International Labour Organization

FINAL REPORT

Technical Assistance

INFRES PROJECT

Infrastructure for Rural Productivity Enhancement Sector

ASIST AP

Advisory Support, Information Services & Training – Asia & Pacific

April 2006

TABLE OF CONTENTS

Acronyms i

Chapter 1. Introduction
- 1.1 Background 1
- 1.2 Structure of the report 1
- 1.3 Review of the terms of reference 2

Chapter 2. Accomplishments 4

Chapter 3. Impact 15

Chapter 4. Fund utilization 16

Chapter 5. Lessons Learnt 17

Chapter 6. Recommendations 18

Reference 20

Annexes
- A The Fifth Progress Report
- B Terms of Reference
- C 3-year Work Programme
- D IRAP Technical Papers
- E Provincial Prioritization Procedure
- F List of LGUs
- G Poverty Impact Procedure for Rural Roads
- H Rural Roads Maintenance Study
- I Process Documentation Report O&M Plan Preparation
- J Pilot Activity Report O&M Capacity-Building
- K Deed of Transfer
- L Financial Report
- M ASIST-AP contributions

ACRONYMS

ADB	Asian Development Bank
ASIST AP	Advisory Support Information Services Training-Asia Pacific
DA	Department of Agriculture
DILG	Department of the Interior and Local Government
FS	Feasibility Study
ILO	International Labour Organization
IMA	Implementation Memorandum Agreement
InfRES	Infrastructure for Rural Productivity Enhancement Sector
IRAP	Integrated Rural Accessibility Planning
LBES	Labour-Based Equipment Supported
LGU	Local Government Unit
NGO	Non-government organization
mLGU	Municipal Local Government Unit
O&M	Operations & maintenance
PCO	Project Coordinating Office
PCI	Pacific Consultants International
pLGU	Provincial Local Government Unit
PO	Project Office
RFU	Regional Field Unit
RRMS	Rural Roads Maintenance Study
SPMB	Subproject Monitoring Board
TAT	Technical Assistance Team
ToR	Terms of Reference

Department of Agriculture
Infrastructure for Rural Productivity Enhancement Sector
(InfRES) Project
International Labour Organization
Advisory Support, Information, Services and Training for Asia and the Pacific
ILO ASIST-AP

FINAL REPORT

Chapter 1. INTRODUCTION

1.1 Background

The International Labour Organization (ILO) has been collaborating with the Department of Agriculture-Infrastructure for Rural Productivity Enhancement Sector (DA-InfRES) Project aimed to strengthen local capacity on rural infrastructure development. InfRES, with funding support from the Asian Development Bank (ADB), is designed to reduce poverty by improving agricultural profitability through provision of rural infrastructures such as farm-to-market roads (FMR), water supply and communal irrigation facilities for local government units (LGUs) in Region 4-B (island provinces except Palawan), Bicol, Eastern Visayas and Mindanao.

ILO's involvement in the project was to provide advisory and technical services on local resource-based approaches in infrastructure development. The involvement includes the application of Integrated Rural Accessibility Planning (IRAP) technology for the identification and planning of subprojects on water and rural roads and use of labour-based equipment supported (LBES) method for the operation and maintenance of the infrastructures. The technical delivery was managed and supervised by the Advisory Support, Information, Services and Training for Asia and the Pacific (ASIST-AP), an ILO regional technical programme involved in sustainable rural infrastructure development in the Philippines. ASIST aims to mainstream sustainable strategies of poverty alleviation through improved rural access to employment opportunities and to economic and social goods and services. The technical assistance team (TAT) of the project consisted of the appropriate experts from the ASIST-AP team in Bangkok who provided short-term inputs and one local full-time staff. The collaboration between the ILO and DA was envisaged to create synergy that will strengthen the project's institutional and technical capacity as well as that of the target beneficiary communities through the use of local resource-based approaches to rural infrastructure development.

The engagement was for three years, which started early part of 2003 and ended on 7 April 2006.

This report described the achievements of the three-year collaboration as called for in the terms of reference (ToR) and listed the lessons learnt from the interactions and application of the tools.

1.2 Structure of the report

Chapter 1 provides the background, objectives and desired results of the collaboration. A review of the ToR highlights the activities. Chapter 2 covers the accomplishments vis-à-vis the targets and presents a per item discussion of the work. Chapter 3 is about the impact of the activities and outlines the benefits derived from each. Chapter 4 deals with fund utilization and how this has been distributed by activity. Chapter 5 is concerned with the lessons learnt and offers insights into the experiences and knowledge gained from the interactions and application of the tools. Chapter

6 lists the recommendation for concerned institutions. Relevant documents in support of the achievements and outcomes are in the Annexes.

The activities and outputs during the period June 2005 to April 2006 are discussed in the Fifth Progress Report in ***Annex A***.

1.3 Review of the Terms of Reference

The ToR described the work to be done to implement the cooperation, consisted of ten (10) activities under the three (3) main outputs:

Output 1	**Application of Integrated Rural Accessibility Planning (IRAP) in the planning and identification of sub projects in the sectors of access improvement and water supply, by the local government units (LGUs) and the DA regional staff.**
Activity 1	Review, validate and/or improve and coordinate with project stakeholders with respect to the infrastructure components, the data collection, data analysis, mapping, project identification, project prioritization procedures and project preparation activities at the LGU level. The objective is to develop a common local level planning approach for InfRES use at LGU level in the 41 eligible project provinces, considering the previous IRAP exercises implemented by the DILG-ILO.
2	Use the existing IRAP outputs, updated where necessary, to assist the LGUs and local beneficiaries to identify priority areas for interventions on potable water.
3	Implement the IRAP road planning procedures using the existing/updated IRAP database in the project LGUs, to assist the LGUs in identifying road sub projects.
4	Co-ordinate with InfRES project staff and concerned agencies in integrating the IRAP agricultural sector related data into the identification and selection process for the project's communal irrigation facilities.
5	Assist in modifying the rural access improvement impact evaluation procedure developed under IRAP to also serve the needs of the Project in terms of evaluating project impacts.
Output 2	**Alternative technologies in the capacity building of the LGUs on road and potable water supply planning and road maintenance provided.**
6	Prepare and assist in delivery, and where necessary, conduct, training programmes on rural road maintenance planning and organization.
7	Work with the concerned LGUs to promote and assess the feasibility of using LBES for the proposed construction and/or rehabilitation of roads.
Output 3	**Advocacy on labour-based equipment supported (LBES) methods and small scale contracting developed, and training programmes for the LGUs conducted.**
8	As requested by LGUs, provide advice and assistance on the development of contract management systems and small contractor training.
9	Work with the Project to develop in-house support for LBES.
Other related output: 10. Identify and define coordination activities for years 4 to 7	

A agreed upon by both parties, the use of IRAP in the identification of communal irrigation subprojects was excluded from the original scope of work. To complement the existing activities of government, IRAP would assist in the identification of rural roads to be improved within the affected areas of the communal irrigation facilities. In addition, the project will share its national

database on agricultural sector to InfRES Project and other interested partners for the identification of the communal irrigation subprojects. Another activity of Output 1 "to coordinate the development of barangay, municipal, provincial and regional database between InfRES and IRAP projects..." was deleted as it was found not to be within the scope of the output. Lastly, Output 3 " to work with the project to develop in-house support for LBES, whenever cost, quality and time efficient. Liaise with the Infra Com for this purpose" was changed to "work with the project to develop in-house support for LBES". The original ToR was adjusted to reflect the agreements. The revised document is ***Annex B***.

An over-all work programme was prepared and a detailed yearly plan was submitted to InfRES for approval. The project submitted reports after the activities indicating outcomes and recommendations of future actions. The approved 3-year plan is ***Annex C***.

Whenever necessary, the project also pursued and implemented cooperation activities with partners particularly the Project Office (PO), a privately-led team of consultants engaged by the Department to oversee the management and operation of InfRES, to ensure coordinated actions and optimize use of resources.

Chapter 2. ACCOMPLISHMENTS

2.1 Summary of outputs vis-à-vis targets

The matrix below summarizes the over-all work, a full discussion, per activity in the ToR, is presented in succeeding sections.

Key Result Area	Prescribed activities	Activities proposed in the Inception Report	Results	Indicator/s of success
Output 1 **Application of Integrated Rural Accessibility Planning (IRAP) in the planning and identification of sub projects in the sectors of access improvement and water supply, by the DA regional staff and local government units (LGUs).**	1. Review, validate and/or improve and coordinate with project stakeholders with respect to the infrastructure components, the data collection, data analysis, mapping, project identification, project prioritization procedures and project preparation activities at the LGU level. *The objective is to develop a common local level planning approach for InfRES use at LGU level in the 41 eligible project provinces, considering the previous IRAP exercises by the DILG-ILO.* 2. Use the existing IRAP outputs, updated where necessary, to assist the LGUs and local beneficiaries to identify priority areas for interventions on potable water. 3. Implement the IRAP road planning procedures using the existing or updated IRAP database in the project LGUs, to assist the LGUs to identify roads.	Technical assistance to LGUs on the application of the IRAP procedure in the identification of proposed subprojects. Utilize IRAP national databank to assist LGUs in the identification of subprojects on potable water supply and rural roads.	i) Procedures on the identification and prioritization of subprojects on water supply and rural roads at municipal level developed, pilot-tested and improved; ii) Prioritization procedure for provincial level use developed, pilot-tested and finalized; iii) Capacity built for LGUs on the procedure, and applied in the identification of subprojects; iv) Provision of follow-up activities to ensure correct application of the IRAP tools by LGUs.	Modules prepared and used in the *Participatory Subproject Identification and Preparation training courses*; 4 technical modules on Accessibility mapping, water supply, rural roads prepared and provincial procedure. Provincial procedure applied in 2 pLGUs 24 courses completed 25 batches of monitoring activities completed
	4. Co-ordinate with InfRES project staff and concerned agencies in integrating the IRAP agricultural sector related data into the identification and selection process for the project's communal irrigation facilities.	Share IRAP national databases on agricultural sector related data to the concerned partners for the identification and selection of the communal irrigation facilities.	v) IRAP national databank established and utilized for project use	LGU accessibility information available. Data of 501 LGUs (64%) out of the 779 target municipalities collated and compiled at the databank.

Note: In red text – additional results not included in the original scope of work

Key Result Area	Prescribed activities	Activities proposed in the Inception Report	Results	Indicators of success
Output 1..	5. Assist in modifying the rural access improvement impact evaluation procedure developed under IRAP to also serve the needs of the Project in terms of evaluating project impacts.	Poverty impact analysis	vi) Poverty impact study on rural roads prepared. No clear signal from the partner how to proceed.	Impact tool prepared
Output 2 **Alternative technologies in the capacity building of the LGUs on road and potable water supply planning and road maintenance provided.**	6. Prepare and assist in delivery, and where necessary, conduct, training programmes on rural road maintenance planning and organization;	Capacity-building on local resource-based technologies for local government units.	*Tools potable water supply and rural road planning developed, pilot-tested and finalized;* vii) Study on rural roads maintenance completed; viii) Training program on the preparation of the operation and maintenance (O&M) developed, pilot-tested and finalized. ix) Capacity-building program on the operation and maintenance of rural roads for LGUs developed, pilot-tested and finalized.	See results under Output 1. Application of IRAP... Findings helped design the O&M Capacity-Building Package. 2 O&M Plans of LGUs prepared, finalized and included in the signed IMA.; O&M package prepared, ready for wider application. San Jose O&M plan improved, staff/crew ready to perform maintenance activities on the InfRES FMR.
Other related output	Review of InfRES Manual (Design & Planning of FMRs	Request for inputs emanated from DA project management office.	x) Maintenance issues integrated in project technical manual.	Recommendation to include slope protection at construction stage adopted by the project, demonstrated in core-LGU together with O&M C-B package.
	7. Work with the concerned LGUs to promote and assess the feasibility of using LBES for the proposed construction and/or rehabilitation of roads.	Promotions and use of LBES, where appropriate, in the road subprojects, in the construction, operations and maintenance of farm to market roads, conduct and develop training programmes.	xi) Promotion of LBES method and technical assistance to LGUs with their Feasibility Study (FS) preparation.	Promoted in 9 core-LGUs, 5 core- LGUs expressed interest and trained. However, use of LBES in the construction was not pursued due to conflict in project policy. Technology incorporated in the maintenance program.

Note: In red text – additional results not included in the original scope of work

Key Result Area	Prescribed activities	Activities proposed in the Inception Report	Results	Indicators of success
Output 3 **Advocacy on labour-based equipment supported (LBES) methods and small scale contracting developed, and training programmes for the LGUs conducted.**	8. Work with the Project to develop in-house support for LBES.	Promotions and use of LBES, and small scale contracting, where appropriate, in the road subprojects, in the construction, operations and maintenance of farm to market roads, conduct and develop training programmes for the LGUs, and develop in-house support for the technology.`	xii) Advocacy on LBES conducted, in-house project staff and DA personnel trained on the technology.	5 DA-RFUs, 2 project and 2 DA staff trained; but use of LBES in the construction was not pursued due to conflict in project policy. The conduct of maintenance study replaced the original output.
	9. As requested by LGUs, provide advice and assistance on the development of contract management systems and small contractor training.	Incorporation of suitable ready-made training materials for the improvement and development of small contractors, where feasible and efficient, into the over-all training programme framework	No activities done. See discussion in xii.	
Other related output	10. Identify and define coordination activities for years 4 to 7.		No expression of interest from the government.	

Output 1. **Application of Integrated Rural Accessibility Planning (IRAP) in the planning and identification of sub projects in the sectors of access improvement and water supply, by the DA regional staff and local government units (LGUs).**

Activity 1 Review, validate and/or improve and coordinate with project stakeholders with respect to the infrastructure components, the data collection, data analysis, mapping, project identification, project prioritization procedures and project preparation activities at the LGU level. *The objective is to develop a common local level planning approach for InfRES use at LGU level in the 41 eligible project provinces, considering the previous IRAP exercises implemented by the DILG-ILO.*

2 Use the existing IRAP outputs, updated where necessary, to assist the LGUs and local beneficiaries to identify priority areas for interventions on potable water.

3 Implement the IRAP road planning procedures using the existing/updated IRAP database in the project LGUs, to assist the LGUs in identifying road sub projects.

Under InfRES, LGUs are responsible for the development of rural infrastructures in their areas. The identification of these infrastructures shall be based on the needs and demands of communities to realize the productive potential of their land. The LGUs must demonstrate that the desired infrastructures are selected through a participatory decision-making process. They are tasked to conduct consultations prior to the formulation of proposals and show that the sub-projects have been identified together with the communities. For this end, InfRES adopted the IRAP tool to ensure the subprojects of LGUs respond to the real needs of the beneficiaries. The communities are among the stakeholders in the Project, therefore their involvement all throughout must be guaranteed.

The IRAP procedure is a simple, relatively inexpensive and user-friendly local level procedure designed to identify and prioritize development needs by using the rural household's access to basic services as basis. It covers several sectors and helps identify interventions to improve the rural households' access situation through the provision of rural infrastructures, better distribution/siting of services or enhancing the people's mobility for them to reach and utilize the basic goods and service facilities. IRAP is an ILO-developed technology, applied in the country nationwide together in collaboration with the Department of the Interior and Local Government (DILG). It was envisaged to maximize the gains of the previous ILO-IRAP exercise for the mutual benefit of both the ILO and DA-InfRES, and create a synergy effect.

The project maintained a national databank of LGU accessibility information. This was utilized for identifying potential investments on water and rural roads for possible funding by InfRES. In addition, the capacity created at local level on IRAP was among the criteria indicators for LGUs to qualify for the assistance.

The following results were achieved during the implementation of the activities:

i) Procedures on the identification and prioritisation of subprojects at municipal level developed and applied in the project LGUs

The activity "review, validate and/or improve and coordinate with project stakeholders..." established that adjustments have to be done to align the procedures to the objectives of InfRES. New indicators, which the Project set, were added to the procedures for identifying water supply and prioritising rural roads subprojects.

Three modules were prepared, fine-tuned and applied by LGUs to avail of InfRES assistance. The modules provide a simple step-by-step procedure to apply IRAP and allow users to execute the required tasks easily. Simple case studies and worksheets were developed to allow hands-on application of skills. The modules consist of the following technical components: *Accessibility mapping, Identification of water supply development priorities and identification and prioritisation of rural roads*. Accessibility mapping is an integral part of the IRAP procedure. It is the graphical representation of access characteristics in a given area that can help in the identification and prioritisation of access problems, facilitate the formulation of interventions, and guide the selection of the best development option. The modules on the identification and prioritisation of water supply and rural roads factor in community involvement by providing a numeric value on the participation of stakeholders into the whole prioritisation process. The existing ILO-IRAP national accessibility database was utilized in the exercises.

The modules were first applied in selected LGUs in the province of Camarines Norte, Bicol region, to generate actual lessons and experiences and use these to fine-tune the procedure. The pilot exercises established that the procedure is effective in identifying infrastructures that support the agricultural objective of the project. The finalized modules were used in the next batches of LGUs trained on *Participatory Subproject Identification and Preparation* training course. A copy of the modules is ***Annex D***.

ii) Prioritization procedure for provincial level developed and applied in the project LGUs

InfRES is designed to assist municipalities improve on their agricultural productivity through agricultural support infrastructures. The Project also encourages provincial governments to collaborate with InfRES in developing agricultural support infrastructures for the municipalities in their respective areas. Provincial involvement calls for the formulation of an identification and prioritization procedure that considers elements that exert significant influence on provincial

development directions, looks beyond municipal boundaries but remains focused in bringing the desired impact on municipal agricultural productivity (Palarca, Technical Module-Provincial Identification and Prioritization Procedure, May 2005).

The Project encourages provincial LGUs (pLGUs) to submit proposals to develop agricultural support infrastructures for the municipalities in their respective areas. The project developed a new procedure to address the need created in the project. The procedure is patterned after similar and successful applications in Laos, Cambodia and Indonesia and embodied the participatory ingredient of InfRES. This approach involved the conduct of a consultation-workshop to be participated in by municipal and barangay (village) key informants, to update and validate the sets of relevant information to guide provincial actions in identifying and prioritizing agricultural support infrastructure subprojects. The procedure was pilot-tested in the province of Albay, Bicol region, found to be effective, and can now be used to assist other provinces wishing to avail of InfRES technical and financial assistance. A copy of the provincial prioritization procedure is ***Annex E***.

This outcome, requested by InfRES-Project Coordinating Office (PCO), was not in the original scope of work, however, it was pursued to address the urgent need of LGUs when the Project entertained province-assisted implementation.

iii) Capacity on IRAP built for LGUs in the project

Part of the capacity-building objective of InfRES was to equip LGUs with appropriate knowledge and skills to develop, manage, implement, operate and maintain the infrastructures to be provided. One of the training courses was on participatory subproject identification, where IRAP was the selected method to identify proposals on water supply and rural roads. Also, part of the collaboration involved conduct of joint activities, when necessary, with the Project Office (PO) team of consultants under the capacity-building component. The project and PO collaborated in the Participatory Subproject Identification and Subproject Preparation course. A complete database of LGUs trained is available at the PO.

The 2-day training course was attended by technical staff (planners, engineers & agricultural technicians) tasked to develop the proposal, and by local government officials (mayor, sanggunian representatives) expected to provide policy, administrative, and financial support to subproject at the local level. The IRAP modules for municipal level application included technical briefings and hands-on application of skills, and the PO was in charge on the detailed preparations of a subproject proposal. A case study on the rural road prioritisation procedure was developed for hands-on application. As to the provincial proposals, a follow through consultation-workshop was organised, the project provided technical assistance on the provincial prioritisation procedure.

InfRES prescribed, in its selection criteria, that the LGUs interested to participate in the Project have been trained on IRAP or any similar participatory approach. For its part, the project certified the LGUs that complied on the criteria. The task required coordination with the PO to provide timely inputs for decision-making. Aside from the joint training courses, the project responded, upon request, to LGUs that required technical assistance.

A total of 24 batches were completed, covering 257 LGUs that consisted of 937 local government functionaries. The following table lists the training courses.

Table 1. IRAP training courses

Date	Venue	No. of LGUs	No. of Pax
16-17 Sept. 2003	Handumanan Hall, Calbayog City[1]	1	19
11-12 Nov. 2003	Vic-mar Resort, Tacloban City[1]		2
25-27 Feb. 2004	Handumanan Hall, Calbayog City[1]		19
24 March 2004	Casablanca Hotel, Legazpi City[2]	3	15
10-11 Aug. 2004	**Waterfront Insular Hotel, Davao City**	**19**	**58**
7-8 Sept. 2004	**Dynasty Hotel Cagayan de Oro City**	**18**	**51**
19-21 Oct.2004	Marcian Graden Hotel Zamboanga City[1]	2	30
27-28 Oct. 2004	Hotel Alejandro, Tacloban City[1]	1	15
3-4 Feb. 2005	**Hotel Alejandro, Tacloban City**	**22**	**36**
	Naomi's Botanical Garden, Ozamis City	**13**	**39**
7-8 Feb. 2005	**Regency Inn, Davao City**	**7**	**24**
3-4 March 2005	**Riverview Inn, Cagayan de Oro City**	**14**	**41**
7-8 March 2005	**Hotel Alejnadro, Tacloban City**	**14**	**44**
14-15 March 2005	**Casablanca Hotel, Legazpi City**	**12**	**31**
17-18 March 2005	**Innotech, Quezon City**	**9**	**23**
21 March 2005	**People's Hall, Capitol Bldg., Old Albay, Legapi City**	9	**37**
8 April 2005	*People's Hall, Capitol Bldg., Old Albay, Legapi City*		163
18-19 April 2005	**Star Asia Hotel, Tacloban City**	**13**	**32**
20-21 April 2005		**14**	**33**
25-26 April 2005	**Camelot Hotel, Quezon City**	**20**	**46**
28-29 April	**Astoria Hotel, Zamboanga City**	**18**	**56**
17-18 May 2005	**Sequoia Inn, Davao City**	**21**	**61**
19-20 May 2005		**14**	**35**
26-27 July 2005	Parkview Hotel, Iriga City[1]	1	12
4 Oct. 2005	*Provincial Capitol, Eastern Samar*	4	30
	24 courses	**257**	**937**
[1] Per request basis, [2] Pilot-test activity, In *Italics* – provincial level application, In **Bold**- joint courses			(M-, F-)

iv) Provision of follow-up technical assistance to ensure correct application of the IRAP tools by LGUs

The project ensured the tools were applied, follow-up missions were organised, and additional support to LGU was provided. During the course of implementation, collaboration with regional partner was carried out in areas where there are security concerns particularly in Mindanao. The ILO-DILG IRAP exercise trained regional institutions, aside from capacity installed at municipal and provincial level, to continue with the technology in the field. Findings of the monitoring missions revealed that majority of the LGUs adopted the tools to identify the subprojects. The DA Regional Field Unit (RFU) staff participated in the field work.

A total of 25 missions conducted and 81 LGUs were covered in the monitoring activities. A copy of the list of LGUs is ***Annex F***.

Activity 4 Co-ordinate with InfRES project staff and concerned agencies in integrating the IRAP agricultural sector related data into the identification and selection process for the project's communal irrigation facilities.

v) ILO IRAP national databank for project use

IRAP was not used in communal irrigation sector but assisted in the identification of access roads to be constructed within the influence area of the communal system. As agreed upon with InfRES, a duplicate copy of the IRAP national databank was established at the Project Office for the formulation of the procedure for communal irrigation subprojects. Another partner requested the datasets for their programming activities, the project conducted a briefing to the staff to appreciate the information.

Activity 5 Assist in modifying the rural access improvement impact evaluation procedure developed under IRAP to also serve the needs of the Project in terms of evaluating project impacts.

vi) Poverty impact procedure on rural road

Rural roads improve rural access, but induce both negative and positive impacts on its service area. The implicit assumption for InfRES is that improving rural access will increase rural productivity and impact positively on poverty reduction endeavors. These assumptions need to be validated to assess whether the investments were justified and draw lessons for future development projects. Various models for assessing impacts of rural roads have been developed over the years (RATP # 14, ILO ASIST-AP, March 2006).

The work involved the integration of IRAP access indicators in the formulation of monitoring and evaluation procedures to measure the project's poverty impacts. The project proposed to undertake a rural roads impact study, a terms of reference (ToR) was prepared but the proposal did not materialize. As agreed upon by both parties, the Project Office will pursue this as part of their ToR and work with the project to integrate the access indicators. Up to this time, there is yet no clear indication from the partner as to how to proceed with the activity. The project delivered its commitment despite the setbacks. A procedure to assess the impact of access infrastructure improvements on productivity enhancement and poverty reduction was developed. A copy of the tool is ***Annex G***.

The project thinks an opportunity to establish case studies on the impact of rural roads on poverty alleviation was missed. Similar applications in other countries, found to be successful, were done and InfRES could have benefited from the experience.

The discussions established that the output "the application of the tool in the identification of subprojects on water supply and rural roads and the poverty assessment tool" was attained. An additional output was the prioritization procedure for provincial level application was found to be effective and used by two provincial LGUs for the identification of their subprojects. A poverty impact tool was prepared but its implementation was not pursued due to reasons not within the control of the project.

Output 2. Alternative technologies in the capacity building of the LGUs on road and potable water supply planning and road maintenance provided.

This refers to two technical areas, infrastructure planning using IRAP and use of LBES method in rural road construction and maintenance. A set of tools for water supply and rural road planning were developed and applied by the LGUs. The modules were incorporated into the capacity-building programme of InfRES but the use of LBES did not prosper due to conflict in project policy.

The following activities helped attain the output:

Activity 6 Prepare and assist in delivery, and where necessary, conduct, training programmes on rural road maintenance planning and organization.

InfRES intends to make LGUs and beneficiaries responsible for the operation and maintenance of the infrastructures provided. The approach would ensure that completed facilities are being operated and maintained, and community organizations are strengthened to get involved in the routine maintenance, and to collect revenues to contribute to O&M costs.

vii) Rural Roads Maintenance Study (RRMS)

The project was also tasked to develop training programmes for effective maintenance of the roads to be provided to the LGUs. "It was agreed that to carry out this effectively it was necessary to understand more fully the current situation in relation to the maintenance of rural roads". A team of local experts carried out the work. "The study showed that there is a general lack of understanding of the need for preventive maintenance. The concept that roads need to be maintained to ensure that they do not deteriorate is alien to many dealing with roads in the LGUs. Roads are maintained when they are deteriorated to such an extent they are impassable or seriously damaged. This is illustrated by the fact that often where maintenance is mentioned as a budget item it refers to a specific remedial activity such as reforming or concreting a section of road". Based on the findings, the project recommended three key issues that need to be addressed "awareness-raising, institutional development, finance and capacity-building" (Maintenance Study in the Philippines, ASIST-AP, March 2006). A copy of the study is ***Annex H***.

