# 「環境社会配慮ガイドラインの運用実態確認報告」の

# 補足調査

平成 20 年 9 月

独立行政法人国際協力機構

## １．調査の目的

「環境社会配慮ガイドラインの運用実態確認報告」は、JICA において、ガイドラインに基づき、手続き等の運用が実際にどのように行われているかを確認し、整理することであり、今般、現地での実施機関、住民、NGO 等を対象とした現地調査を行い、この補足を行ったものである。現地調査を通じて現行ガイドラインの課題及び新 JIC 環境社会配慮ガイドラインで検討すべき論点の抽出に資するものである。

## ２．対象案件

（１）フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」
（開発調査　カテゴリＡ）

（２）ネパール国「アッパーセティ水力発電計画」
（開発調査　カテゴリＡ）

（３）エルサルバドル国「日本・中米友好橋建設計画」
（無償資金協力の事前の調査　カテゴリＢ）

（４）インドネシア国「持続的沿岸漁業振興計画」
（無償資金協力の事前の調査　カテゴリＢ）

（５）エルサルバドル国「地方自治体廃棄物総合管理」
（技術協力プロジェクト　カテゴリＢ）

## ３．調査概要

調査方法、結果は、別添報告を参照されたい。以下に概要を記載する。

### （１）調査者

原科幸彦東京工業大学教授（フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」）JICA 本部及び個人コンサルタント、JICA 現地事務所（インドネシア国「持続的沿岸漁業振興計画」を除く）、ローカルコンサルタント

### （２）聞き取り対象者

相手国実施機関、被影響世帯等の住民、現地 NGO（エルサルバドル国「日本・中米友好橋建設計画」、インドネシア国「持続的沿岸漁業振興計画」を除く）

### （３）情報公開

各案件とも、ステークホルダー協議の実施時に、必要な情報を提供している。エルサルバドル国「地方自治体廃棄物総合管理」では、ステークホルダー協議ではなく、市の広報誌、公開セミナーにより情報を提供している。

相手国の制度に基づく環境影響評価等についても、文書が公開されている。

フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」、ネパール国「アッパーセティ水力発電計画」での住民聞取り調査では、情報公開の程度と非自発的住民移転との関係が強い。

### （４）ステークホルダー協議

カテゴリ A 案件では勿論のこと、カテゴリ B 案件である、エルサルバドル国「日本・中米友好橋建設計画」、インドネシア国「持続的沿岸漁業振興計画」でも、ステークホルダー協議が開催されている。

マスミーティング以外にも、FGD(Focus Group Discussion)を参加した案件もある（フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」、ネパール国「アッパーセティ水力発電計画」）。

住民聞取り調査では、ステークホルダー協議参加者について、プロジェクトの受容程度に関係する要素が得られている。

ステークホルダー協議の協議結果のプロジェクト計画への反映については、ミティゲーションに反映、環境影響評価書に反映等の対応がなされている。

## ４．調査から得られた課題と論点

### （１）ステークホルダー協議・情報公開について

・本件では、ステークホルダー協議開催の告知手段として、関連するNGOに招待状の送付を行ったが、元々、現地で活動するNGOの数は限られているため、参加が限定的であった点がNGOから指摘されている。このような地域ではNGO以外の地域組織（伝統的組織や学校など）も調査の視野に入れることも考えられる。（フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」）

・本件では、開発調査の終了後2年以上が経過していたため、調査対象者の移転の可能性や、プロジェクトに関する記憶が曖昧であるなどの状況が見られた。ステークホルダー協議の開催から事業実施までに間が空く場合には、実施前に再度ステークホルダー協議を開催することも考えられる。（フィリピン国「Cavite-Laguna(CALA)東西道路事業化促進調査」）

・ステークホルダー協議の実施方法に関して、当該社会の現状に応じた方法を検討する必要があると考えられる。本件では、協議の参加者は必ずしも科学的知識が豊富というものではなく、プロジェクトに対する意見も限られている。更に、事業実施が確定していないため、住民の関心事項（事業の開始時期、補償）に明確に回答できない状況が見られた。こうした背景を踏まえると、現地住民を対象とした協議では、必ずしも３段階での協議を実施する必要性はないように思われる。ステークホルダー協議の目的が、住民の意見を聴取し、意思決定に反映させることにあるのなら、形式を追うよりもこの目的に合わせることが重要であると考えられる。（ネパール国「アッパーセティ水力発電計画調査」）・建設完了後の雇用等にも、住民の関心がある。（インドネシア国「持続的沿岸漁業振興計画」）

・ガイドラインに従っているが、住民のプロジェクトに関する知識はそれほど高くはないことから、より情報提供が適切になされることにより、便益を高めることができると考えられる。エルサルバドル国「日本・中米友好橋建設計画」

### （２）JICA 環境社会配慮ガイドラインの理解

・JICA ガイドラインは、実施官庁にとって難解。また、明確に提出すべく文書等まで規定されておらず、如何なる文書が手続き上必要であるか等困惑することがあったこと、またガイドラインがプロジェクトの準備段階しか規定していないとの指摘が実施機関からあった。（エルサルバドル国「日本・中米友好橋建設計画」）

・ガイドラインが、相手国と JICA の両方への要求事項を含むこと等のため、実施機関のガイドラインの理解はあまり高くなかった。（インドネシア国「持続的沿岸漁業振興計画」）

# Report on the additional study on the review of the implementation of JICA Guidelines for Environmental and Social Considerations

August 2008

Japan International Cooperation Agency (JICA)

Table of Contents

# Abbreviations

| | |
|---|---|
| ADHU | Asociación para el Desarrollo Humano |
| AGFI | Adjusted Goodness of Fit Index |
| APC | Analysis of Principal Component |
| CALA | Cavite-Laguna |
| CSA | Covariance Structure Analysis |
| DENR | Department of Environmental and Natural Resources |
| DPWH | Department of Public Works and Highways |
| DS | Development Study |
| ECC | Environmental Compliance Certificate |
| EIA | Environmental Impact Assessment |
| EIS | Environmental Impact Statement |
| ESC | Environmental and Social Considerations |
| F/S | Feasibility Study |
| FGD | Focus Group Discussions |
| FSL | Full Supply Level |
| GA | Grant Aid |
| GFI | Goodness of Fit Index |
| IEE | Initial Environmental Examination |
| ISDEM | Instituto Salvadoreño de Desarrollo Municipal (Salvadoran Institute for Municipal Development) |
| JICA | Japan International Cooperation Agency |
| LGU | Local Government Unit |
| MARN | Mnisterio de Medio Ambiente y Recursos Naturales (Ministry of the Environment and Natural Resources) |
| MRA | Multiple Regression Analysis |
| NEA | Nepal Electricity Authority |
| NGO | Non Governmental Organization |
| NTT | East Nusa Tenggara Province |
| ODA | Official Development Assistance |
| RAP | Resettlement Action Plan |
| RMSEA | Root Mean Square Error of Approximation |
| SHM | Stakeholder Meeting / Consultation |
| SWM | Solid Waste Management |
| TCP | Technical Cooperation Project |
| the Guidelines | JICA Environmental and Social Considerations Guidelines |
| VDC | Village Development Committee |
| WS | Work Shop |
| WWF | World Wide Fund for Nature |

## 1. Background, Objectives and Methodology of the additional review

### 1.1 Background

JICA introduced the “Environmental and Social Considerations Guidelines” (hereinafter, “the Guidelines”) on April 1, 2004. By outlining JICA’s responsibilities and procedures related to environmental and social considerations and identifying the requirements of recipient governments, the Guidelines encourage recipient governments to take into consideration the appropriate environmental and social factors.

On the other hand, JICA and Japan Bank for International Cooperation (sector of Overseas Economic Cooperation Operations) will be integrated into the new JICA on October 1, 2008. For the new JICA, environmental guidelines shall be consolidated into a single framework in consideration of the characteristics of each aid scheme in order to provide the appropriate environmental and social considerations in the implementation of Official Development Assistance (ODA) projects and to clarify environmental procedures required of developing countries.

As the first step of unifying the both Guidelines, JICA issued “Report on the Review of Implementation JICA Guidelines for Environmental and Social Considerations”. To grasp the actual implementation status of the Guidelines, JICA conducts additional study through field survey on case cooperation projects.

### 1.2 Objective

The purpose of “The Review of Implementation of JICA Guidelines for Environmental and Social Considerations” is to examine how the various procedures and processes prescribed in the Guidelines are actually implemented. This additional study is to complement the Review by a site investigation including a hearing to implementation agencies, local peoples, and Non Governmental Organizations (NGOs), and to contribute to extract issues of the existing Guidelines and concerns to be discussed on the new JICA Guidelines.

### 1.3 Target cooperation projects and study schedule for the additional study

In this additional study, we set up the following conditions in order to select target cooperation projects:

a. The projects from sixty (60) projects in which have been already selected as targets of “The Review of Implementation of JICA Guidelines for Environmental and Social Considerations”, and also preliminary or preparatory studies implemented after the Guidelines was put into force;
b. Category A projects are priority; however, Category B projects of Preliminary Study for

Grant Aid and Technical Cooperation Project are chosen, because of no Category A project in these schemes in the projects selected from condition “a”;

c. The projects having remarkable issues; such as involuntary resettlement/land acquisition; and

d. JICA overseas office locates in the target countries, and there are no obstacles for the field survey on security.

Finally, we selected the following projects as in the Table 1.1.

**Table 1.1 Selected Cooperation Projects**

| Title of the cooperation Project | Country | Category | Scheme | Schedule |
|---|---|---|---|---|
| Feasibility Study and Implementation Support on the Cavite-Laguna (CALA) East – West National Road Project in Philippines | Philippines | A | DS | 29 May – 2 June, 2008 |
| Upgrading feasibility study on Upper Seti (Damauli) storage hydroelectric project in Nepal | Nepal | A | DS | 3 – 8 June, 2008 |
| *Informe del estudio de diseno basico para el proyecto de construction del Puente de la Amistad del Japon y Centroamerica entre la Republica de El Salvador y la Republica de Honduras* (Study on the Project for Construction of the Japan-Central America Friendship Bridge Between El Salvador and Republic of Honduras) | El Salvador | B | GA | 25 – 26 May, 2008 |
| Basic Design Study on The Project for the Promotion of the Sustainable Coastal Fisheries in the Republic of Indonesia | Indonesia | B | GA | 8 – 14 June, 2008 |
| The Project for Integrated Solid Waste Management for Municipalities in the Republic of El Salvador | El Salvador | B | TCP | 27 – 30 May, 2008 |

(Note) DS: Development Study, GA: Preliminary Study for Grant Aid, TCP: Technical Cooperation Project

## 1.4 Survey Items

In order to review the implementation of the Guidelines, we set up the survey items the following;

1) General

a. Peoples’ perception on the project

b. Response of the recipient government on the implementation of the Guidelines

c. The Environmental Assessment procedures implemented by the government

2) Information disclosure

a. Timing of the information disclosure

b. Method, contents, and language

3) Stakeholder Meeting

a. Timing, method, contents, and language

b. Refection of result of the meetings on the project design

4) Items of impact

a. Response of the recipient government in order to mitigate impacts

b. Involuntary resettlement and land acquisition

## 2. Feasibility Study and Implementation Support on the Cavite-Laguna (CALA) East – West National Road Project in the Philippines

2.1 Scheme and Classification

Scheme: Development Study (Feasibility study)

Classification: Category A

2.2 Outline of the Feasibility Study

The objective of the feasibility study (hereinafter called “F/S”) is not only to study the feasibility of road construction, but also to review regional development and the transportation concept. In particular, the study aims to alleviate traffic congestion in the CALA area; to improve the living environment of local residents; to promote dispersion of the urban functions of Metro Manila; as well as to further encourage improvement of the investment environment in the area, given its strategic location vis-à-vis the international port in Batangas City. Based on these priority aims, the F/S will be implemented with the following objectives:

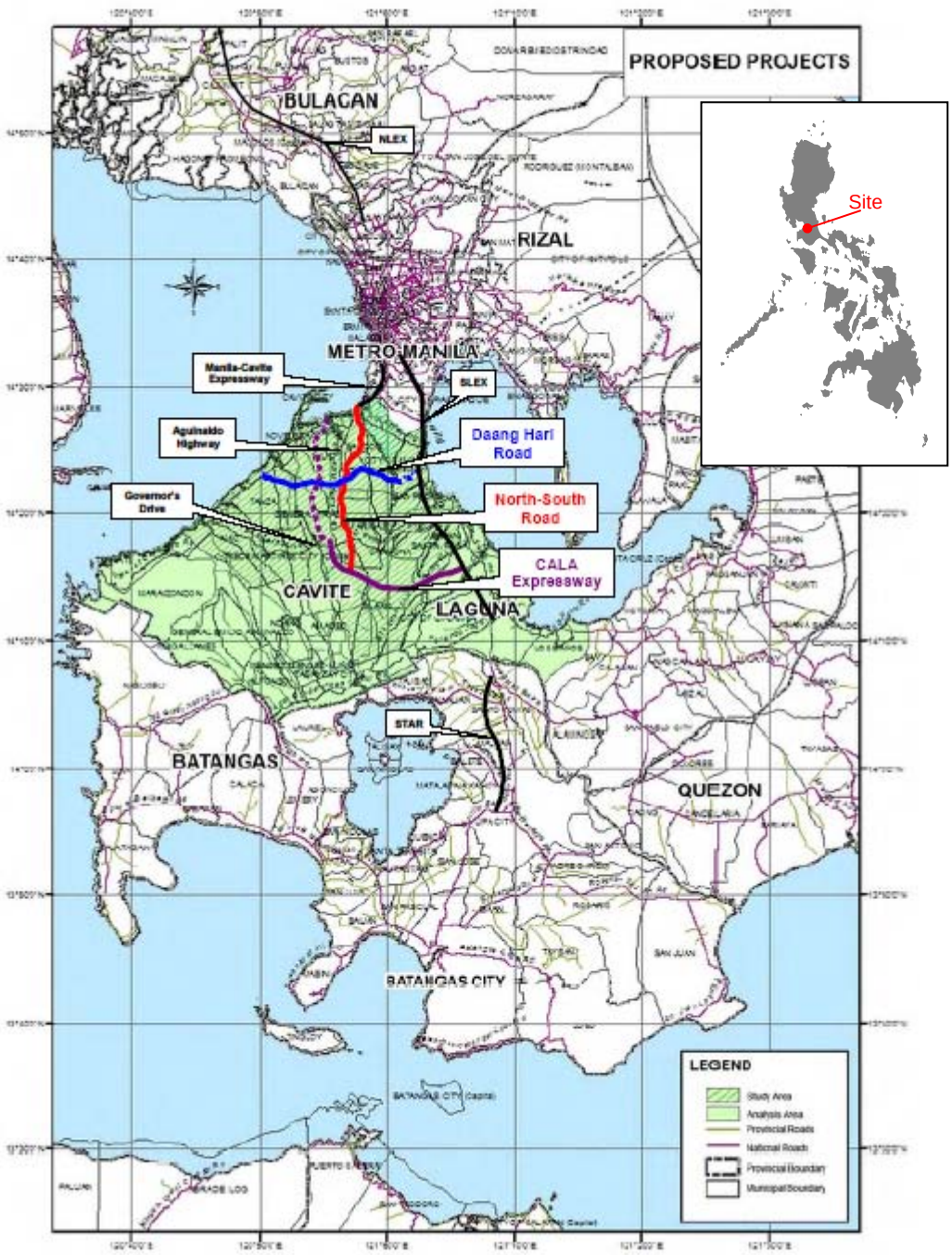
i) Review of the CALA regional traffic network development scenario;

ii) Examination of the feasibility of the CALA East-West Road and related projects and preparation of a project implementation plan; and

iii) Capacity development of the staff of the counterpart agency and other related agencies.

After completion of the F/S, the government of the Philippines is planning to prepare an implementation plan using private funds and/or their own funds. They have not yet prepared an implementation plan including a resettlement action plan for the project. As another road project in the suburban area, they are planning to extend the existing coastal road, and an environmental and social study for this project is now ongoing.

2.3 Geographical location of project site




2.4 Methodology of the survey

(1) Study period

29 May, 2008 – 2 June, 2008

(2) Mission members

Prof. Sachihiko HARASHINA (Tokyo Institute of Technology)

Dr. Kanji USUI (Private Consultant)

JICA Philippines Office

Local consultants (Green Ville College)

(3) Respondents to the survey

Department of Public Works and Highways (DPWH)

Local NGO (Urban and Poor Association)

People expected to be affected in the study in Bacoor district (hereinafter called “affected people” in this chapter)

(4) Methodology

| Date | Respondents | Methodology | Mission Members |
|---|---|---|---|
| 31 May – 1 June, 2008 | Affected People | Interview of the targets (101 samples collected) | Local consultant, Prof. Harashina, Dr. Usui, JICA Philippines Office |
| 30 May, 2008 | Local NGO (Urban and Poor Association) | Interview of the targets | Prof. Harashina, Dr. Usui, JICA Philippines Office |
| 2008/5/30 | DPWH | Interview of the targets | Prof. Harashina, Dr. Usui, JICA Philippines Office |

2.5 Results of the survey

(1) Survey Results of Affected People

In order to find out the actual perception of the affected people regarding the project, we conducted interviews through the following process.

a. Preparation of a questionnaire

We prepared a questionnaire for the purpose consisting of 27 variables (Table 2.1) related to the various perceptions of the project such as the purpose of the project, adverse impacts, information disclosure, stakeholder meetings (hereinafter called “SHMs”), involuntary resettlement, and so on.

