



GUIDELINES FOR FARM ROAD DEVELOPMENT REVISION 2013

June 2013

Engineering Division
Department of Agriculture
Ministry of Agriculture and Forests

Table of Contents

| | | |
|------|---|----|
| 1.0 | Context and Rationale | 3 |
| 1.1 | <i>Legal and Policy Basis</i> | 3 |
| 1.2 | <i>Rationale for Revision of the Guidelines for Farm Road Development 2009</i> | 4 |
| 1.3 | <i>Definition of Farm Roads</i> | 5 |
| 2.0 | Strategic Objectives and Guiding Principles | 5 |
| 2.1 | <i>Strategic Objectives</i> | 5 |
| 2.2 | <i>Guiding Principles</i> | 5 |
| 3.0 | Screening Criteria | 6 |
| 4.0 | Selection and Prioritization | 6 |
| 5.0 | Planning and Budgeting..... | 6 |
| 6.0 | Funding for Farm Roads | 8 |
| 7.0 | Pre-investment Feasibility Studies | 8 |
| 7.1 | <i>Geotechnical Study</i> | 8 |
| 7.2 | <i>Social Study</i> | 9 |
| 7.3 | <i>Survey and Design</i> | 12 |
| 7.4 | <i>Time and Budget</i> | 12 |
| 8.0 | Construction and Supervision | 13 |
| 8.1 | <i>Modalities of Construction</i> | 13 |
| 8.2 | <i>Construction Responsibilities</i> | 13 |
| 8.3 | <i>Construction Supervision</i> | 13 |
| 9.0 | Operation and Maintenance | 14 |
| 9.1 | <i>Operation</i> | 14 |
| 9.2 | <i>Maintenance</i> | 14 |
| 10.0 | Monitoring and Enforcement | 15 |
| 11.0 | Institutional Arrangements | 16 |
| | Abbreviations | 19 |
| | Annexure A: Other References and Technical Documents | 20 |
| | Annexure B: Two-year Planning, Budgeting and Implementation Cycle **..... | 21 |
| | Annexure C: Average Unit Costs of RCC and Bailey Bridges | 21 |
| | Annexure D: Social Impact Monitoring Framework | 22 |
| | Annexure E: Initial Environmental Examination (IEE) Form for Farm Road Projects | 28 |
| | Annexure F: MOU Format between Gewog Administration and RUG | 31 |
| | Road User Group Memorandum of Understanding (English)..... | 31 |
| | MoU Part 1: Form 1 | 32 |
| | MoU Part 1: Form 2 | 33 |
| | MoU Part 2: Form 1 | 35 |
| | MoU Part 2: Form 2 | 36 |

Guidelines for farm road development revision 2013

1.0 CONTEXT AND RATIONALE

Farm Roads in Bhutan are recognized as a key instrument in improving rural livelihoods, reducing poverty and enhancing regional balanced development. Farm Roads have served as an important catalyst driving the growth of the rural economy and to some extent reducing the rural-urban migration trend. While the initial idea for investments in the Farm Roads was to connect farms to markets, the scope of these roads has diversified to include connectivity services to other socio-economic, non-agricultural sectors.

Over the last two development plan periods (2002-2013), demand for Farm Roads has grown dramatically and it will only continue to do so, as institutionalization of the local governments and associated decentralization process take roots. As of date, there exists approximately 4,300 km of Farm Roads across the nook and corner of the country.

However, the sustainable development of Farm Roads in Bhutan is constrained by its topography and harsh terrain, geological condition of the Himalayan region, scattered settlement pattern, scarce financial resources and lack of sufficient and experienced technical manpower in the Dzongkhags and Gewogs.

The series of Guidelines for Farm Road Development have served to assist farmers, Dzongkhags and Gewog administrations, Department of Agriculture and other stakeholders to incorporate technical, economic, social, environment, and management parameters into programming and planning, implementation, operation and maintenance of Farm Roads. The Guidelines also help to avoid different interest groups from putting unnecessary pressures on the implementing agencies to deviate from the road design and site selection.

1.1 LEGAL AND POLICY BASIS

1.1.1 Road Act of the Kingdom of Bhutan 2004

Section 5.5(a) of the Road Act of the Kingdom of Bhutan 2004 mandates the Ministry of Agriculture and Forests as the institution responsible for the construction, maintenance and management of Farm Roads and forest roads.

The revised Road Act of Bhutan 2013 has come into effect when this Guideline was sent for printing. Any provisions in this Guideline, if in contrast to those under the Act, would be superseded by those under the Road Act of Bhutan 2013.

1.1.2 Other References and Technical Documents

This Guidelines document is supplemented by the legislative and policy references and technical documents, which are provided in Annexure A.

1.2 RATIONALE FOR REVISION OF THE GUIDELINES FOR FARM ROAD DEVELOPMENT 2009

1.2.1 Guidelines for Farm Road Development 2009

The Guidelines for Farm Road Development 2009 was formulated to streamline the sustainable development and management of Farm Roads in different parts of the country, in keeping with the strategic objectives of the 10th FYP (2008 – 2013). However, it has been observed that the Guidelines have not been followed at the implementation level due to communication and coordination gaps and challenges.

Many concerns were also raised and issues identified during the Mid-Term Review of the 10th FYP with the Local Governments. It was also envisaged that the Guidelines would be reviewed and re-issued towards the end of the 10th FYP as the local governance institutional arrangements become formalised towards the end of the five-year plan period.

1.2.2 Mid-Term Review (MTR) of the 10th Five Year Plan

The MTR of the 10th FYP identified the following issues and challenges with regard to farm roads development:

- Huge investment on farm roads with few beneficiaries.
- High maintenance cost of farm roads, lack of proper criteria for farm road prioritization, and absence of farm road construction and management strategy.
- One of the major constraints facing Local Governments was the lack of engineers resulting in the delay of the implementation and physical monitoring and supervision of planned activities. Further, there was the lack of basic skills in the field of survey and design of bridges and farm roads.
- Though the royal government has allocated more resources in the 10th FYP compared to the previous plans to Dzongkhags and Gewogs, they still faced numerous resource constraints with regard to construction and maintenance of farm roads. Dzongkhags and Gewogs proposed additional budget for the construction and maintenance of farm roads over and above their annual grant ceiling.
- Numerous challenges were encountered at local levels while constructing Farm Roads. One of the reasons for the delay in construction of Farm Roads is because people refused to let the roads pass through their land.

In view of the concerns and issues raised, the MTR recommended establishing a Multi-Sector Task Force (MSTF) on Farm Roads consisting of officials from MoWHS, MoAF, GNHC, MoF, NEC and MoHCA to review/assess farm road construction and maintenance, and to submit a comprehensive proposal to the Cabinet. The MSTF has been established and it has submitted a comprehensive proposal to the Cabinet along with a set of recommendations, which have been approved by the Cabinet for implementation.

1.2.3 Multi-Sector Task Force on Farm Roads

Deploying a combination of desk research and field surveys/studies, the MSTF focused on the following aspects of Farm Roads:

- Planning and implementation of new Farm Roads,
- Maintenance of existing Farm Roads, and
- Roles and responsibilities of institutions involved with Farm Roads.

Key recommendations of the MSTF were:

- A minimum of two years of project planning, budgeting and implementation cycle for new Farm Roads;
- Strengthening the roles of the Local Government institutions through:
 - ✓ Formalization of Dzongkhag Technical Committee and Farm Road Construction Monitoring Committee at the Gewogs;
 - ✓ Re-emphasizing and strengthening the roles for the Road Users Group (RUG)
- Farm Road Maintenance Modalities and Funding Mechanism.

1.3 Definition of Farm Roads

As per the “Guidelines on Road Classification System and Delineation of Construction and Maintenance Responsibilities 2009”, Farm Roads are roads that link farmland areas/villages to an existing road of equal or higher classification to enable the transportation of inputs to the farm and agriculture produce to the markets.

2.0 STRATEGIC OBJECTIVES AND GUIDING PRINCIPLES

2.1 Strategic Objectives

The strategic objectives of the Guidelines for Farm Road Development are to:

- Strengthen the Farm Roads planning, budgeting and implementing process, and
- Institutionalize a rigorous and regular monitoring system in the development, maintenance and management of Farm Roads.

