

De Aguiar Oliveira, Carlos Herminio; Franca, Vera Lucia Alves; Goulard, Françoise Carpy; Vargas, Maria Augusta Mundim

Conference Paper

SOCIO-ECONOMIC CONSEQUENCES IN THE DOWN VALLEY OF THE SAN FRANCISCO RIVER (BRAZIL) AFTER THE CONSTRUCTION OF DAMS

45th Congress of the European Regional Science Association: "Land Use and Water Management in a Sustainable Network Society", 23-27 August 2005, Amsterdam, The Netherlands

Provided in Cooperation with:

European Regional Science Association (ERSA)

Suggested Citation: De Aguiar Oliveira, Carlos Herminio; Franca, Vera Lucia Alves; Goulard, Françoise Carpy; Vargas, Maria Augusta Mundim (2005) : SOCIO-ECONOMIC CONSEQUENCES IN THE DOWN VALLEY OF THE SAN FRANCISCO RIVER (BRAZIL) AFTER THE CONSTRUCTION OF DAMS, 45th Congress of the European Regional Science Association: "Land Use and Water Management in a Sustainable Network Society", 23-27 August 2005, Amsterdam, The Netherlands, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/117796>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

SOCIO-ECONOMIC CONSEQUENCES IN THE DOWN VALLEY OF THE SAN FRANCISCO RIVER (BRAZIL) AFTER THE CONSTRUCTION OF DAMS

Carlos Herminio DE AGUIAR OLIVEIRA (carlos.herminio@codevasf.gov.br) Vera Lúcia ALVES FRANÇA, Françoise CARPY-GOULARD (francoise.goulard@esa-purpan.fr), Maria Augusta MUNDIM VARGAS.

1 – Introduction

The basin of the river San Francisco, with 640.000 Km² of area, is divided in four physiographic regions: High (*Alto*), Average (*Médio*), Sub-Average (*Sub-Médio*) and the Low (*Baixo*) (Figure 1). The Low San Francisco, object of our study, occupies an area of 30.377 km², about 5% of the basin, corresponds to the lesser portion among its regions, enclosing areas of the States of the Sergipe, Alagoas, Pernambuco, and Bahia.

The Low San Francisco comes presenting, in the last years, a level of significant ambient degradation, with important social and economical implications. This fact has generated conflicts about the use of waters and the



Figure 1 – Bassin of river San Francisco

ground of the basin, such as irrigation, fishes' cultivation and transport, among others. It is easy to observe the ambient liabilities requiring an immediate action of the constituted entities, including the society that usufructs the basin.

The Low San Francisco is the stowage of all the little correct interventions, that had occurred and come occurring in the sum sub-basins, resultants of the great hydraulical structures implanted by the Federal Government, for the energy generation.

The construction of these great installations, (dams of *Três Marias*, *Sobradinho*, *Itaparica*, *Paulo Afonso* and *Xingó*) had promoted a drastic modification of the hydrological regimen of the river with sensible losses for the Low San Francisco, where there were productive flood-plains (“varzeas”).

The undertaken governmental actions for the agricultural production in the flood-plains “varzeas” of the Low San Francisco, for the CODEVASF, had also not brought the longed for results. The irrigation projects had been implanted only in large flood-plains with the cultivation of rice, being more than 70 small and average “varzeas” without type of exploitation hydro-agriculturist. Such projects had not contemplated actions in other sectors of the economy and nor had had a concern with the hydro-ambient revitalization of the basin of the river San Francisco.

The objective of this study is analyzed the social and economical consequences occurred in 15 cities of the Low San Francisco, among the 28 cities that are part of the Basin in the State of Sergipe. To evaluate the social and economical conditions of the 15 cities, seven variables were analyzed inside of a dynamic vision; that is, verifying the absolute and relative occurred variations.

The used variables were: total, urban and agricultural population; index of human development (IDH); harvested area, production and productivity of the rice, for the years of 1970 and 2000, before and after the implantation of the dams.

After this introduction, a historical evolution will be presented, briefing of the management of water of the river San Francisco. The third part of this article approaches the social problematic of the region of the Low San Francisco, proceeding from the construction of the barrage of Sobradinho. In the fourth part, the governmental efforts through the implantation of irrigated areas are presented to surpass the impacts of the regularization of the outflow of the river. Tables and maps show the main occurred socio-economical transformations between 1970 and 2000. In the two final parts of the article, the current context of the management of water of the basin of the river San Francisco is presented. The auteurs insist on the strategic importance of the Committee of the Hydrographic Basin for the mediation of conflicts and for researching actions toward a sustainable development of the Basin.

2 - The historical evolution of the management of waters of the river San Francisco

The first studies for the exploitation of the Basin of the San Francisco retrace the 1850 and had as objective to improve the conditions of navigability of the river. Emperor Dom Pedro II contracted Engineers Emanuel Liais and Enrique Halfeld that had brought as more important contributions the publication, in 1860, of the descriptive circumstantial report, section by section, of the river San Francisco.

