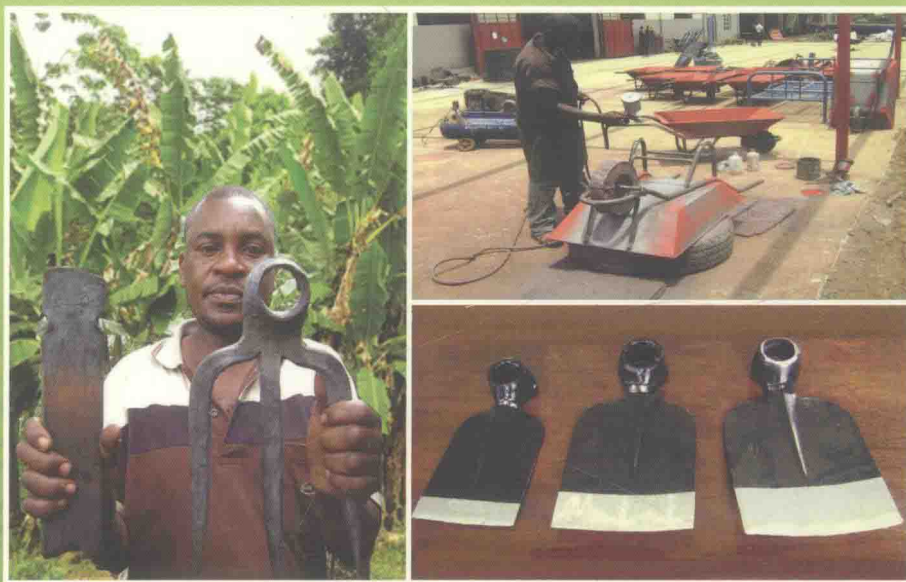


Agricultural Hand Tools in Emergencies:

Guidelines for Technical and field Officers



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Preface

FAO has been intricately involved with activities emanating from emergency situations for many decades. Under such circumstances, not only is assistance required urgently but it is also essential to ensure that it is sufficient both in quantity and quality. Overall objectives are carefully focused on encouraging sustainable recovery programmes and although this will eventually involve the use of power sources of a higher level, there remains a widespread need for handtools by the smallscale farmer. Such tools may appear simple at first glance but failure to understand the importance of selecting the correct tool and to ensure that it is of adequate quality for the job required is fundamental for the success of any recovery programme.

A draft document was released in 2001 under the title “*Guidelines for the technical specifications and procurement of agricultural hand tools*” and this has served as a reference document for the technical and emergency services of FAO for the past decade. It was and still is frequently consulted by FAO Field Officers and other aid agencies and NGOs. It is therefore opportune to update the material.

The present Guidelines have been prepared in an entirely different style and in two distinct Parts. The aim of **Part I** is to make it “user-friendly” to Field Officers. It is very brief in text but amply illustrated with photographs so that each tool can be clearly identified even by non-technical staff. The commonly used terms for the tools in French and Spanish have also been included. The objective is to ensure that an appropriate tool can be ordered and supplied for the task in hand.

Part II is a more technical document designed for use by FAO staff in Headquarters, Regional and Country Offices together with suppliers, manufacturers and inspection companies. The objective is to clearly indicate FAO procurement procedures, to provide detailed technical specifications for a range of agricultural hand tools and to describe how the quality of these tools may be tested.

The information is based upon the considerable experience that the technical services of the Plant Production and Protection Division (AGP) have accumulated in this respect. It also takes full account of the standards developed in East Africa and their related hand tool testing procedures.

It will be of interest to FAO staff involved with procurement and project management. It provides information which will assist suppliers and manufacturers to better appreciate the fundamental importance of supplying detailed and precise information when participating in international tenders. And finally it will be of benefit to inspection companies to more fully appreciate the reasons for and the nature of the test procedures which are described in the technical specifications.

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Acknowledgements

The authors would like to acknowledge the groundwork provided for this document over the past two decades. Goolam Oodally, Agricultural Engineer in the former Agricultural Engineering Service of FAO developed the first draft of the Guidelines in the 1990s. Keith Elliot further developed them in 2001 when they were eventually released on the FAO Website as *“Guidelines for the technical specifications and procurement of agricultural hand tools”*.

A number of officers from the FAO Emergency Operations Division together with staff from their field projects have provided feed back and suggestions regarding earlier drafts, particularly as these regard streamlining procedures.

Rudolph Holtkamp contributed valuable insights arising from his mission to Burundi in 2003 where he looked specifically into the quality standards for hoes. Lawrence Clarke in his role as Chief of AGSE provided the necessary oversight and linked the various pieces together up to his retirement in 2006. Keith Elliot prepared a first draft for a revised edition in 2010.

Technicians and senior staff from the Kenya Bureau of Standards, the Uganda National Bureau of Standards and the Tanzania Bureau of Standards provided additional information and a number of the illustrations. These institutions also welcomed Brian Sims for a technical visit during 2011 when further clarifications were offered and photographic opportunities set up for his visit.

Rodney Byers of the Chillington Tool (Thailand) Co. Ltd. has provided valuable technical information and conducted Josef Kienzle on a visit to their factory outside Bangkok in 2011.

Serge Tissot, Brian Jackson and the authors have continued to update the various technical specifications of the handtools and regularly updated the AGP database on the technical specifications. There has also been continued discussion with the Procurement Service of FAO (CSAP) and they have reviewed the section on Procurement and assisted in revising the sampling procedures to be used during external inspections.

