# THE CAMISEA PROJECT: DEVELOPING LEGAL FRAMEWORKS FOR AVOIDING SOCIAL AND ENVIRONMENTAL CONFLICTS IN SENSITIVE AREAS

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## I. INTRODUCTION

The Camisea field in Cusco, Peru is one of the most important nonassociated natural gas reserves in Latin America.[1] The contract for the exploitation of this field was executed in 2000, and its production stage began in August 2004 (the Project).[2] Camisea is located in the Peruvian forest.[3] People who reside in the area of the Project are "Native Communities," whose members live in accordance with centuries-old customs,[4] and small groups in voluntary isolation who do not want to have contact with other cultures or populations.[5] From an environmental point of view, Camisea is located in a hot spot of biodiversity.[6] Except for small areas used by the Native Communities, Camisea is a tropical forest that has never been

1. *See* PLUSPETROL, BLOCK 88 CONTINGENCY PLAN 9 (2004), http://www.camisea.com.pe/downloads/PLUSPETROL/C%202%20Dec04-ENG.pdf2004 (last visited Feb. 1, 2009) [hereinafter BLOCK 88 CONTINGENCY PLAN].

2. Camisea Project, http://www.camisea.com.pe/project.asp (last visited Feb. 1, 2009); ENERGY INFO. ADMIN., COUNTRY ANALYSIS BRIEFS: PERU (2008), http://www.eia.doe.gov/emeu/cabs/Peru/pdf.pdf [hereinafter COUNTRY ANALYSIS BRIEFS: PERU].

3. PLUSPETROL PERU CORP., ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT OF BLOCK 88, CAMISEA AND AREAS OF INFLUENCE, Executive Summary 3 (2001), *available at* http://www.camisea.com.pe [hereinafter ENVIRONMENTAL IMPACT ASSESSMENT].

4. *See* Roger Hamilton, *Can an Energy Project Save the Rainforest?*, IDBAMERICA, Mar. 27, 2009, http://www.iadb.org/idbamerica/index.cfm?thisid=4381 (last visited Feb. 1, 2009).

5. Inter-American Development Bank, Sustainability Review 2006, http://www.iadb.org/sds/reports/sustainability2006/Chapter_6.cfm?language=en (last visited Feb. 1, 2009).

6. Conservation International, Tropical Andes, http://www.biodiversityhotspots.org/xp/hotspots/andes/Pages/default.aspx (last visited Feb. 1, 2009).

interfered with by human hand.[7] Finally, a small part of the Project—Block 88—is located in the buffer area of a wildlife reserve.[8]

With these elements, it is easy to call Camisea a sensitive area in both social and environmental terms. This Article provides an overview of the legal efforts made by the different stakeholders involved in the Project (government, licensees, and private actors, among others) to develop Camisea in harmony with the population and avoid damage to the environment.

## II. THE CAMISEA PROJECT

The Camisea Project involves two different stages. The first stage includes the construction of the facilities required to produce gas in Block 88; to separate the natural gas from the associated natural gas liquids (NGL); to transport the natural gas to Lima (where it is consumed); and to transport the NGL to a processing plant on the Peruvian coast in order to produce propane, butane, natural gasoline, and diesel.[9] The next stage involves the development of a second field (Block 56) near Camisea, the expansion of the natural gas transportation system, and the construction of a liquefaction plant.[10] The two stages of the Project have an approximate cost of five billion dollars.[11]

This Article focuses on the first stage of the Project and in particular the production facilities located in the Camisea area. These facilities include the following activities: (1) constructing and operating a gas separation and condensation plant (Malvinas Plant); (2) drilling four wells for gas extraction at four

7. *See* Hamilton, *supra* note 4.

8. *Id.*

9. Proyecto Camisea, Preguntas, http://www.minem.gob.pe/archivos/dgh/publicaciones/Preguntas/proyectocamisea.pdf.

10. Juan M. Cayo, Vice Minister of Energy, Presentation at the Center for Latin American Issues, George Washington University: Peru's LNG Sector—An Overview (May 12, 2005), http://www.gwu.edu/~clai/recent_events/2005/Peru%20LNG/Mata.pdf.

11. *See* Proyecto Camisea, *supra* note 9 (estimating cost of Camisea I at $2.4 billion); *see also* Cayo, *supra* note 10 (estimating cost of Camisea II, or LNG Project, at $2.1 billion).

platforms; (3) constructing and operating pipelines from the drilling platforms to the Malvinas Plant; and (4) performing 3D seismic surveys over an area of 1200 square kilometers.[12]

According to the last reports of reserves, the Camisea field has approximately 8.7 trillion cubic feet (TCF) of natural gas and 547 million barrels of associated natural gas liquids (propane, butane, and condensate).[13] The Peruvian Government granted the rights to exploit these reserves to the joint venture formed by Pluspetrol (Argentina), Hunt Oil Company (USA), SK Corporation (Korea), Repsol (Spain), Tecpetrol (Argentina), and Sonatrach (Algeria) (the Licensees).[14] These rights have been granted through a license agreement, which basically allows exploitation of the reserves in exchange for a royalty to be paid to the Peruvian Government (37% of the sales made by the consortium).[15] Exploitation rights are valid for forty years, and Pluspetrol has been appointed as operator of the contract.[16]

The wells are located in four platforms—San Martin 1, San Martin 3, Cashiriari 1, and Cashiriari 3.[17] Two of them began their operations in 2004, and the other ones will initiate their activities this year.[18] A mixture of natural gas and NGL is transported from these platforms to the Malvinas Plant by

12. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 12–16.

13. Camisea Technical Group of Intergovernmental Coordination (GTCI), Proyecto Camisea: Descripcíon, http://www.gtci-camisea.com.pe (follow sidebar hyperlink "Proyecto Camisea," then follow hyperlink "Descripcíon") (last visited Feb. 1, 2009).

14. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 3.

15. Inter-Am. Dev. Bank, Economic Benefits, http://www.iadb.org/pro_sites/camisea/beneficios_E.cfm?language=english&parid=2&item1id=4 (last visited Feb. 1, 2009) [hereinafter Economic Benefits].

16. Perupetro, Camisea Project—Contract Summary, http://mirror.perupetro.com.pe/camisea08-e.asp (contract summaries available for download in .zip format) (last visited Feb. 1, 2009).

17. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 16.