Since this time, two great elements affected the Brazilian Northeast: the floods and the droughts. The floods, although they were devastating, had always been well comings, and even commemorated, therefore they came from rains, announcing the abundance! While the droughts, differently, were signs of misery, hunger and disaster. The problematic of the droughts northeast Brazilian is object of governmental concern since dries of 1877, when an Imperial Commission was created with the mission of proposing measures for the reduction of its effects. In 1884, the workmanships of the weir of Quixadá had been initiated, in the Ceará, concluded 12 years after, representing the only weir implanted in century XIX. In 1909, the developement company against the droughts (Inspetoria de Obras Contra as secas, IOCS) was created - subordinated to the Ministry of the Means of transportation and Public works, becoming later, in 1919, in the Federal amenagment company against the droughts (IFOCS). In 1945, the IFOCS became the National Department of amenagement Against Droughts (DNOCS), still executing the same activities of its predecessors: weir and road construction, perforation of wells, among others, but that, in its great majority, they had benefited to the great proprietors and hadn't the majority of small proprietors, either of the arid areas, either of flood-plains.

2.1 - The creation of the Commission of the Valley of the San Francisco and the General Plan of Economic Exploitation of the Valley of the San Francisco

After the end of 2^a World-wide War, economic liberalism, the southeastern industrial development and the South of the country had translated a regional and differentiated development. Then, the Northeast region was seen as an impediment to the national development, what it remains until the present. Thus, the Constitution of 1946 institutes that 1% of the prescription tax of the Union would be destined to the study and the execution, in the stated period of 20 years, of a Plan of total Exploitation in the economical possibilities of the basin of the San Francisco.

Almost 100 years after the studies of Liais and Halfeld, the basin of the San Francisco, in 1948, is deserving an official agency to deal with its development: the Commission of the

Valley of the San Francisco - CVSF and, in that one exactly year, the Hydroelectric Company of the San Francisco (CHESF). The CHESF, mixing economical company, was created to promote the exploitation of the potential of the river, in the Northeast region, through the generation of electric energy, directed to the development of the regional industrial sector. The CVSF had as its essential mission the promotion of the global development of the valley of the San Francisco, through the best exploitation of the resources of the main northeast perennial river.

The Plan of Exploitation of the San Francisco foresaw the execution of some dams of containment of full - one of the aspects of the region - in the main tributaries of the San Francisco, with what the farming one would be activated, using, mainly, the irrigation. Also, it was foreseen the regularization of the river to make possible the navigation, with the supply of energy in low cost.

However, the initial plan of construction of a set of full dams of containment and regularization of the river's course is making possible the navigation, beyond the irrigation. But only the great generating dams of energy had been executed: none of the small and average dams for the tributaries were constructed.

The Plan of Exploitation of the Valley of the San Francisco, inspired by the actions of the Tennessee Valley Authority (United States), was very complex and presented financial difficulties. It hadn't achieved the projected goals for the sustainable development.

2.2 - The SUVALE and the CODEVASF: the successors of the Commission of the Valley of the San Francisco

The SUVALE (Superintendencia do vale do Sao Francisco), the superintendence of the Valley of the San Francisco - that it substituted the CVSF, in 1967 - selected nine program-areas and concentrated in them the actions aiming at to the use of the water and farming resources. Two of these program-areas contemplated the Low San Francisco: the Subject to flood plains of the San Francisco in Sergipe and Alagoas and the Milk Basin of some cities in the area of the tributaries in the States of Sergipe and Alagoas. In 1974, it was created the public Company of Development of the Valley of the San Francisco (CODEVASF) who had as mission to optimize the actions of development, establishing programs in the farming districts. However, this strategy did not achieve the expectations of social and economical changes, remaining the old problems and appearing others, in function of the implanted activities.

The occurrence of one great full between 1979/1980 called the attention, one more time, for the control of the outflow and the conservation of the natural resources, whose use caused negative effects. As consequence, in 1979, the Inter-ministerial Commission of Studies for the Control of Floods in the San Francisco was created. In the occasion, the implantation of the Executive Committee of the Integrated Studies of the Hydrographic Basin of the San Francisco was recommended (CEEIVASF), with the purpose to follow and to control the use of its water resources through a planning program of the hydrographic basin, as a representative territorial unit.

The CEEIVASF faced problems in function of relative decisions to the planning of water resources of San Francisco's Valley that were analyzed in superior levels of this Committee, without consulting it, as the case of the elaboration of the Project of Transposition of Waters of San Francisco/Tocantins for the Northeastern Half-barren. Moreover, the CEEIVASF faced financial difficulties, lack of material and human resources, absence of quarrel and consensus on planning methodologies, beyond the impossibility of elaboration of managing plans for the basins, from strategic management plans and, over all, the fact of not using the works made by Committees.

The state intervention in the Basin of the San Francisco, only recently, was based in planned actions. At the time of the Commission of the Valley of the San Francisco, the actions were not integrated, acting in a sporadic way only based on the consequences and not on the causes of the social and economical process. This phase is characterized by the common interventionism, with the adoption of urgent and support measures that benefited a privileged minority. The most important accomplishments had been the studies that make possible a beginning of the scientific knowledge of the Basin of the San Francisco, allowing the actuation from the SUVALE, promoting more effective accomplishments.

