



# GUIDELINE FOR THE ESTABLISHMENT OF RNR MARKET INFRASTRUCTURE

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**Ministry of Agriculture and Forests**  
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**MARKET INFRASTRUCTURE**



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### Executive Order

The Ministry of Agriculture and Forests has framed the **Guideline for the Establishment of RNR Market Infrastructure**; with the aim to bring about some standardization among market infrastructure, increase utility and usefulness and avoid wastage of valuable resources.

Specifically, the objectives are to:

- (1) Guide planners, implementers, and other stakeholders to plan and establish quality RNR-MI at strategic locations,
- (2) Differentiate between various infrastructures based on it's end-use, and
- (3) Recommend good practices to help identify and design RNR-MIs and to establish a proper operation and management of RNR-MI after establishment;

All stakeholder agencies including MoAF, Dzongkhag Administration, Gewog Administration and Thromde Administration are expected to refer to the guideline when contemplating building RNR Market Infrastructures for the benefit of the public.

This guideline shall come into enforcement with immediate effect.

YESHEV PENJOR

MINISTER FOR THE MINISTRY OF AGRICULTURE & FORESTS



## **ACRONYM**

<b>B-Coop.</b>	<b>Bhutan Cooperatives</b>
<b>Coop.</b>	<b>Cooperatives</b>
<b>DAMC</b>	<b>Department of Agricultural Marketing and Cooperatives</b>
<b>FG</b>	<b>Farmers Group</b>
<b>MoAF</b>	<b>Ministry of Agriculture and Forests</b>
<b>RNR</b>	<b>Renewable Natural Resource</b>
<b>RNR-MI</b>	<b>Renewable Natural Resource Market Infrastructure</b>
<b>BBR</b>	<b>Bhutan Building Rules</b>
<b>DCR</b>	<b>Development Control Regulation</b>
<b>FCBL</b>	<b>Food Corporation of Bhutan Limited</b>
<b>SOE</b>	<b>State Owned Enterprise</b>





## **1. BACKGROUND AND RATIONALE**

Renewable Natural Resource Market Infrastructure (RNR-MI) can be broadly defined as any infrastructure, immaterial of the size or the durability or the technology employed, which is built to aid marketing of RNR produce. In Bhutanese context, RNR-MI include Cold Stores (mechanically refrigerated), Naturally Ventilated Stores, Farm Shops, Bhutan Cooperatives (B-Coop) Shops, Farmers Group/ Cooperatives (FG/Coops) Sales Outlet, Large Market Facility (such as the Centenary Farmers Market in Thimphu), Roadside Market Facility, Pack Houses for bulking and aggregation of produce and any other infrastructure intended to smoothen the flow of RNR produce to the final markets.

The RNR Marketing Policy emphasizes strengthening market infrastructure in the RNR sector. An important element in RNR marketing is the availability of necessary infrastructure to facilitate marketing. Infrastructures may be required at various points in the supply chain. They not only provide a common meeting place for the buyers and sellers but can also enable addition of value, reduce post-harvest loss and minimize handling costs.

MI in Bhutan are built haphazardly without following any guidelines or norms resulting in many types of infrastructure that are not optimally utilized and often neglected. Many are constructed unilaterally by various agencies under the Ministry of Agriculture & Forests (MOAF), Dzongkhag and Gewog Administrations and Thromdes across the country. In many cases, MIs are either poorly designed in relation to its intended end use, located at wrong places or are handed over to various parties without proper management system in place. RNR-MI,

especially the roadside market facilities are permanently co-opted by few beneficiaries and are also found selling non-RNR produce. A vast majority of the actual beneficiaries perceive the RNR-MIs to be state property and do not feel obliged to look after and maintain them.

## **2. SCOPE, EXTENT AND OBJECTIVES**

This guideline shall apply to RNR-MI developed by the MOAF, Dzongkhag Administrations, Gewog Administrations and Thromdes for general public use. This guideline aims to bring about certain standardization of all RNR-MIs in the country, improve their utility and quality, and ensure proper care and maintenance after construction.

