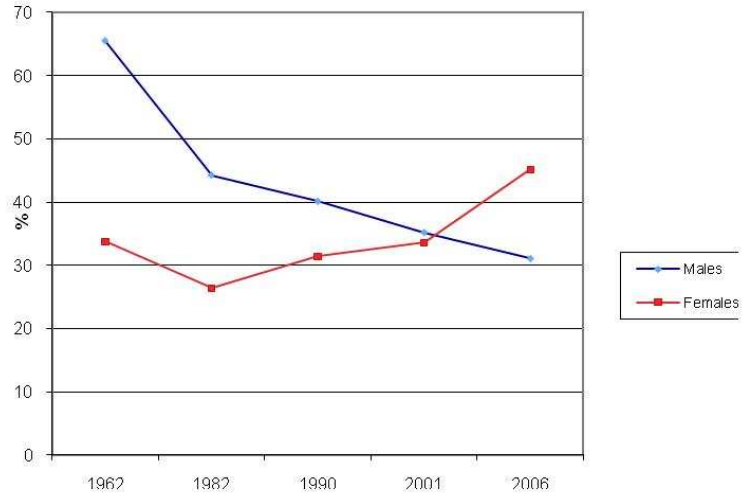
> *According to Marxist theory, in the general course of capitalist development small capitalists play the role of pioneers of technical change. They possess that role in a double sense. They initiate new methods of production in well-established branches of industry; they are instrumental in the creation of new branches of production not yet exploited by the big capitalist* (Luxemburg 1967 [1907]: 28) [our translation].

The argument that we develop here is that women play a similar role, as promoters of the diversification of production and economic innovation in Tungurahua. This role rests on two factors: firstly, social discrimination and, secondly, the predominance of small-scale economic activity centred on self-employment and home-based work. Indeed, all the evidence indicates that, as a rule, women run the smallest, least profitable and most newly established businesses. This explains why they appear to earn much less than males.

We begin with the well-known example of family agriculture, which has become feminised not just in Tungurahua, but also across the Sierra and throughout Latin America. Although there are reasons to believe that there is a problem with inadequate recording of female agricultural labour activity in population censuses, quantitative and qualitative studies confirm that as agriculture stops being profitable men abandon it, leaving women in charge of the farms. This is a key factor in the decrease in female

income: women are engaged in agricultural jobs that produce less income than other activities.[17]

Graph 2: Agricultural EAP in Tungurahua (1962-2006)



Source: INEC, National Institute of Statistics and Censuses, Population and Housing Census, 1962, 1982, 1990, 2001, Survey of Living Conditions, fifth round, 2006.
Design: Carlos Larrea, Ana Isabel Larrea.

In a large proportion of the small-scale artisanal activity that is abundant throughout the province, women usually play a determining role during the early stages or in the smallest businesses. Eighty-nine percent of the owners of small businesses that produce the famous "Ambato chocolates", located in Huachi and interviewed by Ximena Troya (2009: 56), are women. However, in the case of the five businesses with the largest production volume, two of the five owners are male (Troya 2009: 63, Table 5). In the case of jeans textile production in Pelileo, around half of the employees at the start of the 1990s were women, but according to an INSOTEC (Institute of Socioeconomic and Technological Investigation) survey of 217 businesses, only 22.5% of the owners were women. In a survey of start-ups in the 1990s, Luciano Martínez discovered 51% of the 455 artisanal businesspeople in Tungurahua were female, and the proportion of female small business owners grew to 56% (Martínez, 2000: 56 quoted in Martínez and North 2009: chapter 2). Evidently, this information understates the true role played by women in economic activities, which they often undertake on a daily basis. However, it does indicate that the involvement and control of males grows with the scope of the business.

A further example occurs in the indigenous western area of the province. Males search for non-agricultural work outside the region, while the females involve themselves in both traditional and new agricultural work, such as the rearing of guinea pigs or the informal selling of agricultural products in the towns. The formation of savings and credit cooperatives is always a masculine activity in indigenous areas. Conversely, the small community banks in *mestizo* areas are usually run by females. In general terms, while the activities remain small-scale they are taken on by the women, but when they reach a certain size, control is passed to the males. A testimony from the director of Tungurahua's pastoral social scheme's health and credit project backs this up:

[17] The disadvantaged state of agriculture in the province is evident from Table 5; only 8% of the Provincial Gross Domestic Product comes from a series of economic activities which represents 34% of the EAP.

Some of the cooperatives came out of our community bank, for example Mushuk Runa, in its day was a community bank (…). For example, the wife of Alonso Chango [current manager of the Mushuk Runa cooperative], was a partner of the community bank in its early days (Mario Moreno, Ambato, 3 October 2009) [our translation].

The same situation is true among the traders. In the Ambato wholesale market (MMA), 86% of the registered permanent traders are female. For some sections or products, the proportion reaches 100%, and in others it is as low as 42%. If we compare the distribution of permanent stalls and grocery shops[18] between men and women, there is a substantial gap. In the permanent stalls, 85% are women, compared to 51% in the grocery shops. This distribution suggests that when more capital is involved in the "family business", the participation of females as business leaders is lower.[19]

Table 19. Gender of MMA traders by section.

Section	Female	Male
Imported fruit	59%	31%
Beefsteak tomato and similar	70%	30%
Colombian produce	84%	16%
Carrot	50%	50%
Produce from the south	Large majority female	A few
Naranjilla	83%	17%
Soft grains	82%	18%
Groceries	ND	ND
Potatoes II	96%	4%
Potatoes I	86%	14%
Imported onion and garlic	55%	45%
Dry grains	ND	ND
Tree tomato and similar	100%	0%
Products from the valley	96%	4%
White onion	91%	9%
Fruit from the valley	88%	12%
Fruit from Baños	91%	9%
Blackberry	100%	0%
Red onion	79%	21%
Peeled garlic	100%	0%
Green garlic	90%	10%
Dried garlic	88%	12%
Other onion	ND	ND
Eggs	42%	58%
Pulses and vegetables	88%	13%
Fruit from the Costa region I	51% (vehicles: 59%)	49% (vehicles: 41%)
Fruit from the Costa region II	75%	25%
National fruit	98%	2%
Beefsteak tomato I	100%	0%
Beefsteak tomato II	100%	0%

Source: Survey of the chairpersons of MMA traders' associations, August 2009.
Design: Patric Hollenstein.

[18] The permanent traders' market stalls are 6 m^2, while the grocery shops with a roof and closed walls, measure between 36 and 144 m^2.

[19] This has already been noted by Hanssen-Bauer (1982: 196) and by R. Bromley (1975). They discovered that not only were there more women working in trade, but also that the participation of the women depends on the size of the business; the smaller it is, the more women work there. There is also an unequal participation of *mestizos* and indigenous people, depending on the size of the trading business, with the indigenous business tending to be smaller (less capital) than the *mestizo* businesses. In the Pachana market place, Hanssen-Bauer could not detect any additional discrimination against women. They were participating alongside men in their trading businesses, often enjoying more recognition than their male counterparts (Hanssen Bauer 1982: 197).

The survey of permanent traders that was carried out at the Ambato wholesale market is conclusive: when the scope of the business is smaller, the presence of females is greater, whereas males are concentrated overwhelmingly in commercial activity with greater investment than $500 per market (see Table 20).

Table 20. Traders according to amount of investment by gender (Ambato wholesale market, October 2009).

	Men		Women	
Investment in dollars per fair	**%**	**No.**	**%**	**No.**
Less than $100	0,0%	0	6,0%	23
From $100 to $199	9,1%	5	15,7%	60
From $200 to $299	5,5%	3	18,3%	70
From $300 to $499	12,7%	7	16,2%	62
From $500 to $599	10,9%	6	17,5%	67
From $600 to $1000	27,3%	15	14,1%	54
$1001 or more	34,5%	19	12,3%	47
TOTAL	100,0%	55	100,0%	383

Source: Survey of traders at the Ambato wholesale market, October 2009.
Note: 465 surveys in total; not all the traders responded to the question about amount of investment per market.

We could also give further examples. The same pattern is repeated in the cases of, among others, the growing business of rearing guinea pigs and other small animals, and also in the important home-based, small-scale manufacture of footwear, leather goods and textiles.

How do we formulate an overarching impression of the role of women within Tungurahua's economic dynamic? Their importance in the region's economic process does not stem from comparatively greater education, although it is very probable that their greater participation in paid labour has effectively contributed to the improvement of the province's initial education indicators for several decades. For our purposes, the vital point is that they *constitute a fundamental base for innovation, economic experimentation and the diversification of production.* It is precisely due to their subordinate role in general social relations that, within the family, they are entrusted with additional jobs, small independent experimental businesses, and riskier, but smaller-scale activities, where there is uncertainty over possibilities of success. This explains the greater presence of women in the EAP (except in the case of agriculture, which stems from a loss of value of this work), and their relatively lower incomes. If the business is successful, which, given the commercial importance of Ambato, can happen more often than in other impoverished parts of the Sierra, it becomes a "main" business, and there is an increased probability that the males will take the reigns, at least officially. In this way, *the role of women is essential as a driving force behind the dynamism of production diversification in Tungurahua*. Although the operation of this production diversification mechanism is linked to the conditions of gender subordination, it is possible that by promoting women's autonomous labour participation, it could also contribute, subversively and in the long-term, to their erosion.

> *My husband went to work at a car wash, and he had colleagues that enjoyed their liquor. So, when they went to lunch he drank (…) Sometimes they paid his weekly wage and he drank it, and arrived home drunk late at night or the next day, and so we started to fight and this led me to separate from my husband and I started to work for myself* (Matilde Mosquera, El Porvenir neighbourhood, Mocha 10 September 2009) [our translation].

