

# Regional Development for Growth with Equity: The Ceara (Brazil) Experience

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## a. Introduction

A major issue in the process of economic growth is the fact that such growth does not necessarily resolve the problems of poverty and inequality, mainly between regions in a given country. This may be explained by the argument that economic growth involves a concentration of efforts in specific economic sectors or population groups, such as in the "big-push" theory (Rosenstein-Rodan, 1961). The diminution of inequality is expected to be achieved at a later stage, mostly as a result of a "trickle-down" effect. The "unbalanced growth" theory of Hirschman (1988) considers development as a chain of disequilibria – implementation of various investment strategies, the building of social capital, etc. The hypothesis of the existence of a Kuznets U curve (growth causes growing inequality at the first stage and growing equality at a second phase; see Kuznets, 1955), or of a "trickle down" effect or a spread effect through which the first stage, inequality, is subsequently followed by benefits to the poorer segments of the population ("growth first, distribution later") was not generally supported by empirical findings. To mention just a few empirical findings in the last few years, Michel (1991) finds a concentration of growth in higher income percentiles, and similar results using Gini coefficients, for the period after the 1982 recession. Lee and Townsend (1994) find comparable results for that same period in London, leading to growing gaps and a tendency toward long-term dependency. Limited trickle down effects have also been found in developing countries such as Pakistan (Goheer, 1999), or India (Gupta, 2000) and Taiwan (Hsieh and Hsing, 2002). Recent theoretical explanations for the existence of a free market equilibrium at high levels of inequality have been elaborated, mostly on the basis of the financial market behavior. For example, Matsuyama (2000) describes a model in which the distribution of wealth in one period affects the supply and demand for credit, affecting again the distribution of wealth in the next period. Assuming that economic development projects that generate higher returns require a minimum level of investment, and assuming the existence of borrowing constraints, growth would lead to equilibrium with a growing inequality.

In the regional context, Krugman (1991) established a significant starting point with the development of a rather simplified model for the explanation of geographical concentration of manufacturing. He explains, using a two regions/two sectors model, how a concentration of manufacturing activity may be found in one region, depending on the interaction among three main parameters: the share of manufacturing in the economy, the existence of economies of scale, and the level of transportation costs. This core-periphery (CP) model implies that economic efficiency considerations lead to a heavy concentration of the population around the manufacturing activity in one region (core), while the second region (periphery) will be less populated and based on agricultural activity. However, further developments of Krugman's model, mainly assuming changes in some basic assumptions, have led other scholars to different conclusions. Lanaspa and Sanz (2001) find that assuming the existence of congestion costs, and abandoning the assumption of constant transportation costs, lead (using the same basis of Krugman's CP model) to the existence of various asymmetric stable equilibria, thereby providing a "theoretical justification for economic landscapes in which large industrial belts coexist with smaller ones". We can state that the theoretical structure established by Krugman may justify a concentration of manufacturing activity, but, under different assumptions and parameters, may also explain a simultaneous growth in various regions. Krugman himself explains in a later article

(Krugman, 1999) the action of “centrifugal” together with “centripetal” forces that may lead to the concentration of economic activity in more than one place. The coexistence of multiple locations of economic growth is justified by other factors in recent research: physical capital mobility (Forslid, 1999), the decreasing cost of trading ideas (Baldwin and Forslid, 2000), the differing qualities of land (Lanaspa and Sanz, 1999) and the influence of the public sector (Lanaspa, Pueyo, and Sanz, 2001; Bar-El and Parr, 2003a, 2003b). Challenging the core-periphery model has led to the development of alternative models (Copus, 2001; Fishman and Simhon, 2002).

The crucial question now is what are the required policy measures, and to what extent they are actually efficient in the achievement of the ultimate goal of growth with a diminution of inequality. Without entering into details (Bar-El and Schwartz, 2006), we can say that there is a wide variety of policy approaches in this context. These approaches include: focusing on solutions for the poorest populations, offering "pro-poor" interventions by supporting the poorest economic sectors, emphasizing the need for the attraction of foreign capital investment and the application of fiscal incentives for the redirection of such investments, and advocating the need for urban development in the rural areas. A broad picture of the various planning cultures in different countries is provided by Friedmann (2005) in an effort to identify a "global planning culture".

We do not deny the importance of the policy measures that have already been suggested as ways to achieve better distribution of economic growth, employment and income. However, we claim that although many of these measures may achieve the direct objectives for which they were intended, they may not necessarily be the best instruments for the achievement of long-term national economic growth, and perhaps even not for the achievement of long-term diminution of inequality or poverty. Supporting the development of agriculture in a poor region may be counterproductive if such agriculture has no chance for a long-term competitive advantage. Supporting urbanization in a region may be counterproductive if it implies the inhibition of efforts of a nearby urban community to achieve agglomeration economies. Thinly spreading investments over too many projects in too many poor regions may ultimately be economically ineffective.

## **b. A proposition: inequality is a consequence of a regional market failure**

We argue that although inequality and poverty may not decrease simultaneously with national economic growth, medium- or long-term persistence of such inequality may be a consequence of a market failure when changing national economic structures are not met by the appropriate changing demographic and social structures in the national space. This is a market failure in the sense that certain physical and human infrastructures in various regions may not respond appropriately to the new economic structures, and the intervention of the state may therefore be able to create conditions for healthier development at both the regional and national levels. The economic development of regions would be consequently considered not only as a measure for the solution of social inequality problems, but as a measure for national macro-economic development (Desrochers and Sautet, 2008). In this case, it is imperative to first identify the specific components of the market failure, and then to devise a set of policy measures that provide the appropriate answers. The adaptation of such policy measures to the solution of market failures would lead not only to a compensating effect of the unbalanced growth, but more importantly to the integration and contribution of the poorer sectors to the national economy. For example, a

detailed diagnosis identifying various crucial factors, such as the amount of excess labor force from agriculture, the potential for agricultural growth, the accessibility of the population to business services, the regional social structures, the regional institutions, and the potential for the development of non-farm activities, would enable the elaboration of a more efficient set of policy measures regarding the need for infrastructures, urban planning, support for agriculture, regional social organization, etc. A combination of such policy measures, if derived from identified market failures, would contribute to national economic growth and to a better spatial integration.

