



THE 1st VALIDATION OF SOCIAL CARBON REPORT

50MW Sipansihaporas Hydro Power Plant, North Sumatra



	PT. MUTUAGUNG LESTARI
	VALIDATION REPORT

COMPANY NAME	SIPANSIHAPORAS HYDROELECTRIC POWER PLANT <i>(PT. PLN (Persero) Sektor Pandan, Unit Pembangkit Listrik Tenaga Air Sipansihaporas, Sumatera Utara)</i>		
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Status of Index (Total number of index lowered, upgraded, or appropriate)			VALIDATION DATE	No. DAYS	VALIDATOR
Lowered	Upgraded	Appropriate			
0	4	27	30 Oct – 01 Nov 2013	3	Sigit H. Prabowo & Abdul Rahman

AUDIT LOCATION (S) / ADDITIONAL SITES	<u>Sector Office:</u> Jl. R. Suprpto, Sibuluan 1, Kecamatan Sibolga, Pandan, Kabupaten Tapanuli Tengah, North Sumatera - INDONESIA. <u>Sipansihaporas:</u> Desa Husor, Sibuluan dan Sihaporas, Kecamatan Sibolga, Kabupaten Tapanuli Tengah, North Sumatera - INDONESIA	
AUDIT CRITERIA (standard)	Social Carbon Standard	
AUDIT TEAM:	TEAM LEADER: Sigit H. Prabowo	
	TEAM MEMBERS: Abdul Rahman	

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1. Introduction

South Pole Carbon Assessment Ltd has commissioned Mutucertification International (PT. Mutuagung Lestari) to validate the 50 MW Sipansihaporas Hydro Power Plant located at North Sumatra, Indonesia (VCS Project ID 486), Indonesia, for the Year 0 assessment of Social Carbon Standard (or the 2nd Validation of Social Carbon Report).

1.1. Objective

The purpose of this validation is to have an independent third party assessment in order to evaluate the accuracy and consistency of the Indicators of the Social Carbon Standard.

1.2. Scope and Criteria

The validation is based on independent site visit and evaluation as well as on document evaluation and review. The following are the reference documents:

- "Social Carbon Report Version 3.2, April 2011";
- "Approved Indicators for Hydroelectric Power Plants – Version 4.1, June 2011.

1.3. Social Carbon Project Description

The project activity is a run-of river type hydro power plant in North Sumatra province in Indonesia. The total actual installed capacity of the project is 50 MW, comprised of a 33 MW and a 17 MW turbine, with a predicted electricity supply to the grid of 214,800 MWh per annum. The project is owned and developed by PT. PLN (Persero), a state-owned electricity company in Indonesia. The project generates and supplies the electricity to the connected Sumatra grid. The electricity currently generated by the grid is relatively carbon intensive. The proposed project will increase the utilization of renewable energy sources, in this case hydro energy, by operating a new hydropower plant.

The project activity generates an average of 159,596 emission reduction credits per year, starting on the 21 October 2002 (project start date). According to the CDM UNFCCC criteria, one approved GHG program by the Voluntary Carbon Standard (VCS) Board, the project is classified as large scale.

1.4. Validation Team

The Validation team consists of the following personnel :

- Sigit H. Prabowo – Mutucertification International Team Leader and Auditor of Social and Environmental Responsibility, Environmental Specialist
- Abdul Rahman – Mutucertification International Auditor of Social and Environmental Responsibility, Sustainability Specialist

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2. Methodology

The validation of the project was carried out from October 30 – November 01, 2013.

Preparations : October 2013.

On-site visit : October 30 – November 01, 2013.

Draft Reporting : November 04 – 15, 2013.

Final Reporting : December 02, 2013.

2.1. Method used for obtaining information

The method used for applying the Social Carbon Methodology indicators was the following:

Stage 01 : Elaboration of a questionnaire.

Stage 02 : Site visit to the Hydroelectric Power Plant.

Stage 03 : During the site visit, direct interview as well as phone interview were conducted with several local stakeholders relevant to the project.

Stage 04 : Obtainment of some evidence during the visit, such as pictures and documents.

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3. Validation Result

3.1. Social Resources

1. Population Displacement Evaluates if the project requires people, activities or services to be displaced due to the implementation of the project, as well as the measures adopted during the planning and implementation stages, in order to minimize impacts or maximize positive impacts.	
Previous index (in the social carbon report): 3	
Observation: During interview with Mr. Afandi Lubis as Sipansihaporas HPP worker, it was known that there is no population displacement during the planning stage. There is no population house located in construction areas. The construction area is a farmland, so Sipansihaporas HPP gives a compensation for several farmlands. Only legal owners of properties (farmland) are compensated. Compensation was defined as an amount of money given to the landowners. Mr. Afandi Lubis also said that the compensation of land acquisition has been completed since 2001. During interview with Mr. Saut Sipahutar as a local people, it was evident that their farmland was acquisition by Sipansihaporas HPP during the construction stage. He was compensated by amount of some money.	
Index after validation: 3	Status: Appropriate
Perspective: The money given to land owners had already through comprehensive studies carried out by relevant government institution, e.g. Department of Agriculture, Department of Forestry, Department of Social, etc. The amount of compensation had been calculated to include the assurance of livelihood reestablishment and live condition. There were no families without clear legal ownership accepted the compensation.	