III.3. Structure of the commercial network: traders and producers

The third part of the explanation of Tungurahua's particular economic dynamic focuses on the close "symbiosis" that has historically existed between traders and producers. ***The same families were simultaneously involved in both production and trade.*** The proximity and scope of the market network facilitated direct access to trade for the producers and, although this "symbiosis" has weakened in recent times, ***Tungurahua's market network, despite its large size, never became monopolised by large-scale landowning traders.***[20] This reinforced its redistributing effects: not only is the production fragmented between many producers, but trading is also fragmented between many traders.

Many previous studies have stated that, at least until the 1980s, the link that united traders with producers was very strong. Jon Hanssen-Bauer's (1982: 4) detailed study of the onion trade in the Plaza Pachano market claims that market systems with a large number of middlemen adapt well to shortages of transport and economic capital, on the one hand, and to an abundant workforce and a production system consisting mostly of small producers, on the other. While the large-scale traders in Plaza Pachano's indigenous market spend more time on trade, the small-scale traders take on other work, such as agriculture (70% of all traders) (Hanssen-Bauer 1982: 234). Among the *revendones* (small mobile traders), the most common way of investing accumulated capital is in agriculture (buying land, modernisation of production) (Hanssen-Bauer 1982: 267-69).

This is also the opinion expressed by Luciano Martínez and Liisa North (2009) in their recent study of jeans producers in Pelileo. Pelileo's secret to success is that:

> …*In order to slow down the infamously insatiable appetite of commercial capital they have had to divide into a split personality: producer-trader, which allows them, in some ways, to make profits that are not going to end up in the hands of a middleman (…) So, the large- and medium-scale producers have small shops to sell their merchandise, while the small-scale producers are also traders that go to the markets and wholesale markets. When the production side goes into crisis, they seek refuge in trading and in small-scale agriculture. At least for this region, this symbiosis of commercial and production capital is what explains not just the economic dynamic, but also social and cultural dynamics* (Martínez and North 2009: 14) [our translation].

These authors have pointed out that the commercial "split personality" of Pelileo's jeans producers is not limited to the town, but has also reached the city of Guayaquil:

> *Today, it is possible to identify two lines of participation taken by the jeans producers in the market: through the network of smaller, weekly markets that take place in the province, and through the wholesale markets, with a strong presence in Ambato, Quito and, to a lesser extent, Guayaquil. In other words, what exists is a territorial and another extra-territorial network that cover diverse sections of the domestic market* (Martínez and North 2009: 13)
>
> *Although the [jeans] producers do not organise themselves for production, they do for trading. They hire buses to get to the markets, and return together on the same buses in order to avoid being robbed on the highway, especially when they travel to*

[20] The commercial networks of large-scale traders have diversified through other channels. This is done firstly through imports, as we have seen in our characterisation section. Secondly, these large-scale traders aim their products at a market of middle and upper class customers, as occurred in the example of the supermarket chain Supermaxi. This is not an insignificant market: Ambato has recently installed a "Mall of the Andes", which receives more that 4.8 million visitors each year. (*Gestión, Economía y Sociedad*, No. 180, p. 91).

> *Guayaquil (seven weekly buses) (Interviews in* El Tambo*, 2006). They have also organised in order to secure a sales point at the Guayaquil markets and pressured that particular city council to meet their demand, despite opposition from local traders. And although they did not manage to get into the largest market in Guayaquil (Las Bahías), in any case they did manage to set up in some markets that are considered marginal. However, thanks to the increasing activity of the Pelileo producers they have a renewed energy* (Martínez and North 2009: 93) [our translation].

Martínez and North's argument is that the "weak links", in other words social capital, are not established during production, but in trading, because that is where more contacts, more mutual support and more networks are required when facing a more foreign and hostile world. "Other authors have named this idea defensive social capital, which is generated when the community feels threatened by factors external to its environment" (Martínez and North 2009: 95) [our translation].

This is the same conclusion that was reached by a 1987 study of Ambato's markets. One of the advantages of Ambato's markets and wholesale markets is that they offered buyers the option of obtaining products directly, without passing through middlemen, or, at the very least, through no more than two traders (Moya 1988: 27). During that decade, the majority of retailers bought directly from the producer, which meant that Ambato had better prices in comparison to other markets.

> *More than a quarter of the wholesale traders that were interviewed sell products that they plant themselves, that is to say, that there are no middlemen between them and the producer because they are the farmers themselves. The rest of the wholesale traders buy directly from the producer, be it at the farms or the market place, which means that these traders are the first middlemen. Of the* revendones *that were interviewed, none of them produced the food that they traded in, but more than two-thirds bought from the producers and less than a quarter bought from another trader. In other words, the majority of* revendones *are the first link and a small proportion are the second link in the trade chain. Among the retailers we found that more than half of those interviewed buy from the producers (of the retailers that sell in the covered markets, 44% buy from traders, and 47% buy from stallholders). This means that in Ambato's markets and wholesale markets, there are almost no middlemen. This is one of Ambato's most important features, upon which its prestige and the national importance of its markets depends* (Moya 1988: 46-47; their emphasis) [our translation].

The most recent data collected by this investigation regarding the Ambato wholesale market (MMA) suggests that this advantage or "symbiosis" has been lost. The permanent traders,[21] those who have a permanent place in the covered markets that were built during the 1990s, used to be retailers in the traditional markets located in the city's plazas and streets. Although 93% of the traders surveyed in the wholesale market said that they did not partake in any activity other than trading, 27% said that they had land for agricultural production, the majority of which was for sale at the same wholesale market (58% compared to 41% who used it only for their family's own consumption). So, the link with agriculture is still visible, although weakening. Indeed, while 43% of current traders' fathers worked in agriculture, and 28% of their mothers in trading, now only 20% of their spouses are farmers, whereas 39% are also traders or hauliers. In summary, family specialisation has become stronger within a generation.

[21] In the MMA there are currently 97 grocery shops (which accommodate much larger and more specialised traders), 1447 permanent stalls (smaller but also specialised traders) and 500 *revendone*s (small mobile traders) on peak days (Sundays and Mondays).

Analysis by product type confirms that current traders have *few direct family links to the agricultural producers* (see Table 21). This distancing appears to be the result of an increase in the "natural" specialisation of trade, a change in dynamic that has been "induced" by the construction of the covered market. The general impression is that, as they became more successful, they have specialised and distanced themselves from direct production.

Table 21. MMA traders: relation between producers and traders.

Section in MMA	Family relation to producers	Family relation to external traders
Imported fruit	N/A	No
Beefsteak tomato and similar	No	No
Colombian produce	A few	No
Carrot	No	No
Produce from the South	No	No
Naranjilla	No	No
Soft grains	No	No
Groceries	ND	ND
Potatoes II	A few	No
Potatoes I	No	No
Imported onion garlic	No	No
Dry grains	ND	ND
Tree tomato and similar	No	No
Products from the valley	No	No
White onion	No	A few
Fruits from the valley	No	No
Fruit from Baños	A few	No
Blackberry	No	No
Red onion	No	No
Peeled garlic	No	No
Green garlic	No	No
Dried garlic	N/A	No
Other onion	ND	ND
Eggs	A few	1 person
Pulses and vegetables	Yes	Yes
Fruits from the Costa region I	No	No
Fruits from the Costa region II	Yes	No
National fruit	No	No
Beefsteak tomato I	No	No
Beefsteak tomato II	No	No

Source: Survey of the chairpersons of associations and collective interviews in the MMA, August 2009.
Design: Patric Hollenstein.

The principal effect of the relocation to covered markets in the 1990s and 2000s appears to have been an *intensification of the specialisation of traders, disconnecting them from*

the direct producers. A key feature of this specialisation is the division between "wholesalers" and "retailers". The wholesale markets theoretically do not allow the retail sales that are typical of the small agricultural producers who gather weekly. Furthermore, the permanent traders should, in theory, remain constantly in the market. This means at least four days per week at Riobamba, while in the MMA no permanent stall can be left for much time (this time varies according to custom, since there are no formal rules on the matter), because traders run the risk of losing their assigned place. Also, in Ambato the traders' associations keep a close watch to make sure that the grantee of each permanent stall is really the person who uses it and deals with sales personally: neither leasing nor subletting is permitted. This makes it more difficult for traders to involve themselves in other activities. In the words of the first business manager of Riobamba's wholesale market:

> *"The producer should be a real producer and the trader a real trader" (…) The expert [San Martín] identifies the dangers of the producers becoming traders, as in the case of the white onion, where the traders are abandoning the countryside* (Milton San Martín, Riobamba, 8 July 2009, quoted in Matuk 2009) [our translation].

Essentially, the covered markets favour the commercial specialisation of permanent stall owners. According to these same traders, the producers do not want stay at the market "wasting time". It is not their business. This is only partially true, because many "informal" traders are also producers. This is for two reasons. Firstly, trading is often the only survival strategy available when faced with the failure of agricultural production, or the fixed seasonality of income. Secondly, while it is true that often they do not want to stay at the market and sell because of the costs incurred, *sometimes* they do. And also, *sometimes*, they want to or can sell directly to the wholesale buyers. The key point is that for the producers it will always be *an intermittent activity* that can benefit them occasionally. This flexibility, typical of the multi-functionality of small producers, is something that is formally excluded from the main policies of wholesale markets that aim for trader specialisation,[22] but it remains a part of the reality of the daily struggle in the market.

