

Market Analysis: The Case of Mahikeng Forestry Nursery and Vegetable Project

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Abstract: This paper examines the market analysis of Mahikeng Forestry, Nursery and Vegetable project. A total of 150 respondents were visited and interviewed using a well structured questionnaire aimed at acquiring market information. The study found that spinach topped the list of vegetables produce for consumption (38%), followed by cabbage, carrot, potato and tomato in that order. Twenty four percent of producer's intend to produce spinach for sale confirming it the most popular vegetable in the project area. In choosing crops for production either for consumption or for sale by households, potato top the list with 27%, followed by cabbage (21%), spinach (19%), carrot (18%) and tomato (16%). The study found that seedlings productions are the main activity currently at the site but these seedlings are provided to the community free of charge. If the project were to go commercial, this services cannot continue to be provided free of charge. The study revealed that vegetables were mostly demanded by the people in the area and most of the top ten vegetables consumed in this area come from Lichenburg, Klerksdorp and South Rand.

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1. Introduction

Agriculture is very important in South Africa as a source of employment, subsistence and as supplier of raw materials to a vibrant processing sector. "Marketing" is defined as the aggregate of functions involved in transferring and moving goods from producer to consumer. Marketing is not just about selling but requires a clear and perfect understanding of what consumers want and the ability to deliver it to them through the most appropriate channels for a profit. It includes the planning, pricing, promotion and distribution of products and services for consumers, both present and potential (Agricultural Marketing Resource Center, 2007). Consumer focused marketing is the single most important factor that determines the success of an enterprise. According to Kohls (1968), marketing can also be defined as the performance of all business activities involve in the flow of goods and services from the point of initial agricultural production until they are in the hands of the ultimate consumers. Marketing is much more than simply knowing how to dispose of agricultural commodities. Marketing is necessary for economic development. Marketing facilities allow concentration of production on the easiest and most rewarding lines of endeavors. Improvements in marketing procedures or organization expand trade, raise the level of living of all concerned and add to the economic wealth of the community. Marketing enables the community to produce regularly for sale, and this means an improvement in the country's GDP. It provides incentives for community to produce for local and international market. As Abbott

(1989) puts it, marketing also increases community's income so that they can form a growing market for domestic industries through proper communication channels. From the foregoing, it is imperative that the financial sustainability of agricultural projects will depend largely upon availability of a reliable and good value market.

Many of the agricultural projects owned by emerging farmers in South Africa have failed mainly due to lack of reliable and good market for their products. This might have happened due to the lack of proper marketing analysis before projects are implemented. Dinello, Hall, MaFaachern and Dreesen (2000) argue that marketing is the most critical element in the profitable production of agricultural crops. The sum total of functions involved in the transfer of crops from the farmer to the buyer is referred to as marketing. Therefore, functions of agricultural marketing includes processing and assembling the raw commodities, grading and packaging, transportation, preparation for use, storage, shifting and sharing risks, change in ownership, pricing and exchange, wholesaling and retailing. Potential suppliers must study markets carefully to select those crops that will provide them with maximum returns.

This study focuses on the Mahikeng Forestry Nursery and Vegetable project and the findings will serve as a source of advice for the implementers. If the results indicate that there is no reliable market for the products, then the project implementers should not commit the tax payer's money into such project. On the other hand, if the results indicate that there is

a reliable market for the products, the project team should be encouraged to go ahead with the implementation of the project. Market analysis is vital for every project because the probability of a project succeeding depends on the type of market which exists for it. A study by Liebenberg and Groenewald (1996) found that income elasticity of vegetables and vegetable products according with respect to South African population groups are all positive. This implies that the respective population groups would demand more of vegetables as their incomes increase and the target community of this project is no exception.

According to Mander et al. (1997), a large and active trade in traditionally used indigenous plants exists within South Africa. Rapidly increasing demand for medicinal plants and other purposes has resulted in overexploitation of wild populations, a reduction in supply and an increase in cost. The need for sustainable use of wild populations and for enhanced supply through cultivation is acknowledged. Although the production of traditionally used plants has been suggested for over a decade, there has been little response. The lack of understanding with respect to the cultivation economics of producing useful indigenous plants can be considered one of the most limiting factors in commercialization. Producers do not engage in commercialization as there is no indication of the potential costs and returns of producing plants for traditional markets. To promote greater understanding, the institute of Natural Resources is currently testing the cultivation of indigenous plants in small-scale agricultural systems, and studying the economics of cultivating selected species in various agricultural systems.

