

---

**Attachment F**

**Executive Order No.263  
Adopting Community-Based Management As the National Strategy to  
Ensure the Sustainable Development of the Country's Forestlands  
Resources and Providing Mechanisms for its Implementation**

---



*10-10 Nippon Koei*

MALACAÑANG  
MANILA

*45.1.2*

BY THE PRESIDENT OF THE PHILIPPINES

EXECUTIVE ORDER NO. 263

**ADOPTING COMMUNITY-BASED FOREST MANAGEMENT AS THE NATIONAL STRATEGY TO ENSURE THE SUSTAINABLE DEVELOPMENT OF THE COUNTRY'S FORESTLANDS RESOURCES AND PROVIDING MECHANISMS FOR ITS IMPLEMENTATION**

WHEREAS, Article II, Section 16 of the 1987 Constitution provides for the protection and advancement of the right of the Filipino people, both men and women, to a healthful and balanced ecology;

WHEREAS, Article II, Section 10 provides for the promotion of social justice to all citizens in all phases of national development;

WHEREAS, Article XIV, Section 17 mandates the State to recognize and respect the rights of the indigenous peoples to their ancestral domains and consider their customs, traditions and beliefs in the formulation of laws and policies;

WHEREAS, Executive Order No. 192, series of 1987, mandates the Department of Environment and Natural Resources (DENR) as the primary government agency responsible for the sustainable management and development of the country's natural resources;

WHEREAS, the Philippines 2000 and the government's Social Reform Agenda support people empowerment and the full, meaningful and indispensable participation of communities as immediate stakeholders of the forestlands resources in the protection and management of the forest ecosystem;

WHEREAS, the 25-year Master Plan for Forestry Development also recognizes the indispensable role of local communities in forest protection, rehabilitation, development and management, and targets the protection, rehabilitation, management, and utilization of at least 4 million hectares of forestlands, through the community-based forest management strategy;

WHEREAS, entrusting the responsibility for forest rehabilitation, protection, and conservation to the community of stakeholders and affording them equitable access to the forest and coastal resources are viable forestland management strategies as borne by the experience of the DENR and various supporting agencies;

NOW, THEREFORE, I, FIDEL V. RAMOS, President of the Philippines, by virtue of the powers vested in me by law, do hereby order that:

IN REPLYING, PLEASE CITE:

PEFR Letter # 1951177



1951177

CERTIFIED COPY:  
*[Handwritten signature]*  
1987  
RMSS

**SECTION 1.** Community-based forest management (herein referred to as CBFM) shall be the national strategy to achieve sustainable forestry and social justice.

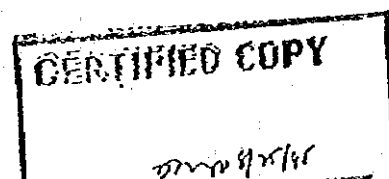
**SEC. 2.** The DENR, through its Community and Provincial Environment and Natural Resource Offices, in coordination with the local government units and the Department of Interior and Local Government (DILG) shall, at all times, take into account the needs and aspirations of local communities whose livelihood depends on the forestlands.

**SEC. 3.** Participating organized communities may be granted access to the forestland resources under long term tenurial agreements, provided they employ environment-friendly, ecologically-sustainable, and labor-intensive harvesting methods. Such harvesting methods shall be mentioned under a site-specific management plan of each recipient community and duly approved by the DENR.

**SEC. 4.** The indigenous peoples may participate in the implementation of CBFM activities in recognition of their rights to their ancestral domains and land rights and claims.

**SEC. 5.** A CBFM Steering Committee shall be created immediately and headed by the DENR with members from the Departments of Agriculture, Trade and Industry, Agrarian Reform, Finance, Science and Technology, Labor and Employment, Interior and Local Government, Budget and Management, National Defense and Justice; National Economic Development Authority; Philippine Commission on Countrywide Development under the Office of the President, Committee on Flagship Programs and Projects of the Office of the President; Presidential Management Staff under the Office of the President; Cooperative Development Authority, and Offices of Northern and Southern Cultural Communities. The Committee may invite representatives from the Philippine Chamber of Commerce, Philippine Wood Products Association, NGO coalition groups, and other public and private organizations to become members of the Steering Committee. The Committee shall formulate and develop policy guidelines that will create incentives and conditions necessary to effectively carry out community-based forest management strategy. Accordingly, members of the CBFM Steering Committee should, at least, be represented by concerned Assistant Secretaries or heads of bureaus and agencies.

**SEC. 6.** The DENR shall work with local governments, people's organizations (POs), non-government organizations (NGOs), religious groups, business and industry, and other concerned organizations to ensure that communities are empowered to initiate and achieve the objectives of this Order.



SEC. 7. In its budget preparation, the DENR shall allot adequate funds to effectively accomplish CBFM targets and shall seek supplementary funding from local and foreign supporting agencies and organizations. DENR shall also ensure the inclusion of budgetary allocation for CBFM in the annual General Appropriations Act, pending the passage of the revised Forestry Code.

SEC. 8. The DENR shall establish a Community-based Forest Management Special Account (CBFMSA) to support the implementation of the strategy and provide financial and professional incentive system for deserving communities and government personnel.

SEC. 9. The DENR may source local and international grants and donations for the establishment of the CBFM Special Account. Other sources of fund may later be determined by the CBFM Steering Committee subject to existing government regulations.

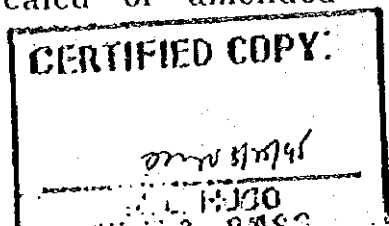
SEC. 10. The DENR shall support and set up jointly with relevant colleges and universities, private and public organizations, arrangements for a community forestry training program for members of participating units, such as people's organizations, non-government organizations, local government units, and other government personnel.

SEC. 11. Within six months after the signing of this Order, the DENR, in consultation with government financial institutions, such as the Development Bank of the Philippines (DBP), the Land Bank of the Philippines (LBP), GSIS and the SSS, shall effect the creation of favorable financing mechanisms for access by communities and organizations in the pursuit of the CBFM strategy and its sub-strategies such as community training and empowerment, enterprise development, agroforestry development, tree plantations, and other non-forest-based alternative livelihood systems.

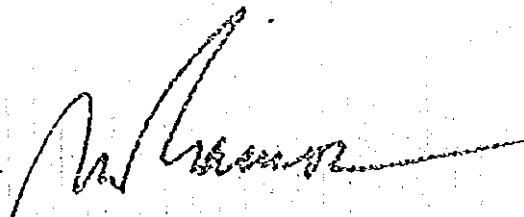
SEC. 12. The DENR Secretary shall issue new rules, regulations, procedures, and guidelines necessary to implement this Order and repeal or modify existing ones consistent with the policies set forth by the CBFM Steering Committee.

SEC. 13. The DENR Secretary shall, within six months from the signing of this Order, submit to the Office of the President, a National Comprehensive Community Forestry Action Plan, which embodies the Department's short, medium and long-term plans. The action plan shall be discussed and approved by the CBFM Steering Committee prior to its submission to the President.

SEC. 14. All previous executive and administrative issuances which are inconsistent herewith are repealed or amended accordingly.



DONE in the City of Manila, this 19th day of July, in the year of Our Lord, Nineteen Hundred and Ninety-Five.



By the President:



RUBEN D. TORRES  
Executive Secretary

CERTIFIED COPY:  
*5/15/95*  
M. L. F. J. O.  
CHIEF B. RMSS

*4/20/95*

---

**Attachment G**

**Executive Order No.1035  
Providing the Procedures and Guidelines for the Expeditious Acquisition  
by the Government of Private Real Properties or Rights Thereon for  
Infrastructure and Other Government Development Projects**

---





MALACAÑANG  
MANILA

EXECUTIVE ORDER NO. 1035

PROVIDING THE PROCEDURES AND GUIDELINES FOR THE EXPEDITIOUS ACQUISITION BY THE GOVERNMENT OF PRIVATE REAL PROPERTIES OR RIGHTS THEREON FOR INFRASTRUCTURE AND OTHER GOVERNMENT DEVELOPMENT PROJECTS

WHEREAS, one of the major causes of delays in the implementation of development projects, particularly national infrastructure projects, has been the processing of acquisitions of private properties or rights-of-way (ROW) thereon which are needed for said projects, and the settlement of claims for payment thereof;

WHEREAS, such property or ROW acquisitions are being hampered by several problems such as refusal of land owners/tenants to allow government personnel to enter the property during parcellary surveys, refusal of owners to sell because of cultural/personal value attached to the property, difficulties encountered by land owners in complying with existing rigid governmental requirements for payment of claims, and delays in issuance of court orders in expropriation cases;

WHEREAS, the delays in the implementation of development projects due to the aforementioned problems on property/ROW acquisitions have been causing a big drain on the government's financial resources in view of increased projects costs specifically in terms of commitment fees on undrawn balance of foreign loans and price escalation;

WHEREAS, there is an urgent need to amend existing rules and regulations, as well as to adopt new procedures and guidelines in order to expedite the acquisition of private property or rights thereon needed infrastructure and other development projects of the government;

NOW, THEREFORE, I, FERDINAND E. MARCOS, president of the Republic of the Philippines, by virtue of the powers vested in me by the constitution, do hereby order and direct as follows:

**SECTION 1. Scope and Applicability.** The provision of this Executive Order shall govern all acquisition of private real properties or rights-of-way (ROW) thereon needed for infrastructure projects and other development projects of the government which are undertaken by any ministry, agency, office or instrumentality of the government, including government-owned or controlled corporations and state colleges and universities.

**TITLE - ACTIVITIES PREPARATORY TO ACQUISITION OF PROPERTY**

**SECTION 2. Feasibility Studies.** Feasibility studies shall be undertaken for all major projects, and such studies shall, in addition to the usual technical, economic and operational aspects, include the social, political, cultural and environmental impact of the project.

SECTION 3. Information Campaign. Every agency, office and instrumentality of the government proposing to implement a development project which requires the acquisition of private real property or rights thereon shall first make consultations with the local government officials, including the regional development councils having jurisdiction over the area where the project will be undertaken to elicit their support and assistance for the smooth implementation of the project. The implementing agency/instrumentality concerned with the assistance of the local government officials and representatives of the Office of Media Affairs shall conduct an extensive public information campaign among the local inhabitants that objectives and benefits to be derived from the project and thus avoid any resistance to or objection against the acquisition of the property for the project.

SECTION 4. Detailed Engineering/Surveys. The implementing government agency/instrumentality concerned shall, well in advance of the scheduled construction of the project, undertake detailed engineering, including parcellary surveys to indicate the location and size of the sites and to determine ownership of the land to be acquired, including the status of such land ownership.

SECTION 5. Project Cost/Funding. The estimated cost of a project shall have the following distinct component:

- a. Pre-investment cost which shall include the cost of undertaking the feasibility study and public information campaign;
- b. Investment cost which shall include the cost of detailed engineering, cost of the property to be acquired and cost of construction and construction supervision.

The programming and budgeting of funds for the pre-investment and pre-construction phases, carried out in that order, shall be undertaken well in advance of the scheduled commencement of construction. The implementing agency/instrumentality concerned shall include in their respective proposals for annual budgetary outlays provisions to finance these preparatory activities and the Office of the Budget and Management (OBM) shall consider such proposals in the light of the foregoing. In the case of the infrastructure ministries, the necessary outlays for each phase of the pre-implementation activities shall be made a distinct component of the annual infrastructure program which shall be released by the OBM as scheduled.

#### TITLE B - PROCEDURE FOR ACQUISITION OF PROPERTY

SECTION 6. Acquisition Through Negotiated Sale. As an initial step, the government implementing agency/instrumentality concerned shall negotiate with the owner of the land that is needed for the project for the purchase of said land, including improvements thereon. In the determination of the purchase price to be paid, the Ministry of Finance and the

Provincial/City/Municipal Assessors shall extend full assistance and coordinate with the personnel of the government implementing agency concerned in the valuation of lands and improvements thereon taking into consideration the current and fair market value declared by the owner or administrator, of the land. Of such current market values as determined by the assessor, whichever is lower, prior to the negotiation.