**Table 2.1 List of variables**

| Variable | Value (min – max) | Meaning | Variable | Value (min – max) | Meaning |
|---|---|---|---|---|---|
| V1 | 1 - 2 | Awareness of the project | v15 | 1 - 5 | Easiness of explanation of the project etc. |
| V2 | 1 - 5 | Support for the project | v16 | 1 - 5 | Satisfaction with SHM |
| V3 | 1 - 5 | Degree of benefit from the project | v17 | 1 - 5 | Degree of distortion of explanation of the project etc. |
| V4 | 1 - 5 | Degree of disadvantage from the project | v18 | 1 - 5 | Degree of accuracy of explanation of the project etc. |
| v5 | 1 - 5 | Degree of satisfaction with given information | v19 | 1 - 5 | Degree of distribution of opportunities to participate in SHM |
| v6 | 1 - 5 | Degree of sufficiency of given information | v20 | 1 - 5 | Degree of explanation of adverse impacts of the project |
| v7 | 1 - 5 | Degree of understanding of given information | v21 | 1 - 5 | Degree of explanation of mitigation measures for the adverse impacts of the project |
| v8 | 1 - 5 | Degree of distortion of given information | v22 | 1 - 5 | Appropriateness of explanation of involuntary resettlement |
| v9 | 1 - 2 | Attendance at the stakeholders' meetings | v23 | 1 - 5 | Degree of agreement on involuntary resettlement |
| v10 | 1 - 5 | Degree of satisfaction with announcement of SHM | v24 | 1 - 5 | Degree of satisfaction with explanation of compensation for relocation |
| v11 | 1 - 6 | Period of announcement of SHM | v25 | 1 - 5 | Degree of satisfaction with response of the project owner |
| v12 | 1 - 4 | Language used at SHM | v26 | 1 - 5 | Degree of acceptance of the project |
| v13 | 1 - 5 | Response from project owner | v27 | 1 - 2 | Awareness of the EIS* system |
| v14 | 1 - 5 | Accessibility of location of SHM | | | |

*EIS: Environmental Impact Statement

b. Selection of target households as interviewees

We randomly selected the target households in Bacoor district because it will be one of the largest areas affected by the project. The total number of affected households in Bacoor is 349, and we needed to collect at least 61 samples to obtain a statistically significant result. To identify the target households, we used a location map describing the shape of their buildings. We obtained 101 samples finally.

c. Training of the enumerators of the field survey

Before beginning the field survey, local consultants coached ten enumerators to be in charge of the interviews.

d. Statistical analysis

In order to analyze people's perceptions in depth, we used the following statistical method: firstly "Analysis of Principal Component [APC]" for grouping the variables; and secondly "Covariance Structure Analysis [CSA]" for analyzing the causal relationship between the groups identified in the first step.

The descriptive statistics of all the samples are shown in Table 2.2.

**Table 2.2 Descriptive statistics of all samples (n=101)**

| | Average | Standard Deviation | Kurtosis | Skewness | | Average | Standard Deviation | Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|---|---|
| V2 | 3.06 | 1.190 | -0.894 | -0.008 | V20 | 3.38 | 1.130 | -0.565 | -0.491 |
| V3 | 2.79 | 1.235 | -0.988 | 0.212 | V21 | 3.31 | 1.102 | -0.641 | -0.318 |
| V4* | 1.75 | 0.984 | 0.040 | 1.097 | V22 | 3.19 | 1.102 | -0.789 | -0.291 |
| V5 | 3.25 | 1.062 | -0.897 | -0.258 | V23 | 2.87 | 1.339 | -1.242 | 0.010 |
| V6 | 3.24 | 1.193 | -1.006 | -0.293 | V24 | 3.43 | 1.099 | -0.281 | -0.638 |
| V7 | 3.13 | 1.092 | -0.560 | -0.401 | V25 | 2.69 | 0.745 | 1.438 | -0.913 |
| V8* | 3.20 | 0.980 | -0.393 | -0.345 | V26 | 3.08 | 1.129 | -0.983 | -0.158 |

* The variables V4 and V8 show a contrary sense; the smaller the value, the stronger the negative perception

Some variables related to perception of the SHMs indicated improper values such as V10, V12, V13, V14, V15, V16, V17, V18 and V19. In the preparation, we excluded these variables from the data.

The three principle components are extracted by processing by the APC method (Table 2.3). We named the components "Degree of information disclosure", "Adverse impacts and mitigation measures", and "Involuntary resettlement and acceptance of the project".

**Table 2.3 Result of APC method**

| Variable | Component 1: Degree of information disclosure | component 2: Adverse impacts and mitigation measures | component 3: Involuntary resettlement and acceptance of the project |
|---|---|---|---|
| V7 | 0.836 | -0.071 | 0.082 |
| V8 | 0.670 | -0.058 | 0.241 |
| V4 | 0.633 | -0.440 | -0.458 |
| V25 | 0.625 | 0.155 | 0.074 |
| V6 | 0.488 | 0.119 | 0.331 |
| V24 | 0.484 | 0.085 | 0.217 |
| V2 | -0.164 | 0.899 | -0.062 |
| V23 | 0.287 | 0.766 | -0.257 |
| V3 | 0.064 | 0.538 | 0.062 |
| V26 | 0.501 | 0.522 | -0.185 |
| V22 | 0.100 | 0.416 | 0.306 |
| V20 | 0.139 | 0.163 | 0.891 |
| V21 | 0.222 | -0.115 | 0.826 |
| V5 | 0.355 | -0.247 | 0.364 |
| Sum | 5.240 | 2.732 | 2.432 |
| % of variance | 38.951 | 10.954 | 8.908 |
| Cumulative contribution ratio (%) | 38.951 | 49.905 | 58.813 |

Secondly, we processed the data by the CSA method to analyze the causal relationship of the components extracted by the APC method. AMOS 5.01 of SPSS Corp. was used as the analysis software, and the maximum likelihood method was used to presume the number of mothers.

The standardized results are shown in Figure 2.1.

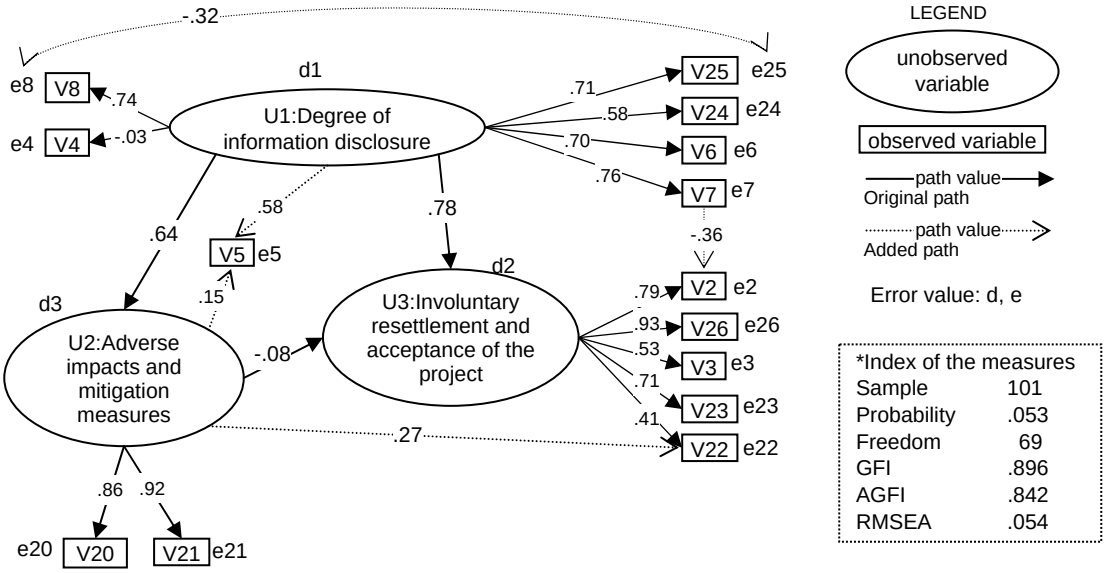



**Figure 2.1 Result of CSA method**

The index of measures in the original model showed inappropriateness. Hence, we modified the model within limitations that can be interpreted in the real world through Modification Indices. The newly added paths as a result of the modification are expressed by dotted lines and the final index of measures is also shown in Figure 2.1. The indices of the measures showed comparatively lower appropriateness. However, this was at an interpretative level.

The component "*U1: Degree of information disclosure*" considerably influenced both "*U2: Adverse impacts and mitigation measures*" and "*U3: Involuntary resettlement and acceptance of the project*". According to the average value of the variables that make up the three components (Table 2.2), most of the variables showed people's negative perception. Hence, the model implies that lack of information disclosure may raise perception of the impacts of the project, mitigation measures, compensation, and acceptance of the project.

For comparison between the present and the past, we also tried to analyze the cause of the perception above using the results of the previous survey in the F/S conducted around March 2006.

When asked their period of residence within the past 10 years, 46.3 percent answered yes in Bacoor district, and 66.7 percent in the poor area of Zapote 5 (Table 2.4). We also compared their awareness of the project as of the F/S with their awareness at present. Even though they were well aware of the project two years ago — the ratio showed more than 90 percent — their current awareness decreased by as much as 20 points (Table 2.5). These results imply that a large portion of the population of this area has already moved to another place because the first consultation with stakeholders was held more than two years ago. Moreover, migrant labor to another area or country is generally observed in this country.

**Table 2.4 Period of residence (as of the feasibility study)**

| | Years | Bacoor district | | Poor area (Zapote 5) | |
|---|---|---|---|---|---|
| Period of residence | Within 10 | 146 | 46.3% | 88 | 66.7% |
| | 11-20 | 53 | 16.8% | 28 | 21.2% |
| | 21-30 | 46 | 14.6% | 9 | 6.8% |
| | 31-40 | 28 | 8.9% | 4 | 3.0% |
| | 41-50 | 23 | 7.3% | 2 | 1.5% |
| | 51-70 | 7 | 2.2% | 1 | 0.8% |
| | Unknown | 12 | 3.8% | | |
| | Total | 315 | | 132 | |

**Table 2.5 Awareness of the project**

| | | Bacoor district | | Zapote 5 | |
|---|---|---|---|---|---|
| Awareness of the project: As of the F/S (2006.03) | Aware of the project | 297 | 93.4% | 129 | 93.5% |
| | Not aware of the project | 21 | 6.6% | 9 | 6.5% |
| | Total | 318 | | 138 | |
| Awareness of the project: As of this study (2008.06) | Aware of the project | 72 | 71.3% | 20 | 66.7% |
| | Not aware of the project | 29 | 28.7% | 10 | 33.3% |
| | Total | 101 | | 30 | |

Note: “Acceptance of the project” was not surveyed among the affected households (by resettlement) as of the F/S

e. Perception of participants in SHMs

We obtained 20 samples from a group of participants in the SHMs, but the number of samples was not sufficient to apply the same statistical methods as in the previous analysis such as APC or CSA. Instead, we applied “Multiple Regression Analysis [MRA]” this time.

**Table 2.6 Descriptive statistics of participants in SHMs (n=20)**

| | Average | Standard Deviation | Kurtosis | Skewness | | Average | Standard Deviation | Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|---|---|
| V2 | 2.60 | 1.392 | -1.200 | 0.292 | V16 | 2.55 | 1.234 | -1.620 | -0.130 |
| V3 | 2.05 | 1.276 | 0.024 | 1.079 | V17 | 2.50 | 1.277 | -1.090 | 0.421 |
| V4* | 1.95 | 1.099 | -0.430 | 0.901 | V18 | 2.45 | 1.276 | -1.020 | 0.377 |
| V5 | 2.50 | 1.147 | 0.602 | 0.930 | V19 | 2.25 | 1.164 | 0.075 | 0.792 |
| V6 | 2.25 | 1.118 | -1.080 | 0.455 | V20 | 2.75 | 1.333 | -1.180 | 0.213 |
| V7 | 2.65 | 1.226 | -1.580 | -0.200 | V21 | 2.40 | 1.046 | -0.990 | 0.294 |
| V8* | 2.60 | 1.095 | -1.220 | -0.150 | V22 | 2.70 | 1.129 | -1.240 | -0.310 |
| V10 | 2.05 | 1.099 | -0.790 | 0.685 | V23 | 2.45 | 1.432 | -1.150 | 0.530 |
| V13 | 2.45 | 1.317 | -0.550 | 0.735 | V24 | 3.00 | 1.257 | -0.930 | -0.530 |
| V14 | 1.90 | 1.021 | 3.245 | 1.537 | V25 | 2.45 | 0.887 | -0.810 | -1.090 |
| V15 | 1.90 | 0.912 | -0.350 | 0.676 | V26 | 2.55 | 1.468 | -1.100 | 0.556 |

* The variables V4 and V8 show a contrary sense; the smaller the value, the stronger the negative perception

Firstly, we picked variables 2 and 26 as “explained variables” and analyzed the relationship between these two variables and the others. There was no strong relationship between the variables, but V23 was likely to influence V2 and V26. This implies that V23 (*agreement on resettlement*) is an important factor in people’s acceptance of the project.

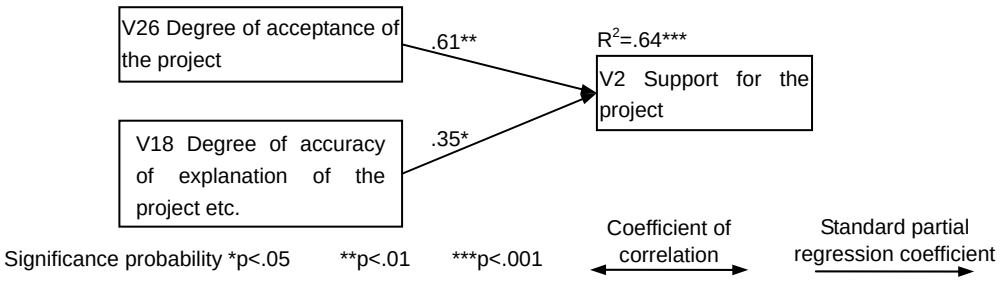



**Figure 2.2 Result of MRA method (V2)**

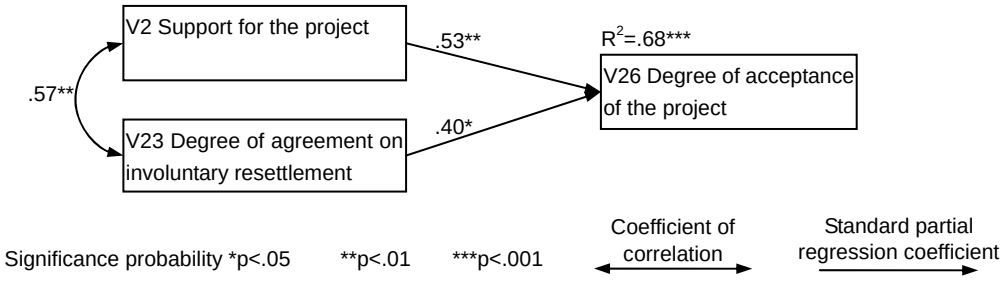



**Figure 2.3 Result of MRA method (V26)**

Also, we picked and analyzed V4 and V8 because these variables indicated a negative perception of the project. However, the MRA method could not be applied to V4 as an "explained variable" because it did not have a strong relationship with the other variables (Table 2.7). For this reason, we tried another way of analyzing this case.

**Table 2.7 Coefficient of correlation between V4 and others**

| Variable | Value | Variable | Value |
|---|---|---|---|
| V2 | 0.02 | V17 | -0.21 |
| V3 | 0.19 | V18 | -0.25 |
| V5 | -0.10 | V19 | -0.32 |
| V6 | -0.29 | V20 | -0.22 |
| V7 | 0.18 | V21 | -0.16 |
| V8 | -0.19 | V22 | 0.03 |
| V10 | -0.13 | V23 | -0.09 |
| V13 | 0.13 | V24 | -0.04 |
| V14 | -0.33 | V25 | 0.13 |
| V15 | -0.22 | V26 | 0.12 |
| V16 | -0.17 | | |

The participants in the SHMs expressed their concerns about the likely adverse impacts of the project. Their concerns focused on land, housing, water, noise and vibration, and air and were one of the causes of their negative perception.

**Table 2.8 Participants' concerns about likely adverse impacts**

| Concerns | No. of times mentioned |
|---|---|
| Land (Land collapse, soil erosion, subsidence, etc.) | 8 |
| Housing and social services | 7 |
| Water (water run-off, contamination) | 6 |
| Noise and vibration | 6 |
| Air (pollution, offensive odor) | 5 |
| Economic activities | 3 |
| Labor and employment | 3 |
| Loss of income | 3 |
| Waste | 2 |
| Accidents | 2 |
| Land use and zoning | 1 |
| Archaeological and historical sites | 1 |
| Population (resettlement, influx of population) | 1 |
| Public health and safety | 1 |
| Culture, lifestyle and values | 1 |
| Conflict of interests | 1 |

V8, which expresses their negative perception, was influenced by V10 and V3 to some degree (Figure 2.4). Interestingly, V10 influenced V8 considerably even though the average value of V10, indicating their positive perception, was lower. This result means that the more effort you make to notify the public in advance, the higher peoples' sense of distortion, although it is difficult to interpret. V3 also influenced V8 to some degree.

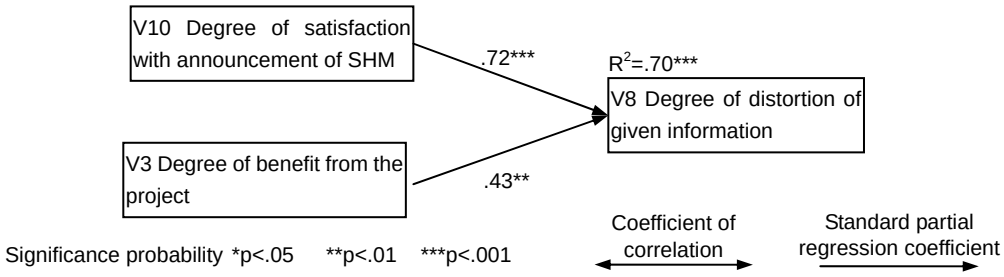



**Figure 2.4 Result of MRA method (V8)**

(2) Survey results of the local NGO

The study mission conducted a short interview of the local NGO, named "Urban and Poor Association" on May 30, and the result is described below.

a. Main activities of the NGO

Their main activity is to provide various legal services to poor people, especially to landless people in Metro Manila and the suburban areas. In their observation, many people come a long distance because there are few NGOs in the suburban area of Metro Manila. Their schemes are based on demand-oriented activities: they will start to support persons or groups after receiving a demand from them.

The major financial resource of the NGO is a grant from the Catholic Church, and a small portion of public subscriptions.

b. Relationship with the study

Their main commitment to the study is attendance at the meetings with stakeholders. DPWH invited them to the meetings with stakeholders every time, and they participated twice, in the 2nd and 3rd meetings. They received all the invitation letters, but were only available on those two occasions.

c. Consultation with stakeholders (SHMs)

They were basically satisfied with the meetings, especially on enhancement of public participation from the planning stage and introduction of group discussion and workshop methods.

However, they also pointed out various issues such as the following: the meeting place was quite far from the residential areas of the affected people; lack of time for discussion when a mass-meeting style was adopted; and limited participation of NGOs.

Another issue they pointed out was that they wanted to know the final result of the meetings.

d. Other

They had suggestions for the resettlement action plan – that Local Governmental Units should implement the plan, and that the involvement of the Catholic Church was essential.