The demand for traditional medicines and other plant products continues to grow in South Africa. The growing human population, the slow employment growth rate, the influx of foreigners seeking work, and the limited resources of the government to serve primary health care and other welfare requirements results in a rapidly increasing use of indigenous plant products. In addition, the strong cultural attachment by many communities to traditional practices, even within modernized urban settings, sustains the demand for traditional plant products. As a result the need to cultivate large numbers of popular indigenous for both medicinal and craftwork plants are important in society (Heinsohn 1991). A large volume of research has been and is currently being undertaken within South Africa, focusing on the mass production of useful indigenous plants. A large body of information now exists regarding tissue culture for many of the popular medicinal plants.

There have been frequent international calls for 'conservation through cultivation', But with little response from either the private or the public sector. In South Africa, one of the large timber companies took up the challenge to mass produce popular medicinal trees; however, it produces trees for distribution to interested groups and has not yet considered commercial production. More successfully, Durban City Parts Department has established a medicinal plant nursery to promote the cultivation of local plants. This nursery has been successful in pioneering cultivation techniques and makes plants available at nominal prices. There has been wide publicity associated with the nursery, but as yet commercial production has been minimal. Some success has, however, been achieved in developing the skills of traditional healers in plant production, and there is a growing interest in production at the homestead level.

The question arises why, with all this information and market signals, is there no real commercial cultivation of traditionally used plants? In the private sector, there appears to be little understanding of indigenous plant cultivation in agricultural systems, particularly concerning the performance of plants and the economics of production and marketing processes. As a result, neither the state, private companies, nor individuals are unable to recognize the value of commercializing the production of indigenous plants. As there is no clear indication of the costs and benefits of commercial cultivation, no serious consideration is given to production. Private companies and individuals do not understand the cost implication of production, and they do not understand financial benefits they could gain from cultivation. Small-scale farmers in communal areas, who are aware of the market in useful plants, have no tradition in cultivating indigenous plants and rely on the natural environment to produce them. There is also little awareness of the potential for cultivating indigenous plants and consequently cultivating them is not considered. Small-scale framers are particularly averse to risk and so are unlikely to make an investment in a new venture unless benefits are guaranteed.

2. Material and Method

The Mafikeng Forestry Nursery and vegetable project is located in Danville, a peri-urban area of the Mahikeng town. It lies in the North Western part of the town of Mahikeng along the Lichtenberg-Mahikeng road. On the western side of Danville is Lomanyane, a predominantly black village with a population of about 895,734 people. According to the recent Local Government demarcations, the Mahikeng Municipality area includes the traditional

rural areas in the surroundings from Ramatlabama in the North to Mooifontein in the south. The population of the newly demarcated Municipal area is about 1.4 million. The project area is characterized by high unemployment rate (37%). The project site is owned by DWAF (Department of Water Affairs and Forestry) but intends to involve the community in it and further operate commercially and to produce and sell forest seedlings and vegetables. It was envisaged that the restructuring of the Mahikeng Forestry Nursery and vegetable project to operate commercially would contribute to the overall economic, social and environmental development of the area. The restructuring would also ensure financial and food security gains, community participation, job creation and in-build cost recovery and profit making mechanisms. In assessing the economic and financial viability of the project, the analysis of the following: bio-physical environment, socio-economic aspects, institutional & managerial aspects, financial analysis as well as environmental and marketing analysis are paramount. However, this study will focus only on the marketing analysis of the project.

The project was instituted by the Department of Water and Forestry (DWAF) and aims at creating jobs for the people in the community through product identified, market survey and bio-physical evidence. analysis of target market for the project products, demand analysis for forestry nursery seedlings and vegetables, input supply analysis for the project, analysis of possible marketing constraints to be faced by the project and analysis of marketing strategy for the project. The study hypothesized that, reliable and good value market exists for forest seedlings and vegetables to be produced by the Mafikeng Forestry Nursery and Vegetable project.