18. INTER-AM. DEV. BANK., REPORT SUMMARIZING PERFORMANCE OF ENVIRONMENTAL AND SOCIAL COMMITMENTS IN THE CAMISEA PROJECT 29 (2007), http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1044695.

approximately fifteen miles of pipeline.[19] Neither platforms nor pipelines cross a town, but they are within territories of the Native Communities.[20]

The Malvinas Plant has been built on the right bank of the Urubamba River.[21] Its installations are projected to produce 11.3 million cubic meters of gas per day and 165 cubic meters of liquid natural gas (NGL)per hour.[22] The plant is designed for growth and will be able to increase gas production to 22.6 million cubic meters per day and to 330 cubic meters of (NGL) per hour.[23] The Malvinas Plant is the starting point of the transportation system, which consists of two pipelines, respectively 336 miles and 460 miles long, that transport the natural gas and the NGL to the coast.[24]

## III. FRAMEWORK

There are several mechanisms included in the Peruvian legal framework to avoid environmental damage and prevent social conflicts. These mechanisms could be classified in two categories: preventative and reactive. The preventative ones obviously try to avoid the generation of an adverse environmental impact and the generation of a social conflict. The reactive ones propose to stop the adverse impact or to find a solution for the conflict.

The main reactive mechanisms are administrative procedures against petroleum companies before the environmental agencies in charge of supervising oil and gas operations,[25] and civil and criminal actions.[26] However, the

19. *See id.*

20. *See* BLOCK 88 CONTINGENCY PLAN, *supra* note 1, at 9.

21. *Id.* at 9.

22. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 13.

23. *Id.*

24. Rita Tubb, *First Gas from Peru's Camisea Project*, 231 PIPELINE & GAS J. 49, 49 (2004).

25. The Supervisory Organism of Investment in Energy and Mines (OSINERGMIN) and the Directorate General of Environmental Health (DIGESA). INTER-AM. DEV. BANK, CAMISEA PROJECT: ENVIRONMENTAL AND SOCIAL IMPACT REPORT 86 (2003), *available at* http://www.iadb.org/exr/doc98/pro/pe02221.pdf [hereinafter ESIR], (outlining a conflict management and solution program).

preventative mechanisms make Camisea an interesting case study. The following sections will analyze preventative provisions and their contribution to a successful development of the Project.

## IV. PREVENTATIVE PROVISIONS

### *A. Legal Framework*

The Peruvian legal framework includes a wide range of laws designed to prevent environmental damage and regulate social conflict. These laws include, among others, provisions regarding quality of water and land, maximum limits for gaseous emissions, protection of forestry and wildlife resources, protection of biodiversity, management of solid wastes, creation of ecologically protected zones and wildlife reserves, and public participation.[27]

In addition, the General Environmental Law includes the principles on which all the regulations and policies regarding environmental matters are based.[28] Among such principles are the right to live in a healthy environment, the right to public access to information, the right to participate in environmental policies, the search for sustainable growth, the principle of prevention (that environmental regulations should be eminently preventative), and the internalization of cost and environmental liability.[29]

Moreover, there are specific regulations governing environmental matters related to hydrocarbon activities. The Regulations for the Environmental Protection in Hydrocarbon Activities regulates the approval of environmental impact assessments for hydrocarbon projects.[30] It also includes several specific technical provisions that aim to: (1) prevent environmental damage; (2) regulate waste management; (3)

26. *Id.* at 25–27.

27. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 1, at 14–33.

28. Ley No. 28611, 15 Oct. 2005, Ley General del Ambiente, El Peruano [E.P.] 302291 (Peru).

29. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 1, at 15–17.

30. *Id.* at 41.

limit areas that can be used by platforms; (4) restore affected areas; and (5) protect people involved in hydrocarbon projects by implementing contingency plans, community relation plans, and other preventative measures to safeguard against well blowouts.[31]

Therefore, the existence of clear rules regarding what must be accomplished by natural resource projects have contributed to the proper development of the Project, not only because the legal framework includes several specific provisions to achieve adequate environmental standards but also because Licensees know of the rules applicable to their operations before beginning operations.

### *B. Previous Evaluation*

Environmental studies are probably the most important tool to secure environmental protections and social harmony. Thus, according to the General Environmental Law and the National System for Evaluation of Environmental Assessments Law,[32] it is not possible to begin the development of a public or private project that could generate a negative impact on the environment unless an environmental study regarding such project has been duly approved by the competent authority.[33]

This principle is included in the Regulations for Environmental Protection in Hydrocarbon Activities, which regulates environmental matters related to such activities.[34] In accordance with the statute, prior to the execution of a hydrocarbon project, it is necessary to present an Environmental Impact Assessment (EIA).[35] Only when the General Directorate of Environmental Affairs of the Ministry of Energy and Mines approves such a study is it possible to initiate the execution of a project.[36]

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31. *Id.* at 41–45.

32. Ley No. 28611, 15 Oct. 2005; Ley No. 27446, 23 Apr. 2001, Ley del Sistema Nacional de Evaluación del Impacto Ambiental, E.P. 201755 (Peru).

33. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 1, at 41.

34. *Id.*

35. Ley No. 28611, art. 24.

36. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 1, at 14 (mandating EIAs for the Camisea Project).

The EIA must include the following: (1) a baseline study describing the natural resources of the location, including geographical, social, economic, and cultural aspects of the populations located in the Project's area of influence; (2) a detailed description of the proposed project; (3) a description and technical assessment of the foreseeable short and longterm effects of each of the hydrocarbon activities on the physical and social environment; (4) an Environmental Management Plan containing preventative measures to avoid any environmental damage and social conflict;[37] and (5) a Closure Plan describing the activities that will be executed at the end of the project in order to restore the environment.[38]

It is necessary to emphasize that the EIA must include a Community Relations Plan describing companies' policies to receive and manage opinions and suggestions from people located in the project's area and to achieve a harmonic relationship with that population.[39]

### *C. Environmental Impact Assessment Provisions*

#### *1. Effects*

To understand measures adopted by the Licensees to prevent environmental damages, this section will review the potential impacts identified in the EIA of Block 88.

The first one is the increase in fluvial traffic by vessels with much greater dimensions and higher passage frequencies than those usually used in the area.[40] The following negative effects could arise from this situation: (1) increased possibility of spills, (2) increased noise level; (3) modification of shore stability by erosion effects and waves; and (4) danger of small boats capsizing.[41]

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37. Particularly, it will include the activities to be performed in order to mitigate the negative effects of the project and reduce it to acceptable levels. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 1, at 48.