SECTION 7. Expropriation. If the parties fail to agree in negotiation of the sale of the land as provided in the preceding section, the government implementing agency/instrumentality concerned shall have authority to immediately institute expropriation proceedings through the Office of the Solicitor General or the Government Corporate Counsel, as the case may be. The just compensation to be paid for the property acquired through expropriation shall be in accordance with the provisions of P.D. No. 1533. Courts shall give priority to the adjudication of cases on expropriation and shall immediately issue the necessary writ of possession upon deposit by the government implementing agency/instrumentality concerned of an amount equivalent to ten percent (10%) of the amount of compensation provided under P.D. 1533; provided. That the period within which said writ of possession shall be issued shall in no case extend beyond five (5) days from the date such deposit was made.

SECTION 8. Conditions Precedent to Foreign Loan Negotiations. As a general rule, negotiations for foreign loans to finance specific construction projects and other projects requiring acquisition of private real property or rights thereon shall be undertaken only after the negotiations for such acquisition with the property owner/s have been completed or the expropriation proceeding have been initiated; provided. That before the filing of expropriation proceedings, the financing institutions must have already favorably appraised the project; provided, further; That exception to the above rule may be allowed by the Investment Coordination Committee (ICC) on a case-to-case basis depending on the type, size and technology of the project involved. In such case, the ICC shall determine the extent/stage of property acquisition that may be required as a pre-condition for project approval or for negotiation of a foreign loan to finance the project.

#### TITLE C - PROCEDURE FOR PAYMENT AND REGISTRATION OR PROPERTY/ROW ACQUISITION

SECTION 9. Assessment of Taxes Due. The Bureaus of Internal Revenue and the respective Provincial/City/Municipal Treasurer shall assess the following taxes, where applicable on the property being acquired.

- a) Capital gains tax due on the gains derived from the sale of the real property to the government;
- b) Estate tax due on the portion of the estate of a deceased owner to be acquired by the government; and
- c) Unpaid real estate taxes on the property up to the time the government took possession thereof.

**SECTION 14. Properties Covered by Operation Land Transfer.** In case the land acquired is covered by the Operation Land Transfer of the Ministry of Agrarian Reform under P.D. No. 27, payment of the purchase price shall be made by the implementing agency/instrumentality concerned to the farmer-beneficiary owning such land by virtue of an emancipation patent issued by the Ministry of Agrarian Reform, free from all liens and encumbrances. If the land is not covered by an emancipation patent, or even if covered by an emancipation patent but the farmer-beneficiary is still amortizing the same with the Land Bank, payment shall be made by the government implementing agency/instrumentality to the landowner, or the Land Bank, as the case may be: Provided, That any amortization payments made by the farmer-beneficiary to the Landowner, or the Land Bank, as the case may be, shall be deducted by the government implementing agency/instrumentality from the purchase price and shall be paid to the farmer-beneficiary shall be entitled to the financial assistance provided for under Section 18 hereof.

**SECTION 15. Approval of Survey Plans.** The National Land Titles and Deeds Registration Administration and the Bureau of Lands shall give priority to the approval of all survey plans of parcels of land affected by government projects which have been filed under their respective jurisdiction.

**SECTION 16. Registration of Deed of Conveyance.** The Register of Deeds shall register the deed of conveyance and issue corresponding title in favor of the government within seven (7) days from the date of presentation of such deed together with the certification provided in Section 10 hereof.

The Register of Deeds shall also register the ROW agreement executed by the landowner in favor of the government for the ROW easement acquired by the latter over his property.

#### TITLE D - ASSISTANCE TO DISPLACED TENANTS/OCCUPANTS

**SECTION 17. Relocation/Resettlement of Tenants/Occupants Affected by Property/ROW Acquisitions.** In case where the land to be acquired for the projects would involve displacement of tenants, farmers and other occupants, the Ministry of Human Settlement, Ministry of Agrarian Reform and other concerned agencies shall extend full cooperation and assistance to the implementing agency/instrumentality concerned in the relocation and resettlement of such displaced tenants and occupants.

**SECTION 18. Financial Assistance to Displaced Tenants/Occupants.** The Government implementing agencies/instrumentalities concerned shall extend financial assistance to the displaced tenants of agricultural lands, cultural minorities and settlers who are duly accredited by the Ministry of Agrarian Reform/Bureau of Forest Development/Office of Muslim Affairs and Cultural Communities. In the case of cultural minorities, payment of such financial assistance to be given to tenants/farmers of agricultural lands which is to be determined by the implementing agency concerned in consultation with appropriate agencies, shall be equivalent to the value of gross harvest of one year on the principal and secondary crops

of the area acquired, based on the average annual gross harvest for the last three preceding crop years: Provided, That in no case shall the financial assistance be less than 15,000.00 per hectare.

Financial assistance may also be given to owners of lands acquired under CA 141, as amended, for the area of portion subject to the reservation under Section 112 thereof, in such amounts as may be determined by the implementing agency/instrumentality concerned, in consultation with the Commission on Audit and the assessor's office concerned.

Payment of the above-mentioned financial assistance shall be made at the time of relocation of the tenants/farmers.

SECTION 19. Replacing Clause. -- All "executive orders, instruction, rules and regulations or parts thereof inconsistent with this Executive Order are hereby repealed or modified accordingly.

SECTION 20. Effectively. This order shall take effect immediately.

Done in the City of Manila, this 25th day of June in the year of Our Lord Nineteen Hundred and eighty-five.

(SGD.) FERDINAND D. MARCOS  
President of the Philippines

By the President:

(SGD.) JUAN C. TUVERA  
Presidential Executive Assistant

such assessment shall be made and transmitted to the government implementing agency/instrumentality concerned within one (1) week from the submission of complete requirements.

SECTION 10. Withholding Tax/Tax Clearance. Upon receipt of the assessment of the aforementioned taxes, the government implementing agency/instrumentality concerned shall issue a certification that upon payment to the landowner, it shall deduct the corresponding capital gains tax and any unpaid estate tax and real estate tax.

On the basis of such certification, the BIR and the respective provincial/City/Municipal Treasurers shall issue the tax clearances for the registration of the property in favor of the government implementing agency/instrumentality concerned.

All taxes deducted shall be immediately remitted by the government implementing agency/instrumentality concerned to the BIR or the Provincial/City/Municipal Treasurer, as the case may be.

SECTION 11. Payment for Improvements on the Property Acquired. Payment for the improvements on property acquired which are not included in the respective tax declaration of the owner, shall be based on the physical inventory report prepared and certified to by the representatives of the agency, the Commission on Audit, and the claimant. In addition thereto, claims for payment of improvements must be supported by an affidavit of the claimant and affidavit of two (2) adjoining land owners or barangay officials attesting to or substantiating the ownership of said improvements.

SECTION 12. Indemnity Bond for Untitled Lands. In case where the property acquired is untitled, the government implementing agency/instrumentality concerned shall require the land owner to post an indemnity or property bond, the amount of which shall be fixed by the Provincial/City/Municipal Treasurer concerned on the basis of the market value as determined by the assessor and as appearing on the current tax declaration of the property. This requirement shall be dispensed with where the claim for payment does not exceed P50,000.

SECTION 13. Period for Payment. The payment of property acquired shall be effected by the implementing government agency/instrumentality concerned within ninety (90) days upon approval by appropriate higher authorities of the negotiated sale and submission by the landowner of all required documents. In the case of property acquired through expropriation, payment shall be effected within ninety (90) days from the finality of the decision rendered by the court: Provided, That if at the time of finality of the decision the funds originally allotted to cover the cost of the property are no longer available due to expiration of the pertinent release instruments, payment shall be made upon the release of funds by the OBM which hereby directed to effect the immediate release thereof, chargeable against available and applicable appropriations thereof.

---

**Attachment II**

**Standard Operating Procedures (SOP) for the Expeditions Acquisition of  
Right-of-way(ROW) and Payment by the Government of  
Private Properties and Other Improvements Thereon for  
Infrastructures and Other Government Development Projects**

---





Standard Operating Procedures (SOP) for the Expeditions Acquisition of Right-of-Way (ROW) and Payment by the Government of Private Properties and other Improvements thereon for Infrastructure and other Government Development Projects.

In order to effect expeditious acquisition of right-of-way and payment of properties and other improvements affected by the constructions of various infrastructure and other flood control projects, the following guidelines are hereby prescribed:

A. RESPONSIBILITIES

1. The Right-of-Way Engineer is to verify the ownership of the lot to be purchased, as well as any encumbrance to which such lot may have been subjected to and should likewise verify and inspect the actual lot to be purchased to determine whether the classification made by the Assessor is in accordance with the actual use of the property. A certification to this effect should be issued by the ROW Engineer.
2. Prepare all documentation and processing of all claims.
3. All documents submitted in support of the claim in every case should be carefully verified as to their authenticity and genuineness in order to forestall fraud.
4. The accuracy of the computations and completeness of documents should be ensured before submittal to the approving officer.
5. The requirements should be standardized for the acquisition of land and another for the demolition/removal of improvements and other structures.

FLOW OF DOCUMENTS

1. All documents must be, for individual claims, placed in a folder with proper indexing marks, properly checked and processed by the ROW Engineer and forwarded to the Internal Control Unit and Technical Sections for checking of the completeness of the documents, accuracy of computations, genuineness of ownership and conformance with the existing rules and regulations.
2. Transmitted to the Assistant Program Director for review and/or recommend approval as the case maybe.
3. Forwarded to the Accountant concerned for issuance of a certificate of availability of funds (CAF) and should

also witness the contract. (A CAF duly verified by the Auditor concerned indicating the particular source and nature of the funds to be used in payment of the consideration of the sale, must be secured and attached to the Deed.)

3. Transmitted to the Program Director for approval if within his delegated authority or recommend approval to the Undersecretary or Secretary for those above his delegated authority.
4. After approval, the documents should be returned to the ROW Engineer who will cause notarization of the documents.
5. Payment Vouchers shall then be prepared with the following required documents:
  - a. For land/lots
    1. Evaluation/Investigation Report
    2. Request for CAF
    3. Certificate of Availability of Funds (CAF) duly verified by the Auditor
    4. Copy of Allotment
    5. COA (Commission on Audit)
    6. Approved Deed of Absolute Sale
    7. Certified True Copy of Transfer Certificate of Title (TCT)
    8. Technical Lot Description duly signed by the Geodetic Engineer
    9. Lot Data Computation
    10. Parcellary Survey plan
    11. Certified true copy of the tax declaration
    12. Tax Clearance
    13. Special Power of Attorney (If the vendor is represented by an Attorney-in-Fact)
    14. Provincial Appraisal Committee Resolution
    15. Pictures
  - b. For Improvements and other structures
    1. Inspector Report
    2. Certified true copy of the Tax Declaration
    3. CAF
    4. Approved Agreement to Demolish and Remove Improvements
    5. Schedule of Values setforth by the Provincial Appraisal Committee.
    6. Certification of Barangay Captain
    7. Quit Claim or Waiver of Claim to be executed by the landowner
    8. Detailed estimates including sketch plan (for structures)

- 9. Pictures
- 11. Straight Line, Diagram or Location sketch map

- 6. Filing/safekeeping of complete set of documents duly authenticated shall be at the Internal Control Unit for the Director's copy and one set with the ROW Engineer. The Original copy of the Deed of Absolute Sale is in the custody of the Registry of Deeds.

The Resident Auditor shall be furnished a certified true copy of a complete set of documents including a certified true copy of the TCT duly registered in the name of the Republic of the Philippines (RP).

**C. TIME FRAME IN ACTING IMPORTANT STAGES OF WORK**

**A. Lots (single only)**

a. Parcellary Survey	Duration
1. Mobilization	- 1 day
2. Data research	- 1 day
3. Lot Survey	- 1 day
4. Computation & Drafting	- 2 days
5. Approval of Subdivided Plan	- 10 days
b. Research and/or verification of following documents:	
1. Land Title	- 2 days
2. Tax Declaration	-
c. Valuation/Appraisal	- upon release PAC Res.
d. Documentation and Approval of Deed of Absolute Sale	- 2 Weeks
e. Preparation and approval of Vouchers.	- 1 week
f. Registration to Registry of Deeds	- 3 days
g. Payment	- 1 day

**B. IMPROVEMENTS AND OTHER STRUCTURES**

- a. Inspection/investigation (including inventory, taking pictures of affected improvements/structures) - 1 day

1 team (3 persons)

- b. Preparation of detailed estimates & drawings - 2 days
- c. Valuation/Appraisal from PAC upon release PAC Res.
- d. Documentation of individual claims:
  - 1. Collating of supporting documents, Verification, authentication & typing 1 day
  - 2. Preparation and Signature of Agreement to Demolish & Remove Improvements (including evaluation, obligation, approval, etc.) - 2 weeks
- e. Signature of Auditor as to CAF - 1 day
- f. Preparation of vouchers & processing and approval - 1 week
- g. Payment - 1 day

D. ACTIVITIES PREPARATORY TO ACQUISITION OF PROPERTY

- 1. Feasibility Studies - shall be undertaken for all major projects and such studies includes technical, economic, operational, social, political, cultural and environmental impact of the project.
- 2. Information campaign- Consultation with local government officials and local residents on objectives and benefit of the project.
- 3. Detailed Engineering/- Surveys Undertake detailed engineering, including parcellary survey to indicate the location and size of the sites and to determine ownership of the land and improvements to be affected/acquired.
- 4. Project Costing/ Funding Pre-investment cost including cost of feasibility study and public information campaign.  
Investment cost including cost

of detailed engineering,  
property acquisition,  
construction and supervision.

