

## **Ensuring Seedling Quality through Fruit Tree Nursery Accreditation and Implications for Forest Nursery Accreditation**

**Don Immanuel Edralin and Agustin Mercado, Jr**

*World Agroforestry Centre (ICRAF-Mindanao), MOSCAT Campus, Claveria, Misamis Oriental, the Philippines*

### **ABSTRACT**

The fruit tree nursery accreditation scheme implemented by the Philippine Department of Agriculture has been promoted to enhance the supply of high quality fruit tree planting materials and reduce the number of dubious seedling market players. This paper examines the advantages to participating nurseries in the fruit tree nursery accreditation scheme and draws implications for possible formulation of a scheme to accredit forest tree nurseries in the Philippines. Data were collected from interviews with accredited fruit tree nursery operators and the nursery accreditation officer-in-charge in Northern Mindanao province. A major advantage of nursery accreditation is that only accredited fruit tree nursery operators can participate in the bidding process of the government seedling procurement program, which always involves a substantial volume of seedlings. As a form of advertisement, accredited nurseries are posted on the government website thus creating a wide range of market opportunities which results in increased sales. Other advantages enjoyed by accredited fruit tree nurseries include receiving free training in improving seedling production and occasionally receiving high quality propagation materials (scions and seedlings), subsidies for pesticides and fertilizers and free soil tests. Observations of advantages gained by nursery operators adopting certification have encouraged other nursery operators to apply for accreditation. Accreditation by the Department of Agriculture places emphasis on maintaining high genetic quality as well as high physical quality of planting materials. Accrediting forestry nurseries is seen as a potential policy option that can expand the supply of high quality tree seedlings in the Philippines, as has been the experience with fruit tree nursery certification.

Keywords: accreditation scheme, certification criteria, preferential bidding, technical support, scion groves

### **INTRODUCTION**

There is currently a strong interest in improving the quality of forestry seedlings in the Philippines. The forestry sector in the neighbouring countries including Indonesia, Thailand and Vietnam is engaged in large scale seedling production backed by strong research and stable market opportunities (Harrison and Gregorio 2009). The choice of

superior quality planting materials had been practiced by buyers due to readily available high quality planting stock. Moreover, the three governments mentioned took major control of seedling production and hence can strongly influence the production of planting materials.

With the extensive reforestation efforts by the public and private sectors to cope with increasing timber demands and address shortages of timber supply in Northern Mindanao (Philippines Region 10), there is a strong increase in demand for seedlings of timber tree species. Region 10 alone currently aims to plant 2.4 M seedlings on an area of 531 ha (Mercado and Piñon 2008). This is only a part of the 20 M trees planned to be planted all over the country as part of the Green Philippines Program. The active planting program means that there is a strong market for tree seedlings and also that forestry nurseries present a lucrative livelihood opportunity.

The forestry nursery sector in the Philippines, particularly in the Visayas and Mindanao, has been characterized by low quality planting stock, availability of only a narrow range of species, poor matching of species to planting sites and often high mortality rates in nurseries (Gregorio et al. 2005; Mercado and Pinon 2008). These problems are aggravated by a high mortality rate of seedlings on outplanting, reaching as high as 50–60% (Herbohn 2006), and can be traced back to the nurseries having poor management practices thereby producing low quality planting materials. Also, the criteria adopted for government procurement of tree seedlings for free distribution to treefarmers – where the lowest price for seedlings is preferred and little quality inspection is conducted – compromises the quality of planting materials and leads to aggravated quality problems.

Accreditation of timber tree nurseries could be one of the policy options to address these problems and could lead to an increase in the quality of the timber tree seedlings available and also minimize the high field mortality at outplanting. At present, there is no accreditation of timber tree nurseries. However, an accreditation system for fruit tree nurseries does exist in Northern Mindanao and is operated by the Department of Agriculture (DA). This paper examines the experiences of the fruit nursery accreditation system of the DA, and draws implications for mechanisms for setting up accrediting forestry seedling nurseries.