### **c. The state of Ceara (Brazil) as a test case: growth, poverty and inequality**

The state of Ceara (CE) is located in the Northeastern region of Brazil, has a population of about 8 million inhabitants, and is as a whole of the poorest states in Brazil. Its GDP per capita is less than half that of Brazil. Although it has experienced a quite satisfactory macro-economic growth, this was accompanied by heavy inequality and poverty levels (Leite, 1983, 1986, 1990, 1991, 1994, 2002). At the end of the millennium, the Governor of the State at this time, Tasso Ribeiro Jereissati, requested an analysis of the economic situation in the state, with recommendations for measures to be taken in order to achieve the diminution of poverty and inequality, without decreasing the macro-economic growth. We describe here the main results of this study (more detailed in Bar-El and Schwartz, 2003) for the situation in Ceara in the period from 1985 to 1999, and a later stage we show the actual measures implemented by the state government in the years 2000 to 2006, and a preliminary evaluation of their effectiveness.

In real terms, the GDP of Brazil has grown by 37 % from 1985 to 1999, while that of Ceara has grown by 62 % during this same period, for an average annual growth rate of 2.3 % in Brazil as compared with 3.5 % in Ceara. The growth rate of the population was about the same in Ceara and in Brazil (about 1.4% a year during this period). Consequently, the real per capita growth in Ceara was quite significant (about 2.1 % a year) as compared with very modest per capita growth in Brazil (about 0.7 %). As a result, the gap of GDP per capita between Ceara and Brazil was considerably reduced during this period. This is consistent with the results of a study on changes in regional inequality in Brazil, identifying a significant Beta convergence between Brazilian regions between 1939 and 1995 (Azzoni, 2001).

There are several alternative measures of poverty rates. Here we adopt the measure used by IPEA (Instituto de Pesquisa Economica Aplicada) for the calculation of time series of poverty rates. The poverty estimates are calculated from PNAD (Pesquisa Nacional por Amostra de Domicilios), an annual survey of the Brazilian national institute for statistics (IBGE). The calculations performed by IPEA are based on a poverty line of R\$68 per capita per month in 1999 prices (which is about the value of a minimum food basket, and roughly half a minimum salary). This is more or less equivalent to the measures used by the World Bank. We calculate poverty rates for three separate population groups:

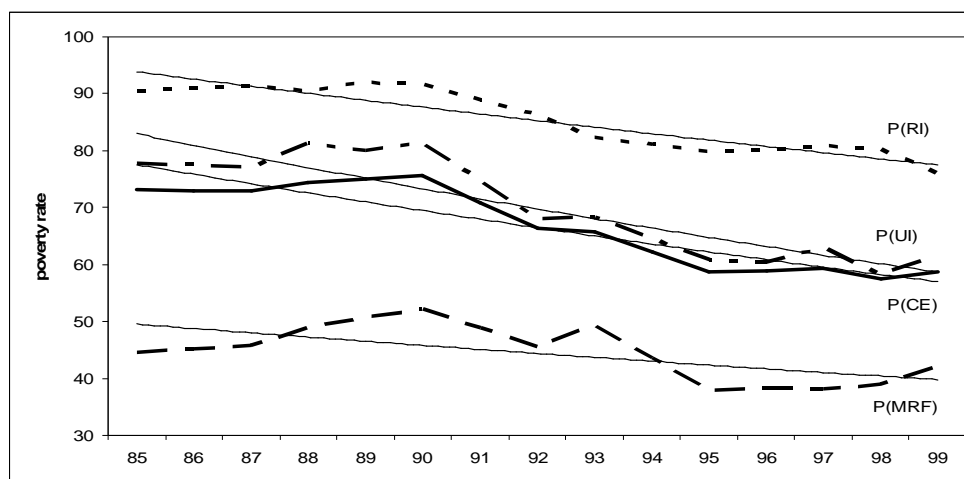
- The metropolitan region of Fortaleza (MRF), including the capital and several neighboring municipalities (today 39 % of total population of the state).
- The urban interior (UI), including the entire urban population in the interior of the state, out of the metropolitan region (29 % of total population).
- The rural interior (RI), including the entire rural population in the interior (32 % of total population).

The relatively rapid growth in GDP per capita was actually accompanied by a trend of decreasing poverty rates, as can be seen in Figure 2. The poverty rate for the whole state of Ceara decreased from 73 % in 1985 to 59 % in 1999. Estimated trend lines for total poverty rates and in each population group are as follows (shown in Figure n° 1):

$$\begin{array}{ll}
 P(CE)= 79 e^{-0.022t} & R2= 0.85 \\
 P(MRF)= 50 e^{-0.016t} & R2= 0.42 \\
 P(UI)= 85 e^{-0.025t} & R2= 0.82 \\
 P(RI)= 95 e^{-0.014t} & R2= 0.86
 \end{array}$$

Where P(CE), P(MRF), P(UI) and P(RI) are the poverty rates for the whole state and for each of the three population groups, and t is the time period with values from 0 (in 1985) to 14 (in 1999).

**Figure n° 1: Poverty rates by year, for urban, rural and metropolitan population in Ceara**



The estimated trend line shows a trend of diminution of 2.2 % a year in poverty rates in the state as a whole. However, in contrast with the clear trend of growth of the GDP in Ceara, the changes in poverty and inequality are not quite clear: The drop in the poverty rates in the state as a whole actually occurred only in the period of 1991 to 1995. During all the years before and after that period, poverty levels remained quite stable.

Evaluating data for the three population groups separately, we find large gaps between them, and no clear indication for the diminution of those gaps:

- There is no clear trend of diminution of poverty in the MRF: we find a negative coefficient, but a quite low value of R square.
- Poverty levels in the rural interior are much higher than in the urban interior, but the trend of diminution of poverty in the rural area is even slower (1.4 % a year) than in the urban area (2.5 %), leading to lower levels of poverty but to increasing levels of inequality.

Indicators of distribution do not show any clear improvement during this period. The most basic indicator, the Gini coefficient, as calculated by IPEA, does not show any diminution of inequality in the distribution of income in each of the three population groups (for further statistical details, see Bar-El and Schwartz, 2003). Other indicators such as the share of poorest 20 % or poorest 50 % in the total income do not show any increasing equality. Furthermore, the ratio between the

average income of the richest quintile of the population and that of the poorest quintile seems to have increased during this period.

In sum, we find that the macroeconomic growth of the Ceara economy since 1985 did not contribute significantly to the reduction of poverty and inequality. Poverty levels did diminish to some extent, but most of the effect actually occurred during several years in the middle of the period. Inequality was not reduced, and may even be increasing, particularly within the rural areas. Most importantly, inequalities mainly result from gaps between the three population sectors: rural, urban and metropolitan.

#### **d. Signs of a market failure**

A process of economic growth on a national level is generally characterized by a change in the structure of the economy, mainly a diminution of the share of agriculture in the total state product and employment, an increase in the share of industrial activities, and a later stage an increase in the service sector. The process of economic growth in the Northeast of Brazil as a whole has been led by industrialization, although it has not been integrated into the economy of the nation (Goldsmith and Wilson, 1991).