(3) Survey result of the implementation agency

The study mission conducted a short interview of the implementation agency DPWH on May 30, and the result is described below.

a. Environmental Impact Statement (EIS)

All the documents related to the EIS system were already prepared and submitted to the responsible agency (DENR, Department of Environmental and Natural Resources) in February 2008. The Environmental Compliance Certificate (ECC) has not been issued by DENR. The main EIS report was prepared in English only. However, various bilingual documents related to EIS were also prepared in order to explain to local people, and those materials were distributed to participants in the SHMs.

Moreover, the LGUs (Local Government Unit) related to the project also have those documents, and local people are able to obtain available information on the project at any time.

b. Adverse impacts of the project and mitigation measures

The likely adverse impacts and mitigation measures are appropriately considered at the F/S stage. All the adverse impacts were described in the Environmental Impact Statement attached to the final report of the F/S.

(Refer also to the Appendix to Chapter 9 in the final report of the F/S)

c. Information disclosure

They have disclosed all the information on the project at the SHMs and Focus Group Discussions, as well as establishing a website. Information is disclosed based on JICA Guidelines and the Philippine EIS System.

d. SHMs

All the information on the SHMs was described in detail in the final report (Refer also to Chapter 9 of the main text and the Appendix to Chapter 9 of the F/S). However, some important points raised were as follows.

A few days before the consultations, they sent invitation letters to the concerned groups, and posted an announcement in public space and on the website as well. In particular, poverty groups received direct notice of the SHMs. The consultations were conducted in two languages, English and Filipino.

As an effective meeting style, they introduced the workshop method in order to collect opinions from the participants, and they explained not only the project benefits but also the adverse impacts of the project as much as possible. All their comments or recommendations on the project were reflected in the mitigation measures.

**Table 2.9 SHMs implemented (Mass-meeting style only)**

| No. | Study Phase | Main Subjects | Period | Number of Participants |
|---|---|---|---|---|
| 1st | Preparation of Scenarios | • Study Outline<br>• Past, Ongoing & Future Transport Projects<br>• Scope of Stakeholders<br>• Schedule & Objectives of Future Stakeholder Meetings | March 17, 2005 | 70 (held at 1 place) |
| 2nd | Evaluation of Scenarios | • Alternative Development Scenarios<br>• Environmental Framework:<br>• Social and Natural Environment Alternative Scenarios for Regional Transport Network | June 16, 2005 | 81 (held at 1 place) |
| 3rd | Preparation of Optimum Project Plan | • Outline of Alternatives<br>• Alternative Measure in Zero Option<br>• Scope and Evaluation Methodologies for Environmental and Social Considerations Study (EIA* Level)<br>• Obtain Opinion on Concerned Environmental Impacts (This meeting was also applied for the Official Scoping Session under the EIS Process) | Sept. 23, 2005 | 98 (held at 1 place) |
| 4th | | • Results of Evaluation on Alternatives<br>• Progress and Interim Results of ESC** Study (EIA Level)<br>• Study Framework on Preparation of Optimum Project Plan | Dec.7 (Cavite) Dec.8 (Laguna) Dec.12 (Muntinlupa), 2005 | 115 (held at 3 places) |
| 5th | | • Results of ESC Study (EIA Level)<br>• Implementation Arrangements of the Project<br>• Mutual Consent on Optimum Project | March 14 (Laguna) March 15 (Cavite), 2006 | 168 (held at 3 places) |
| 6th | F/S | • Outline of F/S<br>• Follow-up of ESC Study (EIA Level)<br>• Explanation of Resettlement Policy | June 2, 2006 | 115 (held at 1 place) |
| 7th | | • Progress of the F/S<br>• Explanation of Framework of RAP*** | July 18 to August 29, 2006 | 259 (held at 7 places) |
| 8th | | • Results of F/S<br>• Mutual Consent on Framework of RAP<br>• Further Arrangement and Requirement for Implementation | Sept. 8, 2006 | 134 (held at 1 place) |

Source: Main text of F/S, pp.9-54.

* EIA: Environmental Impact Assessment

** ESC: Environmental and Social Considerations

***RAP: Resettlement Action Plan

e. Involuntary resettlement, land acquisition

They considered alternative road alignments in the whole area in order to minimize the number of involuntary resettlements. And they will formulate a plan on measures to recover the livelihoods of the relocates, if required.

f. Other

The affected people and/or concerned groups only pointed out some issues regarding the project as mentioned above, and no claims have been received from people after the completion of the F/S.

In terms of the guidelines, their experience with the guidelines is this project only, and they have not met any problem.

(Refer also to the Appendix to Chapter 9 in the final report of the F/S)

2.6 Findings of the study

(1) Operation based on JICA Guidelines

Observed operation complies with the Guidelines and is summed as following.

We confirmed that the items refer not only to the results of this study but also to the final report of the F/S and other resources.

a. Mitigation measures

The main point of the mitigation measures is to examine multiple alternatives to avoid or minimize adverse impacts and to choose the best one.

In this project, five alternative regional transport networks were set up and these were evaluated from several viewpoints such as alleviating congestion, industrialization, feasibility of project implementation, balanced development, and degree of social and environmental impacts.

After the evaluation of the alternatives, mitigation measures were considered for the remaining impacts.

(Refer also to Chapter 5 of the main text in the F/S final report)

b. Scope of impacts

According to the guidelines, the scope of impacts to be assessed and examined includes not only the natural environment, but also human health and social impacts.

This project basically meets the requirement mentioned above because the likely impacts are classified into three major categories under the physical, biological and socio-economic modules, and the duration of each impact (time-scale) is considered as well.

c. Compliance with related requirements

Although the ECC has not been issued yet, this project has complied with the requirements of the Philippines' EIS system so far. When an implementing agency follows the EIS system,

it also complies automatically with other related regulations such as regulations on pollution, protection of nature and peoples' lives, etc. because the EIS system is inextricably linked with these regulations.

d. Information disclosure and SHM

The main points of compliance with social acceptability are: 1) information disclosure, 2) consultation with stakeholders, and 3) reflection of the outcome of consultations in the project plan.

For the 1st and 2nd points above, various efforts toward consensus building were taken such as stakeholders' meetings, Barangay consultations and focus group discussions, household interviews, and meetings with LGU, development councils and cluster groups at municipal and regional level.

Moreover, at the least, the EIS documents have been provided to the LGUs (at municipality level), and local people can access the information at any time through local leaders. Certainly, the local people seem to be unaware of the EIS system; however, their local leaders (Barangay Captain, Mayor and so on) know how to access these materials on the project. In particular, the relationship between the people and their leaders is relatively strong in this country, so the system is likely to work effectively.

(Refer also to Chapter 9 of the main text in the F/S final report)

As mentioned above, even though the maximum effort was made regarding the project at the F/S stage, the local people actually expressed a negative perception. We discuss the result in the following section.

e. Involuntary resettlement

As the project covered by the F/S is only at the planning stage, the main point of involuntary resettlement is only avoidance or minimizing of its impacts.

In the case of the project, a preliminary RAP was developed as reference information for a full-scale RAP, and it contained people's perceptions regarding approval of the project and a rough monitoring plan as well.

(Refer also to the Appendix to Chapter 9 in the final report of the F/S)

(2) Issues and concerns

We identified some issues in the study that need to be discussed.

Firstly, the Urban and Poor Association (a local NGO) pointed out that invitation of NGO groups to the SHMs was rather limited. Although there may be a few NGOs working in the target area, efforts could be made to find alternative groups such as traditional organizations, public schools, etc. Another idea is to entrust this task — invitation of related NGOs to SHMs — to a network-type NGO.

Note: The NGO seems to be unaware of the FGDs (Focus Group Discussions) or

household surveys conducted as of the F/S stage, and only aware of the mass meetings. Activities other than mass meetings were implemented for a wider spectrum of people than mass meetings.

Secondly, the local people expressed a relatively mixed perception of the project even though they had opportunities for public involvement such as household surveys with an explanation of the project, SHMs, FGDs, and others. In this study, we could not clearly identify the reason. However, we can deduce a possible cause of the result: namely, that social change has happened.

As mentioned above, the SHMs and other opportunities for public involvement were held more than two years ago and therefore some people moved to another place, or forgot the main topics or issues explained in the SHMs, etc. If this is true, it may be necessary to consider holding SHMs again, spending time and money. Such social change in the blank period between the planning and implementation stages is sometimes observed. And it normally increases the implementation costs because you have to repeat the same process as in the previous stage. We always have to consider the "*expiration date*" of study results, as well as an effective way to avoid or reduce the blank period.

Reference:

1. Japan International Cooperation Agency, ALMEC Corp., Nippon Koei Co., Ltd (2006.11) "The f*easibility study and implementation support on the CALA East-West National Road Project, final report*", main text, Tokyo.

2. Japan International Cooperation Agency, ALMEC Corp., Nippon Koei Co., Ltd (2006.11) "The f*easibility study and implementation support on the CALA East-West National Road Project, final report*", Appendices Vol.1, Tokyo.

3. Japan International Cooperation Agency, ALMEC Corp., Nippon Koei Co., Ltd (2006.11) "*The feasibility study and implementation support on the CALA East-West National Road Project, final report*", Appendices Vol.2, Tokyo.

## 3. Upgrading Feasibility Study on Upper Seti (Damauli) Storage Hydroelectric Project in Nepal

### 3.1 Scheme and Classification

Scheme: Development Study (Feasibility study)

Classification: Category A

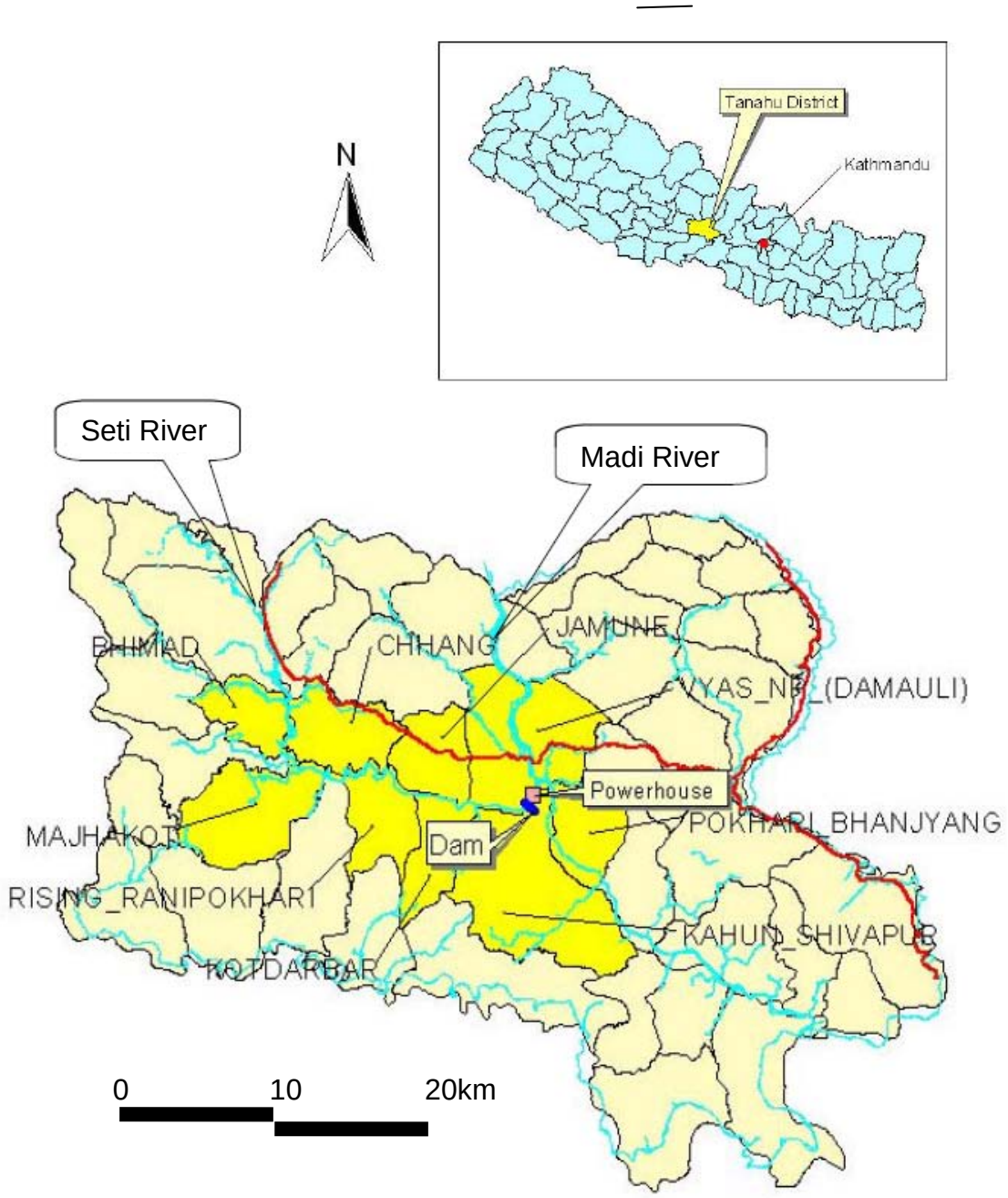
### 3.2 Outline of the cooperation project

The cooperation project aims at formulating an optimum plan and assessing the technical, economic, financial and environmental viabilities of the Upper Seti Storage Hydroelectric Project located in central Nepal by conducting Environmental Impact Assessment. The Study also aims to carry out technology transfer to the Nepalese counterpart personnel over the course of the Study and to recommend the further process of project implementation.

The total installed capacity in Nepal was 611 MW as of July 2006, of which 90% is generated by hydropower, with run-of-river (ROR) type hydropower plants dominating capacity. However, this type does not work effectively in the dry season. On the other hand, construction of a storage type hydropower plant which is capable of annually regulating discharge for generation at times of peak demand needs to be considered to cope with increasing power demand.

The whole feasibility study period of the cooperation project was from November 2004 to June 2007.After completion of the study, good progress was not made on the project because of political instability.

3.3 Geographical location of project site




3.4 Methodology of the survey

(1) Study period

3 June, 2008 – 8 June, 2008

(2) Mission members

Dr. Kanji USUI (Private Consultant)

JICA Nepal Office

Local consultants (4 individual consultants)

(3) Respondents to the survey

Nepal Electricity Authority (NEA)

NGO (NGO Network, WWF)

Affected families in Tanahu district (submerged areas)

Local Government, Village Development Committee

(4) Methodology

| Date | Respondents | Methodology | Mission Members |
|---|---|---|---|
| 3 - 8 June, 2008 | Affected people | Interview of the targets (108 samples collected) | Local consultant, Dr. Usui |
| 4 June, 2008 | International NGO (WWF) | Interview of the targets | Dr. Usui |
| 4 June, 2008 | NEA | Interview and placement of the targets | Dr. Usui |
| 5 June, 2008 | Local Government (VDC, Village Development Committee) | Interview of the targets | Dr. Usui, interpreter (NEA) |
| 5 June, 2008 | Local NGO (NGO Network) | Interview of the targets | Dr. Usui, interpreter (NEA) |
| 6 June, 2008 | Local leader (Rising Patan Village) | Interview of the targets | Dr. Usui, interpreter (NEA) |

3.5 Results of the survey

(1) Survey Results of Affected People

In order to find out the actual perception of the affected people regarding the project, we conducted interviews through the following process.

a. Preparation of a questionnaire

We prepared a questionnaire for the purpose consisting of 27 variables (Table 3.1) — the same as for the CALA project — related to the various perceptions of the project such as the purpose of the project, adverse impacts, information disclosure, SHMs, involuntary resettlement, and so on.

**Table 3.1 List of variables**

| Variable | Value (min – max) | Meaning | Variable | Value (min – max) | Meaning |
|---|---|---|---|---|---|
| v1 | 1 - 2 | Awareness of the project | v15 | 1 - 5 | Easiness of explanation of the project etc. |
| v2 | 1 - 5 | Support for the project | v16 | 1 - 5 | Satisfaction with SHM |
| v3 | 1 - 5 | Degree of benefit from the project | v17 | 1 - 5 | Degree of distortion of explanation of the project etc. |
| v4 | 1 - 5 | Degree of disadvantage from the project | v18 | 1 - 5 | Degree of accuracy of explanation of the project etc. |
| v5 | 1 - 5 | Degree of satisfaction with given information | v19 | 1 - 5 | Degree of distribution of opportunities to participate in SHM |
| v6 | 1 - 5 | Degree of sufficiency of given information | v20 | 1 - 5 | Degree of explanation of adverse impacts of the project |
| v7 | 1 - 5 | Degree of understanding of given information | v21 | 1 - 5 | Degree of explanation of mitigation measures for the adverse impacts of the project |
| v8 | 1 - 5 | Degree of distortion of given information | v22 | 1 - 5 | Appropriateness of explanation of involuntary resettlement |
| v9 | 1 - 2 | Attendance at the stakeholders' meetings | v23 | 1 - 5 | Degree of agreement on involuntary resettlement |
| v10 | 1 - 5 | Degree of satisfaction with announcement of SHM | v24 | 1 - 5 | Degree of satisfaction with explanation of compensation for relocation |
| v11 | 1 - 6 | Period of announcement of SHM | v25 | 1 - 5 | Degree of satisfaction with response of the project owner |
| v12 | 1 - 4 | Language used at SHM | v26 | 1 - 5 | Degree of acceptance of the project |
| v13 | 1 - 5 | Response from project owner | v27 | 1 - 2 | Awareness of the EIA system |
| v14 | 1 - 5 | Accessibility of location of SHM | | | |

b. Selection of target households as interviewees

We randomly selected the target households in Tanahu district which is especially likely to be a submerged area. The total number of affected households in the area is 838, and we needed to collect at least 67 samples to obtain a statistically significant result. To identify the target households, we used a residential list prepared in the feasibility study. We obtained 109 samples finally.

c. Training of the enumerators of the field survey

Before beginning the field survey, Dr. Usui coached four enumerators to be in charge of the interviews.

d. Statistical analysis

In order to analyze people's perceptions in depth, we used the following statistical method: firstly APC method for grouping the variables; and secondly CSA method for analyzing the causal relationship between the groups identified in the first step.

The descriptive statistics of all the samples are shown in Table 3.2.