The study was a significant contribution to the collaboration as it provided a face to the actual condition of maintenance of rural roads in the country. The study was expected to help design a framework for the effective provision of maintenance systems for the rural roads in the Project.

Two technical packages were produced to implement the recommendations of the maintenance study. These are the training program on the operation and maintenance (O&M) plan preparation and the Capacity-Building Program on the operation and maintenance. The O&M plan preparation training program is focused on preparation a document that spells out institutional responsibility, financial and capacity-building to maintain the infrastructure. The O&M Capacity-Building program centers on the procedures to implement the plan.

viii) Training program on the preparation of the operation and maintenance (O&M) plan of rural roads

The development of this program was not part of the original scope of work but mutually agreed upon to assist LGUs prepare the O&M plan for the *Implementation Memorandum Agreement (IMA)*. The Plan is a document that describes how an LGU-recipient will manage and maintain the infrastructure for the next 10 years. It is an important component of the IMA, the contract between the DA and the LGU. The Project felt that the O&M Plans as it stands now, lacked the essential ingredients to operationalise the responsibilities of the LGU.

The program was formulated based on an examination of the document attached to the approved IMA, the findings of the maintenance study and inputs of the Project Office. The improvements introduced also incorporated the outcome of the activities in two pilot areas where the need for LGU and community beneficiary collaboration and cooperation was highlighted. The program was designed to provide the technical staff of LGUs appropriate knowledge and skills to prepare the plan. Clearly, the product is a proposal how the LGU will manage and maintain the infrastructure over the next 10 years. It provides manpower, budget, collaborative arrangements between the LGU and the community beneficiaries, organizations and other users of the facility, and the implementation schedule of appropriate rural road maintenance activities. The preparation of the plan encourages the beneficiaries to be involved in the design, planning and construction processes through a series of public consultations between the local government leaders and intended beneficiaries. This component of the package is applied anytime starting from the conduct of the feasibility study until the drafting of the detailed engineering design (DED) of the infrastructure.

Three LGUs were assisted in the preparation of the O&M plans. The interactions with the LGUs and communities during the application of the program established that the technical assistance should remain as a hands-on skills development activity that can be completed in two days. The involvement of the DA regional field unit in preparing and providing the TA package could facilitate the skills transfer to the rest of the LGUs. A full discussion of the results of the development and application of the package is ***Annex I***.

ix) Capacity-Building Program on the operation and maintenance of rural roads

One of the commitments to the collaboration was the design and development of a capacity-building program that will provide the LGUs with methods, procedures and schemes to prevent the deterioration of the InfRES-supported roads and help prolong its useful life. The idea was to design a package to help the LGUs realize their commitments as stipulated in the Implementation Memorandum Agreement (IMA).

The training program was formulated based on existing relevant documents, the findings of the maintenance study, inputs of the Project Office and experience gained and lessons learnt by other foreign-assisted developments and concerned offices. The activities in the program take off from the commitments expressed by concerned parties in the O&M Plan, after a series of consultations with beneficiaries and other stakeholders within the FMR's service area.

The package covered raising awareness to better understand the dynamics of road deterioration for the formulation of appropriate preventive actions, hands-on skills development schemes for LGU offices and community organizations responsible for maintaining the roads, and developing and nurturing community-based organizations to optimize the use of limited resources and keep the transport infrastructures in its useful state. The use of LBES on the maintenance starts in the skills development component of the program. This is presented as an organizational and skills development package on road operation and maintenance of the rural roads. The pilot activity allowed the team to finalize the training program that is now ready for application in other FMRs supported by InfRES. A copy of the package and the results of the pilot activity is ***Annex J***.

The preparation of an *O&M Plan* and the conduct of a training program on *Operation and Maintenance of Rural Roads* are complementary activities that the LGUs should go through not only for their InfRES sub-projects but also for other infrastructures in their areas as well. It has been established that the right combination of leadership and resources are the two components that can help realize rural road maintenance objectives, and that active community participation should always be part of the maintenance scenario (Palarca, O&M Plan Preparation Training Program).

Other related output

x) Maintenance issues integrated in the project technical manual

The Project Office produced a manual on the *Design and Planning of Farm-to-Market Roads* providing "general design principles and the setting of design standards for single carriageway rural roads." The InfRES PCO presented the document to the technical assistance team for comments, particularly on the operations and maintenance aspect.

The project recommended that a section on road maintenance be part of the manual to impress upon the proponents the need to undertake maintenance activities even before actual road construction takes place. For instance, the side slopes have to be protected with grasses, legumes and/or small trees and shrubs once they are set in place. This means that selected plants would have to be propagated even before (or during construction) to save at least 50% of the plant material costs.

In addition, the preventive routine maintenance activity should be entrusted to the beneficiaries living near or around the infrastructure. Bringing these beneficiaries to participate in road maintenance would entail community organizing interventions, technical assistance on small community-based contract development and management, and conduct of an advocacy campaign focused on local decision-makers using the ILO approach on asset management as the rationale behind the awareness-raising endeavor.

The project recommendation on integrating slope protection at the onset of construction work, when feasible and efficient, was adopted by InfRES in one on-going construction and rehabilitation work of a farm to market road. The experience in the pilot LGU indicated how a creative and an enlightened leadership can effectively respond to local needs within its limited resources and capacity. The cooperation of the community beneficiaries is a testament to their willingness to participate in an undertaking where benefits accrue to them, especially if done through proper representation and coordination. The local chief executive, convinced of the usefulness of the recommendations in the road maintenance study, clearly exercised his political savvy for a mutually beneficial result.

Activity 7 Work with the concerned LGUs to promote and assess the feasibility of using LBES for the proposed construction and/or rehabilitation of roads.

xi) Promotion of LBES method and assistance to LGUs with their feasibility studies (FS) preparation

The objective to promote the technology and provide assistance to LGUs on subproject preparations was partly achieved after adjustments done during the implementation. The plan was to provide training to LGUs and when, necessary carry-out more detailed assistance through demonstrations on how farm-to-market roads (FMR) construction and/or rehabilitation systems could be improved by LBES. The LGUs that expressed interest were trained and assisted on FS preparation. Actual demonstration was not pursued due to policy issues of the project.

InfRES provides that subprojects can be implemented by contract or by force account in exceptional cases. However, ADB does allow the use of training funds to train contractors. Although, informally, it was agreed in principle that as long as training for contractors is subsumed under the budget for LGU training then, there was no objection on using the money to train contractors and LGUs staff. InfRES PCO ruled that the proposed arrangement would cause problems with the PO if their funds would be used for the training as the DA-PCI (PO) contract did not anticipate this activity. To resolve the impasse, it was agreed not to pursue the introduction of LBES for construction/rehabilitation but instead study its potential for the maintenance of rural roads. The objective of generating employment opportunities during construction through LBES method was not lost as it was pursued under the maintenance program. Maintenance work creates permanent employment opportunities as it is a recurring activity that requires more labour than equipment.

A number of outputs were accomplished on the provision of alternative technologies for LGUs on road and potable water supply planning and maintenance. The procedures on the identification and prioritization of subprojects for municipalities and provinces were used. The maintenance study, which replaced the work on LBES, provided a better understanding of the dynamics of maintenance at the local level. The O&M packages developed largely from the study findings are ready to be applied in the rest of the LGUs qualified to access InfRES funds. The products developed were tested and proved responsive to the needs and objectives of the Project. This showed the target was attained.

Output 3. **Advocacy on labour-based equipment supported (LBES) methods and small scale contracting developed, and training programmes for the LGUs conducted.**

Activity 8. As requested by LGUs, provide advice and assistance on the development of contract management systems and small contractor training.

9. Work with the Project to develop in-house support for LBES.

xii) Advocacy conducted, in-house support DA and project staff trained on the approach

Initial activities were implemented which resulted in partial capacity developed in the Project. As earlier discussed, activities were discontinued because of policy issues in the Project. However, objective of generating employment opportunities through the LBES method in the construction was not lost as it is still part of maintenance program. Maintenance activities, particularly preventive and routine actions required the use of more labour than equipment.

Other related output

Activity 10. Identify and define coordination activities for years 4 to 7

Based on the findings of the maintenance study, three major follow-through actions were proposed: i) Design and implement a capacity building program for the LGU technical staff and decision-makers on rural roads maintenance; ii) Develop an advocacy campaign to convince leaders and decision-makers on the merits and benefits of maintaining rural roads; and iii) Orient and train other concerned parties, like NGOs, community organizations and interest groups on proper rural roads operations and maintenance processes.

On the basis of timing, the first recommendation was achieved within the collaboration. The remaining items require more time and resources to implement so possible future joint actions can be considered along these lines. The engagement operationally ended 7 April 2006 and no discussion on the issue was pursued. The Department did not express interest for future joint activities.

Against this background, all documentation of the outputs produced under the collaboration will be officially submitted to the Department through the final report. The transfer of ownership of office equipment and furniture used in the project operations was done. A copy of the Deed of Transfer is ***Annex K***. The latest financial statement of expenditure is ***Annex L***. The final financial statement will be prepared after the last tranche of payment to ILO.

Chapter 3. IMPACT

The discussions in the previous chapter established the objectives of the collaboration were achieved, within the agreed period and resources. An equally significant output compensated for the non-use of LBES in LGU capacity-building on the construction and/or rehabilitation of rural roads. The employment objective of the approach was not lost entirely as it is still part of the road maintenance program. Under the framework of the project, LBES fits best in the maintenance activities of LGUs. The benefits derived from the results of the technical assistance provided are summarized as follows:

1) The application of the IRAP procedure involved participation of stakeholders to identify infrastructures to reduce poverty and improve agricultural profitability. The involvement encouraged consensus-building in an enlightened decision-making environment, provided a sense of community ownership that can lead to more efficient management and maintenance of the facility provided.

   The Project contends that participatory processes of rural infrastructure development, implementation, evaluation and monitoring must be guaranteed. The tools developed embodied this ingredient and monitoring activities ensured correct application of the tools. A total of 257 LGUs were capacitated on the tools, around 90% of the LGUs trained qualified are now in varying stages of preparation of their subproject feasibility studies.

   The mission report of the 3rd ADB Review Mission, Dec. 2004 that DA was satisfied with InfRES performance on IRAP.

   The procedure for provincial application was prepared as a response to recent move of InfRES to entertain provincial proposals. The move was received positively by the other provinces and LGUs that expressed interest and were provided technical assistance are into detailed preparation of the respective subprojects.

   The Project managed to respond to the need and encouraged more LGUs to pursue similar initiatives for efficient utilization of resources to attain targets.

2) The maintenance study provided a better understanding of the dynamics of maintenance. The findings of the study influenced the development of a framework for the provision of effective programmes to prolong the useful life of the infrastructure asset. Two packages were produced and ready for application.

   The O&M Training Program and the O&M Plan Preparation modules are the major components of the O&M Capacity Building Package, will be integrated in InfRES standard training programme. Although separated by at least 6 months, the two activities are directly related as the training program is anchored on the O&M Plan and its provisions. The activities take off from the commitments expressed by the concerned parties in the O&M Plan, which was formulated after a series of consultations with beneficiaries and other stakeholders in the FMR's service area.

   The package provides a platform for the attainment of the capacity-building objectives of the Project and prepare community organizations to maintain their infrastructure.

Chapter 4. FUNDS UTILIZATION AND THE OUTPUTS

The matrix below presents how the funds were utilized in the attainment of objectives indicating the results of work done per key result area.

Key result area	Amount Spent		Indicator/s of Success	Explanation
	(US$)	%		
Capacity on IRAP	70,366	35	Procedures for infrastructure planning and identification in place including procedure for province-assisted implementation; 5 technical papers prepared (4 modules used in the Participatory Subproject ID training course) poverty impact procedure on rural road developed); 257 LGUs covered (937 persons) , 25 batches of monitoring activities conducted, 90% of Lgus covered in FS preparation stage	Cost of travel missions, workshops, local staff
Capacity on O&M	72,927	36	Maintenance study completed (30 barangays, 15 mLGUs, 5 pLGUs studied); O&M capacity-bldg package plan preparation & actual maintenance) developed, training materials in place; 3 LGUs trained, 3 O&M plans in place; nine-member maintenance crew trained.	Cost of travel missions, training, local consultants, local staff
Capacity on LBES			5 core LGUs, 5 regional staff, project staff capacitated on the technology	ASIST AP funds International experts, workshop, travel missions
Project support	56,707	29	1 full-time local staff	Staff, equipment, miscellaneous costs
Total	**200,000**	**100**		

The salary of a full-time local staff was distributed in the technical components as the ToR called for technical assistance more than administrative support in the implementation of the activities. Fifty 50% was spent on the IRAP component, the remaining on O&M and project support components in equal proportion.

The conduct of joint activities with the Project Office on the *Participatory Subproject Identification training course* was a cost efficient arrangement. As a result, sufficient program support was made available to pursue the maintenance study and the O&M capacity-building package development.

ASIST AP provided additional funds in the implementation of some activities. This covered activities on LBES, cost of consultants, workshop and travel missions of non-InfRES staff. A copy of the report is ***Annex M.***

Chapter 5. LESSONS LEARNT

Valuable experiences and insights can be drawn from the interactions with partners in the implementation of the activities in the collaboration. These are summarized in the following:

1) Positive gains of ILO-implemented projects influenced other development programmes to utilize tools developed. The engagement in InfRES stemmed from previous IRAP experiences in the country and elsewhere. As early as the formulation stage of the project in 1999, ADB and DA expressed interest over the ILO-developed planning tool and make use of technical capacity the IRAP project installed in LGUs for the planning of infrastructures to be funded under the ADB-DA project.

2) The ILO presence in the project prove that it can influence large investment programmes considering that the infrastructures funded under InfRES range from $250,000 to a maximum of $5M in each proponent LGU.

3) The engagement proves there is a strong potential to further develop rural road maintenance modalities using the ILO labor-based equipment-supported methods (LBES) and procedures. The pilot activity in San Jose, Occidental Mindoro is a testament to LBES usefulness not only in keeping the infrastructure in its useful state but also in effectively harnessing available local manpower near and around the FMR through local institutional development and/or strengthening.

4) The ILO is recognized as the authority on LBES. However, the experience in other countries must be carefully weighed against local policy, practices, capacity, manpower availability and institutional and administrative infrastructures, before any attempt at introducing foreign-based lessons is made. It is not surprising for LGUs to exhibit early resistance or outright disregard for the technology if conflicting signals emanate from project implementers, just like what happened between the ILO and the PO. The debacle unfortunately led to cold treatment both from the DA and the target local government.

5) The Project design does not reinforce the ILO approach on LBES, which is presented as a "by administration or force account" package. Unfortunately, the InfRES project design specifies that construction should be done by contract and the ILO was not able to address the confusion resulting from the mixed signals coming from the project. These two divergent views in a way discredited the LBES technology as not applicable because of the nature of its implementation. Although attempts at damage control were done, they came a little too late.

6) The Rural Roads Maintenance Study (RRMS) proved that a purely engineering solution does not result in actual maintenance of the infrastructure. The O&M Plan preparation training module proved that the issue can be addressed by first laying the groundwork for the establishment of local institutions, through diaglogue and consultations with all the stakeholders, that will take on the responsibility of doing actual maintenance work. This has to be reinforced with a clear sharing of manpower and fiscal resources through a collaborative arrangement between the LGU and the beneficiary barangay, and through the provision of handtools and field demonstrations of appropriate maintenance activities.

Chapter 6. RECOMMENDATIONS

The ILO participation in the InfRES Project helped formulate a set of recommendations to guide the implementation of future similar initiatives. One outstanding achievement in the collaboration is the formulation of the Operation and Maintenance Capacity Building Package that embodies the lessons learnt in the 3-year engagement. This package is envisaged to be useful intervention for any rural infrastructure development initiative. The following highlights the recommendations.

1) Develop an advocacy campaign to convince decision-makers on the merits and benefits of maintaining rural roads. The RRMS and succeeding local-based activities on maintenance established that leadership, resources and community participation are important ingredients needed for a successful road maintenance program of the LGU. This realization calls for waging an advocacy campaign that will highlight the need for proper, appropriate and timely rural roads maintenance and convince local decision-makers, beneficiaries and road users on the wisdom in keeping rural infrastructures useful. It is certain the advocacy campaign will be a protracted struggle such that steps should be taken to explore the possibility of incorporating the consciousness on rural road maintenance in the curricula of educational institutions, starting even at the primary level.

2) Design and implement capacity building program for technical staff and decision-makers on rural roads maintenance. Most technical staff of the local government units responsible in overseeing rural roads operations and maintenance admit that they are not trained on proper and appropriate rural roads maintenance technology and schemes. The package on O&M developed by the ILO addresses the issues identified in the RRMS. However, it has been noticed that most skills development training programs are attended by managers and leaders of small fiefdoms that actual conduct of maintenance activities are delegated to those who were not trained and did not in any way acquire the skills transferred to their superiors. The training program for decision makers and technical staff should be treated differently compared to the hands-on on-site skills acquisition interventions to be given to those who will actually patch ruts and potholes, clear drainage channels, culverts, etc.

3) Orient and train other concerned parties, like NGOs, community organizations and interest groups on proper rural roads operations and maintenance processes. Rural roads operations and maintenance is not only a concern of LGUs and beneficiaries but by other interest groups like NGOs and on-going projects as well. Most foreign-assisted development projects oblige beneficiary LGUs to commit to maintaining the infrastructure even after the assistance is finished. A committee constituted to oversee such activity should be familiar and aware of the road maintenance needs to guide their actions and decisions. As barangays are at the forefront of rural road maintenance activities, residents can be tapped to organize and be trained as maintenance crew to do slope protection, vegetation control and/or cleaning and clearing of side drains.

   Foreign-funded infrastructure initiatives, like the ADB-DA InfRES Project, oblige LGUs to commit to the maintenance of the investment. A body, like the Sub-Project Maintenance Board (SPMB), is constituted to oversee such activity. To ensure that infrastructure should indeed be provided with the proper guidance, the members of the said board should also be made familiar with rural road maintenance and be provided with practical inputs in conducting their duties. These will give them the awareness to monitor, communicate more efficiently with people doing the actual work, and facilitate in reaching a consensus on matters relating to the upkeep and maintenance of the infrastructure.

4.) Document good practices to demonstrate effective maintenance programs. The ILO technical assistance team in InfRES has generated enough documented outputs as well as field experience to showcase its outputs for other LGUs and similar infrastructure development endeavors. The published rural road maintenance manuals and guidelines, focusing on purely engineering solutions, can be improved by adding the team's outputs and experience in the ADB-DA project. The engineering component of the manual has been proven useful to some extent, but still needs the support of local institutions and organizations composed of residents from barangays within the infrastructure's service area. The augmentation on the new maintenance manual will add institutional strengthening and resource mobilization as an integral part of the road maintenance guide.

5) Tap DA-RFU network for wider delivery of inputs to LGUs. Throughout the 3-year involvement of the ILO in InfRES, the Rural Field Unit (RFU) from the regional offices of the DA have been given minimal opportunities for participation. As early as 2004, the RFUs have been clamoring for greater participation only to be denied by the former PO management. It was towards the later part of the project, when everyone realized that warm bodies on the ground are needed to augment the lack of PO manpower that greater involvement was provided to the RFUs. However, by that time a number of opportunities passed and the InfRES Project continued to be a picture of under-achievement, infrastructure-wise. It is recommended that in similar endeavors covering a wide area, it is wise to tap the agency's extension on the ground, give them significant participation and responsibilities but ensure that they are equipped with the skills and the mindset to deliver through a capacity building program designed specifically for them.

REFERENCE

1. Rural Roads Maintenance in the Philippines, Final Report, ILO, July 2005
2. Training Program O&M Plan Preparation, Process Documentation Report, ILO, Nov. 2005
3. O&M Capacity-Building Program, Pilot testing activity in San Jose, ILO, April 2006
4. Inception Report, ILO, Nov. 2003
5. 2nd, 3rd & 4th Progress Reports, ILO
6. ILO DA contract of Services, March 2003
7. Maintenance Study in the Philippines (Digested Version), ASIST AP, March 2006
8. Mission Reports, ADB Annual Review, Dec. 2004 & 22 Dec. 2005
9. ILO Terms of Reference
10. Various reports of consultants

ANNEXES

ANNEX A

Technical Assistance

INFRASTRUCTURE FOR RURAL PRODUCTIVITY ENHANCEMENT SECTOR (INFRES) PROJECT

5th PROGRESS REPORT

(June 2005 to April 2006)

INTERNATIONAL LABOUR ORGANIZATION

April 2006

TABLE OF CONTENTS

Acronyms i

1.0 Background
- 1.1 Structure of the report 1
- 1.2 Scope of Work 2

2.0 Coverage of the reporting period 3
- 2.1 Summary of activities 11

3.0 Personnel 16

4.0 Impact 17

Annexes
1. Workplan
2. Maintenance study presentation materials
3. Comments on InfRES Technical Manual on Planning of FMRs

ACRONYMS

ADB	Asian Development Bank
ASIST AP	Advisory Support Information Services Training-Asia Pacific
DA	Department of Agriculture
DILG	Department of the Interior and Local Government
FS	Feasibility Study
ILO	International Labour Organization
IMA	Implementation Memorandum Agreement
InfRES	Infrastructure for Rural Productivity Enhancement Sector
IRAP	Integrated Rural Accessibility Planning
LBES	Labour-Based Equipment Supported
LGU	Local Government Unit
MRDP	Mindanao Rural Development Program
NGO	Non-government organization
O&M	Operations & maintenance
PCO	Project Coordinating Office
PCI	Pacific Consultants International
PO	Project Office
RFU	Regional Field Unit
RRMS	Rural Roads Maintenance Study
SPMB	Subproject Monitoring Board
ToR	Terms of Reference

Department of Agriculture
Infrastructure for Rural Productivity Enhancement Sector
(InfRES) Project
International Labour Organization
Advisory Support, Information, Services and Training for Asia and the Pacific
ILO ASIST-AP

FIFTH PROGRESS REPORT

1.0 Background

The International Labour Organization (ILO) is collaborating with the Department of Agriculture-Infrastructure for Rural Productivity Enhancement Sector (InfRES) Project aimed to strengthen local capacity on rural infrastructure development. InfRES, with funding support from the Asian Development Bank (ADB), is designed to reduce poverty by improving agricultural profitability through provision of rural infrastructures such as farm-to-market roads (FMR), water supply and communal irrigation facilities for local government units (LGUs) in Region 4-B (island provinces except Palawan), Bicol, Eastern Visayas and Mindanao.

ILO's involvement in the InfRES Project is to provide advisory and technical services on local resource-based approaches in infrastructure development. The involvement provides that the ILO-developed Integrated Rural Accessibility Planning (IRAP) technology for the identification and planning of subprojects on water and rural roads and use of labour-based equipment supported (LBES) methods for the operation and maintenance of the infrastructures. The project is managed and supervised by the Advisory Support, Information, Services and Training for Asia and the Pacific (ASIST-AP), an ILO regional technical programme involved in sustainable rural infrastructure development in the Philippines. ASIST aims to mainstream sustainable strategies of poverty alleviation through improved rural access to employment opportunities and to economic and social goods and services. The collaboration between the ILO and DA is envisaged to create synergy that will strengthen the project's institutional and technical capacity as well as that of the target beneficiary communities through the use of local resource-based approaches to rural infrastructure development.

The engagement is for three years, which started early part of 2003 and expected to end on 7 April 2006.

This report describes the activities and outputs during the period June 2005 to April 2006.

1.1 Structure of the report

Section 1 provides the background, objectives and scope of work, 2 covers the accomplishments, 3 is about the project personnel and 4 is the impact of the activities and outputs. Relevant documents in support of the work done are in the Annexes.

1.2 Scope of work

Largely, the activities were on the development of the Operation and Maintenance (O&M) Capacity-Building Package consisting of the training programs on the O&M plan preparation and on the actual operation and maintenance of the rural road. The maintenance study conducted before the formulation of the O&M package provided a better understanding of the actual maintenance conditions at the local level and helped design a responsive program that can check and/or prevent the deterioration of the infrastructure assets. The project continued with technical assistance on IRAP but the activities were mostly follow-up to LGUs trained to ensure correct application of the tools.

The approved work programme is ***Annex 1***.

2.0 Coverage of the Reporting Period

Two main outputs were accomplished during the period, these are i) development of a prioritization procedure for province-assisted implementation, ii) development of the O&M capacity-building package on the preparation of the plan and actual O&M activities of the FMR. A summary of activities is presented at the end of the section.

The following results were achieved during the implementation of the activities:

Output 1. Application of IRAP process in the planning and identification of subprojects on water and rural roads.

i) Development of a prioritization procedure for province-assisted proposals

InfRES encouraged provincial LGUs to submit proposals to develop agricultural support infrastructures for the municipalities in their respective areas. Provincial-assisted implementation requires for the formulation of a procedure that considers elements that exert significant influence on provincial development directions, looks beyond municipal boundaries but remains focused in bringing the desired impact on municipal agricultural productivity.

The project developed a simple provincial infrastructure identification and prioritization procedure patterned after similar and successful applications in Laos, Cambodia and Indonesia and embodied the participatory ingredient of InfRES. This approach involved the conduct of a consultation-workshop to be participated in by municipal and barangay key informants to update and validate the sets of relevant information to guide provincial actions in identifying and prioritizing agricultural support infrastructure sub-projects. The procedure was pilot-tested in Albay province, found to be effective, and can now be used to assist other provinces wishing to avail of InfRES technical and financial assistance. A copy of the provincial prioritization procedure is *Annex E, Final Report.*

The province of Eastern Samar in Visayas region also received technical assistance on the prioritization procedure. The provincial governor in his message at the opening ceremonies of the consultation-workshop on 4 Oct. 2005 (see photo at the right side) enjoined the municipal mayors and other stakeholders to maximize the opportunity to access the funds of the Project. Mr. Graham Johnson-Jones, team leader of the InfRES Project Office (PO) reiterated the requirement to ensure full participation of stakeholders in the identification of the proposed subproject.