Specifically, the objectives are to:

- Guide planners, implementers, and other stakeholders to plan and establish quality RNR-MI at strategic locations,
- Differentiate between various infrastructures based on its end-use, and
- Recommend good practices to help identify and design RNR-MIs and to establish a proper operation and management of RNR-MI after establishment;

### **3. DEFINITION AND MINIMUM PARAMETERS FOR ESTABLISHMENT OF RNR-MI**

#### **3.1 COLD STORES**

##### **3.1.1 Definition**

A Cold Store means a store that is cooled through the use of refrigeration technology to preserve perishable produce, be it fresh produce, dairy, sea food or meat. **Cold Stores are capital-intensive and must only be considered after a detailed economic, financial and technical feasibility study.**

How long a produce can be stored depends on the inherent character of the produce and the storage temperature and the humidity. A well-functioning cold store helps preserve the quality (freshness) of the produce over that period of time. With the use of cold store, one can deliver good quality produce to the market or be able to store commodities over a long period of time to take advantage of the higher market prices during the off-season.

##### **3.1.2 Points to consider before investing**

- The cold store must be located in the area of production (farm) to enable immediate cooling and storage after harvest;
- The exterior structure of the cold store must conform to the Bhutan Building Rules (BBR) and Development Control Regulation (DCR) building codes and have basic amenities including proper parking area;

- To achieve a proper cool-chain (from farm to fork), the Cold Store should be equipped with refrigerated transport vehicle(s);
- Only produce with of high commercial value and is suitable for cold storage must be considered for cold storage;
- Cold Store should be built with the intention to store locally grown fresh produce and/ or locally processed dairy and livestock produce and not for storage of imported goods; and
- Expert advice must be sought in terms of choosing the right design and the right kind of technology.

## **3.2 NATURALLY VENTILATED STORES**

### **3.2.1 Definition**

Naturally Ventilated Stores are stores where the cooling effect is achieved naturally without the use of energy; including the Zero-Energy Cool Chamber which brings about a cooling effect as a result of evaporation of water. They are a lot cheaper than cold stores, but will not be as efficient as cold stores. They can however be used to effectively store fresh produce to cater to local markets during the off-season. Because of the stringent temperature requirement and subsequent food safety issues, they will however not be suitable for storage of meat, seafood and dairy produce.

### **3.2.2 Points to consider before investing**

- The structure must be located in the area of production to enable storage immediately after harvest;
- The produce to be stored should be of fairly good commercial value to offset the investment cost and must be suitable for storage; and
- Though the Naturally Ventilated Stores depend solely on natural environmental conditions, they are still fairly technical; and expert opinions must be sought when designing and building such stores to get the most efficient system.

## **3.3 LARGE MARKET FACILITY**

### **3.3.1 Definition**

Large Market Facility means a single structure or a combination of multiple infrastructures, designed to provide an ideal platform for sale of RNR produce to the consumers by the retailers or to the retailers by wholesalers. The size and the complexity of the Large Market Facility will depend on the market size. While there is no one ideal design, the facility should enable effective transaction of produce at the convenience of the buyers and sellers at the minimum cost and time possible. Because it is fairly big investment, it should not be constructed without a proper economic feasibility.

### **3.3.2 Points to consider before investing**

- The facility should have adequate storage spaces, preferably small cold stores, to enable temporary storage of produce for replenishment and to store unsold produce at the end of the business for the day;
- The facility should have a proper waste management system, proper drainage system, adequate parking facility, proper ramps for loading and unloading and lavatories for the public use;
- The design has to adequately consider the growth of the user population (retailer, wholesaler and customer) and demand for other services in the future;
- The services of qualified architects, civil engineers and other experts have to be engaged when designing and building such complex structures; and
- The facility has to conform to all extant building regulations and other applicable regulations.

## **3.4 ROADSIDE MARKET FACILITY**

### **3.4.1 Definition**

The Roadside Market Facility is a structure located at strategic points along the roads, where growers in the vicinity can take their produce and sell it directly to the consumers who are normally travelers by that road.