Additionally, the majority of permanent traders in the MMA come from the most economically prosperous areas of the province (see Table 22). According to the survey of the wholesale market's traders, 91% were born in Tungurahua, 61% come from Ambato (35% from the urban area), 11.2% from Pelileo and 11% from Píllaro. This means that they were born in agricultural regions that for 30 or 40 years have fundamentally produced national fruit.

Table 22. MMA traders by section: place of residence and ethnic origin.

Section in MMA	Residence	Ethnicity
Imported fruit	Pelileo, Ambato	*Mestizos*
Beefsteak tomato and similar	Pelileo, San Juan	*Mestizos*
Colombian produce	Ambato, Latacunga (4-5 people)	*Mestizos*
Carrot	Ambato, Quisapincha (6 indigenous)	50% indigenous
Produce from the South	Pelileo	*Mestizos*
Naranjilla	Pelileo, Puyo, Ambato, Baños,	*Mestizos*
Soft grains	Píllaro, Ambato (33%)	*Mestizos*
Groceries	ND	*Mestizos*

[22] We have many statements which bear witness to this official policy. We will use just one illustration: according to the administrator of the Modelo market, "Traders should respect what is being sold in each place. So, for example, if one place is selling shoes, another place can't sell the same thing, and especially not if the areas are split into different sectors." ("Trading Conflicts in the Modelo Market", *La Hora*, 26 July 2008) [our translation].

Potatoes II	Martínez, Picaihua, Pilahuín	10-15 indigenous)
Potatoes I	Ambato, Píllaro, Pelileo, Quero	Very few indigenous
Imported onion and garlic	Ambato	*Mestizos*
Dry grains	ND	*Mestizos*
Tree tomato and similar	Pelileo, Santa Rosa (1 indigenous)	1 indigenous
Products from the valley	Píllaro, Pelileo, Patate, Ambato (*mestizos*)	50% (by names)
White onion	Píllaro	*Mestizos*
Fruits from the valley	Ambato, Cevallos, Patate, Baños, Cunchibamba	*Mestizos*
Fruits from Baños	Baños	*Mestizos*
Blackberry	Santa Rosa, Ambato, Huachi, Tisaleo, Quinche	*Mestizos*
Red onion	Quero, Pisque	30% indigenous
Peeled garlic	Ambato, Riobamba (2), Pilahuín	*Mestizos*
Green garlic	Ambato	*Mestizos*
Dry garlic	Juan Benigno Vela, Pilahuín	From Chibuleo and Pilahuin
Other onion	ND	*Mestizos*
Eggs	Ambato	*Mestizos*
Pulses and vegetables	Pilahuín, Juan Benigno Vela, Quisapincha, Riobamba, Ambato, Santa Rosa	Largely indigenous
Fruits from the Costa region I	Latacunga, Ambato, Santo Domingo, Macas*	*Mestizos*
Fruits from the Costa region II	Ambato, Latacunga (a few)	*Mestizos*
National fruit	Ambato, Cevallos, Huachi	*Mestizos*
Beefsteak tomato I	Ambato, Pelileo, Baños, Rosario	*Mestizos*
Beefsteak tomato II	Cevallos, Pelileo, Rosario, Picaihua	*Mestizos*

Source: Surveys of the chairpersons of associations and collective interviews in the MMA, August 2009.
Design: Patric Hollenstein.

This growing distance is reinforced by a difference of interests. Indeed, between the MMA's producers and traders the same conflicts and friction that we see in other places seem to exist. The generalised idea that we hear in the interviews is that the traders, in Ambato, just as in any other place, end up with the profit. Ambato's press provides us with an illustrative example. In one story about the second phase of the wholesale market, it said:

> *In the adjudication of the second phase, the same errors will not be committed as those in the first stage, and the pressures that have troubled the Municipality will not be accepted. In the first phase the producers were left outside and now those who wish to sell in the MMA do so with difficulty. Members of the Agricultural Centre have said that selling their products has become their cross to bear; the traders pay them whatever they want. This is why it is the intention of Ambato Council that the second phase is essentially for the province's and central region's producers, who are handing their products to the wholesaler to distribute to the rest of the country* ("The second stage of the Wholesale Market will be for the producers", *El Heraldo*, 26 August 2000) [our translation].

This clipping was found in the archives of the Central Association of Traders in the Ambato Wholesale Market (MMA). On the page where it was stuck, the following was written with permanent marker:

> *If the second phase is for the producers, what are we, the traders, going to do, who are we going to sell our products to? Our colleagues will still be using the parking areas. We will raise our voice in protest and defend our rights. Stop the injustices!*[23] [our translation].

To summarise, the close and historical link between small- and medium-scale trading, and small- and medium-scale local production, contributed not only to the energising of production in the province, but also strengthened its economically redistributive effects. The growth of commercial and production activity, as well as certain public policies that favour specialisation, appear to be increasing the distances between producers and traders. Although we cannot say for certain, this distancing could negatively affect both the regional economic dynamic and its long tradition of flexibility, which is so dependent upon the small scale of enterprise and the multi-functionality of households and regions. If it is true that these historical characteristics of provincial commercial networks have contributed to relative equality and production flexibility, other features are having opposing effects: contributing to social differentiation within areas, social groups, and households.

III.4. Trade network structure: traders and producer regions

The fourth element which explains Tungurahua's economic dynamics is that differences in the trade network structure, specifically ***differences in the positioning of the actors who control the relationship between production and distribution, play a decisive role in determining which regions are economically diverse and which regions are marginalised and impoverished.*** The trade network structure, in turn, depends on other structural factors, such as the distribution of assets (both productive and educational), ethnic discrimination and the subsequent formation of power relations in the market.

In theory, the forces in the market are supply and demand. Negotiations between the buyer and seller rely on this fact. This idyllic image is upheld by market managers and at times by traders themselves. As the managers of the Riobamba market state:

> *With regard to the pricing system,* [the Company Manager] *states that the company does not regulate it at all; instead it allows the transactions to take place according to supply and demand. The market organises the collection of rent and other charges, having understood this to be a service to the community* (Magdala Lema, Riobamba, 28 July 2009, quoted in Matuk 2009) [our translation]. Mónica Miranda [Administrative Manager] agrees: *the system should be based on supply and demand. The only measure which has been introduced is the use of blackboards and TV screens to display prices, so people are aware of fluctuations in price* (Mónica Miranda, Riobamba, July 2009, quoted in Matuk 2009) [our translation].

In practice, a variety of additional factors influence how both the price and the relationship between buyer and seller are determined. Almost all of these are related to the characteristics of the 'actor' who participates in the market and the resources that he/she possesses. The market is not a perfect, impersonal competition between agents whose terms of negotiation depend exclusively on supply and demand or on product

[23] The first phase of the wholesale market, inaugurated in 1996, included only 600 permanent stalls out of a total of almost 1500 registered traders, who had to provisionally occupy the parking areas.

quality. Rather, it is a set of exchanges between real-life people who function within the framework of established power relations.[24]

The first factor is, of course, the scale and cost of production. Those who have more land, more capital to invest, better infrastructure, better land and who are located closer to the market, have a better margin of negotiation. Scale of production is particularly important, because it allows a reduction in transport costs. The most obvious example in the MMA is that of large potato producers, who have direct trade agreements with the owners of large grocery shops. The traders send their lorries or vans to collect the produce directly from the farms, regardless of whether there is a small or large quantity of the product.

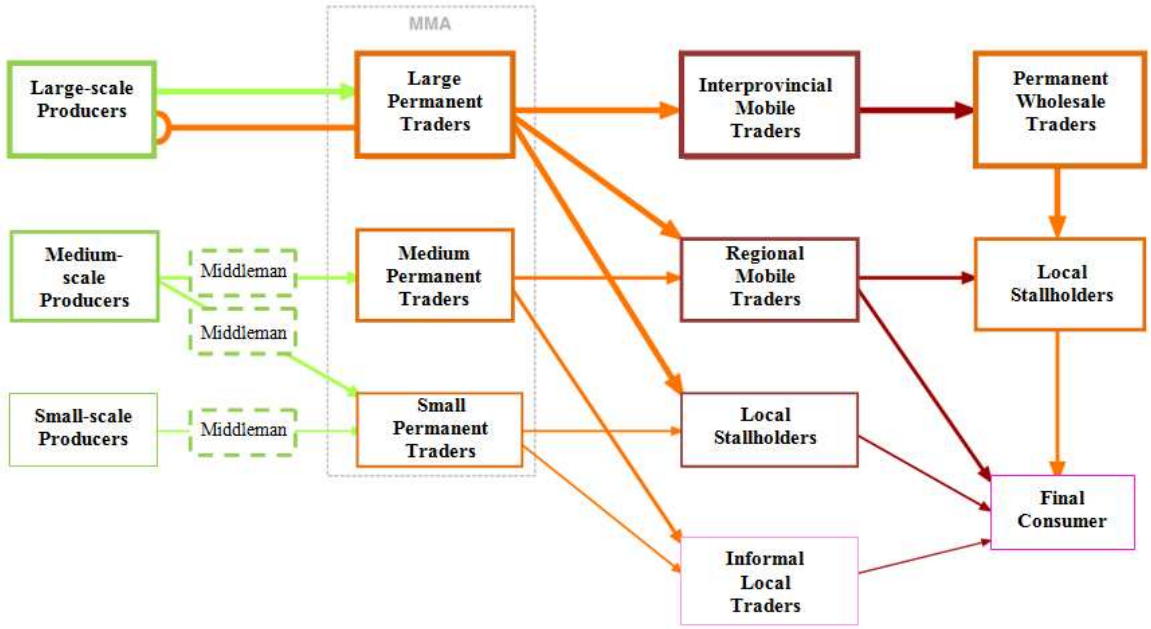
Small-scale producers, however, have a serious problem in terms of scale, which causes a marginal increase in the costs of transporting their product. The severity of this problem depends on one key additional factor: whether producers have their own transport or rely on transport agents and the trader.