38. *Id.* at 47–48.

39. *Id.* at 48.

40. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 5, at 19.

41. *Id.*

Another potential impact was the increasing of base noise levels by air traffic.[42] Such noise could cause the abandonment or temporary displacement of the fauna located in the area.[43] Use of heavy machinery could also contribute to increased base noise.[44] During the operational stage, compressors, generators, turbo expanders, coolers, pumps, and pipes with high-speed fluids could create noise sources that affect the local residents and fauna.[45]

The EIA report also identified loss of vegetation coverage and the alteration of the natural landscape forms as other potential effects.[46] Even if the occupied area—almost 300 hectares—is insignificant when compared with the area of the Peruvian forest, any impact on such an area is undesirable.[47] Also, the movement of soil, slope leveling, and other geological changes may generate adverse impacts on the features of the area.[48]

Introduction of diseases is another possible negative effect.[49] This is very important because Native Communities' immunologic systems are unable to defend themselves against diseases that are common in other parts of the country.[50] In the past and under these circumstances, common diseases have caused serious epidemics.[51]

Uncontrolled migration of Project workers who remain in the area after their contracts are finished could be an additional negative result.[52] At the same time, uncontrolled migration of

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42. *Id.*

43. *Id.*

44. *Id.* at 20.

45. *Id.*

46. *Id.* at 19–20.

47. *Id.* at 19.

48. *Id.* at 20.

49. *Id.*

50. *See id.* (noting the sensitivity of the Machiguenga to common diseases).

51. *See* PETER H. MAY, ENERGY & RES. GROUP AT U.C. BERKELEY , CORPORATE ROLES & REWARDS IN PROMOTING SUSTAINABLE DEVELOPMENT: LESSONS LEARNED FROM CAMISEA 34 (1999), http://www.ie.ufrj.br/gema/pdfs/corporate_roles_and_rewards_in_promoting_sustainable_development.pdf (discussing a flu epidemic in Sepahua, Peru, brought on by oil exploration operations).

52. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, ch. 5, at 20.

people to the Camisea area could produce negative impacts on the demand for housing, food, and services; increase pressure on the resources of the indigenous population's territory; and increase the number of diseases (especially sexually transmitted diseases), prostitution, crime, etc.[53]

In addition, an increase in the risks of contamination of the surface waters and soils could arise from different fuels and supplies that will be used in the project.[54] Likewise, the operation of pipelines could increase the possibility of hydrocarbon liquid spills.[55]

The report also found that construction and operation of flowlines could produce disturbances in the areas used by the Native Communities because certain sections of the flowlines are located near, and in some cases travel through, areas directly used by these communities.[56] Finally, the course of surface waters could be altered, which could negatively impact the stability of the coasts, erosion processes, and sedimentation.[57]

### *2. Environmental Management Plan*

As previously explained, the Environmental Management Plan (PMA), which contains the measures that Licensees will apply in order to mitigate and control such impacts. Those activities can be separated into environmental and social measures.[58]

53. *Id.*

54. *Id.* at 21.

55. *Id.*

56. *Id.*

57. *Id.* at 21–22.

58. Decreto Supremo [D.S.] No. 015-2006-EM, 3 Mar. 2006, Reglamento para la Protección Ambiental en las Actividades de Hidrocarburos, art. 27, E.P. 313661 (Peru), *available at* http://www.minem.gob.pe/archivos/dgaae/legislacion/ds-015-2006.pdf.

*a. Environmental Measures*

*i. General Provisions*

The EIA designates the Project as "offshore in land" because it avoids the construction of roads for the transportation of materials, equipment, and personnel to the various working areas, and instead uses mainly fluvial and air transportation.[59] This logistics system makes it possible to substantially reduce clearing activities and avoid migration of foreign people to Native Communities areas.[60]

Further, the PMA requires clearing activities to be performed in pre-existing trails and surfaces already affected by previous activities whenever possible.[61] Also, clearing is to be "limited to that which is strictly necessary" for the construction of the facilities,[62] and "the following forest species will be avoided: trees of diameters greater than 20 cm DCH (chest height: 1.30 m), commercial timber-yielding species, plants used for medicinal and miscellaneous purposes, species regarded as vulnerable and/or in danger of extinction."[63] Additionally, roots have to be preserved for re-vegetation purposes, and organic matter from the soil and the material obtained from deforestation should be recovered for reuse during reforestation.[64] Finally, "[a]ny tree, bush or plant with economic and/or social importance for the communities must be made available to them."[65]

The PMA provides that once construction activities are concluded, Licensees should begin the execution of a Re-vegetation Plan that includes the restoration and recovery of

59. *See* ESIR, *supra* note 25, at 75.

60. *See id.* at 66 ("[T]he project . . . avoids the typical impacts associated with new roads.").

61. ENVIRONMENT IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 8.

62. *Id.* at 9.

63. *Id.*

64. *Id.*

65. *Id.* at 4.

disturbed areas.[66] The Re-vegetation Plan requires using native plants of the area "in order to prevent new species from displacing local ones."[67]

In addition, the PMA establishes that noise reduction measures are also to be implemented to reduce noise levels of all major equipment—compressors, generators, motors pumps, turboexpanders—including installation of silencers and acoustic insulators.[68] The implementation of a strict maintenance program for ground, fluvial, and air craft should also contribute to the reduction of noise emissions.[69]

To mitigate impacts arising from fluvial traffic, the PMA points out that the Licensees and Native Communities have to jointly develop and implement a Fluvial Traffic Regulation, which prescribes speed limits in nearby communities, prohibits night traffic, sets timetable shifts, and makes other provisions.[70]

In order to control gas emissions, the PMA requires the best technology available be applied to the design and operation of equipment that will form part of the plant.[71] Technical specifications have to be based on standards issued by the World Bank and/or Export-Import Bank.[72] Regarding the design process, and to mitigate the impact caused by lighting systems installed at the Malvinas Plant, the PMA provides that a forest curtain is to be set up around the Malvinas Plant.[73]

In addition, the PMA prescribes that adequate facilities are to be "built for the proper handling and final disposal of solid wastes, liquid w astes such as sewer water, sanitary wastes, and others."[74] Also, the storage areas are to be operated "with a secondary containment system, and will be lined with an impervious membrane in order to contain any spill, and avoid

66. *Id.* at 9.
67. *Id.*
68. *Id.* at 40.
69. *Id.*
70. *Id.* at 41–42.
71. *Id.* at 39.
72. *Id.*
73. *Id.* at 41.
74. *Id.* at 4.