In the period of the SUVALE, a phase of state centralism is initiated, in view of that its action articulated with a politic in national level, aiming at the promotion of development of areas with potentialities that are favorable to the return of the investments, through irrigated agriculture as the impulsive activity of the development of the Basin of the San Francisco. Thus, the phase of the planning properly said was initiated when the intervention starts to focus a set of aspects and interconnected elements in a way to promote deep changes in the productive and social process of the region. Therefore, the specific Plan of Integrated Development of the Valley of the San Francisco and managing plans for each one of the 09 selected program- areas had been elaborated.

On the other hand, the CODEVASF initiates its performance, in 1974, under planning, with the mission of the detailing plans, programs, projects and the execution based on a planned direction by the SUVALE. Then, the visibility of the state intervention in the basin starts, but not in a prompt form, in special in the Low San Francisco, due to urgency of the construction of the dams Paulo Afonso and Sobradinho. However, it occurred without the involvement of the society based in a partial knowledge of the reality and with planning and inadequate strategies that had hindered a global reach of proposed goals and caused a great social responsibility.

3 - The dam of Sobradinho and the social problematic of the Low San Francisco

Low San Francisco, since the waterfall of Paulo Afonso (Bahia) until Porto da Folha (Sergipe), runs in one canyon. From Porto da Folha, the declivity of the river diminishes significant way; the section of the river gets wide, presenting flood-plains (varzeas) that are situated in the edges of the river that benefited of risings from the High and Average San Francisco. The agricultural activities kept relation with the natural regimen of the river. The agricultural calendar of the rice was established in function of the risings from the San Francisco river. Before the arrival of these risings, generally, between December and January, the lands of flood-plains were prepared. In this period, the flood-plains, arriving in port the sediments in suspension that fertilized lands. The catch-crops, installed in the highest parts, were prepared to supply the necessary plants to the transplant. This started soon, in the beginning of the rain season, in march, occasion where the waters of the rising ones diminishes gradually, however march rains the august assured the continuity of the water supplementation. More than the 70 small, average and large flood-plains that exists in both edges were benefited of the risings, making possible great harvests of rice and fish in abundance.

The beginning of the operation of the dam of Sobradinho, in 1978, for priority ends of energy generation, promoted the regularization of the outflow of the river San Francisco in 2.060m³/s. The absence of full disabled the wadding of marginal lagoons of the Low San Francisco, which presents a quota of the superior stream bed to the water levels of the river with regularized outflow, beyond not contributing more for its ecological function of reproduction and nursery of the native species of San Francisco River.

The flood-plains had left of being flooded, eliminating, thus, the traditional rice culture of ebb tide, originating the action of the CODEVASF - Company of Development of

the Valleys of the San Francisco and the Parnaíba - however, limited to the implantation of irrigated perimeters in great flood-plains and the construction of fishes' culture stations.

The developed studies had diagnosed several consequences in the fluvial morphology after the construction of the dams, which, in cascade form, had unchained a process of retention of the sediments in its reservoirs, making waters starting to have one reduced amount of sediments in suspension (ANA, 2000 ANA, 2004) Moreover, the absence of peaks of high outflows to the ebb tide of the Barrage of Xingó affected the process of transport of sediments, because it was in those occasions that the laundering of the canal of the river occurred, preventing the sandbank.

The construction of the dam of Sobradinho and hydroelectric workmanships added to the Paulo Afonso complex had produced substantial modifications in the regimen of the River San Francisco, increasing the minimum flow of 700 for 2.060m³/seg. (maximum 4.500m³/s), bringing extremely negative effect to the traditional system of ebb tide agriculture of marginal flood-plains located in the ebb tide of Paulo Afonso. These consequences had become higher because of the population density of these areas added to the extreme poverty. The World Bank, when financing projects of hydroelectric exploitation of Sobradinho and of Paulo Afonso complex, demanded that the Federal Government should penalize the CHESF, in financial terms, in order to compensate the damages suffered by the marginal population, small agriculturists of flood-plains of the edges of the Low San Francisco. In the occasion, the CHESF gave the incumbency of the execution of the workmanships demanded for the World Bank to the SUVALE, compromising to invest 25 million dollar for the execution of the irrigation workmanships and protection. Later, it made right that the payment of these investments would be made through the supply of electric energy for the CODEVASF, until the moment that the consumption reached the value of the debt. Thus, the CHESF started to supply energy to the irrigated areas implanted for the CODEVASF without charging the due value.

Considering the advance of the workmanships of the dam of Sobradinho in an emergent way, a system of dykes throughout the San Francisco River and the pumping stations were executed to reestablish the natural irrigation conditions of the river, before finishing the dam. The flood-plains (varzeas) would start to be like "polders", modifying totally the fish activity, giving opportunities to normalize that situation. It was esteemed a reduction of 12.000 hectares: 5.000 hectares permanently flooded and 7.000 hectares due to periodic flooding.

