

# Some historical reflections on the development of a major semi-arid region: The Brazilian northeast\*

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## Resumo

Este trabalho foi apresentado pelo autor na primeira Conferência ICID, em 1992, e foi baseado em seu contato extensivo e intensivo com o Nordeste e com o Semi-árido do Brasil. Ele apresenta uma perspectiva histórica da evolução das políticas públicas para o desenvolvimento do Nordeste e mostra sua relação de longa data com o problema das secas no chamado polígono das secas. Ele descreve o desenvolvimento institucional e o predomínio das preocupações hidráulicas durante mais de um século. Nos anos cinquenta do século XX, uma nova percepção implicou em um quadro novo do desenvolvimento institucional, com a criação do Banco do Nordeste e da SUDENE, e uma perspectiva mais ampla de desenvolvimento que começou a se concentrar em questões de bem-estar econômico. O desenvolvimento dos recursos humanos é ressaltado como um componente chave de qualquer estratégia de desenvolvimento. A experiência histórica é fundamental para o desenho de futuras estratégias de desenvolvimento sustentável para o Nordeste.

## Abstract

*This paper was presented by the author in the first ICID Conference, in 1992, and was based on his extensive and intensive contact with the Northeast and Semi-arid of Brazil. It presents a historical perspective of the evolution of public policies for the development on the Northeast and shows its long-time relationship with the problem of the droughts in the so called drought Polygon. It describes the institutional development and the predominance of the hydraulic concerns during more than a century. In the fifties of the XX century, a new perception implied a new institutional development framework, with the creation of the Bank of the Northeast and of SUDENE, and a broader perspective of development that started to focus on economic welfare issues. The development of human resources is emphasized as a key component of any development strategy. The historical experience is instrumental in the design of future sustainable development strategies for the Northeast.*

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**Palavras-chave:** Nordeste, Semiárido, Polígono das Secas, Política de Secas, Desenvolvimento Regional, Desenvolvimento Sustentável.

**Keywords:** *Northeast, Semi-arid, Drought Polygon, Drought Policy, Regional Development, Sustainable Development.*

## 1. Introduction

Old age has a few virtues. And one of these is the ability to see events within the context of a rather long historical perspective. On the basis of almost 50 years of familiarity with Brazil and almost 40 years of close contact with the Nordeste, I decided that my most useful contribution to this conference might be to provide some historical perspective on the development experience of one major semi-arid region - the Brazilian Nordeste.

I first came to Brazil as a Naval Officer during World War II and spent a year on antisubmarine duty stationed most of that year in the Northeast at the Natal air base. Ten years later, in 1954, when I was Chief Economist for the Tennessee Valley Authority, I accepted an invitation to serve as a United Nations development adviser to the newly created Banco do Nordeste. At that time, I spent another 2½ years in Brazil assisting in the establishment of the BNB. Over the ensuing years, I have returned to Brazil on frequent and extended missions to work with the Banco do Nordeste, Electrobras, the Sao Francisco Valley Commission and other government agencies.

My academic career has been as a professor of international business, including an assignment in Beijing, China, during the 1989 Tienanman Square massacre. But I have also continued my economic development career with technical assistance assignments in Brazil and other countries such as India and the Philippines. Thus, my orientation is that of a development economist. But I should also note that my 5 years with the TVA exposed me to environmental issues long before the subject became popular.

## 2. The Northeast Secas

Turning now to the Brazilian Nordeste as a semi-arid region, during decades and even centuries, the Nordeste development problem was exclusively perceived as the periodic drought, or the secas. The published record of the secas goes as far back as 1614 to the reports of a mining prospector searching for emeralds in the San Francisco Valley. But it was not until the severe drought of 1877 occurred that the Brazilian government officially recognized the Northeast

secas as a national problem. The 1877 drought caught the region by surprise because it followed thirty comforting years of abundant rainfall. The magnitude and severity of this calamity has been recorded in the history of the secas with estimates of half a million inhabitants of the state of Ceara perishing from hunger, thirst and disease.

Moved by this great tragedy, Emperor Pedro II established a Commission of Inquiry whose principal recommendations were to improve transportation and to build a series of dams. One of the three dams recommended was the Cedro dam in the municipality of Quixada that was started in 1884 and completed in 1906, 22 years later, after many starts and stops. To many Brazilians, the dam stood as a symbol of inefficiency and waste in the fight against the drought.