The participants appreciated the exercise, it gave them a common language to understand the present situation and how this relates to the bigger picture. The consensus of the group was to pursue a proposal on communal irrigation development to cover 4 municipal LGUs. The intervention was envisioned to increase the agricultural production of the province as the area has huge potential but remains underutilized due to lack of irrigation facilities. In addition, the proposal will complement the proposal of the municipalities on farm to market roads in InfRES.

ii) Technical assistance on IRAP to municipal LGUs

The project conducted monitoring activities to 35 municipalities and 1 province trained on *Participatory Subproject Identification* to ensure correct application of the IRAP procedures. In

selected areas where it is not feasible for project staff to travel due to security concerns, the project sought the assistance of a regional partner to conduct the activities on behalf of the project. The ILO-DILG IRAP Phase III Project trained regional staff of the DILG, NEDA and state universities and colleges (SUCs) to serve as warm bodies in the field on the procedure. The staff based at DILG in Zamboanga City was tapped to conduct the follow-up activities in the LGUs in in region 9 together with the DA-RFU staff. Findings of the missions showed that majority of municipalities visited followed the prescribed approach. Additional technical inputs, when necessary, were provided ensure adequate transfer of knowledge and skills. The table below shows the monitoring activities conducted.

Table 1. Monitoring activities /on-site technical assistance

Region	Province	Municipality	# of LGUs covered	Inclusive dates
9	Zamboanga del Sur	Bayog, V. Sagun, Ramon Magsaysay, Aurora, Tabina, Tigbao	7	]6-10 June 2005
	Zambo Sibugay	Titay, Diplahan, Buug, Payao, Mabuhay,Naga, Imelda	7	
11	Davao del Sur	Tarragona, Caraga	2	25-26 June 2005
10	Misamis Oriental	Binuangan, Balingasag, Jasaan	2	28 June 2005
		Claveria, Libertad	2	29 June 2005
5	Albay	Malilipot, Sto Domingo, Ligao City	3	25 July 2005
		Libon	1	27 July 2005 8-9 Sept. 2005
	Camarines Norte	Sta. Elena	1	17 Aug. 2005
	Albay	Provincial-wide: Daraga, Camalig, Guinobatan, Ligao City, Pio Duran, Jovellar, Oas, Libon	9	6-20 Oct. 2005
		Guinobatan	1	8 & 19 Oct. 2005
		Camalig	1	10 & 18 Oct. 2005
		Total	**36**	**11 batches**

In addition, InfRES prescribed, in its selection criteria, that LGUs interested to participate in the Project have been trained on IRAP or any similar participatory approach. The project provided technical assistance to one LGU in Camarines Sur, Bicol region to comply to the criteria. A training was conducted to the technical staff on 26-27 July 2005 on the identification of the proposed subproject. The activity was capped by the issuance of the LGU sought certification on IRAP.

iii) Poverty impact monitoring tool

As discussed in the previous progress reports, the development of the tool is jointly with the Project Office consultants. The project prepared an impact tool but no discussion on how to proceed with the activity is done. A follow-up discussion to the PO Monitoring & Evaluation (M&E) Specialist on 1 February 2006 indicated no development on the activity. The project delivered its commitment despite the setbacks. A copy of the tool is *Annex G, Final Report*.

Output 2. **Alternative technologies in the capacity building of the LGUs on road and potable water supply planning and road maintenance provided.**

InfRES intends to make LGUs and beneficiaries responsible for the operation and maintenance (O&M) of the infrastructures provided. The approach would ensure that completed facilities are being operated and maintained, and community organizations are strengthened to get involved in the routine maintenance, and to collect revenues to contribute to O&M costs.

One of the commitments of the project was the design and development of a capacity-building program on the operation and maintenance of rural roads. Five activities were accomplished, the maintenance study which helped the formulation of the training programs on the O&M plan preparation, and the actual maintenance of the rural roads, application of the package in selected LGUs and integration of maintenance concerns in relevant technical manual of the Project.

iv) Rural roads maintenance study

The study aimed to provide a better understanding on how LGUs manage infrastructure assets with the resources, technical capacity and decision-making flexibility within the current local governance and development policy environment. The findings of the study were presented to the Project during the InfRES Semi-Annual Meeting in Davao City on 19-20 July 2005. The project emphasized that in view of the findings that most LGUs do not maintain their rural roads, the InfRES road construction approach should be reviewed and if possible, incorporate preventive maintenance activities during construction. Success stories and experiences of the ILO ASIST-AP in other developing countries were presented to demonstrate how this adjustment in the infrastructure development by the LGUs can lead to beneficial results. The project thinks that with the inclusion of preventive maintenance activities during construction, the adjusted cost should include allocations to cover initial activities like plant material collection and propagation and if necessary, the establishment of a plant nursery in a barangay willing to participate and take on the responsibility. A copy of the presentation materials is ***Annex 2***.

The project was invited by the Project Office to present the findings to the local government authorities and beneficiaries of the San Jose (Occ. Mindoro) FMR subproject. The presentation before the Provincial Governor, Municipal Mayor of San Jose, municipal and provincial planners, engineers, agriculturist, barangay leaders, NGOs and community organization representatives was the first occasion to get direct reactions from the local government leaders and stakeholders. The local authorities and technical staff agreed to most of the findings especially on the actions (or inactions) of LGU authorities with regard to road maintenance. The local administrators admitted that most LGUs have limited resources that must be spent on several basic goods and services delivery. The local chief executives said that they are politicians who have to maintain good relations with the constituents such that they have to constantly accede to various requests for funding support, like construction or repair of barangay halls, rehabilitation of communal water supply, contribution to town fiestas, benefit dance, etc. The barangay representatives stated that they too have limited resources and capacity that they are compelled to seek assistance from outside sources.

Another objective of the mission to San Jose was for the project to look at an ongoing FMR subproject and explore ways to integrate preventive maintenance activities even during road construction. The road is 7.5 kilometers and costs Php 11.35 million and is the first of the 9 core-subprojects to be constructed. The visit allowed on-site interactions with a decision-maker who has just witnessed a presentation of how road maintenance is incorporated right at construction stage. The Mayor promptly advised the Municipal Engineer and the contractor to institute side slope protection measures similar to what is recommended in the project presentation. It was further suggested that the side slopes to be covered with *carabao grass,* a planting material that grows abundantly near the site. The Project Engineer said that the grass could be easily transplanted as soon as the side slopes are ready. Photographs sent to the project after the visit revealed that indeed grass neatly covered the side slopes. Other photographs confirmed that the Mayor mobilized the community to do the side slope protection.

Discussions with the Project Office after the presentations in Davao City and Occ. Mindoro indicate agreement in integrating preventive activities even during sub-project construction. The PO informed the project that the grass protection provided on the side slope worked when the river near the project overflowed after several days of heavy rains. A portion of the unfinished road was washed away prompting the LGU to temporarily suspend the work. Photographs (see picture at the left side) also showed that the grass covered sections of the side slope remained intact indicating that the intervention indeed worked. This is a significant development in the light of the project's commitment to design and develop a capacity building program to ensure proper operation and maintenance of the infrastructures.

Based on the recommendations of the study, the project proposed to undertake these activities: 1) design and implement a capacity building program for the LGU technical staff and decision-makers on rural roads maintenance; 2) develop an advocacy campaign to convince leaders and decision-makers on the merits and benefits of maintaining rural roads; and 3) orient and train other concerned parties, like NGOs, community organizations and interest groups on proper rural roads operations and maintenance processes. Within the engagement period, the project can only implement the first recommendation. However, the project believed the implementation of this activity maybe rendered meaningless unless a strong and sustained advocacy campaign will be waged to convince decision-makers to appropriate the necessary resources for the prescribed maintenance activities. At the same time, the third recommendation is equally important as it will create a common and broader perception on the importance of rural roads maintenance. This will set the stage for ensuring the optimal use of this rural transport infrastructure. Therefore, second and third recommendations should be given serious consideration. Considering the resource requirements of the proposed actions and time limitation, both parties agreed to pursue the design and implementation of a capacity building program for the technical staff and decision-makers and to conduct pilot testing activity of the program in the municipality of San Jose.

v) Development of the training module on the O&M plan preparation

This was requested by InfRES in anticipation of the LGU's needs in preparing the needed document that expresses their commitment to the maintenance of the proposed infrastructure. The

document will be part of the *Implementation Memorandum Agreement (IMA)*, indicating responsibilities and commitments between the LGU and the DA for the construction of the agriculture productivity enhancement infrastructure. The need for the technical inputs was reiterated by the InfRES Project Coordinating Office (PCO) Manager and later discussed in a series of meetings with the PO as to how the O&M plan preparation training module can be incorporated in the Feasibility Study (FS) Training Course to be conducted by the InfRES service provider.

The first step was to research on unit costs, labor and equipment productivity standards, maintenance practices and other relevant information needed in determining maintenance costs requirements. The research included maintenance cost figures used by LGUs, donors and relevant government agencies.

The project attended the Training Course on FS Preparation on 12-15 July 2005 in Tacloban City to determine how the topics in the O&M plan preparation training can be integrated into the training program. It was observed that the FS training course covers a number of components that are presented in general terms and do not necessarily refer to a specific infrastructure project. Unlike the proposed O&M plan preparation course, which was designed to deal with a particular infrastructure sub-project. Considering the nature of the FS preparation, the O&M plan preparation course should be therefore conducted as a separate activity and not be incorporated into the FS training program.

The project was presented with the IMAs of San Jose, Occidental Mindoro and Jiabong, Samar. Both LGUs belong to the 9 core-subporjects identified by the Project preparation mission in 1999. The PCO commented earlier that the O&M documents need elaboration to be operationalized by the LGUs themselves. Review of the two O&M documents revealed lack of details that will facilitate its implementation and provide continuity, in the light of the possibility of a complete change of LGU administrators every 3 years. It was obvious that both O&M plans are more of a financial statement of maintenance activities and expected expenditures.

The project thinks that an O&M plan should be a stand-alone document that will guide and facilitate LGU maintenance interventions, provide basis for monitoring and lay the foundation for LGU-stakeholder collaboration. The O&M plan must have the needed details, strategies, information and technology on how to address the cope with the limited LGU capacity to prolong the infrastructure's useful life.

The PO agreed with the project that the O&M Plan in the IMA is more of a work and financial plan and can still be improved by considering the following:

- Institutional development initiatives to evolve the organization that will oversee implementation of maintenance activities over the next 10 years
- Statement of need and potential commitment for collaboration between the LGU and barangays
- Collaborative arrangements that would spell out commitments of both financial and manpower resources
- Regular and other sources of funds
- The improved O&M Plan should not be a big document

The PO Team Leader (TL) stated that there is no problem collaborating with the project in providing technical assistance to the LGUs, but agreed that the FS and the O&M Plan preparation modules cannot be integrated because of management issues and the incompatibility of the modules' contents. He pointed out that the LGUs trained on FS preparation are still preparing their respective DEDs, while the O&M Plan preparation module needs the DEDs to demonstrate the preparation of a realistic maintenance plan.

The TL advised that O&M plan preparation module should be applied to LGUs that have received approval and endorsement from the Regional Technical Committee (RTC) and are preparing for the IMA signing.

A copy of the report of the development of the training module is *Annex I, Final Report.*

vi) Application of the O&M plan preparation training program

The municipalities of Talisay in Camarines Norte and Initao in Misamis Oriental were selected as sites of the pilot testing exercises conducted on 26-27 Sept. and 13-14 October 2006 respectively. The activity consisted of classroom discussion, field visit and barangay consultation. The technical briefing touched on the following topics: road maintenance activities, maintenance activity forecasting based on understanding of the changing season and climate, applications of maintenance activity by road segments, unit costs and productivity standards. The technical inputs not only provided sound basis and make easy the computations of the budget requirements by the technical staff, but also enhanced local capacity to prepare the document that will lay the groundwork for a good number of follow-through actions such as institutional strengthening, organizational development (that can detail functions and responsibilities in the envisaged LGU-barangay collaboration), expression of commitment by beneficiaries and barangays and how this commitment can be realized, and identification of potential sources of funds to undertake the needed maintenance actions.

The field visit provided an opportunity to get first hand information on prevailing environmental conditions, materials availability, and openly discuss with the community beneficiaries the types and forms of deterioration expected to happen, and how these can be properly addressed considering the capacity of the LGU and community. The picture at the left showed the local consultant of the project giving instructions to the technical staff prior the walk-through exercise on the proposed road.

The barangay consultation, a follow-through of the first one conducted in identifying and prioritizing the road segments, was designed to solicit information about on-site experiences of beneficiaries regarding road operations and maintenance and was also consistent with the InfRES objective of attaining active community participation and involvement in the envisaged road maintenance work. The barangays are the key informants and the acknowledged authority regarding conditions in their respective areas, particularly on the use and management of barangay roads and therefore serve as a rich source of ideas and relevant information for the O&M plan. The recognition and acknowledgement given by the LGU to the residents' role through the consultation contribute in developing a sense of ownership of the infrastructure and hopefully reinforce collective efforts aimed at prolonging its useful life. The mayor of Talisay, in the picture at the right side above, expressing appreciation to the barangays for their continued support and cooperation in the subproject despite the long haul to realize their road project.

The results of the pilot activities helped fine-tune the O&M Plan Preparation training program. The finalized O&M plans of the 2 municipalities are included in the IMA signed between the LGUs and DA. A copy of the plans is *Annex I, Final Report.*

The municipality of San Jose, Occ. Mindoro was the first LGU to train on the finalized O&M Plan preparation training course. The LGU, one of the 9 InfRES core-subprojects under InfRES, has been identified to improve the operation and maintenance plan of its 7.5-kilometer farm-to-market

road (FMR) currently undergoing rehabilitation. In San Jose, the approved O&M financial plan was in the signed IMA, indicating official adoption by the LGU. However, it has been observed that the O&M Plan, which was actually an LGU proposal outlining how the infrastructure will be managed and maintained for the next 10 years, was silent on how and when are the appropriate maintenance activities are to be applied.

The briefing for the Mayor emphasized the need to harness the barangay beneficiaries for the actual maintenance work. A meeting with the LGU task force followed to discuss how the needed participation of the beneficiaries can best be achieved. An outline of an O&M Plan, maintenance productivity standards, and the mathematical procedure to determine budgetary requirements for 10 years were presented and demonstrated. For its part, the task force presented the DED and identified the key leaders of the two barangays benefiting from the FMR. Barangay leaders and residents, as they are at the forefront of road operation and maintenance, are acknowledged sources of information and inputs in improving the O&M Plan.

The finalized O&M plan of San Jose was used in the discussions during the conduct of the training on the capacity-building program on the O&M on 20-23 March 2006. A copy of the LGU plan is *Annex J (Annex 6), Final Report.*

Vii) Development of the O&M Capacity-Building Program

In the design, due consideration was given to lessons and experiences in the pilot municipalities of Initao, Misamis Oriental and Talisay, Camarines Norte, the interactions with LGU administrators and technical staff, implementors of similar foreign-assisted development projects and the findings of the maintenance study. The activities in the program take off from the commitments expressed by concerned parties in the O&M Plan, after a series of consultations with beneficiaries and other stakeholders within the FMR's service area.

The package covered raising awareness to better understand the dynamics of road deterioration for the formulation of appropriate preventive actions, hands-on skills development schemes for LGU offices and community organizations responsible for maintaining the roads, and developing and nurturing community-based organizations to optimize the use of limited resources and keep the transport infrastructures in its useful state. The use of LBES on the maintenance starts in the skills development component of the program. This is presented as an organizational and skills development package on road operation and maintenance of the rural roads.

The municipality of San Jose was selected was the pilot site of the training program because it was the most ready LGU for the package. The four-day activity consisted of lecture-discussions and hand-on-on-site demonstration and application of appropriate road maintenance procedures. The training course takes off from the O&M Plan and is designed not only to share information but also to address the lack of technical capacity among beneficiaries and users of the FMR. The participants are the technical staff assigned in the planning and engineering offices and the 9-member maintenance crew recruited to work on the InfRES FMR. They indicated keen interest in understanding the technology and in learning how to manage and maintain the FMR. Also, they expected to acquire practical skills and be able to use tools and labour-based techniques in conducting the preventive routine maintenance activities. The pilot testing in San Jose provided the project with inputs to finalize the program and is now ready for application in other FMRs supported by InfRES. A copy of the O&M Package and the results of the pilot test activity is *Annex J, Final Report.*

vii) Maintenance issues integrated in the InfRES Technical Manual

The PCO presented the document to the project for comments, particularly on the operations and maintenance aspect. The project recommended that a section on road maintenance be part of the manual to impress upon the LGU proponents the need to undertake preventive maintenance activities even before actual road construction takes place. The preventive routine maintenance activity should be entrusted to the beneficiaries living near or around the infrastructure. Bringing these beneficiaries to participate in road maintenance would entail community organizing interventions, ILO technical assistance on small community-based contract development and management, and conduct of an advocacy campaign focused on local decision-makers using the ILO approach on asset management as the rationale behind the awareness-raising endeavor. A copy of the comments of the project is ***Annex 3.***

The project recommendation on integrating slope protection at the onset of construction work, when feasible and efficient, was adopted by InfRES in one on-going construction and rehabilitation work of a farm to market road. The experience in the pilot LGU indicated how a creative and an enlightened leadership can effectively respond to local needs within its limited resources and capacity. The cooperation of the community beneficiaries was a testament to their willingness to participate in an undertaking where benefits accrue to them, especially if done through proper representation and coordination. The local chief executive, convinced of the usefulness of the recommendations in the road maintenance study, clearly exercised his political savvy for a mutually beneficial result.

2.1 Summary of Activities

Component	Key result area	Activity	Duration/Venue	Results	Areas for follow-up/Remarks
1. IRAP	Application of IRAP in the planning and identification of subprojects on water and rural roads	Conducted follow-up activities to LGUs to ensure correct application of the tools	6-10, 25-26 & 29-30 June in region 9 & 10 LGUs 25&27 July in region 5 (Albay province) LGUs 17 Aug. in Sta Elena (Camarines Norte) 8-9 Sept, Libon (Albay) 6-20 Oct. Albay province 8&19 Oct. 2005/Camalig 10&18 Oct. 2005/Guinobatan	Covered 35 mLGUs and 1 pLGU; ensured the subprojects complied with the design of the Project, to ensure participation of stakeholders in the planning and identification of proposals.	Results of field missions provided to concerned RFUs and PO ZPO for consideration and appropriate action.
		Provided technical assistance on IRAP.	26-27 July, Parkview Hotel, Iriga City	Applied the approach for the subproject.	LGU-sought certification on IRAP issued.
		TA on procedure prioritization procedure	4 October, Eastern Samar	Stakeholders agreed to pursue communal irrigation proposal.	

Component	Key result area	Activity	Duration/Venue	Results	Areas for follow-up/Remarks
2) Develop capacity of LGUs to operate and maintain rual roads	Prepare capacity-building program for LGU on the operation and maintenance of rural roads	Developed maintenance module for FS training course	12-15 July, Tacloban City	Attended the 5-day FS training program to determine how the topics in the O&M Training can be integrated into the FS training program. Considering the nature of the FS preparation, the O&M plan preparation module should be conducted as a separate activity and not to be incorporated in to the FS training.	To conduct pilot test activity of the O&M plan preparation training program in selected LGUs who are about to sign the IMA.
		Presentation of findings of the maintenance study to: 1) InfRES (Semi-annual meeting) 2) Local government unit of San Jose	19 July, Davao City 25-26 July, San Jose, Occ. Mindoro	Presented the updates and status of the project workplan and results of the maintenance study and its significance to the Project. Advised San Jose to include preventive maintenance activities during construction stage.	Among the recommendations: inclusion of preventive maintenance activities at construction stage, development of maintenance package to be pilot-tested in the core-subproject. San Jose committed to mobilize community for the task.

Component	Key result area	Activity	Duration/Venue	Results	Areas for follow-up/Remarks
2) Develop capacity of LGUs to operate and maintain rual roads	Prepare capacity-building program for LGU on the operation and maintenance of rural roads	Pilot test activity of the O&M plan preparation training program	26-27 Sept. , Talisay (Camarines Norte) 13-14 Oct. Initao (Misamis Oriental)	The activity not only provided sound basis amd make easy the computation of the budget requirements by the LGU, but also enhanced local capacity to prepare the document that will lay the groundwork for a good number of follow-through actions such as institutional strengthening, organizational development, expression of commitment by beneficiaries and barangays and how this commitment can be realized, and identification of potential sources of funds to undertake the needed maintenance actions.	
		Application of the finalized O&M plan preparation training program in a core-subproject	8-9 Dec. San Jose (Occ. Mindoro) 9-11 Feb 2006, San Jose	LGU staff trained on the preparation of the 10-year O&M Plan. Follow-up visit to ensure correct implementation of agreed actions.	LGU committed to submit the O&M Plan within the month. Conduct of the pilot activity towards 4th week of March.
		Field visit to generate inputs for the O&M capacity-building program formulation.	19-26 January Gutalac, Zambo Norte DAR-Zambo Norte (ARCDP) MRDP, Davao City Makilala, N. Cotabato	The project gathered substantial insights and lessons learned from the interactions with the regional and local partners as well as communities on their experiences on actual maintenance of rural roads. Cooperatives can be conduits on such initiatives as they directly benefit from the services of the infrastructures. Leadership and resources are good combinations of must haves in order to ensure sustainability of the created assets. Lastly, capacity-building package on road maintenance should include financial and institutional aspects as maintenance is not just an engineering solution.	
		Pilot test activity of the O&M Capacity-building program	20-23 March, San Jose (Occ. Mindoro)	LGU technical staff, village maintenance crew and barangay officials trained on appropriate O&M activities.	

Component	Key result area	Activity	Duration/Venue	Results	Areas for follow-up/Remarks
Project Coordination	Develop capacity of LGUs to maintain rural roads.	Meeting with PO Team Leader and Rural Engineer to discuss results of review by the project of the FMR planning Manual	6 July, PO InfRES Office	PCO presented the document to the project for comments particularly on the operations and maintenance aspect. Project recommendations submitted to PCO for consideration.	Copy of comments provided to PO RE for inclusion in the revision of the FMR Manual.
		Meeting with PCO Manager to discuss proposed follow-through action on the maintenance component	16 Aug. PCO InfRES office	PCO issued clearance to proceed with pilot testing of the 10-year O&M plan preparation module and development of the O&M training programme.	
		Meeting with PO TL to discuss proposed inputs on the preparation of the 10-year O&M plan	29 Sept, PO InfREs Office	TL agreed that the document attached in the IMA is m ore of a work and financial plan and can still be improved.	TL will join the project in the second pilot activity in the municipality of Initao in October Results of the pilot activities were submitted to PCO for consideration.
		Participated in the 4th ADB Review Mission	12 Dec., Albay province 15 Dec., Initao (Misamis Oriental) 19 Dec., San Jose (Occ. Mindoro)	The Albay visit relates with the project intervention on the application of the provincial road prioritization procedure, while the trips to San Jose and Initao deal with the application of the O&M plan preparation module.	
		Attended the presentation of ADB review mission results	22 Dec. DA FOS Conference Room	ADB recommended for PO to assess O&M plan preparation and capacity-building program prepared by the project.	
	Poverty impact tool	Follow-up made with M&E Specialist	1 Feb. 2006	The project revised the existing tool. According to the M&E, no impact tool developed yet by the PO, no definite timeframe of implementation.	

3.0 Personnel

Below is the summary of travel missions conducted by ILO team in relation to activities described in section 2.0.

Official	Dates/Destination	Purpose
Chris Donnges	May 30 to 2 June 2005, Manila	Attend presentation of findings of the maintenance study
	12-17 February 2006, Manila	Meeting with Department of Agriculture and ADB to review remaining work in InfRES Project, and work with project team to finalize the O&M capacity-building program
Martha D. Espano	23-24 June 2005, Davao City	Attend World Bank Workshop on Water Supply and Sanitation Design, Quality and Sustainability
	25-26 June 2005, Tarragona and Caraga	Monitor application of the IRAP tools
	29-30 June 2005, Binuangan, Balingasag, Jasaan, Claveria, Libertad, Alubijid	
	25 July 2005, Sto Domingo, Malilipot, Ligao	
	17 August 2005, Sta. Elena	
	19-20 July 2005, Davao City	Attend InfRES Semi-Annual Meeting
	26-27 July 2005	IRAP Training in Iriga City
	12-15 July 2005, Tacloban City	Observe FS Training
	26-27 Sept. 2005, Talisay	Pilot testing of the O&M Plan Preparation Course
	4 October 2005, Eastern Samar	Technical assistance on the application of the provincial prioritization procedure
	6-20 Oct. 2005, Albay	Follow-up visit to LGUs trained to ensure correct application of the tools
	7-8 Dec. 2005, San Jose	Technical assistance on the preparation of the LGU 10-year O&M plan of FMR
	12, 14 & 19 Dec. 2005, Albay, Initiao and San Jose	4th ADB Review Mission
	18-27 Jan. 2006, Gutalac , Davao City and Makilala	Study the lessons learned by foreign-assisted dev't. projects and concerned offices on the O&M of the rural infrastructures.
	7-8 Feb. 2006, San Jose	Follow-up preparation of the O&M Plan
	19-24 March 2005, San Jose	Training on O&M of Rural Road

4.0 Impact

The activities conducted contributed to increased capacities of LGUs to identify, prioritize, operate and maintain rural agricultural support infrastructures. The provincial prioritization procedure addressed the urgent need of the project for an approach that considers elements that exert significant influence on provincial development directions, looks beyond municipal boundaries but remains focused in bringing the desired impact on municipal agricultural productivity.

The maintenance study is a significant contribution to the collaboration as it provided better picture of actual condition of maintenance activities at the local level. The findings helped design the O&M Capacity-Building Package envisaged to contribute to strengthening of capacities of LGUs to implement actions to prolong the useful life of the infrastructure assets provided. The O&M Plan and the O&M Training Program are the major components of the O&M Package. Although separated by at least 6 months, the two activities are directly related as the training program is anchored on the O&M Plan and its provisions. The activities in the training program take off from the commitments expressed by the concerned parties in the O&M Plan, which was formulated after a series of consultations with beneficiaries and other stakeholders in the FMR's service area.

The project delivered the remaining targets as indicated in the workplan of the reporting period.