The CODEVASF included activities of support to the agricultural production and basic infrastructure endowment, with redistribution of lands of the protecting area because of the great cost of the protection workmanships, comparatively to the small population contingent and the economic benefits. In 1972, a Brazilian and French organization was contracted to elaborate the technician-economic feasibility studies of two great flood-plains of the Low San Francisco: Propriá (Sergipe) and Itiúba (Alagoas) that, in operation, they would become a Pilot Project with sights of exploitation of others flood-plains of the Low San Francisco (DYNA/BECON, 1972). The workmanships of the Projects had been initiated in 1974 and, quickly, executed, but the Propriá Project, once implanted, couldn't be placed in functioning, therefore in order to reach the economic viability, projects of low cost had been carried, resulting in imperfections in the survey of the physical conditions of the area of the Project, occurring errors of conception that had caused serious problems of operation.

In order to take care of the commitment to execute a combat Program to the negative effects of the slide bars of the river, the Brazilian government presented to the World Bank two projects for financing that had been approved in the second half of the decade of 1970, foreseeing the distribution of its benefits to the affected population and establishing the premise of a distribution of lands to the agriculturists, in a familiar lots way.

4 - The implanted projects of irrigation and the social and economical transformations in the Low San Francisco

For FONSECA (1988), one of the main problems of the state intervention was the choice of the model of development that estimated the induction of the aiming of social and economical transformations through the change in the organization of the productive space, without taking in consideration a set of interventionist factors. The relation society-job is used in a two-way: however the society is the determinative factor, however is the dependent factor. In the global level, the space is organized in function of the social one, reflecting the structure of the national society, with the distant interests provoking changes in the regional space. In local scope, the changes are seen as inductive of changes in the social structure, that is, generating a new organization of the space in the area of the Projects, stimulating one better social organization.

The majority of the generated upheavals were provoked by the lack of a schedule that correlated the advance of the workmanships of construction of the dam of Sobradinho with the implantation of the irrigated areas. The workmanships of the dam had been initiated in 1972 and the first irrigated perimeters start to function in 1974. The CODEVASF directly

implanted in the State of Sergipe three projects of irrigation for great flood-plains: Propriá, Betume and Cotinguiba/Pindoba, occupying an area of 6.402 hectares, distributed in 1.566 lots in seven cities (*Inset 1*).

Inset 1 - Situation of the Irrigated areas of the Low San Francisco (State of Sergipe)

Project	Localization	Construction / Operation	Area, nº of lots, Cultures
Propriá	Propriá Telha Cedro S. João	1975 – beginning of the operation Concludes in 1979	1.177 hectares 300 lots with 4 hectares rice, fish
Cotinguiba Pindoba	Propriá Néopolis Japoatã	1979 – beginning of the works	2.425 hectares - 520 lots 1690 hectares flooding – rice 732 hectares aspersion – vary cultures
Betume	Néopolis Ilha das Flores Pacatuba	1976 – beginning of the works 1978 – Betume I - beginning of the operation	2.800 hectares 746 lots with 4 hectares de area average - rice, fish

Sources: CODEVASF, 4ª SR

As DINIZ and FRANCE "the rice production was seriously affected by the action of the CODEVASF, in the area. It had the dismounting of a structure of traditional production, with strong consequences that, one decade later, still couldn't back to previous values "(1990, p. 160). All the economical and social structure was shaken, intensifying the migration and emptying the area. With the implantation of the irrigation projects, initially, it had fall in the harvested area and in the rice production, but, in a slow and gradual way, the use of new technologies and the possibility of two annual harvests had resulted in the increase of the production and the productivity.

Analyzing the previous period to the intervention, that is the year of 1970, it is observed that the rice production was present in almost all the cities bathed by San Francisco River, exception of Canindé and Poço Redondo, because in these the natural conditions, with the presence of canyon, hinders the flood-plains formation. The concentration of the production occurred in a more intensive way from Propriá, reaching its maximum level in

Brejo Grande, with 4.923 tons (*Table 1*). In the cities to the sum of Propriá, the small flood-plains made possible a production of minor meant but, important for the local population.

Twenty and five years after the intervention, it was evidenced that the cities of Porto da Folha and Canhoba had left to produce, while Gararu and Amparo of the San Francisco had presented decrease of production of 93,38% and 63,35%, respectively. On the other hand, Brejo Grande, that wasn't the target of the intervention, continued to be the greater producer, reaching 8.514 tons, in year 2000.

In period 1970-2000, in areas of small and average flood-plains, it is evidenced loss of production. Only in the cities next to the estuary, with occurrence of great flood-plains, positive growth was observed (*Figure 2*). Moreover, the CODEVASF, through its presence in the irrigated areas, was responsible for the increase of productivity, especially in Pacatuba and Japoatã. The Figure 3 demonstrates the reduction of the harvested area that occurs in most of the cities, with exception for Brejo Grande, Pacatuba and Japoatã.

Considering the transformations occurred in the rice culture in the Low San Francisco and establishing relation with the social conditions presented in the area, it is observed that in the period between 1970 and 2000, there are registers of changes, even so the cities still keep low levels of conditions, what it was not expected considering the volume of resources applied in the region, as compensatory form and in the search of the improvement of conditions of population's life.