In 1909, a new federal agency, the Inspectoria of Works Against the Drought, was established. With slight changes in name, this federal agency remained in operation until recent years. In 1945, the Inspectoria became a Department (known by the acronym DNOCS) and the 1946 Constitution allocated 3 percent of federal tax revenues for defense against the drought. DNOCS and its predecessor agencies represented a physical or hydraulic strategy of (1) constructing works that would prevent or minimize the “flagellation” and (2) providing emergency assistance to the people of the region during prolonged drought periods.

The hydraulic solution for the Northeast “problem”, that was followed for more than a century, focused on a better utilization of the hydrographic basins of the so-called Drought Polygon. Consequently, a plan was prepared in the 1920s for making use of the valleys of greatest importance to the Northeast economy through construction of dams, roads, irrigation channels and power plants. The dams and reservoirs were intended to provide surface water storage. From 1906 to 1959, 190 publicly owned reservoirs with a capacity of 6.6 billion cubic meters were constructed, and hundreds of small and medium storage reservoirs were built on a cooperative basis with land owners. For using underground water, DNOCS began a well drilling program in 1909 and within 50 years drilled 5,124 wells, an average of only 100 new wells per year for the Polygon.

Extensive transportation and communication facilities were built by DNOCS, which played a significant role in the demographic and economic integration of the region. A large number of small airfields were built in the region and a major communications system of radio stations was established and operated by DNOCS. In contrast to the magnitude of the water storage and transportation accomplishments, the irrigation results were small, as was also true for agro-industrial and piscicultural research.

### 3. The Failure or the Hydraulic Strategy

In Brazil, as in other countries, large public works programs can be vitiated by politics and riddled by scandals, particularly in emergency situations. And much of the criticism and evaluation of the DNOCS activities has been in terms of inefficiency and irregularities. There was much scandal, for example, connected with the 1951 and 1958 droughts - such as the corrupt handling of funds, padding of payrolls, irregularities in distribution of relief goods, and political influence in the selection of projects. In fact, the drought has long been an integral part of the political style of the Northeast. For decades, Nordeste politicians based their claims for increased national attention and resources on exaggerated reports of drought and famine. Among many Brazilians, this phenomenon has been labeled "The Industry of the Drought." But with the development of an extensive transportation network and reservoir system, by the 1960s the secas had become less a period of human suffering and more a political phenomenon.

From 1877 until the early 1950s, or for more than seven decades, the hydraulic solution to the Northeast "problem" reigned as the undisputed goal of federal policies and actions. Each new drought crisis demonstrated that expensive dams and water storage projects had little improved the economic security of the Nordestinos. But the lack of success was invariably ascribed to politics or deficient implementation of the basic policy. Frequent and heated controversies raged over subissues such as large versus small reservoirs and surface versus underground storage. But the basic philosophy of fighting the drought through water conservation projects persisted unchallenged.

Fundamental changes in government policies require more than the apparent failure of long-existing policies. Strongly supported alternative solutions also have to be available. And by the early 1950s such alternatives were emerging. New ideas about the economic development role of government were growing in strength and pervading intellectual, political and governmental circles. As a counter force to the longstanding influence of engineers in Brazilian society, technicos trained in economics began to flow from recently established faculties of economics. And an increasing number of experienced engineers and lawyers were shifting their professional interests to economic problems. Thus, when another drought crisis occurred in 1951, accompanied by the usual political scandals and popular disillusionment, new ideas and supporting personnel were on hand to gain a beach-head in the struggle to reshape federal policy toward the Northeast.

## 4. The “New” Development Approach

The policy shift for the Northeast resulted from new forces at the national level rather than from stimuli originating in the region. Getulio Vargas won the presidential election of 1950 and was almost immediately faced with the 1951 Northeast drought crisis. Horacio Lafer, Vargas Minister of Finance, visited the Northeast in April 1951 to attend a conference on cotton. On his return, Lafer sent a note to the president suggesting that a specialized credit institution be established for the region because, as he noted, the combat of the secas through large engineering works is futile unless accompanied by steps to strengthen the regional economy. With Vargas approval, Minister Lafer drafted a law in mid-1951 to create the Bank of the Northeast as a regional credit agency.