ANNEX 1

INFRES ILO WORKPLAN

June-December 2005

No.	Activity	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1	**Verify eligibility requirements of participating LGUs in InfRES on IRAP training**							
	1.1 Verify applicant LGUs against eligibility criteria on IRAP							
	1.2 Conduct training courses to LGUs not trained on IRAP							
2	**Review, validate and/or improve & coordinate data collection, data analysis, mapping, project identification, prioritization & project preparation activities at the LGU level *(provincial prioritization procedure)***							
	2.1 Apply provincial prioritization procedure to identify SPs							
3	**Use existing IRAP outputs, updated where necessary, to assist LGUs identify priority areas for interventions on potable water**							
	3.1 Assist 20 LGUs to identify subproject on water							
	3.2 Conduct monitoring of LGUs assisted							
4	**4. Implement the IRAP road planning procedures using the existing IRAP database**							
	4.1 Assist 20 LGUs identify subprojects on rural roads							
	4.2 Conduct monitoring of LGUs assisted							
5	**Coordinate with InfRES & concerned agencies to integrate the IRAP agricultural sector related data into the identification and selection process for communal irrigation facilities**							
	5.1 share the IRAP agriculture data to project partners for use in the screening/validation of communal irrigation sub-projects.							
6	**Assist in modifying the IRAP rural access improvement impact evaluation procedure to also serve the needs of the Project in terms of evaluating project impacts**							
	6.1 Work jointly with Project office develop impact tool							
7	**Prepare and assist in delivery/conduct training programmes on rural road maintenance planning and organization.**							
	7.1 Prepare maintenance module for FS course							
	7.2 Prepare training programme on rural road maintenance							
	7.3 Organize workshop on rural road maintenance							
	7.4 Conduct first workshop for 5 LGUs							

INFRES ILO WORKPLAN
June-December 2005

No.	Activity	Jun	Jul	Aug	Sept	Oct	Nov	Dec
8	**Work w/ LGUs both to promote and assess the feasibility of using LBES method for the construction/rehabilitation of roads**							
	8.1 Conduct awareness-raising sessions with InfRES, RTC and selected LGUs	■						
	8.2 Advise on the TOR for the preparation of subproject FS	■						
	8.3 Assist selected LGUs in the preparation of Feasibility Studies	■						
	8.4 Prepare guidelines for the preparation of detailed designs and contract packages	■	■	■	■			
	8.5 Prepare training materials for the training of LGU staff and contractors				■	■		
9	**As requested by LGUs, provide advice & assistance on the development of contract management systems & small contractor training**							
	9.1 Provide training to provincial and municipal staff on labour-based	■	■	■	■	■	■	■
	9.2 Conduct workshops for interested contractors on labour-based	■	■	■	■			
	9.3 Provide site supervision on selected road project sites	■	■	■	■	■		
	9.4 Provide on-site training for contractors and supervisory staff	■	■	■	■	■		
	9.5 Conduct regional workshops on rural road maintenance	■	■	■	■	■		
10	**Assist the LGUs as requested in preparing feasibility studies sub-project proposals**	■	■	■	■	■	■	■
11	**Work with the Project staff in developing in-house support for LB/ES.**							
	11.1 Conduct workshops for DA staff on labour-based & small contracting schemes	■			■			
12	**Coordinate with similar rural infrastructure projects such as the World Bank MRDP and the ADB to both learn and to develop the procedures for InfRES Mindanao reconstruction programme**	■	■	■	■	■	■	■
13	**Prepare the defined reports**						■	

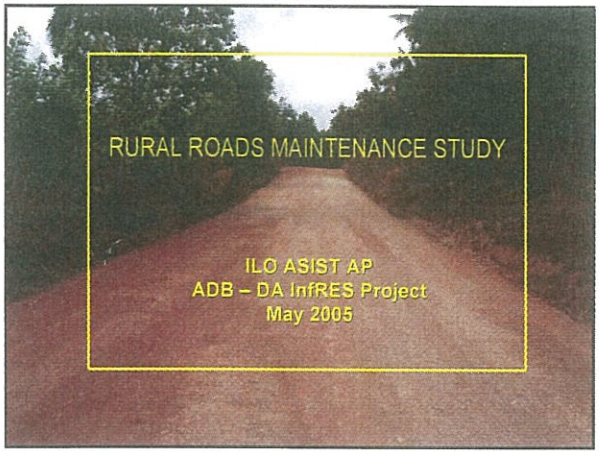
ILO TECHNICAL ASSISTANCE INFRES PROJECT

WORKPLAN

January to April 2006

Key result area	Activities	Timeframe	Output	Remarks
Prepare training program on rural road maintenance	Develop capacity-building programme on operation and maintenance of rural roads	January to February	O&M Capacity-building program for LGUs developed	See copy of O&M Capacity-Building Program for detailed description of content
	Preparation of draft document	2nd week February		
	Revision of first draft	3rd week February	Revised document ready	
	Preparation of training materials	2nd week February to 2nd week March	Training materials and handouts prepared	
	Preparations of the pilot activity in San Jose	1st –2nd week March	Technical, administrative and logistical preparations	
	Training on O&M Capacity-bldg (San Jose)	20-23 & 25 March Sikatuna Beach Resort San Jose (Occ. Mindoro)	Trained LGU staff and barangays to maintain FMR	See Training Design for detailed description of content and schedule of activities
	Revision of O&M Capacity-bldg package and finalization of training materials	4th week March		
Project completion activities and reporting	Wrap-up meeting/s	1) 14 February 2) 1st week April	Remaining work plan Submission and turn-over of reports and equipment/documents	
	Preparation project completion reports (6th progress and terminal report)	2nd – 4th week March	Last progress and terminal reports prepared	
	Preparation turn-over of equipment and documents	2nd-3rd week March		
	Submission of required reports	1st week April		All related outputs will be included in the reports

ANNEX 2



Objective of the study:

... provide a better understanding on how local government units manage infrastructure assets with the resources, technical capacity and decision-making flexibility . . .

ILO ASIST-AP and InfRES Collaboration

Activities of the first three years . . .

3. Implement the IRAP road planning procedures using the existing IRAP database . . .

6. Prepare and assist in the delivery, and where necessary, conduct training programs on rural road maintenance planning and organization

SCOPE OF THE STUDY

TECHNICAL

Type, frequency of maintenance required, how is this done, choice of technology, adequacy of organization, management at LGU

INSTITUTIONAL

Responsibility, budgeting and implementation for LGU roads

FINANCIAL

Overview of current resources available at LGU level, funding mechanisms

STUDY AREAS

5 PROVINCES

15 MUNICIPALITIES

30 BARANGAYS

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

CRITERIA FOR THE SELECTION

Road density by area and population

Accessibility

Peace and order situation

Capable technical staff from either PPDO or PEO willing to be an area-based consultant

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

LIMITS OF THE STUDY

Focused on patterns or trends on rural road maintenance practices and procedures common to the LGUs

Identify training needs to guide design of capacity building program on rural roads operation and maintenance

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

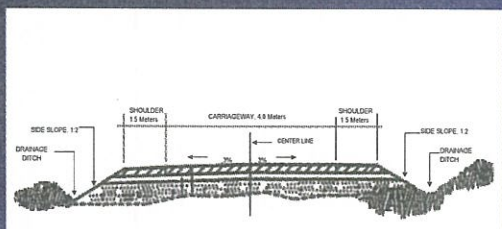
ASSESSMENT LEVELS

- SECONDARY DATA FROM LGU TECHNICAL OFFICES
- KEY INFORMANT INTERVIEWS
- FIELD OBSERVATIONS

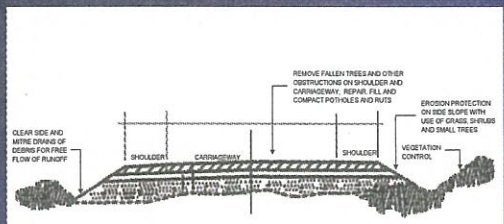
BASIC QUESTION . . .

HOW DOES A WELL- MAINTAINED RURAL ROAD LOOK LIKE?

Where it all started . . .

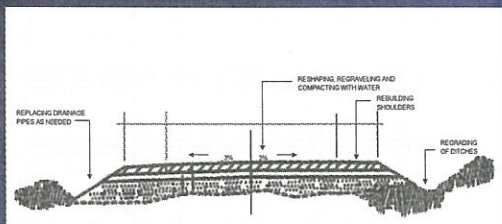


TYPICAL RURAL ROAD SECTION



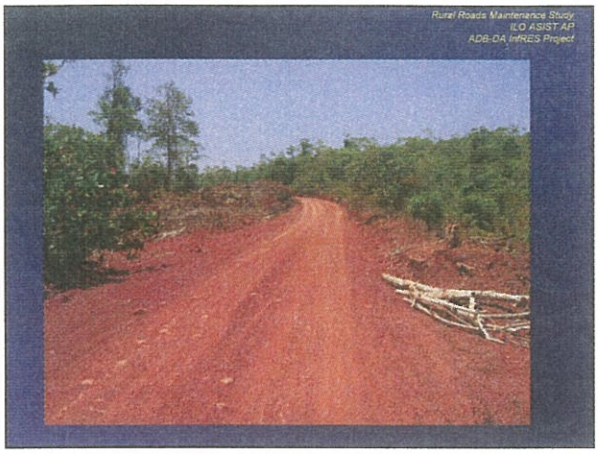
TYPICAL RURAL ROAD SECTION

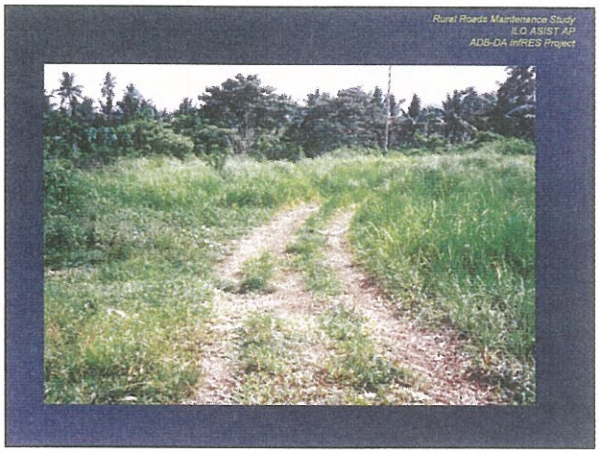
ROUTINE MAINTENANCE

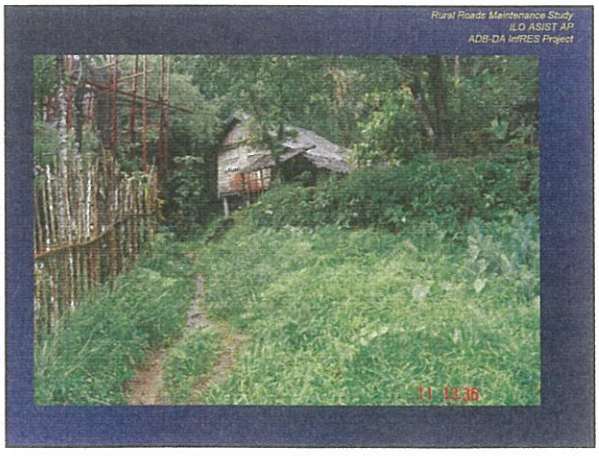


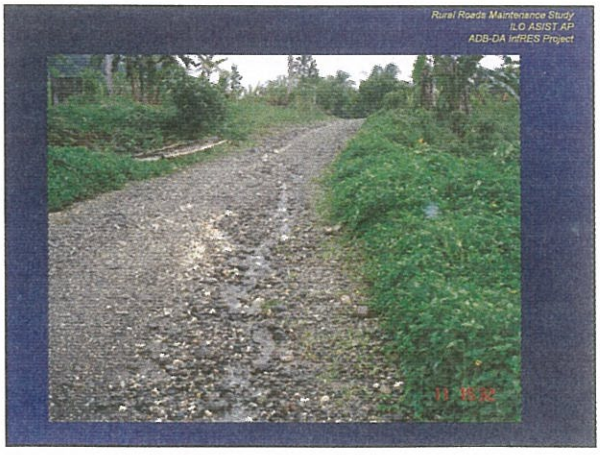
TYPICAL RURAL ROAD SECTION

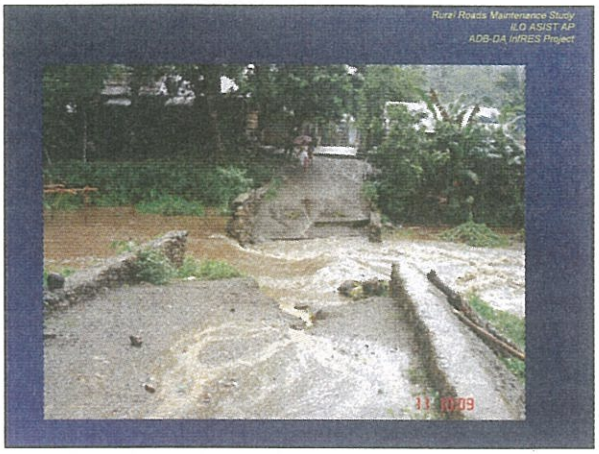
PERIODIC MAINTENANCE

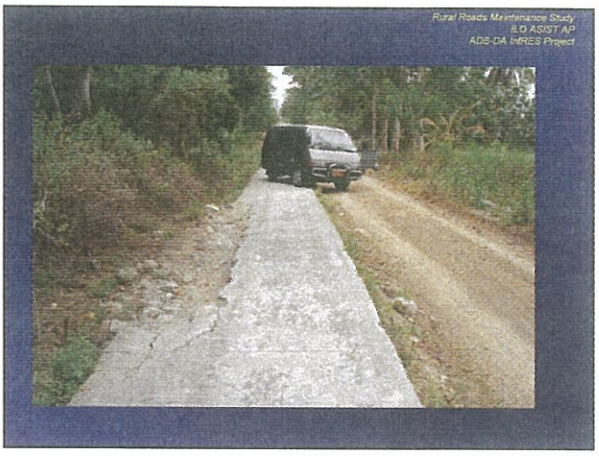

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

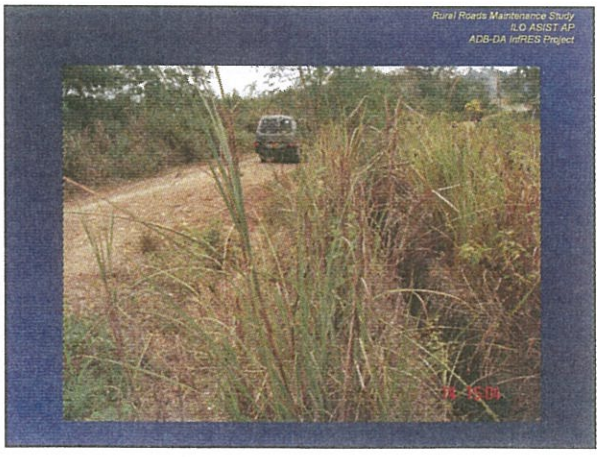

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

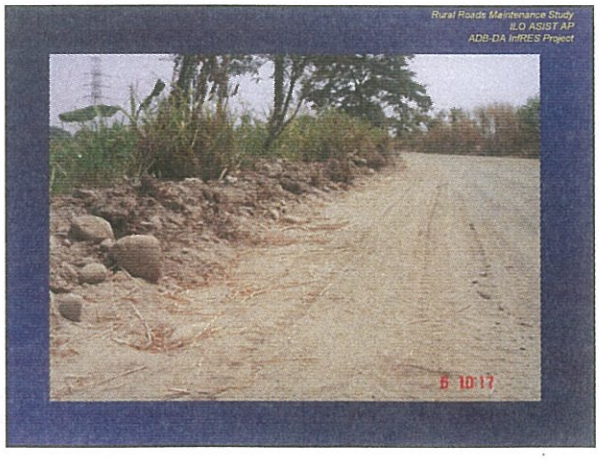

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

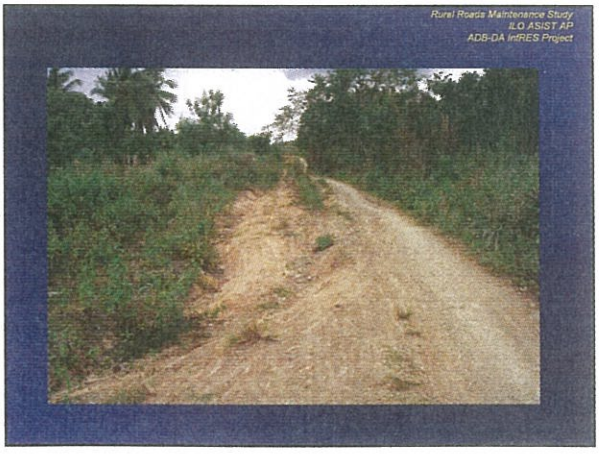

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

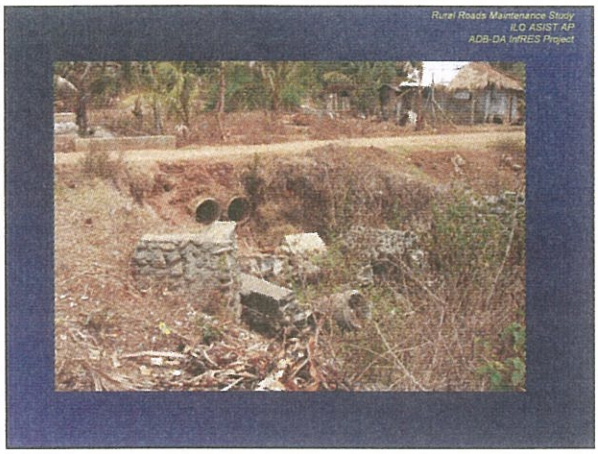

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

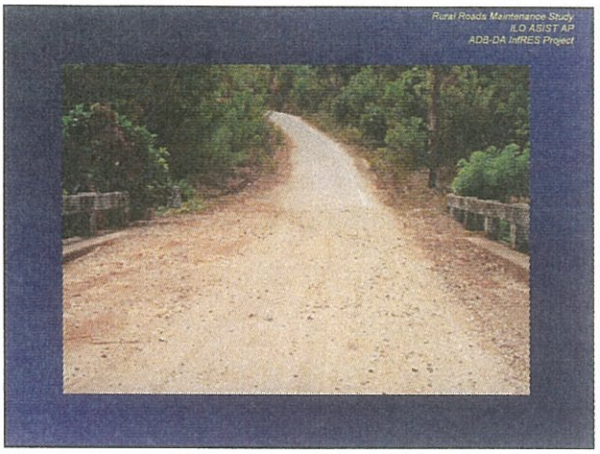

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

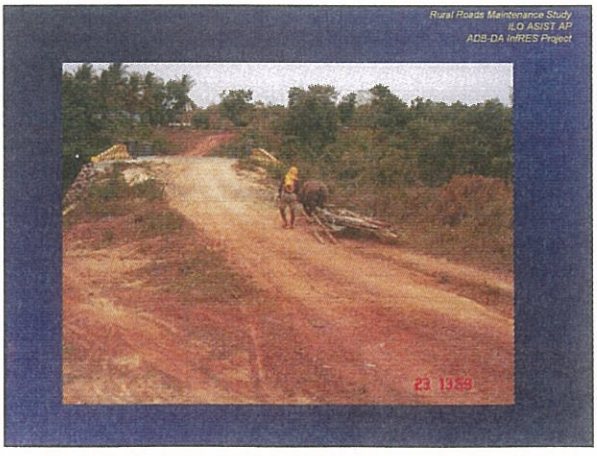

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

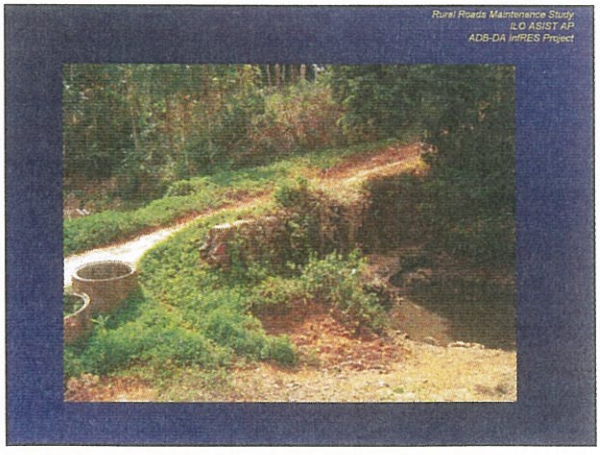

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project
23 1359


Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Road classification carries with it maintenance responsibilities

- In the rural areas, it is either one is looking at a provincial road or a barangay road
- Around 50% of all roads are barangay roads, 20% are provincial and only 9% are municipal roads
- Barangays have the least in resources as well as technical and financial capacity but are tasked to maintain the most number of roads

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Technical capacity high at provincial level, lower at municipal level, and very minimal at barangay level

- PEOs have full manpower complement, some with a balanced fleet of heavy equipment and mobile engineering teams, and some with an annual budget bigger than that of a small municipality
- MEOs sometimes are one-person entities, assisted only by casuals hired on "as needed" basis, cannot provide technical assistance to barangays
- Barangays do not have any engineering office to look after their roads, rely on higher LGU for assistance

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Information to guide road maintenance decisions either not available, inaccurate or outdated

- Majority of barangays visited have roads that are not listed in the municipal road inventory
- Assessor's office declare that barangay road lots donated to municipalities have not been officially transferred and technically are still private property
- Some barangay roads in critical areas have been improved by the LGU although not yet turned over donated to the barangay or municipality

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Rural roads maintenance not so much of a priority at provincial and municipal levels:

- Maintenance budget re-aligned often
- Maintenance regarded as an "invisible" undertaking, unlike road construction or rehabilitation which is a rich source of political mileage for elected officials
- Barangays state that it may take issuance of countless barangay resolutions just to get assistance from the LCE or legislators
- Road maintenance is seen as "repair" and treated like a development project and not a regular annual activity

Findings

No maintenance planning in place – LGUs limited to reactive maintenance actions

- PEO does not prepare a Road Maintenance Plan. The maintenance Division prepares a program of works and a procurement plan based on an ocular inspection of a specific road segment
- At municipal level, the minimal length of roads under the MEO's jurisdiction does not need a plan. Instead, maintenance is done as the need arises.
- At barangay level, the BDC deliberates on the projects that are to be implemented for the coming year, and decides on how to allocate the 20% development fund based on perceived needs

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

No standard mapping in place, information inaccurate, map integration very difficult and tedious

- Some LGUs maintain rudimentary maps with outdated and inaccurate Information
- Other LGUs utilize various mapping technologies making consolidation, like municipal maps into a provincial map, a highly taxing process
- Some information in existing municipal maps were confirmed inaccurate during barangay consultations
- Recent activity aimed at updating provincial map information reinforce the need for a standard mapping procedure

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Road inventory not updated at all levels, some LGUs still use old DPWH inventory

- Barangay consultations reveal that an average of 2-4 barangay roads are not included in municipal inventory
- Some provinces still use the old DPWH inventory
- PEO and MEO key informants state they seldom do updating of inventory as there is no need for it
- Barangay consultations confirm the inconsistency of road information among LGUs

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Road condition survey not properly and regularly done, no standard procedure

- Road condition survey is not done, but area engineers report actual conditions of selected road segments after inspection. This constitutes the road condition survey.
- Barangay submit requests for LGU assistance in improving their barangay road, this also helps in describing current road conditions
- The practice, however, does not cover all the roads in the LGU

Findings

No standard observed by those tasked to do Maintenance

- Area engineers inspect work done by heavy equipment operators doing road maintenance
- Barangay officials, not municipal engineers, ascertain maintenance work quality
- Municipal engineers seldom assist barangays in doing rural road maintenance
- Improved passability is the standard that guides road maintenance, not much attention given to side drains and other equally important elements

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Productivity standards in place, rates vary among LGUs

- The productivity standards set by various maintenance manuals are still used to guide cost estimation

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Manner by which IRA is released, through 12 equal installments, adds to continuous rural road degradation

- Barangays opt to carry out maintenance activities either by force account or by contract once enough funds are in, usually during the last quarter, when the rains have stopped and substantial damage done on the road
- Routine maintenance, such as clearing and cleaning of drainage lines and vegetation control, should have been done before the rains

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Higher level LGUs help lower level LGUs maintain farm-to-market roads through subsidized heavy equipment rental

- The equipment rental rates applied are lower than prevailing market costs but still require a substantial portion of the barangay's 20% development fund
- Other richer LGUs allocate own funds to cover road maintenance costs of several barangay roads but said allocation is used to pay the use of the LGU's heavy equipment

Findings

Community participation on road maintenance cannot be relied upon

- Barangay consultations indicate that the bayanihan spirit is practiced especially after a calamity like typhoons or floods
- The spirit in bayanihan disappears when it comes to road maintenance as residents ask why should they work for free when officials get relatively substantial allowances
- Barangays sharing a common road cannot be expected to maintain their respective portions.

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

Barangays depend on politicians for development, operation and maintenance of roads

- Barangays, because of their limited resources, look for outside funds to address their infrastructure operation and maintenance needs, usually either the Mayor, Governor, Congressman or Senators.
- Some are successful in getting funds from multiple sources while others are not aware how to do it
- In most instances, leadership even at barangay level can spell either barangay progress or stagnation

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Findings

LGU technical staff do not observe or practice proper maintenance procedures

- Most LGU technical staff are observed to be not so keen on rural roads maintenance.
- Improper maintenance activities have been noticed in some roads, like pushing excess materials to both sides of the just to smoothen the surface, thereby covering the side drains needed for its operation.