> [Onion and potato trade was carried out] *directly in Ambato or Riobamba, I used to go to Ambato with the onion van, if the price was low in Ambato, I went to Riobamba where they were offering a better return, (...) if the price was low* [in Riobamba], *I went back to Ambato. With your own car you can really get around, if you've got a hire car, the only thing you can do is make a deal with the first person who'll pay* (Ángel Barreno, producer, Mocha, 26 August 2009) [our translation].

The brokering structures crucially depend on, and vary according to, the nature and resources of the actors who participate in them. The main feature of this difference is that trade networks connecting medium- and large-scale producers to medium- and large-scale traders are '*harder*'. In other words, they are permanent, mutually beneficial and based on trust and collaboration. On the other hand, small-scale producers and traders have more casual relationships, with less trust and regularity, forming a series of relationships which is '*softer*' and less mutually beneficial. The following diagram shows these structural differences in the trade network which closely follow the scale of activity.

[24] The study of social and power structures in the economy and the market is well established (cf. P. Bourdieu, 2002).

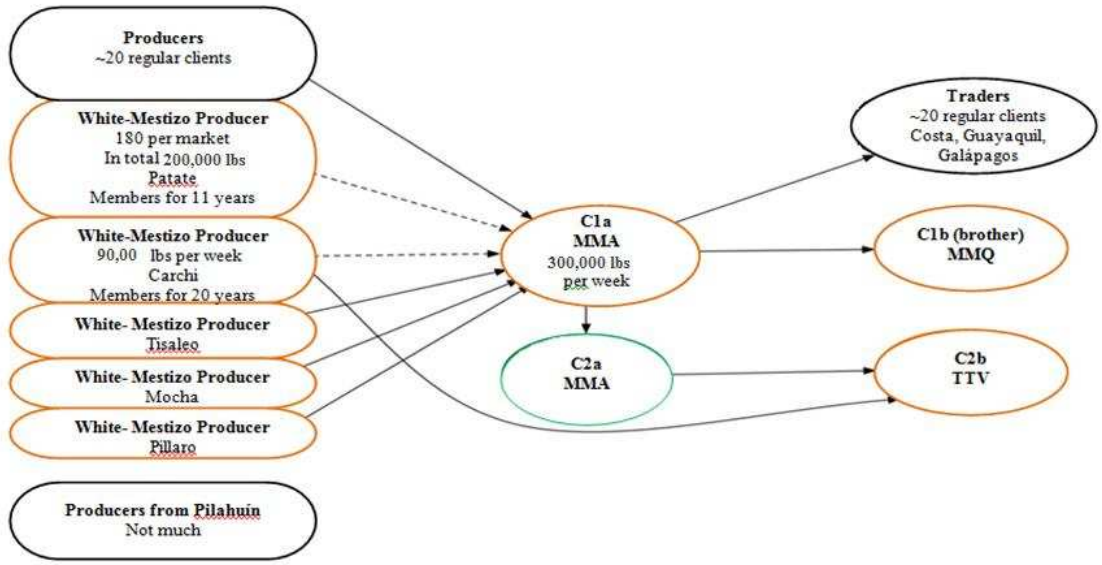
Diagram 4. Trade networks according to size of activity (potatoes in MMA)



Source and Design: Patric Hollenstein, based on field work in the MMA (October 2009) [adapted in translation].

Small- and medium-scale producers often use various middlemen, who act as go-betweens between them and permanent traders. Small producers who do business with small traders are diverse, sporadic and unknown. In contrast, large producers do business directly with only one large trader, usually grocery shop owners, and use their own means of transport. The following diagrams show two cases of potato producers, one large-scale and one small-scale.

Diagram 5: Potato Trade Network: large trader, MMA

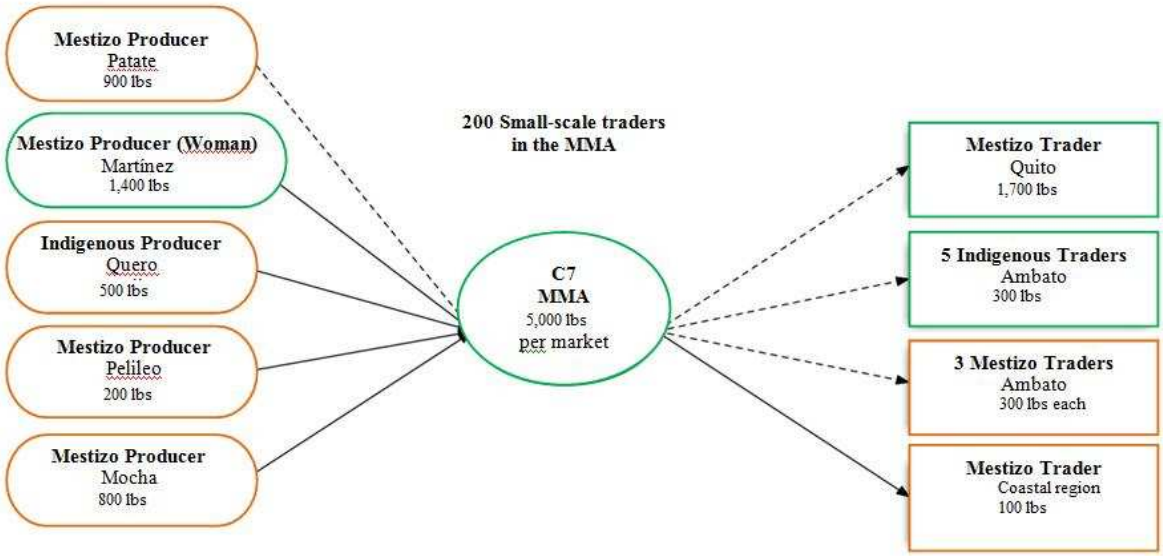


Source and design: Patric Hollenstein, based on field work in MMA (October 2009) [adapted in translation].

Trader C1a, who sells around 300,000 lbs of potatoes a week, has stable relationships with around 20 white-*mestizo* producers, mostly medium- and large-scale, whom he knows by name. These producers take their produce to the wholesale market in their own vehicles and some also hire lorries. The most important factor in this regular relationship is the volume of production of one large type of potato, the *papa gruesa*, which can be sold at a higher price. Very occasionally, he also buys from some small-scale indigenous producers. His market extends to Guayaquil and Quito, where he has a brother with two stalls in the wholesale market. He also sells part of his produce, usually his best price product, to another large-scale trader. This trader is a woman, C2a, who regularly sells to her husband in the Food Exchange Centre in Guayaquil. Sometimes the produce comes from other provinces in the Sierra, in this case from the northern province of Carchi, and travels directly to Guayaquil without having to pass through Ambato.

The small-scale traders, on the other hand, sell 5000 lbs of lower-price potatoes per market. They buy from a variety of producers, whose names they do not know, who change from week to week. They then distribute the produce to various traders in Quito, Ambato and on the coast, whose names they also do not know. The irregularity of the trade relationship is a fundamental issue, and to a large extent it is the result of the small volume of transactions, as small-scale producers cannot always ensure the product quality that traders require. The small scale of the transactions and the low price of the product are always combined with instability in the commercial relationship.

Diagram 6. Potato trade network: small trader, MMA



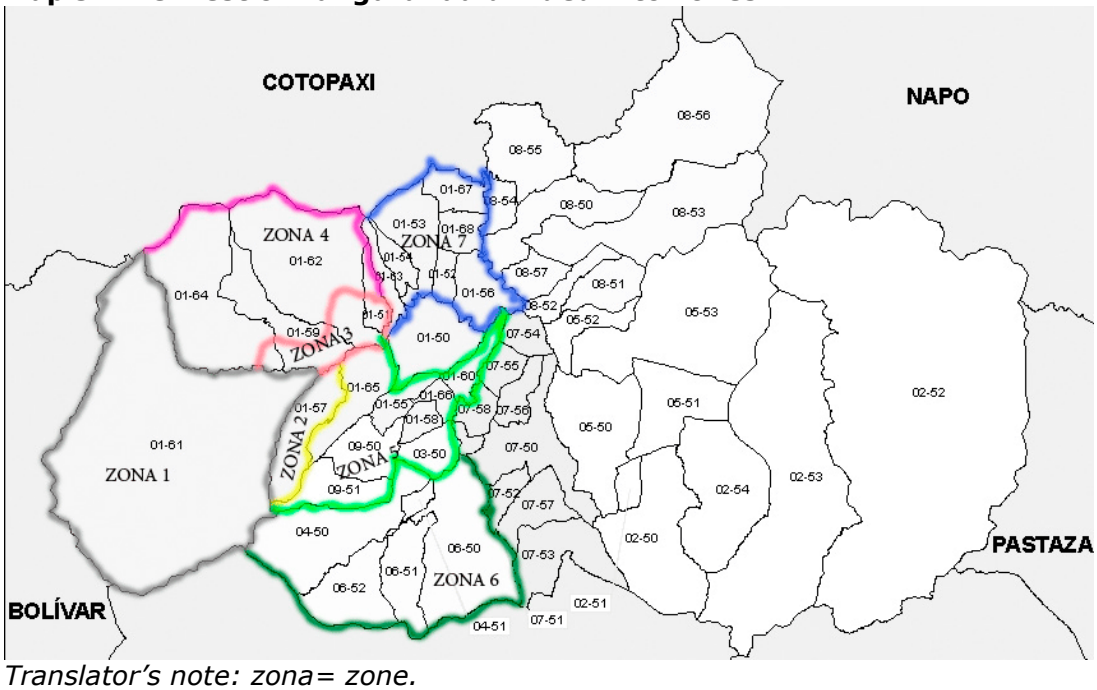
Source and design: Patric Hollenstein, based on field work in the MMA (October 2009) [adapted in translation].