2.2 Guiding Principles

The guiding principles for a successful implementation of the Guidelines for Farm Road Development are:

- 2.2.1 Maintaining continuity and making optimum use of the experience already gained and lessons learnt in the development, maintenance and management of Farm Roads;

- 2.2.2 Ensuring consistency with the national strategy of poverty reduction and balanced regional development;
- 2.2.3 Increasing the synergy between Farm Roads and other types of roads;
- 2.2.4 Cautious and progressive adaptation of modern technological options, so that the chosen options (a) maximise the benefits to the poor, (b) are not burdensome on the current institutional set up, (c) facilitate the smooth development, maintenance and management of Farm Roads, and (d) follow environmental friendly road construction techniques and technologies.

3.0 SCREENING CRITERIA

The screening criteria for construction of Farm Roads are as follows:

- Proposed Farm Road must be more than 1 km in length to be eligible for any form of support from the government; and
- Proposed Farm Road must serve at least 20 households.

For the purpose of these Guidelines, to maintain consistency across the country, household data shall be the permanent resident population and households served shall include all households falling within 30 minutes walking distance from the proposed Farm Road, i.e. not only households alongside the Farm Road. Household data shall be taken from Dzongkhag and Gewog records, and be verified by either the Dzongkhag or the Gewog Administration, as appropriate.

4.0 SELECTION AND PRIORITIZATION

The process for selection and prioritization of new Farm Roads shall be as follows:

- Proposal shall be prioritised and approved at the Gewog level by the Gewog Tshogde (GT), based on local selection and prioritization criteria; however, it shall follow the minimum screening criteria set under clause 3.0 Screening Criteria, above.
- Technical feasibility review and recommendation shall be done by the Dzongkhag Technical Committee (DTC); and
- Dzongkhag Tshogdu(DT) shall be the approving authority.

5.0 PLANNING AND BUDGETING

A minimum of two years of project planning, budgeting and implementation cycle for new Farm Roads, with additional oversight mechanisms, shall be followed. With proper groundwork and planning done in the first year, it is expected to address the existing challenges of hurried executions and with it all the associated problems of poor road quality when the local governments plan and implement a farm road within the same fiscal year. It will also tackle the issues related to delayed clearances and social issues arising from land acquisition and site selection.

The first year shall be devoted to undertaking the ground works such as:

- Consultations with the communities on the initial alignment of the Farm Road and getting the necessary social clearances.
- Getting other necessary clearances such as forestry, environmental, etc. and administrative and technical sanctions.
- Formation of the Dzongkhag Technical Committee (DTC). There must be one such committee for every Dzongkhag. Once formed, such a committee can also serve as a Dzongkhag Tender Committee, etc. which can also serve as a technical review body for all types of constructions.
- Formation of Road Users Group (RUG) and identification of RUG Committee members.
- Preparing the design, drawings, cost estimates, tender documents and call for quotations.
- GT submits FR proposals to DTC for review and recommendation. DT approves the proposals.
- DT/GT takes up the approved FR for budget provision with DNB/MOF.
- Identifying the project management personnel or hiring technical staff, as required.

It shall be mandatory for Local Governments and other implementing agencies to complete all year-one formalities listed above. During the annual budget discussion, DNB/MOF shall verify completeness and accordingly provision the budget.

The second year shall be devoted to execution of the farm road works. The second year activities shall include:

- Release of budget by Department of Public Accounts (DPA), MOF.
- Award of work.
- Monitoring, co-ordination and trouble-shooting project implementation issues by the project management.
- Periodic monitoring by the DTC.
- Frequent monitoring by the RUG Committee and implementing agency (DoA Projects, Dzongkhag Administration, Gewog Administration), in addition to monitoring and supervision by the site engineer.
- Final inspection of the completed Farm Road by representatives of the DTC, RUG Committee, and the implementing agency.
- Proper handing-taking over of completed Farm Road from the contractor/ implementing agency to the Local Government, and to the RUG, witnessed by DTC representatives.

The detailed steps and time schedule of the two-year planning, budgeting and implementation cycle is described in Annexure B.

6.0 FUNDING FOR FARM ROADS

Construction of Farm Roads shall be funded through either Local Governments' Annual Grants or donor-assisted projects e.g. projects under the MoAF. To ensure that all Farm Roads are built to specified standards prescribed in the Guidelines on Road Classification System and Delineation of Construction and Maintenance Responsibilities 2009, a minimum provision of Nu. 3 million per km shall be kept for construction through contracts. Similarly, a minimum of Nu. 2 million per km shall be provisioned for construction done departmentally with earthmoving machines provided from the Central Machinery Unit. These unit costs exclude the cost of bridges, which, if applicable, must be additionally budgeted for. For budgeting purpose, the average unit cost of different types of bridges is attached as Annexure C.

These costing figures shall be periodically revised to account for inflation or for changes in standards.

For any Farm Road implemented with Annual Grants funding during a particular financial year, adequate funding must be provisioned to avoid supplementary budget requirement and compromising on the quality of the Farm Road.

7.0 PRE-INVESTMENT FEASIBILITY STUDIES

Basic pre-investment feasibility studies are essential for construction of roads in Bhutan due to the fragile terrain, precious agricultural land and limited resources– human and financial. Such studies contribute to reducing wasted effort on unviable or un-maintainable projects and to develop realistic alignments and cost estimates as early as possible, reducing obstacles and cost escalation at a later stage.

Because there is limited internal capacity at all levels to undertake detailed feasibility studies, they are often overlooked by implementing agencies when submitting annual budgets. However, it is now expected that implementing agencies will build capacity to undertake studies. Till the time capacity constraints continue, they can outsource such activities, and adequate budget shall be provisioned for such activities.

The following basic feasibility studies must be conducted.

7.1 Geotechnical Study

Although detailed geotechnical studies would be ideal, it may not always be possible under the current circumstances. During the initial stages, when District Engineering Sector has limited experience, DoA shall support the Local Governments through sharing of previous studies, manuals, and collaboration with other relevant technical agencies. However, the DES shall try to build their in-house technical capacity, especially in the fields of geotechnical and environmental studies. DoA shall also support in their efforts to build their technical capacity.

Till that time there is in-house technical capacity, the DES can outsource such studies and also conduct joint studies with external consultants, as a way of building their capacities through hands-on training.

The same procedure also applies to the environmental study under section 7.3.

The following basic data must be reviewed as part of the geotechnical study.

7.1.1 Geological conditions

- Verification of desk study data and detailed walkover survey of alignment and at least 10m (uphill), 20m (downhill).
- Check slope stability and avoid rocky areas and cliffs.
- Identify relic slides or toes through which the alignment might pass.
- Identify possible quarry sites for sand, gravel and rock.
- Identify soil and rock types and conditions.

7.1.2 Terrain

- Verify vertical gradient of proposed road meets Technical Guidelines and that maximum gradient is not exceeded and restricted to maximum length as noted in Technical Guidelines.
- Take note of the aspect of the road alignment especially whether it is north or south facing.

7.1.3 Precipitation and water management

- Verify all watershed and drainage channels. Avoid or note necessary structures.
- Identify high and low water levels, flood plains and seasonal debris paths.
- Identify side drain lining and sub-soil drainage requirements as per site condition.
- Identify sub-base/capping requirement based on soil and climatic condition.
- Study rainfall data to accordingly design adequate drainage structures, and decide on contract periods.

7.2 Social Study

The following basic data of the benefiting communities must be reviewed as part of the social study.

7.2.1 Baseline data (for purpose of future monitoring)

- Demographics
- Occupational/economic activities

- Income
- Access to services (all sectors)
- Agricultural inputs and outputs
- Land use
- Current commodity prices
- Existing community groups/bodies
- Key current concerns/problems of the community in relation to proposed alignment
- Identification of vulnerable persons
- Affected land and property, such as existing community infrastructure (irrigation, drinking water etc.)
- Preferred road alignment
- Agreement in principle to voluntary land contribution

Much of this data can be collected through discussions and interviews with Dzongkhag and Gewog officials, consultations with individuals, community and especially with those directly affected persons. Most of the data like health, education and agriculture can be taken from existing records, by screening out for those specific beneficiary villages.

