SALTO CAXIAS HYDROELECTRIC POWER PLANT CONSULTATION PROCESS AND PUBLIC PARTICIPATION A REAL TOOL FOR SUSTAINABLE DEVELOPMENT

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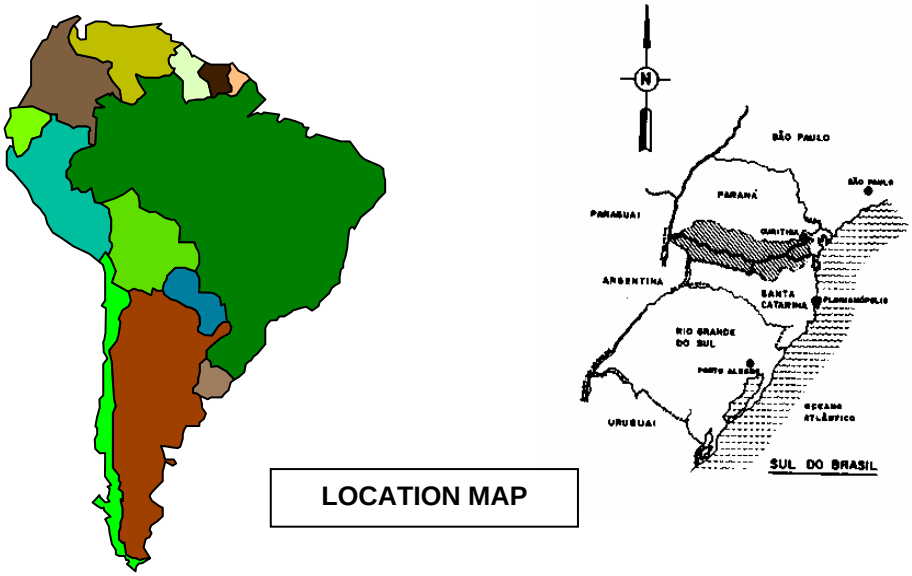
ABSTRACT

This paper presents the consultation process and public participation in the construction of Salto Caxias Hydroelectric Power Plant, in southern Brazil, and details how the actions taken during these processes helped to implement with success the resettlement of approximately 900 families of rural works, that had to give up their land allowing the formation of the reservoir, and the economical development plan designed for the region at that time, called PROCAXIAS, that is currently being carried out creating jobs, helping to recover the economy of the region somehow stagnant since the early 80's.

SALTO CAXIAS LOCATION AND MAIN CHARACTERISTICS

Salto Caxias Hydroelectric Project is located in the Iguaçu River, Paraná State, Southern Brazil. The power plant, one 1,240 MW enterprise is built 180 km upstream the Iguaçu Falls and has a reservoir area of 140 km² that flooded 1,120 rural properties in 9 counties in the southwestern part of the state. The Rolled Compacted Concrete dam finished in August of 1998, is 63 meters high and has a length of approximately 1,000 meters. Four 310 MW generators are delivering all the energy since the end of the year 2000. The construction began in 1995 and the filling of the reservoir was accomplished in September of 1998. The total coast of the project was US$ 1,090,000,000.00, including interest during construction and a quarter part of this amount, almost US$ 250,000,000.00 was expended in the implementation of 24 Environmental Programs. The location of the power plant can be observed in the figure below.



LOCATION MAP

At the beginning of the process a census study identified more than 900 families as owners of small properties or “landless” rural works with a big need of help to be relocated and insert in the regions economy, if you do not want them to be, in the end, living in shanty towns in the suburban areas of the Brazilian big cities. The area flooded was colonized in the late 50’s and early 60’s, by rural workers coming north from extreme south Brazil, mainly from the State of Rio Grande do Sul, looking for land to plant. They are in the majority from Italian and German heritage, and for that reason very attached to the land they own or work. The Southwest of Parana State is a place where the landless movement has one of its strongest roots, because the colonization process was not very peaceful.