We can see the effects that these differences have on the territories. Comparing the trade connections in the western area of Tungurahua shows how these mechanisms of power operate in the market in practice. It also shows how, as a final result, some areas become considerably more successful than others in the same territory with the same market network.

As Map 9 shows, the western area of the Tungurahua province is divided into various sub-areas. For our current purposes, it is necessary only to point out that the areas of highest altitude correspond to the zones 4, 1 and 6. While the high-altitude areas of zone 4 and 1 are predominantly indigenous, those of zone 6 are *mestizo*. There are

significant differences between these zones with regard to their respective trade connections. In zone 4, a particular social group which is predominantly situated in zone 3 (medium-altitude) carries out the brokering. This group is located in Quisapincha and in the low- and medium- altitude regions of Santa Rosa. It mainly consists of the *mestizo* traders who live predominantly in the urban centres of these districts. In contrast, in zone 6, *mestizo* producers sell their own produce in the wholesale markets in Ambato or Riobamba, depending on prices and opportunity. In many cases, traders go directly to the farm to buy the product, paying the costs of transport themselves. In some instances, such as with the carrot crops, they even pay for the costs of the harvest. For their part, the mostly indigenous agricultural producers of zone 1 sometimes carry out their trade directly, but they mainly depend on indigenous traders from Chibuleo and the medium and low-altitude areas of Pilahuín (zone 2) to establish trade connections.

Map 9. The west of Tungurahua divided into zones



Translator's note: zona= zone.

The indigenous inhabitants of the high-altitude zones (4 and 1), considerably more isolated from direct trade connections, are also from zones which were among the last to be served with roads. Their properties are smaller and the land is poorer. The only advantage they have is that there is a plentiful supply of water: there is no need for an irrigation infrastructure, as the area is humid enough to supply water to the rest of the province. This difference in living conditions for the indigenous community creates a barrier which both producers and indigenous traders find difficult to cross.

Many of them acknowledge that *before*[25] it was worse:

> *When we used to arrive with the produce, they used to rip us off..... they paid us whatever they wanted, and seeing as there isn't a fixed price in the market, it sometimes goes up, sometimes down, when the price went down, they gave it back*

[25] The ethnographic description of what Hugo Burgos called "colonialist exchange" between *mestizo revendones* and indigenous producers at the end of the 1960s in Riobamba is genuinely shocking (Burgos 1997 [1970]: chap. 6, 187-245).

to us. We went through so many things (...) which is maybe why [I do business directly]*... I used to go to other markets which were further away. Because of that we've learned a bit about how to do business. In the marketplace, the middlemen were the same, they underpaid us, they took things by force, then later, after having made a purchase, they said, just like that, that the product wasn't good, so they came and gave it back, anything could happen. And all that, yes, thankfully, up till now that all happens much less* (Jacinto Pacari, Chibuleo San Pedro- Juan Benigno Vela, 4 September 2009) [our translation].

In Quero, on the other hand, in zone 6, a *mestizo* zone, priority of sale is given to the large-scale traders who go directly to the farms. The relationship is '*hard*' (in the sense that it is permanent and based on a network of trust), particularly between large-scale traders and producers. The producer and the trader give credit to one another. The relationship is one of friendship, even of closeness, as they share other social spaces, such as parties and sporting events. The middleman is a key figure in the high-altitude communities. He supports the football teams, provides alcohol, pays the musicians. In this way he maintains a strong relationship with the producers, influencing the trade negotiation process. At this point, it seems appropriate to transcribe a long statement of a well-connected *mestizo* producer of the region:

Well, like, you know, for someone like me the trader's been decent, you know? Now I deliver to...Ernesto Cárdenas, he's from the town. So, the good thing for me for example, when the potato's expensive, say like about 15 dollars, then they rip you off. But if you put today's price, nobody's going to bat an eyelid cos of a potato, if it's good and it's cheap, they'll take it, won't they? So with me and this Ernesto Cárdenas, the good thing for me is that when prices are cheap, he goes out to where the potato is to pick it up, the bit where the fields are, and there I dig and I take it and I dump it where the car is, and from there he goes to pick it up. In these recent weeks I've delivered about 60,000 lbs of papa gruesa*. With him I still don't do the money. Just now I rang him on the phone, saying: 'What's going on?' He says that tomorrow he's going to come. Well, you know, that's up to him to decide, doing the money is serious business, no doubt about that right? Like with him, for example, sometimes I've had problems, I haven't been harvesting and I haven't had any money, so I tell him: listen Mr Ernesto, can you do me a favour and lend me 1000 dollars so that they give me a better price, I'm going to dig for you in a month, in a month and a half I'll be digging for you... Ok, he says. He lends me his 1000 dollars, about 500, that's what I told him. No more than 1000 either, I haven't told him that, up to a thousand I told him once. Three hundred here, 500 there, that I have asked him for. If he lends it to me, it's to the rate. And he brings the potato from wherever it is, he goes up cos he's got his truck, he goes up, he comes down.*

(...) He looks after everyone, my father-in-law, my two brothers-in-law, my wife's brothers, my brothers-in-law, my sister (...), of Joaquín Guerrero, they work really really hard, he looks after them... they'll plant any amount of potatoes, he looks after loads of people that Ernesto Cárdenas does. He reckons that he gets around 250,000 to 300,000 lbs a week from just us, just from the ones he knows, not from everyone. They say that he takes about 300,000, from just a few people, when it's going cheap they say he takes about 400,000 and he fills the grocery shop over in Ambato. He's got two shops there in the wholesale market. I've known him now for about 17 years (…) And so we've got to know him pretty well (...). I go: What? How's he going to pay that? I say no, it's less, I don't say: No it's that price Don Fermín, that's the price it is. I don't say that to him... sometimes people get upset. So I ring another businessman and he takes it but only once, and then he next time he comes back again [laughter].

If, you know, there's a wedding, weddings around here, they know to go and get hold of something to take, yeah, yeah, he's a good guy .... and football, when they

play the Quero- Pelileo inter-district tournament, he's from Pelileo, we know to find him there. He's a good guy, it's not just the business, the weddings, the parties here, he's always invited, (...), in the party season they ask him to get a band, so he gets one and they invite him to come to the party, he knows to come bringing drink... (Fermín Sánchez, potato producer, Quero, 18 August 2009; Cárdenas also buys produce in Tisaleo and Píllaro*)* [our translation]*.*

The nature of trade connections is therefore a very important factor in explaining a producer's success, though it must always be considered in combination with structural factors, such as quality and quantity of land and other liquid assets.

Ethnic discrimination is a fundamental factor in creating obstacles in trade networks. However, it is not an insurmountable obstacle, as is shown with the example of Chibuleo's indigenous traders. Notwithstanding, as well as encountering enormous difficulties with regard to direct access to trade, once the indigenous traders manage to gain this access, they are faced with significant obstacles within the same markets. Effectively, it is difficult for indigenous people to gain access to the permanent stalls in the MMA. They only produce a substantial amount of pulses and vegetables (carrots, onions, garlic) and a smaller amount of potatoes and valley produce (produce from the central area of the province). In these particular sections and trade networks, the traders and the producers seem to have more of a relationship, although many of them seem to be inhabitants of Pilahuín and Chibuleo and do not say that they have a direct familiar relationship with the producers. This is trade on a smaller scale, with the exception of the potatoes, but even then the indigenous participants are only responsible for the smaller transactions. The example of the onion and garlic trade networks illustrates this point:

The trade chain has two parts. The first part is that of red onion, the second part is that of lower-quality onion and strung garlic. The second is where the majority of the indigenous people in the network are concentrated (...). The onion and strung garlic traders are indigenous traders from Santa Rosa, who buy the produce from the indigenous people of Pilahuín and Chibileo, who bring it in the morning (...). Their clients are indigenous people from Saquisilí, who take the product to Ibarra. What's more, there are always indigenous informal traders outside the section who sell the same product. There are about 20 of them, the majority are indigenous women from Santa Rosa (Field notes, Patric Hollenstein, August 2009, MMA [our translation].

In fact, the majority of the indigenous traders at the MMA do not have access to stalls or grocery shops and sell at retail prices on steps, in corners, and in the aisles. Outside the MMA there are also groups of indigenous people selling at retail prices. On Mondays, the MMA turns into a large retail market which also includes the sale of clothes, as it has done throughout the 20th century. The permanent traders (and council administrators) generally enter into the most serious conflicts with these mobile traders. In fact, the majority of conflicts reported in the local Ambato press between 1996 and 2008 occurred between informal and permanent traders. In an open letter signed by the representatives of eight retail markets in Ambato, it is agreed to:

2. Request that the personnel of the Department of Markets continue to monitor the situation, and do not allow retail price sales in the wholesale market, given that this type of business causes a great quantity of damage to the markets and marketplaces in the city centre which are now increasingly semi-abandoned (*El Heraldo*, 4 July 1997) [our translation].