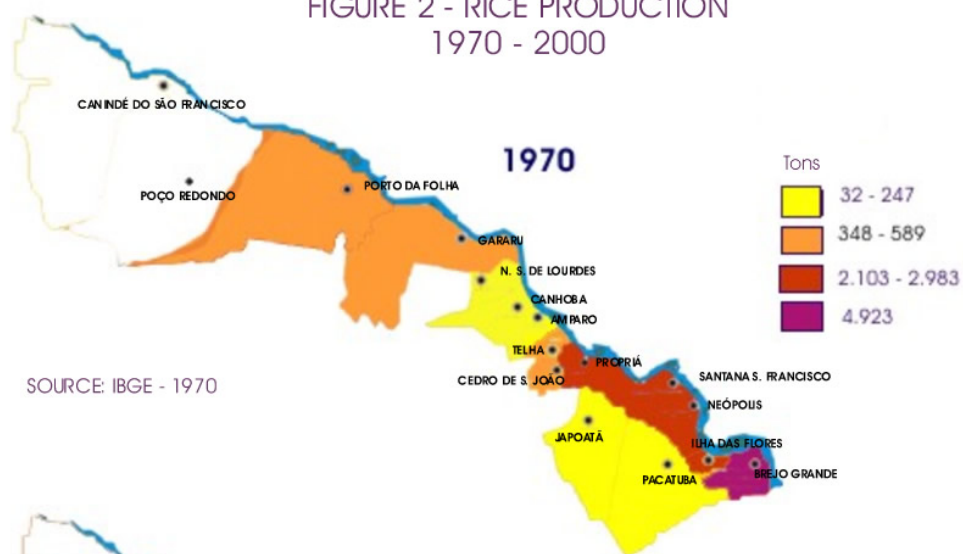
Canindé of San Francisco, situated more to the sum, has the best situation because it is the target of public politics to the irrigation developed by the government of the State of Sergipe. Although there is irrigation in the city, it does not have production of rice in function of the soil conditions. In turn, Brejo Grande, situated in the estuary, has its activities directed toward the farming of rice and bay coconut. The pastures have little meant as well as the cattle creation. Without irrigation projects, it keeps the activities under traditional molds, remains with lesser value and variation of the IDH. In fact, the growth of the production in Brejo Grande is because of the oscillation of water's level, next to the estuary, that makes possible the wadding of flood-plains, in accordance with the flow to the tides.

Table 1
Lower part of São Francisco at Sergipe
Variation of rice cropped area, production and productivity
1970-2000

Municipal Districts	Cropped area hectares			Production toneladas			Productivity Kg/hectare		
	1970	2000	Var. %	1970	2000	Var. %	1970	2000	Var. %
I - Irrigation Politics									
Cedro de São João	320	304	-5	426	1 231	189.0	1 331	4 049	204.2
Ilha das Flores	991	1 687	70.2	2 103	6 961	231	2 122	4 760	124.3
Japoatã	79	108	36.7	65	418	543.1	823	4 836	487.6
Neópolis	1 831	1 212	-33.8	2 983	5 006	67.8	1 629	4 731	190.4
Pacatuba	275	625	127.3	247	2 576	942.9	898	4 758	429.8
Propriá	1 567	1 519	-3.1	2 832	6 059	113.9	1 807	4 843	168.0
Telha	526	462	-12.2	589	1 870	217.5	1 120	4 711	320.6
II - Without Irrigation Politics									
Amparo S. Francisco	115	8	-93	138	9	-93.5	1 200	113	-90.6
Brejo Grande	2 145	2 580	20.3	4 923	8 514	72.9	230	3 300	1 337.8
Canhoba	170	0	-100	224	0	-100.0	1 318	0	-100.0
Canindé S. Francisco	0	0	0	0	0	0.0	0	0	0.0
Gararu	295	40	-86.4	382	140	-63.4	1 295	3 500	170.3
N.Srª de Lourdes	26	10	-61.5	32	35	9.4	1 231	0	-100.0
Poço Redondo	0	0	0	0	0	0.0	0	0	0.0
Porto da Folha	306	0	-100	348	0	-100.0	1 137	0	-100.0

Source: IBGE

LOWER PART OF SÃO FRANCISCO AT SERGIPE
FIGURE 2 - RICE PRODUCTION
1970 - 2000



SOURCE: IBGE - 1970



SOURCE: IBGE - 2000



SOURCE: IBGE - 1970 - 2000

The total population, in period 1970/2000, had a differentiated behavior among the cities. Cedro de São João, Brejo Grande and Canhoba had a decrease in the total population (*Table 2*). The first of them is situated in an area of influence of the irrigated perimeters and the others aren't. It is still observed that such cities had an addition in the urban population, as well as all the others cities of the Sergipe. Low San Francisco, what means that the decreases occur because of the agricultural exodus for the urban centers for the capital of the state, Aracaju and for the municipal headquarters.

Brejo Grande, Cedro de São João, Canhoba, Gararu and Nossa Senhora de Lourdes had presented decrease in the agricultural population, common fact in Sergipe, in the period. Only the second one was the target of irrigation politics.

Canindé do São Francisco presented an atypical growth in the period. The total population increased in 525, 8%, the urban one in 2.462, 8% and the agricultural 241, 6%. This situation was because of public politics able to attract a great population contingent, originating some cities from Sergipe and other states, for example Bahia, Alagoas and Pernambuco. Amongst these politics, the Project of California Irrigation, the construction of the Plant Hydroelectric de Xingó and the new municipal headquarters and the implantations of agricultural nesting are distinguished, generating great expectation of job and income. Poço Redondo, neighboring city, was also benefited of these politics and presented more moderate growth.