2. Communication with stakeholders Evaluates the process for contacting stakeholders in the planning, implementation and operation stages.	
Previous index (in the social carbon report): 3	
Observation: During interview with Mr. Dian Hernanto (PLN Worker), it was known that every year Sipansihaporas HPP communicate with local stakeholders. Mr. Dian Hernanto said again that there are socialization program in June 2013 regarding water level warning system. Based on interviews with Mr. Pandu Samosir, it was known that there is a watershed (Indonesia: " <i>Daerah Aliran Sungai</i> " = DAS) forum in Central Tapanuli Regency. The Forum named DAS Mursala formed by decision of Head of Central Tapanuli Regency (<i>Keputusan Bupati Tapanuli Tengah</i>) No. 401.1/DISHUTBUN/2013 on April 08, 2013 to manage the watershed in Central Tapanuli Regency. On September 16, 2013, Mr. Pandu Samosir as Manager PLN Sector Pandan invited by the Secretary of the Central Tapanuli Regency (<i>Sekretariat Daerah Kabupaten – Pemerintah Kabupaten Tapanuli Tengah</i>) to attend a Forum DAS Mursala work meeting (Invitation letter No. 005/2648). Sipansihaporas HPP also have a procedure related communication and consultation	

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with internal and external stakeholders (Procedure number PRO-MR-05).	
Index after validation: 5	Status: Upgraded
Perspective: From the interview, it was known that Sipansihaporas HPP has developed specific procedures to maintain relations and effective communications with stakeholders.	

3. Acceptance: Evaluates the level of support or acceptance from the neighboring population in regard to the project construction or management of the reservoir. Evaluates the level of support or acceptance from the neighboring population in regard to the entrepreneur.	
Previous index (in the social carbon report): 6	
Observation: During interview with Mr. Dian Hernanto (PLN Worker), every 6 months Sipansihaporas HPP makes a survey regarding the level of acceptance of communities. The survey using a questionnaire and inserted into the RKL/RPL – <i>Rencana Pengelolaan Lingkungan dan Rencana Pemantauan Lingkungan</i> (Environmental Management and Monitoring Plan) document and reported to the Environmental Agency of Central Tapanuli Regency. From this questionnaire, the local communities felt positive impacts on the existence of Sipansihaporas HPP to their economic and social needs. Based on interview with Mr. Hahotan Panggabean (Head of Sihaporas IV Village) and Mrs. Raudhatul Husna (Headmaster of MDA Al Ikhlas) it was known that the local communities were not disturbed by operational activities of Sipansihaporas HPP. There is no opposition from local communities regarding the existence in Sipansihaporas HPP.	
Index after validation: 6	Status: Appropriate
Perspective: Index of 6 was estimated as the most appropriate to the condition. The survey showed that strong support and no opposition from local communities regarding the existence in Sipansihaporas HPP.	

4 Social Demands Social demands may be understood as institutional or civil society interests: demand made by institutions, agencies, NGOs, municipalities or other institutions which aim to improve the human development and/or the environment near the project. This item evaluates which social demands the entrepreneur addresses.	
Previous index (in the social carbon report):5	
Observation: Upon interview with local communities (Mr. Hahotan Panggabean and Mrs. Raudhatul Husna), it was evident that Sipansihaporas HPP had meets several demands from local communities such as tree plantation program, donation for mosques and churches, and community capacity building. The demands made by surrounding community(s) were supposed to be in the format of proposal letter to the office of PLN. Upon receiving the demands, Sipansihaporas HPP will consider which demand(s) is first priority and which second, etc. To accommodate social demands from community(s) Sipansihaporas HPP through their Sector Office (Pandan Sector Office located at Sibolga) established P3L program. Sipansihaporas HPP through PLN Sector Pandan have a policy regarding CSR in	

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Manager's Decision No. 004.K/MSPDN/2013. The core of this policy is to establish a team with the task:

1. Develop the CSR Program plans;
2. Implement the CSR program;
3. Implement the evaluation of the CSR Program;
4. Implement the monitoring of the CSR Program;
5. Make a report of implementation the CSR Program; and
6. Make periodic reports to the manager.

Index after validation: 5

Status: Appropriate

Perspective:

Sipansihaporas HPP was committed to implement a CSR (Corporate Social Responsibility) called P3L project which made them need to bring extra benefit to surrounding communities. Index of 5 (five) was estimated as the most appropriate to the condition. The survey showed that Sipansihaporas HPP has policies and rules to execute voluntary social actions.

5.Social Programs

Evaluates the quality and results of additional social programs, such as:

- Social and Environment Communication Program
- Community development / income generation
- Ethnic integration
- Other social areas (please specify)

Previous index (in the social carbon report):5

Observation:

From social demands received by Sipansihaporas HPP, a program of budgeting was carried out in order to fulfill the demands after determine which demands(s) is priority. All of the social demands and realization of the social program were all reported in Sipansihaporas HPP's CSR (corporate social responsibility) report.

The local community(s) felt that the impact of the programs in 2010 – 2013 has positive influence on everyday behavior, such as:

1. Plant tree sapling distribution and reforestation;
2. Community capacity building; and
3. Financial donation for mosques and churches also financial donation for local madrasah (Islam school for children).

Index after validation: 5

Status: Appropriate

Perspective:

Sipansihaporas HPP had realized several social programs such as contribution to financial donation for mosques and churches also donation for local madrasah, community capacity building and distribution to surrounding community regarding trees saplings. Programs were successfully held and have positive impacts on the beneficiary to local surroundings (i.e. economic benefit, psychology benefit, social benefit, etc.).