These informal traders are generally indigenous:

Retail traders are waiting for effective action regarding the control of informal trade around the marketplaces and markets, which are currently the focus of

street crime (…). They request effective action for the construction of an indigenous market, so that the informal traders leave the pavements around the markets, along with the traders selling at retail prices in the wholesale markets. They must be relocated ("Informal traders and street crime", *El Heraldo*, 9 July 2001) [our translation].

Conflict generally occurs on market days, when the number of informal traders is more than triple that of the permanent traders (see Table 23).

Table 23. Number of stalls on normal days and market days per market, Ambato (1995)

	Normal day			Market day			
Market	**Stalls inside**	**Vehicles**	**Total for a normal day**	**Stalls inside**	**Streets**	**Vehicles**	**Total for market day**
Simón Bolívar	369		369	573	75	10	658
Juan Cajas	275		275	439	4		443
Central	416	164	580	432	544		976
Colón	229	42	271	341	323		664
La Dolorosa	82	124	206	99	566	9	674
Izamba	132	6	138	116	38	2	156
Primero de Mayo	121	136	537	305	1004		1309
La Merced	47		47	45			45
Modelo	703	185	888	719	455		1174
Pachano	91		91	176	32	42	250
Sur	141		141	136			136
Terminal	38		38	32	10		42
Urbina	295	56	351	390	324	7	721
La "Y"	12	8	20	112	139	11	262
Avenida Cevallos		120	120		1,456	51	1507
TOTAL	**2951**	**841**	**3792**	**3915**	**4970**	**132**	**9017**

Source: CONSULPLAN (1995: 6-8).

III.5. Institutions

The fifth element which explains Tungurahua's economic dynamics is that ***the socially redistributive effects of the region's market network were critically dependent both on organisations' guidelines regarding participation and on the operation of local institutions.*** The role of deliberate state intervention was relevant to some extent on three levels: the extension of initial education services provision, the extension of certain market infrastructure services, mainly electricity and road systems, and the introduction of a series of protectionist economic measures in the domestic market, which supported the extension of certain agricultural and manufacturing activities. The civil organisations of social actors also played a fundamental role in the formation of the structural conditions which led to the creation of rules and norms governing the operation of the Tungurahua markets. In particular, they helped to establish a relatively egalitarian structure of land possession, even before agrarian reform laws were passed (1960 and 1970), and in the early extension of irrigation infrastructures, realised by producers and traders from the end of the 19th century. Both factors increased the negotiation capacity of small- and medium-scale producers with traders.

Institutions depend on the process of economic growth, on the predictability of its dominant trends, on the regulation of its rhythm and on the more or less redistributive

and sustainable nature of its results. This supposition is accepted by almost all academic studies in development, regardless of their ideological leanings. It is an idea which is accepted in the frequently cited works of neoclassical models of institutional economy (as in the work of Douglass North 1990) in order to explain economic exchanges. In the influential work of Berdegué and Schetjman (2007: 66-68 and 77-83), the institutional aspects of "Rural Territorial Development" are considered crucial, particularly in guaranteeing equality and redistribution during the process of "productive transformation". Drawing what are admittedly oversimplified comparisons, "productive transformation" can be incorporated into economic growth, while "institutions" act as functional equivalents of equality. José Itzigsohn (2001) provides a similar example of the application of institutional analysis, but from the perspective of world systems, comparing the cases of Costa Rica and the Dominican Republic in the 19th and 20th centuries. Two countries with similar positions and trajectories in the world economy, with similar economic models, followed very different development paths because of important differences in government: in Costa Rica a reformist, welfare state was appointed, while the Dominican Republic moved towards a repressive state which favoured the advantages of cheap labour.[26]

The now classic distinction between "organisations" and "institutions" is particularly important to this study. The first refers to organised social actors, in either civil society or state structures. The term "institution", on the other hand, fundamentally refers to the rules of the game, the guidelines which regulate the actors' actions. These rules can be formal, such as laws, codes or rules, or informal, such as customs or rules of social interaction which can be either consensual or imposed by force. Finally, these rules influence social behaviour by means of restrictions or incentives (North 1990).

From a theoretical perspective, the theory outlined in this paper suggests that a series of informal rules in the operation of the weekly markets was more important in the formation of the economic dynamics of the Tungurahua territory than the planned and organised action of formal state institutions. Both interventions – the organised state intervention and the socially-created informal rules regarding market operation – are particularly relevant in explaining the redistributive effects of the territorial economic dynamics.

The role of organised state intervention was relevant to some extent on three levels. Firstly, in the extension of *initial education* services at a key moment in the territory's economic boom, which created better market entry conditions for many economically disadvantaged social sectors. As has been previously discussed, the extension of these services occurred very early on in the province and was actively demanded by the area's residents. However, the indigenous inhabitants continued to have restricted access to primary education, and the benefits of these services did not reach them. Secondly, in the extension of certain *market infrastructure* services*,* mainly electricity and road systems. This allowed the early integration of the larger surrounding area into the market network, once the railway ceased to be the main form of inter-regional communication in the country. Here, social demand and grass roots collaboration from below were again the necessary complements to state intervention from above. Again, some of the province's high-altitude areas, in both the west and east, did not see the benefits of the redistributive effects of this state intervention, with areas populated by indigenous towns and communities particularly badly affected. Thirdly, a series of *protectionist economic policies* in the domestic market supported the extension of certain market activities in the areas of agriculture (fruit) and manufacturing (textiles, leather products and shoes). Consequently, these sectors enjoyed a long period of consolidation up until the 1970s. The theory proposed by this study is that these three governmental

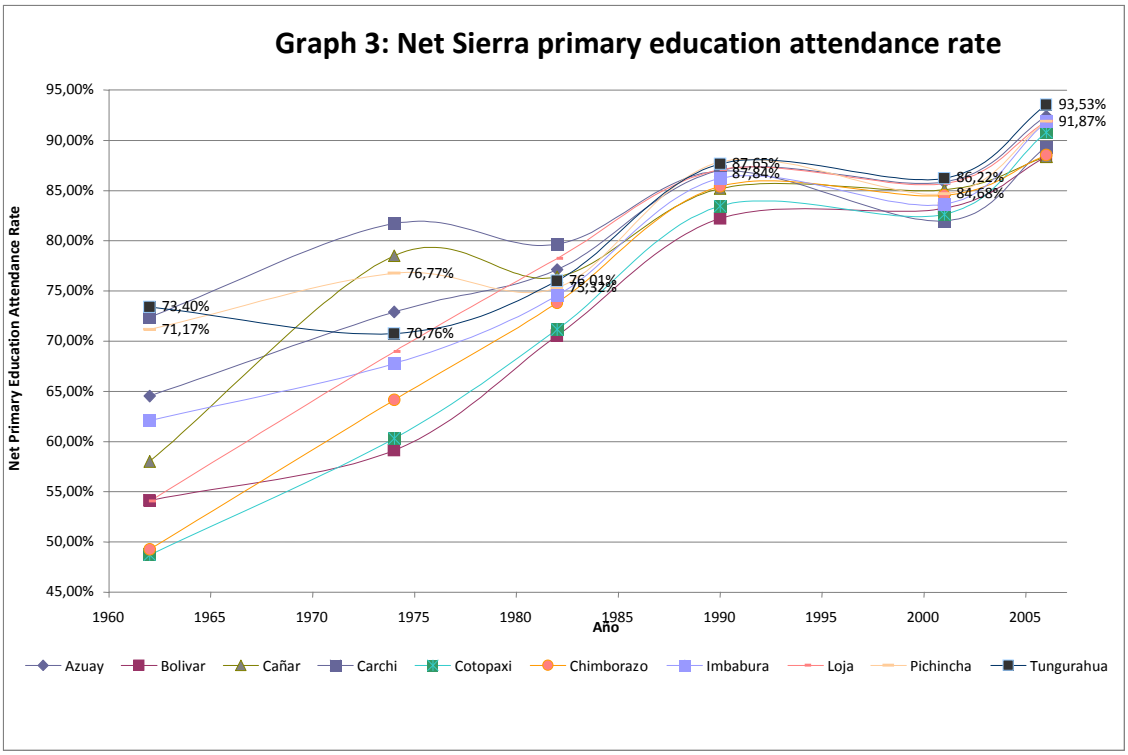
[26] The existence of an agricultural economy based on small- and medium-scale coffee producers is, of course, generally cited as the main structural condition behind the emergence of the reformist state in Costa Rica (Williams 1994).

policies, maintained and necessitated by social pressure, were essential elements in the consolidation of the territorial economic dynamics of Tungurahua.

Effectively, the provision of a road infrastructure, electricity and initial education in Tungurahua is moderately better than any of the neighbouring provinces, or even in comparison with both regional and national averages. This is confirmed by an integrated analysis of a set of six education indicators in the province between 1962 and 2001. These six indicators can be divided into two groups, according to their relation to the territory's economic structure. The first group, which will be referred to as '*initial development'*, consists of indicators related to the provision of basic education: literacy, schooling and attendance rates at primary education level. The second group of variables, which corresponds to indicators of '*diversified development'*, refers to a more advanced state, associated with secondary and further education. The temporal analysis allows us to conclude that initial development indicators, associated with literacy and primary education, tend to increase rapidly in the first stages of educational development. Later, once the provision of primary education becomes more widespread and illiteracy rates experience a significant decrease, progress becomes slow. The second group of indicators starts to show a significant increase only when the primary education base has achieved a minimum level of development, and subsequently shows educational advances in more advanced stages of the development process (Larrea et al 2009).