## **RESEARCH METHOD**

A list of accredited fruit tree nurseries was obtained through the Department of Agriculture's Crop Production Division at Regional Field Unit 10 based in Cagayan de Oro City. Ten fruit tree nursery operators from the 15 accredited tree nurseries in Region 10 (Northern Mindanao) were selected randomly and interviewed at their respective nurseries. The nursery operators were interviewed as to their attitudes and experiences in nursery accreditation, using a semi-structured questionnaire. The regional seed coordinator, who evaluates the applicants for accreditation, was also interviewed.

**DA-BPI ACCREDITATION OF FRUIT TREE NURSERIES AND ITS OPERATORS**

The attempt to accredit nurseries in the Philippines commenced in 1994 through the issuance of Memorandum No. 6, series of 1994, and was later amended through Memorandum Circular No. 3 in 2006, which in line with the implementation of *Republic Act No. 730*, aimed to promote and accelerate the development of the seed industry, in support of the government's Medium Term Agricultural Development Program for commercial crops (DA MC No.3 2006). Through this memorandum, the DA assigned the responsibility to accredit nurseries to the Crop Production Division in its Bureau of Plant Industry (DA-BPI). Accreditation is, however, limited to horticultural trees including fruit and rubber trees because the accreditation is implemented by the DA which considers these crops as commercial agricultural crops, along with rice, corn, and vegetables. The DA places the greatest emphasis on high-value fruit trees including mango, durian, lanzones, mangosteen, rambutan and citrus trees including pomelo and calamansi.

In order to be accredited fruit tree nurseries must satisfy a number of criteria, submit the necessary documents and undergo a process of evaluation before the issuance of nursery certification that is valid for two years. The steps towards obtaining registration are illustrated in Figure 1.