The estimated equations show the growth rates of the real value added in the state as a whole (TV), and in each main sector (IV for industry, SV for services and AV for agriculture). Data are taken from the Anuario Estatístico do Ceara, 2000, Table n° 11.4.:

$$\begin{aligned} TV &= 100e^{0.034t} & R2 &= 0.98 \\ IV &= 103e^{0.042t} & R2 &= 0.95 \\ SV &= 99e^{0.030t} & R2 &= 0.99 \\ AV &= 97e^{0.011t} & R2 &= 0.07 \end{aligned}$$

t is the time period: a value of 0 at year 1985 until a value of 14 in 1999.

Total GDP in Ceara displays an annual growth rate of 3.4 %, as shown earlier. This growth of value added is mainly led by industrial growth, at an annual rate of 4.2 %, followed by services. The interesting, though not surprising, result is that the growth of agricultural value added is the only one with an extremely low R square, reflecting the existence of extreme fluctuations in agricultural production (mainly as a result of droughts), with no significant trend of growth over the years.

The different growth rates of product in each sector lead naturally to a changing economic structure, in terms of the share of each sector in total GDP. The following table, showing the distribution of product between the three sectors at 5-year intervals, gives quite a clear picture of the decreasing share of agriculture and the increasing share of industry and services. The share of agriculture in the GDP of Ceara fell drastically from 15 % in 1985 to 6 % in 1999, with comparable growth of the share of industry and services.

Table n° 1: Distribution of value added by economic sector ( % )

Year	85	90	95	99
Total	100	100	100	100
Agriculture	15	12	10	6
Industry	34	34	34	38
Services	51	54	56	56

Source: Anuario estatístico do Ceara, 2000, Table 11.5, page 356.

At this stage, we ask ourselves to what extent the changing economic structure has led to a changing demographic structure, or in other words, to what extent the diminution of the relative weight of agriculture in the economy led to a diminution of the share of the rural population. As previously stated, we deal with three categories of population: the rural interior, urban interior and metropolitan region. The estimated functions are:

$$\begin{aligned} \text{POP(CE)} &= 99 e^{0.014t} & R^2 &= 0.99 \\ \text{POP(MRF)} &= 98 e^{0.032t} & R^2 &= 0.97 \\ \text{POP(UI)} &= 101 e^{0.027t} & R^2 &= 0.97 \\ \text{POP(RI)} &= 101 e^{-0.011t} & R^2 &= 0.74 \end{aligned}$$

The population of the state POP(CE) grows at an annual trend of 1.4 %, with a clear urbanization process as can be seen by high R square coefficients for the metropolitan region POP(MRF), growing at an annual rate of 3.2 %, and for the urban interior POP(UI), at an annual rate of 2.7 %. The rural interior POP(RI) shows a trend of decreasing population at an annual rate of 1.1 %. We put aside at this stage the distribution of the urban population between the metropolitan and the non-metropolitan region (the interior) and focus on the pure urbanization process. The increasing urbanization process as visible from the figure is apparently a healthy response to the changing economic structure, with a decreasing emphasis on agriculture. The share of rural population has constantly declined over the years, from 77 % in 1940 to 32 % at the end of the century. In absolute terms, rural population has not increased at all since 1970 (and even slightly decreased), while all the population growth in the last 30 years has actually occurred in the urban sector.

The figures of the changing distribution of the population, as shown in the following table for the period of 1985 to 1999, confirm the existence of the urbanization process, but raise some important questions.

Table n° 2: Distribution of the population between the rural and the urban sectors (%)

Year	1985	1990	1995	1999
CE (millions in parentheses)	100 (5.8)	100 (6.3)	100 (6.7)	100 (7.1)
MRF	31	34	38	39
Urban interior	24	26	28	29
Rural interior	45	40	34	32

Source: PNAD, various years.

The salient phenomenon from Table n° 2, when compared to Table n° 1, is the disproportionate share of the rural area in population in relation to the share of agriculture in the economy. Already in 1985, we find 45 % of the population in the rural area, while agricultural production is only 15 % of GDP. We do not necessarily expect the same figure, since there is no rigid correspondence between life in the rural area and involvement in agriculture. Also, employment in agriculture may be more labor intensive than in industry or services. However, following normal standards, it seems that the fact that the share of rural population (45 %) was three times higher than the share of agricultural product (15 %) already in 1985 reflects the existence of some hidden unemployment in agriculture. Much more alarming, however, is the fact that after 14 years, this proportion changes drastically, when the share of population in the rural area (32 %) is more than 5 times higher than the share of agriculture in GDP (6 %). The apparent conclusion is that the process of economic development (and industrialization) has led to urbanization, but at a rate that is much too low.

The decline in absolute population in the rural area means that migration to the urban area is higher than natural growth. We would assume that rural population with no employment in agriculture would first try to find employment in industry or services in the urban area within the region (or develop non-farm employment in the rural area). The lack of such employment opportunities would stimulate migration to other regions or to the metropolitan region.

A rough estimate of the flow of migrants from the rural area (see details in Bar-El and Schwartz, 2003) shows that most rural migrants went to the metropolitan region, and not to the local urban towns. The consequence is a more rapid growth of population in the metropolitan region, at an annual growth trend of 3.2 %, as opposed to 2.7 % in the urban area of the interior, and as a result, a stronger concentration of the population in the metropolitan region. Over the 14-year period the share of the metropolitan region in total population grew from 31 % to 39 %. The process of urbanization is therefore a concentration process, creating a relatively large metropolitan region of 2.7 million inhabitants, with the big city of Fortaleza with approximately 2 million inhabitants, 10 times larger than the second largest city in Ceara, Juazeiro do Norte.

Theoretically, the findings above could still reflect healthy economic behavior. A high share of rural population (low rate of urbanization) in relation to a decreasing share of agriculture in GDP could be explained by higher levels of non-farm activity in the rural area or by a transition to highly labor-intensive agricultural activities. An increasing concentration of the population in the metropolitan region could be explained by the existence of still high agglomeration economies. However, our hypothesis is that there is some incongruity between economic growth, urbanization rate, and spatial distribution of the population, and that incongruity is reflected by low productivity levels, as well as by persistent poverty and inequality.