BRAZILIAN ENVIRONMENTAL LEGISLATION AND THE SALTO CAXIAS PROJECT ENVIRONMENTAL LICENSING PROCESS

The Brazilian Environmental Legislation is enforced since 1986 after the publication of the resolutions issued by the Brazilian Environmental Council, CONAMA, and regulated after the promulgation of the new Brazilian Constitution in 1988. This constitution is the only one in the world that has an entire chapter dedicated to environmental issues. The Brazilian Institute for the Environment, IBAMA, the federal environmental authority organism that regulates and controls the environmental licensing process has to issue three permits or licenses for the implementation of big engineering projects as stated in the CONAMA's Resolution. The first permit is the Previous License, linked to the inventory and viability studies phase, which is issued upon the approval by the environmental authority, of the Environmental Impact Assessment Studies, EIA and Environmental Impact Report, RIMA and the accomplishment of Public Hearings. For the Salto Caxias case, this license was issued in December 16th , 1993. The second permit, the one that allows the beginning of construction work at the job site, is the Installation License, linked to the design phase, and is issued upon approval by the environmental authority of the Environmental Basic Project, PBA. For the Salto Caxias Project, this license was issued in February 22nd , 1994. The third permit, the one that allows the beginning of operation of the project, is the Operation License, linked to the end of the construction phase, and is issued by the environmental authority after a field inspection of the implementation of the environmental plans and programs foreseen in the Environmental Basic Project. For the Salto Caxias case, this license was issued in October 8th , 1998.

THE INITIAL SITUATION

At the beginning of the studies to elaborate the Environmental Impact Assessment Report, the document needed to be approved by the environmental authorities in order to issue the permits necessary to build the power plant, the position of the rural workers was strongly against the constructions of the dam. These people used to live in a region were at least four big dams were built, under the old law prevalent in Brazil, in a time when by the progress of the country, the strategic projects were considered vital to the development and so the military government declares the area as "national

security area", and no questions were allowed to be made. During these times, the people affected by the construction of big dams had almost no rights, unless was clearly the real owner receiving then the real value of the land. Landless workers, living in the land to be flooded were just expelled from the land, driven to shanty towns close to suburban areas of big cities, in what is known as rural exodus. This situation clearly was unsatisfactory because disrupts the economical chains in the countryside, expelling people from the land they work exploding cities with no infrastructure to receive this people, creating more poverty. This problem become apparent a long time ago in the middle of the discussion of land reform problem, but only with the change in the legislation in the country, this problem could be discussed openly. Non-governmental agencies, were created like MST (Landless Workers Movement), or MAB (National Movement for the People Affected by the Construction of Dams), organizing people around the country to fight for their rights. The population of the region of Salto Caxias got organized with the help of this agencies, created another movement CRABI (Regional Movement for the People Affected by the Construction of dams in the Iguaçu River). CRABI in the beginning was against the construction of Salto Caxias instructing the people not to answer the census that were being made in the region so COPEL would not have the data sufficient for the conclusion of the Environmental Impact Assessment Report. They sent a letter to the Company stating that no studies should be made in the region because they did not want the dam to be built.

CREATING A CONSULTATION PROCESS TOOL

When COPEL started some surveys in the area, the CRABI movement occupied the land of the future construction site, demanding discussion and an agreement to allow the works to continue, asking even the participation of the public district attorney, some state representatives and the environmental authority, emerging the problem to the public agenda. The movement always repeats that after several dams built in the region, this one was to be constructed only after an open discussion where they guarantee the rights of the affected people. The participation of the environmental authorities and the public district attorney was a key factor, once the interest was to consolidate the new Brazilian environmental legislation and this venture was at that time, the first one to start after the law had change. With the occupation of the future construction site by the rural workers, COPEL took the initiative and the responsibility of create a mechanism to conduct the discussion. This

mechanism called GEM-CX (Multidisciplinary Study Group), received the support of the environmental authorities, the commission formed by the state representatives, the public district attorney and the rural workers commission, once the decisions should be made by equal value vote of everyone in the commission after meetings of discussion of the problems. The interest of COPEL in a Group like this was that if you could discuss openly every environmental issue related to the project, you probably would share the responsibilities of the process, working in a real partnership with all the actors in the process. The only major problem was to discuss that all the actions to be taken following the decisions of the GEM-CX, had to be bonded by the budget of the project. With the formation of this Group, with the participation of governmental agencies, the rural workers movement had the guarantee that if the actions following the decision of the group were not implemented, the environmental authorities would not issue the necessary permits to conclude the construction and to operate the reservoir.