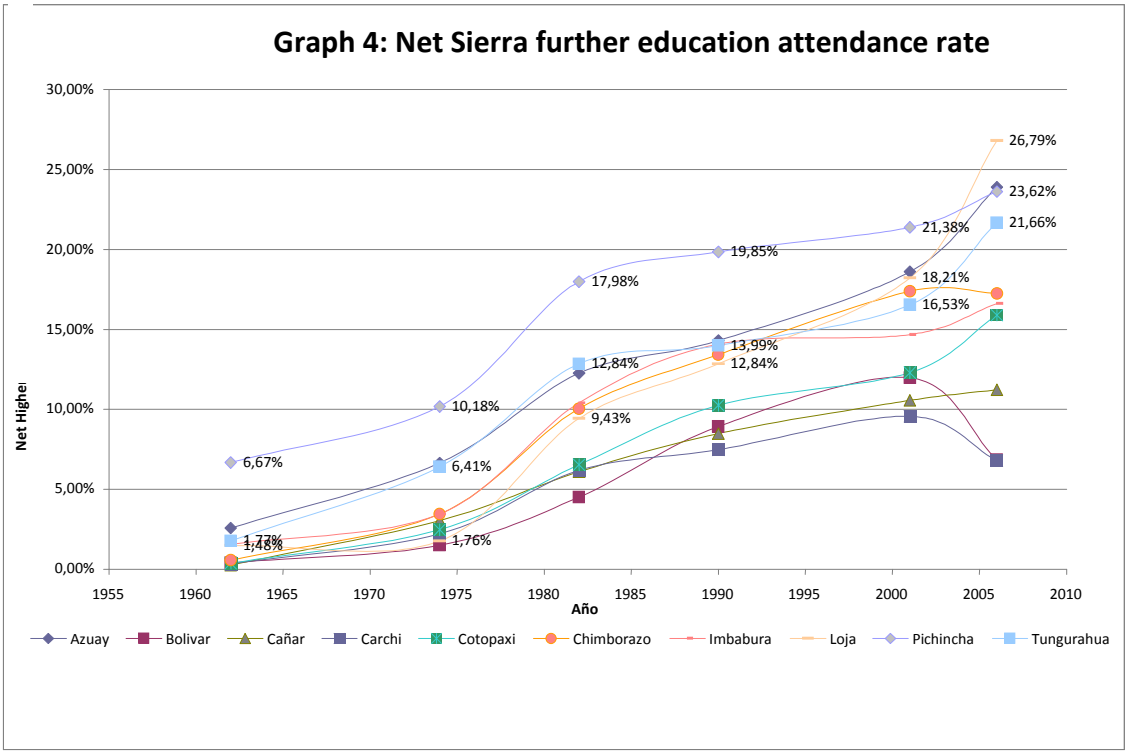
For the period 1962-1982 Tungurahua shows educational advantages in the initial indicators. Between 1982 and 2001 it loses these advantages and gains advantages in diversified development indicators. Finally, as an aggregate result, it maintains its total educational advantage. The following graphs demonstrate this trend. In 1962 the difference between primary school attendance rates in Tungurahua and those in other provinces in the Sierra was significant. By 2001, all the provinces had reached an equivalent level in the provision of primary education, so this indicator no longer reflected a noticeable advantage. The attendance rate for further education shows exactly the opposite evolution. In 1962, it was extremely low for all provinces (with the exception of Pichincha, near Quito). In contrast, by 2006, there was a noticeable difference between provinces in the diversified development indicator. Overall, Tungurahua has maintained a comparative advantage with regard to education in the Sierra since 1962, when the first reliable data appear.

Graph 3. Net attendance rate at primary education level, Ecuadorian Sierra 1962-2006



Sources: INEC, Population and Housing Census, 1962, 1974, 1982, 1990, 2001, Survey of Living Conditions, fifth round, 2006.
Design: Carlos Larrea and Ana Isabel Larrea.

Graph 4. Net rate of attendance at further education level, Ecuadorian Sierra 1962-2006



Sources: INEC, Population and Housing Census, 1962, 1974, 1982, 1990, 2001, Survey of Living Conditions, fifth round, 2006.
Design: Carlos Larrea and Ana Isabel Larrea.

Looking at the way in which education has changed across generations, we find a general increase in secondary and further education, and a decrease in the number of people without any formal education. At the same time, the number of mothers of current Tungurahuan 'heads of family' who lack any formal education is surprisingly high (comparable only with Chimborazo). This confirms that Tungurahua's fundamental advantage was the increase in primary education (or initial education) where previously there had been no formal education. As a result, when all educational levels are integrated into one single summary indicator (schooling years), the advantage disappears or becomes less clear. In summary, the statistics confirm that educational factors have played an important role. They provided a more extensive minimum initial education (primary) than in many poor areas of the Sierra, helping some of the province's poorest groups achieve a higher level of participation in its economic dynamics.

Table 24. Level of education of 'heads of family' and their parents (2006).

		Head of family	**Head of family's mother**	**Head of family's father**
National	Primary	46.2%	50.7%	50.3%
	Secondary	28.6%	10.3%	10.7%
	Post bachillerato	0.8%	0.4%	0.3%
	Further education	16.9%	2.4%	3.8%
	None	7.1%	29.9%	22.5%
	Don't know	0.4%	6.3%	12.4%
Chimborazo	Primary	42.7%	33.1%	38.2%
	Secondary	20.8%	5.0%	7.4%
	Post bachillerato	2.3%	0.3%	0.4%
	Further education	14.0%	1.5%	2.2%
	None	18.6%	54.7%	42.6%
	Don't know		53%	9.2%
Loja	Primary	58.1%	57.8%	57.4%
	Secondary	18.5%	5.6%	5.4%
	Post bachillerato	1.2%	1.5%	0.8%
	Further education	16.9%	3.9%	4.6%
	None	5.3%	25.1%	18.8%
	Don't know (and literacy centre)		6,1%	12.9%
Tungurahua	Primary	56.4%	46.1%	53.8%
	Secondary	19.2%	6.7%	8.2%
	Post bachillerato	1.4%	0.3%	0.4%
	Further education	13.5%	1.2%	2.6%
	None	9.0%	40.3%	24.8%
	Don't know (and literacy centre)	0.6%	5.4%	10.2%

Source: INEC, Survey of Living Conditions, fifth round, 2006.

A similar situation pertains with regard to the availability of household electricity. In the Census of 1962, only 49% of households in Tungurahua had electricity. Despite this, it was the second best-served province in the Sierra, and the difference between Tungurahua and the worst-served province (Bolívar) was almost 40 points. By the year 2001, there was electricity in 94% of households in Tungurahua, but the difference compared to the worst-served province of the Sierra (still Bolívar) was less than 15 points. The province's *advantage* in this type of market infrastructure was reduced (Larrea et al 2009). With regard to the road systems, the advantage of the Tungurahua province radically altered. In the first half of the 20th century there were some rudimentary roads, but by the beginning of the 21st century there were *better* roads, which reduced the cost of transport. The noticeable improvement of the road systems, in particular, was one of the most popular policies of the local government. In 2008, Maruyama, Elías and Torero carried out a study based on up-to-date information regarding the density of Tungurahua's road network and the costs of transport to the nearest local markets. This study confirms that the area has the lowest costs in the Sierra in terms of the transportation of food to the nearest markets. On a national level, only the low-altitude river basin of Guayas has a comparable network.

In all these areas – education, road systems and electricity – public participation was vital, but it was not the only important factor. There was a combination of both community demands and initiatives and state action. However, state intervention ended up being the immediately decisive factor, because of the size of the investments needed to extend the service network. There is one other important case in which the community intervention of local social organisations was more decisive than governmental action.

Examining Tungurahua's economic history between 1850 and 1950 reveals that non-state actors played a central role in constructing the market operation rules which govern the market network and trade activity in the region. This affected the region's history and territorial formation in two ways. Firstly, the province had a *relatively egalitarian structure of land possession*. As a result of the growth in commercial activities in Ambato, and the integration of small-scale producers into these activities, the 1870 Common Land Expropriation Law and the 1964 and 1973 Agrarian Reform Laws strengthened the trend to divide large properties into smaller ones, and to establish small and medium-sized properties. In this way, most land redistribution was realised through the market (peasants could buy land) and was strengthened through violent peasant revolts, which stopped land being concentrated in the hands of a small number of landowners – a trend observed in other regions.[27] Secondly, there was an *early extension of the irrigation infrastructure*. Existing studies show that this was not a result of state-funded initiatives. Evidence suggests that there were three basic motivations for the early construction of irrigation canals: a growth in the production of cereals, which needed to be transported to the coastal region; the production of fruit to be transported to Quito; and an increase in the amount of local market capital in the buying and selling of land, which had increased in value due to investment in irrigation. Irrigation increased the productivity of small-scale producers and meant that each producer had more to sell. Producers therefore became more attractive trade partners for traders.[28] The net result of these two processes (land redistribution and irrigation extension) strengthened the relative power of small-scale producers, enabling them to participate in trade and to negotiate more favourably in the market. This strengthened the overall redistributive trend.

[27] This we have gathered from reading the work of Hernán Ibarra (1987) regarding the economic structure of the central Sierra between 1850 and 1950 (cf. Ospina et al 2009).

[28] This is the interpretation we have made both from Ibarra's work and that of Núñez and Vega (1992) and Ruf (2006) (cf. Ospina et al 2009).