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Recommendations

Develop advocacy campaign to convince decision-makers on the merits and benefits of maintaining rural roads

Design and implement capacity building program for technical staff and decision-makers on rural roads maintenance

Orient and train other concerned parties, like NGOs, community organizations and interest groups, such as the members of the InfRES Sub-Project Monitoring Board (SPMB), on proper rural roads operations and maintenance processes

Advocacy campaign for LGUs should include ILO Asset Management Concept

Gravel road construction cost – PhP3.0 Million/km or PhP21M for a 7 km gravel road

A gravel road is projected to last 5 years

Maintenance cost - PhP60,000/km/year or PhP420,000/yr or PhP2.10 M for 5 yrs for a 7 km road

It only requires 10% of road construction cost to preserve the 7-km road to a reasonable condition

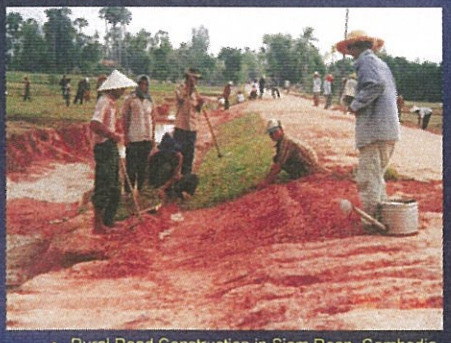
Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

CAPACITY BUILDING PROGRAM

- Rural roads maintenance planning
- Implementation of a rural roads maintenance plan
- Field supervision and monitoring
- Best practices and success stories

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Best practices:



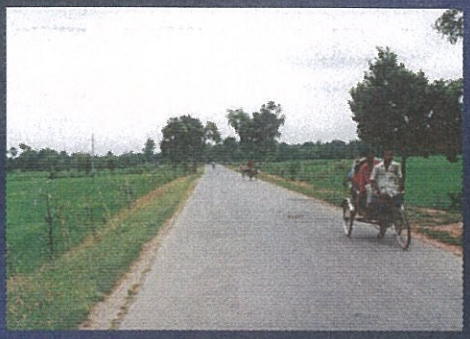
- Rural Road Construction in Siem Reap, Cambodia
- Use of Geographic Information System for mapping

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Success stories:

- Rural Road Maintenance, Bangladesh
- Successful application of lengthman system, Philippines

On-going activities:



- Rural Road operation and maintenance, Bangladesh

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Significance of findings to InfRES

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Review of rural road construction approach

- Incorporate maintenance activities during construction
- Cost of construction should cover cost of initial maintenance activities

Review InfRES preference for municipal infrastructure proposals

- High provincial capacity on infrastructure development can be considered as a favorable option for the project

Rural Roads Maintenance Study
ILO ASIST AP
ADB-DA InfRES Project

Fundamental task is to make LGUs treat maintenance cost as a yearly expenditure

- Objective of maintenance is to preserve the road in a reasonable condition and reduce the rate of deterioration – a preventive activity that should be done on a regular basis
- Rural roads maintenance cost is part of the regular budget and not taken from the 20% development fund

ANNEX 3

Comments on the Design and Planning for Farm-to-Market Roads, InfRES Project Office

The InfRES Project Office produced a manual on the *Design and Planning of Farm-to-Market Roads* providing "general design principles and the setting of design standards for single carriageway rural roads." The InfRES PCO presented the document to the project for comments, particularly on the operations and maintenance aspect.

The following are some of the comments expressed and shared with the PO on July 6, 2005.

Section 2.1.4 *Minimum Design Standards* (page 7)

This section, although definite on the dimensions for the carriage way (4.0 meters) and shoulders (1.5 meters, both sides), is rather silent on the appropriate road right of way dimensions beyond the 7.0 meter road surface where the side slopes and side drainage ditches are provided. The absence of this significant information may lead to problems, especially during construction, should affected landowners question the additional area needed from his/her property to accommodate the important road elements. It is recommended that the Manual indicate at least the minimum road right of way requirement for the FMR.

Section 3.2 *Road Function* (page 13)

Figure 3.1 is Road Function on page 13, and Typical Road Section on page 23. Please make the necessary correction.

Section 3.6.3 *Determine Trail Alignment* (page 19)

Fig. 1.2 *The Design Process*

The arrow to the last box should be labeled "Yes" to declare the satisfactory achievement of the design. On the other hand, the arrow to the right of the last hexagon should be labeled "No" to signal a return to determine the appropriate trial alignments.

Section 3.7.2 *Carriageway and shoulders* (page 24)

Reference to Fig. 2.1 seems to be misplaced in the paragraph. Please make the necessary correction.

Section 3.7.6 *Carriageway markings* (page 25)

This section does not apply to gravel FMRs. Please make the necessary correction.

Section 6.2 *Slope Protection* (page 46)

This section is focused only on the use of retaining walls for slope protection. A discussion on the protection of side slopes, which may run almost the total length of the FMR, can be added. The intervention can include the use of vegetation indigenous to the area for slope protection. Chapter 12 *Bioengineering* (page 56) identifies the vegetation that can be used in this road maintenance activity.

Add a Chapter on *Rural Road Maintenance*

Aside from the above-stated comments, the ILO recommends that a section on road maintenance be part of the manual to impress upon the proponents the need to undertake maintenance activities even before actual road construction takes place. For instance, the side slopes have to be protected with grasses, legumes and/or small trees and shrubs once they are set in place. This means that selected plants would have to be propagated even before (or during construction) to save at least 50% of the plant material costs.

In addition, the preventive routine maintenance activity should be entrusted to the beneficiaries living near or around the infrastructure. Bringing these beneficiaries to participate in road maintenance would entail community organizing interventions, ILO technical assistance on small community-based contract development and management, and conduct of an advocacy campaign focused on local decision-makers using the ILO approach on asset management as the rationale behind the awareness-raising endeavor.

ANNEX B

Terms of Reference (Revised 27 Nov. 2003)

International Labour Organisation (ILO)

Advisory Services, Information Services and Training in the Asia-Pacific Region (ASIST-AP)

Infrastructure for Rural Productivity Enhancement Sector Project

The INFRES project (the Project) will remove constraints to improved farm productivity by investing in rural infrastructure in regions with high poverty incidence and high agricultural potential. Chief among the constraints identified is the difficulty and cost of ensuring inputs to the farm and outputs to the market. The project will have three main components: i) improved rural infrastructure; ii) capability building for local government units (LGUs); and iii) project management and coordination.

The infrastructure to be improved or constructed will fall under three main sub-sectors i) access infrastructure including rural roads, drainage facilities, small (foot-) bridges, cable ways and landing facilities; ii) communal irrigation systems (CIS) and iii) potable water supplies including standpipe, tubewell and spring development.

Provisions have been made in the project design to ensure future maintenance of the assets created.

LGUs, through beneficiary consultation process, will take the initiative in identifying and prioritizing the needs and demands of communities that lack, and/or need to improve existing infrastructure to realize the productive potential of their land. The project therefore concurrently supports a process of capacity building at the LGU level and contributes to the strengthening of the decentralization process in the country, improving participation and transparency as well as procedures and responsibilities for operation and maintenance.

The third project component relates to the Department of Agriculture (DA), which is the executing agency for the project. A project coordinating office at the DA central office will have the overall responsibility for project direction, implementation and policy guidance.

The Rationale for INFRES/ILO ASIST AP Cooperation

The project has a large geographical coverage that will include 779 municipalities in 41 provinces. It will embark on four main development strategies:

1. Improving rural infrastructure
2. Generating rural employment
3. Strengthening decentralization, bottom-up, participatory planning
4. Human resource development and institutional strengthening

Other externally and domestically supported projects are also concerned with these issues in the same sectors and geographical areas. Some of these projects are Technical Assistance (TA) projects assisting the Government in optimizing the impact of the present public investment programme on employment creation and poverty alleviation. The different projects are likely to impact upon each other and an operational link between the projects and programs would have mutual benefits for all and create a synergy effect.

The two main programmes in this respect are the Integrated Rural Accessibility Planning (IRAP) project implemented by the Department of Interior and Local Government (DILG) and the ILO work with the Government on Labour-based/Equipment-supported Technology (LB-ES). Both programmes receive technical assistance from ILO with funding from the

Netherlands and AusAID. It is intended that, in relation to the IRAP component, the outputs of the ILO IRAP III will be used as a major input into the INFRES. ILO ASIST AP will provide additional services as described in these terms of reference.

Integrated Rural Accessibility Planning (IRAP)

IRAP comprises a set of planning procedures that look at access, transport and mobility from a broader perspective. Local governments and development organizations alike use IRAP as a tool for rural infrastructure planning. It promotes community participation and the optimum use of local resources including labour.

IRAP as a programme with ILO technical and SIDA/USAID financial support started in 1989 in 3 pilot provinces under the DA. The local responses to this first IRAP application were generally very positive. The programme was transferred to the DILG to have better access to the LGUs after President Aquino approved the Local Government Code in 1991 and decentralization became law.

Since then the Dutch Government has provided financial assistance to the programme and will continue doing this until December 2002. The Dutch assistance was divided into three phases:

- 1992-1994 development of the process
- 1995-1999 application in 25 pilot provinces
- 2000-2002 nation wide application and mainstreaming

The main emphasis during the present phase is on the modification of the process, nationwide application at LGU level and institutionalization in DILG.

IRAP is concerned with improving levels of accessibility in rural areas. It defines accessibility as the ease or difficulty for rural folk to satisfy their access-related needs. It comprises a set of planning procedures and techniques that cut across sectors and can be used at the local government level for spatial access and infrastructure planning and at the village and municipal level. The procedures and techniques respond to the real access needs of the rural population, which include access to the transport system, potable water supplies, primary health care, education, land, markets and agricultural inputs and hence to improved income opportunities.

The interventions that emanate from the planning process relate to improving people's access and in reducing poverty. This would mean either through improving people's mobility or by bringing the goods and services closer to the people. The first is done through improvements in the rural transport system, which includes rural road improvements, upgrading of village level transport infrastructure (footbridges, landing docks etc.).

Access however can also be improved through a better siting of basic facilities such as water supplies, health centers, schools and markets. The IRAP programme also promotes the use of LB/ES methods in the development and maintenance of infrastructure works and facilitates the linkage between real needs and priorities and funding sources.

Labour-based Equipment Supported Technology (LB/ES)

LB/ES technology is often used for those construction tasks in which the use of labour, supported by equipment, is more efficient than the use of machines alone from a cost, time and quality perspective in the locality. An important effect of LB/ES technology in rural areas is to increase the flow of money through rural economies, often a pre-condition for

diversifying livelihood activities. Using LB/ES technology creates additional jobs. The increased demand for locally made products in turn creates more indirect employment.

The Philippines has a long track record of LB/ES projects with different levels of success. The latest policy of the Government on LB/ES technology is contained in the Philippine Medium Term Development Plan (1998-2004). The plan provides that "Labor-based technology in infrastructure activities, where feasible shall be promoted in support of employment generation efforts". Executive Order 94 (EO 94) approved in 1999 establishes the policy direction and institutional framework to implement a LB-ES infrastructure program.

Responsibilities for rural infrastructure development in the Philippines primarily rest with the municipal governments, which are sometimes supported by national line agencies and special national programmes.

ASIST Asia-Pacific

ASIST-AP is a regional ILO programme under the Employment Intensive Investment Branch of the ILO. ASIST-AP is funded from ILO regular budget funds. In addition funds are also provided for core activities from DANIDA, DFID and the Netherlands.

The goal of the ASIST AP programme is to improve access of the population to employment opportunities and to economic and social goods and services through the effective provision of infrastructure.

The programme is providing technical advice to a number of countries in the region on local resource based approaches to infrastructure development

The programme is providing training and capacity building for national and local planners and technicians and project field staff on technology and planning issues.

ASIST AP and ILO have been involved in sustainable rural infrastructure development in the Philippines for many years. The DA-ASIST AP collaboration will benefit from the experience of past and current ILO ASIST AP programmes in the Philippines and elsewhere in the region.

Coordination Activities

The DA and ILO have expressed interest to co-operate on local level planning (IRAP) and implementation issues in the localities covered under the Project.

The DA requested the ADB to be able to sole source the ILO ASIST AP to provide the services detailed hereunder from the technical assistance of the loan. ADB have given their consent to this.

The overall objective of this co-operation is to strengthen the "local level infrastructure planning (IRAP)" and "labour-based technology for construction and maintenance" aspects of the Project through a participatory process

These TOR describe the activities to be undertaken by the ILO ASIST AP to implement this co-operation activity in order to contribute to the effectiveness of the overall implementation of the Project and its collaboration with other initiatives. The activities basically comprise the following elements:

- Assisting the DA regional staff and the LGUs in the application of IRAP in the planning and identification of sub projects in the three sectors of access improvement and water supply.

- Providing alternative technologies in the capacity building of the LGUs in relation to road and potable water supply planning and road maintenance.

- Providing advocacy in relation to labour-based equipment supported methods and small scale contracting and, where appropriate, developing and conducting training programmes for the LGUs.

The activities of the first three years covered by this agreement are defined as follows:

1. Review, validate and/or improve and coordinate with project stakeholders with respect to the three infrastructure components, the data collection, data analysis, mapping, project identification, project prioritization procedures and project preparation activities at the LGU level. The objective of this activity is to develop a common local level planning approach for InfRES use at LGU level in the 41 eligible project provinces, considering the previous IRAP exercises implemented by the DILG-ILO.

2. Use the existing IRAP outputs, updated where necessary, to assist the LGUs and local beneficiaries to identify priority areas for interventions on potable water.

3. Implement the IRAP road planning procedures using the existing/updated IRAP database in the project LGUs, to assist the LGUs in identifying road sub projects. This work should be closely coordinated with the Provincial authorities and should be closely related to the facilities of access to farm inputs, farmlands and markets.

4. Co-ordinate with INFRES project staff and concerned agencies in integrating the IRAP agricultural sector related data into the identification and selection process for the project's communal irrigation facilities

5. Assist in modifying the rural access improvement impact evaluation procedure developed under IRAP to also serve the needs of the Project in terms of evaluating project impacts.

6. Prepare and assist in delivery, and where necessary, conduct, training programmes on rural road maintenance planning and organization

7. In coordination with the Project Coordination Office (PCO), work with the concerned LGUs to both promote and assess the feasibility of using labour based equipment supported methods for the proposed construction /rehabilitation of roads.

8. As requested by LGUs, provide advice and assistance on the development of contract management systems and small contractor training.

9. Work with the Project to develop in-house support for LB/ES.

10. Identify and define coordination activities for years 4 to 7.

Organisation and Reporting

DA will provide funds to engage the services of ILO ASIST AP to implement the above activities. The initial contract period will be for three years with the possibility of extending the agreement for the remaining life of the project.

The team from ILO ASIST AP will be lead by its Programme Coordinator, who will report to the Project Director of the INFRES.

The ILO ASIST AP team will consist of the appropriate experts from the ILO ASIST AP team in Bangkok who will provide short-term inputs. In addition one local ILO ASIST AP expert will

be provided on a full time basis from January 1st 2003. In addition to his/her technical duties, he/she will provide the in country liaison between the ILO ASIST AP team and the INFRES project.

The INFRES Project Director and the ILO/ASIST Programme Coordinator will jointly decide upon the exact timing and specific TORs for the ILO ASIST AP experts. ILO ASIST AP will prepare these ToRs and submit them to the project director for his comments and eventual approval. After each activity, ILO ASIST AP will prepare a report detailing the inputs provided, the work done and recommendations for further action.

An overall work programme for the ILO ASIST AP inputs is provided. A detailed yearly work programme will be submitted to the InfRES Project Director for approval. The ILO will submit an inception report three months after the work has started. The work programme will be reviewed at six monthly intervals. Accordingly, ILO ASIST AP will submit six monthly progress reports which will give an account on progress made vis-à-vis the work plan targets and identify future actions to be taken. The ILO will finally submit a project completion report by the end of year 3.

Cost Sharing

DA will provide office space sufficient for two (2) technical staff. The ILO will provide tables and chairs. The cost of the use by the ILO staff of office and communications equipment (i.e., phones, fax) and photocopiers will be charged at cost to the ILO. The ILO will assume a proportionate share of the costs of administration and security.

ANNEX C

INFRES ILO ASIST AP Work Plan

		2003	2004	2005	2006
1	Review and coordinate data collection, data analysis, mapping, project identification, project prioritization procedures and project preparation activities at the LGU level.				
2	Use the existing IRAP outputs, updated where necessary, to assist the LGUs to identify priority areas for interventions on potable water.				
3	Implement the IRAP road planning procedures using the existing IRAP data base				
4	Co-ordinate with InfRES to integrate the IRAP agricultural sector related data into the identification and selection process for CIS.				
5	Assist in modifying the IRAP rural access improvement impact evaluation procedure to also serve the needs of the Project in terms of evaluating project impacts.				
6	Prepare and assist in delivering training programmes on rural road maintenance planning and organisation.				
7	Work with the LGUs to both promote and assess the feasibility of using labour based equipment methods for the construction/rehabilitation of roads.				
8	As requested by LGUs, provide advice and assistance on the development of contract management systems and small contractor training.				
9	Assist the LGUs as requested in preparing feasibility studies for sub project proposals				
10	Work with the Project to develop in-house support for LBES.				
11	Coordinate with similar rural infrastructure projects such as the World Bank MRDP and the ADB to both learn and to develop the procedures for INFRES Mindanao reconstruction programme.				
12	Identify and define ordination activities for years 4 to 7.				
13	Prepare the defined reports				

ANNEX D

About 90% of the sub-projects submitted to InfRES by local government units are rural road projects. Rural roads should not be planned in isolation as they form part of a larger network. A network that links agricultural production areas, villages and markets. It is important that rural road projects are identified as part of such a network. A first activity to comply with such a network planning approach is the preparation of an up-to-date road map which shows the extent of the road network and its coverage. The IRAP procedures, which are used extensively in the Philippines, have introduced specific procedures for Accessibility Mapping. These techniques include the preparation of a municipal road map suitable for sub-project identification purposes.

Introduction

Accessibility Mapping is an integral part of the Integrated Rural Accessibility Planning (IRAP) process. It consists of a graphical representation of access characteristics in a given area that can help in the identification and prioritization of access problems, facilitate the formulation of interventions, and guide the selection of the best development alternatives.


IRAP Base map Bato, Catanduanes

Specifically, the Accessibility Maps:

- Show local planners and decision-makers where their resources, services and villages are located and how the road network links this all together;
- Help in the identification and location of access problems and the formulation of interventions and programs of action;
- Facilitate interaction between planners, decision makers and other interest groups during discussion on appropriate plans and programs;
- Make it easier to assess the impact of access improvement projects and guide future development actions.

Methodology

Accessibility Maps are based on the topographic "topo" maps issued by the National Mapping and Resource Information Authority (NAMRIA) at Fort Bonifacio in Metro Manila. These "topo" maps have a scale of 1:50,000 and are lifted from aerial photographs compiled during the early 1950s. Some maps of selected provinces are based on aerial surveys conducted in the early 1980s. Owing to the period by which they maps were prepared, these maps need to be updated to reflect current population centers, major road networks, service facilities, landforms, vegetative cover, water bodies and

channels, and areas with development potentials and constraints.

The Accessibility Maps constitute the basis for rural accessibility analysis. The information contained in the maps is necessary for better appreciation of factors and forces to be considered in plotting the area's development direction.

Accessibility Mapping visualizes levels of access in a particular geographical area. It shows the relationship of a specific service facility and its users. This is achieved by delineating the area of influence of a facility as a point source of service and evaluating the accessibility of people in terms of number affected and distances traveled. The possible catchments areas of new infrastructure facilities such as rural roads could be identified with the help of these maps and could be compared and ranked according to their impact. Such an understanding will favor productive deliberations on access issues and problems and the conceptualization of rational and sensitive development scenarios.

The accessibility maps are prescribed with the following scales:

Provincial Maps	1:200,000
Municipal Maps	1:50,000 or 1:25,000
Barangay Maps	1:10,000

The Process

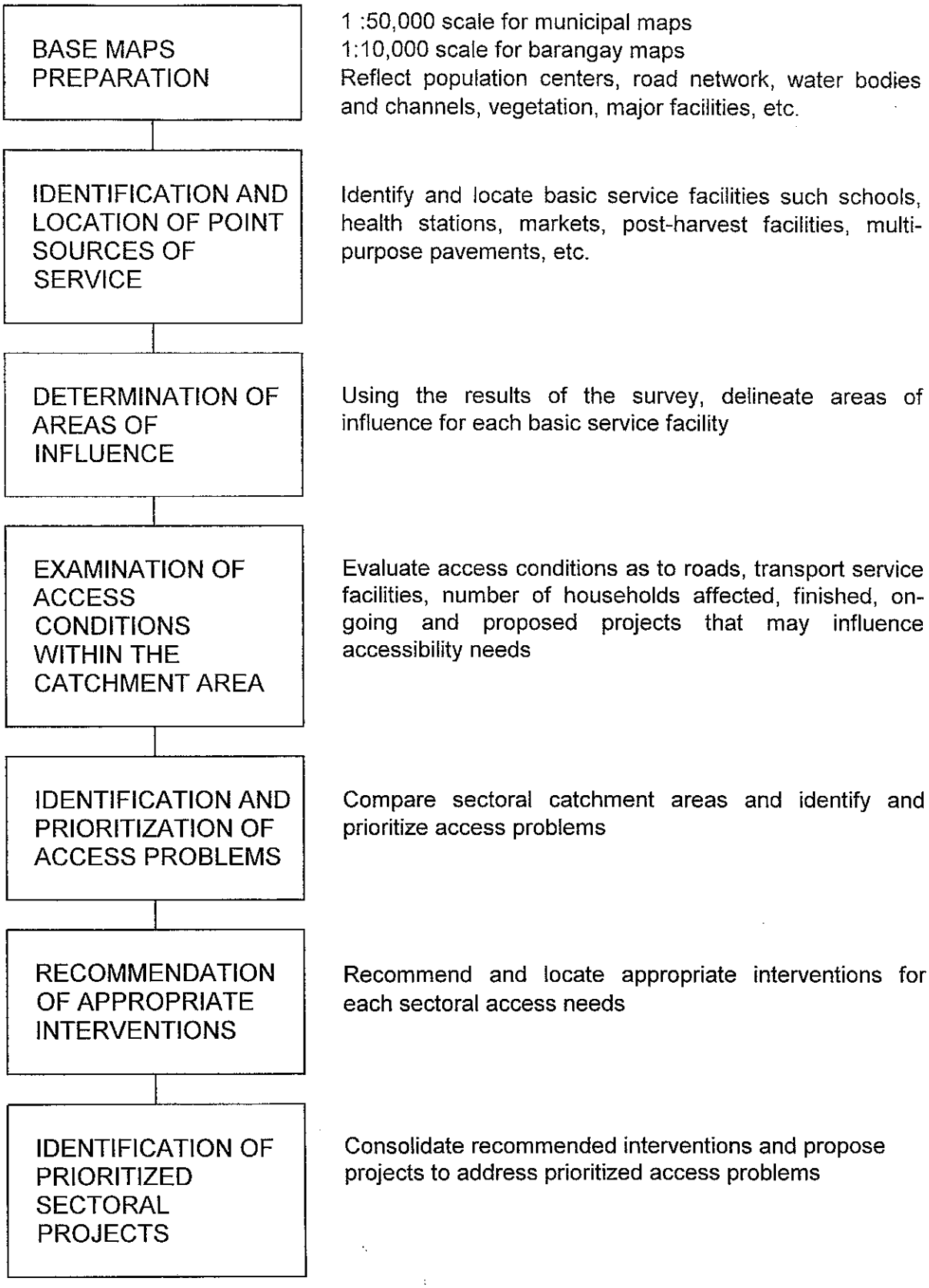
The general Accessibility Mapping process is illustrated in the diagram on the next page[1].

Step 1: Base maps of a municipality and/or barangays are lifted from the NAMRIA composite map. The base maps should reflect the following information:

(a) Population centers like barangays, sitios and other built-up areas;
(b) Major service facilities such as schools, health centers, rice mills, multi-purpose pavements, and other point sources of services;
(c) All road links, classification and their existing conditions; and
(d) Major drainage channels and water bodies

[1] For more details on the IRAP process see "The IRAP Guidebook 2002 – ILO Manila" or "The IRAP Trainor's Manual 2000 – ILO Manila".

ACCESSIBILITY MAPPING PROCESS



Step 2: Facilities which can be considered as point sources of services such as

elementary schools, health stations, markets, post-harvest facilities, etc., are identified and plotted on the maps. Roads are also shown either on the base map itself or on a plastic overlay.

In Steps 1 and 2, the 1:50,000 NAMRIA topographic maps of a municipality are spliced and copied on tracing paper (80/85 grade). The municipal and barangay boundaries should be clearly defined to guide the subsequent application of colors (oil pastel) on the reverse side of the tracing paper. The major road networks are reflected using conventional mapping symbols and representations while the facilities are then plotted and color-coded using luminous color paper cut in small circles with an ordinary office paper puncher. The following original maps on a 1:50,000 scale are to be produced:

A. A **political map** showing barangay and sitio boundaries and population centers

B. A **facility and service map** showing existing service facilities such as schools, health centers, markets, water supplies

C. A **road map** to show hierarchy of links, lengths, existing conditions and trafficability; and

Maps B and C are often prepared on transparent plastic and are used as overlays on Map A (see below).

Step 3: The local planner identifies catchment areas of different facilities based on the barangay surveys and familiarity with the territory. In the case of rural roads, for example, he or she would consider a zone of influence of 2 kilometers on both sides of the road.

Similar to roads, plastic overlays can be used in delineating other catchment areas. In a plastic overlay on Map A, the sectoral catchment areas for each service facility, i.e. schools, health stations, markets, post-harvest facilities, etc., are determined. The size of the catchment area can be determined by looking at:

a. The "Accessibility Data Base", which contains information on household's use of facilities and services;

b. Transport corridors (roads, footpaths, trails, etc.), terrain and other natural features like rivers and mountains that will dictate the directions of the people's movements; and

c. Population concentrations like sitios end barangay centers which form part of the catchment area.

Step 4: An evaluation of the access conditions within the catchment area is undertaken, looking into number of people affected, distances to facility, existing conditions of road links and transport services. This activity also enables the planner to identify barangays and sitios that are excluded, for example, population centers that have no access to a year-round motorable road network.

Catchment areas are then studied and evaluated for different service areas to assess and compare access conditions of households in different areas to target facilities.

Road conditions, existing transport services and distances are examined. This information, lifted from the Accessibility Data Base (ADB), and represented using color coded symbols will be the graphical basis for the evaluation. Typical representations can be: a non-passable road is a heavy red line, or a road passable during dry seasons only is represented as a broken red line.

Step 5: The sectoral catchment areas are compared and ranked. The rankings of the catchment areas are based on the computed AIs, or can be determined by visual inspection of the areas covered and the number of households affected. The graphical interpretation would be that a relatively bigger catchment area would indicate longer distances traveled to reach a service facility. Deliberations on the selection of the appropriate interventions (Step 6) per sector can commence. It is important that the interventions identified are realistic, practical and address the immediate access need of the communities.

Step 6: Interventions to address the identified access need are formulated and reflected diagrammatically on the maps. For instance, a road link to be given immediate attention is identified, or a site for a new service facility is recognized. Symbols and color-coding are used to reflect the priority projects on maps or plastic overlays.