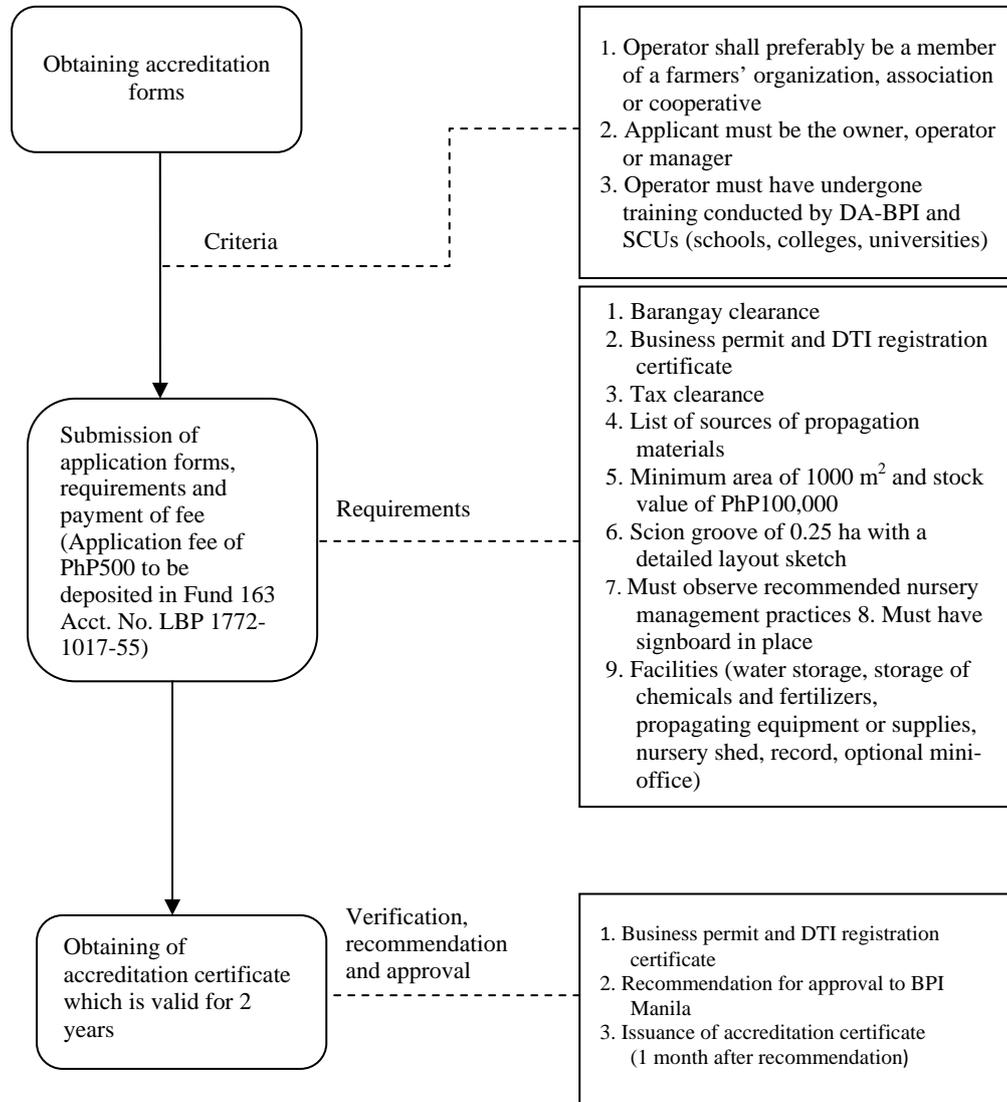


Figure 1. Diagram of the DA-BPI fruit tree nursery accreditation process

By August 2007, there were a total of 15 accredited fruit tree nurseries in Northern Mindanao. The number increased annually from 2004 to 2007 (Table 1), which was attributed to the advantages nurseries gained from accreditation. In 2008 and 2009, a decline in the number of accredited nurseries was observed brought about by the expiration of their accreditation certificate which was valid only for 2 years. Some nurseries ceased its operation and others had already established their reputation as a quality seedling producer and relied on seedling sales from private customers. In 2010, however, the Nursery Accreditation Officer-in-charge at DA indicated that some of

these nurseries plan to undergo re-accreditation and the number of accredited nurseries is expected to rise.

Table 1. Number of accredited fruit tree nurseries in Region 10, Northern Mindanao, the Philippines, 2004 to 2010

Year of accreditation	Number of accredited nurseries
2004	3
2005	6
2006	7
2007	15
2008	7
2009	4
2010	4 (as of May 2010)

### **ACCREDITED FRUIT TREE NURSERIES: PROBLEMS AND ADVANTAGES**

Table 2 summarises the negative and positive experiences as expressed by accredited nurseries regarding accreditation. Prior to accreditation, fruit tree nursery operators experienced difficulties in acquiring seeds or scions for asexual propagation of seedlings. They did not know where to acquire planting materials of high quality so they sourced planting materials from anywhere convenient, which meant that they could not be sure that they were producing high quality planting stock. After accreditation, seedling sellers have become confident that they are selling the desired variety and quality due to the DA's assistance in acquiring high quality planting materials and certification of mother plants and scion groves as part of the accreditation process. As a result, seedling buyers now prefer to acquire seedlings from these accredited nurseries because they can be sure of obtaining their preferred variety and quality of fruit tree seedlings.

The nursery operators interviewed reported that before accreditation they never received technical support from the government and had to rely heavily on their own experiences in nursery operation which often proved costly due to the need for trial and error. After accreditation, nurseries are constantly prioritized as part of the capacity-building program of the DA at the regional level. They receive invitations to training events which were conducted free of charge by DA-BPI and other aligned organizations to improve their capacity to produce high quality planting stock and to ensure that the best varieties of fruit tree species are grown and sold. Technical support is focused mainly on basic nursery activities, especially on asexual propagation such as marcotting, grafting, budding and choosing and obtaining planting materials of high-yielding varieties of fruit trees which enables nursery operators to produce high quality planting stock.

A major disadvantage of not being accredited is the fact that those nursery operators are barred from bidding for government procurement contracts. Operators stated that accreditation has resulted in increased sales because they have been able to participate in government contracts that procure seedlings in mass quantities. A major

advantage in the accreditation process is the prioritization of accredited nurseries in the seedling procurement of the region.