However, no formal organisation is known to have directly intervened in the negotiation processes of Tungurahua's market or market network in a significant way. The water and irrigation boards have never intervened in trade. Nor has the state, even when it explicitly claimed to regulate trade when the covered markets were built in the 1990s. In practice, informal traders moved from the streets to the covered markets without the introduction of regulations to radically change the way in which previous power networks operated. The situation continued to be the same: the same traders negotiating with similar levels of conflict, the same forms of participation, the same relationships with producers, and the same rules of market operation.

In summary, all of the above indicates that the unique way in which Ambato's markets operate is the unintentional product, with no comparable antecedent, of a wide range of actions from a wide range of actors and organisations who fought for recognition and partial demands.

The famous declaration of Friedrich Engels in his letter to J. Bloch on 21 September 1890 can be applied here:

> *(…) history happens in such a way that the final result always comes from conflict between many different individual wills, each of which is the way it is because of an accumulation of special conditions of life. They are the innumerable forces that crisscross one another, an infinite series of force parallelograms that give rise to one outcome – the historic event. In turn, that in itself may be considered the product of a single force that, as a whole, acts unconsciously and involuntarily. Thus the individual's desire is faced with the obstacle of the will of another, and the end result is something which nobody wanted* (In Marx and Engels 1971: 453) [our translation].

In Tungurahua, the relative power of the social actors who intervened in market negotiation was the decisive factor in the infinite series of force parallelograms which resulted in the existence of more favourable market institutions for the poor. The structural conditions afforded more relative power to small-scale producers, small-scale traders and small-scale artisanal enterprises and meant that the market was more favourable for them than in other areas. For this same reason, conditions were less favourable for high-altitude zones and indigenous communities. Inequality in market access reflects the structural inequality, both social and territorial, of productive actors in Tungurahua.

IV. CONCLUSIONS

The historical origin of the role of trade in Tungurahua's economic dynamics goes back a long way. During the 19th century, regional markets in the central Sierra grew, closely following phases of growth and decline in the cocoa trade. During these years, the continual and 'molecular' participation of small mule-drivers allowed some independent landowners and peasants to enterI into the market. They were able to buy land and slowly modify the agrarian structure to its most egalitarian point between 1920 and 1930. This process of property subdivision, activated first and foremost by the land market and the Law of Uncultivated Land (1865), which sped up the subdivision of common land, was accompanied by fierce agrarian conflicts. As a result of a combination of the landowners' reduced power and the smallholders' greater autonomy, it was possible for these conflicts to be resolved in the peasants' favour. When the export crisis and subsequent import restrictions caused food prices to soar in the second decade of the 20th century, the effect was not a renewed concentration of land, as had been hoped. This is due to the fact that, by that time, there was already a consolidated peasantry who defended their land in bloody revolts. The new land ownership structure created a virtuous circle, with land and trade feeding into each other. This was able to

sustain itself even when conditions changed with the decline of the railway from the 1940s. Between the 1940s and 1980, Ambato reached its peak as a centre of trade, as did Tungurahua as a centre of market diversification in commercial agriculture and a wide range of artisanal goods. All of this production was aimed, above all, at the Ecuadorian domestic market. The areas which were able to diversify seemed to coincide mainly with fruit production areas, which were capable of generating sufficient surplus to reinvest in artisanal products.

From the 1980s onwards, Ambato declined, or stagnated to a certain extent, as a centre of trade. It is possible that this stagnation was not as pronounced in rural areas, and the eastern municipality of Baños, which has since experienced a surge in tourism, was evidently unaffected. This stagnation is undoubtedly related to the most general change in the Ecuadorian accumulation model, a shift from an emphasis on the domestic market to an emphasis on exports. This shift was related to the economic crisis which began in 1982, and which remained, with periods of growth and decline, until 2009. This second period (1980-2009) is the period shown in the district maps used in the study, which show a relative stagnation (Larrea et al 2008). To these factors, the growing competition from imported mass consumer goods (imported from China amongst other places) must also be added, such as the entry of Chilean fruit into the market from the end of the 1990s. Tungurahua is currently undergoing economic restructuring, and there are signs that, at least in certain areas, this is happening with dynamism and flexibility, but not without costs.

However, the historical characteristics of a territory are not reproduced simply by inertia – modern forces have to reproduce them. We start by highlighting these persistent dynamics, in order to finish by outlining certain indications which could suggest changes to this trend.

The market network which has its centre in the city of Ambato continues to be the most dynamic of all the central Sierra, and makes up a powerful incentive for production. Effectively, ***the demand for products which are stored in Ambato to be distributed across the entire national market, is a stimulus for the direct producers of the surrounding territory***. This reduces their costs of transport and brokering. The incentive of a market which is exceptionally large by the standards of the Ecuadorian Sierra has not led to a specialisation of regional production. In fact, the opposite is true; ***it continues to generate economic diversification of the territory.*** This happens because we are dealing with a market specialising in consumer goods for the popular and middle-sector markets, the production of which requires low-level investment in equipment, personnel and prime materials. It therefore has low entry barriers for small enterprises. This also affords it a high level of flexibility to adapt to the ups and downs in the various markets of these popular consumer products. Furthermore, there are specific social sectors – small traders and women – who, due to their particular structural positioning, become very important agents in the diversification process.

Initially, in Tungurahua there was a close 'symbiosis' between traders and producers. ***The same families were dedicated simultaneously to both production and trade***. The proximity and extent of the market network allowed producers direct access to trade and meant that the ***market network of Tungurahua, despite its large size, was never monopolised by the large traders who came from a landowning background.*** Over several decades, this strengthened its redistributive effects: not only was production fragmented between many producers, but trade was also fragmented between many traders. Nowadays, there is a trend towards the weakening of this 'symbiosis', due to the effects of a deliberate policy of labour specialisation as a result of the construction of the covered markets. In addition, the trade networks of large traders have diversified through other channels. Firstly, through imports, as we saw in the first chapter on characterisation, which shows that the largest trade companies in Tungurahua are dedicated to such activities. Secondly, they aim their products at a

middle- and upper-class market, as occurred in the example of the supermarket chain, *Supermaxi*. In trade and in markets, however, there are also powerful trends of social differentiation.

Effectively, although there is a market network in Tungurahua, the structure of the trade network varies according to the areas and the produce. ***These differences in the network formation or, to be precise, in the positioning of the actors who control the relationship between production and distribution, play a decisive role in determining which regions are economically diverse and which are marginalised and impoverished.*** The largest producers – the regions with the better land and market infrastructure and *mestizo* regions – benefit from better brokering conditions, whether in the form of greater security, lower transport costs or better credit facilities. Because of this, the structure of the trade network depends on structural factors, such as distribution of assets (both productive and educational), ethnic discrimination and the subsequent formation of power relations in the market.

Finally, the socially redistributive effects of the region's market network were dependent on both organisations' guidelines regarding participation and the operation of local institutions. The role of deliberate state intervention was relevant to some extent on three levels: the extension of initial education services; the extension of certain market infrastructure services, mainly electricity and road systems; and the introduction of a series of protectionist economic policies implemented in the domestic market, which supported the extension of certain agricultural and manufacturing activities. The civil organisations of social actors played a fundamental role in creating the structural conditions which created the rules and norms of operation in Tungurahua's markets. In particular, they were key in establishing a relatively egalitarian structure of land possession, even before agrarian reform laws were passed (1960 and 1970), and in the early extension of irrigation infrastructures, carried out by producers and traders from the end of the 19th century. Both these factors increased the negotiation capacity of small- and medium-scale producers with traders, within the power structures of the markets.

State intervention has therefore been relatively marginal in the construction of this unusual formation, which can be defined as a form of 'popular capitalism', more egalitarian, but still not without exclusions, social limits and serious problems, such as environmental issues. In fact, its polarising trends have always coexisted and continue to coexist with redistributive trends. However, there is no evidence that the state has intervened to promote an open concentration of riches, assets or trade networks. It could be argued that, up until now, no social coalition set up as an alternative to the traditional alliance between small-scale traders and small-scale producers has been able to change the rules of the Tungurahua economic system. However, the current situation could be seen as a crossroads, with potentially very important consequences. What are the vectors of this crossroads?

Growth in economic activities, competition from large supermarket chains, competition from the manufacture of foreign consumer goods and agricultural products, and the attempt to diversify markets to target high-income consumers or even foreign markets, show that we are on the brink of a ***second phase in the process of territorial economic development***. Until now, Tungurahua's success has resided in the success of the first phase of industrialisation and economic development. This has been based on the manufacture of artisanal goods for middle- and lower-class markets, on a fundamentally national level, without a high level of quality and, hence, without advanced technologies or high entry barriers. Currently, we are not only facing a widening gap between traders and small-scale producers, but also many possibilities which would increase entry barriers due to market specialisation and high investment of capital. All in all, this could make participation in the province's most successful

economic dynamic increasingly difficult for small- and medium-scale producers, thus increasing the number of people excluded from the system.

In this general context, what public policies are being designed to avoid this happening? For the first time since we started this investigation, systematic policies to encourage production are being designed and put in place by the provincial government of Tungurahua. These aim not only to make land and community irrigation more efficient, but also to strengthen 'production chains' for the associative trade between small- and medium-scale producers. At the same time, the national policies of the new Ecuadorian government are aiming, in an erratic but clear way, to increase protectionist measures in the domestic market. This time it will introduce selective, rather than indiscriminate, protectionism, to promote the participation of small-scale producers in public procurement competition and to attempt to improve the further education system.

Each of these policies is plagued with contradictions and conflicts, but at least it shows a move in the right direction. It will only be possible to take advantage of this opportunity if there is real clarity and consistency in the goal of moving from the first to the second phase of modernisation without sacrificing the equality and fundamental importance of small- and medium-scale companies.

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