This suspected incongruity is tested with the analysis of processes of change in employment and productivity (in terms of product per worker). The economic growth of Ceara in the last decade was led to a large extent by growth in industrial activity. Actually, the share of industry in the GDP of Ceara did grow, but its share in employment remained quite stable, with a slight downward trend. Table n° 3 provides the distribution of employment between sectors, as compared with the distribution of value added, copied here from Table n° 1 above. This economic growth can indicate growing productivity in the industrial sector, but the ability of this sector to absorb excess labor force is still rather limited. Its share in employment and product is still quite low. Instead, we see a growth of the service sector, mainly in terms of employment: the share of the service sector in employment, which was about 20 % in the seventies, grew to about 40 % in the eighties, and stands at 46 % at the end of the century. Some of this growth may be attributed to a growth of demand for services resulting from economic growth. Some of it is also certainly explained by the growth of tourist activities. However, some of it may be a sign of higher disguised or hidden unemployment.

Table n° 3: Distribution of employment and value added (in parentheses) by economic sectors, selected years (%)

	1985		1990		1995		1999	
Agriculture	48	(15)	43	(12)	47	(10)	40	(6)
Industry	16	(34)	15	(34)	13	(34)	14	(38)
Services	36	(51)	43	(54)	40	(56)	46	(56)
Total	100	(100)	100	(100)	100	(100)	100	(100)

Source: PNAD in various years, and Anuario Estatístico do Ceara, 2000, Table 11.5.

The gap between the rate of decline in the share of agriculture in employment and in value added is the complete opposite of the expected gap in a healthy process of economic growth: we would expect growth in productivity in a developing economy, improving technology, and consequently a more rapid decline of the share of agriculture in employment than its share in product. The data therefore testify strongly to the existence of a lack of adaptation of the agricultural sector to the process of economic growth in Ceara. A significant share of the excess labor force in agriculture does not find alternative employment in other sectors and remains in the agricultural sector, leading to low productivities (as measured by added value per worker) and actually to disguised unemployment.

The following equations show the estimated trends of productivity during the period of 1985 to 1999 for each economic sector and depict a clear sign of the existence of some incongruity between growth, urbanization and spatial distribution.

$$\begin{aligned} TP &= 106e^{0.015t} \quad R^2 = 0.70 \\ IP &= 104e^{0.032t} \quad R^2 = 0.60 \\ SP &= 99e^{-0.001t} \quad R^2 = 0.01 \\ AP &= 109e^{0.000t} \quad R^2 = 0.00 \end{aligned}$$

The annual growth rate of productivity in Ceara (TP) is approximately 1.5 %, reflecting the gap between the growth of output and the growth of employed labor force. However, when examining the behavior of the specific sectors, we find that the slow and quite irregular growth of industrial employment may be a consequence of a relatively rapid increase in productivity levels (IP). The most rapid and steady growth of employment along the years can be found in the service sector (and not in industry, which leads the economic growth). One should not be misled by the growth of employment in this sector, as it is a direct result of stagnation in productivity during the entire 14-year period: the trend line for this sector as well as that of agriculture has a practically zero R square value, and a zero growth coefficient. Growth of employment in services, therefore, reflects to a large extent the accumulation of hidden unemployment and low levels of productivity. The sector of agriculture shows the same stagnation in productivity, with very heavy fluctuations that reflect the climatic instability and the fact that employment in this sector does not decline in times of low production. Again, this indicates the prevalence of constantly growing disguised unemployment levels and growing levels of poverty.

The findings lead quite clearly to the following interpretation of the process of growth with insufficient diminution of poverty and with widening gaps in income distribution. The efforts made for the stimulation of economic growth are for the most part focused on attracting industrial and tourist activities, generally without sufficient regional considerations. Those activities find the best location in the metropolitan region, where the conditions of access to labor force, supply of infrastructures, access to markets and tourist resources (mainly the seashore) are best. The urban features that are required for a process of industrialization are much less accessible in the interior, where cities are much smaller and provide much weaker infrastructures. This is consistent with the conclusion of Henderson, Shalizi and Venables (2001) that non-spatial policies may offset in some cases the intended results of the spatial policies. If we disregard the social inequality problem and the probable future negative implications of unequal distribution on long-term growth, theoretically, this could be a steady free market and efficient equilibrium of the core-periphery type, achieved through concentration of the economic activity in the metropolitan region and through increasing inequality in the distribution of income. However, although we do not have data on productivity in each region, the zero growth productivity in agriculture and in services throughout the 14-year macro-growth period raises doubts about the economic efficiency of this solution.



The excess labor force from agriculture in the rural area, trying to find employment in non-farm activities, has three options: migrating to the regional town within the interior, migrating to the metropolitan region or staying "at home" in the rural area:

The growing disproportion between the share of the population still staying in the rural area (32 %) or the share of labor force in agriculture (40 %) and the share of agriculture in total GDP (6 %) implies that this is a reaction of despair rather than a healthy efficient response to changing economic conditions. These figures actually imply that approximately one third of the state population remains in the rural area and refrains from migrating to urban areas, because of the lack of job opportunities in the urban area and the long distance from the metropolitan region (Lucas, 2001). In terms of poverty and distribution, this population actually grows poorer relative to the population that is engaged in more productive activities.

The fact that the rural population that is ready to leave the rural area and find alternative non-farm employment cannot find an appropriate response in the economy of the interior is reflected by the high share of migrants having to go to the metropolitan region (60 %, as opposed to 40 % of the rural migrants who migrate to towns within the interior). The lack of job opportunities is reflected by the rapid growth of employment in services with low and stagnant productivity, again hinting at the existence of disguised unemployment. This again leads to high levels of poverty and inequality.

The ability of the metropolitan region to absorb excess labor force is apparently quite limited: the growth of the industrial sector is not fully reflected by a growth in employment (the share of industry in employment even shows a decreasing trend), and while the service sector shows growth, it also shows zero productivity growth. This may indicate that other than the growth of the productive tourism sector, much of the labor force in services actually reflects a growing hidden unemployment also in the metropolitan region.

Let us point to the main failures that were indicated above, and explain why, in principle, these are market failures that require the intervention of the state government:

1. The relative size of the population in the main metropolitan region of Fortaleza increases constantly, but this does not necessarily reflect the existence of a healthy economic response to a growth process: unemployment there is high, social infrastructures are weak.
2. The other urban centers in the interior of the State do not respond to the natural urbanization processes that should result from a transition from agricultural to industrial and service activities.
3. The rural area does not reveal any healthy free market response to changes in the economic structure: although there is some rural-urban migration, the labor force does not respond to the lack of employment in agriculture by a transition to cities or by the development of non-farm activities. The fact is that the share of agriculture is much less than the share of labor force in the rural area, leaving space for high levels of unemployment, under-employment and low productivity. This is due to the fact that the natural free market alternative responses that could lead to an optimum do not function:
  - a) Migration to the metropolitan region of Fortaleza is not always feasible: the demand for labor is not high enough there and most of the excess labor force in the rural area do not have the necessary economic potential for migration.
  - b) Migration to a small city in the region is not always feasible because those cities do not have the potential to absorb new populations and new economic activity.