6. Social Benefit

Evaluates the additional benefits to local stakeholders, when these benefits are measurable or evident. These benefits may include:

- Improvement in health system (new installations, enhanced water and electricity systems, support for health programs, and others)
- Additional economic activities (industry, commerce, and others)

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- Improvements in the infrastructure (roads; energy provision, leisure spaces, and others)	
Previous index (in the social carbon report):5	
Observation: Social benefit was closely related to acceptance index, which Sipansihaporas HPP had already evaluate the level of acceptance including social benefit in the periodic report of “RKL-RPL” once every three months. Sipansihaporas HPP had contributed on several social projects such as financial donation for mosques and churches also donation for local madrasah, community capacity building and distribution to surrounding community regarding trees saplings. The benefit of financial donation for mosques, churches and local school is to improve the quality of life of the local communities. The benefits of distribution tree saplings are to improve the water availability level by recovering the forest and also to improve the economy level of the local communities by selling the fruit produced from the trees. Sipansihaporas HPP provides the access road from their base camp station into the powerhouse station where the road was also used by the surrounding communities. In these years, Sipansihaporas HPP gets an additional CSR from carbon trading funds given by PLN head office. The additional CSR will be used to improvement in health system (enhanced water system and support for health programs) and additional economic activities.	
Current index: 5	Status: Appropriate
Perspective: Social benefits were delivered to more than one aspects, i.e. economic, infrastructure, etc. The benefits were accepted by surrounding community of Sipansihaporas HPP. Therefore, the index 5 is the most appropriate. The index may rise to 6 if Sipansihaporas HPP improves the public health system.	

3.2. Human Resources

7. Capacity Building Initiatives
Implementation: Evaluates the availability of human resources as well as their competence for executing the project, including the research, planning and implementation stages. Uncertainty regarding the availability of human resources may be described as the absence of qualified professionals in the market, reduced numbers in the working team, and need for international support, among other alternatives that may compromise the execution of the project.
Previous index (in the social carbon report):5
Observation: Upon interview with Mrs. Vinesa Atthya H. (Administration officer human resources development at PLN Sector Pandan office), it was evident that Sipansihaporas HPP has a standard for competence and also standard for position and formation of employee ((“Daftar Sebutan Jabatan dan Formasi Tenaga Kerja Sesuai SK. Direksi No:261.K/DIR/2012 dated May, 30th 2012). A competence examination (Indonesia: <i>Uji Kompetensi</i>) was one big program held once every 1 year to ensure the competence of all personnel. Sipansihaporas HPP had also proposed training needs to their main office in Medan.

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Mr. Dian Hernanto said that every employee conducted more than one training in intervals of one year or less.

Current index: 6 **Status:** upgraded

Perspective:

Sipansihaporas HPP had already in the stage of maintenance and operations. And all of the personnel involved in the operational and maintenance stages of the HPP were competent on their basis of competence standard issued by PLN. Certificate of competence were also available issued by PLN in coordination with external parties. More than one trainings for one month were usually conducted upon approval by Head Office of PLN.

8. Health and safety

Evaluates if a comprehensive employee safety program is in place and its effectiveness can be demonstrated by the absence of life-threatening accidents.

Previous index (in the social carbon report):6

Observation:

Sipansihaporas HPP has an emergency preparedness and response procedure in place (PRO-ENJ-04). Also Sipansihaporas HPP has a quality manual, environmental and health and safety management procedure in place (MNL-SPDN-01).

A certificate of Indonesian Health and Safety Management System (SMK3) were also available. Until now, no occurrence of life threatening accidents reported.

Current index: 6 **Status:** Appropriate

Perspective:

Sipansihaporas HPP had already received certificate of occupational health and safety management system called the SMK3, and the audit carried out by independent parties, and the certificate was issued by Decree from Minister of Labor (*Surat Keputusan Menteri Tenaga Kerja dan Transmigrasi Republik Indonesia No. kep 83/Men/V/2010*) Valid until May 2013. A recertification audit planned on December 2013.

9. Benefits

Evaluates existence of additional benefits to workers regarding the following:

- Education (support for studies)
- Health (medical and hospital assistance)
- Retirement assistance
- Other (leisure, sports, and meal vouchers, among others)

In cases where the services for implementation, operation and maintenance are outsourced, the indicator evaluates the outsourced employees also.

Previous index (in the social carbon report):2

Observation:

Upon interview with several employee of Sipansihaporas HPP (Mr. Afandi Lubis, Mr. Frayudi, Mr. Dian, and Mr. Dike), it was known that Sipansihaporas HPP had provided additional benefits to workers regarding several aspects, i.e. routine periodic medical checkup every once a year for all operational staffs, education (operational course), retirement fund, sport facilities, etc.

However the compensation / benefits were only given for permanent staffs of Sipansihaporas HPP, and do not include contractors / sub contractors working on behalf of Sipansihaporas HPP. According to interview, those subcontract staffs had

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already receive their own benefit / compensation such as health insurance, etc. from company which employed them.	
Current index: 2	Status: Appropriate
Perspective: The benefits were only given to permanent staffs and not include outsourcing personnel.	

10. Transfer of new technology Evaluates the level of technological innovation and the technologies employed in the project or regarding operational procedures and maintenance, actions for mitigation of impacts, or other aspects that show a break from the common practice of the sector. The existence of research and development projects (R&D) related to the project are also considered in this indicator.	
Previous index (in the social carbon report):3	
Observation: Sipansihaporas HPP had several innovation programs, such as a program called Early Warning System using DTMF (Dual Tone Multi-Frequency) in 2010; Special tools for demolition and installation of "extension joint penstock" in 2011; and water level monitoring system in 2012.	
Current index: 3	Status: Appropriate
Perspective: Sipansihaporas HPP had already implemented on several innovation technology developed by their internal ideas. However the program still not yet covered to gains efficiency and to reduce environmental impacts.	