PROCEDURES AND GUIDELINES FOR ACQUISITION OF RIGHT-OF-WAY

For information and easy reference, attached are Ministry/Department Orders and Executive Order marked as Annexes "A", "B", "C" and "D" which provide procedures and guidelines for the expeditious acquisition and payment of right-of-way claims.

Ministry Order No. 65, series of 1993 was issued in order to standardize system and procedures in the acquisition of right-of-way, to preclude possible delays in the prosecution of the infrastructure and other capital outlay projects with a view of expediting the payment of right-of-way claims, particularly those of small lot owners. (Annex "A")

Ministry Order No. 65 was partially amended by Department Order No. 120, series of 1988, for the determination of just compensation for private property to be affected/acquired for DPWH projects. (Annex "B")

Department Order No. 234, series of 1990 amended D.O. No. 120 in so far as paragraph 4 is concerned, to attain uniformity in the determination of just compensation to be paid to property owners, the price of the property not to exceed the market value appearing in the Tax Declaration thereof prior to the investigation, survey and construction of the project, shall be offered and if the owner refuses to accept it, the matter shall be submitted to the corresponding Appraisal Committee for determination of just compensation. The just compensation determined by the Appraisal Committee shall be the basis of negotiation with the property owners for the purchase of the property involved. (Annex "C")

Executive Order No. 435, series of 1985, provides the procedure and guidelines for the expeditious acquisition by the government of private real property or rights thereon for infrastructure and other government development projects. (Annex "D")

For purposes of consolidating all records relevant to acquisition of real estate properties, all concerned offices are directed to submit to the Office of the Legal Service, this Department, copies of Deeds of Sale and Agreements (for improvements), including other supporting papers. Likewise, the corresponding titles of said properties in the name of the government should be submitted which in turn will be transmitted to the Records Management and Archives Office for safekeeping.

TIME FRAME FOR THE ACQUISITION & PAYMENT OF ROW

ITEM	NUMBER OF DAYS										
	0	10	20	30	40	50	60	70	80	90	100
Percolary Survey											
Gathering of Docs.											
Negotiations											
Preparation of Deed of Absolute Sales/Agreement for improvements and approval											
Preparation of Vouchers and Approval											
Registration of Titles in the name of the government											
Payment											

NOTE: In case of failed negotiations, expiration of property will be filed thru the Office of the Solicitor General. The concerned Regional Trial Court will issue writ of possession upon deposit of an equipment to 10% of the amount of compensation.

Day 1 starts after the completion of the detailed design which will be made the basis of the percolary survey.

---

**Attachment I**

**Guidelines on the Acquisition and Payment of Right-of-Way for  
Public Works and Highway Projects**

---





**Ministerial Order No.65 of 1983**

**October 6, 1983.**

**Subject: Revised Guidelines on the Acquisition and Payment of Right-of-Way for Public Works and Highway Projects**

In order to standardize system and procedures in the acquisition of right-of-way to preclude possible delays in the prosecution of our infrastructure and other capital outlay projects with a view of expediting the payment of right-of-way claims, particularly those of small lot owners, the following guidelines are hereby promulgated:

**1. Funding of Right-of-Way**

It is hereby made a policy of this Ministry that in the listing of projects and their estimated costs for purposes of inclusion in all capital outlay programs (both General Appropriations and Public Works Acts-funded) the cost of acquisition of needed right-of-way shall be included in said estimates, and programs of work, to assure availability of funds for payment thereof.

Funds to cover the preparation of parcellary plan and related works thereto shall be appropriated and made available immediately after the Ministry has decided to implement the Project.

**2. Acquisition of Right-of-Way before Bidding**

No project shall be advertised for bids unless the necessary right-of-way for the project had been acquired. However, where the project is of such magnitude that it would take more than one (1) year to complete, advertisement and bidding of the same may be allowed if at least fifty percent (50%) of the required right-of-way had been acquired on the date of bidding, or the corresponding complaints for expropriation of the needed right-of-way had already been filed with the proper courts, and deposit had been made with the PNB, or corresponding permit to enter premises and use lot, issued by the lot owners, for at least fifty percent (50%) of the areas needed for right-of-way is secured.

These requirements shall be certified to have been complied with by the Senior Legal Officer or the Right-of-Way Engineer of the Office concerned.

To avoid unnecessary complaints and/or court litigation, no affected lot shall be occupied or traversed unless the necessary complaints for expropriation had already been filed with the proper courts or corresponding permit to enter premises issued by the lot owners is secured.

**3. Mode of Acquiring Real Properties or Rights Thereon for Public Use**

Under our existing laws, there are different modes of acquiring title to, and ownership of, private property particularly real estate property, as well as modes of acquiring right to use the private property of another person. The most common methods are as follows:

- (1) donation;
- (2) purchase;
- (3) easement;
- (4) quit claim;
- (5) exchange or barter; and
- (6) condemnation proceedings.

(1) Donation

Donation, as defined under Art.2725 of the Civil Code, "is an act of liberality whereby a person dispose gratuitously of a thing or right in favor of another who accept it."

A donation to be valid, must be made in a public instrument and must be accepted by the donee. Pursuant to Opinion No.145, Series of 1962 of the Secretary of Justice, donation can be accepted by the Secretary of Public Works, Transportation and Communication (now Minister of Public Works and Highways). However, acceptance of donations of real property to be used by MPWH Offices in the region was delegated to the Regional Directors and maybe redelegated, in writing, to District or City Engineers as the exigency of the service may require (Ministry Order No.65, series of 1982).

The deed of donation to be acceptable to the government, should be pure and simple and not conditional or onerous. A clause to the effect, that such donation is being made by the donor not to defraud his creditors and that the donor had reserved for himself enough property for his and his family's subsistence should be incorporated.

The deed of donation should be registered with the Register of Deeds for the purpose of either having it annotated at the back of the title of the whole property in cases where only a portion was donated or for securing a separate or a new title in favor of the government if the whole lot has been donated.

(2) Purchase

When the owner of property needed for public use is not willing to donate his property to the government, then the government shall acquire his property and pay him just compensation. A contract of sale shall be executed between this property owner, otherwise known as vendor, and the government known and vendee.

Purchase made by the government are governed by existing and special laws, particularly with respect to:  
(The rest is deleted)

In compliance to P.D. 1533 dated June 11, 1978, when a calendar year, the officials charged with the acquisition of right-of-way shall immediately gather all tax declarations and the corresponding sworn statements of owners relative to all lots affected by such construction, including the improvements thereon. Thereafter, the owners of the above-mentioned property shall be notified in writing, and the just compensation to be paid for these affected properties shall be based on the tax declaration or the sworn statement filed and existing at the time notice was given and not at the time actual construction of the project shall commence.

2) Effectively of the Sale

The mere signing of the deed of sale by the owner of the property, the District Engineer/Project Manager and/or the Regional Director does not *ipso facto* perfect the deed of sale. The deed of sale has still to be approved by the proper department head (now Minister) as provided under Sec.568 of the Revised Administrative Code, as amended or by officials delegated with authority to approve same pursuant to Ministry Order No.65, series of 1982, in order that such deed of sale shall be deemed perfected.

..... property is located, for the purpose of having the same annotated at the back of the title of the property in case only a portion thereof was purchase or for the

purpose of having the old title canceled and a new title in favor of the government be issued if the whole lot has been purchased.

3) In the preparation of deeds of sale, the following requirements and conditions should be observed and complied with:

- a. Where the subject property is registered or titled, the vendor must be the registered owner thereof and must possess a clear and clean title thereto under the Torrens System free of any lien and encumbrances whatsoever. A xerox copy of the title, with all the pages thereof included therein, must form integral part of the deed.
- b. Where the subject property is unregistered or untitled, the vendor must submit a certified true copy of the tax declaration and an indemnity bond, which must either be a surety bond or property bond. Surety bond shall be issued by a surety company duly authorized to act as surety under Act.536, as amended, and certified to be in good standing by the Insurance Commissioner. Property bond shall specify sufficient property of the (pondman) with assessed values of not less than the purchase price for the subject property. In either case, the bond shall remain in force until the government obtained the corresponding title to the subject property.
- c. A deed of conveyance or sale must be executed in the proper form by the parties concerned, specifically describing the property to be sold. The marital consent of the spouse of the owner-vendor should generally be indicated in the Deed.
- d. If the owner of the property is a corporation, a certified copy of the resolution of the governing (.....) of such corporation or partnership authorizing any of its officers to execute the deed shall be attached to the deed. In the case of partnership the managing partner should execute the deed.
- e. If the owner is already deceased, the heirs must first consolidate their ownership of the property either through court proceedings or through an extra-judicial settlement, subject to the provisions of Rule 74 of the New Rules of Court.
- f. If the property is under guardianship or administratorship, approval by the guardian or administrator/executor must first be secured. The corresponding Letters of Administratorship and/or Guardianship should be submitted as an integral part of the Deed.
- g. ... Land Act, the government shall be entitled to a twenty (20) meters strip free under Sec.112 of CA 141, or sixty (60) meters strip under P.D.635(January 7, 1975).
- h. If it appears that the property is subject to the provisions of Section 4 Rule 74 of the New Rules of Court and the period of two (2) years from the registration of the consolidation or settlement has not yet expired, an indemnity bond (either surety or property bond), conditioned for the payment of any adverse claim against the property filed within the said period of two (2) years, should be posted.
- i. If the vendor is represented by an Attorney-In-Fact, the corresponding special power 4 of Attorney should be attached to and made an integral part of the deed of sale. If the vendor is presently residing abroad, such special power of

attorney should be duly attested by the Philippine Consulate of the country where the vendor reside.

- j. Where the subject property is mortgaged, the consent of the mortgagee to the sale thereof or release of the mortgage must first be secured.
- k. All Real Estate taxes due on the property must have been paid as evidenced by a tax clearance certificate issued by the proper authority.
- l. The Deed of conveyances should be witnessed by at least two persons and if the vendor affixed his signature by thumb mark, same should be witnessed by two additional persons.
- m. The accountant concerned should also witness the contract, and his signature shall be considered as constituting a certification that funds for the purpose is available (LOI 968).
- n. A certificate as to the availability of funds in the proper form, duly verified by the Auditor concerned, indicating the particular source and nature of the funds to be used in payment of the consideration of the sale must be secured and attached to the Deed. (Sec. 607, Revised Administrative Code and Sec. 86 of P.D. 1445).
- o. The Right-of-Way Engineer, in addition to verifying the ownership of the lot to be purchased, as well as any encumbrance to which such lot may have been subjected to, should likewise verify and inspect the actual lot to be purchased to determine whether the classification made by the Assessor is in accordance with the actual use of the property (Sec. 19 P.D. 464). A certification to this effect should be issued by the Right-of-Way Engineer.
- p. The papers and documents submitted in support of the claim in every case should be carefully verified as to their authenticity and genuineness in order to forestall fraud.
- q. ... and Torrens Title to the subject lot is already vested in the name of the government. For parcel of lands partially affected, payments should be affected only after the corresponding deed of sale had already been annotated at the back of the title of the subject lot.
- r. If the Deed of Conveyance was not signed by the owner but was signed by his duly and legally constituted agent, the owner should also be notified in writing of the amount due him as payment of his property. Accordingly, the treasury warrant or check for the payment of said property should be drawn in favor of the registered owner.
- s. Officials or employees responsible for releasing checks or warrants should require positive identification of the payee before releasing these checks or warrants.
- t. To implement the Presidential policy/directive of expediting payment of right-of-way claims (LOI 1037), the District/City and Regional Offices as well as Project Management Offices shall act on all claim within forty eight hours from receipt thereof. Should there be no sufficient funds to pay all claims presented with complete documents and ready for payment, the smaller claims should be given priority in payment; and in case the amount of claim are equal, priority of payment shall be based on the period/date the property (lot) were taken by the government.