No specific social specialisation is required to collect the data, although sensitivity to avoid influencing the responses during consultation is important. It is also crucial to identify any coercion of vulnerable groups over land or property loss when finalising the road alignment.

The Extension Agents are mandated to carry out the socio-economic studies. They are not only in close proximity with the communities but also would have better understanding of the socio-economic situation of them. Moreover, most of this information would already be available with their offices.

7.2.2 Land Compensation

All implementing agencies must be aware that Farm Roads are being constructed as a priority need of the rural communities. The financial impact on the government would be huge if the government has to pay compensations for land or affected properties for the construction of farm roads. Therefore, no compensation shall be provided to communities for either land or affected trees or properties due to construction of Farm Roads.

However, the implementing agencies must try to find all possible mitigation measures to avoid loss of land and property of individual farmers. Some possible ways are: re-alignment through government land, internal arrangements within the community, alternative engineering designs, etc., during the feasibility stage. In addition the implementing agencies can look into setting up restriction on the maximum percentage of land that can be acquired from an individual household. Or, ensuring that land will not be acquired from a household with very less land

holding (the minimum threshold land holding can be decided by the community). Particular attention shall be paid to vulnerable households such as female-headed households or those with many dependants.

The implementing agency must ensure that the social study during the project feasibility stage bring out the issues that affect the communities. This information shall be documented following the Social Impact Management Framework procedures described in Annexure D. One important provision under the framework is to draw up a specific agreement (format included under Annexure D) with those affected, noting the amount of land to be donated and its location, assets included therein, estimate of land and asset value, with sketch of road and plot. This must be finalised upon final batter pegging and before formation cutting. The agreement must be signed by the implementing agency and the affected household in the presence of an external witness to verify it was not signed under duress. The agreement, in original, shall be retained by the implementing agency and the affected household. The implementing agency must assist to update the affected landowners 'lagthram', if he/she desires to do so.

7.2.3 Environmental Study

The environmental study should emphasize on early consideration of environmental risks and factors, avoidance of higher risks, and value-addition to the projects by timely identification of environmental impacts and measures to mitigate and enhance those impacts. The study should be conducted mainly in line with the National Environment Strategy, the National Environment Protection Act 2007, Environmental Assessment Act 2000 & Regulation for Environmental Clearance of Projects 2002. However, provisions of the Waste Prevention and Management Act of Bhutan 2009, The Water Act of Bhutan 2011 and Waste Prevention and Management Regulation 2012 should also be taken into account during the environment strategy. The following basic data must be reviewed as part of the environmental study.

7.2.4 Baseline data

- Land use and vegetation
- Flora and fauna (protected species)
- Watershed and drainage patterns
- Protected Areas including Wildlife Sanctuaries, National Parks, Nature Reserves, Conservation Areas and Biological Corridors in relation to the road alignment.
- Cultural heritage sites in relation to proposed alignment
- Houses, Services and Infrastructures likely to be affected by the proposed road.
- Affected land (Area, type, use)
- Possibility of adverse aesthetic impacts.
- Social impacts if not adequately covered in the Socio-economic section.
- Sites for surplus spoil disposal
- Sites for possible quarries if required

With respect to above baseline data, likely environmental impacts should be assessed and mitigation and enhancement measures should be proposed accordingly.

Article 9 of the Environment Assessment Act 2000 states that “A project of the Royal Government that does not require development consent may commence only after receiving an environmental clearance from the Secretariat”. Therefore, upon decision on the construction of the farm road, environmental clearance should be obtained from the relevant competent authority or National Environment Commission Secretariat. Application for environmental clearance should be applied in line with the Initial Environmental Examination (IEE) Form. (Annexure E). For additional information, Application for Environmental Clearance: Guideline for Highways and Roads, NECS 2004 can be referred.

One important Note to remember is that, a full Environmental Impact Assessment is required for roads that pass through any part of a Protected Area.

7.3 Survey and Design

Detailed survey and design is required to avoid any dangerous and unstable areas or those requiring high cost for construction of embankments, walls, cross drainage structures or blasting. Survey should be carried out in phases, the first proposed centreline being marked out prior to the pre-investment studies being conducted, to serve as a guide to those undertaking the studies.

Once the preliminary studies have been completed, the engineer can make any necessary change to the alignment and then conduct the detailed topographical survey.

The data should be sufficient to accurately design the horizontal and vertical alignment for the full length of the road including cross sections at 20m c/c. Geometry of passing places and hairpins must be designed as per the Farm Road Technical Guidelines and Technical Specifications (2009).

7.4 Time and Budget

The table below provides the recommendation for budgeting of feasibility studies, survey and design component:

| | Time | Cost | Notes |
|--|--|-------------------------------------|--|
| Survey and Design | 1 week/5km for field-work +1.5 months office preparation (drawings, estimates, reports etc.). Assumes sufficient staff available to conduct all studies as part of one team. | 3-5% of estimated construction cost | Detailed topographical survey, estimation of quantities, production of detailed BOQ, structures inventory, design drawings |
| Pre-investment Studies (Geotech, Socio-economic and Environmental) | Does not include travel time to road head. | 3-5% of estimated construction cost | Produce reports, preparation of EMP, submit for NEC clearance, clear any social/land issues |

8.0 CONSTRUCTION AND SUPERVISION

8.1 Modalities of Construction

Construction of Farm Roads shall be implemented either:

- Through contract, or
- Departmentally with machinery support from CMU or any other hiring agency.
- Or, through the combination of above two modalities

8.2 Construction Responsibilities

The construction of Farm Roads shall be managed by the Dzongkhag Administration (DA) and the Gewog Administration (GA). Specific responsibilities for construction of Farm Roads are as follows:

- Coordination by the Dzongkhag Agriculture Sector (DAS).
- Technical aspects by the Dzongkhag Engineering Sector (DES).
- Actual construction by Contractor or by DoA/local governments if done departmentally.

8.3 Construction Supervision

DA and GA shall also have joint responsibility for construction supervision to ensure proper quality control. Specifically:

- Construction supervision shall be the main responsibility of DES, and
- GA (through the Agriculture Extension Agent) and RUG Committee shall have additional supervision responsibilities.

The modalities and responsibilities of implementing institutions, from planning through supervision and monitoring, are summarized in the table below.

| Activity | Responsible Institution | | |
|--|-------------------------|-------------------------|--|
| | Gewog | Dzongkhag | Others |
| Feasibility Studies, Survey and Design | ✓ | ✓ | <ul style="list-style-type: none">• Review and recommendation by DTC• Technical backstopping by DoA |
| Planning and Budgeting | ✓ | ✓ | <ul style="list-style-type: none">• Approval by DT• Validation by DNB |
| Procurement | ✓ | ✓ | |
| Construction and Supervision | ✓ | ✓ | RUG Committee to provide additional supervision |
| Monitoring | Gewog level KRA/KPI | Dzongkhag level KRA/KPI | <ul style="list-style-type: none">• Sector level KRA and KPI by DoA |
| Farm road bridges – survey and design | | ✓ | DoR & DoA |

9.0 OPERATION AND MAINTENANCE

9.1 Operation

Upon completion of the construction, GA shall take over the Farm Road and hand it over to the RUG, via a MOU signed between GA and RUG. It shall then be the full responsibility of the RUG to operate and maintain the Farm Road as per the terms and conditions of the MOU. The MoU format is provided in Annexure F.

As found feasible, RUG may work out mechanisms to levy toll charges for use of Farm Roads by other agencies, for instance, National Resource Development Corporation Ltd. (NRDCL) for transportation of timber and stone, other commercial companies, importers and exporters of agro-products, etc. Such charges could be used for sustaining maintenance funds.

