

INTER-AMERICAN DEVELOPMENT BANK



MULTIPURPOSE BABA PROJECT

(EC- L 1026)

***ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT
(ESMR)***

April 2007

A. Project Description

1. The Baba Hydroelectric Project (the “Project”) involves the construction, operation and maintenance of a dam and diverter to transfer water from the Baba River, in order to increase the energy generation of an existing hydroelectric power plant called the Marcel Laniado de Wind (MLW) Plant.
2. The Borrower is the *Fideicomiso Hidropacífico*, under the administration and control of the Project Sponsor (*Consorcio Hidroeléctrico del Litoral - CHL*). CHL is composed of *Construtora Norberto Odebrecht S.A. (CNO)* and *Odebrecht Investimentos em Infra-Estrutura Ltda. (OII)*, collectively named “Odebrecht Companies”, and local private investors: *Cartopel*, *Aquamar S.A.*, *SONGA S.A.*, *Importadora El Rosado S.A.*, *Negocios Industriales Real S.A. (NIRSA)*, *IPAC S.A. (IPAC)*, and *Papelera Nacional S.A.* CNO will be in charged of constructing and operating the Project.
3. The Project is located within the administrative and political jurisdictions of the towns of Buena Fé and Valencia, Province of Los Rios, Ecuador. As a reference, the reservoir is located 15 Km south of the rural community of Patricia Pilar and 27 Km north of San Jacinto de Buena Fe, City of Buena Fe. The project influence area encompasses few step canyons and mostly agricultural rural areas, where the environment has been highly disturbed by the practice of monoculture and use of agrochemicals. Large extensions of banana, palm, and rubber plantations, among others, are found in both, the direct and indirect project influence area.
4. The Project will be built near the confluence of the Baba and Toachi Rivers, equidistant between the cities of Quito and Guayaquil (see Figure 1). It involves the construction of:
 - a. Dam and Reservoir: a 20-meter-high dam (the Baba dam) downstream from the confluence of the two rivers, which together with the three additional dams that constitute part of the diversion scheme (described below), will create a reservoir of approximately 110 million m³, flooding approximately 1099 ha. (1013 ha the main reservoir, and 86 ha along the diversion scheme). The average flow into the reservoir is 100.4 m³/s, with a minimum flow of 11 m³/s and a maximum flow of 1235 m³/s. The average expected residence time is 12.9 days and the average depth is 10 meters, with maximum depth of 20,9 meters. The normal operation level of the reservoir is 116 meters above sea level, fluctuating from 117,6 to 109 in wet and dry season, respectively.

- b. Diversion Scheme: an 8-km open channel diverter, formed by a series of 20-meter-high dams¹ in conjunction with channels, from the new reservoir formed by the Baba dam to an existing reservoir called Daule-Peripa, and located within the same macro watershed. The diverter will channel water from the Baba River to the Daule-Peripa reservoir, where the MLW Hydroelectric Power Plant is located. This diverted water would enable additional energy generation from the MLW Plant's existing and currently underutilized capacity. The MLW Plant currently generates 80 MW, but it has installed capacity of 213 MW, and thus no modifications to the existing powerhouse, transmission lines, or switchyards are required. The rationale and objective of the Project is therefore to allow the transfer of additional water to the MLW plant in order to generate up to an additional 75MW using MLW's idle installed capacity.

Project associated facilities, not financed by the IDB, include:

- c. Hydroelectric Generation Plant: The Project Sponsor will build a new 42-MW hydroelectric plant, that would generate power before the water is discharged to the Daule-Peripa Reservoir. This component of the Project also includes a 1-km-long 138 kV transmission line to deliver the energy generated to CHL's members, which are large industrial companies needing a reliable energy source for their production processes. These added works increase the Project's energy output by almost 70% when compared to the original design.
 - d. *Via Entrelagos Road*: a new 22 km road.
5. The construction of the Project will include a workers camp with a capacity to hold 300 workers. Project's construction will take approximately two years to build and will require approximately 1,000 temporary workers. The workforce associated to maintenance and operation of the reservoir will be greatly reduced during operation to approximately a dozen people.
 6. Total Project costs are estimated at approximately US\$194 million, and construction is expected to take up to two years. Initial earth movements and base camp construction started on December 2006, and construction is expected to be finalized by mid-November 2008; the reservoir is expected to be filled by the end of 2008. The Sponsor is seeking financing of approximately US\$155 million for the construction of the dam and diverter. IDB would provide up to US\$77 million, or 40% of Project costs, through a 16-year A loan along and arrange approximately US\$ 11 million from B lenders to complete the total senior debt requirement.
 7. The Multipurpose Baba Project evolved from the interest of the Ecuadorian State in managing hydrological resources of the Guayas river basin —and as part of an

¹ The dams and channels that comprise the diverter take advantage of the natural topography to create the diverter channel, but have no water storage capacity.