11. Involvement of the employees in the carbon project Evaluates internal communication process of the entrepreneur in relation to project emissions reductions.	
Previous index (in the social carbon report):6	
Observation: Upon interview with Mr. Dian Hernanto it was known that several employees of Sipansihaporas HPP participated in a social carbon training workshop given by South Pole Carbon. PLN Sector Pandan created a team called "Monitoring VCS Project and Social Carbon Team" in July 02, 2012 and renewal on January 02, 2013 with 14 personnel (3 personnel from Sipansihaporas HPP). One of the team's tasks is to communicate to all employees about the carbon project and information on climate change. Mr. Dian said that all of the employees had been informed regarding the implementation of Social Carbon Project since 2010.	
Current index: 6	Status: Appropriate
Perspective: Since Sipansihaporas HPP is not such a large scale group of employees, it was not difficult to inform all of the employees about the implementation of Social Carbon Project, mostly after all areas have its own representative that participated in the Social Carbon Training. Therefore it was evident that information regarding implementation of carbon project was not only received by management and employee(s) directly involve in the carbon project.	

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3.3. Financial Resources

12. Economic Performance	
Evaluates if the economic performance of the project met the expectations of the shareholders and directors regarding, for example, goals for energy generation, stated periods for executing jobs, and operational and maintenance costs. It evaluates if the goals were met or if they did not meet the expectations for the given period.	
Previous index (in the social carbon report):4	
Observation: Sipansihaporas HPP has been running in line with expectations. In 2010 until 2012, the power generation has reached the expected target and gained the expected profit.	
Index after validation: 5	Status: Upgraded
Perspective: The flow of river water strongly affects the electrical energy generated. The reduction of water flow will reduce the production of electricity generated. In 2010 Sipansihaporas HPP surpassed 100.2% from the target; in 2011 Sipansihaporas HPP surpassed 102.4% from the target; and in 2012 Sipansihaporas HPP surpassed 112% from the target.	

13. Market	
Evaluates eligibility of credits to CDM Market or to other voluntary markets as well as their attractiveness to potential buyers.	
Previous index (in the social carbon report):3	
Observation: All project activities are eligible under the VCS.	
Index after validation: 3	Status: Appropriate
Perspective: none.	

14. Sale of Credits	
Evaluates uncertainties regarding the value of commercialized credits generated by the project.	
Previous index (in the social carbon report):1	
Observation: Until now there is no buyer who submitted the purchase of carbon from hydropower.	
Index after validation: 1	Status: Appropriate
Perspective: Social Carbon verification will improve the attractiveness to potential buyers.	

3.4. Natural Resources

15. Sustainability principles	
Evaluates the existence of specific policies and programs geared toward project sustainability and the applicability of the principles, values and objectives regarding sustainability.	
Previous index (in the social carbon report):5	
Observation: Sipansihaporas HPP had a documented policy regarding environmental and quality (PRO-ENJ-02). The policy was also distributed to all sectors of Sipansihaporas HPP.	

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Besides the policy, an environmental and quality objective was also available to ensure a consistent quality and environmental performance.

During interview, it was known that Sipansihaporas HPP has an Environment Management and Monitoring Plan (RKL – RPL) to maintain the natural resource sustainability. It was known too that Sector Pandan Office placed a representative staff (Mr. Ronniko Silalahi, Mr. Buchari, and Mr. Saldy) in Sipansihaporas HPP to manage the Environment Sustainability Program (P3L). Every 3 months, P3L plan an environment sustainability program based on the RKL – RPL.

Current index: 5	Status: Appropriate
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Perspective:

The objective, target, and program regarding quality and environmental matters were consistently implemented. A monitoring of the objective's achievement was available. Project owner are effectively incorporated by some collaborators (i.e. Local Stakeholders, Local Environment Office Central Tapanuli Regency, and North Sumatera University) to achieve the goals and objectives.

16. Environmental Management

Evaluates environmental management procedures adopted by the project, including organization, coordination of actions, and documentation of impacts identification, monitoring and periodic emissions reporting, as well as existence of regular certification.

Previous index (in the social carbon report):6

Observation:

Sipansihaporas HPP had already gained ISO 14001:2004 (Environmental Management System) certificate issued by TUV Rheinland as ISO 14001 certification body. The certificate has expired on September 25, 2013. During interview with Mr. Dian, it was known that Sipansihaporas HPP will be re-certificated in November 2013.

Current index: 6	Status: Appropriate
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Perspective:

Sipansihaporas HPP was consistent to implement the environmental management system, and yet to be certified by an independent certification body. The index of 6 was the most appropriate to be given regarding indicator of environmental management system.

17. Environmental legislation

Evaluates accordance of the project with environmental laws and norm, including agreements with public authorities, such as environmental licenses, requested authorizations for installation, etc.

Previous index (in the social carbon report):5

Observation:

Sipansihaporas HPP had identified all of environmental regulations that were relevant to be complied (list of environmental regulation was in place). From the list, Sipansihaporas HPP had also evaluated the compliance status to all environmental regulation identified. And it was evident that majority of the regulation had been complied, though the not complied regulation had been addressed as environmental programs so a full compliance will be achieve.

Sipansihaporas HPP was in progress to gain a permit regarding environmental matter, i.e. temporary storage of hazardous waste from the Local Environment Office Central Tapanuli Regency.

Current index: 5	Status: Appropriate
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Perspective:

Although Sipansihaporas HPP was still in progress to have a permit on temporary storage of hazardous waste from the Local Environment Office Central Tapanuli Regency, but the index 5 (environmental licenses routinely issued, determined obligations are fulfilled) was the most appropriate to be given. The reason was because the amount of hazardous waste produced by Sipansihaporas HPP was insignificant, i.e. used lubricants and dry cells. Besides that, there was no other activity within HPP operational that needed any license/permit from relevant government agencies, i.e. no waste discharge to soil and/or river, etc.

Sipansihaporas HPP had identified all of the legal environmental regulation relevant to be complied and also had evaluated the compliance level to all of the legal environmental regulation identified.

18. Legal Procedures

Evaluates if the project was involved with any lawsuit or administrative sanctions executed by public organs, person or people, aiming the environment and human health protection or repair.