The IDH presented a growth of more than 100% in all the cities. These were the biggest indices that had occurred outside the area of influence of the irrigated perimeters, as the case of Poço Redondo, who had it because of the fortification of compensatory public politics. Even though, this city is one of the poor of Sergipe and Brazil. With the implantation, in the second half of the eighties, of the first project of agrarian reform, Barra da Onça in this city, the relative success of the enterprise produced new projects, resulting in other occupations and encampments in the region that had intensified the division of the land and the growth of the agricultural population.

Even so all the cities during the studied period have presented positive variation in the components of the IDH, it is evidenced that the values still are medium. Cedro de São João presents the best situation (0,684), then Propriá with 0,653. This city presented the lesser growth of IDH in the period (102, 8%).

LOWER PART OF SÃO FRANCISCO AT SERGIPE
FIGURE 3 - RICE CROPPED AREA
1970 - 2000

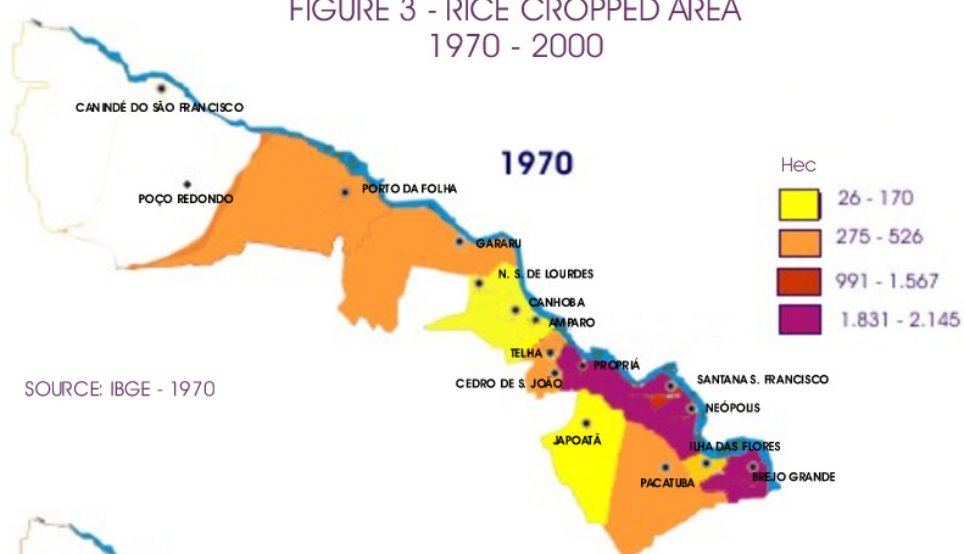


Table 2
Lower part of São Francisco at Sergipe
Change of Total, Urban and Rural Population, and IDH variation
1970-2000

Municipal Districts	Total Population		Urban population		Rural population		IDH	
	1970	2000	%	1970	2000	%	1970	2000
I - Irrigation Politics								
Cedro de São João	5.454	5.378	-1,4	2.914	4.650	59,6	0,278	0,684
Ilha das Flores	6.632	8.281	24,9	3.037	3.796	25	0,239	0,584
Japoatã	6.978	13.020	86,6	2.266	3.866	70,6	0,250	0,604
Neópolis	16.311	24.728	51,6	7.262	14.522	100	0,256	0,61
Pacatuba	9.469	11.536	21,8	802	2.533	215,8	0,227	0,584
Propriá	21.309	27.385	28,5	18.356	23.567	28,4	0,322	0,653
Telha	1.945	2.638	35,6	638	1.063	66,6	0,226	0,601
II - Without Irrigation Politics								
Amparo S. Francisco	1.886	2.182	15,7	917	1.205	31,4	0,229	0,602
Brejo Grande	7.989	7.102	-11,1	3.120	3.947	26,5	0,251	0,55
Canhoba	4.734	3.965	-16,2	1.219	1.595	30,8	0,203	0,597
Canindé S. Francisco	2.837	17.754	525,8	363	9.303	2.462,8	0,217	0,58
Gararu	10.689	11.363	6,3	1.714	2.988	74,3	0,202	0,572
N.Srª de Lourdes	3.971	6.023	51,7	853	2.965	247,6	0,191	0,583
Poço Redondo	9.298	26.022	179,9	811	6.360	684,2	0,155	0,536
Porto da Folha	15.924	25.664	61,2	4.139	8.712	110,5	0,213	0,556

Source: IBGE

Thus, VARGAS (1999) stands out that despite the strategy of development of the national plans of the period of 1970 to the 1989 to emphasize the reach of a social end of rise of per capita income and of the conditions of life of the population, the theoretical arrangements of the planning and the structural guiding of the plans had been directed and implemented for a better performance of the economical space. The planned region demonstrated the construction of a technician-functionary space, commanded by successive plans of economical development, where the motor force was focused on irrigated regions.