- effort to promote the development in the region while also addressing the national shortage of energy resources. The possibility of implementing this (or a similar hydroelectric project) in the Project area has been considered since the 1960's and 70's and eventually resulted in the currently proposed design alternative.
8. The currently proposed Multipurpose Baba Project evolved from a previous and nearby hydroelectric project conceptualized by CEDEGÉ/Hidronación and shown on Figure 1 ("Embalse BABA Anterior"), which received a lot of opposition from affected communities in the direct influence area, as well as of local and international NGOs, due to the magnitude of the flooded area and the significant social and environmental impacts and risks thereof, including a large resettlement, the isolation of the town of Patricia del Pilar, and the partial flooding of an ecological reserve.
 9. After an exhaustive alternative analysis, CHL won the bidding process with an alternate design that significantly reduced the environmental and social impacts of the Project: (a) the proposed design reduces land acquisition and resettlement by about 85%, instead of 240 families that would have had to be relocated in the original design, only 43 families will be directly affected, and only 29 of those are resident non-owner families; (b) land acquisition is limited to 1,099 hectares compared to the original 3,760 hectares, or approximately a 70% reduction; (c) the dam to be built is only 20 meters high instead of 55 meters; (d) reservoir size was reduced from 600 million to 110 million m³, and (e) no protected areas or ecological sensitive habitats will be affected whereas the previous design implied the partial flooding of a World Ecological Reserve in *Bosque Protector del Centro Científico Río Palenque*.

B. Environmental and social compliance

10. In December 2003 the *Concejo Nacional de Electricidad* (CONELEC) approved the preliminary Environmental Impact Assessment (EIA) developed by *Hidronación* for the bidding process. This preliminary EIA, which referred to the original design, included a significant amount of baseline data, and was supposed to be expanded by the Company granted the concession.
11. A second EIA was developed by CHL² for the alternative and improved new Baba Multipurpose Project. This EIA was presented by CHL to the Ministry of Environment on September 14th, 2006, and was approved on October 27th, 2006³. Per IDB's request, and in compliance with IDB O.P.-710 on Involuntary Resettlement, the EIA included a Preliminary Resettlement Plan⁴.
12. The Environmental License was granted on November 10th, 2006. The key requirements of the license are: (a) compliance with the ESMPs presented in the approved EIA, (b) the presentation of an execution timetable for the development

² The local company Efficacitas was hired to develop the EIA.

³ This EIA has been available in the Bank's Public Information Center since November 9th, 2006 (<http://www.iadb.org/exr/pic/environmental/eiaec11026.cfm>).

⁴ The Preliminary Compensation and Resettlement Plan is also available at the link above.

- and implementation of these ESMPs, (c) compliance with the applicable Ecuadorian environmental laws, and (d) monthly environmental and social monitoring and reporting. Based on the Bank's due-diligence, CNO is in full compliance with the Environmental License and has been adequately implementing the mitigation measures according to ESMPs execution timetable.
13. In brief, in accordance with the SEMA (*Sistema Unico de Manejo Ambiental*) of Ecuador, CNO performed two public consultation events: (Section F describes in further detail the consultation process associated to the project beyond those required by Ecuadorian Law).
 - a. ToR: This consultation process consisted on disclosure of the project components, expected impacts and mitigation measures, and more specifically the Terms of Reference (ToR) for the Project EIA. The process included individual interviews with relevant parties, the installation of a Public Information Center (PIC) in San Jacinto de Buena Fé, which stayed open for two weeks, as well as several public meetings in the project influence area. This initial consultation process took place during the months of June and July, 2006, and the ToRs were approved by the Ministry of Environment on August 24th, 2006
 - b. Draft EIA: Once the draft EIA was finalized, a second consultation process took place, during the months of August and September 2006. The PIC was re-opened for the consultation of the Draft EIA, and upon IDB request has remained open until today to provide additional and updated information to any interested stakeholder. An additional PIC has also been opened in Patricia del Pilar.
 14. Additionally the project obtained the "Certificate of non-Intersection with Protected Areas" on April 20th, 2006; Archeological clearance by the National Institute of Cultural Heritage (INPC) on September 8th, 2006; and the Permit for Exploitative use of Water for a period of 50 years on October 29th, 2006.
 15. Furthermore, in compliance with IDB O.P.- 710 on Involuntary Resettlement and upon's IDB request, CNO developed a Compensation and Resettlement Plan to deal with landowners and non-landowners directly affected by the filling of the dam. Section E describes in further detail the Compensation and Resettlement Plan.
- C. Environmental and Social Impacts and Risks**
16. The key environmental and social impacts associated with the Project and associated facilities are: (For a complete summary of impact generating activities and potential impacts during construction, filling, and operation phases, please refer to Tables C.1 and C.2).
 - a. Flooding of an area of 1,099 hectares of land with the subsequent impact on the current land uses, which is over 90% agriculture. The Project area

is located in an area that has been significantly disturbed with no apparent intact forest or other natural vegetation cover. Small areas that are not in intensive seasonal or perennial agricultural use still exist, but in patches of mostly secondary forests or shrubs near streams and drainages (quebradas). This fragmented habitat does seem to still harbor isolated endemic flora (and likely fauna). Some of these areas will be cleared or excavated and become inundated segments of the 8 km of diverter canals between the Baba dam and the Daule-Peripa system.