Previous index (in the social carbon report):6

Observation:

Upon interview with Mr. Dian Hernanto and Mr. Afandi, it was known there is no lawsuit received regarding environmental matter and human health since the earlier stage of HPP construction until now.

Current index: 6

Status: Appropriate

Perspective:

There was no lawsuit addressed to Sipansihaporas HPP since they started of construction phase up to this moment.

19. Environmental Impacts

Evaluates magnitude of environmental impacts of the project, existence of environmental impact statements/studies, and maintenance of environmental evaluation procedures.

Previous index (in the social carbon report):4

Observation:

Besides Environmental Impacts Assessment made by Sipansihaporas HPP, a periodic evaluation on the significance of environmental impacts was also carried out (on the form: "*Daftar Aspek dan Dampak Lingkungan*"). Sipansihaporas HPP had a list of all environmental aspects occurred from operational activity and evaluate the impacts which can have significant or insignificant impact on environment or human health.

From the list, it was evident that several impacts were categorized as insignificant impacts and most of it was significant. Sipansihaporas HPP had also determined what action needed to control the impacts. A procedure of identification on environmental aspects and impacts evaluation was also in place.

Current index: 4

Status: Appropriate

Perspective:

From the periodic identification of environmental aspects and evaluation of the significance of environmental impacts ("*Daftar Aspek dan Dampak Lingkungan*"), it was evident that majority of the impacts were significant. As many as 83% of the impacts were significant.

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20. Environmental risk management	
Evaluates the definition, implementation and maintenance of procedures relevant to potential emergencies and accidents related to the project, as well as those relevant to the preparation of answers for such situations, in case of emergency.	
Previous index (in the social carbon report):6	
Observation: Sipansihaporas HPP had established a documented procedure regarding potential emergency condition and what action shall be done by all relevant personnel working at the HPP (procedure PRO-ENJ-04). A simulation of emergency condition to test such procedure was also had been conducted, e.g. on February 26, 2013 regarding fire drill and first aid. A documented record of simulation was in place (Indonesia: <i>Laporan Pelatihan Siaga Tanggap Darurat</i>).	
Current index: 6	Status: Appropriate
Perspective: Sipansihaporas HPP had committed to carry out periodic simulation on emergency condition according to emergency preparedness and response procedure.	

21. Reservoir and marginal areas management	
Measures the effectiveness of the Reservoir and marginal areas management, considering:	
a) Existence of invasions in the marginal and adjacent areas and mitigation measures adopted b) Existence of plan or program for use of the reservoir and surrounding areas, considering its coverage and efficacy for assurance of the planned uses.	
Previous index (in the social carbon report):4	
Observation: Upon interview with Mr. Dian H., it was known that community safety was being priority concern to Sipansihaporas HPP management, therefore all activities around reservoir was to be prohibited. Sipansihaporas HPP had set a perimeter fence and warning signs so that none of unauthorized personnel will enter reservoir area. During site visit, it was known that Sipansihaporas HPP has a reforestation program to manage their reservoir. Their planting <i>Mahoni, Avocado, Mango, Durian and Ingul trees</i> in reservoir side.	
Current index: 4	Status: Appropriate
Perspective: Due to Sipansihaporas HPP management policy regarding restricted area of the reservoir, it was obvious that no invasions or inadequate uses of Sipansihaporas HPP's reservoir. Sipansihaporas HPP has a reforestation program for management of the reservoir and marginal area.	

22. Erosion, landslides, silting and floods	
Evaluate the current stage of erosion and silting of the reservoir and if the operations are a major cause of the problem and the existence of programs to manage these risks, such as monitoring, and erosive processes control (ex: protection and reforestation programs for reservoir protection zone).	
Previous index (in the social carbon report):5	
Observation:	

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Sipansihaporas HPP had no contribution to erosion or silting in the reservoir and downstream areas. As HPP, they are very relying on water debit so they implemented any action to minimize erosion and silting.

However, illegal logging activity in the upstream area had caused a major problem of silting. This issue had became a discussion topic in the newly establish forum between HPP and local stakeholders.

To manage and avoid the erosion, Sipansihaporas HPP has a reforestation program with several types of wood tree plants focused along the Sihaporas River and catchment area also Sipansihaporas HPP cleans up the river from waste every three months.

Current index: 5	Status: Appropriate
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Perspective:

Sipansihaporas HPP had implemented a program of tide monitoring, reforestation, and discussion with local stakeholders regarding the sustainability of Sihaporas River.

23. Water Resources

Evaluate the current stage of water quality of the reservoir or downstream water and if the operations are a major cause of the problem and the existence of programs to manage these risks, such as monitoring data and measures of control implemented (ex: sewage treatment station eventually implemented in local communities due to construction of the hydroelectric plant, actions taken for sanitary vigilance, etc).

Previous index (in the social carbon report):4

Observation:

Monitoring and measurement of river water quality was conducted once every three months and reported to relevant agencies in the document of *RKL-RPL*.

Current index: 5	Status: Upgraded
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Perspective:

From the last monitoring of water quality (covered Natolbak Embouchure, Paramaan River, Inlet Power House 1, Sihaporas River, Outlet Power House 1 and Outlet Power House 2), it was obvious that Sipansihaporas HPP had no contribution to any water pollution. Several result showed that Sipansihaporas HPP enhanced water quality. The sample of water than tested in Binalab Laboratory. Binalab Laboratory has accredited by National Accreditation Committee (No. LP-412-IDN).

Sipansihaporas HPP also has a cleanup program in each dam site to reduce and preventive the sedimentation.

3.5. Biodiversity Resources

24. APP (Permanent Protected Areas) and Legal Reserve

Evaluates state of conservation of the areas around the reservoir including Permanent Preservation Areas - APP and legal reserve areas whether owned by the project or not.