### (3) Easement

This mode of acquiring property, or the right to use private property for public use is done through a road right-of-way agreement executed by the owner of the property granting an easement for right-of-way. This method is resorted to if the value of lot involved is very nominal for the reason that expenses of surveying or segregating the affected portion from the main lot would be very much more than the value of lot being acquired. While the government is actually paying the value of the private property, it only acquires a right of easement for right-of-way, but the owner still retains ownership of the lot traversed by the road.

In order to protect the interest of the government whenever this mode is used to acquire the right to use private property, the Auditor General (Now Commission on Audit) had recommended the following conditions, which were approved by the President, to be incorporated in the road right-of-way agreement:

- 1) In case of change of alignment of the road, the government shall be allowed by the owner of the lot to enjoy the easement of right-of-way in another portion of his property, that may be traversed by the realigned road, equal in area to that previously paid and without additional compensation;
- 2) ... area occupied by the abandoned road may revert to the owner upon payment of a price agreed upon between the government and such owner, which in no case shall be less than what the government had previously paid him;
- 3) That this mode should be utilized only when the values of the lot involved is less than P5,000;

As in the case of donation or deed of sale, the road right-of-way agreement should be registered immediately with the Register of Deeds concerned.

### (4) Quit Claim

This mode is applicable to private property or land acquired under the provisions of Special Laws, like Commonwealth Act 141, known as the Public Land Act. Under the provisions of this law, especially Sec. 112 thereof, a strip of twenty (20) meters of the property acquired under such law is reserved by the government for public use with damages to improvements only. The twenty (20) meters strip had subsequently been increased to sixty (60) meters under P.D.635, which took effect on January 7, 1975, amending Sec.112, C.A.141.

Sec.112 of C.A.141 was further amended (P.D. 1361, April 26, 1978) to widen the scope of works covered, not only for public highways, railroads, irrigation ditches, aqueducts, telegraph and telephone lines but including airport runways, sites necessary for terminal buildings and other government structures needed for full operation of the airport, as well as areas and sites for government buildings for Resident and/or Project Engineers needed in the prosecution of government - infrastructure projects and similar works.

P.D. 1361 also authorize government officials charged with the prosecution of the aforementioned projects or their representatives to take immediate possession of the portion of the property subject of the lien as soon as the need arises and after due notice to the owners. It is, however, understood that ownership over said properties shall immediately revert to the title holders should the airport be abandoned or when the infrastructure projects are completed and buildings used by project engineers are abandoned or dismantled, but subject to the same lien for future improvements.

A quit claim is also availed of in cases when private parties had already occupied or are already occupying a tract of land by virtue of an application under the Public Land Law for the grant of public lands to said applicants. Such applicant should be requested to execute a quit claim instrument for the area or portion of the lot applied for, which is needed by the government for public use. Such quit claim instrument duly executed by the applicant should be immediately submitted through the District Land Officer, and ..... issuance of his free patent.

#### (5) Exchange or Barter

There are instances where the owner of a property needed for road right-of-way would request the government to exchange an old abandoned road or government lot near the project instead of being paid the money value of his lot. This request may be favorably considered especially if the lot being taken from the owner is his only lot. When this mode is availed of by the government, the following conditions should be taken into considerations:

- 1) The areas of the lots proposed to be exchanged, as well as the corresponding market value of each of them should first be determined. The exchange should be based not only on the corresponding area involved but also on the price it commands.
- 2) If the area (abandoned road) proposed to be exchanged was acquired through donation, the terms and conditions stipulated in the Deed of Donation must first be verified to justify disposal thereof. If through sale the former owner(s) of the land (abandoned road) shall have the first priority to re-acquire such land, or if not interested in repurchasing same, he shall waive his right thereto.
- 3) Whether there will be lot owners abutting the abandoned road to be deprived of an access (aggress or ingress) to the new highway.

The mere signing of the deed of exchange by the owner and the representative of the agency concerned does not result in a valid exchange. The approval of the Office of the President is still necessary to perfect the deed and make it valid pursuant to the provisions of Sec.567 of the Revised Administrative Code. Such deed should be registered with the Register of Deeds concerned in order that the old Certificate of Title may be canceled and a new Certificate of Title be issued to each of the parties concerned.

#### (6) Condemnation Proceedings

When the owner of a private lot needed by the government does not agree to convey his property to the government by any of the foregoing modes of acquiring and/or transferring ownership to the property, then the government will have to exercise its right of eminent domain. It will file a complaint for the expropriation of the private property it needs for public use, pursuant to provisions of Sec.64 (h) of the Revised Administrative Code. This was supplemented by a Memorandum issued by the Executive Secretary by Authority of the President, dated October 17, 1972, which authorized the Solicitor General to file expropriation proceedings for properties needed by the government for the construction of roads. Said Memorandum further leaves to the Secretary of Public Works, Transportation and Communications (now Minister of Public Works and Highways) the determination of the property of using expropriation proceedings.

Under P.D.1533, upon the filing of the complaint for expropriation and the deposit in the Philippine National Bank at its main office or any of its branches of an amount equivalent to ten percent (10%) of the amount of compensation provided in Section 1 hereon, the government or its authorized instrumentality, agency or entity shall be

entitled to immediate possession, control and disposition of the real property and the improvement thereon, including the power of demolition if necessary, notwithstanding the pendency of the issues before the courts.

In order to enable the Office of the Solicitor General to file the necessary complaint for expropriation, the District/City Engineer and/or Project Manager concerned shall furnish the Ministry (MPWH) the following pertinent documents and/or information:

- 1) The Certificate of Title of the lots to be condemned;
- 2) The technical description of each and every parcel sought to be expropriated;
- 3) The residence, age, civil status and other personal circumstances of the owner. If any of the owner is minor, state whether he or she has a duly appointed guardian. If the owner is dead, then the name(s) and residence of the surviving heirs;
- 4) Encumbrances on the property, if any, the nature and amount of encumbrance; to whom and date of the contract creating such encumbrance;
- 5) Sketch plan showing the parcels of land to be expropriated, including the corresponding name of owners, area affected and the improvements therein;
- 6) Certified true copy of the tax declaration of the lot involved, with the corresponding sworn statement of the owner, both valid and effective at the time the owner was notified of the project.

#### 4. Removal or Demolition of Improvements or Buildings

If the owner of an improvement is willing to remove and transfer the building to another lot, then an agreement to demolish or remove the improvements should be executed at a consideration to be determined pursuant to P.D.76 as amended. As regards fruit bearing trees and other similar improvements which have not been included in the tax declaration, the validity of such improvements should be paid in accordance with the schedule of values approved by the Ministry of Finance.

Payment of improvement shall always be covered by an Agreement of Demolish and Remove Improvements to be signed by both parties and approved by an official of this Ministry pursuant to Ministry Order No.65, series of 1982.

The following documents should be made an integral part of the claim:

- 1) Certified true copy of tax declaration;
- 2) Certified true copy of sworn statement or a certification issued by the Assessor concerned attesting the failure of the owner to file such statement aside from the affidavit executed by the owner attesting the failure to file such sworn statement;
- 3) Tax Clearance from the Municipal/City Treasurer (Real Estate Taxes);
- 4) Picture or pictures of the improvements to be duly certified by the Project Engineer;
- 5) Inspection report duly signed by the Project Engineer and the Auditor's representative (Sec.14, COA Memorandum No.80-39);

- 6) In case the improvements were introduced by the claimant on the land of another, the latter must execute a Quit Claim or Waiver of Claim to Improvements.

For purposes of consolidating all records relevant to acquisition of real state properties, all regional and district offices are directed to submit to the Office of the Assistant Minister for Legal Affairs, this Ministry, copies of Deeds of Sale and Agreements (for improvements), including other supporting papers. Likewise, the corresponding title of said properties in the name of the government should be submitted which in turn will be transmitted to the Records Management .... for safekeeping.

All instructions, directives, orders, rules and regulations previously issued by this Ministry which are in conflict with the provisions of these guidelines are hereby amended or modified or repealed accordingly.

This order shall take effect immediately.

(Original Signed)

Jesus S. Mipolito  
Minister



---

**Attachment J**

**Presidential Decree and Executive Order Related to Agrarian Reform  
Program**

---



M A L A C A N A N G  
Manila

PRESIDENTIAL DECREE NO. 27

DECREEING THE EMANCIPATION OF TENANTS FROM THE BONDAGE OF THE SOIL TRANSFERRING TO THEM THE OWNERSHIP OF THE LAND THEY TILL AND PROVIDING THE INSTRUMENTS AND MECHANISM THEREFOR.

Inasmuch as the old concept of land ownership by a few has spawned valid and legitimate grievances that gave rise to violent conflict and social tension,

The redress of such legitimate grievances being one of the fundamental objectives of the New Society,

Since Reformation must start with the emancipation of the tiller of the soil from his bondage,

NOW THEREFORE, I, FERDINAND E. MARCOS, President of the Philippines, by virtue of the powers in me vested by the Constitution as Commander in Chief of the Armed Forces of the Philippines, and pursuant to Proclamation No. 1051, dated September 21, 1972, and General Order No. 1 dated September 22, 1972, as amended do hereby decree and order the emancipation of all tenant farmers as of this, October 21, 1972.

This shall apply to tenant-farmers of private agricultural lands primarily devoted to rice and corn under a system of share-crop or lease-tenancy, whether classified as landed estate or not:

The tenant-farmer, whether in land classified as landed estate or not, shall be deemed owner of a portion constituting a family-size farm of five (5) hectares if not irrigated and three (3) hectares if irrigated;

In all cases, the landowner may retain an area of not more than seven (7) hectares if such landowner is cultivating such area or will now cultivate it;

For the purpose of determining the cost of the land to be transferred to the tenant-farmer pursuant to this Decree, the value of the land shall be equivalent to two and one half (2 1/2) times the average harvest of three normal crop years immediately preceding the promulgation of this Decree;

The total cost of the land, including interest at the rate of six (6) percentum per annum, shall be paid by the tenant in fifteen (15) years of fifteen (15) equal annual amortizations;

In case of default the amortizations due shall be paid by the farmer's cooperative in which the defaulting tenant-farmer is a member, with the cooperative having a right of recourse against him;

The government shall guarantee such amortizations with shares of stock in government-owned and government controlled corporations;

No title to the land owned by the tenant-farmers under this Decree shall be actually issued to a tenant-farmer unless and until the tenant-farmer has become a full-plugged member of a duly recognized farmer's cooperative;

Title to land acquired pursuant to this Decree or the Land Reform Program of the Government shall not be transferable except by hereditary succession or to the Government in accordance with the provisions of this Decree, the Code of Agrarian Reforms and other existing laws and regulations.

The Department of Agrarian Reform through its Secretary is hereby empowered to promulgate rules and regulations for the implementation of this Decree.

All laws, executive orders, decrees and rules and regulations, or parts thereof, inconsistent with this Decree are hereby repealed and/or modified accordingly.

Done in the City of Manila this 21st day of October, in the year of Our Lord, nineteen hundred and seventy-two.

(SGD.) FERDINAND E. MARCOS  
President of the Philippines

## EXECUTIVE ORDER NO. 228

DECLARING FULL LAND OWNERSHIP TO QUALIFIED FARMER BENEFICIARIES COVERED BY PRESIDENTIAL DECREE NO. 27; DETERMINING THE VALUE OF REMAINING UNVALUED RICE AND CORN LANDS SUBJECT OF P.D. NO. 27; AND PROVIDING FOR THE MANNER OF PAYMENT BY THE FARMER BENEFICIARY AND MODE OF COMPENSATION TO THE LANDOWNER.