The total land area of the site where the nursery and vegetable project is located is about 4.8 hectares.

Although approximately 2.97 hectares (62%) of land at the site is under sprinkler irrigation, most of this land (47%) is however currently uncultivated (fallow) and has been so for the past 5 years. The remaining 15% of the land fitted with irrigation system, 12.6% and 2.4% are under vetiver grass and nursery tree seedlings respectively. A total of 150 respondents were visited and interviewed using a well structured questionnaire aimed at acquiring market information. The total respondents involved in this project were stratified as follows: 50 questionnaires were used to sample selected shops and institutions involved in the marketing and processing of products from this project, another 50 to sample the community's opinion and 50 to sample the opinion of producers and those handling the produce in one way or another. The main sources of marketing information were by way of visits to selected shops and institutions involved in the marketing and/or processing of some of the products identified as having reasonable potential. Interviews were also held with various people, both producers and those handling the produce in one way or another. A sample of the questionnaire is given at the back of the thesis. Quantitative and qualitative analysis in the form of graphs, bar charts, tables and line graphs were used. Their relationship with the unit of analysis will also be highlighted. Computer Software package SPSS was used for the analysis.

3. Results

Figure 1 presents the target markets, Table 1 highlights the quantity of vegetables sold per month by different marketing agents in the target markets, Table 2 shows most demanded vegetables on the respective target markets; Figure 2 presents patronage of the nursery and Table 4 shows tree seedling species recommended by both suppliers and hawkers in the study area

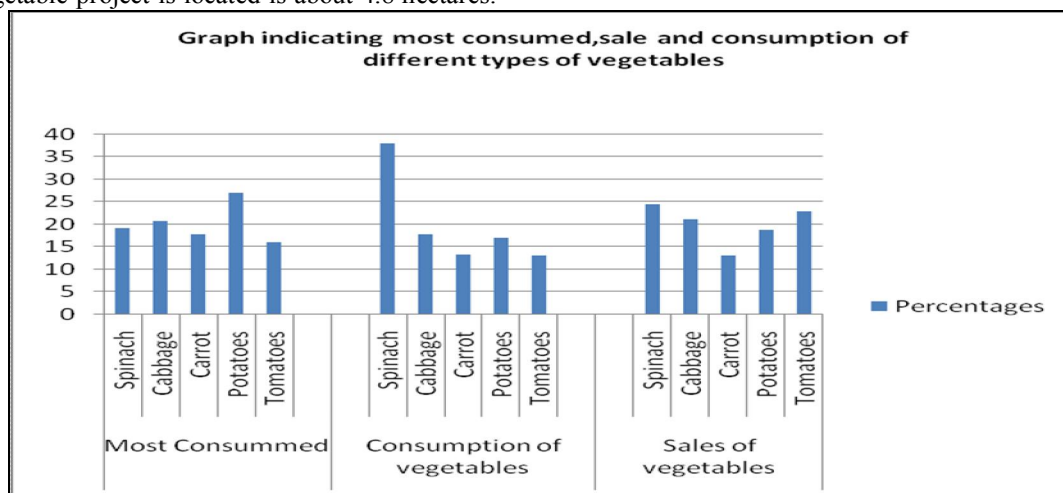


Figure 1: Target markets

Table 1 Quantity of vegetables sold per month by different marketing agents in the target markets