**Table 3.2 Descriptive statistics of all samples (n=109)**

| | Average | Standard Deviation | Kurtosis | Skewness | | Average | Standard Deviation | Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|---|---|
| V2 | 2.04 | 0.679 | 3.881 | 1.218 | V20 | 2.74 | 0.897 | -0.739 | 0.455 |
| V3 | 2.15 | 0.768 | 0.418 | 0.618 | V21 | 2.80 | 0.814 | 0.437 | 0.599 |
| V4* | 2.00 | 0.793 | 1.853 | 1.019 | V22 | 2.59 | 0.852 | -0.476 | 0.729 |
| V5 | 2.49 | 0.812 | -0.418 | 0.573 | V23 | 1.91 | 0.918 | 0.539 | 1.061 |
| V6 | 2.59 | 0.863 | 0.628 | 1.002 | V24 | 2.83 | 0.938 | -0.383 | 0.612 |
| V7 | 2.21 | 0.639 | 1.002 | 0.651 | V25 | 2.48 | 1.051 | -1.228 | -0.475 |
| V8* | 3.50 | 0.587 | -0.472 | -0.122 | V26 | 1.94 | 0.803 | 2.258 | 1.193 |

* The variables V4 and V8 show a contrary sense; the smaller the value, the stronger the negative perception

Some variables related to perception of the SHMs indicated improper values such as V10, V12, V13, V14, V15, V16, V17, V18 and V19. In the preparation, we excluded these variables from the data.

The four principle components are extracted by processing by the APC method (Table 3.3). We named the components "Involuntary resettlement and compensation", "Degree of information disclosure", "Acceptance of the project" and "Attitude of the project owner", and the four components consisted of variables indicating smaller average values, meaning a comparatively positive perception by the people.

**Table 3.3 Result of APC method**

| | Involuntary resettlement and compensation | Degree of information disclosure | Acceptance of the project | Attitude of the project owner |
|---|---|---|---|---|
| V24 | 0.907 | -0.062 | -0.201 | -0.029 |
| V22 | 0.755 | -0.071 | 0.052 | 0.074 |
| V21 | 0.585 | 0.097 | -0.005 | 0.380 |
| V5 | 0.536 | 0.388 | -0.221 | 0.113 |
| V23 | 0.497 | 0.225 | 0.322 | -0.084 |
| V8 | 0.138 | -0.944 | -0.035 | 0.358 |
| V6 | 0.119 | 0.748 | -0.054 | 0.171 |
| V7 | 0.050 | 0.580 | 0.151 | 0.247 |
| V2 | 0.016 | -0.153 | 0.856 | 0.176 |
| V3 | -0.436 | 0.122 | 0.765 | 0.126 |
| V26 | 0.208 | 0.120 | 0.731 | -0.088 |
| V4 | -0.444 | 0.139 | -0.230 | 0.634 |
| V20 | 0.093 | 0.086 | 0.147 | 0.623 |
| V25 | 0.221 | -0.295 | 0.162 | 0.617 |
| Sum | 4.282 | 1.910 | 1.435 | 1.145 |
| % of variance | 30.589 | 13.643 | 10.253 | 8.176 |
| Cumulative contribution ratio (%) | 30.589 | 44.232 | 54.485 | 62.660 |

Secondly, we processed the data by the CSA method to analyze the causal relationship of the components extracted by the APC method. AMOS 5.01 of SPSS Corp. was used as the analysis software and the maximum likelihood method was used to presume the population parameter. The path values mean the proportional relationship of two variables; the bigger the number, the stronger the relationship. And negative values mean the inverse proportion.
The standardized results are shown in Figure 3.1.

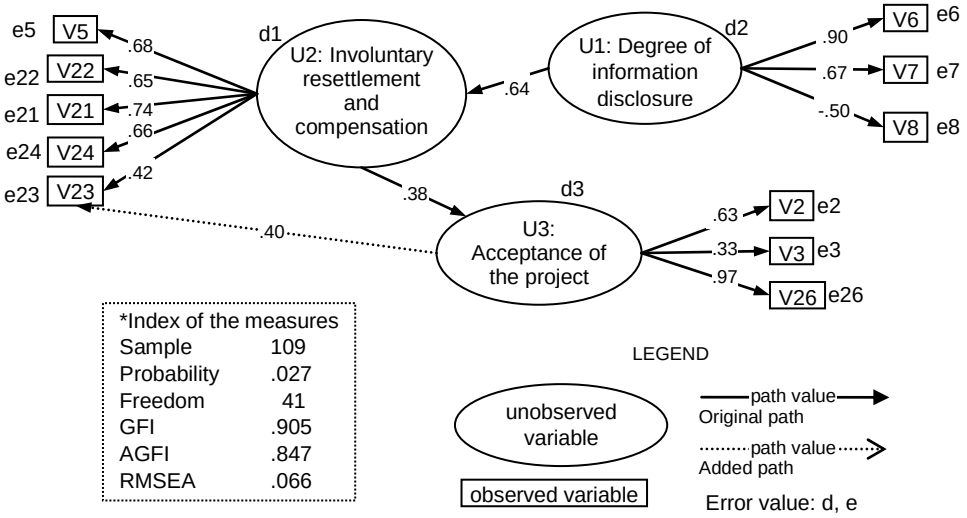



**Figure 3.1 Result of CSA method**

The index of measures in the original model showed inappropriateness. Hence, we modified the model within limitations that can be interpreted in the real world through Modification Indices, and we also deleted V4, V20 and V25 because they indicated statistical inappropriateness. The newly added paths as a result of the modification are expressed by dotted lines and the final index of measures is also shown in Figure 3.1. The indices of the measures showed moderate appropriateness.

Firstly, the path from “U1: Degree of information disclosure” to “U2: Involuntary resettlement and compensation” showed a comparatively strong relationship. This result implies that appropriate information disclosure positively influences people’s perception of involuntary resettlement and compensation.

Secondly, U2 influenced “U3: Acceptance of the project” in some measure. This issue - involuntary resettlement - is maybe one of the main concerns of the affected people. Therefore, it implies that appropriate explanation of involuntary resettlement positively influences people’s perception regarding acceptance of the project.

e. Perception of participants in SHMs

We obtained 46 samples from a group of participants in the SHMs, but the number of samples was not sufficient to apply the same statistical methods as in the previous analysis such as APC or CSA. Instead, we applied MRA method this time.

**Table 3.4 Descriptive statistics of participants in SHMs (n=46)**

| | Average | Standard Deviation | Kurtosis | Skewness | | Average | Standard Deviation | Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|---|---|
| V2 | 2.09 | 0.784 | 4.277 | 1.580 | V16 | 2.20 | 0.778 | 1.290 | 1.118 |
| V3 | 2.28 | 0.911 | -0.392 | 0.502 | V17 | 2.59 | 0.933 | -1.068 | 0.594 |
| V4* | 1.87 | 0.859 | 3.737 | 1.579 | V18 | 2.46 | 0.887 | 0.578 | 1.136 |
| V5 | 2.26 | 0.713 | 1.352 | 1.108 | V19 | 2.04 | 0.556 | 3.368 | 0.835 |
| V6 | 2.26 | 0.713 | 1.916 | 1.493 | V20 | 2.48 | 0.913 | 0.242 | 0.892 |
| V7 | 1.96 | 0.469 | 1.899 | -0.158 | V21 | 2.54 | 0.862 | 1.415 | 1.058 |
| V8* | 3.61 | 0.493 | -1.871 | -0.461 | V22 | 2.37 | 0.799 | 2.286 | 1.679 |
| V10 | 2.26 | 0.648 | 1.021 | 0.720 | V23 | 1.70 | 0.866 | 2.124 | 1.507 |
| V13 | 1.89 | 0.482 | 1.298 | -0.318 | V24 | 2.61 | 1.085 | 0.381 | 1.181 |
| V14 | 2.28 | 0.834 | 2.404 | 1.576 | V25 | 2.39 | 1.238 | -1.691 | -0.070 |
| V15 | 2.22 | 0.629 | 2.779 | 1.482 | V26 | 1.98 | 0.830 | 1.134 | 1.018 |

* The variables V4 and V8 show a contrary sense; the smaller the value, the stronger the negative perception

Firstly, we picked two variables 2 and 26 as “explained variables” and analyzed the relationship between these two variables and the others. Regarding V2 — “Support for the project” — we could not find any variables with a strong relationship with the variable, but V14 and V26 influenced it slightly. Although there are limits to interpreting this result, the accessibility of the meetings was likely to be appropriate. In practice, the SHM and FGD meetings were held in various places in the affected area.

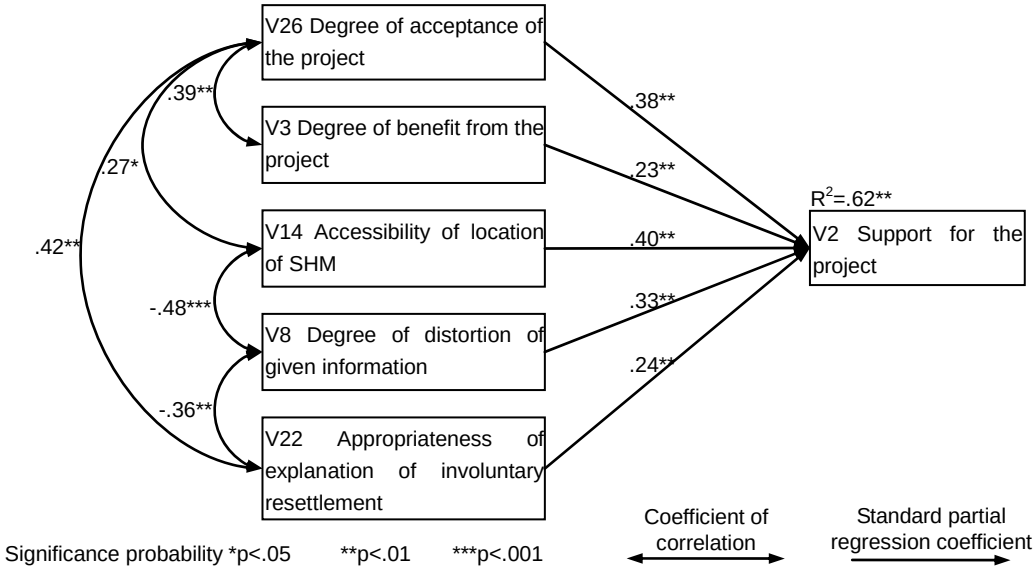



**Figure 3.2 Result of MRA method (V2)**

Regarding the analysis of V26 as an explained variable, it is difficult to interpret the result because the value of the standard partial regression coefficient between V23 and V26 is not large. On the other hand, there is some relationship between V2 and V26, but these variables indicate almost the same meaning. We cannot strongly state the impact of V23 on V26; however, agreement on involuntary resettlement might influence acceptance of the project.

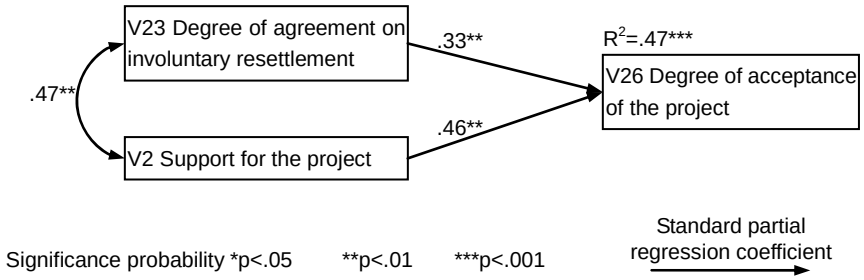



**Figure 3.3 Result of MRA method (V26)**

We picked and analyzed V4 because this variable indicated a negative perception of the project. The value of $R^2$ (Determination Coefficient) was only 0.29. We have to be careful regarding interpretation because it means the low power of explanation of this model.

The relationship between V21 and V4 is comparatively easy to interpret: appropriate explanation of mitigation measures reduces people's perception of the disadvantages of the project. In the case study, people have a good perception regarding the explanation of the mitigation measures. Nonetheless, V26 indicated their negative perception. This implies that a better explanation has been given to people; however, it is still not enough.

On the other hand, the relationship between V14 and V4 is maybe meaningless because there is a discrepancy: providing appropriate accessibility influences their negative perception of the project.

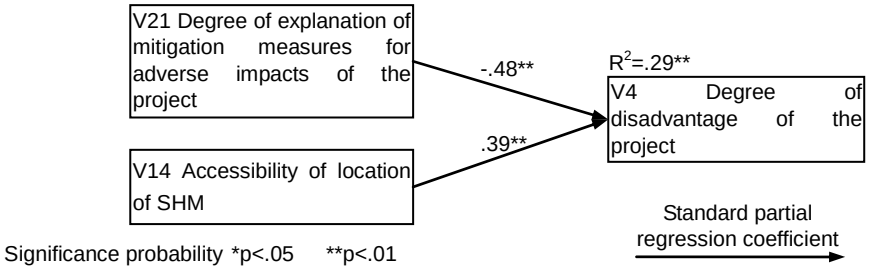



**Figure 3.4 Result of MRA method (V4)**

The participants in the SHMs expressed their concerns about the likely adverse impacts of the project in Table 3.5. Their concerns focused on land, biodiversity, water, accidents, and resettlement

.

**Table 3.5 Participants' concerns about likely adverse impacts**

| Concerns | No. of times mentioned |
|---|---|
| Land (Land collapse, subsidence) | 39 |
| Biological terrestrial environment (flora and fauna) | 19 |
| Water (increased water run-off, water contamination) | 12 |
| Accidents | 12 |
| Population (resettlement, influx of workers) | 10 |
| Biological environment in freshwater (flora and fauna) | 9 |
| Land use and zoning (change in land use) | 7 |
| Noise and vibration | 5 |
| Culture | 4 |
| Housing and social services (disruption of delivery of social services, reduced access of displaced families to previously existing social services) | 3 |
| Other | 11 |

(2) Survey results of the implementation agency

Although the study mission tried to conduct an interview, the NEA side was not available to accept a face-to-face interview at the time. Instead of the interview, we handed a questionnaire to them and collected it later.

The results of the survey are as follows.

a. EIA

According to the NEA, the EIA certificate for the project has not been issued, but the EIA reports were completed through the F/S. The main EIA report was written in English; however, the executive summary and/or all of the related documents were written in Nepali for the local people.

The main reports have been sent to the affected VDCs and District Development Committee offices, and local people are able to obtain the available information related to the project at any time.

Also, results of SHMs are reflected to the EIA report.

b. JICA guidelines on environmental and social considerations

According to the NEA, there is an issue to be discussed concerning the guidelines; namely, too many SHMs as per JICA guidelines – two or three meetings are enough for this type of project.

c. Adverse impacts of the project and mitigation measures

According to the NEA, all adverse impacts were described in the EIA report attached to the final report of the F/S.

(Refer also to the ESC report in the final report of the F/S)

d. Information disclosure and SHMs

According to the NEA, all information for the SHMs is included in the final report of the F/S. And the main information disclosure activities were conducted at the SHMs.

According to their view, the objective of the meetings is to disclose information including the adverse impacts of the project, and to solicit information and concerns from the affected people. And they pointed out the issues of SHMs to be discussed from this case; that meeting in a pattern-like manner is meaningless for the implementing agency and local people. Even though the local people knew about the project and their main concerns were the progress of the project, likely negative impacts and compensation, it was quite difficult to respond to their demands because of the low maturity of the project.

In this study, we could not realize face-to-face interviews; however, another mission heard various issues concerning SHMs from NEA and other resource persons in Damauli as

follows:

| |
|---|
| Date: 4 May, 2007<br>Venue: Damauli<br>There is a risk that SHMs are used for political matters.<br>We should reconsider the way of conducting meetings in a mass-meeting style because it has limitations. Various ways such as FGD, WS and/or household surveys with an explanation of the project should also be considered depending on the social situation as an alternative for consensus building.<br>When you conduct an SHM at a stage where there is no fixed physical layout or adverse impacts, there is a risk of causing social confusion: local people thought that the proposed project would be started soon because most people were not highly educated and rumors spread rapidly. As a result, some families moved to another place or disposed of their property such as houses, farm land, etc. before a decision was reached on project implementation.<br>Local people do not understand the reason why the NEA conducts SHMs in three stages; scoping, rough outline and final draft. When the NEA conducted SHMs following this procedure, they expressed the same opinions every time because it is quite difficult for people to understand the difference between the meetings: people only require information on the benefits and adverse impacts, compensation for such impacts, and the schedule for project implementation. |

e. Involuntary resettlement and land acquisition

According to the NEA, the major issues of involuntary resettlement have been already described in the final report of the F/S. In order to reduce the number of involuntary resettlements, they considered alternative dam heights and locating construction areas in places with less settlement. And they will formulate a plan to recover the livelihoods of affected people.

(3) Survey result of the local leader in Rising Patan Village

The study mission conducted a short interview of the local leader on June 5, and the result is described below.

a. SHMs

He said that meetings were held in the area, but his community required more information especially on the progress of project implementation.

b. Impacts of the project

In terms of the major impacts of the project, he pointed out the following: the access road to the surrounding bazaar, community roads and suspension bridge would be submerged. He required the necessary compensation for the adverse impacts.

c. Support for the project

He said that his community agreed with the project implementation.

(4) Survey results of the international NGO

The study mission conducted a short interview of an international NGO named “World Wide Fund for Nature” on June 4, and the result is described below. A WWF member participated in the SHMs held at Kathmandu only.

a. Adverse impacts of the project

WWF emphasized their position that they do not claim to be anti-development. However, they are watching activities that affect the natural environment of the world, and especially in this project the endangered species listed on CITES and IUCN red list. And also, they pointed out several impacts of this kind of project; rare species such as tigers or elephants in the forest areas would be affected by disconnection of their migration routes, as would the various fishes by construction of the dam.

b. Consultation with stakeholders (Stakeholders’ meeting)

WWF evaluation of the SHMs was excellent because they were held in the project area. On the other hand, they recommended giving more explanation focused on biodiversity to the local people, because the people had a great deal of knowledge about nature based on their traditional culture and lifestyle.

c. Other

WWF had a suggestion regarding the importance of monitoring after project implementation. In general, the EIA report is well prepared; however, it is sometimes not reflected in practice. For avoidance of that issue, effective monitoring is required.