The facility has to ensure proper protection to the produce at all times from direct sunlight, rain, wind and other weather conditions and be convenient to both sellers and buyers.

### **3.4.2 Points to consider before investing**

- The Roadside Market Facility should be located close to the farms and at a convenient place where there is adequate parking space;
- The structure should adhere to basic traditional design;
- Should comply with the Road Act of Bhutan to maintain buffer of at least 50ft and other right of way provisions including clearance from the Department of Roads, Ministry of Works and Human Settlement prior to construction of facility;
- Locally grown and locally processed RNR produce shall receive priority for sale over non-RNR products; and
- The structure should have a simple but proper waste disposal means and preferably lavatories.

## **3.5 FARM SHOPS**

### **3.5.1 Definition**

Farm-shops means shops located in rural areas for the supply of essential food items and farm inputs and for buying locally grown produce for onward marketing. Farm-shops are currently built and run by the government through the Food Corporation of Bhutan Limited (FCBL). Because of its multifarious functions and other economic factors that needs consideration, the location is crucial.

Farm-shops have three main functions, namely, (i) Supply of agricultural inputs to growers, (ii) supply of essential food items for the local people and, (iii) as and when required, buy farmers produce at a pre-determined price.



### **3.5.2 Points to consider before investing**

- Farm-shops should be located closest to the village(s) that it intends to cater to;
- The structure should have road connectivity;
- The structure should have adequate number of rooms and associated equipments (deep freezer, refrigerator, weighing balances, etc.) to satisfy the three functions; and
- The structure should have a proper waste disposal system, adequate parking facility, lavatory and reliable water and electricity.

## **3.6 BHUTAN COOPERATIVES SHOP**

### **3.6.1 Definition**

B-Coop. Shops are structures primarily intended to sell RNR produce and products of FG and Cooperatives and its members. B-Coop Shops may also source goods from non-member individual farmers, to supplement the supply from FG/Coop and enhance product diversity in the shop.

Its primary function is to provide an efficient market outlet for produce and value added products of the FG and Co-operatives.

### **3.6.2 Points to consider before investing**

- It should be located in urban areas where there is adequate demand for locally grown farm produce;
- The structure should include a proper waste disposal system, adequate parking facility, water, electricity and lavatories; and
- To be recognized as a B-Coop Shop and operate it as one, the operator or the management (whether run by a single

FG/Coop, a group of FG/Coop or by an independent party) will have to fulfill the criteria outlined in the **B-Coop Shop Establishment and Operation Guideline** prescribed by the MoAF and obtain a **Certificate of Recognition**.

### **3.7 FARMERS GROUP OR COOPERATIVES SALES OUTLET**

#### **3.7.1 Definition**

FG/Coop Sales Outlets are small structures owned and operated by a particular FG/Coop, with dual functions - value addition to primary produce and sales. Most of these outlets are equipped with basic food processing equipment and are mainly located in proximity to the areas where farms are located.

#### **3.7.2 Points to consider before investing**

- The structure is owned by a FG/Coop and managed either by themselves or their authorized representative(s);
- Where value addition is intended, processing equipment made of food-grade material has to be used;
- The structure should have a proper waste management system, water and electricity. Proper lavatory must be set up away from the food processing area; and
- The structure must be of basic traditional design and if by the road side, must comply with the rules governing construction near national highways and other existing rules and regulations.

## **3.8 PACK HOUSES**

### **3.8.1 Definition**

Pack Houses are either temporary or permanent structure where produce from different farms are gathered, bulked, sorted, packed and shipped to the final markets. The farmers may do it themselves collectively or this operation may be organized by a trader or an exporter.

Temporary Pack Houses are also locally called Collection Centres and are very simple structures which are setup during the harvesting and marketing operation while a Permanent Pack House is custom built and equipped with proper post-harvest treatment, grading and packaging facilities.

Whether permanent or temporary, a good pack-house would protect produce from direct sunlight, rain, wind and other elements of weather. To get maximum efficiency, it must also provide a comfortable work environment for workers.