- b. The complete or partial flooding of 77 properties (belonging to 69 owners), leading to the relocation of 43 resident families⁵, and the potential partial economic displacement associated with land use changes of approximately 255 seasonal agricultural workers⁶;
 - c. The potential impacts associated with the installation of construction camps and the influx of construction workers (peak of approximately 1,000 worker);
 - d. The potential ecological and social positive and negative impacts associated to changing a river into a reservoir, and the changes in water flow, water quality, and general ecological river integrity generated thereof (e.g. sediment load, changes in fishing population, etc); including the potential ecological and social impacts downstream of the reservoir due to the modified river dynamics, such as minimum constant flow and/or lack of flooding;
 - e. The risk of sediment accumulation and distribution in the reservoir due to inadequate management of the upstream watershed.
 - f. The interference with existing infrastructure, such as the Santo Domingo – Guayaquil Pipeline which will have to be relocated, or the Quevedo-Santo Domingo road and the Quito – Guayaquil highway which will be temporarily closed;
 - g. The construction of access roads and other ancillary facilities (e.g. quarries, cement plants, etc) or new infrastructure such as the Via Quevedo-Santo Domingo bridge; and
 - h. The cumulative impacts in the area associated with existing impacts and poor management of the Daule-Peripa reservoir, particularly with reference to current poor water quality and the consequent social impacts.
17. Additionally, other impacts typically associated with the construction and operation of a moderate dam project are expected such as potential soil erosion and sediment transport up and downstream from the dam, affectation of groundwater flow and existing water wells, dust generation, air emissions from vehicle traffic and cement or concrete plants, storm water runoff, noise emissions from construction, waste disposal, increased local traffic, increased demand on local infrastructure and services (including social services), worker accidents, general disturbances to flora and fauna, and modification of landscape.

⁵ 29 are working families that live and work on the land (i.e. non-land owners) of landowners, and the remaining 14 are resident landowners.

⁶ This is an approximate number based on a survey performed on plantations to be affected.

18. There will be no direct or indirect impacts on indigenous peoples or native communities, natural habitats, endangered species, archeological and/or cultural sites.
19. Permanent impacts include resettlement and changes in land-use, river flow and dynamics, and landscape, however, all other impacts are temporary and can be managed through good environmental, social and health and safety management practices.
20. The principal project positive benefits or impacts are: (a) the provision of environmentally sustainable energy by contributing to displace local generation sources that are older, less efficient, and fossil-fuel based, with the potential subsequent climate impact, and (b) flood risk reduction and control. Additionally, the mixing of the Baba River water in the Daule/Peripa reservoir with the construction of the diversion channel, is expected to improve the poor water quality currently present in the Daule-Peripa.
21. Based upon the Bank's due-diligence, the principal environmental and social risks are:
 - a. CNO's failure to adequately implement the Compensation and Resettlement Plan and properly mitigate impacts on the 69 property owners and 43 resettled families,
 - b. Potential present and future conflicts in terms of downstream users and minimum release from project damn, and
 - c. Past local concerns about the Daule-Peripa reservoir and NGOs generating potential claims to the Project and the subsequent potential reputation risks to the Bank thereof.

D. Environmental and Social Management

22. It is important to note that most important mitigation measure for this project was the alternative design proposed by CHL, as described above in paragraph 9.
23. To manage the environmental and social impacts and risks generated by the project, the Company developed a total of 69⁷ mitigation measures. These 69 measures constitute the Environmental and Social Management Plan (ESMP) of the EIA approved by the Ecuadorian Authorities.
24. At the request of the Bank, the EIA ESMPs will be grouped and enhanced in some specific areas, under an Environmental Management System (EMS). This EMS will provide a better execution and supervision structure, timetable, and assign clear responsibilities and accountabilities. This EMS is being developed consistent with ISO 14001, and includes the following general Plans: (The

⁷ 52 for the construction phase, and 17 for the operations phase.

mitigation measures outlined in ESMPs of the approved EIA are summarized in Table D.1.)

- a. Detailed Environmental and Social Management Plans and Procedures – that link all the expected environmental and social impacts during construction and operation with specific avoidance and/or detailed operative mitigation and monitoring procedures. This Plan will include detail operational procedures for all 69 measures of the EIA ESMPs, plus some specific enhancement of mitigation measures and procedures as requested by the IDB (see Table D.1).
 - b. Basin/ Catchment Areas Management Plan – To assure the mitigation of potential ecological and social impacts associated to changing a river into a reservoir, and general ecological river integrity is conserved, the Project will release a minimum flow of 11.4 m³/sec, which is a flow superior to the minimum flow during the dry season (approximately 3 months of the year). Additionally, the Bank has requested CHL to develop a Basin/ Catchment Areas Management Plan, designed to appropriately dimension, mitigate and/or compensate the impacts and risk associated with the changes on river flow and dynamics as a consequence of the dams and reservoir, including upstream and downstream impacts and risks during project operation.
 - c. Stakeholders Management Plan – designed to map and appropriately manage relevant stakeholders, and engage them in constructive discussions on how to improve the environmental and social footprint of the Project during both, the construction and operation phases.
 - d. Health and Safety Programs (Construction and Operation Phases)
 - e. Contingency and Emergency Response Program, including Spill Prevention Control and Countermeasures (Construction and Operation Phases)
 - f. Compensation and Resettlement Plan. (See section E for details)
25. A significant impact during construction is the expected influx of workforce. However, over 80% of the unskilled labor force (about 800 workers) are expected to come from Buena Fe, Patricia del Pilar, Quevedo and other near-by towns, and will not sleep in the workers camps, but will be transported in and out of the construction site to/from the their towns everyday. Additionally, as noted in table D.1, CNO has developed two programs to mitigate this impact, namely a policy to hire and train local workforce, and to improve services and sanitary infrastructure of Patricia del Pilar.
26. CNO has two independent divisions responsible for the management of environmental, social, and occupational health and safety issues. This two divisions report directly to the Project Director, and are:

- a. Environmental and Occupational Health and Safety Division: Composed of a Division Manager, that oversees the Environmental Unit, the Safety Unit, and the Occupational Health Medical Unit, which have a total of 28, 23, and 6 professionals respectively, including civil, environmental and forestry engineers, biologists, archeologists, a medical doctor, paramedics and nurses.
 - b. Management and Finance Division: Composed of a Division Manager that oversees the Compensation and Resettlement Unit and the Social and Community Relations Unit, which have a total of 10 and 7 professionals, respectively, including seven social workers/assistants in the negotiation team, three community liaisons, two agronomists, sociologists, and a lawyer.
27. Additionally, the Baba environmental, social, and health and safety team, has direct access to CNO's Environmental Corporate Unit, which promotes the implementation of best environmental, social, and health and safety practices globally, has created performance indicators, supervises all mayor works in CNO's portfolio, and provides a ranking or grade on the environmental and social performance to all projects. This grade influences the performance evaluation of the local Project Team, including that of the Project Director.
 28. As stated above, in relation to the potential cumulative impacts associated with the Daule-Peripa, the additional water diverted from the Baba is expected to improve the water quality of the Daule-Peripa reservoir. At any case, the Bank is currently collaborating with the Ecuadorian Government in the preparation of the Country Strategy. In this context the Bank will transmit to the authorities the concerns associated with the current situation associated with the Daule-Peripa reservoir, and it is willing to explore solutions with CEDEGE to improve the situation of the communities affected by the poor water quality and general condition of this reservoir. Additionally, the IDB is requesting CHL to take reasonable efforts to contribute to the solution of past issues, by working out different options with Hidronacion and CEDEGE.

E. Resettlement and Compensation

29. The construction of the Baba Multipurpose Project involves the flooding of an area of 1099 ha, directly impacting a total of 77 agricultural properties, which belong to a total of 69 families.
30. The Company prepared a Compensation and Resettlement Plan (CRP) to design and supervise the execution of all compensation and resettlement activities in compliance with IDB O.P. 710 on Involuntary Resettlement. In general the objectives of the CRP are:
 - Assure that all the affected families have options and are given access to dignified housing solutions equivalent or better than their current ones.

This solution includes all resident families, independently if they are owners or non-owners.

- Assure economic and income restitution of all affected people, ensuring an income equivalent or superior to their income prior to the construction of the project to ensure their sustainability.
 - Achieve the sustainability of the new resettlements, by providing social, financial, and technical programs that assure appropriate social insertion and productive viability.
 - Provide the appropriate infrastructure to attend any educational, health, recreational, and sanitary needs in host areas, if any.
31. CNO hired the Brazilian Company Diagonal Urbana to perform a detailed socio-economic survey of the area to be directly impacted by the project, to establish the universe of people to be eligible to compensation and resettlement, and other applicable socio-economic programs included in the CRP.
32. The families considered eligible to compensation and resettlement associated with the Project are those who: (a) reside or develop economic activities in the lands required for the construction and operation of the Project, independently of the land and/or houses ownership status, and (b) are included in the socio-economic cadastre developed by Diagonal by the end of December of 2006. Even though the CRP established the cut-off date of December 2006, it includes a provision to include additional proven beneficiaries affected by the Project, in cases they were overlooked or excluded due to their absence from the area during baseline generation, due to illness, studies, or any other acceptable and reasonable cause.
33. Within the 77 affected properties, there are:
- a. A total of 43 families (total of 167 people) that will be displaced:
 - 14 resident owners, and
 - 29 resident non-owners, which are the ones that require the greatest care, as they are families that live in houses, built in land of their current employers.
 - b. The *Escuela Américo Vespucio*, a school that serves 24 children.
 - c. An average of 255 seasonal workers a year that work as temporary or seasonal workers in the larger properties.
34. Mostly large agricultural lands dedicated to sugar cane, corn, African palm, plantains, coffee and cacao compose the affected area. Of the affected 77 properties only 8 are considered small (<5 ha), 50 are medium size (between 5 and 70 ha) and 19 are considered large (> 70 ha). In terms of area, 85.2% of the

area to be affected by the Project belongs to large project owners, 13.3% belongs to medium size owner, and only 1.4% belongs to small owners. It is also important to note that only 16 properties will be purchase in its totality: 4 small, 10 medium, and 2 large properties. The remaining 61 properties will be affected only partially⁸. Of those properties that will be purchased in its totality, 5 do not have any people living in it, 7 are inhabited by property owners, and 4 are inhabited by non-owner workers.