WHEREAS, Presidential Decree No. 27, for purposes of determining the cost of the land to be transferred to the tenant-farmer, provided that valuation shall be determined by crop productivity;

WHEREAS, there is a need to complete Operation Land Transfer and accelerate the payment to landowners of lands transferred to tenant-farmers;

WHEREAS, there is also a need to maintain the financial viability of the Land Bank of the Philippines, the financing arm of the agrarian reform program of the government;

NOW, THEREFORE, I, CORAZON C. AQUINO, President of the Philippines, by virtue of the powers vested by the Constitution, hereby order that:

SECTION 1. All qualified farmer beneficiaries are now deemed full owners as of October 21, 1972 of the land they acquired by virtue of Presidential Decree No. 27 (hereinafter referred to as P.D. No. 27)

SECTION 2. Henceforth, the valuation of rice and corn lands covered by P.D. No. 27 shall be based on the average gross production determined by the Barangay Committee on Land Production in accordance with Department Memorandum Circular No. 26, series of 1973 and related issuances and regulation of the Department of Agrarian Reform. The average gross production per hectare shall be multiplied by two and a half (2.5), the product of which shall be multiplied by Thirty Five Pesos (P35.00), the government support price for one cavan of 50 kilos of palay on October 21, 1972, or Thirty One Pesos (P31.00), the government support price for one cavan of 50 kilos of corn on October 21, 1972, and the amount arrived at shall be the value of the rice and corn land, as the case may be, for the purpose of determining its cost to the farmer and compensation to the landowner.

Lease rentals paid to the landowner by the farmer beneficiary after October 21, 1972, shall be considered as advance payment for the land. In the event of dispute with the landowner regarding the amount of lease rental paid by the

farmer beneficiary, the Department of Agrarian Reform and the Barangay Committee on Land Production concerned shall resolve the dispute within thirty (30) days from its submission pursuant to Department of Agrarian Reform Memorandum Circular No. 26, series of 1973, and other pertinent issuances. In the event a party questions in court the resolution of the dispute, the landowner's compensation claim shall still be processed for payment and the proceeds shall be held in trust by the Trust Department of the Land Bank in accordance with the provisions of Section 5 hereof, pending the resolution of the dispute before the court.

SECTION 3. Compensation shall be paid to the landowners in any of the following modes, at the option of the landowners:

(a) Bond payment over ten (10) years, with ten percent (10%) of the value of the bond payable immediately in cash, and the balance in the form of LBP bonds bearing market rates of interest that are aligned with 90-day treasury bills rates, net of applicable final withholding tax. One-tenth of the face value of the bonds shall mature every year from the date of issuances until the tenth year.

The LBP bonds issued hereunder shall be eligible for the purchase of government assets to be privatized.

(b) Direct payment in cash or kind by the farmer-beneficiaries with the terms to be mutually agreed upon by the beneficiaries and landowners and subject to the approval of the Department of Agrarian Reform; and

(c) Other modes of payment as may be prescribed or approved by the Presidential Agrarian Reform Council.

SECTION 4. All outstanding Land Bank bonds that are retained by the original landowner-payee or by their heirs, are deemed matched up to one-twenty-fifth (1/25) of their yearly face value from their date of issue to the date of this Executive Order and may be claimed by the original landowner-payee by surrendering the bonds to the Land Bank. The original landowner-payee may claim payment for the remaining unexpired period of the surrendered bonds under any of the modes of compensation provided in Section 3, sub-sections (a), (b), and (c) hereof.

In order to meet the financial requirements mentioned in this Section, the Central Bank shall remit to Land Bank such sums as may be necessary from the Sinking Fund established by the Land Bank from the retirement of its bonds and other long-term obligations and which Sinking Fund is administered by the Central Bank. Provided, however, That there is no change in maturity of other outstanding Land Bank bonds acquired and held by transferees from original bondholders.

The landowner is exempt from capital gains tax on the compensation paid to him under this Executive Order.

SECTION 5. In the event the landowner does not accept payment of the compensation due him, his compensation shall be held in trust for him by the Trust Department of the Land Bank. The cash portion of the compensation and such portions that mature yearly shall be invested by the Trust Department only in government securities fully guaranteed by the Republic of the Philippines. All the net earnings of the investment shall be for the benefit of the landowner, his heirs or successors in interest.

The rights of the landowner may be exercised by his heirs upon his death.

SECTION 6. The total cost of the land including interest at the rate of six percent (6%) per annum with a two percent (2%) interest rebate for amortizations paid on time, shall be paid by the farmer-beneficiary or his heirs to the Land Bank over a period of up to twenty (20) years in twenty (20) equal annual amortizations. Lands already valued and financed by Land Bank are likewise extended a 20-year period of payment of twenty (20) equal annual amortizations. However, the farmer-beneficiary if he so elects, may pay in full before the twentieth year or may request the Land Bank to structure a repayment period of less than twenty (20) years if the amount to be financed and the corresponding annual obligations are well within the farmer's capacity to meet. Ownership of lands acquired by farmer-beneficiary may be transferred after full payment of amortizations.

SECTION 7. As of the date of this Executive Order, a lien by way of mortgage shall exist in favor of the Land Bank on all lands it has financed and acquired by the farmer-beneficiary by virtue of P.D. No. 27 for all amortizations, both principal and interest, due from the farmer-beneficiary or a valid transferee until the amortizations are paid in full.

SECTION 8. Henceforth, failure on the part of the farmer-beneficiary to pay three (3) annual amortizations shall be sufficient cause for the Land Bank to foreclose on the mortgage.

SECTION 9. Thirty (30) days after final notice for payment to the defaulting tenant-farmer, a copy of which notice shall be furnished to the Department of Agrarian Reform, the Land Bank may foreclose on the mortgage by registering a certification under each of its intent to foreclose with the Registry of Deeds of the city or province where the land is located attaching thereto a copy of the final notice for payment; proof of service to the tenant-farmer and the Department of Agrarian Reform of the final notice for payment; and a certification that at least three (3) annual amortizations on the land or the sum thereof remain unpaid. The mortgage is deemed foreclosed upon registration of said documents with the Registry of Deeds.

In the event the defaulting tenant-farmer could not be served the final notice for payment, the Land Bank shall post the notice for payment in the town hall, public market and barangay hall or any other suitable place frequented by the public of the barangay where the defaulting tenant farmer resides. A certification

by the Land Bank to this effect will substitute for the proof of service of the final notice of payment for purposes of foreclosure.

The Register of Deeds of all cities and provinces are directed to have a separate registry book to enter all the requirements of foreclosure as provided herein.

SECTION 10. The tenant-farmer, or any of his compulsory heirs may lift the foreclosure within a period of two (2) years from its registration by paying the Land Bank all unpaid amortizations on the land with interest thereon of six percent (6%) per annum. In case of failure to lift the foreclosure within the said period, ownership of the land shall be deemed transferred to the Land Bank.

SECTION 11. The Land Bank, not later than three (3) months after its acquisition of the land, shall sell the foreclosed land to any interested landless farmer duly certified to as a bonafide landless farmer by the Department of Agrarian Reform of the barangay or the two closest barangays where the land is situated. The cost of the land is the unpaid amortizations due on the land as of the date of the sale with interest thereon of six percent (6%) per annum. In the event that there is more than one interested buyer, the actual buyer shall be determined by lottery in the presence of all the buyers or their representatives and a representative of the Department of Agrarian Reform. The Deed of Conveyance executed by the Land Bank in favor of the farmer transferee shall be registered with the Register of Deeds of the city or province where the land is located. Ownership shall transfer to the farmer transferee only upon registration with the Registry of Deeds. The lien of the Land Bank by way of mortgage on the remaining unpaid amortizations shall subsist on the title of the transferee.

SECTION 12. The Land Bank, at least one (1) month prior to the sale, shall furnish the Department of Agrarian Reform with a notice of sale and shall post a similar notice in the town hall, public market and barangay hall or any other suitable place frequented by the public of the barangay where the property is located. The notice shall state the description of the property subject of the sale, the price, the date and place of sale.

SECTION 13. The National Land Titles and Deeds Registration Administration is hereby authorized to issue such rules and regulations as may be necessary relative to the registration with the Register of Deeds of all transactions/activities required herein taking into consideration the need to protect the integrity of the Torrens Systems, the interests of the parties and innocent third parties.

All transactions/activities and their corresponding documents that are registered with the Register of Deeds pursuant to the requirements of P.D. No. 27 and this Executive Order shall be free from all documentary stamps and registration fees.

SECTION 14. The Department of Agrarian Reform and the Land Bank are authorized to issue the additional implementing guidelines of this Executive Order which shall not be later than sixty (60) days from the date hereof.

SECTION 15. To ensure the successful implementation of the Agrarian Reform Program, an Agrarian Reform Operating Fund (Agrarian Fund) shall be set up by the National Government in the Land Bank. The amount of this Agrarian Fund, to be determined by the Government Corporation Monitoring and Coordinating Committee (hereinafter referred to as GCMCC), with source the funding requirements for Land bank to carry out the full implementation of this program which will include the net operating losses directly and indirectly attributable to this program and the credit facilities to farmers and farmers organizations. Within thirty (30) days from the effectivity of this Executive Order, the Land Bank shall submit to the GCMCC its funding requirements for 1987. Thereafter, within sixty (6) days after the end of each calendar year, the Land Bank shall submit to the GCMCC an accounting of all drawings the Land Bank had made against the fund. At the same time, it will also submit its prospective funding requirements for the current year for review and validation of the GCMCC. The amount approved by the GCMCC shall be deemed appropriate and the amount programmed for release in coordination with the Department of Finance, Budget and Management and the National Economic and Development Authority. Within thirty (30) days from GCMCC's approval, such funds shall be remitted to the Land Bank for credit to the Agrarian Fund.

SECTION 16. If any part of this Executive Order is declared invalid or unconstitutional, it shall not affect any other part thereof.

SECTION 17. All laws, presidential decrees, orders, letters of instructions, rules and regulations, and other issuances or parts thereof inconsistent with this Executive Order are hereby repealed or modified accordingly.

SECTION 18. This Executive Order shall take effect upon its signing and publication as provided by law.

SECTION 18. This Executive Order shall take effect upon its signing and publication as provided by law.

DONE in the city of Manila, this 17th day of July, in the year of Our Lord, nineteen hundred and eighty-seven.

(SGD.) CORAZON C. AQUINO  
President

By the President:

(SGD.) JOKER P. ARROYO  
Executive Secretary

---

*APPENDIX E*

*PROJECT EVALUATION*

---





**APPENDIX E**  
**PROJECT EVALUATION**  
**TABLE OF CONTENTS**

	<i>Page</i>
<b>E.1 SACOBIA / BAMBAN RIVER PROJECT .....</b>	<b>E-1</b>
1.1 Cost of the Project .....	E-1
1.2 Benefit of the Project .....	E-2
1.2.1 Criteria of the Benefit .....	E-2
1.2.2 Estimate of Direct Damage .....	E-2
(1) Buildings .....	E-2
(2) Agricultural Crops .....	E-3
(3) Infrastructures .....	E-3
1.2.3 Estimate of Indirect Damage .....	E-3
(1) Detour Cost of Transportation .....	E-3
(2) Loss of GRDP .....	E-4
(3) Evacuation and Building Clean-up Costs .....	E-4
1.3 Comparison of Cost And Benefit .....	E-4
1.4 Implication of Economic Evaluation .....	E-5
1.4.1 "Present Status" .....	E-5
1.4.2 Evaluation of Sacobia/Bamban Project .....	E-5
1.4.3 Reclamation of Sand-Pocket .....	E-6
1.4.4 Tourism Development .....	E-6
1.4.5 Physical Benefit .....	E-7
<b>E.2 ABACAN RIVER PROJECT .....</b>	<b>E-7</b>
2.1 Cost of the Project .....	E-7
2.2 Benefit of the Project .....	E-8
2.2.1 Criteria of the Benefit .....	E-8
2.2.2 Estimate of Direct Damage .....	E-8
(1) Building .....	E-9
(2) Agricultural Crops .....	E-9
(3) Infrastructures .....	E-9
2.2.3 Estimate of Indirect Damage .....	E-10
(1) Loss of GRDP .....	E-10
(2) Evacuation and Building Clean-up Costs .....	E-10

	<i>Page</i>
2.3 Comparison of Cost And Benefit .....	E-10
2.4 Implication of Economic Evaluation .....	E-11
2.4.1 "Present Status" .....	E-11
2.4.2 Evaluation of Abacan Project .....	E-11
(Table Analysis of Project Benefit)	
2.4.3 Physical Benefits .....	E-11
 <b>REFERENCES .....</b>	 <b>E-13</b>