water or soil contamination."[75] Such areas are to have a "firewall system . . . large enough to hold 110% of the volume of the fuel stored in it."[76]

According to the PMA, a Spill Prevention, Control and Containment Plan must be established to minimize any possibility of a discharge resulting from the Project.[77] This plan regulates the design, build, and maintenance stages of the facilities.[78] All facilities must have the ability to respond immediately to an emergency and to keep equipment and provisions on hand to control spills in case of any contingency.[79]

This plan has to be complemented by a Hazard Study on the Malvinas Plant carried out to analyze the risks of "loss or rupture of any device containing contaminating vapors or gases, as well as spills, fire, explosion, earthquake, flood, etc."[80] As a result of this study, the Contingency Plan will be "prepared stating the steps to be taken in case any of the situations analyzed and assessed happen to occur."[81]

Training of personnel involved in the Project was identified by the PMA as another important way to avoid damage to the environment.[82] Thus, prior to working on the Camisea Project, all workers will receive proper training regarding the Environmental Management Plan and periodical meetings are to be held in order to reinforce this training.[83]

To prevent any disturbance of surface archaeological remains in a project area, the PMA established that a permanent monitoring program will be carried out in alliance with government agencies.[84] If an archeological site is

75. *Id.* at 8.

76. *Id.*

77. *Id.* at 18.

78. *See generally id.* at 47–59 (describing the way in which the plan regulates the design, building, and maintenance phases of the facilities).

79. *Id.* at 21, 24–25.

80. *Id.* at 41.

81. *Id.*

82. *Id.* at 2.

83. *Id.*

84. *Id.* at 15–16.

registered, the site is to be declared an archaeological monument by the government and a preservation and restoration plan applied to the same.[85]

*ii. Monitoring Activities*

Special consideration is to be granted for the conservation of flora and fauna in the area.[86] Regarding this issue, probably the main effort carried out by the Licensees will be the implementation of the Biodiversity Monitoring Program.[87]

The Peruvian forest is one of the most biodiverse areas in South America and "[a]fter Brazil [it] encompasses the largest area of Amazon forest."[88] It is important to conserve such biodiversity to maintain the multiple ecological processes and environmental services of the area, as well as to maintain the integrity of the entire Amazon region.[89] Moreover, biodiversity is critical to the subsistence of Native Communities because food, dwelling, and work are obtained from the biological resources of the area.[90]

The objective of the Biodiversity Monitoring Program is to preserve biodiversity in the area of influence of the Project by verifying the fulfillment of preventative and mitigation measures, as well as the efficiency of these measures.[91] Then, the main activities to be performed as a part of the program are the following: (1) to review the evolution of foreseen impacts; (2) to create the database to be used as a reference and a future verification base; and (3) to keep the competent authority informed on uncontemplated environmental impacts and unforeseen evolutions of valued impacts.[92] The implementation

85. *Id.*

86. *Id.* at 50–53.

87. *Id.* at 51–53.

88. PLUSPETROL PERU CORP., MONITORING BIODIVERSITY IN CAMISEA: SCOPING STUDY REPORT, Executive Summary i (2002), *available at* http://www.camisea.com.pe/%5Cbiodiversidad/Executive%20Summary.pdf [hereinafter MONITORING BIODIVERSITY IN CAMISEA].

89. *Id.*

90. *Id.*

91. *Id.* at iii.

92. *Id.* at iii–iv.

of the program is in the hands of an environmental consultant, Environmental Resources Management (ERM), with the participation of Native Communities of the area.[93] The execution of this program has to be described as successful, not only due to the twenty new species identified by the program, but also because it has provided valuable and independent information regarding the effects of the Project.[94]

However, biodiversity is not the only issue to be monitored by the Licensees. In addition to the Biodiversity Monitoring Program, they have implemented a broad environmental monitoring plan in order to control and guarantee the fulfillment of the mitigation, protection, and prevention measures included in the Environmental Management Plan.[95] The aspects that are monitored by this broad plan are soil and sediment, surface water, underground water, air quality, geomorphology and relief, flora, fauna, health, and socioeconomic and cultural media.[96] In cases when Peruvian legislation does not provide a standard, monitoring results are compared with standards from international entities.[97]

There is one aspect of the monitoring plan that is really interesting. The monitoring activities are not only developed by Licensees, but they are also executed by people from Native Communities specifically trained to perform these activities.[98] This allows Native Communities to receive information regarding the Project and its impact directly from their own people. It follows that this information is more reliable and understandable.

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93. *See* ENVIRONMENTAL IMPACT ASSESSEMENT, *supra* note 3, Executive Summary, at 54.

94. David Gavidia, *20 Nuevas Especies en Camisea*, LA REPÚBLICA, Aug. 4, 2006, http://www.larepublica.com.pe/component/option,com_contentant/task,view/id,118716 /Itemid.

95. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 61.

96. *Id.* at 61, 85–86.

97. *Id.* at 60.

98. MONITORING BIODIVERSITY IN CAMISEA, *supra* note 88, Executive Summary, at viii.

*b. Social Measures*

The EIA established several provisions to avoid affecting Native Communities in its influence area.[99] Due to the vulnerability of the Native Communities, normal provisions meant to protect populations near oil and gas projects are not enough; it was necessary to establish special measures to keep them away from any damage.[100]

First, Camisea Project workers and employees are forbidden from: (1) establishing contacts with the native people in the area (contact can only be made by personnel specifically trained to do so); (2) disturbing native fauna or damaging or destroying sensitive habitats such as nests, shelters or burrows; (3) using firearms; (4) collecting wildlife or vegetation species; (5) hunting and fishing; (6) owning pets or any other domesticated animals; (7) collecting archaeological samples or disturbing those areas identified as archaeological sites; (8) consuming alcoholic beverages or being under the influence of alcohol during working hours; and (9) possessing, using, or being under the influence of illegal drugs.[101]

A Community Relations Plan is included in the EIA as a guideline setting forth the policies and provisions that must be followed by the Licensees regarding their relationship with the Native Communities.[102] This plan provides for:

- Implementation of an "Information Program" addressed to the stakeholders of the Project—government, communities and local authorities—in order to provide data and assure understanding, acceptance, and support of the Project.[103]
- Establishment of a "Community Compensation Program" to mitigate potential damages resulting from Project

99. ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 25.