Step 7: All sectoral recommendations are integrated to identify and prioritize projects that will address the accessibility needs of the community;

Aside from determining the sectoral interventions to address the access problems, there is also a need to integrate the proposed interventions so that common areas can be identified. This is done by superimposing the sectoral overlays on the Map C (Road Map) and, while focusing on the sectoral problem areas, determine how improvements in transport infrastructure and/or distribution of facilities will result in improved access.

Understanding the greater benefits to be derived from these common project areas will result in the optimization of the use of meager resources of the local government unit concerned. Redundancy and/or duplication in the projects to be proposed is therefore avoided. The Accessibility Maps will be the integrating mechanism for the sectoral interventions as these will provide a clear appreciation of location characteristics for better project and site selection decisions.

A matrix to show the relationships of the sectoral catchment areas can also be prepared to guide the integration process.

Step 8: A similar process can be used for the preparation of barangay Accessibility Maps on 1:10,000 meter scale maps.

Barangay accessibility maps on 1:10,000 scale are to be used in analyzing access conditions to goods, services and facilities within the barangay including non-point sources such as water and fuel wood. The use of a bigger map will provide a higher level of detail as sitio level information are utilized as the basis for analysis. This will help in the selection of the best development option for the barangay.

Materials

Accessibility mapping and the preparation of presentation materials will not entail considerable strain on the local government budget. These materials are readily available locally and are reasonably priced. The following are needed:

Tracing Paper	one (1) 1"011 No. 80/85
Oil Pastel	one (1) set 12-color (minimum)
Lighter Fluid	one (1) bottle
Cotton	one roll
Technical Pens	Nos. 0.2, 0.3, 0.5, 0.8,1.0,1.2
Color Pens	one (1) set
Mechanical Pencil	one (1) set
Erasers	two (2) pieces
Masking Tape	one (1) roll
Plastic Sheet	four (4) meters
Color Papers	one (1) set fluorescent colors
NAMRIA Maps	one (1) set for a municipality
LeRoy Set	one (1) set (optional)

Coloring

Colors are applied on the maps for readability thereby facilitating the delivery of information, findings, and recommendations to decision-makers and other interest groups. Colors to delineate barangays and/or sitios are directly applied on the reverse side of the tracing paper using the oil pastel colors and thinned to erase application strokes using cotton balls with a few drops of lighter fluid. Colors which go beyond the desired area to be covered can easily be erased using any ordinary pencil eraser.

Roads and other links can be identified using color pens while the service facilities can be represented using the fluorescent color papers cut with an ordinary office paper puncher.

Labels on the maps can be done either free-hand or with the use of lettering guides or LeRoy Set.

Summary

Rural Accessibility Mapping process, as an integral part of the Integrated Rural Accessibility Planning procedure, is envisioned to facilitate the conceptualization of local level development plans and programs that will address actual people's needs. It has been developed as a "user-friendly" process which can be easily understood even by people without the necessary technical training.

The process utilizes the local planner's familiarity with his area as well as the Accessibility Indicators computed through the use of the IRAP procedure. This information is graphically represented on the base maps and constitutes the basis for analysis.

By simple inspection, catchment areas are compared and those that cover a relatively wide area exhibit access problems. Some barangays may even fall outside a catchment area. Comparing catchment areas aids in the identification of priority investments. The graphical interpretation of the recommended intervention would be to reduce the area of influence by a strategic location of another facility within the catchment area. If such an intervention is deemed impractical, the alternative would be to enhance the people's mobility by the construction or upgrading of roads, and/or the improvement of transport services and facilities.

The maps produced, using inexpensive materials available locally, are then utilized for conveying the findings and recommendations to the local decision makers in a visual form. This is to enlighten and encourage intelligent deliberations on access issues to reach the best development option for the community. The outputs of this mapping procedure, therefore, will be valuable documents in local level planning.

Accessibility Mapping and InfRES

The ILO implemented a nation-wide IRAP capacity building project in the Philippines during the late 1990s. This project trained local level planners across the country in preparing and using Accessibility Maps. Analyses were undertaken for different sectors including health, education and transports services to identify priority areas for investments at LGU level.

InfRES is primarily concerned with rural roads, small-scale irrigation and rural water supplies. The Accessibility Maps prepared by LGUs will help in the identification of transport bottlenecks which negatively impact on agricultural productivity and profitability. Accessibility Mapping is therefore an important element for the pre-identification of rural roads to be funded under InfRES. Local level planners need to have a good understanding of their entire road network before they can identify and prioritize investments that will improve the overall performance of the road network.

The ILO is assisting InfRES in providing further training to local level planners at municipal level in preparing, updating and using Accessibility Maps in rural road planning.

Identification of Barangays for Improving Rural Water Supply

Access to potable water is a basic requirement. People need to have adequate access to water to fulfill a range of needs. A lack of access to sufficient, year round, potable water may result in health problems and certainly wastes time and effort in collecting water. These factors may have a negative impact on agriculture productivity and profitability. Adequate access to potable water is defined as having an all-year round potable source within 5 minutes walk from the house. The IRAP procedures include tools for the pre-identification of barangays and sitios where improving access to potable water is a priority.

Introduction

Households in some agricultural rural communities are unable to be as productive as they should be because either some of the household members are unhealthy or sick with water-borne disease caused by drinking contaminated water or a considerable amount of time is spent in fetching water from a distant source. In both cases, time that could have been devoted to productive use is wasted.

In response to the priority placed by rural communities on the provision of safe potable water, InfRES will support the rehabilitation and construction of point sources, communal faucets, springs and tube-wells. In more detail, the following activities will be covered:

- Construction of intake boxes at springs
- Construction of reservoir and break pressure tanks
- Laying of distribution pipes and construction
- Installation of tap stands, and
- Drilling of tube-wells and provision of hand pumps where groundwater of adequate quality for cost-effective extraction is present

Implementation of water supply schemes will be supported in places where (a) the present source is contaminated, inadequate, or so far from the beneficiaries that collection results in loss of agricultural productive time, (b) the potential source is safe, adequate and can be developed in a cost-effective way, and (c) improved potable water supply can result in improved health and contribute to increased agricultural production.

Methodology

The methodology set out below, based on the IRAP process, will help LGUs determine priorities for improving their rural water supply.

InfRES is collaborating with ILO in developing capacity for further applying IRAP procedures at the local level. This collaboration takes off from earlier work done on developing capacity in the Philippines. The current collaboration will help ensure that the subprojects identified by LGUs reflect the actual needs and priorities of the beneficiary communities.

Determining the actual needs of the community is done through a needs-based assessment whereby the planner collects relevant information from Key Informants, and

analyzes this information using a multi-criteria approach.

The analytical procedure shall use existing LGU IRAP data, updated when necessary, and other relevant secondary information to arrive at recommendations to improve rural water supply. The results of fieldwork and analysis will be presented to stakeholders and decision-makers at local level.

The above-cited process would make sure that stakeholders and constituents get involved in the identification of needs as well as in deciding the development of their respective areas. In this way, community ownership is established, an essential element to sustain the life of the rural water infrastructure provided by InfRES.

Identification of priorities

The provision of safe potable water supply at the local level is envisaged to contribute to improved health conditions and increased agricultural productivity of communities seeking assistance from the project.

To determine potential and priority areas for rural water supply development, the following process has been developed for a proponent municipality:

Step 1: Prepare an accessibility map (preferably at barangay level), reflecting the locations/sources, types, and conditions of existing water facilities, potential sources to be developed in a cost-effective way, and areas with incidence of water-borne diseases

Step 2: Identify barangays with Level 3 water supply and those without level 3 water supply

Step 3: Screen the barangays (those identified without Level 3 in Step 2) to prepare a short-list of candidates for construction and/or rehabilitation of water supply facilities.

Step 4: Prioritize barangays for potable water supply for construction and/or rehabilitation.

Step 1. Prepare an Accessibility Map

The maps prepared during the ILO IRAP Project are at the municipal level. To accurately reflect the information it is recommended to prepare a barangay level Accessibility Map, showing population concentrations, existing water sources and potential sources.

It is recommended to start with a barangay base-map and use a plastic overlay, to reflect the following (water-specific information) on the base map:

- Identify current sources of water supply facilities (Level 1,2, & 3),
- indicate whether current source is potable, adequate/seasonal supply,
- locate incidence of water-borne diseases (acute gastroenteritis, cholera, amoebiasis, etc.).

Use standard or conventional signs and symbols to reflect the aforementioned information.

Step 2. Identify Barangays and Sitios with level 3 Water Supply Facilities

InfRES will support the rehabilitation and construction of point source, communal faucet, spring and tube-well development projects (levels 1 & 2). It is imperative to identify barangays with level 3 facilities and eliminate them as potential candidates for development and/or rehabilitation. The argument here is that communities with level 3 systems are adequately served and do not need additional investments under InfRES.

Step 3. Screen potential barangays for water supply development

A screening process is to be undertaken for the barangays in the municipality to identify areas that qualify for the provision of levels 1 & 2 water supply construction and rehabilitation. For those which passed the initial screening, a simple prioritization process is carried out to determine which areas need immediate attention for water supply development (Step 3).

The following screening criteria should be used for identifying priority areas for improving rural water supply:

1) The present source is contaminated, inadequate, would require significant amount of resources to correct or highly vulnerable to contamination.

2) The current source is beyond 0.5 km. from the target beneficiaries.

3) The potential source is safe, adequate and can be developed in a cost-effective way.

4) Potential for barangay agricultural productivity improvement is relatively high.

5) Improved potable water supply is likely to result in improved health and will contribute to increased agricultural production.

6) The proposed project addresses the expressed need of the beneficiaries, both men and women in the community.

It is recommended that all the criteria are satisfied before a barangay pre-qualifies for a subproject. Barangays that pass the screening criteria will be subjected to the ranking procedures under Step 4.

Step 4. Prioritization of areas

A multi-criteria approach should be used to rank communities. The criteria to be applied are: (1) number of (households) beneficiaries, (2) amount of time spent to get to the current source, (3) distance of the potential source to be developed, (4) community perception/expression of needs, and (5) number of cases reported on water-borne diseases.

Existing LGU IRAP data, updated when necessary, and secondary information will be utilized to determine priorities based on the above criteria. The available IRAP data should include the following: number of target beneficiaries, travel time and expression of community needs. The necessary secondary data could be sourced at the LGU or from agency records (e.g. health centers, etc.) and include information on: water-borne diseases reported, agricultural productivity, cost of investment and poverty incidence. See **Annex 1** for a sample data form to be used to collect the required information to do the analysis.

The above-cited criteria will be used to determine communities that need immediate attention to improve on their water supply conditions. Qualitative and quantitative assessments will be made of different conditions, and ratings of 1-3 will be used to describe different levels or conditions. A simple scoring system to indicate the degree of a condition for a given situation in a barangay has been developed.

The final decision on the identification of priority areas (sitios and barangays) needs to be done in a participatory way. Stakeholders shall review a list of areas initially ranked according to the prioritization indicators. The final choice could be influenced by factors such as the cost of investment vis-à-vis the target number of beneficiaries, resources available, cost-effective manner in developing a potential source, socio-economic, environment and agricultural concerns.

There are seven sub-steps involved to identify priorities for improving water supply at the local level. See **Annex 2** for a sample format to be used in determining the priority communities for water supply development. See also **Annex 3** for a sample analysis.

Step 4a) Determine the total number of beneficiaries (per barangay) of the proposed water supply project.

Step 4b) Determine the average travel time of households (per barangay) to the present source of water and the distance of these habitations to the potential source.

Step 4c) Determine the average number of cases/incidence of water-borne diseases in the barangay reported in the last five years.

Step 4d) Determine the general perception or expressed need of the community, and differentiate between male and female residents.

Step 4e) Determine the ratings (1-3) of the indicators in Steps 4b and 4c. The value one (1) means low, value two (2) means moderate, and value three (3) means high.

Steps in determining the class intervals (CI) of the rating-levels:

1) *Determine the range between the highest and lowest values.*
2) *Divide the range by 3. The result is called the established class interval.*
3) *To get the 1st (1 = low rating) class interval, add the established CI to the lowest observed score. The sum of the two variables should be the maximum range of the scores under the first category.*
4) *To get the 2nd (2 = moderate rating), add 1 to the sum of step 3 plus the CI. The sum is the maximum range of the scores under the second category.*
5) *To get the 3rd (3 = high rating), add 1 to the sum of step 4 plus the CI. The sum is the maximum range of the scores under the third category.*

Indicator of step 4d) will use this standard:

Rating	***Description***
1	*3rd priority of female and male population*
2	*2nd priority of female and male population*
3	*1st priority of female and male population*

Step 4f) Add the ratings/scores of the indicators in steps 4b-4d to get the total of the sub-indicators. Then multiply the total of the sub-indicators with the absolute value of the number of households affected (beneficiaries).

Step 4g) Rank the barangays according to their total rated scores.

The ranking is based on the highest score down to the lowest score. The barangay that gets the highest score is ranked number 1, the second highest is ranked number 2, and so on.

As earlier stated, the above procedure aims to provide an initial assessment of the condition of communities on the following aspects: level of access towards the facility, size of population affected by the lack or absence for such service, health condition as influenced by the quality of service and people's perception for the need for the intervention. A meeting to review the list of priorities, attended by concerned parties, should be organized to reach a consensus. The decision as to which among the communities will be considered in the proposed sub-project needs to be done in a participatory way. To attain this, the stakeholders must get familiarized as to how the ranking was done and the criteria used in selecting the areas for investment.

Annex 1

BARANGAY ACCESSIBILITY FORM

Instruction:

This form is to be accomplished using the Key Informants (KI) method. Seven to ten persons who are recognized as knowledgeable of the actual situation pertaining to the sectors being studied will be the participants of the KI. The information to be enumerated in this form should be the consensus among the KIs and jot just the response of one person. The KI should be conducted in the barangay itself. Guides to each question are placed in another page of the actual survey questionnaire.

Region _____ Year/Month/Date _____

Province _____

Municipality _____

Barangay _____

Data collected by _____
Last name First name Middle Initial

_____
Position

Key informants:

Name	Sectors represented

Name of barangay captain or representative _____ Signature _____

BARANGAY ACCESSIBILITY SURVEY FORM - WATER FACILITIES

Region: _____ **Province:** _____ **Municipality:** _____

* FA (female adult); FC (female child); MA(male adult); MC(male child)

Part 1

Name of Purok/Sitio (Include Barangay Proper)	No.of hhs.	% Hhs w/n .05 kms source	Description Main Water Source	Purpose/ Use of Water	# Hhs (beyond 0.5 kms source)	Ave. col. (RT) time (Hhs. beyond 0.5 kms source) (Seasons)		Secondary Sources of Water	Potable Yes/No	Purpose/ Use of Water	Ave. # water-borne diseases	Who usually collects* F or M	Potential potable source to be developed		
						Wet	Dry						Distance	Type	Adequate Yes/No

Instructions:

1) The **names of the sitios/puroks**, including the barangay proper, are required to be listed in the first column chronologically or alphabetically.

2) **Number of households** refers to the actual number of households in the sitios/puroks. Use the latest NSCO survey or if actual number is available at the barangay , adopt said data.

Indicate only the **percentage (%) of households** in the sitio/purok where households have **access to water source within 0.5 kms.** Experience showed that the key informants can easily indicate the answer in % than the actual number. It will be easier now to determine those households without direct water source from the responses of the key informants. If the distance from the house to the water source is within 0.5 kms., then the household can be considered with "Direct Water Supply." Beyond that, it is already considered that the household is experiencing difficulty in terms of accessing water and does not have "Direct Water Supply." ILO adopted the standard of InfRES Subproject FS criteria (villages or settlements lack potable water source within 0.5 kms.).

3) The information under **Description of Water Sources (Main or Secondary)** asks the data collector to indicate the sources of water such as spring, creek, river, deep well, dug well, artesian well, communal faucet, etc.

4) **Purpose/use of water** requires the key informants to indicate if the main/secondary source is used for drinking, washing.

5) **Water Collection Time** need to be established for households that DO NOT have a Direct Water Supply and has to walk a considerable distance to a source. The time asked refers to round-trip travel to source including the time spent waiting for their turn to fill up container(s). In most instances, water sources differ during the **wet and dry seasons**, thus differences in travel time should also be indicated. Is the current water source of households that **DO NOT have direct source potable**? The answer should be Yes or No only.

6) **Average number of water-borne** diseases incidence reported in the last three years. Prior to the conduct of the KI, the data collector can refer to the secondary data available at the Municipal Health Office. Said information could be validated during the KI. DOH standard follows a three to five-year (backtrack) period to establish prevalence of water-related health problems in the community.

7) **Who usually collects water.** Ask the KI participants about the sex group (male or female) who usually fetch water. Then ask whether the person is a child ("C") or an adult ("A"). This has to be entered under the relevant Male/Female column. Thus, the resulting data will tell us whether the person(s) usually carrying water are male children, adult males, female children, or adult females. The entries under "Male" or "Female" sub-columns should be "A", "C", or "A and C."

Accessibility-oriented planning should identify the affected (positively or negatively) groups. It should be able to pin point who gets to benefit from the introduction of a facility or an intervention. In the case of water, the question of who usually collects water identifies the group that has to travel to secure water for their household. Identifying the group whose burden will be relieved is important because the use of the time released would differ among adults and children, females and males. Adults will be able to engage in a livelihood, while children will have more time for schoolwork, play, or helping in the house. Thus, the question seeks to capture two things: the "age" and sex of the person.

8) **Potential source** to be developed. Indicate the **distance** (in kilometers) of the possible potable source being considered for development. Indicate also the **Type (e.g. spring)** as well as the if the source is **Adequate (Yes or No)** to supply the target community beneficiaries.

PART 2: PRIORITY PROBLEMS

BARANGAY	Perceived by Male Population			Perceived by Male Population		
	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3

Instruction

The objective is to document the people's perception or expression of needs (e.g. potable water supply) as regards accessibility problems in their area and how they see them. The respondents are asked to determine if potable water supply development is considered priority by the community. If yes, the respondents are asked to indicate whether it is rank priority 1, 2 or 3. Number 1 is the most significant while number 3 is the least significant among the top three problems perceived. This perception of the respondents can validate the answers to the previous sections.

The question should be asked separately of women and of men. If the KI is jointly held with female and males participants. The facilitator can preface the question by saying that it should be answered only the women/men in the group. Why should we ask this question separately for and from women and men? Women and men share the same concerns for their community, but they may also have very different gender needs and priorities. Distinguishing between the perceived problems of women and men is a way of making sure that the inputs to the planning process do not only come from one gender group. In this way, investments to be provided by the LGU to the community are targeted towards the priorities of the communities.

Annex 2

SAMPLE FORM: Identification of priorities

Note: List down in the form only those barangays which passed the screening criteria.

Barangay	# of Hhs.	(1) # of Hhs affected	(2) T-time (CS)	(3) Distance (PS)	(4) # of WBD	(5) Community Perception		(2)	(3)	(4)	(5)		(6) Subtotal (2+3+4+5)	(7) Total (1*6)	Rank
						M	F				M	F			

Legend: **CS** – average travel time (2 seasons) current source (two-way) including waiting time – those households beyond 0.5 kms. from the source
PS – potential source (in kms.); **WBD** – average number of cases/incidence of water-borne diseases
Box with bold line – indicate the corresponding equivalent rating of each indicator.

Annex 3

SAMPLE ANALYSIS

Note: List down in the form only those barangays which passed the screening criteria.

Barangay	# of Hhs.	(1) # of Hhs affected	(2) T-time (CS)	(3) Distance (PS)	(4) # of WBD	(5) Community Perception		(2)	(3)	(4)	(5)		(6) Subtotal (2+3+4+5)	(7) Total (1*6)	Rank
						M	F				M	F			
Camagsaan	126	66	30.00	5	2	1	1	2	2	1	3	3	11	726	7
Alagao	151	77	20	7	3	1	1	1	3	1	3	3	11	847	5
Catabaguangan	120	120	40	5	2	2	1	3	1	1	2	3	10	1200	4
Itok	335	136	30	8	4	1	1	2	3	2	3	3	13	1768	1
Mabini	139	87	20	5	1	2	1	1	1	1	2	3	8	696	8
Mactang	129	94	30	4	3	1	2	2	1	1	3	2	9	846	6
Villa Aurora	131	131	30	6	2	1	1	2	2	1	3	3	11	1441	3
Tanawan	115	115	30	8	4	1	1	2	3	2	3	3	13	1495	2

Legend: **CS** – average travel time (2 seasons) current source (two-way) including waiting time – those households beyond 0.5 kms. from the source
PS – potential source (in kms.); **WBD** – average number of cases/incidence of water-borne diseases
Box with bold line – indicate the corresponding equivalent rating of each indicator.

Column (2) – CS	**Column (3) - PS**	**Column (4) - WBD**	**Column (5) – Perception/Expressed need by M & F**
Highest value – 40 Less Lowest value – 20 --- Interval - 20/3 = 6.66 or 7 20 + 7 = 27 (Rating = 1) 28 +7 = 35 (Rating = 2) 36 + 7 = 42 (Rating = 3)	Highest value – 8 Less Lowest value – 4 --- Interval - 4/3 = 1.33 or 1 4 + 1 = 5 (Rating = 1) 5 +1 = 6 (Rating = 2) 7 + 1 = 8 (Rating = 3)	Highest value – 4 Less Lowest value – 2 --- Interval - 2/3 = .66 or 1 2 + 1 = 3 (Rating = 1) 4 +1 = 5 (Rating = 2) 6 + 1 = 7 (Rating = 3)	1st priority = 3 2nd priority = 2 3rd priority = 1

[redacted]

Rural roads are essential in agricultural development. Rural roads link communities and their agricultural fields to the main transport system and markets. Improving rural roads reduces transport cost and stimulates marketing. This results in increased production and productivity, crop diversification and increased profitability. A main bottleneck for local economic development is often a limited and poor quality rural road network. InfRES aims to overcome this problem in selected municipalities. The demand for rural road construction and improvements is extensive and it is important that rural roads are identified that respond to the transport needs of rural farmers and contribute to an increased agricultural output and poverty reduction. The IRAP tools include a participatory procedure, based on a multi-criteria analysis, to pre-identify suitable rural road candidates.

Introduction

A principal constraint that many poor farmers face in becoming more productive and profitable is the difficulty and costs in bringing in agricultural inputs to their farms and in hauling out their produce to the market. This is primarily caused by the lack of appropriate access infrastructures.

Part of the interventions to address this problem confronting the farmers, the InfRES Project will finance upgrading and/or rehabilitation and construction of rural roads that connect to areas with agricultural potential. This includes upgrading of trails or footpaths to all-weather rural roads, construction of landing facilities, footbridges, cableways and other transport infrastructures that will link production areas to markets and help enhance productivity.

The following graph shows the relationship between investments in road development and agricultural benefits. It indicates that the initial investments in providing first time access generate the fastest increase in agricultural benefits, followed by investments that provide all year access (in areas that only have seasonal access). The smallest increase in agricultural benefits results from further road improvement and upgrading. Maintenance works sustain and compound the benefits generated, while lack of maintenance results in a significant decrease in agricultural benefits over time.

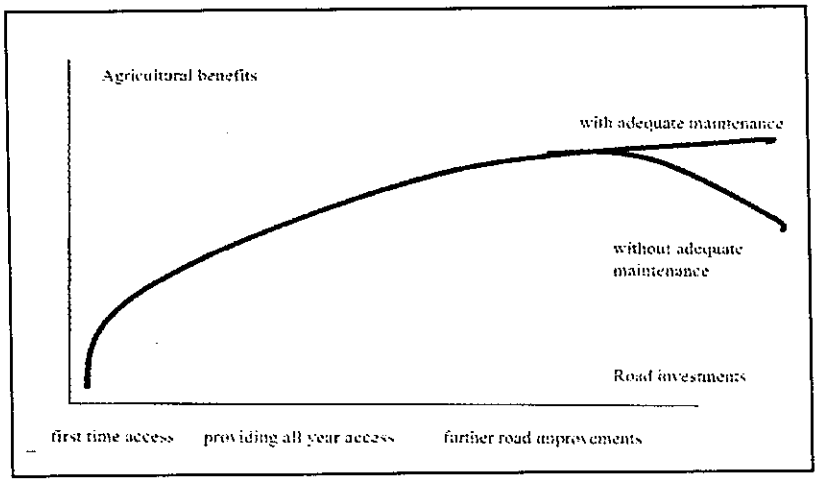


Figure 1: Road Investments - Agricultural Benefits Curve

Road Network Analysis

Most access improvement interventions to be financed under InfRES are associated with improving the rural road network. Unlike water supply, road links cannot be planned in isolation, as they are part of a larger road network. It is necessary to look at the total network and prioritize investments that will maximize the returns to the network as a whole.

The prioritization will take the following steps:

Step 1: Prepare a municipal road map and make an overall assessment of the extent, classification and condition of the road links in the network (see chapter 1).

Step 2: Identify rural roads that are in maintainable condition (and prepare a maintenance budget estimate).

Step 3: Identify road links that: i) need to be rehabilitated or upgraded to bring them into maintainable condition, and ii) new rural road links.

Step 4: Screen the roads identified in Step 3 to prepare a short list for construction, rehabilitation or upgrading.

Step 5: Prioritize rural roads for construction, rehabilitation or upgrading.

Step 1: Prepare the Municipal Road Map

The first activity involves the preparation of the municipal road map to show all individual road links, their classification and current conditions.

The road network needs to be reflected on a map to help in understanding the hierarchy of roads, classification and how each link fits into the overall network. To facilitate the analysis, it is recommended to prepare road map as a plastic overlay to be used together with the IRAP base map (see chapter 1).

The map should indicate road classification like *national, provincial, municipal or barangay roads*, and trafficability based on road conditions such as *dry season only, all weather*, etc. Represent road classification by using lines of various thickness, while indicate trafficability with designated colors to describe conditions. For example, a thin red line could indicate a barangay road that is only trafficable during the dry season.

The road map should also show river or stream crossings such as bridges or culverts (or the lack of them). For example, a black bridge symbol shows an existing bridge, a blue bridge symbol shows one that needs to be repaired while a red bridge symbol indicates the need for a (new) facility.