(5) Survey results of the local NGO

The study mission tried to contact the NGO which participated in the SHMs to arrange an interview, but could not make an appointment. Instead, we chose a local network-type NGO named “NGO Network” because they received invitation letters to the SHMs. The interview was held on June 5, and the result is described below.

a. Main activities

Their main activities of the NGO were to coordinate 194 NGOs in Tanahu district, to

implement capacity building programs such as advocating the right to natural resources, construction of rural roads funded by the EU, organic agriculture, etc. The main target area is Tanahu district.

b. SHMs

Although they received an invitation letter to each SHM, none of the staff was able to attend each time. However, they have a lot of chances to hear about the meetings indirectly from the participants such as other related NGOs or the local people as the target group, and the evaluations of such people or groups regarding the meetings are generally good. They accepted most of the evaluations because the meetings were held for poor people and were conducted in various places including rural areas.

c. Recommendations for the project

The NGO said that most of the local people were supportive of the project; however, the government should focus on poor people. In terms of the Resettlement Action Plan, the Basic Human Needs program should be implemented for the most affected people, they said. They are able to help the activities of the government.

d. Support for the project

They will give their full support for the project, because the project is important for regional development.

3.6 Findings of the study

(1) Status of compliance with the Guidelines

Observed operation complies with the Guidelines and is summed as following.

We confirmed that the items refer not only to the results of this study but also to the final report of the F/S and other resources.

a. Mitigation measures

The main point of the mitigation measures is to examine multiple alternatives to avoid or minimize adverse impacts and to choose the best one.

In this study, four alternative layouts, as well as the Full Supply Level (FSL) were set up and evaluated from several viewpoints such as cost effectiveness, biodiversity, forests and involuntary resettlement.

After the evaluation of the alternatives, mitigation measures were considered for the remaining impacts.

(Refer also to Part A of the ESC (Environmental and Social Considerations) report in the final report of the F/S)

b. Scope of impacts

According to the Guidelines, the scope of impacts to be assessed and examined includes not only the natural environment, but also human health and social impacts.

This project basically meets the requirement mentioned above because the likely impacts are classified into three major categories under the physical, biological, socio-economic and cultural modules, and the duration of each impact (time-scale) is considered as well.

c. Compliance with related regulations

This project complies with the requirements of the Nepali EIA system. When they follow the EIA system, they also comply automatically with other related regulations such as regulations on pollution, protection of nature and peoples' lives, etc. because the EIA system is inextricably linked with these regulations.

d. Information disclosure and SHM

The main points of compliance with social acceptability are: 1) information disclosure; 2) consultation with stakeholders; and 3) reflection of the outcome of consultations in the project plans.

For the 1st and 2nd points above, various efforts toward consensus building were taken such as SHMs, FGD, household interviews, and meetings with VDCs and development councils and cluster groups at municipal and regional level.

And the results of this case study clearly showed their positive perception of the project; it is one proof of the efforts toward consensus building.

Moreover, accessibility to EIA documents is: the related VDCs have the documents, and the local people can access the materials through the officials at any time. And what little local people know about the EIA system itself; however, the local leaders give them great help.

(Refer also to Part D of the ESC report in the final report of the F/S)

e. Involuntary resettlement

The main points of involuntary resettlement and loss of livelihood sources are: 1) avoidance or minimizing of such impacts, 2) agreements with affected people on compensation, and 3) monitoring of the resettlement action plan for implementation.

For the 1st point, NEA set up multiple alternatives evaluated for avoiding or minimizing involuntary resettlement as mentioned above.

In terms of the 2nd and 3rd points, the two situations have not come yet and the actual situation is in the planning process. However, the framework of the RAP was developed as reference information for a full-scale RAP, and it contained people's perception regarding approval of the project and a rough monitoring plan as well.

(Refer also to Part D of the ESC report in the final report of the F/S)

(2) Issues and concerns

As the NEA or others pointed out above, there are various issues concerning the SHMs that need to be improved. Participants of SHMs are mainly farm workers without much scientific knowledge and their concern is narrowly focused. During the study, as the project implementation schedule is not clear, NEA's response to the residents' concern on project starting year and compensation was not clear. In order to avoid such problems, we should consider a flexible method suitable to various societies. It seems it is not always necessary to hold SHMs at all of scoping, rough outline and draft final report timing. Also, for instance, dividing the target groups is one of the options to be improved; FGDs and/or household surveys with an explanation of the project should be held for local people at once — because they seem to be uninterested in the differences or meanings of each stage — in formal conference style with invitation letters in three stages for their leaders.

We should consider what is the most important purpose of SHMs; namely, to hear people's true opinions and reflect them in the decision-making process, and to follow the guidelines just for form's sake should be avoided.

Reference:

1. Japan International Cooperation Agency, Electric Power Development Co., Ltd., Nippon Koei Co., Ltd., (2007.6) "*Upgrading feasibility study on Upper Seti (Damauli) storage hydroelectric project in Nepal*", final report, Tokyo.

2. Japan International Cooperation Agency, Electric Power Development Co., Ltd., Nippon Koei Co., Ltd., (2007.6) "*Upgrading feasibility study on Upper Seti (Damauli) storage hydroelectric project in Nepal*", appendix, Tokyo.

3. Japan International Cooperation Agency, Electric Power Development Co., Ltd., Nippon Koei Co., Ltd., (2007.6) "*Upgrading feasibility study on Upper Seti (Damauli) storage hydroelectric project in Nepal*", environmental and social considerations (ESC) report., Tokyo.

## 4. Proyecto de construccion del Puente de la Amistad del Japón y Centroamérica entre la Republica de El Salvador y la Republica de Honduras

(Study on the Project for Construction of the Japan-Central America Friendship Bridge Between Republic of El Salvador and Republic of Honduras)

### 4.1 Scheme and Classification

Scheme: Preliminary Study for Grant Aid

Classification: Category B

### 4.2 Project description

JICA conducted a preparatory study and basic design study for grant aid for the new bridge, the Japan-Central America Friendship Bridge between the Republic of El Salvador and the Republic of Honduras. The need of the bridge is from that the existing bridge crossing over the River Guascoran presents following difficulties: 1) aging and the risk of collapse under heavy trucks, and 2) heavy traffic congestion because large-size trucks cannot pass each other due to the narrow bridge width. Moreover, this bridge is part of the Plan Puebla Panama which will play a central role in Central American transportation. So the new bridge will bring huge benefit not only to El Salvador, but also to other countries in Central America, such as Honduras, Nicaragua, and Guatemala.

The new structure will replace the current bridge in El Amatillo. It will be 170m long, will be located 725m downriver of the existing bridge and will have two lanes, one in each direction, with a width of 3.65m each, a shoulder and a 3m sidewalk on each side, and a total width of 13.30m. The construction of the bridge will cost 650 million Japanese yen, equivalent to around US$ 6 million.

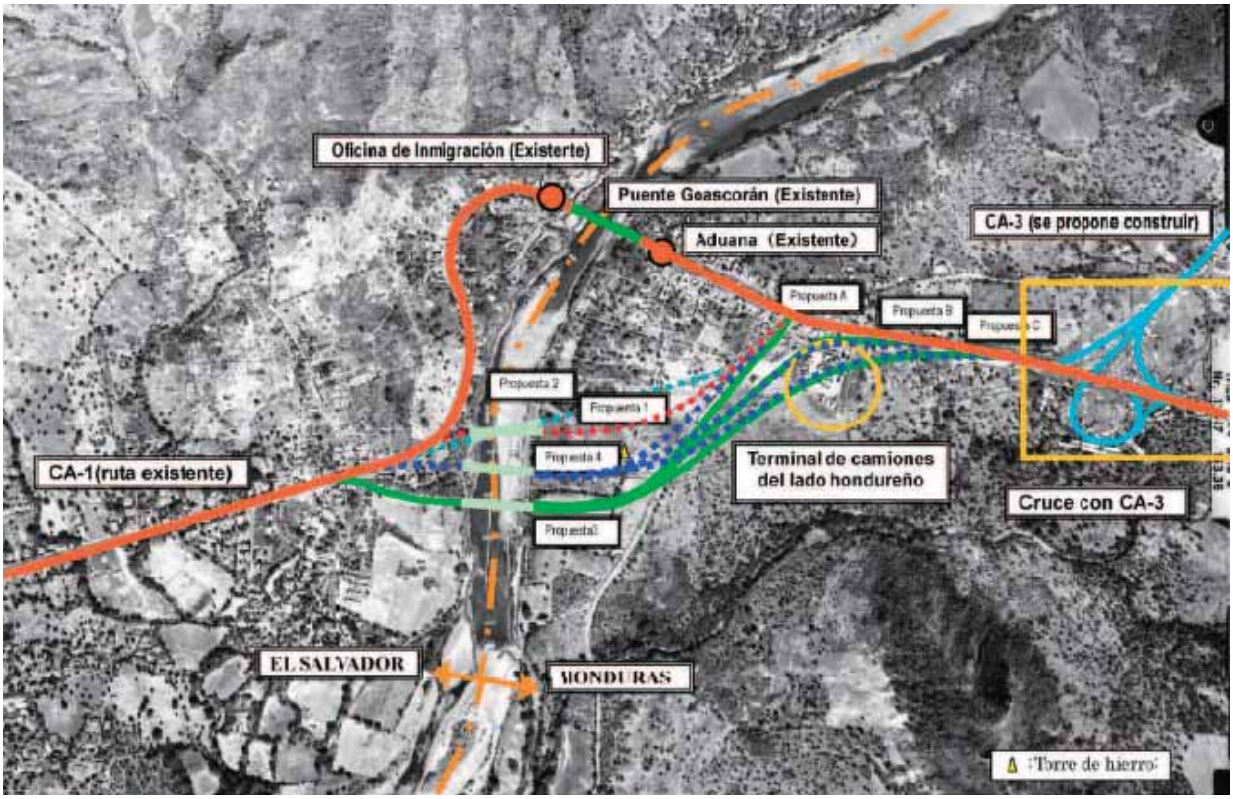
According to the demand forecast, the bridge will carry an average of 3,479 vehicles per day, the majority of which will be trucks and commercial vehicles. The governments of El Salvador and Honduras are currently building the access roads to the new bridge. On the Salvadoran side, the access road will be 495m long, with 2 lanes with a width of 3.65m. Additionally, 2.40m-wide shoulders will be provided, with a total roadway width of 14.10m. On the Honduran side, the constructed access road will be 1.1 km long.

The project is now at the construction stage and will be completed by March 2011.

4.3 Geographical map of the project

**Map 4.1: Project Area**


**Map 4.2: Alternative route analyzed in the study**



4.4 Survey method

(1) Study period

23 May, 2008~2 June, 2008

(2) Survey Team

1) Mr. Akihiro Miyazaki: Senior EIA Review Officer, Environmental & Social Considerations (ESC) Review Div., Office for ESC Review and Credit Risk Analysis
2) JICA El Salvador Office
3) Local consultant: Asociación para el Desarrollo Humano (ADHU)

(3) Respondents in the survey

The following people and groups were the survey target to measure the social impacts and to grasp how JICA Guidelines applied to the project.

| Date | Respondents | Investigators |
|---|---|---|
| 2008/5/22-5/29 | Persons directly or indirectly affected by the project | Local Consultant<br>Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/28 | Implementing Agency: Ministry of Public Works | Mr. Miyazaki<br>JICA El Salvador Office |

4.5 Result of the Survey

(1) Survey Results of Household

a. Preparation of the questionnaire

A questionnaire was prepared by JICA and the consultant transfer the questionnaire to Spanish one.

b. Selection of households as interviewee

With guidance from the Environmental & Social Review Office, JICA Headquarters, 40 people were randomly selected and interviewed. All of the interviewed were over 18 years old. The interviews were conducted house-by-house and were concentrated among persons living in the area of the project including persons who will be directly affected by the construction of the project and people from small and medium size businesses who live close to the exciting bridge site.

The respondents were selected by town address. Three houses in each block in the town were chosen by odd number in the town address.

Nonetheless, none of the people who were interviewed refused to respond to any of the interview questions. 40 samples were obtained finally.

Interview with resident in Pasaquina Municipal

May 24, 2008

c. Analysis Method

By using the statistical analysis software, we came up with the average and standard deviation of each variable. Then we analyzed these data with presumptions using stepwise regression (F=0.10) and checked the effect on the variables

d. Variable Description

The Table 4.1 shows the variables utilized in the analysis. Each variable has a range from 1: very affirmative to 5: very negative, utilized in the survey.

**Table 4.1 List of Variables**

| Variable | Item |
|---|---|
| V-1 | Support for the the project |
| V-2 | Degree of benefit from the project |
| V-3 | Degree of disadvantage from the project |
| V-4 | Degree of satisfaction with given information |
| V-5 | Sufficiency of the project information |
| V-6 | Degree of understanding of given information |
| V-7 | Degree of distortion of given information |
| V-8 | Degree of satisfaction with announcement of SHM |
| V-9 | Response from project owner |
| V-10 | Accessibility of location of the SHM |
| V-11 | Easiness to understand the explanation of the project |
| V-12 | Degree of satisfaction with the SHM |

| | |
|---|---|
| V-13 | Adequacy of explanation at the SHM |
| V-14 | Sufficiency of opportunity to participate in the SHM |
| V-15 | Adequacy of explanation of the adverse impact |
| V-16 | Adequacy of explanation of the mitigation measures |
| V-17 | Adequacy of explanation of involuntary resettlement |
| V-18 | Degree of consent to resettlement |
| V-19 | Degree of satisfaction with explanation of compensation |
| V-20 | Degree of acceptance of the project |

e. Statistical Description (consecutive variable)

The Table 4.2 shows the average and standard deviation of each variable. A low number for the average means that the respondents answered affirmatively, while a high number shows a negative perception about the questions. However, only V-3 and V-7 shows the opposite meaning.

**Table 4.2 Survey Result out of 40 samples**

It does not show the variables concerning the stakeholder meetings

| Variable. | V-1 | V-2 | V-3* | V-4 | V-5 | V-6 | V-7* | V-15 | V-16 | V-17 |
|---|---|---|---|---|---|---|---|---|---|---|
| Average | 1.93 | 2.45 | 2.10 | 2.95 | 2.73 | 3.00 | 2.83 | 3.10 | 3.15 | 3.05 |
| Standard Deviation | 0.829 | 0.846 | 0.841 | 0.846 | 0.877 | 0.716 | 0.385 | 0.709 | 0.802 | 0.815 |
| Variable | V-18 | V-19 | V-20 | | | | | | | |
| Average | 2.68 | 3.10 | 2.65 | | | | | | | |
| Standard Deviation | 0.997 | 0.709 | 0.893 | | | | | | | |

*: Lower numbers for the average show that the project was negatively accepted.

f. Analysis: General analysis of the sample result

As shown in Table.4.2, the result shows that the project has neutral perception. For example, variables V-3、V-7、V-15、V-16、V-17 and V-19 are slightly higher than the medium number. This means that the project has a sort of negative perception among the interviewees. On the other hand, the other variables show a relatively affirmative opinion of the project. In terms of standard deviation, all the numbers are lower than 1.0, so we could not see any dispersion among the samples.

In order to grasp the perception concerning the project acceptance, we chose V-1 and V-20 as variables related to the explanation, and conducted multiple regression analysis to check the relation with other variables.

In analyzing these data, we made the presumption using stepwise regression, a semi-automated process of building a model by successively removing variables based solely on the estimated coefficients (F=0.10).

We constructed a model in which V-1 In favor of the project is an Explained variable. The model has a low figure (0.28) for $R^2$, Coefficient of Determination. This means that the figure does not represent highly reliable data. As shown in the following Figure 4.1, at the top there is a strong relationship between V-2 and V-1. This result means that people support the project if they think that the project will bring them all sorts of benefit.

In terms of the model in which V-20 Acceptance of the project is an Explained variable, the model has a strong implication for a mutual relation because of the high figure (0.51) for $R^2$. In this model, we chose two variables, V-1 and V-18, in order to check the relation. In the case of V-1, the standard partial regression coefficient was calculated as 0.24 and it was difficult to unveil the relation. The relation between V-18 and V-20 has a high number (0.62), and we could say that both show a relatively strong correlation. Thus, this means that people will accept the project because people consent to resettlement.

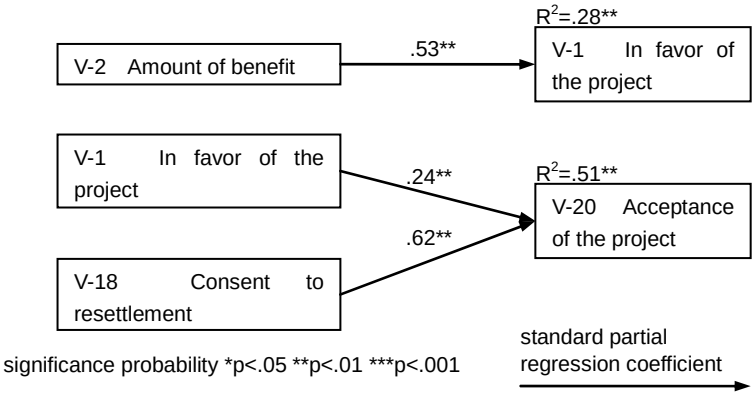



**Figure 4.1 The result of Multiple Regression Analysis with Explained Variables: In favor of the project（V-1)、Acceptance of the project（V-20)**

The following analysis unveils the correlation utilizing the explained variables V-3 Degree of disadvantage and V-16 Adequacy of explanation of the mitigation measures, the same analysis as earlier. These variables express a relatively negative sense of opinions as shown in Table.4.2.

In the case of the model that uses V-3 as an Explained Variable, the coefficient of determination indicates a very low number (0.10), so the model itself does not have the persuasion to express a relation.

On the other hand, in the model that utilizes V-16 as an Explained Variable, the coefficient of determination demonstrates a very high number (0.85), therefore the model could have the persuasion to manifest a relation. We could understand that V-15 especially influences V-16 by standard partial regression coefficient point (0.56). Then we can see that V-17 and V-4 also sort of influence V-16.