PUBLIC PARTICIPATION AND ITS OUTCOME IN THE EXPROPRIATION AND RESSETTLEMENT PROGRAMS

After long and tense negotiation in a series of meetings, one agreement was reached, and by advise of the public district attorney and with the approval of the environmental authorities, this agreement was officially added to the Environmental Impact Assessment Report, which by law should be implemented by the entrepreneur, in order to receive all the environmental permits (for construction and for operation). The key institutional reform adopted was that for the first time in Brazil, this issues were being discussed before the beginning of the construction of the dam, in an openly and democratic way, when everyone taking part of the process had the opportunity to give their opinion and make suggestions. These suggestions, bonded by the budget, were in fact added to the Environmental Basic Project, the instrument foresaw in the law to implement the recommendations made in the Environmental Impact Assessment Report. The main issues defined in the agreement were the schedule for expropriation, the schedule for relocation, the participation of the peasants in the definition of the price of the land, their right to choose the local to be relocated, the definition of the size of the area for each family, the definition of the infrastructure to be build in each project, the participation of the families in the management of the construction of the infrastructure of the projects, the participation of the community in the management of the ressettlement project (in partnership with COPEL in the first three years) and the use of conservation action and ecological methods in the implementation of the crops (this last issue strongly defended by the peasants). The principal impacts that the implementation of the terms of the agreement will bring to the process is that we can, in partnership with the affected people, better the management of the natural resources that will be used, in this case the land for the ressettlement. With the enhancement of the managing of these resources, hopefully we will not have as a result of the construction of the Salto Caxias power plant, rural exodus but a fixation of the population in the countryside. The Expropriation Program was implemented by means of payment for the owners for the acquisition of the land at market value, after a survey carried out by a commission formed by Copel technicians and representatives of the owners with the mediation of the Paraná State Environmental Institute, IAP, the state environmental authority. The Resettlement Program was aimed to small farmers, owners of properties smaller than 30 acres, and rural workers with no tenures, or “land less” workers, as they say in Brazil. From the approximately 1,120 families directly

affected by the formation of the lake, 858 were entitled to this Program, under the conditions cited above. From these 858 families, 232 settled for own solution for resettlement or individual projects, and 626 chose the Collective Project. For implementation of this Collective Resettlement Project, Copel made the acquisition of 40,000 acres, with a strong public participation in the selection of the areas, in the nearby region, forming 19 communities with an average of 50 families in each one. In these communities Copel funded agricultural and social assistance for three years after the moving. Each family received an area with a minimum size of 40 acres depending on the size of the group, a brick house with 3 or 4 bedrooms and a barn. The families were resettled on 10 prepared farm sites Infrastructure was developed to support these farms, including housing, storage, water supply, roads, soil preparation, electricity, telephone, education and health services schools. Specific considerations in the resettlement program were:

- conservation of remnant forest areas including tree planting;
- preparation of farmland to minimize erosion and protect waterways from sedimentation (roadwork and terracing of land);
- support and education for the development of organic agricultural practices, to replace the use of pesticides, highly soluble fertilizers, hormones and antibiotics;
- education for both adults and young people designed to assist the growth of both individuals and the community;
- improvements to local healthcare through developing two health centers and a family doctor program and an emphasis on preventative medicine; and
- cultural growth and preservation of cultural and social heritage through supporting annual cultural events.

Resettlement occurred from 1996 to 1998. While the transition period may not have been as smooth as possible, however overall the resettlement process has been successful. In 2001 the farming communities were producing substantial crops, a significant proportion of which were organic soy and corn.