## LIST OF TABLES

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
E.1	Summary of Barangay Data Base in Sacobia/Bamban River Basin .....	E-16
E.2	Unit Values of Damageable Properties applied for Project Evaluation ..	E-20
E.3	Number of Buildings located in Probable Flood Areas in Sacobia/Bamban River Basins .....	E-21
E.4	Probable Flood Damage for each Flood Return Period in Sacobia / Bamban Rivers .....	E-24
E.5	Estimated Average Annual Damage under without-Project Conditions in Sacobia / Bamban Rivers .....	E-24
E.6	Summary of Traffic Counting on Magalang-Tarlac Road .....	E-25
E.7	Summary of Traffic Data on North Luzon Expressway on July 16-23, 1995 .....	E-28
E.8	Traffic Counting Survey on Magalang-Tarlac Road on July 19,1995 .....	E-30
E.9	Traffic Data in the Study Area .....	E-31
E.10	DPWH Traffic Counting Survey in November 1994 .....	E-32
E.11	Detour Cost Computation .....	E-33
E.12	Data for Additional Transportation Cost .....	E-34
E.13	Basic Data for Estimate of GRDP Loss by Interruption of Economic Activities caused by Flood .....	E-35
E.14	Probable Indirect Damage for each Flood Return Period in Sacobia / Amban River Basin .....	E-36
E.15	Average Annual Indirect Damage in Sacobia / Bamban River Basin ....	E-36
E.16	Cost-Benefit Analysis of Sacobia / Bamban Flood / Mudflow Control Project .....	E-37
E.17	Sensitivity Analysis of Sacobia / Bamban Flood / Mudflow Control Project .....	E-37
E.18	Analysis of Economic Benefit in Sacobia/Bamban River Basin .....	E-38
E.19	Summary of Barangay Data Base in Abacan River Basin .....	E-40
E.20	Number of Buildings located in Probable Flood Areas in Abacan River Basin .....	E-44
E.21	Probable Flood Damage for each Return Period in Abacan River Basin .....	E-48
E.22	Estimated Average Annual Damage under without-Project Conditions n Abacan River .....	E-48

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
E.23	Probable Indirect Damage for each Flood Return Period in Abacan River Basin .....	E-49
E.24	Average Annual Indirect Damage in Abacan River Basin .....	E-49
E.25	Cost-Benefit Analysis of Abacan Flood / Mudflow Control Project .....	E-50
E.26	Sensitivity Analysis of Abacan Flood / Mudflow Control Project .....	E-50
E.27	Analysis of Economic Benefit in Abacan River Basin .....	E-51

**LIST OF FIGURES**

<b>Figure No.</b>	<b>Title</b>	<b>Page</b>
E.1	Probable Inundation Area in Sacobia / Bamban River Basin .....	E-53
E.2	Damage Curves for Properties .....	E-54
E.3	Land Use Map ( Post-eruption ) .....	E-55
E.4	Schematics of Detour Alternative Routes .....	E-56
E.5	Probable Inundation Area in Abacan River Basin .....	E-57

## **ABBREVIATIONS**

<b>CLDP</b>	<b>Central Luzon Development Programme</b>
<b>GDP</b>	<b>Gross Domestic Product</b>
<b>GIS</b>	<b>Geographical Information System</b>
<b>GNP</b>	<b>Gross National Product</b>
<b>GRDP</b>	<b>Gross Regional Domestic Product</b>
<b>LISR</b>	<b>Luzon Island Strategic Road</b>
<b>NLE</b>	<b>North Luzon Expressway</b>
<b>NSO</b>	<b>National Statistic Office</b>
<b>p.a.</b>	<b>per annum</b>
<b>PKII</b>	<b>Phil-Koei International Inc.</b>

## **E.1 SACOBIA / BAMBAN RIVER PROJECT**

### **1.1 COST OF THE PROJECT**

The investment cost was estimated on the basis of the following preconditions:

- 1) the base period of cost estimate was set at as of October 1995,
- 2) the exchange rates were assumed at US\$ 1=Peso 25=₱ 100,
- 3) value added tax and import duties of 7% in total were estimated in the local currency portion,
- 4) the price contingency for the future were estimated assuming annual inflation rates of 2.5% for foreign currency and 8.7% for local currency portions respectively,
- 5) the administration cost was estimated in local currency portion at 5% of the total of main construction cost (including F.C. and L.C.) and land acquisition cost,
- 6) the engineering cost was estimated at 10% of the total main construction cost, of which 90% was assumed to be in foreign currency and 10% in local currency, and
- 7) the physical contingency was estimated by 10% of the total of main construction cost, land acquisition cost and engineering cost.

The cost for desilting works were treated as the maintenance cost and scheduled to be disbursed in nine (9) years for Sacobia/Bamban Rivers starting from the initial stage of the construction.

The Project cost (financial) is estimated at P 2,834 million with foreign currency (F.C.) portion of P 1,607 million and local currency (L.C.) portion of P 1,227 million at the price level as of October 1995 as shown below.

#### **Project Cost of Flood/Mudflow Control Works for Sacobia/Bamban River Project**

	Unit: Pesos million					
	Financial Cost			Economic Cost		
	F.C.	L.C.	Total	F.C.	L.C.	Total
1) Main Construction Cost	1,184.36	746.62	1,930.98	1,184.36	525.49	1,709.85
2) Land Acquisition Cost	0.00	34.20	34.20	0.00	0.00	0.00
3) Administration Cost	0.00	98.26	98.26	0.00	78.59	78.59
4) Engineering Cost	173.79	19.31	193.10	173.79	15.44	189.23
5) Physical Contingency	135.82	80.01	215.83	135.82	63.99	199.81
6) Price Contingency	112.65	249.11	361.76	-	-	-
7) Total	1,606.61	1,227.51	2,834.12	1,493.97	683.51	2,177.48

The operation and maintenance costs were estimated based on 0.5% of the total of the main construction cost.

The financial cost shown above was converted into the economic cost to adjust the distorted market price value. Considering the current unemployment situation, the market wage was adjusted by shadow wage rate which was assumed at 60% of the market wage rate. In order to adjust the distortion of the official exchange rate, the

standard conversion factor of 0.86 was applied following the recent ADB practice. The economic cost of land acquisition was assumed to be nil based on the fact that the land required for the Project have been either a swamp area or lahar areas with no productive use.

## 1.2 BENEFIT OF THE PROJECT

### 1.2.1 Criteria of the Benefit

The benefit to be accrued from the implementation of the Project was defined in this Study as the reduction of the direct and indirect damages caused by flood/mudflows. The probable direct and indirect damages were estimated under the current conditions at the end of 1994. The damage under the with-project conditions was assumed to be zero under the design flood of 20 year-return period. Thus the project benefit constitutes the probable damage to be occurred by the flood of the designed scale of 20-year return period..

### 1.2.2 Estimate of Direct Damage

In estimating the damageable value of all the properties in the probable inundation area, a "Barangay Data Base" was established in the GIS (Geographical Information System). All the data required for the estimate of damage including population, number of household, value of properties and areas of each barangay were input and arranged in this Data Base. An abstract of the said data base is summarized in Table E.1 (c.f. Appendix R for M/P for the details of GIS related matters).

The probable inundation areas were delineated for the river basin on the basis of a hydrological simulation study for each return period of 2, 5, 10, 20, 50 and 100 years out of which those of 20- and 100-year return period floods are depicted in Figure E.1. The whole area of a barangay was divided into a number of cells of a 100-meter square in each of which the information on depth and duration of inundation and sediment for each return period was loaded from flood analysis.

Damage curves were generated for major items of properties such as residential buildings, non-residential buildings, paddy field, upland crops, and infrastructures including roads and bridges. The damage curves were generated for each hazard of flooding, sediment and lahar toward the depth and duration of each hazard. In generating these damage curves, those adopted in the Study of Agno River Flood Control conducted by JICA in 1990 and the standard of Ministry of Construction of Japan were referred to. The said curves are depicted in Figure E.2.

Unit values of each damageable property were adopted mainly from the above mentioned Agno Study after adjusting the change in market prices between the time of the two studies. The information derived from local government agencies were also incorporated. Unit values applied in this Study are shown in Table E.2.

The method of identifying and estimating damageable values is stated by each item hereunder:

#### (1) Buildings

The number of buildings locating in probable flood areas were counted on a topo map of 1:10,000 which was produced from aerial photos taken in 1994. Through superimposing the flood area map on the said topo maps, buildings to be inundated were counted for each flood return period. The result of building counting on the map is compiled in Table E.3.



The result of the population census in 1990 conducted by NSO and the population survey conducted by the JICA Study Team in August 1994 were referred to. The recent result of the Survey of Establishment conducted by NSO in 1993 was also utilized.

## (2) Agricultural Crops

The land use map by each agricultural crop in the Study area as of 1994 was produced as shown in Figure E.3 and was stored in GIS Barangay Data Base.

This land use map was produced based on the aerial photo map taken by the JICA Study Team in April 1994 with a scale of 1:10,000 and the land use map of Magalang, Mexico, Santa Ana and Arayat municipalities which were prepared by the JICA study of "the Mapping and Agricultural Potential Study for the Integrated Rural Development Program in Pampanga" in November 1992.

Unit prices applied were those net income values of each crop adopted in Agno Study after being adjusted for the price change between the time of the two studies. The damage of the livestock was estimated by a ratio (7%) of the agricultural crops following the Agno Study after reviewed based on recent statistics.

## (3) Infrastructures

The length of roads, bridges and irrigation canals were stored in the Barangay Data Base for each barangay. The damage to these infrastructures were computed according to the probable affected area in each barangay. The data on roads and bridges were originated from a GIS map prepared by JICA study of CLDP and those on irrigation canals were originated from the recent "Irrigation Systems/Projects Survey" prepared by PKII Engineers in October 1994.

The probable flood damage for each property and for each flood return period is summarized in Table E.4. Its breakdown in each barangay for each return period and for each property is compiled in Table E.1. The average annual direct damage was obtained after aggregating each property damage and is tabulated in Table E.5. Judging from the gradient of the curve shown below the above-mentioned table, the design period of 20 years can be said reasonable.

### 1.2.3 Estimate of Indirect Damage

In this Study, the indirect damage covers such secondary damages to be stemmed from and induced by the flood/mudflow occurrences as the additional transportation cost due to forced detouring, the opportunity loss of product due to the interruption of economic activities caused by flood/mudflow, and the cost of evacuation and clean-up of buildings. The indirect damages were estimated as stated hereunder.

#### (1) Detour Cost of Transportation

The probable additional cost of transportation due to the forced detour caused by flooding of roads and bridges was computed based on the detour distance, duration and the vehicle operation cost. In the typhoon season, it was assumed that the San Francisco Bridge becomes impassable ten times for each three days which results 30 impassable days in a year due to flooding of access roads to the bridge. Within this period, it was assumed that all the vehicles were forced to make a long detour taking Friendship Highway via Santa Rita near Malolos without taking the shorter route via San Fernando-Gapan road to avoid the habitual flood prone area near around Mexico municipality.

For other eleven (11) months of the year, it was assumed that all the traffics except 2,500 vehicles per day which prefer to take a detour through the Friendship Highway to avoid the probable congestion caused by non-existence of Bamban Bridge would take a route via San Francisco Bridge.

The total traffic demand for crossing the Bamban River was assumed at 13,000 per day based on the recent traffic survey of JICA and PNCC. JICA Study Team made a traffic counting survey at three (3) points of roads in Mabalacat, Magalang and Capas in the period of July 16-July 23, 1995. The survey results are summarized in Table E.6. The traffic data of North Luzon Expressway for the same period was obtained from PNCC, which is also compiled in Table E.7. Tables E.8 to E.10 were also referred in estimating the traffic volume crossing the Bamban Bridge.

The detour alternative routes were assumed for each origin-destination route under the normal condition i.e. under the pre-eruption conditions which is considered as with-Project conditions and are shown in Figure E.4. The computation formula and other data for the computation is shown in Tables E.11 and E.12.

The extension of North Luzon Expressway is now under planning by extending the existing route from Santa Ines terminal to Tarlac. Its completion is expected in 2010. Therefore, it was assumed in this Study that 6,000 vehicles taking the North Luzon Expressway presently would take the new route after its completion. This will lessen the benefit of the Bamban Bridge construction after 2011.

The time value of drivers and passengers were not considered in this Study.