Previous index (in the social carbon report):3

Observation:

During interview with Mr. Dian Hernanto less than 50% of areas surrounding the HPP are a national owned forest (register 13 / *Tapian Nauli Protected Forest*). This legally conservation area had been degraded due to illegal logging by surrounding community

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who thought the forest as community forest, and by other party. But Sipansihaporas HPP has conducted reforestation program since 2010.

Current index: 3 **Status:** Appropriate

Perspective:

Less than 50% of legal reservation areas are degraded. It was known since 2010 Sipansihaporas HPP has a reforestation program to recovery degraded areas.

25. Recovery of Degraded Areas

Evaluates existence of reforestation projects in marginal areas of the reservoir, procedures for planting, maintenance, control measures and surveillance, it also evaluates extent of actions; limited legal obligation; areas of the company, riparian forest in the incremental basin, and so on.

Previous index (in the social carbon report):5

Observation:

Sipansihaporas HPP had carried out reforestation on several areas. A series of monitoring data on the forestation was in place, and it was known that reforestation took place since 2010 until now. As many as 1.800 tree seedlings had been planted in 2010; 1.900 tree seedlings in 2011; 2.200 tree seedlings in 2012; and 1.000 tree seedlings in 2012.

The planting area was those related to keep the water availability, such as Paramaan Watershed, Dam Site Area, Access road Sipan I and Sipan II, Spoil Bank near Dam Site, and Natolbak Watershed which are owned by HPP, and also community land such as Sibuluan Nauli which are on either water catchment areas of the tributary intakes or upstream of the intakes.

Current index: 5 **Status:** Appropriate

Perspective:

Sipansihaporas HPP had carried out voluntary action of reforestation on several areas, both owned by Sipansihaporas HPP and outside the project ownership.

26. Biodiversity Conservation

Evaluates actions of biological monitoring developed in surrounding environmental areas and influence of the power plant; assesses specific programs developed for flora and fauna on the banks of the reservoir or in surrounding areas for conservation and research.

Previous index (in the social carbon report):3

Observation:

Sipansihaporas HPP, in the RKL-RPL report every three months, had already addressed monitoring result regarding the abundance of lake fauna, i.e. plankton and benthos. A simple analysis had also determined to explain connection between water quality and the abundance of plankton and benthos.

The sample location located in Natolbak Embouchure, Paramaan River, Inlet Power House 1, Sihaporas River, Outlet Power House 1 and Outlet Power House 2. The sample of plankton and benthos tested in Binalab Laboratory.

Current index: 3 **Status:** Appropriate

Perspective:

Still insufficient evidence that Sipansihaporas HPP had already conducted further research on local biodiversity other than lake fauna. The monitoring on the abundance of lake fauna was limited to the obligation to provide RKL-RPL report every three months, where monitoring of plankton and benthos became one of the essence of the

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report.

27. Ichthyofauna	
Evaluates existence of procedures for monitoring the ichthyofauna, partnership for research, and management actions (restocking, culture in ponds, net).	
Previous index (in the social carbon report):1	
Observation: Sipansihaporas HPP had not yet monitored the existence of ichthyofauna.	
Current index:1	Status: Appropriate
Perspective: Sipansihaporas HPP had not yet monitored the existence of ichthyofauna.	

3.6. Carbon Resources

28. Additionality	
Consists of reduction of greenhouse gas emissions or increase in removal of CO ₂ beyond what would occur in absence of project activity. This item evaluates tools used for assessing Additionality and compliance with national and international standards.	
Previous index: 6	
Observation: Additionality is validated according to an investment analysis.	
Index after validation: 6	Status: Appropriate
Perspective: none	

29. Emission Reductions Calculations & Monitoring	
Evaluates methodologies used to calculate emissions and monitor compliance with national and international standards.	
Previous index: 6	
Observation: ACM0002/Version 10, Sectoral Scope: 1, EB 47 was used.	
Index after validation: 6	Status: Appropriate
Perspective: none	

30. Validation & Verification	
Evaluates existence of total or partial validation / verification of project by a third party, if third party is accredited by UNFCCC, and compliance procedures for validation / verification with national and international standards.	
Previous index: 6	
Observation: Project was verified by TUV-SUD, India.	
Index after validation: 6	Status: Appropriate
Perspective: none	

31. Project Performance	
Evaluates performance of project, verified by comparison with estimates of emissions reductions under the PDD.	
Previous index:5	
Observation: The project reduces emissions by 392,884 tCO ₂ from 1st April 2010 up to 28th	

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February 2013 (35 months). In general the project performance is still in-line with the estimated annual reduction in the registered VCS-PD (159,596 tCO₂ / year).

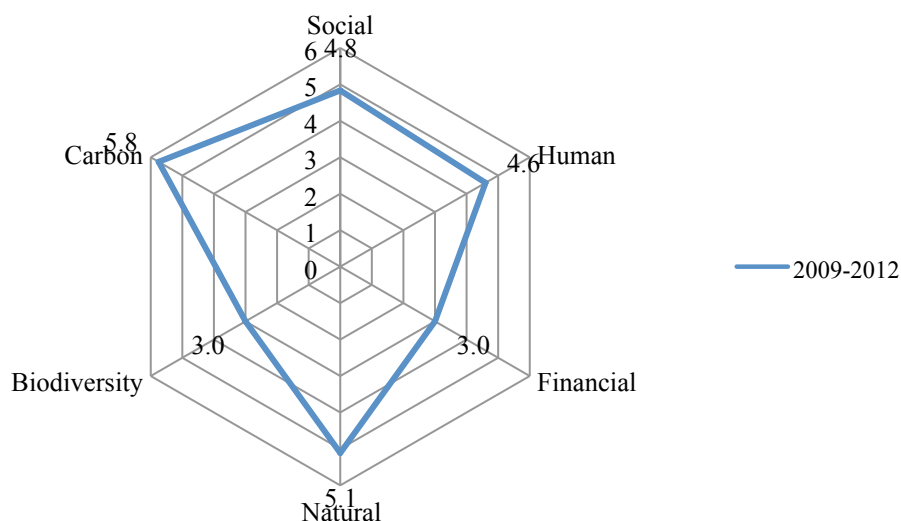
Index after validation: 5 **Status:** Appropriate