- c) Development of rural non-farm activities is limited by the lack of access to appropriate infrastructures, services and human capital.

These bottlenecks are not solved by the action of the free market, because of the prevalence of a typical market failure: the free market development of activities such as non-farm enterprises or industrial firms in small cities is hindered by the existence of positive externalities. Private investments may not be viable in the short term because of the lack of amenities such as infrastructures, services, and human capital, while:

1. The development of such activities may induce externalities by increasing income in the region, increasing demand for labor force, increasing demand for local inputs, improving the quality of labor force, etc.
2. Investments in infrastructures and in human capital may be viable in the long run for the region as a whole, even if they are not viable for the private investor in the short run.

This is a typical situation that requires the intervention of the state in the economy, in order to achieve a better social optimum, in terms of economic benefits to the society as a whole. Such intervention should be oriented towards the solution of market failures. However, the specific package of measures to be taken by the government should be carefully analyzed and adapted to the given conditions in order to achieve maximum effectiveness. Treating the problem of poverty and inequality through economic development requires both a clear macroeconomic policy and a focused local policy. The natural long-term trends, such as the decline of the relative weight of agriculture in economic growth and globalization processes, impose serious challenges. The rural area and the interior as a whole must adapt to the changing economic structures and develop the ability to compete in an increasingly industrializing and modernizing economy. This is a new situation for a population that was generally used to a quite closed economy (and in many cases, a subsistence economy).

The general concept is, therefore, that the solution of poverty and inequality in the rural area through the promotion of non-farm employment cannot be achieved only by focused local efforts. It also requires measures on a much wider scale. Economic development in the rural area, beyond the supply of local needs, requires first the solution of bottlenecks that generally constrain the ability to achieve acceptable levels of productivity: infrastructures, human capital, institutional frameworks, access to finance, access to markets, access to know-how and technology. But, in addition, achieving competitive ability also requires appropriate exogenous conditions such as support of an appropriate urban structure in the interior. Also, the changing economic structures (the decrease of the relative weight of agriculture in the economy) imply the need for demographic changes, in terms of urbanization processes.

We can therefore summarize the approach of the government of Ceara for the achievement of growth together with equality and diminution of poverty as one that is focused on the solution of market failures at the following levels:

1. Spatial restructuring, in terms of reinforcement of the urban structure in the interior of the state. This is expected to facilitate economic development and attract excess labor force to industrial and service activities.
2. Supporting regional collaboration, through the stimulation of appropriate organizations, in order to induce agglomeration economies.
3. Stimulate the increase of productivity at the micro-economic level, through the improvement of access to education and public services, stimulation of entrepreneurship, and support of technological improvement.

## **e. Policy measures implemented for the solution of the market failures**

Since 2000, the government of Ceara has adopted a set of policy measures based on the findings above, in order to achieve an appropriate combination of the growth of the economy of the State with the alleviation of poverty and diminution of inequality. Those measures focus on three main fields: increasing rural productivity, stimulating non-farm employment, and supporting a new demographic spatial structure. We define here each of these policy components, derive from them actual policy measures, and present the actions that have already been taken by the State of Ceara (see a more elaborate description in Bar-El, forthcoming).

### **(1) Increasing productivity in the rural sector**

Lower labor productivity is a result of two groups of factors: capital intensity and total factor productivity (TFP). Increasing TFP is mainly the responsibility of public policy, in terms of the supply of external conditions that lead to an increased production. Those conditions are generally identified as the provision of education services, professional training, physical infrastructures, technology development, and appropriate conditions of public management and macro economic structures. A few policy measures that were implemented since 2000 are presented here.

#### ***1. Education***

The enormous efforts invested in education have led to a drastic improvement, but at the same time to a growing gap between the rural and the urban sectors. The share of the investments in the rural area should grow at a much higher rate than that of the urban area, in order to enable a diminution of the gaps, or even in order to prevent the gaps from growing. The percentage of persons with only three years or less of education has dropped drastically, but it still stands at 80% in the rural area.

#### ***2. Infrastructures***

The importance of public investments in infrastructures has a consensus among Ceara policy makers, and actually, a high priority has been given to such investments in the rural area. This refers to both investments that are directly related to agricultural activity, such as dams, irrigation projects, etc., as well as investments that are mostly related to non-farm activities. Infrastructure investments are part of many of the projects that are oriented with agricultural reforms, the rural industrial development, and the fight against poverty.

Investment in infrastructure may be naturally based on expressed needs, but it should mainly be of a planned nature, considering long-term needs, multiplier effects, and broad regional and state benefits. In short, we mean that infrastructure investment is an endogenous variable in development (responding to development needs), but it should be much more of an exogenous variable, inducing development. The policy of treating infrastructure investment as exogenous has been implemented by the government of Ceara since 2002, through the establishment of government budget rules that allocate given shares of the budget by regions.

#### ***3. Agricultural development policy***

The government of Ceara has initiated a pilot program of "rural entrepreneurship consultancy". It aims to increase entrepreneurship and managerial skills among farmers in the rural area, providing them with consultancy services that help them to improve their productivity and to increase their range of their activity. The program is operated by the Secretariat of Agriculture, in coordination with other relevant Secretariats, with the support of the regional offices of the Secretariat of Local and Regional Development, and under the guidance of a government steering committee.

The focus of the program is mainly on the following issues:

- Managerial and marketing consultancy to farmers
- Development of joint organizations for purchasing raw materials, for processing of agricultural products, and for marketing final products
- Introduction of technical innovations in agricultural businesses
- Improving accessibility to financial funds
- Development of new businesses in agriculture and in non-farm activities.

A consultancy package includes three phases, with a total of 60 consultancy hours. The first stage is the organization of farmer groups and brain-storming with them on their potential for development, the second phase is assisting them in the preparation of business plans for projects identified in the first phase, and the third phase is assistance in implementation.

## **(2) Rural non-farm employment policy**

Policy measures that increase productivity, as described above lead to a higher level of income per worker, but naturally also lead by definition to a diminution of the number of workers required for any given quantity of product. The consequence is therefore that the solution for employment in the rural area is heavy investment in the creation of employment opportunities in non-farm activities. Some jobs would be within the rural area itself, but the majority would be jobs in industry and services mainly in the local cities.