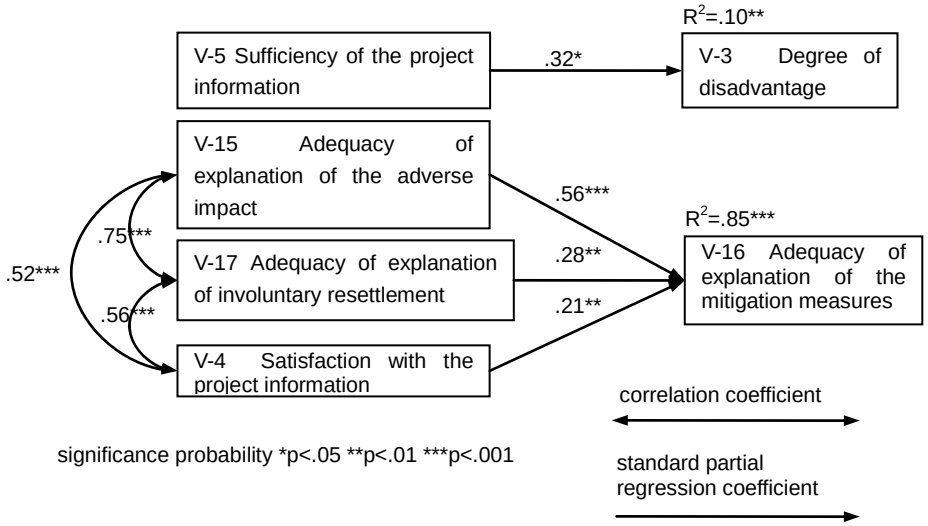



**Figure 4.2 The result of Multiple Regression Analysis with Explained Variables V-3: Degree of disadvantage and V-16: Adequacy of explanation of the mitigation measures**

(2) Survey Results of Implementing Agency

a. Survey method

We conducted qualitative analysis using the responses to our questions concerning the project, environmental considerations, and the Guidelines. The interviews were conducted face-to-face directly by JICA.

b. Environmental and Social Considerations

In order to advance the project, the ministry and the JICA study team identified the environmental and social items to be taken consideration such as involuntary resettlement, economic activities, social infrastructure, local conflict of interest, waste, disaster risk, topography and geographical features, meteorology, soil erosion, river, landscape, air pollution, noise and vibration. Then the ministry and the study team analyzed the mitigation measures to deal with the environmental and social considerations based on the results of the analysis. The ministry and the JICA study team considered these items to involve the project design at the planning stage. Then the government tried to mitigate the impacts. Moreover, the government has not found any new items that should be taken care of and

taken into consideration other than the items in the report so far.

From an environmental monitoring perspective, the government checked the items such as water quality and air pollution according to the El Salvador environmental law. The government prepared US$45,000 in order to conduct an environmental survey, implement monitoring and mitigate the adverse environmental impacts in the project area.

c. Environmental permission

Since the Ministry of the Environment and Natural Resources enforced an environmental management system in the national law[1], everyone has to observe the regulations concerning environmental management. In addition, JICA encourages the recipient government to follow the Guidelines on environmental and social considerations. In terms of this project, the Ministry of Public Works received environmental permission from the Ministry of the Environment and Natural Resources in December 2005 allowing the construction of the new bridge at the project site. However, the Ministry of the Environment and Natural Resources requested additional data such as the air pollution level and water quality to prove the environmental clearance at the construction stage.

And the ministry also has the responsibility to submit a monitoring report to the Ministry of the Environment and Natural Resources regarding the items mentioned above. The report should be turned in every half a year after the start of project construction.

Besides the environmental permission procedure mentioned above, the government should take care of reforestation because the implementing agency has other responsibilities to observe the environmental regulations. The government has already obtained reforestation permission from the environmental department in the Pasaquina Municipal local government. The regulations say that no one can cut down trees in development activities. Instead of cutting down the trees, the implementing entity must relocate/plant the trees at the development site.

The negative impacts listed in the report are monitored consecutively by the implementing government and monitoring reports are submitted to the Ministry of the Environment and Natural Resources once every six months. The monitoring is actually conducted by the construction company with the support of the implementing government's Ministry of Public Works. Water quality and air pollution at least should be reported by the implementing ministry. There is no report that mentions any problematic issues so far according to the interview with the person in charge at the ministry.

[1] Permiso Ambiental: Artículos 21,22,23,24,25,60,62,63,82, Ley de Medio Ambiente, and Artículo 32, Reglament General de la Ley

d. Information Disclosure

According to the person in charge at the implementing agency, all the necessary information concerning the project was disclosed to the public by the Ministry of Public Works and the Ministry of the Environment and Natural Resources. The first attempt was when a stakeholder meeting was held in the area during the JICA preliminary study. At that time, the ministry explained the content, objectives, effectiveness of the project, regional development plan, road system and situation in the project area, the project concept, road design, alternatives, and land acquisition process. The Ministry of Public Works has conducted several stakeholder meetings up to now.

On the other hand, Salvadoran environmental laws obligate the implementing agency to conduct information disclosure, namely 20 days of public comment right before the decision is taken on environmental permission. The information has to be posted in newspapers, governmental advertisement papers and on the website. Anyone can access and check the documents during the public comment period. The Ministry of the Environment and Natural Resources conducted a public hearing after the 20 days of public comment period based on the environmental law[2].

All the information concerning the project was provided in Spanish, the common language of the country.

e. Stakeholder Meetings

Stakeholders meetings have been held several times up to now. First of all, a meeting was held during the JICA preliminary study on October 27, 2005. In the meeting, a total of 35 residents participated in the church located in the project site. The chair of the meeting, the Ministry of Public Works, explained the content, objectives, effectiveness of the project, regional development plan, road system and situation in the project area, project concept, road design, alternatives, and land acquisition process. And then free discussion was held after the ministry's explanation. The explanation was conducted in Spanish and in easy words in order to enhance the participants' understanding. The ministry said that the participants seemed to grasp what the speaker explained. In the free discussion, some major questions and requests were: 1) they wanted to know the decision concerning the road alignment as soon as possible, 2) they hoped that the project would contribute to the local economy, 3) they wanted to resolve the road congestion in the area, and 4) the project would enhance disaster prevention, etc.

[2] Permiso Ambiental: Artículos 22, Reglamento General de la Ley de Medio Ambiente

In addition to the stakeholders meeting, the study team conducted interviews of business people who manage small and medium enterprises near the existing international bridge in order to grasp their opinion of the project, during the Basic Design Study. The results of the interviews showed that residents generally accepted the project plan and hoped that the existing bridge would be utilized even after the new bridge was constructed. Then they asked the ministry the following issues:

the government should consider giving business people who manage small and medium enterprises near the existing international bridge the opportunity to resume their business near the new bridge, and the government should explain the project to business people who manage small and medium enterprises

Since then, the ministry has accepted these requests, and they obtained the informed consent of the business people in order to promote their understanding of the project after the basic design study. Also the ministry requested the local government to provide business people an act of grace to access the new bridge site.

f. Resettlement

Involuntary resettlement is planned in the project. However, the study team and the government tried to minimize the social impact, especially the number of resettlements by the project, by analyzing the alternatives concerning the road alignment. As a result of the study, seven families were required to be resettled.

g. Land Acquisition

According to the interview with the Ministry, the land acquisition process was implemented in accordance with the land law and regulations made by Ministry of Public Works[3]. The procedure of land acquisition is shown in the Report[4]

The ministry submitted a copy of the paper showing that residents who might be affected by the project generally accepted the project plan and transferred to another area, to the study team in September 2006.

As mentioned before, land acquisition is conducted by the ministry based on regulations issued by the government[5]. At the beginnings, the ministry explained the procedure of land acquisition to the residents who would be resettled by the project at the first stakeholders meeting. Then the ministry promoted discussion with residents in order to establish the

[3] La ley de expropiacíon de terrenos para las obras púlicas en El Salvador

[4] Informe del Estudio de Diseño Básico para el Proyecto de Construccción del Puente de la Amistad del Japón y Centroamérica entre la Republica de El Salvador y La Republica de Honduras

[5] Procedimiento de adquisición de la tierra en construccíon del camino por MOP

price for resettlement. If necessary, a legal entity could negotiate with the ministry in place of the residents. According to the ministry, the price was fixed based on the value of the real property. Also, the price fluctuated from several perspectives such as living cost, market value, residents' living condition, and movable property value, etc. So the ministry fixed the price in a prudent manner after several meetings with the residents.

h. Guidelines Compliance

The study is advanced with appropriate environmental and social considerations in line with the JICA Guidelines. The people in charge of the environment in the project understand the context of the Guidelines and use them carefully.

i. Others: Difficulty in using the Guidelines

A general perception of the JICA Guidelines is that the ministry has difficulty in understanding them. One of the reasons is that they do not know what kinds of papers or documents will be necessary as the Guidelines do not prescribe such documents, even though the government of El Salvador has relatively severe laws and regulations on environmental management in the project implementation. Second, JICA Guidelines lay down regulations only at the preparation stage (study stage) even though the implementation stage needs to be considered.

(3) Survey results of NGO

No local or international NGOs were involved in the project even though the ministry did not refuse their participation. According to the ministry, there were some engineering questions concerning the project from someone, but these were not critical questions, and the ministry responded quickly to the person who asked.

4.6 Findings of the study

(1) Operation based on the Guidelines

It was confirmed that the study complies with the Guidelines.

The level of knowledge concerning the project is not so high in spite of the importance of the project to the local community. A little more than half of the interviewees (57.5%) claim to know about the project. Although the acceptance level of the project was stated to be around 80%, it is most likely that this is because of the perspective within the local community on projects of this type in general, and not on the specific project that is the subject of this study.

The project needed to implement resettlement in the approach road construction area. The implementing agency, the Ministry of Public Works, acted properly such as holding stakeholder meetings, explanations for each household, discussions and negotiations.

Although the ministry and JICA study team made an attempt to provide information to community members concerning the project, satisfaction with information is not so high. This result gives the impression that the project should have improved the information provision method even though Ministry of Public Works and the community tried to communicate with residents in the project area. For those who attended the community meetings, the contents and information offered by Ministry of Public Works appear to have been well received, since the majority of the people who attended answered that they were satisfied with the information presented.

Many of the sample targets were people who earn their living from agriculture such as milk products, cereals and bean products so they might think that the new bridge construction will not generate any benefit to them directly. And as the general perspective in this area, people feel negatively toward the government and try to refuse anything the government would provide[6].

(2) Issues and Concerns

Public information and public relation exercises were conducted appropriately in accordance with the JICA Guidelines. However, the project implementing agency could have done more to ensure people's comprehension concerning the project, as the level of knowledge concerning the project is not so high. The more adequate community information and development efforts probably led to bring a better benefit and satisfaction. Residents appeared to understand the general importance of projects of this kind, but they expressed the desire to be included more in future projects and public works.

Moreover, public relations with affected persons and residents living around the project site at the construction or pre-construction stage might be important communication tools in order to enhance their understanding of the project.

Two points are raised on difficulty in using the Guidelines. One is that difficulty to understand what kinds of papers or documents will be necessary. Another is that JICA Guidelines lay down regulations only at the preparation stage (study stage).

Reference:

1. Agencia de Cooperacion Internacional del Japon, Central Consultant Inc., Nippon Koei Co., Ltd, (2006.11) "*Informe del estudio de diseno basico para el proyecto de construccion del Puente de la Amistad del Japon y Centroamerica entre la Republica de El Salvador y la Republica de Honduras*", Tokyo.

6 Bannett 1999 "Oral Testimony Manual – Giving Voice", and Burdge, R. and E Vanclay (1995), "Social impact assessment"

2． Japan International Cooperation Agency,“ Preliminary Study Report on the Construction of El Amatillo Japan-Centralamerican Friendship Bridge between Republic of El Salvador and Republic of Honduras”, Japan (Original Document in Japanese)

## 5. Project for the Promotion of Sustainable Coastal Fisheries in the Republic of Indonesia

5.1 Scheme and Classification

Scheme: Preliminary Study for Grant Aid

Classification: Category B

5.2 Project description

East Nusa Tenggara Province (hereunder referred to as “NTT”) within which the Project area is located is the most backward and impoverished province in the country (per capita GRDP for this region is the lowest among the 30 provinces of Indonesia, being only one-third of the national average). The fishing industry in the area comprises mainly small fishing operations that supply fresh fish to local towns and their environs. Although there remains ample room for future development of fishery resources (currently only about 30% developed), the present income and living standards of coastal fishermen (approximately 200,000) are extremely low due to backward fishing techniques and lack of fishing infrastructure.

In order to break this cycle of poverty, the Indonesian government targets sustained livelihood and improved standard of living for small coastal villages within the area. Of these coastal villages, Amagarapati located in Larantuka sub-district in East Flores district and an important center for fishing activities and marketing of marine products, generates the second largest fish harvest after Kupang district which is the site of the capital of NTT province. However, because of insufficient fishery facilities, fishing efficiency is low. This in turn is aggravated by fish losses incurred after fish hauling.

The Project accordingly aims to invigorate the fishing industry in this overall area by upgrading the efficiency of fishing operations and reducing post-harvest losses. This will be accomplished by establishing a core fishing port infrastructure including facilities for landing, fuelling and re-supply, marketing, vessel repair, etc.

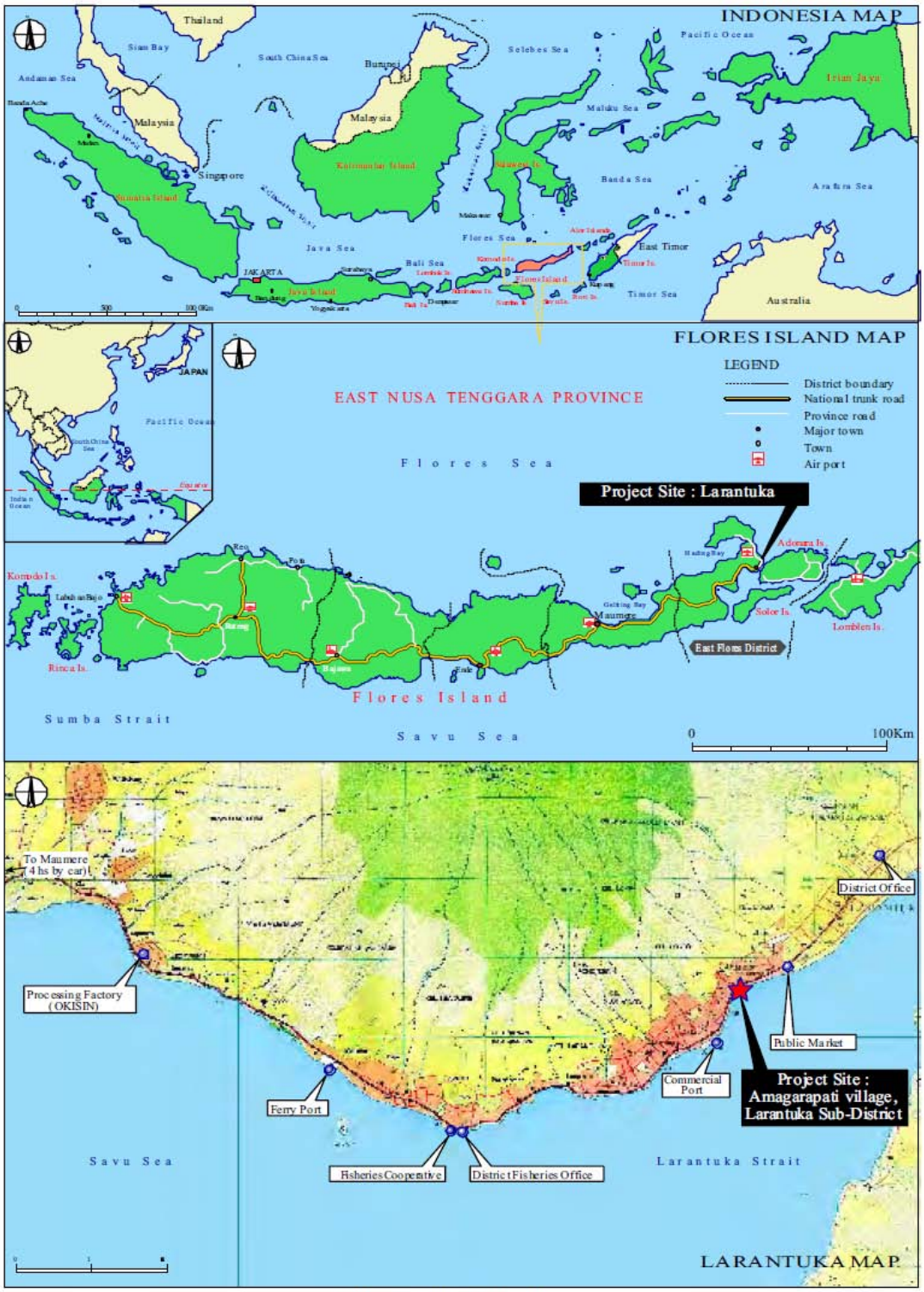
On the basis of the above, the Project includes construction of facilities and provision of equipment as follows:

a) Civil works: Landing jetty, access bridge, landing wharf for small fishing boats, slipway, retaining walls, on-premise roads and parking lot, drainage channel
b) Buildings: Administration building / kiosk, fish handling shed, ice-making and storage plant, fueling shed, workshop, electric power supply and water supply shed, security guard house, public lavatory, simple wastewater treatment facility
c) Equipment: Support equipment for catch landing and fish handling, equipment for facility

operation and maintenance, and equipment for on-premise safety

The project is now at the construction stage and will be completed by March 2009.

## 5.3 Geographical map of the project




Map of Project Site

5.4 Survey method

(1) Study period

8 June, 2008~15 June, 2008

(2) Survey Team

1) Mr. Noriaki MURASE: Environmental and Social Considerations (ESC) Review Div., Office for ESC Review and Credit Risk Analysis
2) Local consultant: INCREASE (NGO)

(3) Respondents in the survey

The following people and groups were the survey targets to measure the social impacts and to grasp how JICA Guidelines applied to the project.

| Date | Respondents | Interviewers |
|---|---|---|
| 10-13 June, 2008 | Persons directly or indirectly affected by the project | Local Consultant |
| 10-12 June, 2008 | District government of East Flores (Bupati Office, District Marine Affairs and Fisheries Office, District Planning Bureau) | Mr. Murase<br>Local Consultant |

5.5 Result of the Survey

(1) Survey Results of Household

a. Preparation of the questionnaire

A questionnaire for the purpose, consisting of 16 variables (Table 5.1) related to the various perceptions of the project, was prepared by JICA and was translated into Indonesian by the consultant.

b. Selection of households as interviewee

40 people were randomly selected and interviewed. All of the interviewee were over 18 years old. The interviews were conducted house-by-house and were concentrated among persons living around the project site. 40 samples were obtained finally.

c. Analysis Method

By using statistical analysis software, we came up with the average and standard deviation of each variable. Then we analyzed these data with presumptions using stepwise regression, a semi-automated process of building a model by successively removing variables based solely on the estimated coefficients (F=0.10), and checked the effect on the variables.

d. Variable Description

Table 5.1 shows the variables utilized in the analysis. Each variable has a range from 1: affirmative, to 5: very negative, utilized in the survey.