35. Of the affected population:

- a. The 29 non-owner resident families to be affected are spread out over the area to be flooded, typically have migrated from other areas of the country, and currently do not belong or are organized in a cohesive group, even though all of them have been in the area for four years or more. Three of these 29 families are currently living as “*allegados*” in the non-owner resident homes. They all live in small houses built high at one tier level over four columns, where their living space is in the second floor, and the space under the house is used as storage, to keep some domestic animals over night, and to protect their living space from mosquitoes and flooding during the rainy season. They are mostly built with wooden walls or cement blocks and tin roofs, have no septic system or access to running water, electricity or other public services. The average family size is 3.83, with a family income ranging from US\$ 50-200/month, which is mostly composed of their salary from working as agricultural workers.
- b. All of the 8 small property owners, 66% of the medium size, and none of the large landowners live in the area. The income range of small and medium size property resident owners is US\$ 200-300/month, and US\$ 160-600/month, respectively. All small property owners are over 50 years old, 37.5% are women, and all of them have primary education. Even though they own the properties where they work and live, the houses and living conditions are very similar to the resident non-owners, without electricity, running water, or access to public services. Their family income comes from a combination of selling their own production and salaries as workers in other agricultural lands, nearby packing companies, or other sources of employment.
- c. There is a population of seasonal agricultural workers that is going to be potentially affected as the plantations they work in during crop collection season, are in the direct flooding area. This population is estimated to be around 255 workers that work as “*jornaleros*” during crop collection season, and comes mostly from the nearby towns of Buena Fe, Patricia del Pilar, and Quevedo.

⁸ Based on Art 799 of the Ecuadorian Civil Code, when the required affectation exceeds 85% by area or by price it must be purchased in full.

36. Table E.1 summarizes the compensation and/or resettlement program proposed. In brief:

- All property owners (resident and non-resident) will be paid at a minimum, a negotiated price based on replacement and market costs evaluation (including plantations) performed by the *Dirección Nacional de Avalúos y Catastros* (DINAC), plus an additional 10%. As necessary this amount will be increased to an amount that allows the affected families to find solutions that provide a minimum sustainable and socio-economic viable income. This is especially relevant for small and possibly for some of the smaller medium property owners, for which the 85% cut-off imposed by the Art 799 of the Ecuadorian Civil Code (see footnote 8), may not provide an economically sustainable production unit. These property owners will be subjected to a Sustainable Production Evaluation and Monitoring Program to (a) assure the sustainability of the solution proposed prior the compensation is provided, (b) follow-up their income sustainability, and (c) provide any corrective actions on a case-by-case basis, as necessary.
- The sustainable mitigation of non-owners directly affected involves: (a) relocation and provision of a house and land, (b) continuity in income generation, (c) technical and social assistance, and (d) monitoring. All resident non-owners will be assured to continue with their current job, will be provided with ownership of a 1-ha plot of land, and a 60 m² house, that has the option of becoming a 100 m². The beneficiaries are offered different house-floor designs (two or three bedrooms) as well as selection of construction material and roofing. These houses are to be completely built by the project company, which also will provide a dining room and two beds. The houses will be provided also with a water well and a septic system. All resident non-owners will also be subject to two additional special assistance programs: (a) Agricultural Capacity Building and Support Program to maximize the productive capacity of their 1-ha plot, and (b) Occupational Capacity Building, Strengthening and Income Restitution. The 1-ha plot solution is not necessary enough to assure the economic sustainability of the resettled families, as the purpose of the resettlement is not to substitute their existing income generation mechanism. The Occupational Capacity Building, Strengthening and Income Restitution Program of the Resettlement Plan will assure that their income generation is not negatively affected as a consequence of the relocation, and if it does, that CNO has mechanisms in place to assure income restitution and job conversion, if and when necessary.
- The project company will help move all displaced families and their belongings.
- The School will be completely rebuilt and reactivated to serve the same student population.

- The Company will implement an additional compensation program geared toward addressing economic restitution or improvement of the estimated 255 temporary and seasonal workers potentially affected by the Project. The CRP includes an Economic Reactivation/Work Opportunity and Conversion Program for all the economically active population in project influence area that could have loss income as seasonal plantation workers due to the flooding of the lands they used to work on.
37. Prior to the finalization of the CRP, there were a series of meetings with the affected population, where the Company presented the Project, clarified the degree of impacts and affectation of their lands and means of subsistence, and provided information of the options and solution available to them.
 38. The CRP also includes a specialized Program of Individualize Consultation, Information, and Follow-up, to achieve a close “hand-holding” of each affected family, to identify any issues during the process of resettlement and compensation on a case-by-case basis, and allow for the design and implementation of customized solutions according to specific or particular situations or vulnerabilities that were overlooked or may unexpectedly arise during the process (e.g. illness, children in need of schooling, old age, etc).
 39. The CRP includes a detail Supervision and Evaluation Program, that is expected to last until December 2010, and includes the certification of an independent social specialist appointed by the IDB prior to the physical displacement of any affected family, certifying compliance with IDB O.P-710 on Involuntary Resettlement.
 40. As of the end of March 2007, only 7 non-owner resident families have been resettled, and 33 properties (537 ha) have been acquired. The CRP includes a budget of US\$ 6,601,964, an execution timetable for the new houses of six months starting on December 2006, and the expectation for all the physical resettlement to be finalized by the end of August 2007.

F. Public Participation.

41. The process of public participation specifically associated with the Multipurpose Baba Project – and consistent with the timing and mechanisms stipulated by Ecuadorian regulations - began in June 2006. As part of the EIA ToRs, the Ministry of Environment approved the public participation methodology on August 24th 2006. However, activities that contributed to the overall results of consultation (local expectations vis-à-vis project impacts and benefits and commitments that may have been made) can be considered to have started much earlier. The consultation timeline is presented below:
 - a. *April, 2004: Original Project Design Consultation.* Nearby communities were first informed on a proposed dam on the Baba River when the original design was proposed. At the time the Project was managed by CEDEGE and its subsidiary Hidronacion. CEDEGE and contracted

personnel initiated the process of EIA consultation in April 2004 (including meetings) but were met with strong opposition. A decision was therefore made not to consult the EIA ToR as required by Ecuadorian regulation. The EIA was completed (2004), but the Fideicomiso Multiproposito Baba eventually abandoned the initial design concept and sought alternative designs that would reduce impacts and increased local acceptance.