Since 2000, the government of Ceara has initiated two main programs: the monitoring program and the technological development program:

### ***1. The monitoring program:***

One major program that was developed and implemented in the last couple of years by the government of Ceara in cooperation with SEBRAE (a semi-public consultancy firm), in order to facilitate such non-farm types of activities, is the "monitoring program" for small and medium sized enterprises (SMEs). It is based on the assumption that the public policy needed in order to enable sustainable economic growth includes not only macro and regional level measures that create appropriate conditions for development, but also support at the micro level for the solution of bottlenecks and market failures (see recent contributions in various countries: Escania and Madruga, 2008, Fritsch, 2008, Fritsch and Mueller, 2008, Stel and Suddle, 2008).

In spite of the existence of consultancy programs offered by a semi-governmental institution, SEBRAE, we find a discrepancy between the supply and the demand for such support services to remote SMEs. This discrepancy is typical of rural areas in other countries, and is due to the fact of the remote location of the SMEs prevents them from being aware of the existence of the consultancy services. Even when they are aware, their remoteness claims the cost and time of

commuting to these services. As a result, we often witness low levels of survival of small businesses (Brixy and Grotz, 2007).

This program, therefore, adopts a "reach-out diagnostic" approach, where a consultant approaches a firm in its premises, and offers a diagnostic consultancy. The businesses to be approached are selected through five criteria: small businesses with 5 to 40 workers; agro-industrial activities, productive activities (not commerce or services); high expected regional multiplier effect; high growth potential.

This program has been implemented in the first phase in three regions and later expanded to three more regions. A total number of 2,093 businesses have participated in the program. The total number of beneficiaries from this program, counting the workers and their family members, was estimated at 22 thousand. A preliminary analysis of the results of this program (Schwartz and Bar-El, 2004), based on the pilot phase, shows an important contribution to the ability of the entrepreneurs to correctly identify their problems, and to improve their achievements in terms of productivity, marketing, etc.

## ***2. The technological improvement program:***

An additional program that is intended to improve productivity and the multiplier effect (Schiuma and Lerro, 2008, Kebir and Crevoisier, 2007) was recently launched in three pilot regions. The main objectives of this program are:

- To provide technological guidance individually or in groups with common interest.
- To organize sectoral groups with the aim of meeting technological needs and developing innovative programs.
- To support the technological demands of the firms served by the monitoring program.
- To facilitate access to the financing sources in order to meet the demands of the groups or the firms for the technological solution indicated.
- To identify new production paradigms for the region based on technological knowledge.
- To identify and reveal the technological investment opportunities in the region.
- To identify the technological capacity needs of the productive agents in the region and to propose service solutions.
- To stimulate collaboration between the firms and the research institutions.
- To promote mobilization, propagation, and sensitizing events.

## **(3) Spatial policy: Urbanization and the principle of “concentrated dispersion”**

The spatial organization of the population distribution is an integral part of the policy strategy for rural development and the fight against poverty. Appropriate spatial distribution and organization of the population may directly affect the emerging economic structure in the interior, the feasibility of various economic activities, the productivity levels, the access of labor force to employment, and the access to markets, etc.

### ***1. Spatial urban restructuring:***

This program is intended to respond to the problem of the inconsistency between the economic structure of the state and the demographic distribution of the population, which lead to high levels of open and hidden unemployment, poverty, and inequality. The program of spatial urban

restructuring is based on three elements: the rural-urban distribution, the distribution of the urban population between the metropolis and the interior, and the spatial distribution of the urban population within the interior. The analysis of the economic and demographic data led to a plan of urban restructuring at two levels:

The first level is the support for the development of four major "secondary" urban centers (the primary being the metropolis). Those centers are actually regions, including a few municipalities, which follow the concept of a "metropolitan-based region". Detailed plans for regional development of each of these centers are being developed by planning firms, following given directives: identification of the main economic basis, strengthening of the urban center with infrastructures and appropriate services, building a regional network, services to the rural hinterland, housing and social services, and educational networks, etc.

The second level is the support for the development of 14 "tertiary" urban centers. These are smaller urban locations which serve a smaller periphery of municipalities, and are intended to serve as centers mainly for local rural activities that need urban support, such as marketing, production services, infrastructures for non-farm activities, education, etc.

A few of the expected effects of these policy measures are:

- Increased agglomeration economies: Increased capital productivity and competitiveness stimulate capital mobility and increasing economic activity.
- Increased labor mobility: Wider occupational options stimulate the attraction of labor force from the rural area and mobility of workers between occupations, therefore increasing labor productivity.
- Increased support to the rural area through supply of services, demand for products, and therefore increased productivity of the rural sector.

Detailed plans for regional development of four of these centers have been effected and published by planning firms, following given directives: identification of the main economic basis, strengthening of the urban center with infrastructures and appropriate services, building of a regional network, services to the rural hinterland, housing and social services, and educational networks, etc... The plans have been elaborated in close cooperation with the Regional Councils or other bodies of regional social participation. The plans are used as an important anchor for the decisions made about the allocation of budgets at the State level.

## ***2. Regional economic development units:***

The ability of peripheral regions to compete with economic activities at the State level is hindered mostly by the disadvantages that characterize many of them, explained mainly by the lack of agglomeration or scale economies. Concrete examples are the small scale of markets, the limited access to specialized production factors, and the lack of urbanization.

The general concept behind the regional economic development units is that the competitive ability of the peripheral regions in the interior can be improved by attempting to reduce the constraints of the lack of agglomeration or scale economies by using a regional approach. In other words, the focused support to individual enterprises or municipalities may not be sufficient for the achievement of a competitive ability, and a significant element must be added: the consolidation of the region as a whole. This means the reinforcement of the links between the various economic

activities, cooperation among the various economic forces that can increase the benefits of each of them, improvement of regional conditions such as infrastructures or educational facilities that can increase the economic efficiency of most individual economic activities, cooperation among the various economic and social leaders in the community to achieve common regional goals, and coordination among the various public institutions at the national and local levels that act within the region. Such efforts would lead to the reinforcement or creation of the regional “social capital”, considered today by most development specialists as a crucial element for the development of peripheral regions.

The establishment of regional economic development units seeks to empower the local and regional development forces and leaders. These regional units or regional offices coordinate – at the local and regional level – the development efforts initiated by the local and central government or by the local population, and implement them in close contact with the local population. They coordinate the work of local and regional authorities currently operating in the area, integrating them with the state development institutions.

Eight regional development units have already been installed and are in full process of operation. Each unit covers a number of municipalities in a region, and is operated by a manager at the regional office established for this purpose by the Secretariat of Local and Regional Development, under the guidance of a Regional Advisory Council. This Council consists of representatives of the local society (religious, educational, etc.), the local business community, the local politicians (mayors of all municipalities represented), and regional representatives of government offices. Such a regional council is expected to be a popular body that represents the various components of society and of government in the region. The council appoints "working groups" for specific purposes (such as the development of regional tourism, the organization of regional expositions, etc.), that operate under the guidelines of the Council and with the support of the manager of the regional office.