Perspective: none

3.7. General Performance

Table 1. Performance by resource

Resource	Critical	Satisfactory	Sustainable	Average	General Performance
Social	0.0%	16.7%	83.3%	4.8	Sustainable
Human	20.0%	20.0%	60.0%	4.6	Sustainable
Financial	33.3%	33.3%	33.3%	3.0	Satisfactory
Natural	0.0%	22.2%	88.9%	5.1	Sustainable
Biodiversity	25.0%	50.0%	25.0%	3.0	Satisfactory
Carbon	0.0%	0.0%	100.0%	5.8	Sustainable
Total	13%	24%	65%	4.4	Sustainable



3.8. Historic Performance and Comparative Analysis

Table 2. Historic Performance (compared to year zero)

Resource	2009-2012 (Year Zero)
Social	4.8
Human	4.6
Financial	3.0
Natural	5.1
Biodiversity	3.0
Carbon	5.8
Total	4.4

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4. Conclusion

Upon validation that covers document review and interview, it was evident that Sipansihaporas HPP had done several actions in order to reach higher performance according to the Social Carbon Standard.

Social Resources – Sipansihaporas HPP, together with local stakeholders, should strengthen the existence of Forum Das Mursala so that periodic forum meetings can be done to discuss public opinion and also to carry out studies on the public opinion. The P3L program has a positive impact to several local communities and influence their behavior everyday. Sipansihaporas HPP should consider improving the health system (new installations, enhanced water and electricity systems, support for health programs, and others).

Human Resource – Currently, benefits which cover health insurance, retirement assistance, and education was limited to permanent workers and not yet included outsourced personnel. Apart from whether outsourced personnel had been given the above benefits by their carrying company, Sipansihaporas HPP did provide other benefit such as leisure and sports to all of the employees. Sipansihaporas HPP should consider to carry out satisfaction survey to all employees regarding benefits they received, and also to provide proper benefits to all employees either permanent or outsourced.

Performance on the human resources sector can also be raised if Sipansihaporas HPP had developed and implement a new innovation to reduce environmental impacts and to gain efficiency.

Financial Resources – The economic benefit of the Sipansihaporas HPP was not able to calculate since electricity produced was distributed to Distribution Section of PLN (PLN P3B / *Penyaluran dan Pusat Pengatur Beban*), a separate part of the HPP, and not being directly sold to market. Furthermore, electricity price had been centrally standardized by the government. However, Sipansihaporas HPP electricity production itself were possible to be calculated which depends on the river water flow, i.e. normal flow will produced normal electricity and vice versa.

Natural Resources–Sustainable performance had been performed by Sipansihaporas HPP regarding Natural aspects. Mostly since Sipansihaporas HPP had already certified by external party on their Quality Management System, Environmental Management System, and also for SMK3 as Indonesian Occupational Health and Safety Management System. Higher performance average can be gain by Sipansihaporas HPP if consider more action regarding the management of reservoir and marginal areas, which according to social carbon standard, higher performance can be given if there are multiple uses of reservoir and adjacent areas with evident benefits to the local population.

Biodiversity Resources – Only satisfactory performance was given to the aspect of biodiversity resources, mostly due to the existing condition that more than 70% of HPP area is in a permanent protected area. To achieve a higher performance, Sipansihaporas HPP should consider more action on biodiversity conservation and to

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conduct a study regarding the abundance of ichthyofauna to determine the effect of HPP operational with the abundance of ichthyofauna.

CarbonResources– already validated by TUV Rheinland – India.

Upon validation of Social Carbon Report, it was evident that no indicator score lowered. And also as many as 4 (four) indicators had their scores upgraded: indicators number 2, 7, 12, and 23. Therefore, as many as 27 (twenty seven) indicators had not changed from the earlier Social Carbon Report.

5. Person Interviewed

- Mr. Pandu Samosir, worker at PLN Pandan Sector Office
- Mr. P. Sitorus, worker at PLN Kitsu Medan HPP.
- Mr. Binharun Nababan, worker at PLN Pandan Sector Office
- Mr. Dian Hernanto, worker at PLN Pandan Sector Office
- Mr. M. Afandi Lubis, worker at Sipansihaporas HPP.
- Mr. Frayudi, worker at Sipansihaporas HPP.
- Mr. M. Buchari, worker at Sipansihaporas HPP.
- Mr. Dike Satya L., worker at Sipansihaporas HPP.
- Mr. Boy Sinaga, worker at Sipansihaporas HPP.
- Ms. Vinesa Atthya harness, worker at PLN Pandan Sector Office
- Mr. Saut Sipahutar, local people from Sibuluan Nauli Village.
- Mr. Hahotan Panggabean, Head of Sihaporas IV Village.
- Mrs. Raudhatul Husna, Headmaster of MDA Al Ikhlas.