PUBLIC PARTICIPATION AND ITS OUTCOME IN THE REGIONAL DEVELOPMENT PLAN

As the 140 Km² lake flooded 1,120 rural properties in 9 counties in the southwest part of the state, the removal of a quarter of the population of the region was also a big impact to deal with, in order to avoid any economic problem that would occur in these small towns. This issue was also one of the main themes discussed in the Multidisciplinary Study Group and many actions were defined and taken to implement the economical development plan designed at that time, called PROCAXIAS, which is currently being carried out for the region creating jobs, helping to recover the economy of the region somehow stagnant since the early 80's. The issue that raised the local economy question was the flooding of a small hydroelectric power plant, Foz do Chopim with 40 MW of installed capacity, owned by COPEL, with the formation of the Salto Caxias reservoir. This power plant, running since the 60's was at that time the only formal employer of the small town of Foz do Chopim a district of the county of Cruzeiro do Iguaçu, and with the closure of the power plant there was the fear that with no jobs people would leave the town forcing small business to close the doors because of a lack of customers. The community came to COPEL with a proposal: that the company paid some amount as indemnification and they would leave the place abandoning the

village. To help find a solution COPEL hired SEBRAE, a governmental organization that helps and support the creation and development of small business. SEBRAE started by making a survey of the economic situation of the town, its resources and a social diagnosis of its population. Then they try to identify market and business opportunities that would replace the 40 jobs that would be lost with the closure of the power plant. SEBRAE found three interesting situations:

- Close by Foz do Chopim (35 Km) there is a city called Dois Vizinhos (approximately 45,000 inhabitants) that gets all the fruit and vegetables they consume in the town from a place far way paying a higher price due to the need of transport. In the other hand there was a group of small farmers in Foz do Chopim that, if trained and organized, could produce the fruit and vegetable at a more competitive price. So SEBRAE organize the producers into a cooperative, trained them to produce fruits and vegetables in an organic way, even helping them get the Brazilian green label for their products. SEBRAE also made all the contacts with the food markets in the town helping the cooperative to commercialize its products. Nowadays this cooperative sells all its production not only to Dois Vizinhos but to all the cities of the region, since their products have the strong appeal of being organic and environmentally correct.

- In the survey made by SEBRAE, they discovered 05 women that knew how to sew, using old machines they inherit from their grandmothers. With the help of COPEL, that bought 05 sewing machines and constructed a small warehouse, SEBRAE started a small cloth factory. They trained these 05 women to use the new machines and these women trained another 05, then they formed a cooperative. SEBRAE made the contact with a famous cloth brand in Sao Paulo and they accept the risk of produce some cloths as an experiment. As the cooperative was organized and the workers had have a good training and support, they could produce quality cloths with a very competitive price. Nowadays the cooperative has 30 workers (women and men) and all the production is made in Foz do Chopim, receiving from Sao Paulo only the brand tags to be attached.

- Another opportunity found at that time was that there was a need to clean the future reservoir basin (140 Km2), cutting trees and cleaning the areas from debris and sanitary installations, to prevent problems for

the water quality and navigation among others. SEBRAE created a cooperative preparing and training some people of the town to perform auxiliary services, such as this one, and asked COPEL to hire them to execute the cleaning job. Nowadays, with all the training and experience received, this cooperative performs several kinds of auxiliary jobs, mainly for the municipalities of the region.

After six months instead of the 40 jobs that used to exist due to the small power plant, with help of SEBRAE and total support of COPEL, there were close to 100 jobs created, and no more will to leave the town. After that the Company decided that would be a good idea to extend this kind of action to all counties affected by the formation of the reservoir creating the PROCAXIAS Project. COPEL decided to extend the contract with SEBRAE so a regional development plan would be developed for the nine counties affected by the formation of the reservoir as a compensation measure, for the loss of population (the families displaced by the lake) and any other economy loss. The Company and SEBRAE also decided that this project should not only help small business and the city economy but also prepare the municipalities governments to work in a new manner. SEBRAE started by making a survey of the economic situation of each one of the counties, its resources and a social diagnosis of its population, then they try to identify market and business opportunities. With this work they could define an economic profile for each one of the counties. After the survey SEBRAE found very interesting facts that could help create and develop new business. For instance they found that all the small domestic products such as brooms, pans, plastic cups and plates among others, with a good demand in the cities, came from as far as Sao Paulo (800 Km far). The same with furniture and small plastic toys. So there was some good business opportunities. The main problem was, who would financing this new small business, the Company was willing to help, but was not able to give all the financial support needed. The solution was the creation in each county of a Municipal Development Fund. This Fund would be managed by a commission formed by some municipal authorities and some community representatives. Any entrepreneur willing to open a business should present a project to the Commission. This project should pass the scrutiny of SEBRAE technicians before receive the final approval of the Commission. After the approval, the entrepreneur would get the money from the Fund and with the help of SBRAE open the new small business guaranteeing at least 3 to 4 new job positions. After a grace period the loan should be paid back to the Fund to help finance new opportunities. At that time the mechanism looked like would work well, but still there was a