Here enters another important historical fact. Vargas had three Nordestinos as presidential advisers - Romulo de Almeida, Jesus Soares Pereira and Cleantho de Paiva Leite - who were intimately involved in the new thinking on economic development. It was not surprising, therefore, that when Vargas asked the Congress to establish the Bank of the Northeast, the project had been broadened into a major regional development institution which would have a special staff for regional economic studies and planning - the ETENE. As Vargas stated in his presidential message, “The title itself, Works Against the Drought, expresses a limitation, focusing on the problem above all from the angle of engineering works. In the light of past experience and modern techniques of regional planning, it is time for a definite economic and social direction to be impressed upon the solution of the problem”.

The essence of the new policy approach was to focus directly on economic welfare problems rather than on the physical drought phenomenon. It emphasized economic development planning and argued that higher regional levels of income, employment, and production, and a greater dependence on activities other than agriculture are the best defenses against the drought. Its basic strategy was to encourage all regional possibilities for economic growth - mining and manufacturing as well as agriculture, the humid areas as well as the semi-arid interior - and thus increase the resistance of the Northeast to the periodic droughts as they occur.

The Bank of the Northeast that was born out of an economic crisis began its life in the midst of a political crisis. Only months after the BNB began operations in 1954, President Getulio Vargas committed suicide. Two years of political turmoil followed including a period when Brazil had three different presidents of the Republic in three days. As the head of the BNB served at the pleasure of the President of the Republic, the Bank also had three different presidents between 1954 and 1956.

Nevertheless, the BNB made some progress - especially in preparing personnel, regional institutions and popular thinking for the new development approach. It also pressured Juscelino

Kubitschek, when he became president in 1956, to create an agency to coordinate all government development activities in Northeast Brazil. At the time, Kubitschek's interest and energies were dedicated to the construction of the new federal capital - Brasilia. But he accepted the proposal with major modifications and established a Working Group for Northeast Development in the Executive Office of the Presidency. The Working Group, however, had limited authority and uncertain financial support.

When another major drought occurred in 1958, accompanied by another series of DNOCS failures and drought Scandals, the economic development approach made another major advance. President Kubitschek transformed the Working Group into a new strong agency, SUDENE, to plan and coordinate all development efforts for the Northeast. And he named Celso Furtado, who had recently returned to Brazil from his United Nations job in Chile, as head of SUDENE.

I will not take the time nor attempt to summarize and evaluate the successes and failures of the BNB, SUDENE and other institutions in implementing the "new" strategy over the last thirty-some years. There are others at this conference, such as Drs. Rubens Vaz da Costa and Nilson Holanda, better prepared to do so.

Any evaluation of regional progress, however, must be based on a comparison with the previous situation in this region and related to the likely results of a continued hydraulic approach. On this basis, I'm sure that an objective evaluation would conclude that the change in development strategy has resulted in significant regional progress.

## 5. The Greatest Success: Investment In Human Resources

One method of evaluation is in terms of observable physical results. In this vein, I have often commented that when I arrived in Fortaleza in the 1950s, the streets (mainly unpaved) were crowded with donkeys and horse-drawn carts. When I returned in the 1960s, the same streets were mostly paved and filled with Lambrettas (motor scooters). When I returned again in the 1970s, the same streets were clogged with small Volkswagens. And now we see another level of automobile opulence.

But to my mind, the great development success of the Northeast has not been the creation of physical goods but the less visible spectacular development of human resources. When I began my advisory mission in 1954, the Brazilian government had promised to have one or more Brazilian economists available to assist me. But after a month of sitting and waiting for this commitment to be fulfilled, I realized that I was not going to get the promised help and I began to understand why. At that time, in all of Brazil there were less than 10 persons with the equivalent of a Master's degree

level of training in modern economics. And none of the few trained economists was willing to leave Rio (the then capital) or Sao Paulo to work in the distant Northeast. They wanted to be quickly available in the South in case the President of the Republic called on them.

Fortunately, out of desperation, we decided that we had to create staff by starting our own training program. From hundreds of applications by Nordestinos, we recruited 20 bright young people and initiated the first of many training programs by the Bank of the Northeast. The next problem was the absence of facilities in the Northeast, such as books, statistical reports and professors, for training. We had to take all of the trainees to Rio for about four months to do the training. I said that this situation was fortunate because it started the BNB on a large and continuing program of investing in human resources through its own training programs and by sending employees overseas to foreign universities.