Many of the diagrams are based upon recognised international or national standards but these have been extensively modified to improve clarity. Whilst prepared by the lead author, they were finalised with assistance from Mario Alessandri (CSAI) and Magda Morales, Consultant.

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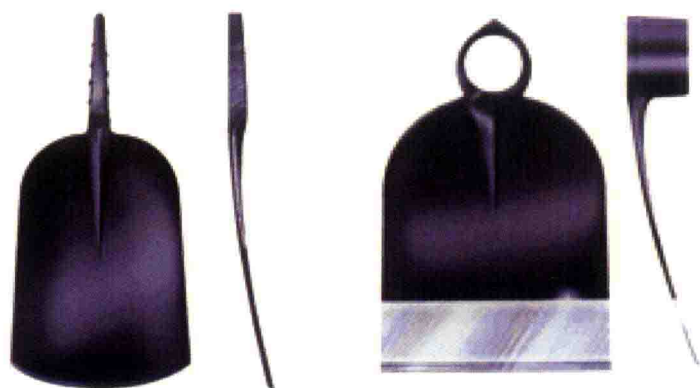
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Part I

Practical Guidelines



1. Why supply hand tools in field projects?

Any serious gardener knows that the process of digging and cultivating by hand is a very arduous task. In the rural areas of many developing countries, particularly in sub-Saharan Africa this job is mainly undertaken by women. In contrast the men tend to seek other activities, often in the towns and much more rarely do they wield a hoe.

The standard emergency response of FAO to a crisis is to provide the target beneficiaries with basic kits to enable them to start up farming operations again as soon as possible. These kits usually contain some seeds and fertilizer together with a hand tool, most commonly a hand hoe but perhaps also a machete, a sickle, an axe, a shovel or another tool.

FIGURE 1



(Photograph: Josef Kienzle)

FAO is a major actor amongst those organisations that provide emergency response kits and thus has a considerable market share in the procurement and delivery of hand tools. It follows that FAO has a responsibility to

ensure that any tools supplied meet acceptable standards of quality and are also appropriate for the needs of the beneficiaries. FAO is also very much aware that it is dealing directly with very vulnerable and often the least privileged groups particularly women and rural youth.

Such provision of hand tools should only be viewed as a contribution towards a short term solution during a limited timeframe following the emergency. It is not intended that such procurements should be repeated for each subsequent agricultural campaign and if this is eventually deemed necessary, such a measure should only be undertaken following careful monitoring and an in-depth needs assessment study.

In the unlikely event that a repeat-order is approved, then priority should be given to local procurement where local suppliers and fabricators, including blacksmiths, can become involved. In this way support can be given towards developing local industries and infrastructure which in turn will contribute towards a more sustainable rural infrastructure. This philosophy supports the approach currently being suggested by the World Food Programme¹ and more recently by FAO known as “Purchase for Progress” or P4P.

A major objective of FAO is to encourage the use of agricultural equipment which can improve productivity and profitability whilst making the task of achieving this easier to undertake. This means that more sophisticated tools might prove to be more suitable, particularly as a project moves on to the rehabilitation phase. Some equipment which falls within this category includes jab planters, animal drawn rippers and carts or even single-axle walk-behind or ride-on tractors. Field staff should however be aware that the introduction of such equipment will depend not only on its technical specification but also on social and cultural aspects. The recipient communities will need to accept at least in part the challenges and risks of adopting such a higher level of mechanization.

The Plant Production and Protection Division (AGP) is convinced that in order to maintain the interest of rural youth in modern farming techniques, efforts must be made to introduce market oriented and commercial farming systems. The necessary equipment could be offered to farmers through local vendors, a principal objective of the P4P initiative. Some farmers would eventually also become service providers offering mechanised farm services or establishing local repair and maintenance workshops.

¹ <http://www.wfp.org/purchase-progress>

The ultimate goal would be to achieve a sustainable agricultural system in which agricultural tools and agricultural mechanization each have a role to play and where there would be no further need for FAO to procure hand tools during an emergency.

2. Selection and procurement

2.1 INTRODUCTION

The objective of **Part I** of these guidelines is to assist FAO Field Officers with the selection and procurement of agricultural hand tools. These are often included as part of the inputs supplied under emergency programmes but may also be needed for rehabilitation or development projects. One of the most important aspects is the correct identification and description of the tools which are required. A number of factors can influence this decision and these are discussed.

The next step is to consider possible procurement options. International procurement for large orders is often preferred but there may be strong reasons for also including local procurement as a possibility for at least part of the order. Field Officers may become involved in the case of local procurement and to these ends an overview is provided of FAO procurement procedures. This is dealt with in greater detail in **Part II**.

Detailed technical specifications for each hand tool will eventually need to be drawn up. Field Officers may wish to make a first draft of these although they will have to be technically cleared in FAO Headquarters through the responsible technical division (AGP). Certain basic specifications will however need to be determined in the field and these are described. The assistance of field staff will be of particular importance if part of the order is to be purchased from local sources.

During the procurement process through international tenders, the hand tools which have been ordered directly by FAO Headquarters or under their direct supervision will be inspected by an internationally recognised inspection company. This is to ensure that the quality of the goods conforms to those which were offered by the supplier. During this inspection the packaging and the quantities shipped will be checked and some laboratory tests may also be carried out. Field Officers are not involved at this stage. These test procedures are fully described in **Part II**.

2.2 SELECTION OF APPROPRIATE TOOLS

When selecting tools for farming operations the first step is to consider which of these could be most appropriately targeted by the intervention.