question not answered: Who is going to put money into the Fund? In the Brazilian legislation there is a law to compensate the municipalities for loss of land caused by the formation of a reservoir to feed a hydroelectric power plant. The money that goes to each municipality is a function of the flooded area and the production of energy of the power plant and is passed to the counties monthly by the Federal Government. Once this money reaches the municipalities, the use of it is a local matter, so SEBRAE and COPEL convince the county representative houses to pass a municipal law obliging the municipal governments to pass a small percentage (10%) of this money to the Fund. In the year 2000 these Municipal Development Funds (there are 9) helped created more than 50 new small business in the affected counties, with more than 300 new direct job positions (almost 1,000 indirect job positions) which is a good number taking into account the size of the local economy.

With the formation of these funds, the matter of help and support private entrepreneurs was somehow solved with an instrument capable of create new jobs helping to bust the regional economy. There was yet the problem of the affected municipalities, small towns not prepared to deal with the new reality. For this matter SEBRAE prepared a lot of courses and tanning for the public employees, and the Company helped buying new computers and equipments. The municipal offices were better organized and the public service changed starting to be more efficient, reaching the population. After a year of preparation the 09 mayors of the cities decided to create a Municipal Consortium, with the objective of not only have a more strong politic position inside the State but also, divide some services helping save some money. For example, in Brazil each municipality has to buy its own medicines to distribute to poor people, from the year 1999 the nine municipalities started buying all their medicine together and for this reason finding better deals and saving money. With this simple action the municipalities saved from 30% to 50% of the money spent in medicine. In Brazil each city has its own equipment to construct and maintain the rural roads, and the general position of the small towns is that the heavy machinery sometimes is broken or there is no money for fuel. The municipalities participants of the PROCAXIAS Consortium created one crew for construction and maintenance of rural roads. Each city donated one equipment and provided its operator, the crew rotates in a weekly manner working in each municipality, the city that receives the crew provides fuel for the equipment and food and housing for the operators. This manner of work allowed an economy of more than 60% of the money spent by each city alone, and at least once each two months the crew is in one county. Important events, like religious holidays and local festivals used to be done without planning with, sometimes, events occurring in neighboring cities

concurring with each other. By the year 2000, there was created a calendar of events (sports, religious, local holydays, etc), allowing people from one city to go to a party in another city creating a better understanding among the communities. The fishing and boat racing events, that happens due to the lake has drawn visitors from all the state and even from other states, busting the economy of the towns.

CONCLUSION

The principal lesson learned that we can derive from this case is that the public participation in the process helped the implementation of the plans and programs foresaw in the environmental studies. We learned that in a real partnership, when you are confronted with a problem, people can sit in a table, discuss the problem openly and get real good suggestions that will help, and even decreases costs. It is very important, at least for the success of the Salto Caxias project, the sharing of the responsibilities with the affected communities. The lessons are replicable in other cases because the participation of the population is of fundamental importance for the process to be legitimated by the society. When a process like this, involving a big engineering project, where a large amount of investment is at stake is democratically discussed you can have the support of the public once they fill as a participating part of the decision process and not only an object. With this feeling and this work in partnership the chances that any environmental plan and program, aimed to compensate and mitigate environmental impacts caused by big engineering projects, reach success increase enormously. This case, as the first one being done in this fashion in Brazil, started with some conflicts and because of that a lot of time and a considerable amount of money were spent. So for other projects, an initial work of contacting all the population, communities, governmental and non-governmental agencies and environmental and other authorities, must be made because this is a way to ensure that the construction and implementation of such a project can be transformed, with the participation of the society, in a real tool for development. Finally we can conclude that such an opportunity, like building a big engineer enterprise, in this case a hydropower dam, besides the negative environmental and social impacts it brings, can and must be used by the affected population as a tool for regional development, bringing economical and social advantages in the way to ensure the real sustainable development of the region.