**Table 5.1 List of variables**

| Variable | Item |
|---|---|
| V-1 | Support for the project |
| V-2 | Degree of benefit from the project |
| V-3 | Degree of disadvantage from the project |
| V-4 | Degree of satisfaction with given information |
| V-5 | Degree of understanding of given information |
| V-6 | Degree of distortion of given information |
| V-7 | Degree of satisfaction with the SHM |
| V-8 | Response from project owner |
| V-9 | Accessibility of location of the SHM |
| V-10 | Easiness of explanation of the project |
| V-11 | Degree of Satisfaction with the SHM |
| V-12 | Adequacy of explanation at the SHM |
| V-13 | Sufficiency of opportunities to participate in the SHM |
| V-14 | Adequacy of explanation of adverse impacts of the project |
| V-15 | Adequacy of explanation of mitigation measures for the adverse impacts of the project |
| V-16 | Degree of acceptance of the project |

e. Statistics description (consecutive variable)

Tables 5.2 and 5.3 show the average and standard deviation of each variable. A low number for the average means that the respondents answered affirmatively, while a high number shows a negative perception in response to the questions. However, V-3 and V-6 show the opposite meaning.

**Table 5.2 Survey result of all samples (n=40)**

It does not show the variables concerning SHM.

| Variable. | V-1 | V-2 | V-3* | V-4 | V-5 | V-6* | V-14 | V-15 | V-16 |
|---|---|---|---|---|---|---|---|---|---|
| Average | 1.90 | 2.45 | 2.98 | 2.85 | 2.78 | 2.83 | 2.85 | 3.03 | 2.00 |
| Standard Deviation | 0.74 | 1.04 | 1.48 | 1.14 | 1.00 | 0.50 | 1.00 | 0.95 | 0.39 |

*: Lower number for the average shows that the project was negatively accepted.

**Table 5.3 Survey result of participants in SHM (n=16)**

| Variable. | V-1 | V-2 | V-3* | V-4 | V-5 | V-6* | V-7 | V-8 | V-9 | V-10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Average | 2.06 | 2.38 | 3.19 | 2.25 | 2.00 | 2.69 | 2.44 | 2.75 | 2.00 | 2.63 |
| Standard Deviation | 0.68 | 0.96 | 1.60 | 1.13 | 0.52 | 0.60 | 1.15 | 1.13 | 0.37 | 0.96 |
| Variable | V-11 | V-12 | V-13 | V-14 | V-15 | V-16 | | | | |
| Average | 2.31 | 2.19 | 2.19 | 2.25 | 2.63 | 2.75 | | | | |
| Standard Deviation | 0.95 | 0.54 | 0.91 | 0.86 | 1.09 | 1.18 | | | | |

*: Lower number for the average shows that the project was negatively accepted.

f. Analysis 1: Analysis of the survey result of all samples

As shown in Table 5.2, the result shows that the project has an affirmative perception generally. This is supported by the result showing that the average of V-1 is 1.90.

The standard deviation of each variable is close to one. This means that there is no significant variation among the answers. However, the figure for V-3 which shows the perception of negative impacts is somewhat higher than the others. The reason for this is that various negative impacts were selected by the interviewees.

In order to grasp the perception concerning project acceptance, we chose V-1 (Support for the project) and V-16 (Degree of acceptance of the project) as explained variables, and conducted multiple regression analysis to check the relationship with the other variables.

Firstly, we constructed a model in which V-1 (Support for the project) is an explained variable. The model has a low figure (0.31) for $R^2$: Coefficient of Determination. This means that the figure does not represent highly reliable data.

As shown in the following Figure 5.1, there is a relationship between V-16 and V-1. This result means that people will support the project if they think that the project will bring them all sorts of benefit. It can be assumed that there is also some relationship between V-2 and V-1.

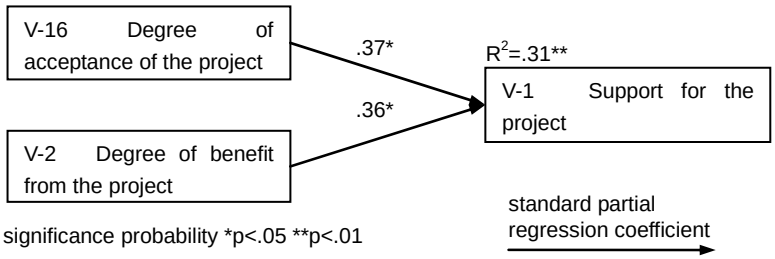



**Figure 5.1 The result of Multiple Regression Analysis with Explained Variables: Support for the project(V-1)**

Secondly, we constructed a model in which V-16 (Degree of acceptance of the project) was an explained variable. The model has a low figure (0.31) for $R^2$ which means that the figure does not represent highly reliable data.

In this model, we chose two variables V-1 and V-4 in order to check the relationship. As shown in Figure 5.2, there is some relationship between V-1 and V-16. In addition, there is a correlation between V-4 and V-16. We could say that interviewees' satisfaction with the given information positively affects their acceptance of the project.

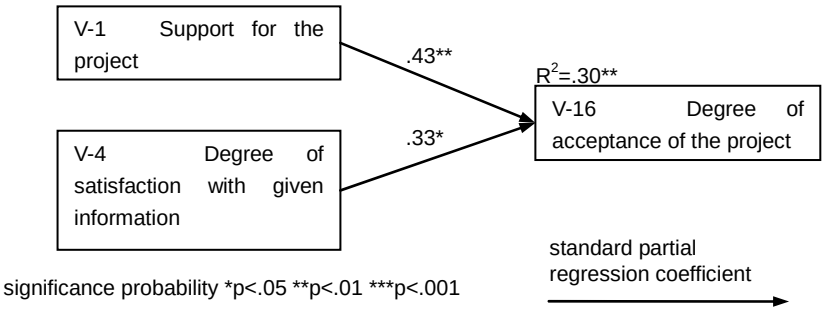



**Figure 5.2 The result of Multiple Regression Analysis with Explained Variables: Degree of acceptance of the project(V-16)**

Moreover, we attempted an analysis of V-6 (Degree of distortion of given information) which indicated a negative perception, but statistically significant results could not be obtained.

g. Analysis 2: Analysis of the survey result of participants in SHM

As shown in Table 5.3, the result shows that participants in SHM have an affirmative perception of the project generally, except for V-6. The participants also have an affirmative perception of SHM because the average values of the variables for SHM (V-7〜V-13) are below 3.

The standard deviation of each variable is close to one. This means that there is no significant variation in the answers. However, the figure for V-3 which shows the perception of negative impacts is somewhat higher than the others as in Analysis 1.

In order to grasp the perception concerning project acceptance, we chose three variables: V-1 (Support for the project), V-6 (Degree of distortion of given information) and V-16 (Degree of acceptance of the project). Then, we conducted multiple regression analysis as in Analysis 1.

As shown in Figure 5.3, the model that utilizes V-1 as an explained variable has a high figure (0.68) for $R^2$; therefore, the model could have the persuasion to manifest a relationship. In particular, there is a strong relationship between V-10 (Easiness of explanation of the project) and V-1. This result means that people will support the project if they think that the explanation in the SHM is easy to understand.

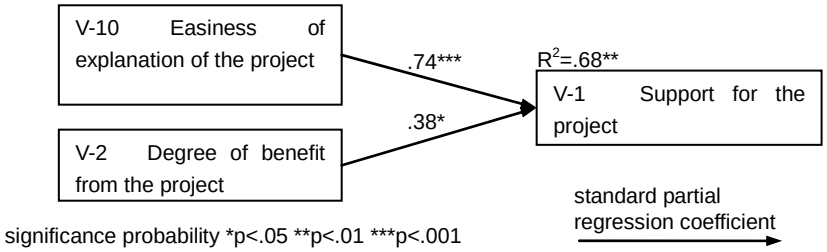



**Figure 5.3 The result of Multiple Regression Analysis with Explained Variables: Support for the project(V-1)**

The same can be said for the model in which V-16 (Degree of acceptance of the project) is an explained variable. There is a strong relationship between V-10 and V-16 because the effect of V-10 (standard partial regression coefficient) shows a high level (0.80).

Moreover, we attempted to construct a model in which V-6 (Degree of distortion of given information) was an explained variable, but statistically significant results could not be obtained.

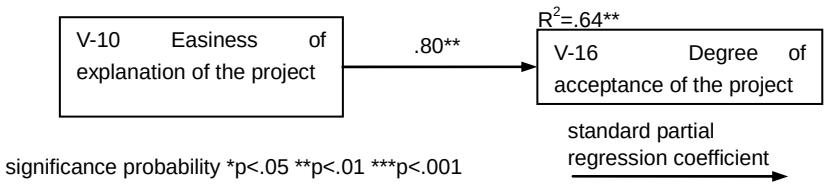



**Figure 5.4 The result of Multiple Regression Analysis with Explained Variables: Degree**

**of Acceptance of the project(V-16)**

(2) Survey Results of Implementing Agency

The Study team interviewed the district government of East Flores (hereinafter called “the Government”). The result is described below.

a. Adverse impacts of the project and mitigation measures

The likely adverse impacts and mitigation measures are appropriately considered at the preliminary study stage. The Government and the JICA study team identified the environmental and social items to be taken into consideration, such as economic activities, land use, social infrastructure, soil erosion, landscape, water pollution, waste, noise and vibration, ground subsidence, odor, and accidents. Then, the study team analyzed the mitigation measures to ensure environmental and social considerations based on the result of the preliminary study. The Government and JICA study team considered these items to be involved in the project design at the planning stage.

Moreover, the Government commissioned an Initial Environmental Examination (IEE), which is required by the EIA system in Indonesia, to the University of Nusa Cendana Kupang. Based on the result of IEE, the environmental management plan and monitoring plan were prepared in December 2005. The government conducted mitigation measures and monitoring activities according to these plans. In addition, the government explained the outlines of the plans to local residents at the SHMs.

As an example of avoiding negative impacts, the government changed the reclamation plan in response to the request of local residents to avoid removal of the “Holy Stone”.

There have been no reports of problems so far according to the result of interviews with the Government.

b. Information disclosure

According to the explanation from the Government, the result of IEE including the environmental management plan and monitoring plan has been disclosed to the public at the District Marine Affairs and Fisheries Office. Anyone who is interested in the project can access and obtain a copy of the IEE report. The report is written in Indonesian, the common language around the project site.

Also, relevant information is disclosed at SHMs.

c. SHMs

SHMs were held twice during the JICA preliminary study near the project site. 39 residents participated in the first meeting held on July 18, 2006, and 47 residents in the second meeting held on July 23, 2006. As for announcement of the meetings, the Government sent invitations to local residents and members of the fishermen’s union. At the meetings, the

Government explained the objectives and contents of the project, the positive and negative impacts, and the outlines of the environmental management plan and monitoring plan. The explanation was conducted in Indonesian and in easy words in order to enhance participants' understanding.

According to the minutes of the meetings, local residents mainly asked the following questions and presented the following requests:

1) Questions about the reclamation schedule and detailed design of the facilities
2) Request for minimization of water pollution from the project and proper waste management
3) Request for contribution of the project to the local economy
4) Request for enhancement of fish port management including capacity building of the fishermen's union

The above-mentioned requests were reflected in the facility plan and the fish port management plan. The result of the meeting showed that the participants generally accepted the project and did not have stiff opposition to the project.

According to the explanation from the Government, it has also explained the progress of the project to local residents on a regular basis.

d. Land acquisition

According to the explanation from the Government, land ownership was transferred from the landowners to the Government before the project started. At the time of the change in ownership, the Government received a letter of consent from the landowners and compensated them in cash according to procedures stipulated by the Government.

There is no involuntary resettlement in this project.

e. Environmental permission

This project requires preparation of an environmental management plan and monitoring plan according to the EIA system in Indonesia. It was confirmed that the District Marine Affairs and Fisheries Office submitted these plans to the District EIA Review Committee, and then, the Committee approved the plans prior to starting the project.

5.6 Findings of the study

(1) Operation based on the Guidelines

a. Compliance with the Guidelines

It was confirmed that the study complies with the Guidelines.

Also, the Government prepared the environmental management and monitoring plan and disclosed and explained it to the public properly. Moreover, SHMs were held appropriately

in cooperation with the JICA preliminary study team.

b. Perception of the Guidelines

As a result of interviews with the Government, it was confirmed that the interviewees did not understand the contents of the Guidelines well. One of the reasons why their perception of the Guidelines was not high was that the Guidelines include requirements for both JICA and the recipient governments, so the Government would not clearly understand what JICA requests of the Government. Another reason would be that the Guidelines prescribes procedures only at the preparation stage (study stage) even though the implementation stage exists in the project.

c. Contents of information disclosure

The SHMs were held appropriately by the Government because 13 of the 16 interviewees who participated in the SHMs were satisfied with the meetings according to the result of the questionnaire survey. On the other hand, many interviewees requested information about the fish port operational plan including the employment schedule after completion of the construction.

(2) Issues and Concerns

As perception of the Guidelines was not so high in the Government because of that the Guidelines include requirements for both JICA and the recipient governments, some elaboration to improve the perception should be considered.

It is pointed out that the residents are concerned about the fish port operational plan including the employment schedule after completion of the construction. It is advisable for the Government to continuously provide opportunities for local residents to obtain information about the progress of the construction and the future operational plan of the fish port.

Reference:

1. Japan International Cooperation Agency, System Science Cousultants Inc., Nippon Koei Co., Ltd., (2007.1) “*Basic design study report on the project for the promotion of the sustainable coastal fisheries in the Republic of Indonesia*”, Tokyo

## 6. The Project for Integrated Solid Waste Management for Municipalities in the Republic of El Salvador

### 6.1 Scheme and Classification

Scheme: Technical Cooperation Project

Classification: Category B

### 6.2 Project description

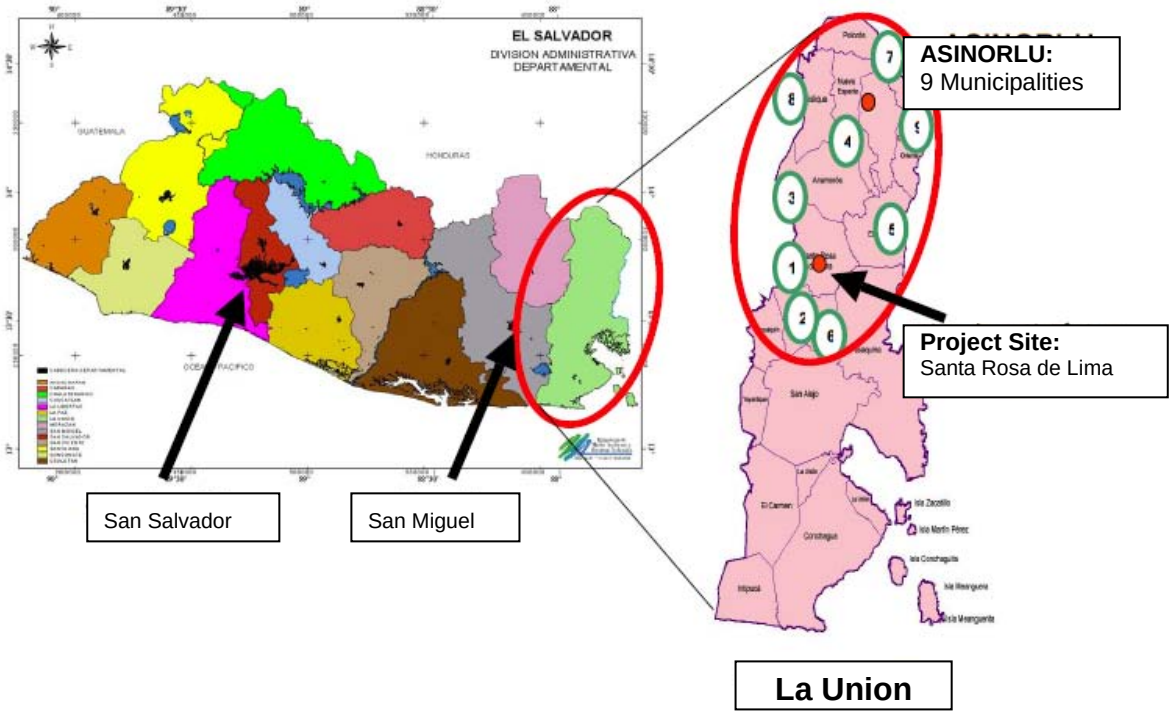
The problem of solid waste is a common issue in every country of Central America and the Caribbean. This situation is usual in El Salvador. The Salvadoran government decided in 2000 to close the uncontrolled landfill in July 2004 and make a sanitary landfill for deposition of solid waste according to the Executive Law enacted in 2001. However, the small and medium municipalities fell behind with its implementation because the personnel did not have adequate knowledge and ability in solid waste management (SWM) and because of the low financial resources.

In view of the situation、the Salvadoran Government requested the Japanese Government for technical cooperation and this was approved in August 2005. JICA sent an expert team to provide technical assistance to the Salvadoran engineers for the project implementation in May 2006.

A preliminary study was conducted by the Salvadoran government and JICA, which resulted in the design of a pilot project before the experts were dispatched. The principal element of the pilot project was construction of a sanitary landfill in the Municipality of Santa Rosa de Lima, in the Department of La Union, on the eastern border of El Salvador. This landfill would receive, process, and manage solid waste from nine surrounding municipalities, representing a total of 114,000 inhabitants. The new landfill was built on the site of an existing, rudimentary landfill facility.

The project is now in the third and final year based on the agreement between JICA and the Government of El Salvador. The project will be completed in March 2009 so the Japanese experts and their counterparts who are concerned in the project are eager to take action in order to reach the outcome of the project.

6.3 Geographical map of the project




6.4 Survey method

(1) Study period

23 May, 2008~2 June, 2008

(2) Survey Unit

1) Mr. Akihiro Miyazaki: Senior EIA Review Officer, Environmental & Social Considerations (ESC) Review Div., Office for ESC Review and Credit Risk Analysis
2) Mr. Orlando Hidalgo Buitrago: Program Officer, JICA El Salvador Office
3) Local consultant: ADHU

(3) Respondents in the survey

The following people and groups were the survey target to measure the social impacts and to grasp how JICA Guidelines applied to the project.

MARN, ISDEM and Santa Rosa de Lima Municipality are implementing agencies while Project Implementation Unit is in ISDEM.

| Day | Respondents | Investigators |
|---|---|---|
| 2008/5/23-5/25 | Residents living around the project site, waste pickers, and the work force at the project site | Local Consultant<br>Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/27 | Local NGO (Asociasíon Salvadoreña Pro-Salud Rural) | Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/28 | Ministry of the Environment and Natural Resources (MARN) | Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/28 | El Salvadoran Institute for Municipal Development (ISDEM) | Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/27 | Santa Rosa de Lima Municipality | Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/27 | Implementing Agency Project Implementation Unit (PEU) | Mr. Miyazaki<br>JICA El Salvador Office |
| 2008/5/27 | Project Experts | Mr. Miyazaki<br>JICA El Salvador Office |

6.5 Result of the Survey

(1) Survey Results of Residents

a. Preparation of the questionnaire

A questionnaire was prepared by JICA and the consultant translated the questionnaire into Spanish.