#### (2) Loss of Production by Interruption of Economic Activities

The loss of production due to the interruption of economic activities caused by flood/mudflows were estimated based on the per capita GRDP of non-agricultural sector (estimated at P33,550 in 1994 at 1994 price) multiplied by the duration (assumed to be ten days in a year) and the number of affected people in urban areas. The loss of production in the agricultural sector was not considered here since it is already included in the direct flood damage of agricultural crops. The basic data for computation of the estimated loss of GRDP is shown in Table E.13.

#### (3) Evacuation and Building Clean-up Costs

The evacuation cost and the clean-up cost of buildings to be occurred at the time of disasters were estimated based on the unit cost adopted from a similar study in the past and the assumed duration of the incidence. For the cost of evacuation, the duration of ten (10) weeks in a year and the unit cost of P216 per week per household were assumed for lahar incidence. For the cost of clean-up of buildings, the duration of six (6) days in a year and the unit cost of P150 per day per building were assumed for lahar. No similar costs were considered for flood incidence.

The probable costs of evacuation and building clean-up together with the estimated loss of GRDP are shown for each flood return period in Table E.14 and their average annual costs are shown in Table E.15.

### 1.3 COMPARISON OF COST AND BENEFIT

The comparison of cost and benefit is presented in Table E.16.

Benefits were assumed to accrue immediately after the completion of the Project. When the expected rapid economic growth in the Central Luzon Region is considered, the value of properties in the Study Area is also expected to increase

rapidly. In this Study, the flood control benefit (reduction of direct damages) was assumed to increase at the same rate as that of GRDP of the Region i.e. 8.23 % p.a.

The benefit accrued from the saving of detour costs of vehicles is also expected to increase as the traffic volume increases. In this Study, the growth rate estimated for the new North Luzon Expressway studied by JICA in the LISR Study was adopted and 1.9% p.a. growth of traffics were applied. Meanwhile, assuming the completion of the said new highway after 15 years, the transportation benefit was treated to decrease after its completion in 2010.

The estimated foregone of production caused by the flood/mudflow incidence together with costs of evacuation and building clean-up was assumed arbitrarily to increase with a rate of growth of population in Region 3 which was estimated at 2.67% per annum for the period of 1990-2010 in JICA CLDP Study.

As the result of benefit-cost comparison, EIRR of 16.4% was derived. The net present value discounted at 12%, which is in this Study considered as the opportunity cost of capital in the Philippines, was computed at P 873 million.

A sensitivity analysis was conducted by varying both the benefit and cost of the Project. The result is summarized in Table E.17. As shown in the table, the Project cannot be justified only in the worst case where the cost is assumed to increase by 20% and the benefit is assumed to decrease by 20%.

#### 1.4 IMPLICATION OF ECONOMIC EVALUATION

##### 1.4.1 "Present Status"

It is to be noted that the project benefit to be accrued from the saving of the probable direct damage was computed on the basis of the present ( as of end 1994 ) conditions of the Study Area which is being covered partially by lahar deposit. Therefore, in such areas as Bamban and Mabalacat municipalities where a wide lahar deposit exists, the probable damage counted in the economic analysis is far less than that to be occurred under the pre-eruption conditions. In other words, there are less probable damage remaining in such heavily damaged areas which worked to reduce the EIRR of the Project.

##### 1.4.2 Evaluation of Sacobia/Bamban Project

The transportation benefit i.e. savings of the detour cost of vehicles caused by the flooding of roads and bridges constitutes the biggest benefit with a share of more than 40% of the total benefit (cf. table hereunder). This shows the fact that the Study Area is situated at an important location connecting the National Capital Region and the Northern Luzon Regions.

Average Annual Damage for 20-Year Return Period (Pesos million)

Building	Crops & Livestock	Infra-structure	Evacuation Cleanup	Loss of GRDP	Detour Cost	Total
51.09	19.00	17.06	8.62	7.25	76.77	179.97
28%	11%	9%	5%	4%	43%	100%

According to the PNCC data of North Luzon Expressway in July 1995, vehicles traveling directly between Metro Manila (Balintawak) and Santa Ines, the present terminal of NLE in Mabalacat, are the majority on NLE. Out of 3,940 vehicles arriving at Santa Ines, 2,290 (58%) were those entered at Manila and out of 4,050 vehicles entered at Santa Ines, 2,450 (60%) were bound for Manila (c.f. Table E.7).

The transportation of raw materials and final products transported into and out-of Metro Manila constitutes the major flow of the traffic in the Study Area.

Following the transportation benefit, the benefit to be accrued from the saving of probable direct damage of buildings constitutes nearly 30% of the total project benefit. This is resulted from the fact that some densely populated barangays in Concepcion municipality are included in the probable inundation area.

Despite the rural characteristics of this area, the probable damage on agricultural crops is expected comparatively small with 11% of the total Project benefit. The wide farmland presently covered by lahar is attributed to the reduction of probable agricultural damage.

The derivation of average annual damage of each item by each flood return period is compiled in Table E.18.

#### 1.4.3 Reclamation of Sand Pocket

The pre-eruption conditions of the current sand-pocket area is shown below:

Barangays being buried in Sand Pocket

Barangay Name	Telabanca	Malonzo	St. Rosario	Sapan Baren	Tabun
Area (sq.km)	7.7	2.4	1.7	7.9	1.7
Household (1990)	350	128	379	60	528
Population (1990)	2,249	811	2,268	347	3,001

The total area of about 22 square km land is now abandoned and utilized as the sand trap. As shown above, there existed in this area five (5) barangays before the eruption and the population was about 8,700 (1,450 households) in total of the whole barangays.

In this Study, the reclamation of the sand-pocket area was not included as a Project component. In other words, both the cost incurred and the benefit accrued from the reclamation of the sand pocket area were not considered in this Study. Because, the feasibility of the lahar cultivation was not confirmed.

Meanwhile, a study on the future perspectives of agricultural development in the lahar affected farmland was carried out and compiled in the Master Plan. This study will show one of the possible ways for farmers in the area to exploit the land resources in the long term span.

#### 1.4.4 Tourism Development

Apart from the structural measures to cope with possible natural disasters, the present Project will pave a way for the region to promote a possible tourism development in this area. Actually, a small natural lake has been created after the eruption in the upper stream of the Sapang Cauayan River in a walking distance from the Route No.3. When the safety of climbing the Mt.Pinatubo is assured, then a volcano tourism with a sight-seeing network linking the mountains and lakes will become popular in this area. In the CLDP Study of JICA, the development of a sort of eco-tourism is being envisaged in the Region. An amusement Park in Clark Field is also proposed in the same Study. A golf course is under operation near Dolores in Mabalacat municipality and another golf course has been newly opened in November 1995 in Clark Special Economic Zone. All these tourism development plans can be

successfully operated only after the security against possible natural disasters is assured by such a structural measures proposed by the present Project.

#### 1.4.5 Physical Benefit

The Project benefit was estimated by the saving of probable direct and indirect damages caused by the probable flood and/or lahar with a scale of 20 year-return period. The consequent physical benefit will extend to the following :

- 1) Population to be relieved from inundation : 19,800 (21% of Study Area)
- 2) Number of household to be relieved : 3,900 (22%)
- 3) Land area to be saved from inundation : 58.2 square km (22%)
- 4) Farm land to be saved : 2,800 ha (31%)

In summing up, the Sacobia/Bamban Project will relieve 19,800 persons of 3,900 households from suffering the inundation and will also save 58 square km of land in which 2,800 ha is a farm land (c.f. Table E.18 for above figures).

The road traffic will become possible to maintain the normal order, which is absolutely necessary for economic activities of the region and also for the daily life of an ordinary people. With a security of safety from the natural disasters, investments with a longer time span consideration would become possible. The most valuable benefit of the Project seems to be that many people can be free from the risk of losing their lives though it is not included in the benefit computation.

## E.2 ABACAN RIVER PROJECT

### 2.1 COST OF THE PROJECT

The investment cost was estimated on the basis of the following preconditions:

- 1) the base period of cost estimate was set at as of October 1995,
- 2) the exchange rates were assumed at US\$ 1=Peso 25=¥ 100,
- 3) value added tax and import duties of 7% in total were estimated in the local currency portion,
- 4) the price contingency for the future were estimated assuming annual inflation rates of 2.5% for foreign currency and 8.7% for local currency portions respectively,
- 5) the administration cost was estimated in local currency portion at 5% of the total of main construction cost (including F.C. and L.C.) and land acquisition cost,
- 6) the engineering cost was estimated at 10% of the total main construction cost, of which 90% was assumed to be in foreign currency and 10% in local currency, and
- 7) the physical contingency was estimated by 10% of the total of main construction cost, land acquisition cost and engineering cost.

The cost for desilting works were treated as the maintenance cost and scheduled to be disbursed in four (4) years for Abacan River starting from the initial stage of the construction.

The Project cost (financial) is estimated at P 1,005 million with foreign currency (F.C.) portion of P 555 million and local currency (L.C.) portion of P 450 million at the price level as of October 1995 as shown below.

### Project Cost of Flood/Mudflow Control Works for Abacan River

	Unit: Pesos million					
	Financial Cost			Economic Cost		
	F.C.	L.C.	Total	F.C.	L.C.	Total
1) Main Construction Cost	407.48	272.52	680.00	407.48	191.80	599.28
2) Land Acquisition Cost	0.00	7.50	7.50	0.00	0.00	0.00
3) Administration Cost	0.00	34.37	34.37	0.00	27.49	27.49
4) Engineering Cost	61.20	6.80	68.00	61.20	5.44	66.64
5) Physical Contingency	46.87	28.68	75.55	46.87	22.94	69.81
6) Price Contingency	39.14	100.50	139.63	-	-	-
7) Total	554.69	450.37	1,005.06	515.55	247.67	763.22

The operation and maintenance costs were estimated based on 0.5% of the main construction cost.

The financial cost shown above was converted into the economic cost to adjust the distorted market price value. Considering the current unemployment situation, the market wage was adjusted by shadow wage rate which was assumed at 60% of the market wage rate. In order to adjust the distortion of the official exchange rate, the standard conversion factor of 0.86 was applied following the recent ADB practice. The economic cost of land acquisition was assumed to be nil based on the fact that the site has been a barren land with no productive use.

## 2.2 BENEFIT OF THE PROJECT

### 2.2.1 Criteria of the Benefit

The benefit to be accrued from the implementation of the Project was defined in this Study as the reduction of the direct and indirect damages caused by flood/mudflows. The probable direct and indirect damages were estimated under the current conditions at the end of 1994. The damage under the with-project conditions was assumed to be zero under the design flood of 20 year-return period. Thus the project benefit constitutes the probable damage to be occurred by the flood of the designed scale of 20-year return period.

### 2.2.2 Estimate of Direct Damage

In estimating the damageable value of all the properties in the probable inundation area, a "Barangay Data Base" was established in the GIS (Geographical Information System). All the data required for the estimate of damage including population, number of household, properties and areas of each barangay were input and arranged in this Data Base. An abstract of the said data base is summarized in Table E.19 (c.f. Appendix R for M/P for the details of GIS related matters).

The probable inundation areas were delineated for the river basin on the basis of a hydrological simulation study for each return period of 2, 5, 10, 20, 50 and 100 years out of which those of 20- and 100-year return period floods are depicted in Figure E.5. The whole area of a barangay was divided into a number of cells of a 100-meter square in each of which the information on depth and duration of inundation and sediment for each return period was loaded from flood analysis.

Damage curves were generated for major items of properties such as residential buildings, non-residential buildings, paddy field, upland crops, and infrastructures including roads and bridges. The damage curves were generated for each hazard of flooding, sediment and lahar toward the depth and duration of each hazard. In generating these damage curves, those adopted in the Study of Agno River Flood Control conducted by JICA in 1990 and the standard of Ministry of Construction of Japan were referred to. The said curves are depicted in Figure E.2.

Unit values of each damageable property were adopted mainly from the above mentioned Agno Study after adjusting the change in market prices between the time of the two studies. The information derived from local government agencies were also incorporated. Unit values applied in this Study are shown in Table E.2.

The method of identifying and estimating damageable values is stated by each item hereunder:

(1) Buildings

The number of buildings locating in probable flood areas were counted on a topo map of 1:10,000 which was produced from aerial photos taken in 1994. Through superimposing the flood area map on the said topo maps, buildings to be inundated were counted for each flood return period. The result of building counting on the map is compiled in Table E.20.

The result of the population census in 1990 conducted by NSO and the population survey conducted by the JICA Study Team in August 1994 were referred to. The recent result of the Survey of Establishment conducted by NSO in 1993 was also utilized.