### **3.8.2 Points to consider before investing**

- For maximum efficiency and minimum costs, pack-houses must be located strategically, with good road connectivity;
- Permanent Pack Houses are fairly technical and expert opinions must be sought when designing and building such stores to get the maximum pack house efficiency. Among other things, the structure must have proper unloading and loading bays, water supply, proper waste management system and lavatories;

- Permanent Pack Houses can be expensive and will require a proper technical and economic feasibility study before investment; and
- When designing permanent Pack-houses, the exact type of packaging and grading equipments must be considered in tandem, to avoid problems of dissonance between equipments and the building in which it will be housed.

### **3.9 WAREHOUSES**

#### **3.9.1 Definition**

Warehouses are structures for storage of commodities. In this guideline, commodities refers to durable agricultural produce such as grains, pulses and spices.

Because the commodities meant for warehousing are usually dried and does not require to be cooled, no refrigeration is required. However, in very humid areas, when commodities are stored in bulk, molds and fungi can cause damage and protections may be required.

#### **3.9.2 Points to consider before investing**

- Expert opinions must be sought when designing and building warehouses keeping in mind the commodities to be stored to get the maximum efficiency and minimal storage loss;
- The Warehouse should incorporate mechanisms to prevent infestations by rodents. In extremely humid areas, mechanisms to reduce humidity may need to be incorporated; and

- The Warehouse should have proper unloading and loading space, water supply, electricity, proper waste management system and lavatories for workers.

#### **4. PROCEDURES FOR ESTABLISHMENT OF RNR-MI**

- 4.1 The establishment of RNR-MI will depend on the size of operation, the kind of technology required and the investment available. However, there are certain parameters that needs to be factored in to ensure the final design fully meets the requirement;
- 4.2 The construction of any RNR-MI should follow all existing rules and regulations in the country that governs infrastructure establishment;
- 4.3 The proponent (Agencies under MoAF, Dzongkhags, Thromdes, and Gewog Administrations and MoAF affiliated SOEs) intending to construct Farm Shop, B-Coop. Shop, Cold Store, Large Market Facility, or Permanent Pack House, shall submit a proposal to Department of Agricultural Marketing and Cooperatives (DAMC), MoAF, which will include (i) Details of the Proponent and Beneficiary, (ii) Location of the proposed structure, (iii) Architectural drawing, (iv) Technical and Financial estimates, and (v) Management plan (*operation and maintenance*);
- 4.4 MoAF shall conduct a socio-economic feasibility study of the proposed infrastructure (Farm Shop, B-Coop. Shop, Cold Store, Large Market Facility, or Permanent Pack House) within two months from receipt of the proposal and accordingly communicate the approval to the proponent. Where required, the Ministry may form a Technical Committee consisting

of experts from various field as part of this feasibility assessment;

- 4.5 The proponent (Agencies under MoAF, Dzongkhags, Thromdes, and Gewog Administrations and MoAF affiliated SOEs) intending to construct Naturally Ventilated Stores, Roadside Market Facility, Temporary Pack House (Collection Centre), FG/Coop. Sales Outlet or Warehouses, shall carry out feasibility study and may submit to DAMC, MoAF for vetting. The DAMC may consult technical agencies in the vetting process; and
- 4.6 The proponent shall carry out construction of the proposed structure after obtaining requisite clearances such as environmental, community and others.

## **5. MONITORING AND EVALUATION**

- 5.1 The DAMC and its regional offices with support from the Dzongkhag Administration, Thromde and Gewog Administration shall carry out regular monitoring to assess the utilization of the RNR-MI.
- 5.2 Based on the above Monitoring and Evaluation, the DAMC shall analyze, prepare and submit regular reports to the Ministry with recommendation for interventions, if required.

## **6. MISCELLANEOUS**

- 6.1 In the event the recommendations of this guideline is not followed, the proponent agency shall be responsible for any queries or issues with regards to misuse, underutilization, neglect and/ or non-conformity to exiting rules and regulations.
- 6.2 The MoAF reserves the right to amend this guideline as and when required.