- b. *November 2005: Alternative CHL Design Selection.* Following the selection of CHL as the successful bidder who presented an alternative design for the project, a series of informational meetings (Buena Fe, Vinces, Quevedo) and a large number of media spotlights (radio, TV, newspapers) were used to announce the new and improved (lower impact) design. At the time, opposition continued and arguments made demonstrated that there was confusion (or distrust) relative to the actual change in design.
- c. *February – May, 2006: Socioeconomic Characterization.* A variety of activities were completed during this period of time that raised awareness relative to the new project design and established communication channels with an important subset of stakeholders: the households (owners and residents) to be affected by the Multipurpose Baba Project. For example, in an initial phase (February 2006) CNO staff met with communities in the area of the reservoir to obtain their consent to send sociologists to conduct census and opinion surveys (April / May 2006). This information was used as a basis for the Preliminary Resettlement Plan and has been key in the development of the final Compensation and Resettlement Plan. These communication continues to date.
- d. *June-July, 2006: Scoping – ToR Review Consultation.* According to Ecuadorian Law, CHL initiated formal consultation of the EIA ToR. Stakeholders were identified, including potentially impacted landowners, farmers living downstream of the proposed dam site, local and regional government representatives and authorities, members of the communities in the direct area of influence of the Project and local organizations. Meetings and interviews were held with these stakeholders to obtain their input; which was later supplemented with information received during a workshop held on June 22. In addition, a Public Information Center (PIC) was established in San Jacinto de Buena Fé, in front of the church and the central park, to collect comments and observations from June 21st until July 7th, 2006.
- e. *August – September, 2006. Draft EIA Review.* The PIC was reopened on August 28th to provide easy access to the results of the draft EIA. Per Ecuadorian regulations, the PIC had to remain open through September 15th; however, per the IDB's request the latter has remained opened to date. On September 6th, a formal public meeting was organized to present draft results of the EIA (submitted to authorities on September 14th, 2006).

- f. *October, 2006 – Present: Post EIA Approval, Resettlement and Other.* Following the approval of the EIA by the Ministry of Environment, consultation activities with select groups of stakeholders continues. In addition, the processes of distributing information have also continued – as have meetings with local authorities, labor union and other local stakeholders. A second PIC was opened in Patricia Pilar in proximity to where construction of the workers camp is taking place. Once offices in the camp are constructed, the PIC will be moved to that location. Additionally, the Project has a website –<http://www.proyectobaba.com/> which represents another mechanism for communicating and receiving feedback on the project.
42. The intrinsic local socioeconomic and political context; past issue with the Daule-Peripa; conflicting expectations, perceptions and interests; and, to some extent, the manner in which the consultation has been managed by the Multipurpose Baba Project have contributed to creating some level of opposition to the Project. Further, politicized local leadership, NGOs and other stakeholders have polarized some of the predominantly poor farmer community around particular issues, which may or may not be aligned with actual community priorities, goals and expectations.
43. As stated in Section G, the Bank will require that the Project Company develop and implement an ongoing Stakeholders Management and Communication Plan, to better engage local communities and governments, clarify any existing doubts and concerns about the environmental and social impacts of the Project, and provide timely and appropriate responses to stakeholders inquiries.

G. Environmental and Social Requirements

44. As part of the Loan Agreement, the Bank will require that the *Consortio Hidroeléctrico del Litoral - CHL* and all portions of the Project shall, at all times during the life of the Loan Agreement, comply with each of the following:
- a. All applicable environmental, social, health and safety, and labor Ecuadorian regulatory requirements, including those associated with any environmental, health and safety related permits, authorizations, or licenses that apply to the Project or the Project Company.
- b. Implement an environmental, and health and safety management system that is consistent with ISO 14001 and BS 8800 (for environmental and health and safety, respectively) for the construction and the operation phases, and comply with all aspects and components of the various project-related environmental, social, health and safety, and contingency plans, in particular the ESMP, the detailed environmental and social management plans/procedures, and the Compensation and Resettlement Plan.

- c. All applicable aspects of the IDB Environmental and Safeguard Compliance Policy and Involuntary Resettlement Policy.
 - d. Applicable aspects of the World Bank General Environmental Guidelines (World Bank Pollution Prevention Handbook, July 1, 1998).
 - e. Applicable aspects of the World Bank Monitoring Guidelines (World Bank Pollution Prevention Handbook, July 1, 1998).
 - f. Applicable aspect of the International Finance Corporation Guidelines for General Occupational, Health and Safety (2003).
 - g. Consult with the IDB before approving or implementing any changes to the Project or its timetable that could potentially have negative environmental, social, or health and safety effects.
 - h. Send written notice of any and all non-compliances with any environmental and social requirement of the Loan Agreement and any significant environmental, social, health and safety, and labor accident, impact, event, and/or claim.
 - i. Ensure that any other company sub-contracted for construction or operation activities comply with the applicable environmental, social, and health and safety requirements of the Loan Agreement.
 - j. Implement ongoing, information disclosure and consultation activities related to environmental, social, and health and safety aspects of the project, via the development of a Stakeholders Management and Communication Plan that is acceptable to the IDB.
 - k. Take reasonable efforts to contribute to the solution of past issues related to the Daule-Peripa Project, by working with Hidronacion and CEDEGE.
45. Prior to consideration and approval by the IDB Board of Executive Directors, the IDB will require, in form and content satisfactory to the IDB, the final Compensation and Resettlement Plan that complies with IDB Policy on Involuntary Resettlement.
46. Prior to Financial Closure, the IDB will require, in form and content satisfactory to the IDB, the following:
- (a) The Environmental and Social Management System framework, that includes the actions identified in the ESMP, and the detailed environmental, social, health and safety plans/procedures for the construction phase,
 - (b) The Stakeholders Management and Communication Plan,