100. *See id.* at 86 (stating that the socio-cultural impact in areas of uncertainty detected by the assessment are especially critical and need to be monitored and controlled with corrective measures).

101. *Id.* at 47–48.

102. *Id.* at 54.

103. *Id.* at 55.

activities.[104] The EIA prescribes a government-approved methodology to calculate such effects.[105]

- Implementation of a "Community Social Assistance Program."[106] This program was focused not only on assisting Native Communities with their basic needs, but also on improving their living standards through projects that assure a constant income to the community, such as agricultural or basic manufacture projects.[107] This program also provides certain basic facilities to the population.

  In addition, when manpower is required for the execution of any task related to the project not requiring skilled manual labor, Licensees must hire local workers.[108]

  Likewise, health campaigns should be launched by Licensees in order to prevent or obtain an early diagnosis of any disease that could affect communities.[109] "Physicians will also cooperate in case of medical emergencies within the communities, transferring patients to the nearest hospital and ensuring that they receive proper attention."[110]
- Implementation of an "Environmental Training and Sensibility Program" for workers to inform and create awareness regarding activities that could potentially produce negative effects, and how to avoid them.[111] Likewise, personnel are constantly instructed to respect the peace and quiet enjoyed by Native Communities as well as to respect the local values, rules, customs, and traditions of Native Communities.[112]

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104. *Id.*

105. *Id.* at 61.

106. *Id.* at 55.

107. *See id.* at 55, 85–86 (stating that the project will temporarily provide locals with jobs and a market for their farming produce).

108. *Id.* at 48.

109. *Id.* at 39, 56.

110. *Id.*, ch. 6, at 13.

111. *Id.*, Executive Summary, at 55.

112. *Id.*, ch. 6, at 2–3.

Another interesting tool in the EIA included to avoid negatively impacting the Native Communities is the "Anthropologic Contingency Plan."[113] This instrument regulates procedures that have to be followed by employees and contractors in case of contacts with people living in voluntary isolation.[114]

People in voluntary isolation are members of tribes who avoid "all contact with strangers and [prefer] the isolated existence they have maintained for centuries."[115] "What little is known about them has been gleaned from other indigenous groups and from chance encounters with developers and rights groups."[116] They are located in Amazonian Ecuador, Peru, Brazil, and Bolivia.[117] These types of groups are particularly sensitive to any environmental impact, because they depend exclusively on biological resources, and to human encounters, which introduce disease.[118]

According to the plan, when a work team finds evidence of a voluntarily isolated group, it must immediately stop its activities.[119] Then, native guides, essential members of each work team, will lead an examination of the area.[120] These guides are to be prepared to act as spokespersons of the group in case of an encounter.[121] A security area must be established to prevent any possible attack of the work team, and workers must

113. Proyecto Camisea, Environment and Communities, http://www.camisea.com .pe/environ2.asp (last visited Feb. 1, 2009).

114. Jose Luis Carbajal, Supervisor CCCN-Lima, Pluspetrol, Plan de Contingencia Anthropológico para Poblaciones en Contacto Inicial o en Aislamiento (Oct. 11, 2002), http://www.camisea.com.pe/downloads/BID/AnexosLote88/anex0II_Doc22.pdf.

115. *See* United Nations, Indigenous Peoples Living in Voluntary Isolation, http://www.un.org/events/tenstories/06/story.asp?storyID=200 (last visited Feb. 1, 2009).

116. *Id.*

117. *Id.*

118. INTER-AM. DEV. BANK, OPERATING GUIDELINES: INDIGENOUS PEOPLES POLICY 44 (2006).

119. Carbajal, *supra* note 114, § 3.1.

120. *Id.* § 2.1 (requiring each drilling and seismic team to have native workers that can act as translators when needed).

121. *Id.*

evacuate the area if there is a risk to their security.[122] Once it is found safe to continue, the work team will resume its activities.[123]

Concerns related to this situation have led the government to create indigenous reserves to protect voluntarily isolated people.[124] Laws that regulate these reserves establish several preventative measures in order to avoid affecting voluntarily isolated people, including governmental approvals and anthropologic contingency plans, which follow the Camisea provisions.[125] In the Camisea area, an indigenous reserve was created for the protection of the Nahua Kugapakori ethnics.[126]

### *D. Citizen Participation*

Citizen participation has become a very important element in the development of natural resource projects, and it seems to be one of the most efficient tools to prevent environmental damage and social conflicts. In Peru, the General Environment Law established that any person has the right to participate in the decision-making process related to environmental issues, as well as the government's establishment of policies regarding these issues.[127] The law also provides that governmental agencies are obliged to establish proper mechanisms to make possible the exercise of this right.[128] In accordance with this principle, the Ministry of Energy and Mines has enacted the Regulation of Consultation and Citizen Participation in the Approval Procedure for Environmental Studies in the Energy

122. *Id.* § 3.1.

123. *See id.*

124. *Major New Protected Areas Established in Peruvian Amazon*: *Reserves will Protect Wildlife While Safeguarding Indigenous Rights*, U.S. NEWSWIRE, Mar. 31, 2005.

125. D.S. No. 028-2003-EM, 14 Aug. 2003, Plan Ambiental Complementario (PAC), E.P. 249774 (Peru).

126. *Id.* arts. 1, 2.

127. Ley No. 28611, 15 Oct. 2005, Ley General del Ambiente, art. III, E.P. 302291 (Peru).

128. *Id.* at ch. 1, art. 3.

Sector and Mines, which regulates such rights during the administrative process for approval of the EIAs and during the execution of the projects.[129]

The administrative process includes three public information meetings and one public hearing to be held in the area where the project will be developed.[130] The first information meeting must be performed prior to the elaboration of the EIA, and its objective is to inform people about the project and relevant environmental regulations.[131] The second meeting is held during the elaboration of the EIA, and its objective is to inform about the EIA findings and to collect citizens' opinions regarding the project.[132] The third meeting is held once the EIA is finished, and its function is to present the conclusions of the EIA.[133]

After the third meeting, the Ministry of Energy and Mines calls a public hearing where the holder of the project has to explain the impacts identified and the mitigation measures to be adopted.[134] Then, the public has the right to express its opinions, comments, and critiques to the EIA.[135] These comments are registered by the government agency in charge of evaluating the EIA and have capital importance in determining whether the EIA is approved.[136]

The EIA must include a citizen participation plan that describes mechanisms to be used by the Licensees during the operational stage to maintain proper communication channels with people located within the impact area of the Project.[137] The

129. Resolución Ministerial [R.M.] No. 596-2002-EM/DM, 20 Dec. 2002, Reglamento de Consulta y Participación Ciudadana en el Procedimiento de Aprobación de los Estudios Ambientales en el Sector Energía y Minas, art. 1, E.P. 235511 (Peru).