SILVA (2003) affirms that "the amount of the presented complaints discloses that the Perimeters had not been capable to minimize the consequences of the errors of the barrages constructed to the sum of the river, as well as they had been incapable to promote the development of the region from the consolidation of a modern and agricultural project that could generate income, raising the economical and socio-cultural standard of the partners and forming a solid middle class enterprise in the field in tuning with the expansionist necessity of the capital".

In a tip of the process, the general context of neutrality politics and technicism of the development model did not allow to consider the social dynamics of the relations of production, and in the other, the imperative performance of the CODEVASF, acting hastily and subordinate to the necessities of the electric sector.

5 - The current Management of the Basin of the San Francisco

Diverse solutions have been pointed to the revitalization of the Low San Francisco: hydro-agricultural exploitation of small and average flood-plains; programs of improving of the sanitation and environmental education; recovery of the native bushes, the edges and the adequate handling of ground; improvement of the navigation; implementation of the areas for fish activities and the program of tourist development; fortification of the Committee of the Basin of the San Francisco and a integrated decentralized and participative management of the hydrographic basin. It is exactly in the context of these two last actions that there are the great changes in the region, therefore the resolution of the hydro-ambient and socio-economical problems of the Low San Francisco pass through a new model of public politics of management of the region. It would be developed in order to privilege the participation of the society, with the adoption of the hydrographic basin as planning unit, what it becomes of basic importance the boarding of the quarrel of the territorial planning, in this work, under this new approach.

The hydrographic basin, ahead of the increasing importance of the water for the society, passed to be used as referential territorial for adoption of politics of planning or handling and exploitation of natural resources, changed into a basic unit of planning and ambient management. Thus, in several countries of the world, this scale comes being taken as a “backbone” for releasing processes of regional development, for instance like in France where the advances had been significant (Ministère de l’Aménagement du territoire et de l’environnement, 1998).

In Brazil, the management of hydrographic basins is something recent, being considered as an experience "in construction". It was from the Water Code, of 1934, that diverse laws had been created, initiating the process that, later, had come to base the water management, but, it was in 1997, that this question gave an important step, when was published law 9,433/97, instituting the National System of Management of Water Resources - SNGRH - and establishing the principles of the National Politics of Water Resources: the hydrographic basin as unit of planning; the integrated, decentralized and participative management; the multiple uses of the water with priority for the human supplying, in case of scarcity and the economical value of the water.

This Law foresees the institution of Committees of hydrographic basins - CBH aiming at to promote the debate of the questions related to the water resources and to articulate the performance of the intervening entities; to decide, in administrative lower court, the conflicts related to the water resources; to approve the Plan of Water Resources of the basin; to suggest values to be charged for the use of the water resources and to establish the mechanisms for this collection.

In 1998, a council named “Conselho Nacional de Recursos Hídricos” (CNRH) is instituted. It has a normative and deliberative character, as the most expressive agency of the hierarchy of the SNGRH. In 2000, is created the National Water Agency (ANA), autarchy with administrative and financial autonomy, tied with the Ministry of the Environment, with the mission to implement the National Politics of Water Resources and to develop the SNGRH. In rivers of the federal level, ANA is going to develop implementing pioneering experiences of management in the basins of the rivers Paraíba do Sul, Piracicaba, Doce and San Francisco. This last one is considered the greater challenge, because of its dimension, the complexity and the strategic importance of this basin.

5.1 - The Committee of the hydrographic basin of the river San Francisco

In June of 2001, the CNRH approves the creation of the Committee of the Hydrographic Basin of the river San Francisco - CBHSF, based on the principles of 9.433/77 Law and on the basis of the resolution n° 05 of the CNRH. ANA coordinated the methodological orientation of the installation process and assured the resources for the implementation of the program mobilization program in the scope of the basin of the San Francisco. The members of the CBHSF had been elected among its pairs, with meetings in segment, carried through in each one of the component states of the Basin. In December of 2002, the 60 members of the Committee and its respective substitutes had been installed, thus distributed: 24 members of the segment “water users”, 15 of the “civil society”, 01 of the “aboriginal communities”, 08 of the municipal public authorities, 07 representatives of each State and 05 for federal government.

However, observing the distribution of the vacant of the Committee for categories, we see a situation of Power very different from the past. From beginning, the presence of users and the civil society in the Composition of the Committee, and what it is more important, the expressive proportional weight that these segments represent in the total: the users with 40% and the civil society with 25%. That is, such segments represent 65% of the total, while that the federal level does not reach 10%. The constitution of the Committee of the Hydrographic Basin is a great landmark so that the society can assume the management of waters of the river San Francisco, therefore the Committee will have to function as a true "parliament of waters", brightening up the existing problems, nullifying the conflicts, promoting the organization of the governmental interventions and privileging the diverse multiple uses of waters, thus moving away, definitively, the hegemony of only one great user. Therefore, it is about a new form of management boarding of the space, that despites the great efforts and governmental interventions, did not reach the estimated ones of the sustainable development.