Beyond the eight regional offices that have been established so far, there are plans to establish such offices in each of the secondary and tertiary regions. Most of the activities are oriented towards the attraction of entrepreneurs, stimulating the creation of appropriate economic conditions in the region for the development of economic activities, and fostering economic projects (such as infrastructure) based on regionally defined criteria.

The effects of such regional units (or offices) as identified with the experience until now are:

- Increased synergy between all regional elements of economic growth as a result of an increased participation of relevant local and regional social and economic entities; increased productivity and competitiveness.
- Increased externalities by solving regional (not just local) bottlenecks and by “marketing” the region as a whole.
- Increased coherence between local, regional, and state economic development.

In sum, the regional offices together with their regional councils may, in the long-term, be a leading institutional power for economic growth, with a broad vision of local, regional, and state elements, all represented in their administration. They should be considered as the governmental instrument for the achievement of a process of local regional participation in the growth process, as well as for the coordination of actions of other government agencies.

## **f. A few preliminary evaluations**

The results of such types of policies are not always easy to identify. Some of these specific policy measures provide positive results only after a decade or two (such as the restructuring of the urban system). However, statistical data on the main indicators of development of the State of Ceara provide at least some positive signs of trends of diminution of inequality and poverty, compared with the whole Northeast region, and compared with Brazil. We indicate here some of the main results (detailed statistical figures can be found at Bar-El, forthcoming).

### **(1) Economic growth**

Before anything else, it is important to call attention to the fact indicated above that the economic growth of the State of Ceara does not lag behind that of the nation as a whole. Although the average GDP growth rate was on average somewhat lower in Ceara for the period from 1992 to 2005 (2.6% compared with 2.8%), the beginning of the millennium shows a more rapid growth in Ceara: between 2002 and 2005, the average growth rate of the economy in Ceara increased to 2.9% a year, while the GDP of Brazil grew at the much lower rate of 2.4% per year. Although the growth rate of the economy of Ceara is not very high, its trend is not lower than that of the nation as a whole, and therefore we can state that if any process of diminution of poverty and inequality has happened during this period, it is important to recognize that it did not happen at the expense of a decreasing macroeconomic growth.

### **(2) Changing economic structure, adapted by a changing demographic structure**

The economic growth of Ceara in the last few years has been characterized, as expected, by a changing structure, with a relative decrease in the weight of agriculture and an increase in the weight of industry. This changing structure has been much more salient in Ceara than it was in the Northeast as a developing region or in Brazil as a whole:

1. The share of agriculture in employment has drastically decreased since the end of the previous millennium, from 40% to 31% in Ceara. In parallel, the share of industry and construction in employment increased significantly from 14% to 21%. This process was not as clear and significant in the developing region of the Northeast: the share of agriculture decreased there at a much smaller rate, and that of industry and construction hardly changed.
2. At this same period between 1999 and 2004, the process of urbanization continued, and the share of rural population out of total population decreased from 33% to 24% (9% less in 2004 than in 1999, equal to the diminution of employment).
3. At the same time, the share of agriculture in product stabilized at about 6 to 7% after a continuous decrease as shown above.

We find here, therefore, signs of a quite healthy process of economic growth, with a stable production of agricultural products, with relatively fewer workers, and with a process of migration of proportional shares of rural population to urban places. Producing the same relative quantities of agricultural products with fewer workers directly implies the existence of a process of increasing productivity in the rural area.



### **(3) Decreasing rural/urban gaps**

Assessing the changes that occurred in the rural/urban gaps that were found above for the year 1999, we find an important improvement, in absolute terms and in comparison with the Northeast and with Brazil.

Results show signs of quite interesting phenomena. We find that the ratio between rural and urban workers with an income increased slightly from 1999 to 2004: rural income was 39% of urban income in 1999, and this ratio grew to 41% in 2004. This ratio is still lower than that of the Northeast, but we can see that the whole Northeast region has experienced a growing gap between the rural and the urban population during this period (the gap for the nation as a whole decreased substantively).

The most interesting finding is a very substantive decrease of the gap between rural and urban spaces regarding the economically active population, meaning the population of workers with the addition of the unemployed labor force and workers with no remuneration. The ratio was 28% in 1999, and it grew to 35% in 2004, much more than in the Northeast and in Brazil.

The picture presented by these data is that during the period between 1999 and 2004 the income per worker in the rural area increased slightly more than the income of the worker in the urban area, but most of the improvement and the decrease of inequality between the two sectors is due to the fact that an increasing number of unemployed and of non-remunerated workers joined the group of workers with income. This is a quite clear sign of decreasing hidden or open unemployment in the rural area, and therefore a sign of increasing productivity.

### **(4) Decreasing Metropolitan/Interior gaps**

The decreasing gaps between the rural and the urban population reflect changes in two dimensions: decreasing gaps between the Metropolitan area (mostly urban) and the Interior, and also decreasing gaps between the rural and the urban population in the Interior itself.

Again, we find a similar phenomenon as the one described above. For the labor force that is employed in a paying job, the gap between the Interior and the MRF (Metropolitan Region of Fortaleza) did not decrease and even increased slightly: on the average, working persons had an increase in their income at more or less the same rate in the Interior and in the MRF, so that the paid workers in the Interior gained about 45% of the income of the MRF workers. However, as seen in the table, significant effect was due to the inclusion of unemployed and non-remunerated workers into the group of paid workers. The gap between the average income of the economically active population in the Interior and that of the MRF decreased at a very substantive rate: instead of 38%, the average income ratio increased to 43%. It can also be seen that an important dimension of the decreasing gap is the diminution of the gap between the rural population and the urban population within the Interior itself.

We detect therefore some interesting signs of a process of inclusion of inactive or inefficient labor force in the Interior into the group of economically active workers who gain an income for their work, and this process is stronger amongst the rural population. There is also probably a process of increasing average income of the working labor force with income, although it may not be fully visible at this time because this average may be biased due to the relatively lower income of the workers who recently joined this group. This is shown in the next section.

## **(5) Increasing per-capita household income**

The changing economic structure, the improving balance between the rural area and the urban area, the improving balance between the MRF and the Interior, the increasing level of education of the population, all these lead to an apparent diminution in the gaps of income per capita between Ceara and the Northeast and Brazil.

According to IPEA data, per capita household income in real terms has slightly decreased from 1999 to 2004 in the Northeast and in Brazil but not in Ceara. Consequently, these data show a process of decreasing gaps, where Ceara, which had always a lower income than the Northeast, closed this gap in the last few years, and diminished the gap with Brazil, again, mostly in the last few years.