9.2 MAINTENANCE

9.2.1 Activities

As described in the Farm Roads Maintenance Manual (2009), there are three types of maintenance relating to farm roads and bridges. These are defined below.

| Maintenance Types | Roads and Bridges | Responsibility |
|----------------------------|--|---|
| Routine Maintenance | On-going maintenance throughout the year requiring limited equipment – hand tools only and labour, including activities such as drain clearing, pot-hole filling, vegetation cutting, etc.; Bridges would require checking pins and joints, parapets and decking | Road User Group and Gewog Administration |
| Major Maintenance | Emergency maintenance & monsoon restoration, as and when required; For bridges repairs as such as repainting, oiling etc. | Gewog Administration |
| Improvement/Rehabilitation | Typically after 5 years to maintain technical standards of the road; Bridges may require painting, oiling, and even changing parts | Gewog Administration/ Dzongkhag Administration |

9.2.2 Maintenance Budget

Major Maintenance and Improvement/Rehabilitation of all Farm Roads shall be the responsibility of Local Governments (Dzongkhags and Gewogs) and resources shall be prioritized from their Annual Capital Grants. Wherever relevant, improvement funds may be kept with the Central Programs.

The beneficiaries shall continue to be responsible for the Routine Maintenance of their Farm Roads. The beneficiaries through their RUGs shall mobilize resources i.e. labour to carry out routine maintenance activities, and also create Farm Road maintenance funds through contributions, toll fees, or any other feasible means.

9.2.3 Modality

Modality options for Maintenance implementation are outlined in the Farm Road Maintenance Manual 2009.

10.0 MONITORING AND ENFORCEMENT

The monitoring and enforcement functions of the various institutions and stakeholders are as follows:

10.1 Engineering Division/DoA/MoAF

- Enforcing the Guidelines for Farm Road Development Revision 2013; institutionalisation of farm road implementation procedures
- Reporting on farm road construction progress and situation at the national level
- Monitoring the key result areas and key performance indicators at the sector level

10.2 GNHC

- Monitoring the key result areas and key performance indicators at the national, sector, Dzongkhag and Gewog levels

10.3 DNB/MoF

- Monitoring and enforcing the implementation of two-year planning, budgeting and implementation cycle

10.4 DoR/MoWHS

- Monitoring to ensure implementing agencies build farm roads to approved specifications and standards

10.5 NEC

- Enforcement of relevant environmental laws, policies and regulations, and monitoring compliance regularly
- Monitoring compliance to EFRC methods

10.6 Local Governments (Dzongkhags and Gewogs)

- Monitoring observance of the Guidelines for Farm Road Development- Revision 2013
- Monitoring construction works
- Conduct periodic monitoring of the Farm Roads operation and maintenance
- Monitor to ensure Farm Roads are pliable all seasons
- Monitoring the key result areas and key performance indicators at the Dzongkhag and Gewog levels.

11.0 INSTITUTIONAL ARRANGEMENTS

The main institutions involved in the development of farm roads, and their roles and responsibilities are:

11.1 Department of Agriculture, MoAF

- Responsible for developing farm road standards, guidelines and technical specifications in consultation with Department of Roads, MoWHS.
- Enforcing Farm Road Guideline and institutionalisation of farm road implementation procedures.
- Maintain the information database and maps of the farm roads, and their conditions and thereby ensure coordination in the planning of new Farm Roads.
- Reporting on farm road construction progress and situation at the national level.
- Through the DAO, continue to spearhead the planning and co-ordination of Farm roads construction and maintenance.
- Continue to implement donor supported Farm Road projects as centrally executed projects.
- Provide technical backstopping to the implementing agencies.
- Monitoring the key result areas and key performance indicators at the sector level.

11.2 Ministry of Finance

- Ministry of Finance through DNB and DPA shall have the key role, especially in enforcing the implementation of two-year farm road planning, budgeting and implementation cycle.
- Ensure the Local Governments and other implementing agencies submit documents such as detail survey, design and estimate for new Farm roads during the annual budget discussions.
- Verify whether the Dzongkhag Technical Committee is formed.

- DPA shall share the list of all farm roads under construction in the Dzongkhags and Gewogs in that particular year with the GNHC and DoA on their request.

11.3 Gross National Happiness Commission

- GNHC will support facilitation and co-ordination of local governments in planning and prioritization of farm Road as per the local social and economic needs, FYP objectives, and availability of funds.

11.4 National Environment Commission

- As the custodian of all environmental laws, policies and regulations, NEC is mandated to enforce these instruments and monitor compliance regularly.

11.5 Department of Roads

As mandated by the Road Act 2013, DoR is the coordinating body for all road development activities in the country. The specific roles of DoR vis-à-vis Farm Roads are to:

- Define farm road standards and technical specifications.
- Monitor that implementing agencies built farm roads to approved specifications and standards.
- Support farm road bridge survey and design.
- Capacity development of the District Engineering Sector for farm road bridge survey, design, construction and maintenance.

11.6 Department of Forests and Park Services

- Issue forestry clearance as a pre-requisite for environmental clearance

11.7 Dzongkhag Technical Committee

- Body to review and recommend FR proposals to DT
- Monitor observance of Farm Road Guidelines
- Submit list of DTC members and information required for budget endorsement to DNB
- Ensure site engineer and formation of RUG
- Periodic monitoring
- Endorsement by DTC representative during handing-taking to ensure quality and standards
- Submit the technically approved farm roads to the DT, for prioritization and endorsement into the Dzongkhag/Gewog plans.

11.8 Dzongkhag Agriculture Sector

- Coordinate in obtaining all necessary clearances and completing all other pre-construction requirements including survey, design, estimates etc., as per the two-year planning cycle.
- Submit half-yearly progress reports to ED/DOA to enable it to monitor and record progress at the national level.
- Monitoring the key result areas and key performance indicators at the Dzongkhag level.
- Coordinate socio-economic feasibility study for farm road construction.

11.9 Dzongkhag Engineering Sector

- Carry out feasibility studies (geotechnical and environmental), survey and design
- Tendering and awarding of farm road contracts
- Construction and contract supervision

11.10 Gewog Administration

- Through the GT, receive and assess the beneficiaries' proposals, screen them following the FR guideline screening criteria and accordingly incorporate them in the Gewog plans.
- Implementing of farm road construction and maintenance.
- Through EA/GAO, ensure that RUGs are formed for every farm road.
- Through EAs carry out the socio-economic feasibility study.
- Through RUG ensure that all farm roads are pliable all seasons.
- Once completed and taken over from the Contractor/ Builder, hand over the farm roads to the RUG through signing of MoU between the GA and the RUG Committee.
- Monitoring the key result areas and key performance indicators at the Gewog level.
- Settlement of disputes, especially issues related to land.

11.11 Road User Group

- Assist the implementing agency during feasibility studies, survey and design
- Provide additional supervision during farm road construction.
- Takeover the road after completion of construction and take full ownership.
- Fully responsible for routine maintenance of their farm road.
- Inform GA if major maintenance or rehabilitation is required.

ABBREVIATIONS

| | |
|-------|--|
| BoQ | Bill of Quantities |
| CMU | Central Machinery Unit |
| DA | Dzongkhag Administration |
| DAO | Dzongkhag Agriculture Officer |
| DAS | Dzongkhag Agriculture Sector |
| DE | Dzongkhag Engineer |
| DES | Dzongkhag Engineering Sector |
| DFO | Dzongkhag Forest Officer |
| DGM | Department of Geology and Mines |
| DLG | Department of Local Governance |
| DoA | Department of Agriculture |
| DoFPS | Department of Forests & Park Services |
| DNB | Department of National Budget |
| DoR | Department of Roads |
| DT | Dzongkhag Tshogdu |
| DTC | Dzongkhag Technical Committee |
| ED | Engineering Division |
| EFRC | Environmentally Friendly Road Construction |
| EMP | Environmental Management Plan |
| FY | Financial Year |
| FYP | Five Year Plan |
| GA | Gewog Administration |
| GNHC | Gross National Happiness Commission |
| GT | Gewog Tshogde |
| HH | Household |
| KPI | Key Performance Indicator |
| KRA | Key Result Area |
| MoAF | Ministry of Agriculture & Forests |
| MoHCA | Ministry of Home & Cultural Affairs |
| MoF | Ministry of Finance |
| MoU | Memorandum of Understanding |
| MoWHS | Ministry of Works and Human Settlement |
| MSTF | Multi-Sector Task Force |
| MTR | Mid-Term Review |
| NEC | National Environment Commission |
| NRDCL | Natural Resources Development Corporation Limited |
| RECOP | Regulation for Environmental Clearance of Projects |
| RGoB | Royal Government of Bhutan |
| RUG | Road Users Group |

