ENGINEERS REGISTRATION BOARD

PRACTICAL TRAINING GUIDELINES FOR AGRICULTURAL ENGINEERS

A: INTRODUCTION

(a) Subject to the contents of these practical training guidelines, every trainee in the Agricultural engineering discipline shall complete training in the types of works specified for a minimum period of three years or as specified in the Engineers Registration Board Regulations 1999.

(b) In the case of research workers and other specialists, where the nature of work renders it impracticable to adhere to the requirements set out in the contents of these practical guidelines, the Board shall evaluate each individual's case separately having due regard to the practical training approved for the time being by the Board.

(c) The main thrust for professional and technician engineer trainees is as follows:-

(i) Professional engineers:-

The main thrust is on knowledge, understanding subject matters, analysis and methods. Professional engineers must have analytical capabilities, adaptability to varying situations, ability to identify, rectify and design solutions, management capabilities, power and communication skills, adherence to the professional ethics and conduct as specified in the Engineers Registration Board bylaws of 1999 and as amended from time to time.

(ii) Technician engineers:-

The main thrust is on know-how of subject matters. Technician engineers must have independent judgement within the field, top class engineering applications, development of cost effective systems and safe procedures, applications of appropriate mathematics, science and related subjects, team and resource management.

B: CONTENTS OF PRACTICAL TRAINING

(a) Workshop Practice and Field Operations

Every trainee shall work under the supervision of a registered professional Agricultural engineer for a minimum period of 18 months or as determined by the

Board in accordance with the Engineers Registration Regulations during which time knowledge and experience should be acquired in most of the following areas:

(i) Farm machinery and mechanization:-

- Mechanization of agricultural operations including selection of tractor power and matching implements for cultivation (ploughing) planting, fertilizer application, crop protection against weeds, pests and diseases, harvesting and transportation.
- Machine shop and workshop practice including overhaul, maintenance and repair of machinery, transport and construction equipment.
- Work place ergonomics and evaluation of operator's tasks.
- Animal traction

(ii) Soil and water engineering

Evaluation of land and water resources including:-

- Land classification
- Land use resource planning for optimal agricultural production
- Preparation of a scheme for control of soil erosion in any given area

(iii) Animal production, processing and farms structures

- Agro processing at rural and industrial level e.g. milling, oil extraction, sugar production, milking machines and dairy processing equipments
- Rural electrification
- Biomass engineering

(iv) General management

- General management as applicable to workshop practice and field operating and safety

(b) Design:

Every trainee shall work under the supervision of a registered professional Agricultural engineer for a minimum period of one year or as determined by the Board in accordance with the Engineers Registration Regulations during which time knowledge and experience should be acquired in most of the following areas:

(i) Farm machinery mechanization

- Selection, design and development of machinery, equipment and power sources for agricultural mechanization operations
- Design of maintenance and workshop support facilities for field machinery
- Farm roads construction and maintenance

(ii) Soil and Water engineering

- Planning, design and construction of an irrigation scheme and tertiary system design.
- Rural development for small holder irrigation schemes and water supply
- Land drainage
- Design of sprinkler irrigation system.

(iii) Animal production, processing storage and farm structures

- Design and construction of buildings including livestock housing and crop storage and silage
- Selection, design and development of equipment for cleaning, sorting, grading and packaging of agricultural produce.

(iv) Environmental considerations

- Environmental impact assessment and rectification