## **(6) Poverty diminution**

The increasing levels of income and of education as described above may not necessarily lead to the diminution of poverty levels. However, the policy adopted by the State of Ceara, focusing on regional development and on the solution of market failures that prevent the advance of poor regions and populations, is also expected to produce results in the field of poverty and inequality. Positive results in this field are expected as a consequence of changes that have been shown in the various issues above: adaptation of agriculture employment, decreasing illiteracy amongst the lowest classes, improvements in human capital.

We use here the familiar measures of poverty and indigent poverty as defined by IPEA (slightly different from the figures provided by IBGE as described above). The decrease in poverty levels occurs in Brazil after 1992, but at quite a slow pace. Until 1999, poverty levels decrease even more slowly in Ceara and in the whole Northeast than in Brazil, causing an increase in poverty gaps. However, in the last few years between 1999 and 2004, Ceara shows a faster rate of decrease of poverty, closing the gap with the Northeast and reducing the gap with Brazil.

A clearer picture is shown by the data on indigent poverty: extreme poverty was always a very painful problem in Ceara, with greater rates than the Northeast and more than twice the rates in Brazil. After 1992 those rates decreased in Ceara at the same rate they decreased in Brazil, thus keeping the same gap, but in the last few years the decrease in indigent poverty rates was much greater in Ceara (3.7% a year) than in Brazil (2.7%) and in the Northeast (2.0%). The indigence poverty rate in Ceara is still very high (26.4% in 2004), but today for the first time it is lower than in the Northeast, and its gap with the rate in Brazil has decreased quite substantively.

## **(7) Decreasing profundity of poverty**

Poverty may have different depth levels. The distinction between poverty and indigent poverty already provides an indication of the depth of poverty. As we saw in the previous section, the advance of the State of Ceara in the last few years in the reduction of poverty is good in comparison to the advance in Northeast or in Brazil, but the more important achievement of the policy of Ceara is the reduction of the profundity of poverty: people are somewhat less extremely poor. Another measure for the profundity of poverty may be the average level of income of the poor and of the indigent poor. Again, we can see that there is progress, mostly in the last few

years, in another dimension of poverty. The poor population (including the indigent poor) in Ceara always had an average level of income much lower than that of the poor population in the Northeast or in Brazil. In other words, the poor in Ceara always were poorer than the poor in the Northeast or in Brazil. The improvement rate of this situation, mostly from 1999 to 2004, has been much stronger in Ceara than in the Northeast and in Brazil, especially in the case of the indigent poor. This has led to a situation where the profundity of poverty is more or less equal in Ceara to the Northeast or to Brazil: the poor people in Ceara are today no longer poorer (especially true for the indigent poor) than the poor in Northeast or in Brazil.

## **(8) Decreasing inequality**

Decreasing poverty does not of course necessarily mean a decreasing inequality. We use here a few frequently used indicators for inequality, again based on IPEA data, and check the rate of change in Ceara compared with Northeast and with Brazil: Gini coefficient, share of income of 50% poorest population, share of income of 1% richest population, and ratio of average income of richest 20% and poorest 20% of population.

All four indicators show that the process of diminution of inequality is actually quite recent, and began only in the new millennium. The Gini coefficient of inequality had an increasing trend over all years until the end of the previous millennium, although generally the increasing trend was not as strong in Ceara. Since the beginning of the millennium, we find a decreasing trend of inequality, at a higher rate in Ceara than in the Northeast and in Brazil: in 2004, Ceara almost reaches the Gini coefficient of Brazil, and for the first time has a lower Gini coefficient than the Northeast. This process is also apparent in the strongest decreasing income share of the 1% richest population, the strongest increase in the income share of the 50% poorest population, and the strongest decrease in the gap between the average income of the 20% richest and the 20% poorest population.

## **g. Conclusion**

The heavy problem faced by the State of Ceara in its development process is the same problem encountered by most developing countries and certainly by the Brazilian states: how to solve the poverty problem and how to achieve a reduction of inequalities, without prejudicing the economic growth of the State. The State of Ceara has adopted an approach based on the assessment that inequality in a process of economic growth may result from the emergence of market failures in the development of poorer regions. The analysis made for the years 1985 to 1999 actually indicates the existence of such market failures: the changing structure of the economy (decreasing weight of agriculture) is not met by appropriate adjustments in the demographic structure (spatial distribution of the population) and in the social and organizational structures in regions outside the metropolis. The policy measures taken by the State of Ceara were therefore oriented towards the solution of such failures, using regional development as a major instrument for development with the reduction of poverty and inequality: urban spatial restructuring, regional organization, solution of market failures that prevent economic growth of local initiatives.

The policy measures adopted by the State of Ceara since the beginning of the new millennium are expected to lead to the coexistence of economic growth, decreasing inequality and decreasing poverty. The preliminary evaluation presented above is mostly based on comparative indicators

for Ceara, the Northeast and Brazil, for three time periods, based on IPEA data: from 1981 to 1992, 1999, and 2004. The results show a quite encouraging picture about the path taken by the State of Ceara, in comparison with the whole region and country.

The economic growth in the State of Ceara and the level of poverty and inequality are still quite high, but the signs shown by a variety of indicators seem to detect a turning point in Ceara in the new millennium – in absolute terms and in comparison with the Northeast and with Brazil. The policy adopted by the State of Ceara since 2000 apparently led to a more appropriate adaptation of the social and demographic structures to the changing economic structures. Better levels of urbanization and of employment in the rural area, jointly with improved levels of education, have led to a clear diminution of gaps between the rural area and the urban area, to higher productivity, to lower levels of poverty, to lower intensity of poverty and to lower levels of inequality. Even when such improvements happened in the Northeast and in Brazil, the changes detected in Ceara were always much stronger. A final and important point is that these advances did not restrain the economic growth of the State: on the contrary, during this same period, the economic growth was greater in Ceara than in the Northeast and in Brazil.

The importance of the experiment of the state of Ceara is that it demonstrates the ability to solve social problems of poverty and inequality by using pure economic instruments, and that it shows the potential contribution of such policy measures to the achievement of goals of national economic growth. The model used in Ceara cannot be copied to other states, but this methodology can certainly be applied to the conditions in other places. This would require the following steps:

- a. Analysis of specific situation in terms of macro economic growth, economic sectors, distribution of income, regional distribution of economic activity and of population, urbanization processes, etc...
- b. Identification of main regional market failures that may explain the problems of growth, poverty, distribution.
- c. Elaboration of required policy guidelines and specific measures to be taken, evaluation of priorities with policy makers.
- d. Elaboration of concrete projects for the implementation of the policy priorities.
- e. Follow-up and evaluation of implementation of each specific project.

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