(2) Agricultural Crops

The land use map by each agricultural crop in the Study area as of 1994 was produced as shown in Figure E.3 and was stored in GIS Barangay Data Base.

This land use map was produced based on the aerial photo map taken by the JICA Study Team in April 1994 with a scale of 1:10,000 and the land use map of Magalang, Mexico, Santa Ana and Arayat municipalities which were prepared by the JICA study of "the Mapping and Agricultural Potential Study for the Integrated Rural Development Program in Pampanga" in November 1992.

Unit prices applied were those net income values of each crop adopted in Agno Study after being adjusted for the price change between the time of the two studies. The damage of the livestock was estimated by a ratio (7%) of the agricultural crops following the Agno Study after reviewed based on recent statistics.

(3) Infrastructures

The length of roads, bridges and irrigation canals were stored in the Barangay Data Base for each barangay. The damage to these infrastructures were computed according to the probable affected area in each barangay. The data on roads and bridges were originated from a GIS map prepared by JICA study of CLDP and those on irrigation canals were originated from the recent "Irrigation Systems/Projects Survey" prepared by PKII Engineers in October 1994.

The probable flood damage for each property and for each flood return period is summarized in Table E.21. Its breakdown in each barangay for each return period and for each property is compiled in Table E.19. The average annual direct damage was obtained after aggregating each property damage and is tabulated in Table E.22.

Judging from the gradient of the curve shown below the above-mentioned table, the design period of 20 years can be said reasonable.

### 2.2.3 Estimate of Indirect Damage

In this Study, the indirect damage covers such secondary damages to be stemmed from and induced by the flood/mudflow occurrences as the opportunity loss of product due to the interruption of economic activities caused by flood/mudflow, and the cost of evacuation and clean-up of buildings. The indirect damages were estimated as stated hereunder.

#### (1) Loss of Production by Interruption of Economic Activities

The loss of production due to the interruption of economic activities caused by flood/mudflows were estimated based on the per capita GRDP of non-agricultural sector (estimated at P33,550 in 1994 at 1994 price) multiplied by the duration (assumed to be ten days in a year) and the number of affected people in urban areas. The loss of production in the agricultural sector was not considered here since it is already included in the direct flood damage of agricultural crops. The basic data for computation of the estimated loss of GRDP is shown in Table E.13.

#### (2) Evacuation and Building Clean-up Costs

The evacuation cost and the clean-up cost of buildings to be occurred at the time of disasters were estimated based on the unit cost adopted from a similar study in the past and the assumed duration of the incidence. For the cost of evacuation, the duration of 10 weeks in a year and the unit cost of P216 per week per household were assumed for lahar incidence. For the cost of clean-up of buildings, the duration of 6 days in a year and the unit cost of P150 per day per building were assumed for lahar. No similar costs were considered for flood incidence.

The probable costs of evacuation and building clean-up together with the estimated loss of GRDP are shown for each flood return period in Table E.23 and their average annual costs are shown in Table E.24.

### 2.3 COMPARISON OF COST AND BENEFIT

The comparison of cost and benefit is presented in Table E.25.

The desilting works which are included in the column of maintenance cost were assumed to start from the beginning of the construction for four (4) years.

Benefits were assumed to accrue immediately after the completion of the Project. When the expected rapid economic growth in the Central Luzon Region is considered, the value of properties in the Study Area is also expected to increase rapidly. In this Study, the flood control benefit (reduction of direct damages) was assumed to increase at the same rate as that of GRDP of the Region i.e. 8.23 % p.a.

The estimated foregone of production caused by flood/mudflow incidences together with costs of evacuation and building clean-up was assumed arbitrarily to increase with a rate of growth of population in Region 3 which was estimated at 2.67% per annum for the period of 1990-2010 in JICA CLDP Study.

As the result of benefit-cost comparison, EIRR of 24.1% was derived. The net present value discounted at 12%, which is in this Study considered as the opportunity cost of capital in the Philippines, was computed at P 1,149 million.



A sensitivity analysis was conducted by varying both the benefit and cost of the Project. The result is summarized in Table E.26. As shown in the table, the Project is justified even in the worst case where the cost is assumed to increase by 20% and the benefit is assumed to decrease by 20%.

## 2.4 IMPLICATION OF ECONOMIC EVALUATION

### 2.4.1 "Present Status"

It is to be noted that the project benefit to be accrued from the saving of the probable direct damage was computed on the basis of the present ( as of end 1994) conditions of the Study Area which is being covered partially by lahar deposit. Therefore, in such an area as Mexico municipality where a wide lahar deposit exists, the probable damage counted in the economic analysis is far less than that to be occurred under the pre-eruption conditions. In other words, there are less probable damage remaining in such a heavily damaged area, which worked to reduce the EIRR of the Project.

### 2.4.2 Evaluation of Abacan River Project

More than half of the total Project benefit is expected from the saving of probable building damages to be occurred in the probable inundation area which includes some urban and lowland areas in Mexico municipality. Some lowland areas in Angeles city are attributed to the said saving of probable building damages as well.

Average Annual Damage for 20-Year Return Period (Pesos million)

Building	Crops & Livestock	Infra-structure	Evacuation Cleanup	Loss of GRDP	Total
58.45	23.66	16.39	9.17	7.70	115.37
51%	21%	14%	8%	7%	100%

The agricultural benefit i.e. the savings of damage of agricultural crops occupies more than 20% of the total Project benefit. Lowland farm lands in Mexico and Santa Ana municipalities are expected to be relieved from floods.

The derivation of average annual damage of each item by each flood return period is compiled in Table E.27.

### 2.4.3 Physical Benefit

The Project benefit was estimated by the saving of probable direct and indirect damages caused by the probable flood and/or lahar with a scale of 20 year-return period. The consequent physical benefit will extend to the following :

- 1) Population to be relieved from inundation : 20,800 (18% of Study Area)
- 2) Number of household to be relieved : 4,100 (20%)
- 3) Land area to be saved from inundation : 29.2 square km (23%)
- 4) Farm land to be saved : 1,500 ha (15%)

In summing up, the Abacan Project will relieve 20,800 persons of 4,100 households from suffering the inundation and will also save 29 square km of land in which 1,500 ha is a farm land (c.f. Table E.27 for above figures).

The road traffic will become possible to maintain the normal order, which is absolutely necessary for economic activities of the region and also for the daily life of an ordinary people. With a security of safety from the natural disasters, investments with a longer time span consideration would become possible. The most valuable

benefit of the Project seems to be that many people can be free from the risk of losing their lives though it is not included in the benefit computation.

**REFERENCES  
FOR  
SOCIO-ECONOMY AND PROJECT EVALUATION**

1. "1990 Census of Population and Housing"  
Report No.3-68C: Socio-economic and Demographic Characteristics  
Report No.4-68C: Housing Statistics  
Report No.2-74C: Population by City, Municipality and Barangay  
Pampanga and Tarlac Provinces, NSO June 1992
2. "Preliminary Report for the Master Plan Study for the Areas of Central Luzon  
affected by the eruption of Mt.Pinatubo"  
USAID, Louis Berger International Inc. October 29,1993
3. "Report and Recommendation for the Mt.Pinatubo Damage Rehabilitation  
Project"  
ADB, 30 March 1992
4. "Philippine Country Operational Program Paper 1993-96"  
ADB, April 1993
5. "1993 Philippine Statistical Yearbook"  
NSCB, January 1994
6. "1991 Family Income and Expenditures Survey" Vol.1 and Vol.2  
NSO, January 1994
7. "Population Projections by single year of age and by sex: 1990-2000-High  
Assumption" NSO
8. "Annual Accomplishment Report CY 1992"  
Pampanga and Tarlac Provinces, Provincial Planning and Development Office,  
May 1993
9. "Terminal Report : Mt.Pinatubo Rehabilitation and Reconstruction Program"  
President Task Force on Mt.Pinatubo, November 1992
10. "Socio-economic Impacts of Mt.Pinatubo Eruption"  
NEDA Region 3 Office
11. "Medium Term Development Plan for Tarlac 1994-98" (Working Draft)  
Tarlac Province, October 14 1993
12. "Mapping and Agricultural Potential Study for the Integrated Development  
Program in Pampanga"  
JICA (NK) November 1992
13. "In Search of Alternatives : Rehabilitation Options and Alternatives for the  
Mt.Pinatubo Victims"  
Philippine Business for Social Progress (PBSP), July 1993
14. "Philippine 2000"  
A Special Report of a Newspaper "Manila Standard" on July 21 1993
15. "Medium Term Philippine Development Plan 1993-98"  
NEDA December 1992

16. "Annual Development and Investment Plan 1993, Province of Pampanga"  
Provincial Planning and Development Office (PPDO), Pampanga Province
17. "Socio-economic Profile 1989 Pampanga Province"  
PPDO Pampanga Province
18. "Physical Parameters Package for Long Term Alternatives-being considered in the  
Mt. Pinatubo Recovery Action Plan-Basin Cost Summaries"  
USACE Portland District, December 1993
19. "Mt. Pinatubo Recovery Action Plan-Interim Report of the Pasig-Potrero River  
Basin"  
USACE and USAID, October 1992
20. "Immediate and Long-term Hazards from Lahars and Excess Sedimentation in  
Rivers draining Mt. Pinatubo, Philippines"  
US Geological Survey, 1992
21. Progress Report I of "The Master Plan Study for West Central Luzon  
Development Program", JICA, March 1994
22. "Socio-Economic Impacts of Mount Pinatubo Eruption", NEDA Region III  
Office, 1993
23. "1993 Year-End Report to the President", Mount Pinatubo Commission, Office  
of the President, January 1994  
"1994 Work and Financial Plan" MPC  
"Progress Report as of January 1994" MPR-PMO
24. "Business and Socio-Economic Prospects in Angeles City : With or Without  
Clark Air Base : 1947-2006", Center for Research and Communication, October  
1989- March 1990
25. "Master Plan Study on Luzon Island Strategic Road Network Development  
Project" JICA, July 1993
26. "Master Plan on Mount Pinatubo Development Programs", Province of Tarlac,  
September 1993
27. "Socio-economic Profile of Pampanga Province 1989", Provincial Planning and  
Development Office
28. "Socio-economic Profile of Tarlac Province 1990"
29. "Development Plan of City and Municipalities:
  - Angeles City "Socio-economic and Physical Profile 1993"
  - Arayat "Comprehensive Development Plan, Arayat 1992-96"
  - Mabalacat "Socio-economic Profile 1989"  
"Comprehensive Development Plan and Zoning Ordinance  
1993-98"
  - Magalang "Socio-economic Profile 1993"  
"Development Investment Plan 1994-98"
  - Mexico "Socio-economic Profile 1991"
  - Santa Ana "Socio-economic Profile 1990(?) (simple one )"
  - San Juan "Socio-economic Profile 1990 and 1992"  
"Barangay Profiles" (After Pinatubo)
  - Capas "Barangay Data 1987 (simple)"
  - Concepcion "Socio-economic Profile 1980 and 1993"

30. "Pampanga Province : Annual Accomplishment Report 1992"  
"Pampanga Province : Annual Development and Investment Plan 1993"
31. "Disaster Planning and Management for Agriculture" BSWD and JICA  
March 1992
32. "1993 Annual Report : Philippine Business for Social Progress"
33. "Preliminary Report for the Master Plan Study for Pinatubo affected Areas"  
Louis Berger, USAID October 1993
34. "Master Plan for the Areas of Central Luzon affected by the Eruption of  
Mt.Pinatubo" Final Report, Louis Berger Int'l Inc. July 1994
35. "Integrated Plan for the Mt.Pinatubo affected Areas" Mount Pinatubo  
Commission, July 1994
36. "Medium Term Development Plan for the Province of Tarlac 1994-1998"  
Working Draft, October 1993
37. "Medium-Term Central Luzon Regional Development Plan 1993-1998"
38. "Study on Flood and Mudflow Control in the Sacobia-Bamban/Abacan Rivers  
Draining from Mt.Pinatubo" - Report on the Irrigation Systems/Project Survey  
October 1994, PKII Engineers
39. "The Master Plan Study for Central Luzon Development Program" Final Report  
JICA, September 1995
40. "Study of Agno River Basin Flood Control" Final Report  
Vol.III Main Report Part II Feasibility Study  
Vol.IV Supporting Report Part I master Plan  
JICA, December 1991