Annexure A: Other References and Technical Documents

This Guidelines document is supplemented by the following legislative and policy references and technical documents:

- (1) National Environment Protection Act 2007, National Environment Commission
- (2) Environmental Assessment Act 2000, National Environment Commission
- (3) The Forest and Nature Conservation Act of Bhutan 1995
- (4) Technical Guidelines for the Constructions of the Farm Roads (May 2009), Department of Agriculture
- (5) Technical Specifications and Standard Drawing for the Constructions of Farm Roads, Department of Agriculture, May 2009.
- (6) Farm Road Maintenance Manuals A, B, C, D and E (May 2009), Department of Agriculture
- (7) Guidelines on Road Classification System and Delineation of Construction and Maintenance Responsibilities 2009, Policy and Planning Division, Ministry of Works and Human Settlement
- (8) Environmental Codes of Practice – Highways and Roads 2000, Department of Roads
- (9) Annual Grants Guidelines for Local Governments (Dzongkhags and Gewogs) 2010, Gross National Happiness Commission
- (10) Regulation for the Environmental Clearance of Projects 2001, National Environment Commission
- (11) Application for Environmental Clearance Guideline for Highways and Roads 2004, National Environment Commission

Annexure B: Two-year Planning, Budgeting and Implementation Cycle **

| Financial Year | Activities | Timeline (approximate) |
|----------------|---|------------------------|
| FY0 | GT/DT propose budget for feasibility studies and, survey and design | February/ March |
| FY1 | Consultation with the beneficiaries/communities | July – June |
| | Formation of DTC (one per Dzongkhag) | July – November |
| | Formation of RUG Committee | July – December |
| | Conduct feasibility studies and survey and design, and cost estimates | July – November |
| | Process for all clearances | July – January |
| | <ul style="list-style-type: none"> GT submits proposals DTC reviews and recommends DT approves | December – January |
| | DT/GT takes up the approved road for budget provision with DNB | February/ March |
| FY2 | Commence construction, supervision and monitoring | July – June |

FY0-Financial Year 0; FY1- Financial Year 1; FY2- Financial Year 2

** Some changes in the implementing procedure will be felt only in year zero, i.e when doing it for the first time. After second year onwards, the process will be continuous and expected to have no much difference. There will be feasibility studies, survey and design for some roads, and at the same time some farm roads will be under construction.

Annexure C: Average Unit Costs of RCC and Bailey Bridges

| Sl. No. | Bridge Type | Carriage Width (m) | Cost per Meter run (Nu) |
|---------|---|--------------------|-------------------------|
| 1 | Permanent Bridges : RCC bridges | 5.50 | 487,437.00 |
| 2 | Semi-permanent Bridges : Bailey Bridges | 3.28 | 262,658.00 |

Source: Department of Roads, MoWHS

Annexure D: Social Impact Monitoring Framework

Background

To facilitate the assessment and management of potential adverse social impacts arising from the Farm Road development programme, the Ministry of Agriculture and Forests has prepared a Social Impact Management Framework (SIMF) based on RGOB's relevant legislation and guidelines.

The SIMF details the guiding principles, policies and processes for assessing the program's potential social impacts and defining opportunities to enhance benefits and mitigate adverse social impacts. It contains modalities on socio-economic conditions, identifying stakeholders groups and analyzing their interests and concerns, conducting social screening to assess potential impacts and linking these findings to project design. The institutional structure to support social impact management, including capacity building requirements and monitoring and evaluation mechanisms are also detailed in the SIMF.

Social Screening

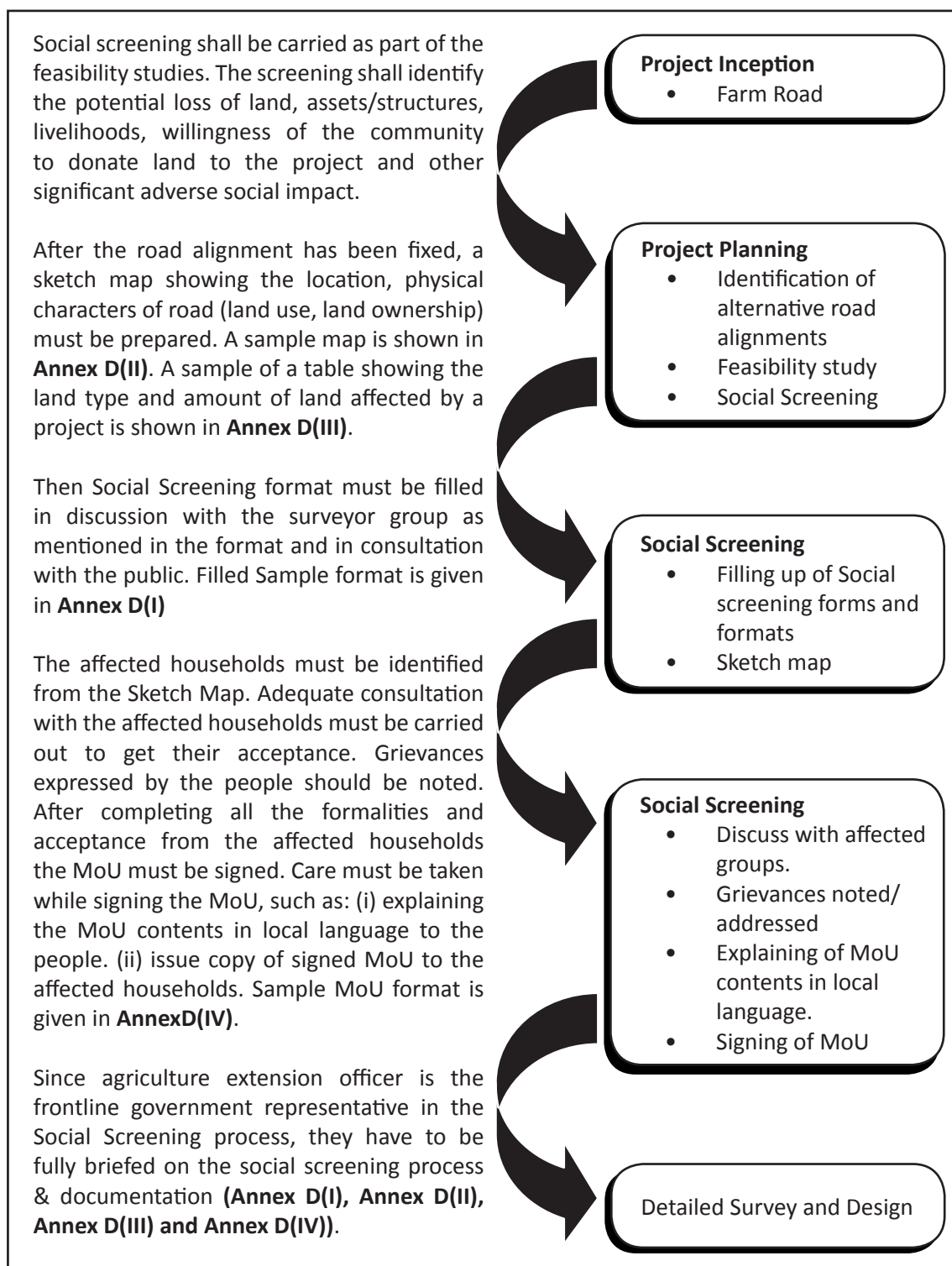
Social screening is to identify the potential for loss of land, asset/structures, livelihoods, loss of community property resources, willingness of the community to donate land to the project and other significant social impacts. To the extent possible, the project must consider alternative engineering designs to minimise adverse social impacts and land acquisition.