- (c) The Basin/Catchment Area Management Plan, that includes a detailed water budget and balance and any necessary mitigation or compensation measures, and
 - (d) A status report of the progress of implementing the Compensation and Resettlement Plan.
- 47. Prior to the First Disbursement, the IDB will require, in form and content satisfactory to the IDB, the following:
 - (a) Final detailed environmental and social management plans and procedures for the construction phase, including environmental, health and safety, and contingency and spill prevention and counter-control plans.
- 48. The IDB will also require for all disbursements an Environmental and Social Compliance Certificate issued by independent environmental and social consultants, stating that the Project is fully compliant with all environmental and social requirements and provisions of the Loan Agreement.
- 49. Prior to filling the reservoir, the company shall submit, in form and substance satisfactory to the IDB, the following plans related to Project operations:
 - (a) Detailed environmental and social management plans and procedures for the operation phase, which must include an updated Stakeholders Management and Communication Plan and Basin/Catchment Area Management Plan.
 - (b) Health and safety plan for the operation.
 - (c) Contingency plan and spill prevention and counter-control plan for the operation, including downstream construction surveillance program and flooding emergency preparedness program.
- 50. Prior to Technical Completion, the company shall submit, in form and substance satisfactory to the IDB, an Environmental and Social Compliance Certificate issued by independent environmental and social consultants, certifying compliance with all environmental and social requirements and provisions of the loan agreement, including adequate application of the Compensation and Resettlement Plan.
- 51. During the life of the Loan Agreement, the Company must prepare and submit an Environmental and Social Compliance Report (ESCR), in form and content acceptable to IDB. The ESCR will be submitted on a quarterly basis during the construction and the first year of operation, and yearly thereafter for the duration of the loan.
- 52. The Bank will monitor the project's environmental, social, health and safety aspects via internal Bank supervision actions (e.g., site visits, review of documentation, etc.) and will contract an external independent environmental

consultant to perform more detailed supervision/monitoring actions during project construction and initial operation. The Bank will also contract an external independent social consultant to perform detail supervision of the appropriate execution of the Compensation and Resettlement Plan. In addition, the Bank will have the right, as part of the Loan Agreement, to contract for the performance of an independent environmental, health, and safety audit, if needed.

Table C.1. Impact⁹ Generating Activities per Phase.

Phase	Activity
Construction	Earth movement in areas of the reservoir, work camp, dams and canals
	Construction of the hydroelectric plant
	Construction of the <i>Via Entrelagos</i>
	Construction of the transfer system (dams and canals)
	River diversion
	Construction of work camp
	Gravel / Cement plant establishment
	Construction / improvement of access roads
	Resettlement
	Construction of the bridge on the <i>Via Quevedo</i> road
	Chaune river channel modification
	Use of gravel and sand material
	Acquisition of land for worker camps
	Movement of existing infrastructure (pipeline)
	Waste management at the worker camp
	Worker mobilization
Construction vehicle traffic	
Reservoir Filling	Establishment of forested buffer zone
	Flooding of reservoir area
	Clearing and removal of vegetation from area to be flooded
	Disposal of cleared material
Operation and Maintenance	Presence of a reservoir / lake
	Operation and maintenance of a hydroelectric plant
	Hydrological basin control
	Transfer of water to the Daule-Peripa
	Reservoir maintenance (disposal of floating debris, aquatic reed etc)
	Management of reforested / revegetated areas
	Access road maintenance

Source: Efficacitas EIA, 2006.

(1) ⁹Positive or negative.

Table C.2. Summary of Key Impacts and Phases

Area	C	F	O	Key Risks/ Impacts
Environmental	X			Increase in dust and air emissions
	X			Increase in noise levels
	X			Contamination of soils and water from accidental spills of fuels and lubricants
	X			Solid and liquid waste generation and disposal
	X			Surface and groundwater contamination
	X			Landscape alterations and borrow of material
	X	X		Loss of habitat and potential loss / disturbance of protected species
	X	X		Disturbance /potential loss of fauna, possibly including protected species
			X	Changes to the hydrology of the Baba-Quevedo River
			X	Changes in water quality including the potential for eutrophication
			X	Potential spread of aquatic weed
			X	Long term effects on aquatic habitat, fish and fisheries
Socioeconomic			X	Erosion and sedimentation
	X			Resettlement of people and a school
	X	X		Flooding and disturbance of archeological sites
		X		Flooding of cultivated areas
	X			Influx of workers and increase demands on local infrastructure, goods and services
	X			Conflicts resulting from influx of workers and stakeholder relations
	X			Temporary impact on Quevedo Santo Domingo Road and increased traffic
	X			Economic distortion and increase in prices
		X		Health
			X	Effect on water availability and downstream economic activities (potable water, agricultural irrigation, fishing and gravel extraction):
			X	Upstream basin activities such as deforestation, water use and discharges
			X	Community and stakeholder relations