Table 2. Problems prior to accreditation and the advantages after accreditation

Problems prior to accreditation	Advantages observed after accreditation	Disadvantages of accreditation
Difficulty in acquiring seeds or scions	DA assistance in acquiring quality planting materials	Pressure to maintain quality
No technical support	Receive technical support	
Could not participate in government procurements	Participate in government procurement through biddings	
	Promotion of nurseries to seedling buyers	

Nursery operators stated that the only disadvantage of being accredited is the pressure on maintaining quality standards. Buyers expect seedlings from accredited nurseries to be of superior health and of the most suitable varieties. On the part of buyers this is advantageous because they are able to put pressure on the nursery operators to only produce and sell high quality planting materials. The advantages experienced by nursery operators and the pressures by private buyers on them, as well as the governments' policy to procure seedlings only from accredited nurseries are all factors that persuade the fruit tree nurseries to adhere to the nursery accreditation system.

Numerous opportunities were mentioned by nursery operators who had been accredited. One is the fact that their nurseries are posted and advertised by DA on the governments' website which increases their reach to customers (government and private) seeking to purchase seedlings. Posting on the website also increases linkages to other nurseries promoting knowledge and information sharing about management techniques as well as market demand. The information on the website includes seedlings stocked, contact persons, addresses and phone numbers.

Individuals and corporations who come to the DA for assistance on planting fruit trees are constantly referred to accredited fruit tree nurseries when seeking seedlings to buy, which also enhances the opportunities for accredited nurseries. Other opportunities, such as scions and seedlings given for free or sold at minimal cost to nursery operators by DA-BPI, were also given exclusively to accredited nursery operators. Nursery operators also occasionally receive free fertilizer and pesticide samples from the DA. On one occasion, one nursery received free soil testing conducted by the DA.

### **VIEWS OF NURSERY OPERATORS ON ENHANCING THE FRUIT TREE ACCREDITATION SCHEME**

Accredited nursery operators expressed their views on enhancing the accreditation scheme through improving the market for their seedlings. One way to achieve this is through educating seedling buyers about the advantages of buying seedlings from accredited nurseries because of quality assurance. It was also suggested that the establishment of a model nursery by the DA-BPI would promote learning and entice other nursery operators to join the accreditation scheme. Increased support such as handing out planting materials, fertilizers and pesticides for free were also suggested as ways to persuade nurseries to subject themselves for accreditation.

### **CONCLUSION**

The fruit tree nursery operators' desire to be accredited was driven by the advantages observed in the scheme. Operators regarded accreditation as closely linked to increased sales through participation in government procurement biddings. Government procurement usually requires mass quantities of planting materials and is a highly attractive market for nursery operators. This has been the major driving force for the fruit tree nurseries to apply for accreditation.

Nursery accreditation also exposes accredited nurseries to buyers from a wide range of locations, not just from the region where they are registered, because they are included on the DA list of accredited nurseries. Exposure on the website as a form of advertising not only links sellers to buyers but also to fellow sellers, which promotes the sharing of knowledge, skills and markets. The opportunities such as free training to improve seedling quantity and quality, access to free or concessionally-priced high quality propagation materials (scions and seedlings) and the occasional handing out of free fertilizer and pesticide samples and soil testing all serve to entice seedling producers to apply for nursery accreditation.

The fruit tree nursery accreditation conducted by the DA puts pressure on nursery operators to produce high quality fruit tree seedlings with correct labelling and identification of specific varieties, which is a way of assuring that the market is supplied with only high quality planting materials. As a result, seedling buyers prefer to buy seedlings from accredited fruit tree nurseries because they are assured that they will be getting the preferred variety of planting materials they wish to acquire. Accreditation by the DA increases the emphasis on maintaining the genetic quality of planting materials as well as the physical quality of the seedlings.

### **IMPLICATIONS FOR FOREST NURSERY CERTIFICATION**

Given the benefits of fruit tree nursery certification identified above, an accreditation scheme specifically designed for the forestry nursery sector is seen as a potential policy option that can enhance the supply of high quality tree seedlings for the region and the country as a whole. This would guarantee a supply of high quality seedling stock through the assurance of high quality mother trees. The accreditation process could focus on ensuring high genetic as well as physical quality of planting

materials. Genetic quality can be assured through certifying that the seeds and seedlings have been obtained from phenotypically superior mother trees (including straight bowl, balanced crown form and good health) while physically superior quality can be achieved through ensuring that the nurseries employ appropriate management practices. While the DA is responsible for fruit trees, the Department of Environment and Natural Resource (DENR) would be the appropriate agency to accredit forestry tree nurseries.

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