Here I must pay tribute to a great Nordestino, Raul Barbosa, a former governor of the state of Ceara. When Raul Barbosa became president of the BNB, in his wisdom he committed the Bank to a major program for investing in human resources through training bank and regional personnel. Two other former presidents of the BNB - Rubens Costa and Nilson Holanda – also deserve recognition for forcefully continuing this tradition.

## 6. Sustainable Development and the Future

Now let me turn to the subject of sustainable development. The concept of sustainable development with its focus on the quality of life and avoiding deterioration of the environment represents a significant advance in the evolution of development strategies. On an historical note. I might mention that international concern about economic and social development has a rather short history, dating back only to the early 1950's. The challenge now is to make operational and to implement the sustainable development concept. Based on the development experience of the Northeast, several key and inter-related elements emerge as essential for implementation.

### 6.1. To succeed in changing prevailing policies and programs, alternative strategies in operational and pragmatic form must be available.

It is not enough to focus largely or exclusively on a negative approach of elaborating in great detail on the shortcomings and limitations of prevailing development efforts. As is being emphasized at this conference, much work remains in translating the sustainable development generalities into specific and feasible action programs.

## **6.2. The alternative strategies must go beyond environmental fundamentalism for the sake of conservation.**

Two key economic concepts must be recognized in the formulation of strategies; namely, the need for allocating scarce resources and the need to consider trade-offs. Back in my early days at the Tennessee Valley Authority, I worked with environmental engineers who in their enthusiasm for preserving the water, soil and forest resources of the region would have allocated all of our resources to their programs at the expense of other competing demands, and without evaluating the trade-offs that were involved.

## **6.3. The most important element in any development strategy is investment in human resources.**

I cannot overstate my belief in the payoff from well conceived investment in human resources. The fact that this conference is being held in Northeast Brazil is almost certainly a payoff from the far-seeing programs of the Bank of the Northeast and others to invest heavily in human resources. Strategies for sustainable development must be implemented and supported by people of the region. Thus, a region or a country must have an adequate supply of people who understand the development process and have the necessary knowhow to implement appropriate strategies and secure popular support.

## **6.4. There must be participation in the planning process by people and institutions that are responsible for the implementation**

During the years I worked as an adviser in Brazil, I always had the Brazilian staff prepare the reports and investment plans. I gave advice and direction, but the end product was that of a Brazilian. My strategy was to be sure that the people responsible for implementation had contributed their knowledge to the planning process, were familiar with the basis for making the action recommendations, and committed to the proposals. Thus, we eliminated a decision gap. When an outsider makes recommendations, the implementer has to make an explicit decision to accept the outside recommendation. But when the recommendation has the implementer's name on it, the decision gap has been eliminated.

## **6.5. The last element I will mention is politics**

In a democratic country like Brazil or the United States, the importance of politics in the formulation and implementation of government policies cannot be overemphasized. In the



United States, for example, we are now having a difficult time reducing military expenditures despite the end of the Cold War. Our congressional representatives are reluctant to reduce expenditures for military bases and defense industries that employ people in their districts.

I don't have any easy answers for the political problem. One must hope that there are political leaders on the scene who take a broad rather than parochial view toward social and economic welfare potentials, and have the courage and skills to implement sustainable development programs.

In its early days, the Bank of the Northeast was fortunate to have such politicians as Romulo de Almeida and Raul Barbosa as presidents. Raul Barbosa once explained to me that he was able to resist political pressures on the BNB because his political experience as a governor had taught him about all the political ploys.

## 7. Conclusion

In conclusion, I want to thank the conference organizers for inviting me to participate. I am fond of Brazil and the Nordeste. Sometimes when I speak Portuguese, people ask me if I am a Brazilian and I tell them that I am a Nordestino de coração - a Nordestino at heart. The region still has too much poverty. But relative to its past, the Northeast has made impressive economic and social progress. As I have visited the region over recent decades. I've seen unpaved streets become paved, extensive housing built, new jobs created, new schools and universities started, and as I once told a pessimistic nordestino politician, even the beggars on the street have become better dressed.

Above all when I see the valuable leadership role that some of my trainees and former colleagues in the Northeast are playing in programs to improve the quality of life, I feel personally rewarded for the years and the energy I devoted to the Northeast.