6. References

- "Approved Indicators for Hydroelectric Power Plants – Version 4.1, June 2011.
- Sipansihaporas HPP periodic monitoring of environmental parameters (ind: *Laporan RKL-RPL Triwulan I 2010, Triwulan II 2010, Triwulan III 2010, Triwulan IV 2010, Triwulan I 2011, Triwulan II 2011, Triwulan III 2011, Triwulan IV 2011, Triwulan I 2012, Triwulan II 2012, Triwulan III 2012, Triwulan IV 2012, Triwulan I 2013, and Triwulan II 2013*).
- 2010, 2011, and 2012 Performance Target of Sipansihaporas HPP.
- Sipansihaporas HPP's Manual on Environmental Management System.
- Procedure communication and consultation with internal and external stakeholders (Procedure number PRO-MR-05)
- Procedure emergency preparedness and response (PRO-ENJ-04).
- Procedure quality manual, environmental and health and safety management (MNL-SPDN-01)
- Certificate of ISO 14001, ISO 9001, and SMK3 possessed by Sipansihaporas HPP.
- www.socialcarbon.com
- www.southpolecarbon.com

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7. Validation Statement

THE SOCIAL CARBON REPORT ESTABLISHED BY SOUTH POLE CARBON ASSET MANAGEMENT LTD. INCLUDES ALL CHANGES REQUESTED IN THIS FINAL VALIDATION REPORT(LAST REVISION WAS SENT ON NOVEMBER 27, 2013).

THIS STATEMENT WAS ISSUED WITHOUT ANY PRESSURE OR INTIMIDATION FROM ANY PARTIES, AND UPON AN OBJECTIVE VALIDATION AUDIT. THIS VALIDATION REPORT SHALL NOT BE EDITED BY UNAUTHORIZED PARTIES WITHOUT PERMISSION FROM VALIDATOR PERSONNEL OF MUTUCERTIFICATION INTERNATIONAL AS SOCIAL CARBON APPROVED CERTIFYING ENTITIES.

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8. Attachment

8.1 Corrective Action request form (CAR)
resolved by project owner.

8.2. Index of photos

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8.1 CAR form resolved by project owner

Several non conformances were observed between Social Carbon Report and condition at field. Those non conformances shall be corrected by project owner by revising the Social Carbon Report. Details of the non conformances can be seen below. Project owner shall fill in the column of “summary of project owner response” and “revised sections”.

NC #:	1 of 4	Reference:	SCR Section 4, Indicator 2
Non conformance detail:			
- Sipansihaporas HPP has developed specific procedures to maintain relations and effective communications with stakeholders. - There is a watershed forum in Central Tapanuli Regency. The Forum named DAS Mursala formed by decision of Head of Central Tapanuli Regency No. 401.1/DISHUTBUN/2013 on April 08, 2013 to manage the watershed in Central Tapanuli Regency. - The index shall be revised, since index given in the SCR was 3, while upon validation it was evident that the index could be upgraded into 5. Please refer to Validation Report section 3 regarding validation Result on Indicator number 2 for more detail on validation perspective.			
Summary of project owner response:			
The subjected indicator has been upgrade into index 5 on the SCR Version 2.			
Revised sections (if applicable):			
SCR Version 2, Section 4.1, Indicator 2 Page 7.			
Conclusion (filled by validator):			
Project owner had revised the SCR. CAR is resolved.			

NC #:	2 of 4	Reference:	SCR Section 4, Indicator 7
Non conformance detail:			
- The employees of the project have experience and have participated in more than one training in intervals of one year or less. - The index shall be revised, since index given in the SCR was 5, while upon validation it was evident that the index could be upgraded into 6. Please refer to Validation Report section 3 regarding validation Result on Indicator number 7 for more detail on validation perspective.			
Summary of project owner response:			
The subjected indicator has been upgrade into index 6 on the SCR Version 2.			
Revised sections (if applicable):			
SCR Version 2, Section 4.2, Indicator 7 Page 11.			
Conclusion (filled by validator):			
Project owner had revised the SCR. CAR is resolved.			

NC #:	3 of 4	Reference:	SCR Section 4, Indicator 12
Non conformance detail:			
- Sipansihaporas HPP surpassed from the expected target in 2010, 2011, and 2012. - The index shall be revised, since index given in the SCR was 4, while upon validation it was evident that the index could be upgraded into 5. Please refer to Validation Report section 3 regarding validation Result on Indicator number 12 for more detail on validation perspective.			
Summary of project owner response:			
The subjected indicator has been upgrade into index 5 on the SCR Version 2.			
Revised sections (if applicable):			
SCR Version 2, Section 4.3, Indicator 12 Page 13.			

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Conclusion (filled by validator):
Project owner had revised the SCR. CAR is resolved.

NC #:	4 of 4	Reference:	SCR Section 4, Indicator 23
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Non conformance detail:
- Sipansihaporas HPP has a cleanup water program from waste in each dam site to reduce and preventive the sedimentation. - The index shall be revised, since index given in the SCR was 4, while upon validation it was evident that the index could be upgraded into 5. Please refer to Validation Report section 3 regarding validation Result on Indicator number 23 for more detail on validation perspective.

Summary of project owner response:
The subjected indicator has been upgrade into index 5 on the SCR Version 2.

Revised sections (if applicable):
SCR Version 2, Section 4.4, Indicator 23 Page 17.

Conclusion (filled by validator):
Project owner had revised the SCR. CAR is resolved.

8.2 INDEX OF PHOTOS

Pictures	Comment
	Interview with Mr. Saut Sipahutar, a local people from Sibuluan Nauli Village.
	Interview with several Sipansihaporas HPP workers
	Interview with Ms. Vinesa Atthya Harness, worker at Sipansihaporas HPP



Interview with Mr. Pandu Samosir,
Head of PLN Sector Pandan Office



Interview with Mrs. Raudhatul Husna,
Headmaster of MDA Al Ikhlas



The Islamic School (MDA Al Ikhlas),
the development was funded by PLN
donation (CSR Program).



Interview with Mr. Hahotan
Panggabean, Head of Sihaporas
IVillage.



Reforestation program near to the power house



New drainage system in access road near to the power house to minimize the run off



Sihaporas River



Power House Unit 1

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	Plant tree sapling in Power House Unit 2
	Restricted area of Sipansihaporas HPP