Area	C	F	O	Key Risks/ Impacts
Health and Safety	X			Risk associated with construction activities
	X			Risk of exposure to health-hazardous environmental conditions
	X			Risk of explosions and fire
	X			Potential accidents involving poisonous or displaced animals
			X	Risk to downstream communities from dam breach or rupture
		X	X	Potential for downstream water contamination
			X	Dam safety
		X	X	Occupational risks

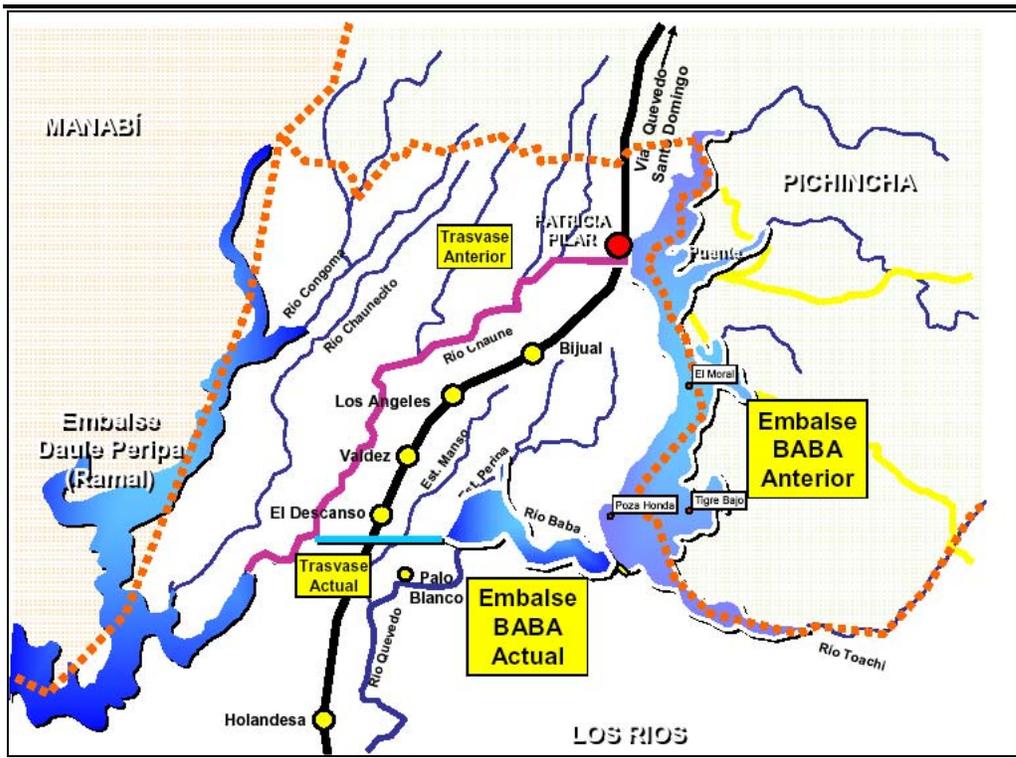
Key: C = construction; F =reservoir filling; O = maintenance

Table E.1. Summary of Compensation and Resettlement Activities

Ownership	Residency	Size	CRP Solution
<p style="text-align: center;">Owner (69 owners, 77 properties)</p>	<p style="text-align: center;">Resident Families (14 owners, 14 properties)</p>	<p style="text-align: center;">Small (4)</p>	<ul style="list-style-type: none"> • Cash Compensation (DINAC + 10%) or equivalent land and house. • Sustainable Production Evaluation and Monitoring Program. • Individualized Consultation, Information, and Follow-up Program. • Economic Reactivation / Work Opportunity and Conversion Program. • Help to move.
		<p style="text-align: center;">Medium (10)</p>	
	<p style="text-align: center;">Non-resident (55 owners, 63 properties)</p>	<p style="text-align: center;">Small (3 owner, 3 properties)</p>	<ul style="list-style-type: none"> • Cash Compensation (DINAC + 10%) or equivalent land • Sustainable Production Evaluation and Monitoring Program. • Economic Reactivation / Work Opportunity and Conversion Program.
		<p style="text-align: center;">Medium (33 owners, 37 properties)</p>	<ul style="list-style-type: none"> • Cash Compensation (DINAC + 10%) • Sustainable Production Evaluation and Monitoring Program (as applicable)
		<p style="text-align: center;">Large (18 owners, 22 properties)</p>	
		<p style="text-align: center;">School (1)</p>	<ul style="list-style-type: none"> • Restitution of a new school

Non-owner (workers)	Resident Families (29)	<ul style="list-style-type: none"> • 1-ha of land. • 1 new house. • Occupational Capacity Building, Strengthening, and Income Restitution. • Agricultural Capacity Building and Support Program. • Individualized Consultation, Information, and Follow-up Program. • Economic Reactivation / Work Opportunity and Conversion Program • Help to move.
	Non-resident seasonal workers (estimated 255)	<ul style="list-style-type: none"> • Economic Reactivation / Work Opportunity and Conversion Program.

Figure 1. Location of Original and Current Project Design Concept



Source: Odebrecht, 2006