**b**. Selection of households as interviewee

42 residents over 18 years old mainly including three distinct groups in the project area were interviewed. The first group of 12 people who lived in or adjacent to the current landfill site and who made their living from collecting and selling materials picked from the piles of waste were all waste pickers. The second group of 7 interviewees included sanitary landfill workers, engineers associated with the new project, and representatives of government and non-governmental organizations involved in the project. The third group was composed of 23 people who live near the landfill but do not earn their living from the landfill or waste recycling. In terms of the third group, the random sampling method was applied in this survey. Nonetheless, none of the people who were interviewed refused to respond to our face-to-face interviews. 42 samples were obtained finally.

Local consultant (ADHU) interviews with waste picker

c. Analysis Method

By using the statistical analysis software, we came up with the average and standard deviation of each variable. Then we analyzed these data with presumptions using stepwise regression (F=0.10) and checked the effect on the variables.

d. Variable Description

The Table 6.1 shows the variables utilized in the survey. Each variable has a range from 1: very affirmative to 5: very negative, utilized in the survey.

**Table 6.1 List of Variables**

| Variable | Item |
|---|---|
| V-1 | Support for the the project |
| V-2 | Degree of benefit from the project |
| V-3 | Degree of disadvantage from the project |
| V-4 | Degree of satisfaction with given information |
| V-5 | Sufficiency of the project information |
| V-6 | Degree of understanding of given information |
| V-7 | Degree of distortion of given information |
| V-8 | Degree of satisfaction with announcement of SH |
| V-9 | Response from project owner |
| V-10 | Accessibility of location of the SHM |
| V-11 | Easiness to understand the explanation of the project |
| V-12 | Degree of satisfaction with the SHM |
| V-13 | Adequacy of explanation at the SHM |
| V-14 | Sufficiency of opportunity to participate in the SHM |
| V-15 | Adequacy of explanation of the adverse impact |
| V-16 | Adequacy of explanation of the mitigation measures |
| V-17 | Adequacy of explanation of involuntary resettlement |
| V-18 | Degree of consent to resettlement |
| V-19 | Degree of satisfaction with explanation of compensation |
| V-20 | Degree of acceptance of the project |

e. Statistical Description (consecutive variable)

The Table 6.2 shows the average and standard deviation of each variable. A low number for the average means that the respondents answered affirmatively, while a high number shows a negative perception. However, only V-3 shows the opposite meaning.

**Table 6.2 Survey Result out of 42 samples**

**It does not show the variables concerning the stakeholder meetings**

| Variable | Average | Standard Deviation |
|---|---|---|
| V-1 | 2.33 | 1.373 |
| V-2 | 2.57 | 1.346 |
| V-3* | 2.07 | 1.351 |
| V-4 | 2.74 | 1.231 |
| V-5 | 2.24 | 1.206 |
| V-6 | 3.05 | 1.103 |
| V-15 | 2.74 | 1.289 |
| V-16 | 2.67 | 1.319 |
| V-17 | 2.88 | 1.214 |
| V-18 | 2.19 | 1.194 |
| V-19 | 3.05 | 1.103 |
| V-20 | 2.21 | 0.898 |

*: Lower number for the average shows that the project was negatively accepted

f. Analysis 1: General analysis of the sample result

As shown in Table.6.2, the result shows that the project has slightly positive than neutral perception. For example, variables V-3,V-6, and V-19 are slightly higher than the medium number. This means that the project has a sort of negative perception among the interviewees. On the other hand, the other variables show a relatively affirmative opinion of the project. In terms of standard deviation, all the numbers are near 1.0, so we could not see any dispersion among the samples.

In order to grasp the perception concerning the project acceptance, we chose V-1 and V-20 as variables related to the explanation, and conducted multiple regression analysis to check the relation with other variables. In analyzing these data, we made the presumption using stepwise regression (F=0.10).

We tried to check a model in which V-1 In favor of the project is an explained variable. The model has a high figure (0.62) for $R^2$: Coefficient of Determination. This means that the figure does represent the sample. As shown in the following Figure 6.1, upper side, there is a much stronger relationship between V-2 and V-1 rather than V-5 and V-1, and V-20 and V-1. This result says that people feel in favor of the project if they think that the project would bring about sorts of benefit.

In terms of the model in which V-20 Acceptance of the project is an explained variable, the model has a strong implication for a mutual relationship because of not so low figure (0.31) for $R^2$. In this model, we chose only one variable, V-1, in order to check the relation. In relation with V-1, the standard partial regression coefficient was calculated as 0.55 and we could say that V1 and V-20 show a relatively strong correlation. Thus, this means that

people will accept the project because people support the project. The result say that usual relationship between two variables.

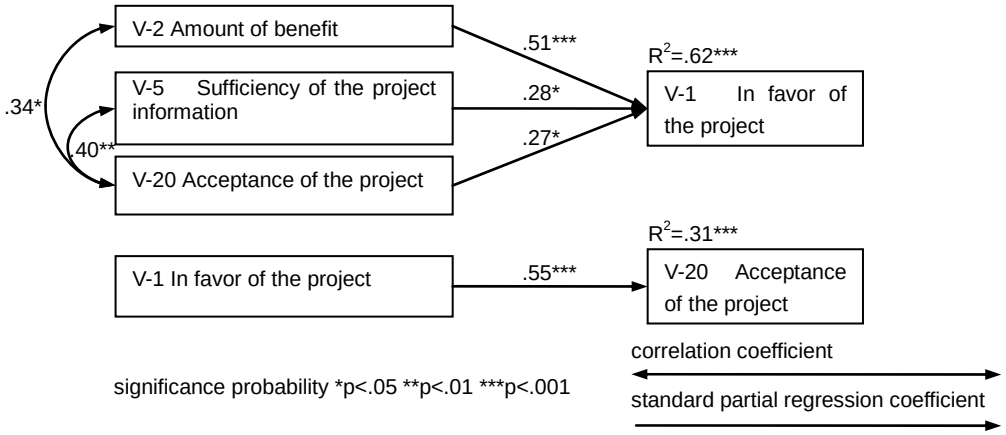



**Figure 6.1 The result of Multiple Regression Analysis with Explained Variables: In favor of the project(V-1), Acceptance of the project(V-20)**

In the case of the model that uses V-3 as an explained variable, the coefficient of determination indicates a very low number (0.14), so the model itself does not have the persuasion to express a relationship as shown in Figure 6.2.

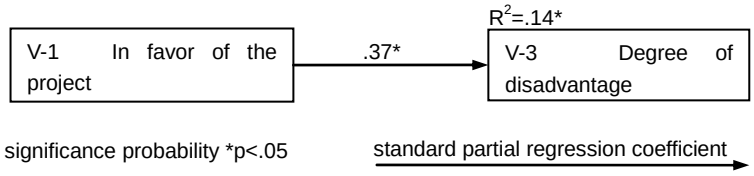



**Figure 6.2 The result of Multiple Regression Analysis with Explained Variables: V-3 Degree of disadvantage and V-16 Adequacy of explanation of the mitigation measures**

In the interview survey, we tried to grasp the negative perception from households concerning the contents of disadvantage due to the project as shown in Table 6.3. As a result of the survey, people have strong impression that the project might bring adverse impacts such as water, air quality, land, etc., on their life.

**Table 6.3 Contents of disadvantage due to the project**

| No. | Contents of disadvantage responding to (Q2-5) |
|---|---|
| 25 | Water (increased water run-off, water contamination) |
| 19 | Air (air pollution, offensive odor) |
| 16 | Land (land collapse, soil erosion, subsidence) |
| 13 | Biological freshwater environment (flora and fauna) |
| 12 | Biological terrestrial environment (flora and fauna) |
| 5 | Land use and zoning (change in land use) |
| 5 | Aesthetics and visual effects (landscape) |
| 5 | Population (resettlement, influx of workers) |
| 5 | Waste |
| 4 | Noise and vibration |

g. Analysis 2: Focusing on Stakeholder Meetings

We try to analyze the result on the response of stakeholder meetings, but also we have to bear in mind that the sample is limited because of small population in affected area. As shown in Table 6.4, all the variables except V-3 indicate an affirmative trend. If we focus on V-3, we can see that its standard deviation has a relatively higher number (1.45) than the other variables. The reason for this is that there are many impacts which people might feel to be a disadvantage.

**Table 6.4 Result from the Stakeholder Meeting Participants(n=19)**

| | Average | Standard deviation |
|---|---|---|
| V-1 | 1.79 | 1.084 |
| V-2 | 2.16 | 1.385 |
| V-3* | 2.00 | 1.453 |
| V-4 | 2.21 | 1.228 |
| V-5 | 1.63 | 1.116 |
| V-6 | 2.74 | 1.327 |
| V-8 | 2.11 | 0.994 |
| V-9 | 2.21 | 1.273 |
| V-10 | 2.05 | 1.268 |
| V-11 | 1.53 | 0.772 |
| V-12 | 1.47 | 0.772 |
| V-13 | 2.05 | 1.311 |
| V-14 | 1.95 | 1.129 |
| V-15 | 2.05 | 1.311 |
| V-16 | 1.79 | 1.273 |
| V-17 | 2.42 | 1.427 |
| V-18 | 1.37 | 0.831 |
| V-19 | 2.74 | 1.368 |
| V-20 | 1.79 | 0.976 |

*: Lower number for the average shows that the project was negatively accepted

In addition to the previous analysis, we conducted Multiple Regression Analysis with important variables V-1 and V-20.

If we constructed a model in which V-1 was an explained variable, the coefficient of determination would be a high score (0.68). This means that the model would be appropriate and the explanation would have a relatively big impact. When the relationship of the variables is explained, V-2 Amount of benefit and V-19 Degree of satisfaction with the explanation of compensation have a sort of influence on V-1. As a result of the analysis, we can conclude that “since the project will have a large amount of benefit and explanation about compensation will be provided satisfactorily, people will support the project.”

On the other hand, in case of V-20, the coefficient of determination (0.58) is calculated as mentioned below. So we can say that the model will be appropriate and V-12 has a relatively strong influence on V-20. However, V-6 has a negative influence on V-20, so we can say that the higher the comprehension level, the lower the acceptance of the project. This result is a little confusing, but we can assume that there might be a lot of disadvantageous information on the project within the information they received.

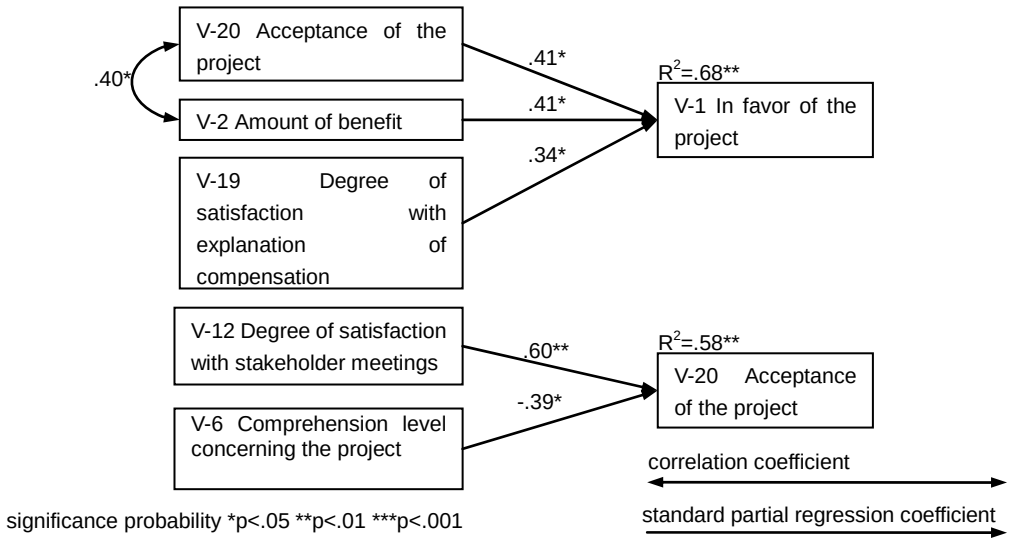



**Figure 6.3 The result on Multiple Regression Analysis with Explained Variables: In favor of the project(V-1), Acceptance of the project(V-20)**

(2) Survey Results of Implementing Agencies

a. Survey Method

We conducted qualitative analysis using the responses to our questions concerning the project, environmental considerations, and the Guidelines. The interviews were conducted face-to-face directly by JICA.

b. Environmental Permission

The necessary governmental procedure was completed based on the national

environmental law before starting the project implementation stage. In terms of this project, an EIA study was not required, but an IEE level environmental study was conducted and environmental permission for the project was obtained. Santa Rosa de Lama Municipality submitted the survey result to acquire environmental permission from MARN and MARN approved the application without any major comment in October 2006. The documents and application were all drawn up in Spanish and the document is available for reading.

c. Adverse environmental & social considerations on the project

The preliminary study was conducted to check the adverse environmental and social impacts of the project. The result of the study showed that there were some adverse environmental and social impacts of the project such as involuntary resettlement, local economy, geography, groundwater, river zone, water quality, soil erosion, and offensive odor.

In accordance with the JICA Guidelines and environmental law in El Salvador, the implementing agency conducts mitigation measures and monitors the items mentioned above.

The project also provided technical support for waste pickers.

d. Information disclosure

According to the implementing agencies, information disclosure was conducted by various methods such as municipal newspapers, open seminars, and field trips. All the information was delivered in Spanish. Spanish is the common language of the country, so people in El Salvador could understand all the information.

e. Stakeholder meetings

The project was classified as environmental category B, so stakeholder meetings were not a prerequisite condition according to the Guidelines. Nonetheless, the project held several workshop meetings in order to enhance understanding of the project such as the plan/strategy, activities, current environmental situation, and so on. The project especially communicated with the waste pickers who live inside the landfill site because the results of the study indicated that it might have some impacts on the waste pickers. The project tried to identify the current impacts, and then provided technical support such as life improvement programs, self-enlightenment lectures and micro credit seminars for 9 months.

f. Involuntary resettlement/Land acquisition

The project did not require land acquisition. All the land for the project was possessed by the municipal government and prepared for landfill. However, as mentioned before, 9 families of waste pickers already lived in the project site at the beginning of the project, so

the project had to have their acceptance concerning the project. And 3 families who were the resettlement target received various explanations from the government and moved to another landfill site, so they could resume regenerated waste collection at the same place. Although the families needed to resettle, we did not see any damage or economic loss due to the project implementation.

g. Monitoring

In terms of environmental issues, the implementing agencies keep monitoring the environmental situation and conditions regarding the items to be considered. The agencies have a responsibility to submit a monitoring report to the Ministry of the Environment and Natural Resources every six months. Monitoring costs seem to be a burden on the agencies.

h. Guidelines Compliance

The project is advanced with appropriate environmental and social considerations in line with the JICA Guidelines and the national environmental law. The people in charge of the environment in the project deeply understand the context of the Guidelines and use them carefully.

The project counterpart and experts sincerely understood and complied with the Guidelines. MARN especially analyzed the Guidelines in depth in order to adapt them for the project administration. However, some people working on the project were confused as to how they should apply the Guidelines to the national environmental regulations.

i. Other issues

The implementing agencies acknowledged that programs for the waste pickers would be available for the future landfill site. The government, especially MARN, is trying to identify the environmental impacts and mitigate them, but has not paid much attention to the social impacts on waste pickers and local residents in the past. So the project could be a model case for the construction of new landfills with environmental and social considerations in El Salvador.

(3) Survey results of NGO

a. General perception

During the project, the NGO Asociación Salvadoreña Pro- Salud Rural which provides health care, rural development, and life improvement activities such as micro-credit seminars, and gender and primary health care services and promotion, participated in the project activities in order to provide technical support such as life improvement programs, self-enlightenment lectures, and micro-credit seminars for small businesses for waste

pickers for 9 months. Positive impact is observed such as that some waste pickers go to school and start small business. According to the interviews with the NGO, they expected to give more support during the time provided by the municipal government to reach their goals such as sustainable life improvement, i.e. taking jobs other than waste picking despite getting some outcome. So the NGO requested the government to resume activities on the project site in order to be sure of reaching their goals on the project.

Seminars and lectures for the waste pickers are not an easy task because they have a relatively low educational status, different culture and life style and no motivation for their lives. They do not have any future plans or strategy for their families, but just think about their lives today and tomorrow. So all the families insist on their sons and daughters acquiring educational status.

b. Guidelines compliance

The NGO feels that the JICA Guidelines encourage the nation to consider the poor and vulnerable in the implementation of any new project. That is why the NGO had not seen any project or plan with strong social considerations especially for waste pickers managed by the government until this project started.

c. Stakeholder involvement

The NGO emphasized that stakeholder involvement including waste pickers in the project might have great impacts. The government in addition to private companies has not tried to implement projects with the participation of vulnerable people and the poor at the planning stage because their participation would not provide any profit to the project and more time would be needed to implement it.

d. Information disclosure

There is no specific comment or opinion on this issue. However, they feel relatively satisfied with the procedure of information disclosure on the project because the government, including the local government, talked about and discussed openly the issues concerning the project.

6.6 Findings of the Study

(1) Operation based on the Guidelines

It was confirmed that the study complies with the Guidelines.

Resident's concern on the project seems not high. Because the project site is adjacent to the existing waste landfill which is an open dump site with bad environmental condition and it is not easy for residents to distinguish the project site and existing dump site, especially for inhabitants of the area near the landfill, this is supposed to affect to the perception on

the project.

In such case, careful communication with residents is important.

(2) Issues and Concerns

Developing an effective vocational training program for the waste collector group (waste pickers) would generate more fruitful results, even though the project provided some programs for them. This group is in a very vulnerable position economically, socially, and especially regarding their physical health.

Reference:

1. Japan International Cooperation Agency, The Republic of El Salvador, (2005.8) "*Record of Discussions Between Japanese Implementation Team and Authorities Concerned of the Government of the Republic of El Salvador on Japanese Technical Cooperation for the Project for Integrated Solid Waste Management for Municipalities in the Republic of El Salvador*", San Salvador (http://www.jica.go.jp/english/about/policy/envi/profile/els01.html)