130. *Id.* arts. 3–5.

131. *Id.* art. 3.1(a).

132. *Id.* art 3.1(b).

133. *Id.* art. 3.1(c).

134. *Id.* arts. 6.6, 9.

135. *Id.* art 6.7.

136. *Id.* art. 6.10.

137. Ley No. 27446, 23 Apr. 2001, Ley del Sistema Nacional de Evaluación del Impacto Ambiental, art. 10.1(d), E.P. 201755 (Peru).

Licensees must ensure that these people will have easy access to information about the project and that their requests, claims, and comments will be heard.[138]

The means described above were critical to make the Camisea Project feasible, because the population located in the Camisea area was concerned about the risks and negative effects of the Project.[139] For example, people were alarmed about the possibilities of a blow out, pollution of rivers, the migration of fauna, reduction in fishing, and diseases that could affect them.[140]

However, the three information meetings and one public hearing were not enough to deal with public concerns. In fact, more than a few meetings were held with all stakeholders involved in the project—the government, population, nongovernmental organizations, and local authorities.[141] These meetings began several months before the elaboration of the EIA and have continued on a monthly basis.[142]

### *E. Land Use Covenants*

Land use covenants are another measure that help to prevent social conflict, because they promote dialogue and understanding between Native Communities and Project developers.[143] Therefore, the license agreement does not by itself grant the right to use the land where the Project will be

138. *See id.* art. 1(c) (requiring the "establishment of mechanisms that ensure public participation in the process of assessing environmental impact").

139. *See* ENVIRONMENTAL IMPACT ASSESSMENT, *supra* note 3, Executive Summary, at 85.

140. *Id.*, ch. 4, at 114, 117–18.

141. ESIR, *supra* note 25, at 123.

142. *See* Camisea Project, Information Exchange with Stakeholders, http://www.camisea.com.pe/dialogo08.asp (last visited Feb. 1 2009) [hereinafter Information Exchange] (noting that the first meetings took place in November of 2000).

143. *See* DIEGO SHOOBRIDGE & SACHIN KAPILA, ENVIRONMENTAL IMPACT ASSESSMENT OF THE CAMISEA GAS PROJECT: THE IMPORTANCE OF CONSULTATION AND LOCAL PARTICIPATION 3–5 (stating key objectives are to maintain dialogue and create mutual agreement).

developed, and it is necessary that Licensees and Native Communities arrive at an agreement regarding the use of the land prior to the execution of the Project.[144]

According to the Organic Law for Hydrocarbon, if this permission is not granted, the government can establish an easement in favor of the Licensees for field development.[145] However, there has not been a case where a hydrocarbon project has been developed without the permission of the Native Communities, because oil and gas companies realized that any hydrocarbon project cannot be sustained without a good relationship with these communities.[146]

Therefore, before the Camisea Project was initiated, the Licensees executed numerous land covenants with Native Communities of the area.[147] This was a valuable first step to avoiding conflicts in the area because the beginning of the project was approved by the main stakeholder in the area.[148] Without such covenants, the sustainability of the project could be seriously affected.

### *F. Canon*

Another mechanism established by the Peruvian government to avoid social conflicts is the "*Canon"*.[149] To explain the *Canon*, it is necessary to understand that the Peruvian government receives revenues from an oil and gas project in two different ways: income tax and royalties.[150] The income tax rate is approximately 30% of any project's income.[151] Royalties

144. *See id.* at 2–5 (discussing the importance of mutual agreement and local participation).

145. Ley No. 26221, 20 Aug. 1993, Ley Orgánica de Hidrocarburos, art. 82, E.P. (page unavailable) (Peru), *available at* http://www.minem.gob.pe/archivos/dgh/legislacion/leyorganica.pdf.

146. *See* SHOOBRIDGE & KAPILA, *supra* note 143, at 10–11.

147. *Id.* at 5 (stating that one of the objectives of the Camisea Project Community Consultation Program is to arrive at a mutual agreement for land use).

148. *Id.* at 2–5.

149. Ley No. 27506, 10 Jul. 2001, Ley de Canon, E.P. 206487 (Peru).

150. *See id*. art. 11.

151. *See* Global Property Guide, Rental Income Tax is High in Peru, http://www.globalpropertyguide.com/Latin-America/Peru/Taxes-and-Costs (last visited Feb. 1, 2009) (stating the tax rate on corporate entities earning rental income is 30%).

constitute the payment to the government by any company that has obtained the right to explore and exploit a hydrocarbon field.[152] Licensees pay percentage value royalties on every barrel produced.[153]

The *Canon* is a percentage of the revenues (income tax and royalties) received by the government as a consequence of a hydrocarbon project that is distributed among the populations located in the influence area of the Project.[154] This amount is delivered by the central government to the local authorities of the area, and it can only be used for infrastructure projects such as hospitals and schools.[155]

The *Canon* is useful as an incentive to obtain the consent of the population regarding an oil and gas project because the local people receive a direct benefit from these projects.[156] The *Canon* is also a sustainable mechanism to avoid social conflicts because payments are made on a monthly basis during all operational stages of the project. Therefore, not only does the *Canon* contribute to initial acceptance of the project, it also helps maintain this acceptance during the life of the project.

### *G. Multiple Environmental Authorities*

There are several Peruvian governmental agencies and local authorities that have jurisdiction over environmental issues. This section includes a brief description of their functions and how they collaborated to successfully develop the Camisea Project.

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152. Ley No. 27506, art. 11.

153. D.S. No. 017-2003-EM, 29 May 2003, art. 1, E.P. 244993 (Peru) (stating the formula to calculate royalties based on production scales).

154. Ley No. 27506, art. 5.

155. Roger Hamilton, *The Mayor with 200,000 Children*, INTER-AM. DEV. BANK, Oct. 2006, http://www.iadb.org/idbamerica/index.cfm?thisid=4281&lanid=1.

156. *See* Inter-Am. Dev. Bank, Camisea: Basic Facts, http://www.iadb.org/pro_sites/camisea/datos.cfm?language=EN (last visited Feb. 1, 2009) [hereinafter Camisea: Basic Facts] (discussing the benefits the community receives from receiving a percentage of the royalties).