Issues Related to Social Screening

There is a very limited process of social screening. The following list sets out a summary of problems identified related to social issues:

- Social screening process is not fully or uniformly being undertaken.
- Generally, social screening documents do not include a map of the location, physical characteristics of the road, land-use, and ownership patterns of the project area. The absence of such information makes it difficult to assess the severity of impact on any given household from land lost or donated.
- It is not very clear on whose responsibility it is to carry out social screening- whether it is the responsibility of the Extension Agent, site engineer or gup?
- Inconsistencies in filling up the MoU forms even within a Dzongkhag.
- The households are sometimes not aware of the area of land that they agreed to donate when they sign the MoU.
- No records were kept on the amount of land donated by each household or indicated in the MoU.
- Some individual's believe that once they have signed the MoU they have no scope to raise their issues or concerns.
- The MoUs are written in English and people are unaware of their contents.

Social Screening Process

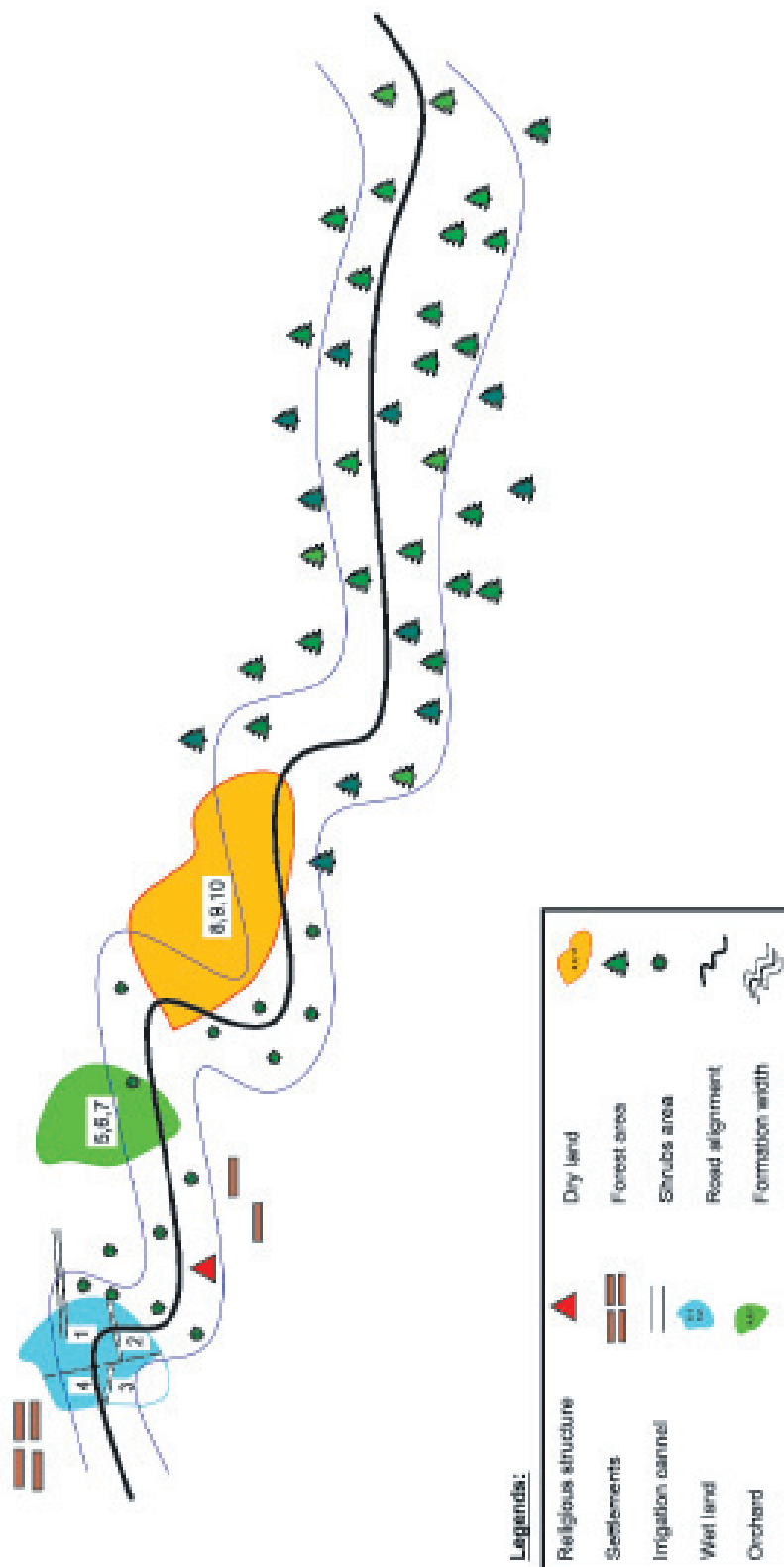


Annexure D(I) Social Screening Format: SAMPLE FORM

Background Information

1. Name of the farm road/irrigation channel: Zurphey farm road.
Total Length: 4.18km
2. Alignment of road for proposed work: Tshanglajong to Zurphey
3. Date of Survey: 9th August 2004
4. Name of Surveyors: i) Mr.GopalRana,Junior Engineer ii) Mr.Kin Dorji, Project Engineer, ECR-ADP iii) Mr.Chenga Tshering Assist.DAO iv) Mr.ThinlayRinchen,Gup,Trong geog.
 - Does the sub-project need to acquire lands, houses or other private property of the people for its construction/ improvement?
Yes/ No
 - Does the sub-project impact houses/assets or other property?
Yes/ NO
 - Is the acquisition of land based on voluntary donation?
Yes/No
 - Will any of the affected household lose 25% (community to decide on this figure) or more of their owned land or income due to project interventions or any affected family who will lose a residential house as a consequence of the project?
Yes/No
 - Will the sub-project adversely impact livelihoods:
Yes/No
 - Are there any impacts on common property resources (religious or culture structures, irrigation, drinking water, etc)?
Yes/No
 - Are there any adverse impacts on vulnerable groups in the community?
Yes/No
5. Name of respondents(please attach list)
6. Location and physical characteristics of road:
Provide a sketch map of road showing- land-use, land ownership i.e private land, public land and community resources/properties. This has to be completed on a road design map for each road project intervention) **Refer Annex D (II)**

Annexure B(ii): Land Use Sketch Map for Social Screening- Sample Map



Annexure D(III): Land affected by construction of farm road.

Dzongkhag:

Gewog:

Name of Farm Road:

| Sl. No | Name of farmer | Village | House No. | Tham No. | Total land owned (Acres) | Land affected by the road in Acres | | | | |
|--------------|--------------------|----------|-----------|----------|--------------------------|------------------------------------|-------------|------------|-------------|------------|
| | | | | | | Dryland | Wetland | Orchard | Total | Total % |
| 1 | Tandin | Pemashog | BA-7-179 | 188 | 5.00 | 0.15 | - | - | 0.15 | 3.0 |
| 2 | Pasang Dema Tamang | Pemashog | BA-7-51 | 281 | 5.31 | - | - | 0.20 | 0.20 | 3.0 |
| 3 | Ugyen Tshering | Pemashog | BA-7-182 | 77 | 5.00 | - | 0.10 | - | 0.10 | 2.0 |
| 4 | Choda | Pemashog | | | 5.00 | 0.15 | - | - | 0.15 | 3.0 |
| Total | | | | | 66.76 | 1.35 | 1.37 | 0.2 | 2.92 | 4.4 |

Annexure D(IV):MoU for Voluntary Land Donations- SAMPLE FORM

The following agreement has been made on 12 day of December 2007 between Mr/Mrs/Kinlay Wangmo age 70 years , resident of Chapa village Gewog Chapcha Dzongkhag Chukha the son/grandson/daughter/grand daughter of Mr. Begopa.