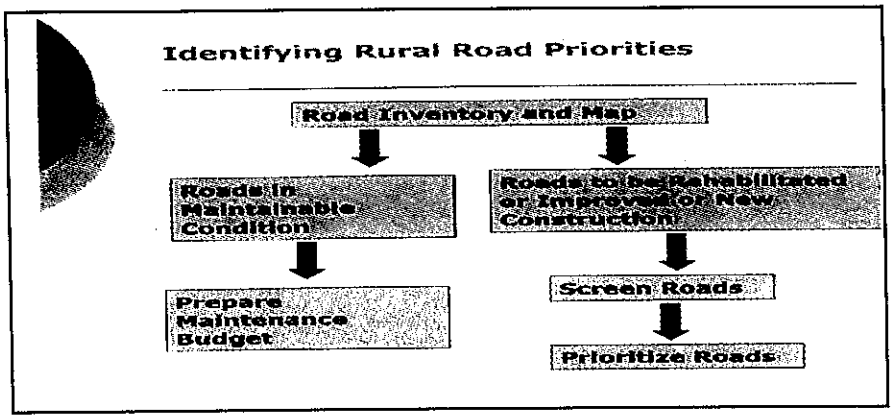
Step 2: Identify Maintainable Roads

InfRES supports rehabilitation of roads, upgrading and new construction. The project will not support routine and periodic maintenance, as this is the full responsibility of the LGUs. Road maintenance is a critical activity since roads deteriorate through continuous use. Experience tells us that roads without maintenance lose their trafficability.

Lack of maintenance results in lost (road) assets and benefits. Road investments generate employment, income and social benefits that can be lost in case the road becomes impassable.

One of the requirements for an LGU to become eligible for InfRES funding is a demonstrated commitment towards road maintenance. LGU budgets for the last 5 years will be examined to verify if at least 65% of the rural road maintenance needs have been met through local appropriations.

The procedure for assessing maintenance budgets and identifying rural road improvement priorities proposed in this Technical Guide divides the existing road links into two categories: maintainable roads; and, roads that need rehabilitation or upgrading. New road links will be added as another category later. InfRES will only support works on road links belonging to the second category.



For simplicity, it is suggested to classify maintainable roads as those trafficable throughout the year for the usual transport vehicles such as jeepneys, tricycles and vans. These roads do not need major works to keep them in trafficable condition as routine and periodic maintenance can address the necessary requirements. Once these maintainable road links and their corresponding lengths have been identified, a standard unit maintenance cost can be applied to estimate the annual routine maintenance budget. It is important to distinguish the requirements for annual routine maintenance works from the irregular periodic maintenance needs.

To quickly estimate the budget for the annual routine maintenance, multiply the total length of the road links that are in maintainable condition, and under the responsibility of the local government units, with the estimated costs per kilometer. As roads need periodic maintenance as well, include the periodic maintenance costs in the total maintenance budget requirements estimate (see example below).

The total length of the barangay road network in the municipality of Capalonga in Camarines Norte is 130 kilometers (kms.) of which 75 kms. are trafficable all year-round. The estimated total routine maintenance requirements to keep the 75 kms. in good (i.e. year-round trafficable) condition is Php 6,750.00 annually (75kms. X Php 90,000/km). In addition, specific roads will require periodic maintenance every year and the cost of this should be added to the routine maintenance budget to estimate the total annual maintenance requirements. For example, assuming that no new roads are added to the maintainable network, that the 55 kilometers that is in non-maintainable position is not improved to maintainable standards and that the periodic maintainable cycle is 5 years:

	Annual Costs
Routine maintenance needs	6,750,00
Periodic maintenance needs	7,500,000
Total	**14,250,000**

The periodic maintenance requirements are calculated as follows: 75 kms with a periodic maintenance cycle of 5 years means an average, periodic maintenance on 15 kms of road annually. If the average periodic maintenance cost is Php 500,000/km. Then, the total periodic maintenance requirements is Php 7.5M annually (15kms. X Php 500,000/km.). If more roads are brought into maintainable condition then the total annual maintenance costs will go up.

Step 3: Identify Rural Roads for Rehabilitation or New Construction

The second category of roads identified under Step 2 comprises the non-maintainable roads. These roads are not passable all year-round and need to be rehabilitated to be of service throughout the year, as well as become maintainable links again. In the event the LGU plans to extend this rehabilitated road network and add additional links to reach nearby new agricultural production areas, these new links should be treated as part of the road that needs rehabilitation.

The InfRES project supports road rehabilitation or new construction if the concerned link would have a major impact on agriculture production and productivity. It is unlikely however that InfRES will finance all rehabilitation and construction works. It is therefore necessary to prioritize roads in accordance with the objectives of InfRES, i.e. reduce poverty by improving agricultural production and productivity, as well as generate rural employment. (see Steps 4-5).

Step 4: Screening Rural Roads

The road key map and road database list all existing road links in an area that need rehabilitation and indicate new links for construction (Step 3).

To prepare a short-list of rural road candidates and to disqualify roads that do not meet certain criteria, a screening process is used. For those roads that pass the screening test, a simple cost-benefit analysis is applied as part of the ranking process (Step 5).

The following criteria are used for the screening:

1 The road link must run through an inhabited area, and satisfy a minimum number of people per kilometer of road.

2. The road link must run through an agricultural production area, and address a minimum area of agricultural land-use requirement within its zone of influence.

3. The road link should connect with an all weather road and be part of a network leading to local or provincial markets and/or district centers.

4. The road link must not be closely parallel to or in the area of influence of another all-weather road.

5. The road should not require the construction of expensive bridges.

6. The road link should not run through an environmentally-protected area.

7. The road link should serve the local economy at large and not only a special interest group such as a logging or mining firm.

It is recommended that all these requirements must be satisfied before a proposed road link pre-qualifies for rehabilitation or new construction. After the screening process, it is expected that the total length of the road network for rehabilitation is reduced. Roads that pass the initial screening will be subjected to the socio-economic ranking procedures described in Step 5 to help identify the priority links for rehabilitation/construction.

Step 5: Prioritizing Road Links

Rural roads can be prioritized using a simple cost-benefit and multi-criteria analysis to quantify benefits and relate said benefits to an estimated cost.

The process involves a socio-economic ranking based upon *the number of people in the area of influence, the expected socio-economic impact per person and the total cost of the road construction, rehabilitation or upgrading*. The application produces a quick list of priority candidates. For an assessment of higher level roads, such as provincial and national roads, more sophisticated methods can be used. For identifying rural road priority candidates, the following cost-benefit ratio is proposed:

$$\frac{\text{Population Served (P) X Economic Benefit Factor (B)}}{\text{Total Cost of the Road (C)}}$$

The procedure consists of five (5) steps:

Step 5.1: Estimate the Number of People within the Area of Influence (P):

To estimate the total number of people served, lay out on the map a 3 to 5-kilometer distance on both sides of the road to describe its area of influence. After having identified the barangays and/or sitios within the area of influence, determine the total number of households within the area of influence. Households that are separated from the road by natural obstacles such as a mountain or a river and households that tend to use another road should not be considered in the computation.

Step 5.2: Estimate the Socio-Economic Impact within the Area of Influence (B):

This step is requires some analytical work, considering that road improvements have an impact on the economic development of an area and the quality of life of the population served.

To understand the possible impact of a road improvement project, the potential benefits for each road link need to be valued. A scoring system to describe the said socio-economic benefits can facilitate the assessment. The following are used in assessing a road's benefits:

- ***Level of isolation***. *Isolation and poverty are linked. The poorer is the existing access, the higher will be the impact of the road. Providing first time access usually induces rapid changes. Roads that will improve access to communities without or with very difficult, dry season only, road access should have high priority.*

- ***The economic potential of the area of influence***. *Improved access to markets will encourage people to produce more goods to sell and stimulate interaction with traders. By improving access, the people may be encouraged to use idle resources and increase production of agricultural and non-agricultural items. The greater the volume of potential new production and marketable surplus, the higher is the priority.*

- ***The level of social services***. *Improved access can extend these services to formerly isolated communities. Road improvements positively affect accessibility through an improved level of transport service (from walking to riding or from high-cost unreliable service to cheaper and reliable service) to social services like existing hospitals and secondary schools. Road improvements could also result in the construction of health centers and in the upgrading of medical services in an area.*

As some criteria may be in conflict with others, or some are more important than others, it is therefore important that major stakeholders such as the direct beneficiaries, local decision-makers and leaders, planners, community and non-government organizations, extension

workers and other interest groups are fully involved in assessing the weights of the potential benefits.

The following table identifies potential socio-economic impacts **(scores)** of rural roads:

Indicator 1: Agriculture Potential within the Area of Influence (AoI)	
0	The area around the road has Low Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will not change much).
1	The Area Around the Road has Medium Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase).
3	The Area Around the Road has High Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase a lot).
Indicator 2: [illegible]	
0	Good (All sitios have road access, road is in good condition most of the year)
1	Fair (Most sitios have road access, road is only in good condition but only during the dry season)
3	Bad (Only few sitios have road access, no road or road is in very bad condition most of the year)
Indicator 3: Present Access to the Markets in AoI	
0	Good (main market is easily accessible, road is in good condition most of the year)
1	Fair (main market is not easily accessible, road is only in good condition during the dry season)
3	Bad (main market is difficult to access, no road or road is in very bad condition most of the year)
Indicator 4: Poverty Incidence in AoI	
0	Low poverty incidence in area. 0% – 30% of the households live under the poverty line.
1	Medium poverty incidence in the area. 31% to 70% households live under the poverty line
3	High poverty incidence in the area. 71% or more households live under the poverty line
Indicator 5: Road Condition as Barangay Problem	
0	No Problem (barangays identified road access as no problem)
1	Minor Problem (barangays identified road access as a minor problem)
3	Very Big Problem (barangays identified road access as a big problem)

Each of the factors identified in the table above are provided with three level scores. For instance, *Agriculture Potential* can be described as "high", "medium" or "low" with scores of "3", "1" and "0" respectively. Local government officials, planners and other technical experts at municipal level decide on the scores. The following choices are prescribed:

3 = very important benefit
1 = of little importance
0 = not an important benefit

Weights	Very Important (3 points)	Of Little Importance (1 point)	Not Important (0 point)
Agriculture Potential			
Access to Transport Services			
Present Access to Markets			
Poverty Incidence			
Road Condition as Community Problem			

Each person fills out one form and after receiving a critical number of responses, the average number of points of the entire group is calculated. This average number of points will become the weights of the different benefits (an example is shown below):

Potential benefit	Sum of all scores given by stakeholders	Ave. score (sum/no. of stakeholders)	Weight (ave.score/ total)
Agriculture potential	24	a.3	A .22 f
Access to transport services	24	b. 3	B .22 f
Present access to markets	22	c. 2.75	C .20 f
Poverty incidence	16	d. 2	D .15 f
Road condition as a community problem	24	e.3	E .22 f
	Total	f. 13.75	1.0

To calculate the total value per factor, multiply the scores per factor with the weight of the factor. The indicator for socio-economic benefit is the sum for all factors.

Once the scores are known it is possible to calculate the total benefit factor for each road. The following formula is used:

$$\sum_{B=1}^{5} (\text{Score} * \text{Weight}) = \text{Benefit Factor}$$

Step 5.3: Estimate the Total Cost of the Road Improvement (C):

At this point, it is recommended to look at the costs of construction, rehabilitation or upgrading. If the total construction, rehabilitation or upgrading costs for each road link are known, there is no need to estimate total costs. If the total improvement costs are not known, use a cost estimate based on past experience.

If the actual improvement cost per road link is known, it is recommended that actual figures are used instead of the cost estimates.

Step 5.4: Calculate the Benefit/Cost Ratio (P*B/C):

Once the construction or rehabilitation costs, the population served and the socio-economic benefits are known, calculate the benefit/cost ratio, as introduced earlier, for all rural roads proposed for rehabilitation or new construction.

Roads serve areas with different economic potentials (agriculture, tourism, industry, mining etc.). The number of people served is not enough to rank roads. The best road candidates are obviously those that serve a relatively large number of people and service an area with a relatively large socio-economic potential. Priority roads should be those that have the largest impact per investment unit, or **roads that have the lowest investment cost per person served weighted with the socio-economic benefit**. Since the ratio

$$\frac{\textit{Population Served} \times \textit{Socio-economic Benefit Factor}}{\textit{Total Cost of Road Rehabilitation/Construction}} \quad \textit{or} \quad \frac{(P * B)}{(C)}$$

relates benefits to costs, a high value of the ratio indicates high priority for the concerned road link. The high ratio value means more people are served, or benefits are generated (or both) for the amount invested. The ratio value corresponding to a road link, when compared with the other road link values, will be the basis of the prioritisation.

Annex 1 provides the guide to undertake the prioritisation procedures.

Step 5.5: Participatory Workshop to Review Priorities

The proposed benefit/cost ratio is an initial procedure to identify rural road priorities. A meeting to review the list of priorities, attended by concerned parties, should be organized to reach a consensus. This may result in some shifting of priorities. Once the short-list of priorities has been finalized, the prioritized road links can be subjected to a more thorough technical, financial and environmental analysis.

Annex 1

Guide to implement Step 5 – Prioritizing Road links

Step 1. Determine weights of identified benefit factors

By using the following table, determine how the stakeholders perceive the current conditions normally experienced in the LGU. The objective is to establish a collective perception on the significance of planned interventions to guide the prioritization of the road segments.

How important do you consider the following potential benefits when selecting rural road projects?	Very important (3)	Of little importance (1)	Not important (0)
Agriculture potential			
Access to transport services			
Present access to markets			
Poverty incidence			
Road condition as a community problem			

Each participant, representing an interest at local level, fills out the form based on an understanding of the sentiment of the organization or group he/she represents. Collect the accomplished tables and compute for the weight of each potential benefit by doing the following steps:

1. Compute the average for each potential benefit by adding the *rows* and dividing the sum by the number of respondents.

2. Compute for the weights of each average by dividing each average score by the sum of the averages. First add the average score of each potential benefit and divide each average score by the total of the average scores.

3. The computed value corresponding to each potential benefit is the weight provided by the collective perception of the stakeholders.

Potential benefit	Sum of all scores given by stakeholders	Ave. score (sum/no. of stakeholders)	Weight (ave.score/ total)
Agriculture potential	24	a.3	A .22 f
Access to transport services	24	b. 3	B .22 f
Present access to markets	22	c. 2.75	C .20 f
Poverty incidence	16	d. 2	D .15 f
Road condition as a community problem	24	e.3	E .22 f
	Total	f. 13.75	1.0

Step 2. Rank the road segments

Individual roads segments provide measurable benefits versus costs to their respective areas of influence. By comparing these benefits, a ranking mechanism is developed to identify and prioritize which of these roads if improved would yield the most significant benefits. A numeric value to quantify the benefit-cost ratio of a road segment is determined by using the following formula:

$$\frac{(P \times B)}{C}$$

where P = population; B = economic benefit factor;
C = cost of construction, rehabilitation or upgrading

A higher ratio value means that more people are served or more benefits generated (or both) for the amount invested. The roads with higher ratio value deserve priority.

The residents within a road's area of influence comprise the direct beneficiaries of the infrastructure. The road's area of influence is determined by drawing lines at 3-5 kilometer distance on both side of the road. The total population within the delineated area is the value of **P** in the above formula. The cost **C** can be derived from prevailing standard costs of road construction, rehabilitation or upgrading.

The economic factor **B** in the formula is determined by doing the following steps:

Determine the scores for each road segment by using the following table of indicators. Each stakeholder shall rate the road segments separately by using their understanding of current conditions surrounding the individual road segments.

Rating	Classification
0	The Area Around the Road has Low Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will not change much).
1	The Area Around the Road has Medium Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase).
3	The Area Around the Road has High Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase a lot).

Rating	Classification
0	Good (All sitios have road access, road is in good condition most of the year)
1	Fair (Most sitios have road access, road is only in good condition but only during the dry season)
3	Bad (Only few sitios have road access, no road or road is in very bad condition most of the year)

Rating	Classification
0	Good (main market is easily accessible, road is in good condition most of the year)
1	Fair (main market is not easily accessible, road is only in good condition during the dry season)
3	Bad (main market is difficult to access, no road or road is in very bad condition most of the year)

Rating	Classification
0	Low poverty incidence in area. 0% – 30% of the households live under the poverty line.
1	Medium poverty incidence in the area. 31% to 70% households live under the poverty line
3	High poverty incidence in the area. 71% or more households live under the poverty line

Rating	Classification
0	No Problem (barangays identified road access as no problem)
1	Minor Problem (barangays identified road access as a minor problem)
3	Very Big Problem (barangays identified road access as a big problem)

1. Add the scores provided by the stakeholders for each indicator and multiply these by the indicators' respective weights determined in Step 1.

2. Add the weighted scores of the indicators for each road. The value is the economic benefit factor B in the formula $\frac{\mathbf{P \times B}}{\mathbf{C}}$. Fill up the following table.

Here is a sample form to implement the activities in Step 2.

Road Link 1	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential												.22	
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 1)						

Road Link 2	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 2)						

Road Link 3	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 3)						

Road Link 4	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 4)						

Road Link 5	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 5)						

Road Link 6	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 6)						

Road Link 7	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 7)						

Road Link 8	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 8)						

Road Link 9	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 9)						

Columns can be added for the participants' score if needed.

3. Estimate the cost of each road segment and substitute this to **C** in the benefit-cost formula. Likewise, substitute the values of **P** and **B** and compute for the benefit-cost ratio. Fill up the following table and sort (or rank) the values in descending order. The highest value corresponds to the road with the highest priority for improvement.

Road Link	Benefit factor (B)	Population (P)	Cost (C)	**P x B C**	Rank

Conclusion

This exercise can help guide the actual conduct of a participatory activity among the various stakeholders in a municipality in selecting road links that can be proposed to the ADB-DA InfRES project. The interaction among the participants of the consultation can be further facilitated by preparing and presenting an updated municipal map showing all the road links in the area and overlaid with relevant information from the CLUP or the SAFDZ. The graphical representation of current conditions in the municipality, particularly on infrastructure intervention needs with which the stakeholders can easily relate with, will lead to productive deliberations between and among the various interests represented in the consultative exercise.

IRAP Road Prioritization Exercise

Objective: To demonstrate the IRAP procedure for the identification and prioritization of rural roads for investment programming

Technique: Case study analysis

Activity 1. The Role Play

Constitute a consultative group composed of a broad representation of the various stakeholders in the LGU. Each member assumes a specific role to play in this exercise and represents an organization, an office or any interest group. A facilitator chosen from among the participants shall ensure that discussions will focus on the job at hand.

Activity 2. The Case Study

The group's task is to rank 9 road segments, identified by the LGU engineering office, for either rehabilitation or upgrading. The needed information about each road segment is in the one-page summary case study prepared for this exercise. Apply the IRAP road prioritization procedure to rank said road segments for consideration in a proposal to be submitted for funding under the InfRES Project. It is necessary that all participants get a clear idea of what the case study is all about before proceeding to the next step.

Activity 3. Application of the IRAP Road Prioritization Procedure

3.1 Determine weights of identified benefit factors

By using the following table, determine how the stakeholders perceive the current conditions normally experienced in the LGU. The objective is to establish a collective perception on the significance of planned interventions to guide the prioritization of the road segments.

How important do you consider the following potential benefits when selecting rural road projects?	Very important (3)	Of little importance (1)	Not important (0)
Agriculture potential			
Access to transport services			
Present access to markets			
Poverty incidence			
Road condition as a community problem			

Each participant, representing an interest at local level, fills out the form based on an understanding of the sentiment of the organization or group he/she represents.

Collect the accomplished tables and compute for the weight of each potential benefit by doing the following steps:

1. Compute the average for each potential benefit by adding the *rows* and dividing the sum by the number of respondents.

2. Compute for the weights of each average by dividing each average score by the sum of the averages. First add the average score of each potential benefit and divide each average score by the total of the average scores.

3. The computed value corresponding to each potential benefit is the weight provided by the collective perception of the stakeholders

potential benefit	Sum of all scores given by stakeholders	Ave. score (sum/no. of stakeholders)	Weight (ave.score/ total)
Agriculture potential		a.	$\frac{a}{f}$
Access to transport services		b.	$\frac{b}{f}$
Present access to markets		c.	$\frac{c}{f}$
Poverty incidence		d.	$\frac{d}{f}$
Road condition as a community problem		e.	$\frac{e}{f}$
Total		f.	1.0

3.2 Rank the road segments

Individual roads segments provide measurable benefits versus costs to their respective areas of influence. By comparing these benefits, a ranking mechanism is developed to identify and prioritize which of these roads if improved would yield the most significant benefits. A numeric value to quantify the benefit-cost ratio of a road segment is determined by using the following formula:

$$\frac{\mathbf{(P \times B)}}{\mathbf{C}}$$

where P = population; B = economic benefit factor;
C = cost of rehabilitation or upgrading

A higher ratio value means that more people are served or more benefits generated (or both) for the amount invested. The roads with higher ratio value deserve priority.

The residents within a road's area of influence comprise the direct beneficiaries of the infrastructure. The road's area of influence is determined by drawing lines at 2-kilometer distance on both side of the road. The total population within the delineated area is the value of **P** in the above formula. The cost **C** can be derived from prevailing standard costs of road construction, rehabilitation or upgrading.

The economic factor **B** in the formula is determined by doing the following steps:

1. Determine the scores for each road segment by using the following table of indicators. Each stakeholder shall rate the road segments separately by using their understanding of current conditions surrounding the individual road segments.

Rural Roads - Scores	
Indicator 1: Agriculture Potential within the Area of influence	
Rating	Classification
0	The Area Around the Road has Low Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will not change much).
1	The Area Around the Road has Medium Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase).
3	The Area Around the Road has High Agricultural Potential (if the road is improved or constructed the agriculture production and marketing of products will increase a lot).
Indicator 2: Present Level of Access to Transport Services in Area of influence	
Rating	Classification
0	Good (All sitios have road access, road is in good condition most of the year)
1	Fair (Most sitios have road access, road is only in good condition but only during the dry season)
3	Bad (Only few sitios have road access, no road or road is in very bad condition most of the year)
Indicator 3: Present Access to the Markets in Area of Influence Area of influence	
Rating	Classification
0	Good (main market is easily accessible, road is in good condition most of the year)
1	Fair (main market is not easily accessible, road is only in good condition during the dry season)
3	Bad (main market is difficult to access, no road or road is in very bad condition most of the year)
Indicator 4: Poverty Incidence in Area of influence	
Rating	Classification
0	Low poverty incidence in area. 0% – 30% of the households live under the poverty line.
1	Medium poverty incidence in the area. 31% to 70% households live under the poverty line
3	High poverty incidence in the area. 71% or more households live under the poverty line
Indicator 5: Road Condition as Barangay Problem	
Rating	Classification
0	No Problem (barangays identified road access as no problem)
1	Minor Problem (barangays identified road access as a minor problem)
3	Very Big Problem (barangays identified road access as a big problem)

2. Add the scores provided by the stakeholders for each indicator and multiply these by the indicators' respective weights determined in 3.1.

3. Add the weighted scores of the indicators for each road. The value is the economic benefit factor **B** in the formula $\frac{\mathbf{P \times B}}{\mathbf{C}}$. Fill up the following table.

Road Link 1	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 1)						

Road Link 2	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 2)						

Road Link 3	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 3)						

Road Link 4	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 4)						

Road Link 5	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 5)						

Road Link 6	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 6)						

Road Link 7	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 7)						

Road Link 8	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 8)						

Road Link 9	Participants' Score										Tot	Wt	Weighted Score
Agriculture potential													
Access to transport serv													
Access to market													
Poverty incidence													
Road condition as problem													
							TOTAL (Economic Benefit Factor B for the road link 9)						

Columns can be added for the participants' score if needed.

4. Estimate the cost of each road segment and substitute this to **C** in the benefit-cost formula. Likewise, substitute the values of **P** and **B** and compute for the benefit-cost ratio. Fill up the following table and sort (or rank) the values in descending order. The highest value corresponds to the road with the highest priority for improvement.

Road Link	Benefit factor (B)	Population (P)	Cost (C)	$\frac{P \times B}{C}$	Rank
1					
2					
3					
4					
5					
6					
7					
8					
9					

Conclusion

This exercise can help guide the actual conduct of a participatory activity among the various stakeholders in a municipality in selecting road links that can be proposed to the ADB-DA InfRES project. The interaction among the participants of the consultation can be further facilitated by preparing and presenting an updated municipal map showing all the road links in the area and overlaid with relevant information from the CLUP or the SAFDZ. The graphical representation of current conditions in the municipality, particularly on infrastructure intervention needs with which the stakeholders can easily relate with, will lead to productive deliberations between and among the various interests represented in the consultative exercise.

ANNEX E

TECHNICAL ASSISTANCE
Infrastructure for Rural Productivity Enhancement Sector
InfRES Project

PROVINCIAL INFRASTRUCTURE IDENTIFICATION AND PRIORITIZATION PROCEDURE

Introduction

An ILO study on rural roads operations and maintenance indicates the lack or absence of updated information on the municipality's road network. The study states that some LGUs do not have an updated road map, others do not even have a map, and basic information such as road inventory and their current conditions are either absent or several years old. The research establishes that data in most municipal engineering offices are confined to inaccurate listing of road links with minimal technical descriptions on current conditions, traffic patterns, available transport services, etc.

At the national level, the DILG, through the ADB-funded Rural Roads Maintenance Policy Framework Project, started to establish a databank on rural roads in the country. Said databank lists the road links, their technical descriptions, surface material used and current conditions. However, the project has ended and the results have not been officially released by the DILG.

The Local Government Code provides that investments on rural infrastructures are to be determined by the LGUs themselves and allows the use of part of their annual Internal Revenue Allotment (IRA) for the said projects. LGUs can also seek and access outside sources of funds, like the Philippine Development Assistance Fund (PDAF) of legislators, to construct roads, bridges and other basic service facilities in rural communities.

To help in accelerating development in the agriculture sector in selected regions of the country, the Asian Development Bank (ADB) and the Department of Agriculture embarked on the Infrastructure for Rural Productivity Enhancement Sector (InfRES) Project. The initiative provides technical and financial assistance to LGUs for the construction and operation of agricultural support infrastructures such as farm-to-market roads, communal irrigation and domestic potable water supply systems. InfRES prescribes, in its selection criteria, that the sub-projects to be proposed by the local government units should have been selected either through the Integrated Rural Accessibility Planning (IRAP) process developed by the International Labor Organization (ILO), or through any other similar participatory procedure.