*1. Ministry of Energy and Mines*

The Ministry of Energy and Mines (Ministry) has three main functions associated with environmental and social issues: (1) to propose and issue environmental regulations for the hydrocarbons sector (through the General Department of Hydrocarbons); (2) to evaluate and approve environmental impact assessments (through the General Department of Environmental Matters); and (3) to prevent and promote solutions in any social conflict that could arise regarding oil and gas projects (through the Social Affairs Department).[157]

The Ministry was and still is particularly involved with the Camisea Project because of the benefits the project could generate for the country—reduction of energy costs and substitution of expensive fuels with natural gas.[158] First, prior to the beginning of the Project, the Ministry of Energy and Mines promulgated a set of new rules and statutes regulating natural gas activities and environmental matters.[159] Likewise, a special division of the Department of Environmental Matters was created to improve the reviewing and decision-making process regarding the Camisea EIA.[160] Finally, during the execution of the Project and under its operational stage, the Social Affairs Department and the Department of

157. D.S. No. 025-2003-EM, 28 Jun. 2003, Reglamento de Organización y Funciones del Ministerio de Energía y Minas, art. 38, 39, E.P. 246819 (Peru), *available at* http://www.minem.gob.pe/archivos/ogp/mof_mem.pdf.

158. Economic Benefits, *supra* note 15; *see* Inter-Am. Dev. Bank, Camisea: Main Actors Involved, http://www.iadb.org/pro_sites/camisea/involucrados.cfm?language=en&parid=2&item1id=3 (last visited Feb. 1, 2009) [hereinafter Camisea: Main Actors Involved] (discussing how the GTCI, a division of the Ministry of Energy and Mines, has become a permanent entity which monitors aspects of the Camisea Project for the government).

159. *See, e.g.*, Ley No. 28611, 15 Oct. 2005, Ley General del Ambiente, E.P. 302291 (Peru); *see also* Ministry of Energy and Mines, Laws and Regulations, http://www.minem.gob.pe (last visited Feb. 1, 2009) (showing the laws and regulations that have been enacted over the years regarding oil).

160. Inter-Am. Dev. Bank, Public Agencies with Responsibility in the Camisea Project, http://www.iadb.org/pro_sites/camisea/entidades.cfm?language=english (last visited Feb. 1, 2009) [hereinafter Public Agencies with Responsibility in the Camisea Project].

Environmental Matters have been very proactive in promoting solutions to issues that could generate a social conflict between the Licensees and Native Communities.[161]

### *2. The Supervisory Organism of Investment in Energy and Mines*

The Supervisory Organism of Investment in Energy and Mines (OSINERGMIN) controls compliance of legal and technical requirements included in hydrocarbon regulations.[162] An important part of their duties is controlling compliance with environmental regulation applicable to oil and gas activities and the EIAs approved by the Ministry of Energy and Mines.[163]

OSINERGMIN is empowered to impose fines and even order a suspension of any activity that could infringe environmental regulations.[164] Fines imposed by OSINERGMIN may rise up to $1.1 million in cases of environmental damage.[165]

Osinergmin has performed several inspections of the Camisea facilities to verify that the environmental regulations and the respective EIA have been properly fulfilled.[166] OSINERGMIN has also participated in all the meetings held as a part of the citizens' participation process and during the negotiation process of the agreements with Native Communities (compensation and land use covenants).[167] This continuous presence of OSINERGMIN in the development of the Project has been very valuable not only due to its technical contributions but also because OSINERGMIN can give an independent

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161. *See* Information Exchange, *supra* note 142 (describing the nature of the working relationship between the Licensees and the Native Communities).

162. Osinergmin, ¿Que es Osinergmin?, http://www.osinerg.gob.pe (last visited Feb. 1, 2009).

163. Ley No. 26734, 31 Dec. 1996, Ley del Organismo Supervisor de Inversión en Energía—OSINERG [Ley del OSINERG], art. 5, E.P. 145572 (Peru).

164. Resolución de Consejo Directivo OSINERGMIN No. 387-2007-OC/SD, 23 Jul. 2007, E.P. 349838 (Peru).

165. *Id.*; Camisea: Main Actors Involved, *supra* note 158; R.M. No. 176-99-EM/SG, 20 Apr. 1999, art. X, E.P. 172401 (Peru).

166. *See* Camisea: Main Actors Involved, *supra* note 158 (detailing the number of inspectors involved in the project).

167. *See* Osinergmin, Audiencias Públicas 2008, http://www2.osinerg.gob.pe/ (last visited Feb. 1, 2009) (showing OSINERGMIN's participation in public hearings).

opinion regarding environmental and social impacts of the Project.[168] This is particularly valuable when oil and gas projects are developed in sensitive areas, because, in such cases, there will be substantial information available regarding the impacts of the project (prepared by different stakeholders). The existence of this official report regarding the developing of the project and its potential impacts (made by OSINERGMIN) helps to avoid misunderstandings with government agencies and Native Communities.

### *3. National Institute for the Assessment of Natural Resources*

The National Institute for the Assessment of Natural Resources (INRENA) is the government agency in charge of promoting a rational and integral management use of renewable natural resources and their ecological environment in order to reach sustainable growth, as well as conservation of biodiversity.[169]

INRENA's opinion is usually required by the Department of Environmental Matters during the evaluation of EIAs.[170] INRENA's participation in the Project was mainly during the administrative process for the approval of the EIA.[171] At this stage, INRENA made important contributions to improve the environmental management plan of Block 88, particularly in relation to possible effects on flora and fauna and also in the buffer zone of the Otishi National Park.[172]

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168. *See generally* INTER-AM. DEV. BANK, FIFTH SEMI-ANNUAL PUBLIC MEETING ON THE CAMISEA PROJECT, MEETING SUMMARY 14 (2007), http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1044078 (discussing independent audits conducted by OSINERGMIN).

169. D.S. No. 002-2003-AG, 3 Mar. 2003, Reglamento de Organización y Funciones del Instituto Nacional de Recursos Naturales (INRENA), art. 4, E.P. 237320 (Peru).

170. *Manhattan Minerals Corp.: Comments on Inrena Preliminary Review of EIA*, BUS. WIRE, May 20, 2003, http://findarticles.com/p/articles/mi_m0EIN/is_/ai_102045664.