1. The land with certificate no (*insert thram no.*) is a part of 5 acres (give the total land holding figure under the above thram no.) is surrounded by wetland (wetland/dry land/orchard/forest/tseri) on the eastern side, by dryland on the western side, by tseri on the northern side, and by forest in the southern side.
2. The owner holds the transferable right of 0.10 acres of land (land/structure/asset)
3. The owner testifies that the land/structure is free of squatters of encroaches and not subject to any other claims.
4. The owner hereby grants this asset to the Geog Administration, Chapcha for Construction of Zomtho-Komo farm road for the benefit of the community.
5. The owner will not claim any compensation against the grant of this asset nor obstruct the construction of the road.
6. The GT/DT agrees to accept this grant of asset for the purposes mentioned.
7. The GT/DT of Chapcha Gewog (in case of GYT) shall construct and develop the road and take all possible precautions to avoid damage to adjacent land /structure /other assets.
8. Both the parties agree that the infrastructure so constructed shall be community premises.
9. The provisions of this agreement will come into force from the date of signing of this deed.

Signature of the Owner

Signature of GT Chairman

Signature of Tshogpa

Witness :

Annexure E: Initial Environmental Examination (IEE) Form for Farm Road Projects

1. Proposal for new road/ improvement of existing road
2. Name of the project proponent with following details
 - a) Name of the applicant
 - b) Address
 - c) Phone/Fax
 - d) Email
 - e) Describe the purpose of construction of new road/ widening of existing road
3. General Information
 - a) Length (in kilometres)
 - b) Starting place From To
 - c) Location

| Stretch of the Road/Alignment | Geogs | Dzongkhags (District/s) | Thromde/s |
|-------------------------------|-------|-------------------------|-----------|
| | | | |

4. Land
 - a) Describe the type of land (government/private/forest land/other land) as well as area required for road construction along the length of the road.
 - b) Alternate Routes/Alignments considered
 - i) _____
 - ii) _____
 - iii) _____
 - iv) _____
 - c) On a map or google map describe and earmarked the potential landslide areas along the route/alignment
5. Whether any of the following exist within the vicinity or new road/alignment is passing through. If so, please indicate aerial distance and the name of the site.

| S.No | Item | Name | Aerial Distance (in km) |
|------|--|------|-------------------------|
| 1 | National Park | | |
| 2 | Sanctuary | | |
| 3 | Forest | | |
| 4 | Wildlife Habitat | | |
| 5 | Habitat of endangered/threatened/endemic species | | |
| 6 | Reservoirs/Dams | | |
| 7 | Religious/archeological site | | |

6. Site Preparation

a) Is the road route/alignment located in low-lying area?

Yes ☐

No ☐

i) Level before filling (in m)

ii) Level after filling (in m)

iii) Details of fill material required

| Quantity of Fill Material required (in cu.m) | Source |
|--|----------|
| | |

b) Gradient details

c) Does the site involve stripping?

Yes ☐

No ☐

If yes, provide the following details:

i) Size of the area to be stripped.

ii) Location

iii) Soil type

iv) Volume and quantity of earth to be removed

v) Location of dump site

d) Does it involve cutting?

Yes ☐

No ☐

If yes, please furnish the following details:

i) Size of the area to be cut.

ii) Depth of cut

iii) Location

iv) Soil type

v) Volume and quantity of earth and other material to be removed

vi) Location of dump site.

e) Does the site preparation require cutting of trees?

Yes ☐

No ☐

If yes, please furnish the following details:

i) How many trees are proposed to be cut?

ii) Species of the above trees

iii) Are there any protected/endangered species?

Yes ☐

No ☐

If yes, provide details

7. Describe the type of soil, average thickness and estimate total quantity of top soil (m3) to be generated along the length of road.
8. In case the road passes through a flood plain of a river (if applicable), Please provide flood periodicity in the area
9. Raw material requirement
 - a) Expected quantity of raw material required during construction

| S.No | Item | Quantity (Tonnes) | Mode of Transport | Source |
|------|------------------------|-------------------|-------------------|--------|
| 1 | Blue metal | | | |
| 2 | Bricks | | | |
| 3 | Sand | | | |
| 4 | Cement | | | |
| 5 | Bitumen | | | |
| 6 | Diesel | | | |
| 7 | Others(Please specify) | | | |

b) Details of construction workers to be employed

10. Quantify the expected quantity of solid wastes likely to be generated (tonnes/day). Also describe method of disposal of solid wastes and its reuse
11. Describe the surface and subsurface water source such as inventory of spring, stream, river and water crossing along the length of road.
12. Describe the number of villages as well as population through which road passes through. If the road construction involve acquisition of land or displacement or demolish of existing structures, then, proponent should provide detailed information including compensation package wherever applicable.

Annexure F: MOU Format between Gewog Administration and RUG

Road User Group Memorandum of Understanding (English)

This Memorandum of Understanding consists of two parts:

Part 1 deals with issues before construction completion following election of the Committee members

Part 2 is to be signed after the road construction is complete (even if DLP applies) and is being handed over to the RUG Committee by the Geog/ Dzongkhag Administration. At this moment the change and transfer of ownership of the road strongly shifts from government to the community

Glossary and Acronyms

| English | English | Dzongkha | |
|-----------------|---|----------|--|
| Road Care-taker | The RUG Committee member who walks the length of the road regularly to identify maintenance work required | | |
| DAO | Dzongkhag Agriculture Officer | | |
| DoA | Department of Agriculture | | |
| DLP | Defects Liability Period. Period after the completion of construction that a Contractor is still responsible to undertake repairs due to faulty work. This does not include maintenance | | |
| GAO | Gewog Administration Officer | | |
| GT | Gewog Tshogde | | |
| MOU | Memorandum of Understanding- a signed agreement between the parties – in this case Dzongkhag/ Geog and the RUG represented by the RUG Committee | | |
| RM | Routine Maintenance | | |
| RUG | Road User Group. The community group formed under the cooperative act to work together to maintain their Farm Road | | |
| WS | Workshop – one of the three Workshops for RUG formation and Farm Road RM capacity building | | |

MoU Part 1: Form 1

| | |
|---|--|
| Name of Geog | |
| Farm Road Name | |
| Farm Road length | |
| Starting point | |
| End point | |
| Estimated/ Contract cost | |
| Source of funding | |
| Number of households | |
| Date of start of construction | |
| Date of expected construction completion | |

GENERAL OBLIGATIONS

Communities benefiting from the Farm Road have agreed to form an association to undertake Routine Maintenance of the road, and have elected Committee members to represent them. This Association shall have its own Regulations and Bylaws for implementing its activities. The beneficiaries have also understood that in case they default with this agreement, the GT have the full power in penalizing the defaulters as per the bylaws

ELECTED ROAD USER GROUP COMMITTEE MEMBERS

| | Name | Signature |
|------------------------|-------------|------------------|
| Chair Person | | |
| Secretary | | |
| Treasurer | | |
| Road Care Taker | | |
| (other) | | |
| (other) | | |

Date of election ofFarm Road RUG Committee

Election of Road User Group Committee carried out in the presence of:

| | DAO representative | DES representative/ GAO | Gup |
|------------------------------|---------------------------|--------------------------------|------------|
| Name/ designation | | | |
| Date/ signature | | | |

MoU Part 1: Form 2

Farm Road RUG Committee

With this agreement the beneficiaries of Farm Road, declare to have formed a Farm Road RUG for the purpose of managing the routine maintenance, and to have elected a Committee in a fair and equitable manner. The beneficiaries have understood and agreed that the Committee of the RUG will:

1. Maintain and fully function as Committee at all times, holding elections for position as and when required.
2. Will/ not* be issued maintenance hand-tools from the Geog/Dzongkhag* as per the DoA Maintenance Manual which they shall control,manage, use and care throughout the maintenance work
3. Mobilize the community labour for the routine maintenance work
4. Inform the Geog/Dzongkhag* for need of materials to complete the Routine Maintenance
5. Make their own arrangement for replacement tools as informed by the road care taker.
6. In the event of Major Maintenance or works covered by the DLP, which are outside the scope of Routine Maintenance, they shall inform the Geog/ Dzongkhag* to make arrangements.
7. Regularly collect funds for the routine maintenance (tools, payment of Caretaker etc)
8. Make sure that the contributions are deposited in the RUG Joint Savings Account in a Bank and maintain a record of funds collected and spent.
9. Inform in good time, of intention to step down from Committee and plan for election of replacement member.