If the magnitude of the Basin of the river San Francisco will be considered, the number of 60 members does not reflect and nor contemplates all the segments, not only in function of the great territorial extension, as well as, also, for the great existing conflicts, of form if to effect one adequate management of the Basin. Therefore, one becomes necessary to reflect more on the shared public administration that can be adjusted to the geographic, partner-economic context and politician and that it reflects of balanced form the composition of the social representations of the region, through the construction of a system of planning and negotiation of public politics, that involves the Committee of institutional Basin and a

new local arrangement, allowing the economical social and ambient success in the implementation of the politics.

6 - Final Considerations

The plan of Exploitation of the Valley of the San Francisco of 1950 was totally totally changed by the priorities of dams in its main stream bed for aims of energy generation, bringing as consequences the hegemony of an user in detriment of too much uses of the basin. The importance of the energy in the economical development of a region is not questioned, however, the negligence of other priorities that propitiated the generation of job and income in the region is something that we must reflect!

The model of regularized outflow, imposed by the CHESF, without taking in consideration the historical behavior of the regimen of the river, led to a situation of stoppage of important economical activities as fishing and agriculture, causing poverty in the edges of the San Francisco. The situation becomes more complicated; therefore, the resources that could be prioritized to revitalize the river are being placed to transpose its waters for other regions, as if it already was benefited enough, the lands of its basin.

The politics of intervention of the State in the basin of the San Francisco would have to be made with a bigger intermeshing enters the some agencies in action, taking in account some interests of the population without creating distinctions, being come back toward the man of the region and not benefiting to groups and strange and external interests.

Then, it is deduced that the management of the waters that had being implemented in the basin of the San Francisco did not aim at its multiple uses, nor brought the development of the diverse sectors of integrated form to benefit the regional economy. Thus, it is necessary a new model of management of the hydrographic basin of the river San Francisco, through the formularization of a Managing Plan that can direct the future uses of the water inside and out of the basin, applying the grant and the collection of the water and of those users who, admittedly, are with income-producing economic activities.

The revitalization of the basin is something unquestioned and it can't be postponed. The control of the actions by the society must be the starting point and, for this it becomes necessary the fortification of the Committee of the Hydrographic Basin of the San Francisco: with a support technician and the creation of the Agency of the Basin. The European experience in particular "les Agences of l'eau" of France can be the reference for the Basin of the San Francisco; more especially as the Brazilian policy of water resources has been inhaled in the Policies of these countries (Office international de l'eau, 2004).

Considering the scale of the basin of the San Francisco, it is important the regular functioning of the Regional Advisory Chambers of the High, Average, Low and Sub-Average San Francisco. They could be decentralized units of the Committee, bringing, thus, the debate of regional questions, in search of the collective interest.

Thus, the national policy of water resources that praises the possibility of the politician-administrative decentralization on waters, strengthened for the congregation of municipal, state organization and of the civil society. Through Committees of hydrographic basins that will be accomplished with profits for the all society. The great challenge consists of the arrangement of an effective and efficient coordination of all these actors at different levels such as, technical, political, administrative and sectoral. The aim to reach is the defense of the social interests, especially for the people who are living in the basin, toward a sustainable development of the region.

References

ANA - Agência Nacional de Águas / GEF – Global Environment Facility (Fundo para o Meio Ambiente Mundial) / PNUMA – Programa das Nações Unidas para o Meio Ambiente / OEA – Organização dos Estados Americanos. PAE - Programa de Ações Estratégicas para o gerenciamento integrado da bacia do rio São Francisco e da sua zona costeira: Relatório Final. Brasília: TDA Desenhos & Arte Ltda., ANA, 2004.

ANA/GEF/PNUMA/OEA. DAB - Diagnóstico Analítico da Bacia. Brasília: ANA, 2003

CODEVASF. Plano Diretor do Baixo São Francisco. Brasília: Ministério do Interior, 1975.

CODEVASF. Plano Diretor para o aproveitamento dos recursos hídricos da bacia do São Francisco no Estado de Sergipe. Brasília: Ministério do Interior, 1984.

DYNA/BECON – Baixo São Francisco: Estudo de Viabilidade para o aproveitamento hidroagrícola das várzeas de Itiúba(AL) e Própria(SE). Rio de Janeiro, DYNA Engenharia Ltda/Bureau Central d&Etudes pour les équipements d’Outre-Mer, 1972.

DINIZ A. e FRANÇA V. As Áreas de Exceção Agrícola de Sergipe e Alagoas. Recife : SUDENE, 1990.

FONSECA, Vânia. A intervenção do Estado no Baixo São Francisco Sergipano. Tese (Doutoramento em Geografia) Instituto de Geociências e Ciências Exatas. Rio Claro: Universidade Estadual Paulista, 1998.

Ministère de l’Aménagement du territoire et de l’environnement. La Gestion de l’eau en France, une démarche reconnue. Paris, 1998.

Office international de l’eau : www.oieau.fr/oie/nouvelles/fnouv_dern.htm . Les nouvelles - Dernière Edition - N°15, Décembre 2004 (pdf).

SILVA, Tânia M. da e LOPES E. S. Múltiplos Olhares sobre o semi-árido nordestino. Aracaju: FAP, 2003.

VARGAS, Maria Augusta M. Desenvolvimento Regional em questão: o Baixo São Francisco revisitado. Aracaju: NPGeo/Universidade Federal de Sergipe, 1999.