171. Camisea, Camisea Project Timeline, http://www.camisea.com.pe/Timeline%20camisea.pdf (last visited Feb. 1, 2009).

172. *See* ParksWatch, Machiguenga Communal Reserve, http://www.parkswatch.org/parkprofile.php?l=eng&country=per&park=macr&page=man (last visited Feb. 1, 2009) (discussing contributions designated for INRENA to implement Otishi National Park).

*4. Other Entities*

There are other government authorities in charge of preventing environmental damage and social conflict. One of the most important is the General Directorate of Environmental Health (DIGESA), which is in charge of controlling compliance with the general health laws.[173] DIGESA's duties include: (1) minimizing and controlling health risks from harmful elements, factors, and environmental agents; (2) issuing preventative and control measures to control environmental contamination as well as avoiding risks to the health of the general population; (3) regulating the discharge of waste or contaminating substances in the water, air, and soil; and (4) regulating hazardous substances and products to prevent any damage to the health of individuals.[174]

Like OSINERGMIN, DIGESA supervises the activities of the Project but focuses mainly on possible effects to rivers in the area.[175] DIGESA is also in charge of approving waste treatment facilities for the project and controlling their means of disposal.[176]

Another important government agency is the National Institute for the Development of Andean, Amazonic and Afro-Peruvian People (INDEPA) whose mission is the promotion, coordination, supervision, and evaluation of policies, plans, programs, and projects for the development of rural and Native Communities and the protection of their ethnic and cultural identities.[177] INDEPA participates in aspects of the project dealing with Native Communities such as the covenants

173. Ministerio de Salud, La Dirección General de Salud Ambiental, http://www.digesa.minsa.gob.pe (last visited Feb. 1, 2009).

174. *Id*.

175. Public Agencies with Responsibility in the Camisea Project, *supra* note 160.

176. *See* ESIR, *supra* note 25, at 11 tbls.3–6, (demonstrating DIGESA's involvement with wastewater treatment in Camisea).

177. Ley No. 28495, 15 Apr. 2005, Ley del Instituto Nacional de Desarrollo de Pueblos Andinos, Amazónicos y Afroperuano [Ley del INDEPA], art. 4, E.P. 290813 (Peru).

negotiation process and citizen participation.[178] It was extremely involved in the issue of the voluntarily isolated people located in the Nahua Kugapakori Indigenous Reserve.[179]

Finally, other authorities with jurisdiction over environmental and social matters are the Office of the Ombudsperson for Camisea,[180] local and regional authorities,[181] and the Coast Guard.[182]

To clarify the authority and responsibilities of the various government offices, some with overlapping authority and interests, the government created an institution in charge of coordinating governmental efforts to protect the environment and promote social harmony in the Camisea Area. This institution is called the Technical Group of Intergovernmental Coordination Camisea (GTCI), and it is comprised of the above named institutions.[183]

178. INTER-AM. DEV. BANK, REPORT SUMMARIZING PERFORMANCE OF ENVIRONMENTAL AND SOCIAL COMMITMENTS IN THE CAMISEA PROJECT tbl.4.1 (2007), http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1044695.

179. *See* Roger Hamilton, *Voyage up the Urubamba: Local Leaders Attend a Meeting on Protected Area Management*, INTER-AM. DEV. BANK, June 1, 2007, http://www.iadb.org/news/detail.cfm?language=English&id=3980 (discussing a critical meeting involving INDEPA and protection of the Nahua Kugapakori Nanti Reserve).

180. The Office of the Public Defense has the duty to defend the constitutional and fundamental rights of the people. Defensoría del Pueblo, La Defensoría, http://www.defensoria.gob.pe/la-defensoria.php (last visited Feb. 1, 2009). Regarding the Camisea Project, its activities were focused on the defense of the Native Communities' rights. DEFENSORÍA DEL PUEBLO, INFORME DEFENSORIAL NO. 103: EL PROYECTO CAMISEA Y SUS EFECTOS EN LOS DERECHOS DE LAS PERSONAS (Feb. 2006), *available at* http://www.servindi.org/pdf/informe_103.pdf.

181. INTER-AM. DEV. BANK, REPORT SUMMARIZING PERFORMANCE OF ENVIRONMENTAL AND SOCIAL COMMITMENTS IN THE CAMISEA PROJECT 9 (2004), http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=455828. Local and regional authorities have competence in certain environmental matters. *See id.*

182. Public Agencies with Responsibility in the Camisea Project, *supra* note 160. The Coast Guard has jurisdiction over environmental matters related to the rivers in the country. *Id.*

183. D.S. No. 120-2002-PCM, 23 Nov. 2002, E.P. 233749 (Peru).

## V. CONCLUSION

After consideration of the measures adopted to avoid environmental damage and social conflict in Camisea, the question that follows is whether these measures effectively achieved their objectives.

The answer is yes. After more than seven years of activities related to the Camisea Project, no effects on the environment in the Camisea area have been reported by any government agency.[184] Also, despite some minor issues, no significant controversies have arisen between Licensees and Natives Communities.[185] Thus, when a minor claim has arisen between the parties involved in the Project, OSINERGMIN and the Ministry of Energy and Mines have promptly undertaken the case and found a harmonic solution.[186]

Therefore, the Camisea Block 88 development is a good example of how a hydrocarbon field can be developed in a sensitive area. It also demonstrates that if the correct preventative measures are adopted to ensure environmental safety and social harmony, it is not necessary to avoid these types of projects and the benefits that may result as a consequence of them.[187]

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184. Inter-Am. Dev. Bank, Camisea Project: Fact Sheet, http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=837877 (last visited Feb. 1, 2009) [hereinafter Camisea Project: Fact Sheet].

185. *See id.*

186. *See* Public Agencies with Responsibility in the Camisea Project, *supra* note 160 (describing the various functions of each agency).

187. *See* Camisea Project: Fact Sheet, *supra* note 184 (discussing how possible negative effects have been mitigated). According to the Inter-American Development Bank, the Camisea Project has benefited Peru as follows (with all values expressed in net present value): (1) 30% reduction in marginal cost of energy generation resulting in $6.5 billion in direct benefits to electricity end-users; (2) substitution of expensive fuels for natural gas by industrial users that will generate $913 million in savings; (3) gas supplied to more than 5,000 residential and commercial customers, generating another $334 million in savings; (4) conversion of vehicle engines from gasoline fuel to compressed natural gas representing $204 million in savings (three compressed natural gas stations in Lima); and (5) approximately $1.5 billion per year reduction in hydrocarbon trade deficit representing approximately $7.5 billion. Economic Benefits, *supra* note 15.