It is understood and agreed that it will be the duty of the Committee as a whole, and not only of the Road Care Taker to ensure that all the Routine Maintenance tasks are executed satisfactorily and at appropriate frequency and season. Duties of committee members follow:

THE CHAIRPERSON

1. Overall responsibility for the Committee, convening meetings as required and ensuring proper conduct of the meetings.
2. Ensuring that the Committee's tasks detailed above are carried out in a satisfactory and timely manner and the road remains in good condition.
3. Ensuring that adequate funds are raised and seeking alternatives in the case of problems.
4. Ensuring that voluntary household contributions are in line with agreements, and seeking resolution in the case of problems.
5. Receiving reports from the maintenance overseer, approving plans and payments.
6. Delegating tasks to the various Committee members and ensuring they carry out those tasks satisfactorily.
7. Liaising with the Dzongkhag Engineering Sector/ DAO and monsoon restoration and periodic maintenance requirements.
8. Liaising with the Geog with respect to Committee or Community problems.
9. †

*delete as appropriate;† add any specific duties identified during this RUG's discussions on Committee Responsibilities

THE SECRETARY

1. Keeping a record of proceedings and conclusions of all Committee meetings.
2. Keeping a record of the households comprising the Community.
3. Writing letters and reports on behalf of the Committee and keeping copies of all correspondence.
4. Assisting the treasurer with keeping records of payments for maintenance workers and materials.
5. Assisting the treasurer with respect to the collection of contributions from households and funds from other sources.
6. Officiating Chairperson
- 7.†

THE TREASURER

1. Keeping clear records of all financial transactions/receipts
2. Depositing and withdrawing funds from the bank account.
3. Collecting contributions from households and funds from other sources.
4. Making compensation payment to the overseer.
5. Purchasing materials and replacement tools
- 6.†

THE ROAD CARE TAKER

1. Walking the road length after the rain and before the rain
2. Reporting the condition of road.
3. Reporting the working areas.
4. Reporting and planning the daily routine works.
5. Keeping the records of the workers.
6. Making sure that the road is trafficable.
7. Organize necessary labour, equipment and materials for maintenance and supervise the works.
8. Checking the bio-engineering sites and planning for new plantation.
- 9.†

10.†

SIGNED BY COMMITTEE AND DZONGKHAG/ GEOG ADMINISTRATION

| | RUG Committee | | Geog/ Dzongkhag Rep |
|-------------------|---------------|--|---------------------|
| Name/ designation | | | |
| Date/ signature | | | |

MoU Part 2: Form 1

The signing of Part 2 of the MoU should take place once the road is completed and shall record the handing over of the Farm Road to the RUG Committee by the Geog/ Dzongkhag. From this moment the transfer of ownership of the road strongly shifts from the government to the Community.

Handing/Taking Over Agreement Farm Road

With the completion of Farm Road, implemented by Geog/Dzongkhag* and constructed by.....Construction, this Memorandum of Understanding (MOU) has been signed on(date) between the Geog /Dzongkhag* and the beneficiaries as having been completed and handed over to the Maintenance Committee of.....Geog, represented by the RUG Committee.

Handed over by: Geog/ Dzongkhag* staff

| Name | Designation | Signature |
|------|------------------------------|-----------|
| | Dasho Dzongdag/Dzongrab | |
| | District Agriculture officer | |
| | District Engineer/ GAO | |
| | Gup | |
| | Geog Extension staff | |

Received by: RUG Committee

| Name | Designation | Signature |
|------|------------------|-----------|
| | Chair person | |
| | Secretary | |
| | Treasurer | |
| | Road Care Taker | |
| | Executive Member | |
| | Executive Member | |

MoU Part 2: Form 2

The beneficiaries should have local arrangement for the maintenance of the road similar to that of the maintenance of the Chhu-lam or Tsa-lam where community property is divided into several sections and each section is the responsibility of specific groups of beneficiaries. In the event of major damage, and after establishing that this was not caused by negligence on the part of the beneficiaries*, the Community shall approach local government for support in arranging repair works following the DoA Guidelines for Farm Road Development.

*As per the DoA Guidelines for Farm Road Development, any damage caused by beneficiaries shall be rectified at their own expense.

RESPONSIBILITIES OF THE BENEFICIARIES

All the maintenance works which are of regular (routine) nature which includes all the activities of the DoA Maintenance Manual i.e. keeping the road in proper shape, maintaining the side and cross drains free from debris, boulders, logs, and other obstructions that are either placed by human being or by natural causes.

The task of the maintaining Road User Group (RUG) includes road condition inspection, planning, preparation, organisation, management, supervision and monitoring of the maintenance works. It includes the collection any required maintenance funds to procure materials (stone gravels, sand, gabion, wire, cement etc) if required equipment (mostly hand tools) and to mobilize labourers if voluntary labour is not forthcoming. Unskilled labour involved in the Routine Maintenance shall be provided by the beneficiaries.

FARM ROAD MAINTENANCE COMMITTEE

The RUG Chairperson is responsible for the coordination with the Geog/ Dzongkhag* Administration as per this MoU for the maintenance work.

The Road Care Taker shall hold meetings with the beneficiaries to draw the workplans and allocation of the labour for the various tasks, using the beneficiaries themselves or by employing manpower using the maintenance fund.

SCOPE OF ROUTINE MAINTENANCE

- Clean Obstructions from the Road
- Clean and Maintain Drainage Structures
- Clean Side Drains
- Repair Scour Checks and Drain Linings
- Repair Potholes
- Repair Structures
- Reshape Carriageway
- Cut Vegetation
- Check and Repair Bioengineering

The tasks of the Committee Members are as noted in MoU Part 1: Form 2. The Road Care Taker should make himself/ herself familiar with maintenance management and execution and should request support from **Geog/ Dzongkhag*** for refresher training as required.

The monitoring of the road condition should be as per the DoA Maintenance Manual. All planning for Routine Maintenance should be carried out by the beneficiaries. Major Maintenance; as defined by the DoA Maintenance Manual; shall be notified to **Geog/ Dzongkhag*** and necessary support, procurement and implementation undertaken by **Geog/ Dzongkhag***.

FINANCING ROUTINE MAINTENANCE (P2)

The RUG should work out their plans to undertake the Routine Maintenance for their particular road.

The Community commits to contribute a **regular sum/ voluntary labour days per beneficiary/ household*** to generate future routine maintenance funds for their road, so that the road is properly maintained and open all year around. This contribution may be revised by the RUG following discussion and voting. Each household will be given the option to contribute in kind or in cash and record their choice with the Committee.

Collected funds will be safely deposited in the joint account in the name of the Community RUG.

The RUG Committee will open a Joint Savings Bank Account for this purpose which shall be administered as discussed by the Community.

AGREEMENT ON MAINTENANCE FUND CONTRIBUTIONS AND USE

This agreement on Maintenance Fund Contributions was executed and submitted on.....
(date) of..... (year) at.....(place) by the.....Farm
Road RUG Committee.

We agree to contribute to the Maintenance Fund for the upkeep of the Road. Each household will contribute each year in the month of.....an amount of Nu.....to be deposited in the bank account by the Treasurer with countersigned by the Secretary or other member*. Any breach of this agreement by individual defaulters will result in the Road Routine-Maintenance Committee taking appropriate action as follows:

- Will follow the bylaws
- Will follow the chathrim
- Collect certain amount as penalty.

USES of FUNDS

As discussed by the Committee and beneficiaries, fund can be used for:

1. Purchase of handtools
2. Payment of Road Care Taker
3. We hereby agree to provide compensation for the Road Care Taker who is responsible for the routine up keep of theFarm Road

-
.....
-
.....
.....
.....

SIGNED BY COMMITTEE AND DZONGKHAG/ GEOG ADMINISTRATION

| | RUG Committee | | Geog/ Dzongkhag Rep |
|-------------------|---------------|--|---------------------|
| Name/ designation | | | |
| Date/ signature | | | |

***delete as appropriate (**