IRAP is a simple, relatively inexpensive and user-friendly procedure designed to identify and prioritize development needs by using the rural households' access to basic goods, services and facilities as basis. Application of IRAP in the Philippines and in several countries in Southeast Asia is managed and supervised by the ILO Advisory Support, Information, Services and Training for Asia and the Pacific (ASIST-AP) based in Bangkok. ILO's involvement in InfRES is to provide technical assistance on the use of the IRAP in identifying and prioritizing investments on rural roads and potable water supply.

InfRES is designed to assist municipalities improve on their agricultural productivity through agricultural support infrastructures. The Project also encourages provincial governments to collaborate with InfRES in developing agricultural support infrastructures for the municipalities in their respective areas. Provincial involvement calls for the formulation of an identification and

prioritization procedure that considers elements that exert significant influence on provincial development directions, looks beyond municipal boundaries but remains focused in bringing the desired impact on municipal agricultural productivity. An important pre-requisite to understanding such a situation is the province's access to updated and accurate information.

Updated information is readily available at barangay level. This is partly the result of the guidance and assistance provided to elected barangay officials on their respective roles in governance by the Department of Interior and Local Government (DILG). Ideally, said information should be reflected at municipal and provincial levels. However, this is not always the case.

To address this inconsistency of information at various levels of governance, the ILO is proposing the use of a simple participatory procedure patterned after similar and successful applications in Laos, Cambodia and Indonesia. This participatory approach involves the conduct of a **consultation/workshop** to be participated in by municipal and barangay key informants to update and validate the sets of relevant information to guide provincial actions in identifying and prioritizing agricultural support infrastructure sub-projects.

Objective

The activity aims to update, validate and integrate relevant information from barangay to provincial level using municipal base maps prepared by the province. The participatory consultation/workshop will demonstrate how information is integrated and reflected on the provincial (or district) base map to provide a sound basis for development decisions. The participants of the activity, most of whom will come from subject barangays, will rely on stock knowledge and familiarity of conditions in their respective areas and refer to official planning documents of their respective municipalities.

Approach

It is essential that the municipal and barangay key informants work together in reflecting on a 1:25,000 scale map (minimum size) the relevant information about their respective areas. Once accomplished, the updated municipal maps will be pieced together to form a composite map that describes conditions within and beyond municipal boundaries. The assessment, to be done by the province with the municipal/barangay key informants, is the meat of the consultation process.

Output

The outcome of the activity is a prioritized list of provincial infrastructure investments. Said list can be further evaluated based on: provincial (and municipal if the infrastructure implementation will be a province-municipal collaboration) capacity, resources, technical and managerial capacity, development trends, etc., to further strengthen the selection of the desired infrastructure projects.

It is imperative that the Provincial Planning and Development Office (PPDO) produce the 1:25,000 municipal working maps from the 1:50,000 NAMRIA composite map of the province. If the province does not have the capacity to produce said working maps, assistance from service providers should be sought. The province-produced 1:25,000 municipal maps will facilitate the integration of municipal outputs.

Materials

Sticker color paper, color pens, paper puncher, pentel pens, oil pastel, lighter fluid, pencil, tracing paper, paper cutter, plastic sheet, municipal map 1:25,000 scale prepared by the provincial planning office

Methodology

Step 1. On the 1:25,000 municipal map, indicate the relevant and updated information

Municipal planners, engineers, agriculturists, barangay leaders and other key informants from the target municipalities will attend the consultation/workshop. It is recommended that the municipal representatives bring with them the following reference materials:

- CLUP (for the land use data)
- Comprehensive Development Plan (for the sectoral development directions)
- SAFDZ (to identify and help delineate agricultural production areas)
- IRAP Accessibility Data (to establish rural households' perception of priority needs by barangay or for the whole municipality)
- Municipal base map (prepared and maintained by the municipality, in whatever scale available)
- Poverty map (if available, to identify areas with high incidence of poverty)
- Tax map or cadastral map (to help determine location and distribution of public and alienable and disposable lands and average landholding sizes)
- List and location of municipal infrastructure priorities (from the municipal planning documents)

Activity:

On the municipal working maps produced by the PPDO, task the key informants to indicate the following information:

- Barangay center location (some of the barangay centers may be wrongly located, adopt a color scheme and use color sticker paper cut by paper puncher to represent a more accurate location of the sites)
- Road network (roads that are not on the map, or wrongly located, can be easily corrected by the Barangay key informants. Use color pens to differentiate road surface materials used, vary the widths to indicate road classification such as national, provincial, municipal or barangay roads)
- Spot location of basic service facilities (adopt a color scheme to indicate specific service facilities to be applied uniformly by all municipalities)
- Major land uses like croplands, forests, water bodies, swamps, etc. (can be delineated and labeled or specific area colored with oil pastel thinned with lighter fluid, color-coded and applied uniformly by all municipalities)
- Major infrastructures such as irrigation facilities, dams, bridges, power lines, etc. (agree on the symbols to be used)

Reflect on the updated municipal map the **agricultural development zones** (refer to the SAFDZ maps, delineate boundaries using broken lines, color pens, etc.) and sites identified as **municipal priorities for infrastructure development** (from CLUP and/or Comprehensive Development Plan).

Step 2. Produce a composite provincial (or district) map from the updated municipal maps

Gather all the municipal map outputs and piece them together to form a provincial (or a district) map. Together with the participants and using popularly accepted symbols, discuss and indicate the following: settlements and population centers, major infrastructure facilities such as ports or airports, bridges or dams, irrigation and post-harvest facilities; general land uses clearly delineating major agricultural production areas; distribution of poverty levels; and road networks.

The updated location of barangay roads as provided by the barangay key informants are now reflected on the provincial composite map and describes, on a broader scale the nature and type of the various transport infrastructure links between producers and consumers, suppliers and users, and gives more meaning and significance to roads that will improve access to areas with high agricultural potential.

Step 3. Identify and classify the important road networks

Discuss the locational attributes and significance of the elements on the map. For instance, examine how the settlements are located in relation to major service centers, how are they linked and/or what are the transport options available to the residents. Another way is to ask the participants to describe the travel patterns of people in their respective municipalities like: which route is taken by most residents, reasons for and frequency of trips, most visited destinations by residents, traffic volume, sources of household and farm supplies, markets to sell produce, etc. These inputs will guide the identification and classification of the important road networks that have a direct influence on an area's development. With the concerned municipal key informants working with the provincial engineering technical staff, identify the important road segments on the composite map and describe their current surface conditions.

The province must then select from among the identified barangay roads those that satisfy the InfRES selection criteria, as well as the province's infrastructure development agenda. Although InfRES will most likely not support improvement of provincial roads, the PPDO must include, as a criterion for the selection of barangay roads for improvement, the potential for linking respective areas of influence to current and potential growth centers and nodes, transport hubs or major service centers. For example, separate barangay roads that run through agricultural production areas in two adjoining municipalities and that can be connected to provide a more direct route to service centers can be high in the provincial priority list. Or, barangay roads with the potential for improving access to major facilities like post harvest, warehouses, seaports, etc, can be included in the provincial selection.

Road classification brings with it the road's maintenance responsibility. Under the InfRES project, the maintenance of an improved farm-to-market road is the responsibility of the municipality that entered into the contract with InfRES. However, the ILO maintenance study reveals that municipalities, especially in the lower income brackets, do not maintain barangay roads because barangays have their own Internal Revenue Allotments (IRA) to use. The study also reveals that barangays along a common barangay road tend not to maintain their respective segments because segments or other barangays are not maintained anyway.

Province-initiated FMR improvement entails maintenance commitment by the province. Considering the better technical and financial capacity of this higher-level LGU, and considering that the FMR will most likely service several barangays that not do any maintenance, the commitment stands a better chance of actual implementation.

Step 4. Identify and prioritize areas within the province (may be just within or may extend beyond a municipality) that would require infrastructure interventions to accelerate the desired agricultural development

This consultation guide, although designed to access InfRES funding, must be anchored on current development plans and programs of the LGUs. The updated municipal maps should be overlaid with provincial preferences as stated in the provincial development plan or through official pronouncements of both the provincial executive and legislative branches of government. Also to be reflected on the composite map are infrastructure development priorities of each municipality. These elements must be highlighted, presented and discussed during the plenary assembly.

Process:

4A. Reflect municipal infrastructure priorities on the composite map

Each municipality has its own set of infrastructure priorities that are very significant at said level but expectedly are viewed differently from a higher-level LGU. As the consultation/workshop aims to operationalize the participatory component required of the proponent LGUs, considering said municipal priorities in arriving at provincial development decision is an important component of the activity.

4.B Delineate on the updated composite map the areas identified and prioritized for development, specifically on the agricultural sector, using the PPFP (or the Strategic Agriculture Fishery Development Zone map to identify agricultural areas) as reference.

The PPFP is an indicative basis for sectoral plans particularly those that deal with land, natural resources and infrastructure facilities. It helps facilitate the integration of land use proposals among adjoining localities with higher-level framework plans. The document provides the right locations for large-scale projects and gives the reason to link or open up new areas with transport infrastructures to optimize its development potential. The document is designed to influence local investment decisions.

A simple inspection of the composite map can guide the delineation of areas with strong potential for agricultural production development. Should the area indeed fall within the zone identified in the PPFP, it can be declared that the said site is a strong candidate for infrastructure intervention. Should the same site be found located within the agricultural zone identified by the SAFDZ map, the move to introduce interventions for agricultural development becomes obvious.

4.C Identify sites on the composite map that qualify as target areas for development under the InfRES Project. These must have any or all of the following (as prescribed in the InfRES Guidelines):

- Existing rural transport infrastructures (such as rural roads, footpaths, trails that can be upgraded or rehabilitated) passing through significant human settlements and agricultural production areas
- Social services and economic investments (in place or being planned yet) that can be enhanced by the InfRES infrastructure
- Cultural communities that will also benefit from the InfRES intervention
- Production areas (from SAFDZ) that can be efficiently linked, through a core road network of barangay and provincial roads, to existing markets
- Communities, preferably properly organized, willing and capable of participation in planning, design and project construction

Should the areas identified in 4B and 4C include a municipality's infrastructure priority sites identified in 4A, the convergence is certain to lead to a sub-project(s) to be proposed to InfRES. The said sub-project(s) can either be a municipal-provincial collaboration, or a purely provincial initiative depending on the desire of the LGUs involved. Example of this can be: a convergence cropland area covering portions of 2 adjoining municipalities that is not fully utilized because of accessibility problems may require upgrading of an existing trail or earth road to a gravel surface farm-to-market road (FMR) connecting 2 municipalities. The province can package this as its sub-project.

Step 5. Rank the identified sites.

Several areas with high agricultural development potential will be identified from the composite map. The selection of the appropriate site for provincial infrastructure intervention will require a simple and transparent ranking procedure that is acceptable to all parties. It must be clearly impressed upon the participants that their involvement is essential in guiding or influencing provincial investment decisions.

The three sets of characteristics for consideration, from InfRES, from the PPFP and from the list of municipal priorities, must mutually reinforce each other in a particular site. Unless there is a strong justification that the province can set forth, all the other areas where the three sets of characteristics do not converge have to be omitted from further discussions.

This method is similar to sieve mapping, sometimes also referred to as the convergence method. IRAP also applies the same concept by eliminating areas that do not experience accessibility problems and focusing only on those that need access improvement interventions.

Step 6. Prioritize the areas that would qualify for InfRES intervention

As Step 5 is done in a plenary session, it is expected that several areas will be identified, promoted and defended by the representatives from the affected municipalities. The province must strongly emphasize that unlike doing the assessment at municipal level, it is now going to make the evaluation from a higher plane and will consider elements that may not be clearly appreciated when done at a lower level.

From among the areas that remain after applying the InfRES, PPFP and municipal qualifying elements, apply a simple prioritization procedure that will satisfy provincial interests. For instance, evaluate whether the envisaged infrastructure will:

- benefit the most number of people
- spur the agricultural development of the biggest area
- efficiently link production with the consumer market by significantly cutting on travel time and transport costs
- develop communities within or adjacent to the infrastructure's area of influence
- identify cost effective infrastructure interventions

Other elements can be considered by the province in consultation with the key informants and factored into the evaluation during the plenary session.

Prepare either a checklist (or devise a scoring system) to prioritize the sites that remained after Step 6.

As the consultation involves the participation of key informants from barangay level, it is best if a simple ranking procedure can be devised that use variables with which the participants can easily relate with, say number of beneficiaries and costs of infrastructure development.

Step 7. Identify the infrastructure(s) needed to accelerate the identified area's development and help attain the provincial development objectives.

After the selection of the sites and the target beneficiaries, identify the type, extent and nature of the infrastructure needed to accelerate the specific area's desired development.

Using the composite map that indicates the prioritized area for development and recipient of provincial development intervention, brainstorm on the infrastructure needed. For instance, examination of the updated information on the map will help delineate the core road network that will link the production area to the existing and potential markets. Closely look at the current conditions of the strategic segments of the road network and other basic transport infrastructures such as footpaths, trails, footbridges, etc. With the municipal representatives acting as the authority, determine what would be the appropriate infrastructure intervention to attain the desired impact.

Facilitate the discussions and aid in arriving at an agreement on the infrastructure project to be proposed to InfRES.

It is important that the representatives from the other non-recipient areas participate in the open discussions to prevent any unwanted statements that may jeopardize the preparation and submission of the proposal. It must be made clear that the procedure aids in the prioritization and systematic programming of capital investments.

Step 8. Group the identified infrastructures as to roads, communal irrigation system and potable water supply and apply the appropriate ranking procedure.

For roads, rank the identified infrastructures by using the IRAP road prioritization procedure (refer to ILO Technical Guide on Identifying Rural Road Priorities) used by municipalities in selecting FMRs. The procedure makes use of the following:

- population within area of influence
- beneficiary perception
- cost
- core road network
- engineering considerations

For potable water supply, apply the ILO water supply prioritization procedure (refer to ILO Technical Guide on Prioritizing Villages on Water Supply Development, 2004) that considers the following elements:

- population within service area
- distance or travel time to current potable water source
- incidence of water-borne diseases
- beneficiary perception

For communal irrigation, the National Irrigation Administration (NIA) procedure can be used to select which among the identified areas should be provided with the facility.

The selection as to which among the three types of agricultural support infrastructure projects should be proposed to InfRES is left to the discretion of provincial authorities.

Resources, technical and financial capacity, development directions and trends, managerial capability, political dynamics, etc., are just some of the factors to be considered in the said selection.

Conclusion

This provincial infrastructure identification and prioritization procedure embodies the participatory component typical of similar methodologies developed by the ILO and applied in several countries in Southeast Asia. Earlier processes were designed for exclusive application at municipal level but changing times necessitate the need for a broader application at a higher-level local government unit. This procedure, pilot-tested in a province and found to be effective, can now be used to assist provinces wishing to avail of InfRES technical and financial assistance.

ANNEX F

List of LGUs Covered in the Follow-up Activities

Region	Province	Municipality	# of LGUs covered	Inclusive dates
8	Samar	Sto. Nino	1	7 Dec. 2004
	Leyte	Barugo, Capoocan	2	
9	Zamboanga del Norte	Katipunan, Sindangan	2	13 Dec. 2004
	Zamboanga del Sur	Tukuran	1	
	Zambo Sibugay	Ipil	1	
10	Misamis Oriental	Gitagum, Initao	2	
	Lanao del Norte	Sapad	1	
8	Leyte	Alangalang, La Paz, Dagami, Tolosa, Julita	5	16 Feb. 2005
	E.Samar	Maslog, Calbiga, Sto. Nino	3	
	Northern Samar	Pambujan	1	
	Southern Leyte	Silago, Bontoc	2	
	Biliran	Culaba	1	
9	Zamboanga del Sur	Kumalarang, Leon Postigo, Pagadian City	4	18 Feb. 2005
	Zamboanga del Norte	Dipolog City, Sibutad, Polanco, Siayan	4	
10	Bukidnon	Lantapan, Malaybalay City	2	21 Feb. 2005
	Misamis Oriental	Alubijid	1	
	Lanao del Norte	Baroy	1	
11	Davao del Norte	New Corella	1	23 Feb. 2005
	Compostela Valley	Maragusan	1	
5	Camarines Sur	Caramoan	1	29 March 2005
		Minalabac	1	30 March 2005
	Albay	Camalig	1	31 March 2005
	Sorsogon	Gubat	1	4 April 2005
		Sta Magdalena	1	21-23 May 2005
9	Zamboanga del Norte	Jose Dalman, Manukan, Gutalac, Godod	4	24-28 May 2005
9	Zamboanga del Sur	Bayog, V. Sagun, Ramon Magsaysay, Aurora, Tabina, Tigbao	7	]6-10 June 2005
	Zambo Sibugay	Titay, Diplahan, Buug, Payao, Mabuhay,Naga, Imelda	7	
11	Davao del Sur	Tarragona, Caraga	2	25-26 June 2005
10	Misamis Oriental	Binuangan, Balingasag, Jasaan	2	28 June 2005
		Claveria, Libertad	2	29 June 2005
5	Albay	Malilipot, Sto Domingo, Ligao City	3	25 July 2005
		Libon	1	27 July 2005 8-9 Sept. 2005
	Camarines Norte	Sta. Elena	1	17 Aug. 2005
	Albay	Provincial-wide: Daraga, Camalig, Guinobatan, Ligao City, Pio Duran, Jovellar, Oas, Libon	9	6-20 Oct. 2005
		Guinobatan	1	8 & 19 Oct. 2005
		Camalig	1	10 & 18 Oct. 2005
		Total	**81**	**25 batches**

ANNEX G

Rural roads improve rural access, but induce both negative and positive impacts on its service area. The implicit assumption for InfRES is that improving rural access will increase rural productivity and impact positively on poverty reduction endeavors. These assumptions need to be validated to assess whether the investments were justified and draw lessons for future development projects. Various models for assessing impacts of rural roads have been developed over the years. Most models are rather sophisticated and expensive to apply. This chapter sets out a simple procedure for assessing impacts of rural roads.

Rural Roads and Impact

Poor access is one of the fundamental characteristics of poverty. Isolation from sources of basic goods, services and facilities is also isolation from information, technology, opportunities, innovations and a chance for a better future. In rural areas, farm-to-market roads (FMRs) aim to improve on the existing link between rural users and suppliers, producers and consumers, between rural households and their sources of basic goods and social services. Improvements on this rural link desire to achieve measurable effects on the intended beneficiaries. Determining these effects is what describes an impact assessment.

The procedure presented in this chapter is proposed to assess the impact of InfRES-supported road investments on poverty reduction and agriculture development. Benefits may arise from improved access to markets and jobs, access to education and health services, access to credit and business and access to information. Other benefits may result from reduced travel and transport costs and employment created during infrastructure construction and maintenance.

Various studies have been implemented in different countries to measure the impact of rural road investments. These studies vary from relatively straightforward inexpensive qualitative case studies presenting anecdotal information to more costly and sophisticated quantitative socio-economic impact studies.

Impact assessment is basically determining the effects of an intervention by comparing the situation before and after the project. For the InfRES sub-projects, the impact assessment can be focused on the following areas:

On road users:

- Travel time
- Frequency of travel
- Number of road users
- Transport costs
- Purpose of travel

On Socio-economic impact

- Household income and on other measurable changes on socio-economic indicators
- Agricultural productivity related with production volume, technology, information, new practices

Environment

- Description of changes in the natural environment
- Changes in agricultural and other land uses

Policy

- Local policy changes brought about by the infrastructure

Local Institutions

- Formation of organizations related with the operation and maintenance of the infrastructure

Impact assessment of roads requires the establishment of baseline information as basis for determining or measuring the changes brought about by the infrastructure. These sets of baseline information are contained in socio-economic profiles, project feasibility studies and/or local development plans. The impact assessment can also be done by establishing the emergence of events, activities and practices brought about by the project. For instance, local government units may enact ordinances that relates directly with the project, community organizations are formed to respond to a new felt need, or discernable new practices evolve, all of which are established to be not present before the project.

In InfRES, the conduct of a feasibility study (FS) is a mandatory activity that establishes the needed baseline information for the assessment. The FS also provides the justification for the subproject and the rationale behind the site selection. The document prescribed for an InfRES subproject takes off from the profiling and assessment of the target area that include the following information sets[1]:

- Physical and biophysical resources
- Socio-economic situation
- Agricultural resources
- Rural infrastructure
- Internal capability assessment

Other reference materials for the benchmark information may come from the municipal Comprehensive Land Use Plan (CLUP) and/or the Municipal Development Plan (MDP). Additional information on agricultural resources is in the Strategic Agricultural and Fisheries Development Zone (SAFDZ) prepared by the Department of Agriculture. The profile of the target beneficiaries are in the subproject proposal submitted to InfRES, including essential road user information such as traffic count, travel time, frequency of travel, transport costs and purpose of travel.

In the event some of the information needed for the assessment are not available or were not generated, the assessment can be based on primary data and information from beneficiary interviews and/or personal observations. Both qualitative and quantitative information can be used for the activity with standard and other acceptable techniques utilized for the analysis.

Impact assessment most often is a difficult process as not all of the changes can be directly attributable to the project but rather the result of some external factors as well. It is easy to measure the impact of a road improvement on travel time to a health clinic for example, as travel times are reduced as soon as the road is completed. It is much more complicated to

[1] Training on Subproject Feasibility Study Preparation, InfRES Project, DA 2005

measure the impact of the road on the overall health status of the people. Other factors, such as a health awareness programme, might have contributed to an increased number of visits to the health clinic, which in turn is reflected in improved health statistics. Such developments can also be attributed to better access to information brought about by improved and increased interaction of people with each other and the established sources of relevant information.

One objective of this assessment procedure is to help determine the socio-economic benefits of roads constructed under InfRES. In instances when the roads are constructed using labour-based technology, or when a systematic maintenance procedure using barangay residents is in place, the assessment can also look into the employment creation effects of the infrastructure. With the beneficiary profile as benchmark information, the effect on overall household income can be determined.

Assessment Methodology

The remainder of this chapter briefly sets out a methodology for assessing impacts of rural roads under InfRES. The methodology is relatively inexpensive and easy to use and local enumerators could be hired to collect the needed data.

The impact study also aims to assess the magnitude and distribution of both direct and indirect effects of access improvements. Direct effects are the result of reduced travel times and savings in transport costs. Indirect effects consist of increases in income and improvements in health, education, interaction, participation etc.

The impact of an intervention is best determined after a minimum of 2-3 years from project completion. In instances when the available information prior to the subproject construction can not provide basis for comparison of specific conditions, primary data generation focusing on the beneficiaries' and other reliable sources' personal experiences is recommended.

Activity 1: Assess available secondary data and identify data gaps

Gather all the documents used in conceptualizing and formulating the subproject. The documents should include: LGU development plans, project feasibility study, socio-economic profile, project proposal, and Memorandum of Agreement and/or contracts entered into by the LGU. Ensure that the documents provide the following information:

- Description of the infrastructure project
- Rationale, general and specific objectives of the project
- Primary (and secondary, if identified) beneficiaries
- Socio-economic conditions, particularly relating with target beneficiaries
- Local policy statements relevant to the project

From the available benchmark information, list those that best describe the conditions before subproject implementation and assess whether these have been updated to describe current conditions relative to the project area.

Identify data gaps and prepare for Activity 2.

Activity 2: Conduct primary data generation

The project documents identify the target beneficiaries of the infrastructure, automatically presenting a list of respondents for the primary data generation activities. This is so as the desired impacts of the infrastructure are designed to be personally experienced by people

within its delineated influence area. The zone of influence of a road project is taken as the area within 2-kilometer distance on both sides of the facility.

The data gathering instrument should be designed to measure the changes brought about by the road on its users, on the household beneficiaries, on the environment, on local institutions and local policies. The following can be used as reference to measure these changes:

- Travel time
- Frequency of travel
- Number of road users
- Transport costs
- Purpose of trips
- Household income indicators
- Health indicators
- Literacy indicators
- Access to livelihood/employment opportunities
- Unemployment/underemployment rates
- Changes in the natural environment that can be attributed to the road
- Land use within the zone of influence
- Local policies related to the infrastructure
- Formation of organization or groups linked to the infrastructure

The above list covers some of the areas that can help measure the changes brought about by the infrastructure. Other indicators can be used for as long as the changes can be distinguished after road completion and through the continued use by intended beneficiaries.

This activity consists of 3 different sub-activities: i) the design, pre-testing and finalization of the survey questionnaires, ii) the recruitment and training of enumerators, and iii) the conduct and supervision of the survey.

Activity 3: Process data generated

Using tables prepared for the purpose, process the accomplished questionnaires and summarize the results. Note emerging patterns and/or trends and be ready to relate and/or determine whether these are indeed caused by the infrastructure.

Activity 4: Analyze and interpret information

The results of Activity 3 constitute the basis for the impact assessment. Any acceptable and/or appropriate statistical analysis procedure can be utilized. Interpret the findings by relating these to conditions prior to the completion of the project and establish how the changes are linked to it. For instance, establish how improvement of the road facilitated travel that led to increase in frequency of trips by beneficiaries, increase in public transport service, variation in travel cost, better access to information (i.e., technology, pricing, practices, etc.), or increased visits by technicians, health workers, teachers and/or traders.

Try to relate variations in household income to increased agricultural production, better access to other livelihood or employment opportunities, use of new production techniques, new varieties or farm inputs, all of which could have not been possible or would have been beyond the easy reach of beneficiaries if the infrastructure was not constructed.

There are instances when the LGU or barangay governments would enact ordinances regarding the operation and maintenance of the infrastructure, or the development of community organization dedicated to the upkeep of the facility, or still, institutions are

strengthened to ensure the prolonged use of the road. Establish how these developments are brought about by the construction of the road.

The construction of the road may also result in some environmental changes like flooding, erosion or even landslides. Try to establish how the findings on this aspect could have been due to the infrastructure.

Activity 5: Prepare an impact assessment report

The impact of the road may come in several forms, or in various intensities. Determine which among the impacts have the most significant effect on the beneficiaries, both positive and negative, to guide its effective operation and maintenance, or as input to planning of future similar projects. The use of an impact assessment can be regarded as similar to a post evaluation that aims to determine whether the objectives have been attained or not, or help conceptualize and develop a set of activities that can facilitate accomplishment of desired results.

Activity 6: Package report as an easy reading material

The impact assessment report is useful not only to project developers and managers but to the beneficiaries as well. The report can serve as an effective feedback mechanism for the barangay beneficiaries, LGU officials, community organizations and other users of the facility. The document can also strengthen advocacy initiatives and can be a useful reference that can be conveniently used by other LGUs.