PRODUCT	SPAR			CHECKERS			SCORE			TOPTASTE			CARROT KING	
	Q/S/M	P/UNIT	VALUE (R)	Q/S/M	P/UNIT	VALUE (R)	Q/S/M	P/UNIT	VALUE (R)	Q/S/M	P/UNIT	VALUE	Q/S/M	UNITS
1. CABBAGE/HD	800	3.25	2600	600	2.59	1554	700	2.99	2093	600	3.00	1800	400	15KG.BAGS
2. CARROT/BSH	500	4.99	2450	400	2.99	1196	500	2.49	1245	500	3.00	1500	250	10KG.BAGS
3. BEETROOT/BCH	300	4.30	1290	500	3.99	1995	500	2.49	1245	900	3.00	2700	250	10KG.BAGS
4. SPINACH/BCH	80	3.99	319.2	40	3.99	159.6	80	2.49	199.2	40	3.99	159.6	800	600GM.BAG
5. LETTUCE/HD	200	4.70	940	144	4.99	718.6	140	4.59	642.6	200	5.00	1000	100	12HDS/BOX
6. PARSELEY/PKT	20	3.49	69.8	10	3.49	34.9	20	2.99	59.8	10	2.50	25	2	BOX
7. BLUE PUMPKIN	120	-	-	120	-	-	120	-	-	100	-	-	-	-
8. HUBBARD/KG	120	6.15	738	160	-	-	160	-	-	100	-	-	200	20KG.BAGS
9. TOMATO/KG	500	6.99	3495	360	6.29	2264.4	400	7.99	3196	360	7.99	2876.4	900	4.5KG.BOX
10. POTATO/KG	500	2.99	1495	380	2.79	1060.2	500	2.99	1495	370	4.99	1846.3	2000	10KG.BOX
11. GREEN PEPPER/K	150	7.89	1183.5	120	8.99	1078	110	11.99	1309	100	9.99	999	200	1KG.BOX
12. ONION/KG	100	2.55	255	225	3.99	897.8	150	4.99	748.5	200	4.79	958	1000	10KG.BAGS
13. CUCUMBER/ONE	300	4.29	1287	270	4.29	1158.3	260	3.29	855.4	100	3.99	399	50	15/BOX
14. BUTTERNUT/L.S	160	3.19	510.4	198	3.69	730.6	150	4.99	748.5	100	3.99	399	800	10KG.NUTS

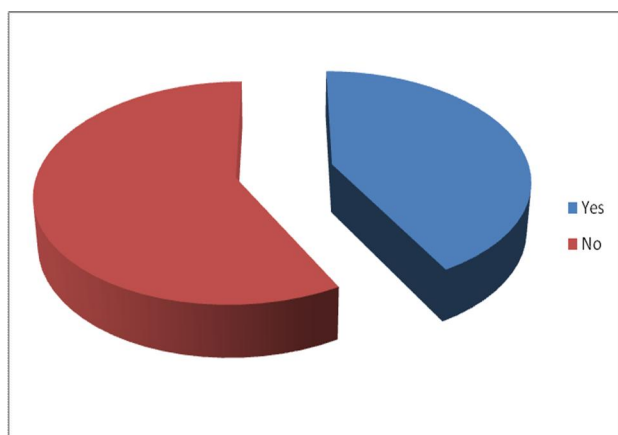
Key: Q/S/M = Quantity Sold per Month, P/Unit = Price per unit, Qty = Quantity

Table 2: Most demanded vegetables on the respective target markets

Supermarkets, Cafes, Wholesalers & Vendors	Target community	Participants of the defunct project
1 Cabbage	1 Spinach	1 Spinach
2 carrots	2 Onions	2 Beetroots
3 Beetroots	3 Cabbage	3 Carrots
4 Lettuce	4 Potatoes	4 Onions
5 tomatoes	5 Tomatoes	5 Tomatoes
6 Potatoes	6 Carrots	6 Potatoes
7 Onions	& Beetroots	7 Cabbage
8 Green pepper		
9 Cucumber		
10 Spinach		

Table 4: Tree seedling species recommended by both suppliers and hawkers in the study area

Botanical Names	Common Names
Thuja orientalis	Compacta aurea
Thuja orientalis	Aurea nancompacta
Cupressus sempervirens	Swane gold
Juiperus scopularum	Skyrocket
Cupressus macrocarpa	Goldcrest, semi shade
Washingtonia robusta	Washington fan palm
Phoenix canariensis	Date palm
Schinus molle	Pepper tree
Combretum eruthrophyllum	River bush willow
Deciduous and celtis sinensis	Quick growing

**Figure 2: Patronage of the nursery**

4. Discussion

The importance of analyzing the market for an agricultural project cannot be over emphasized. The market analysis will enable the determination of the sustainability of the project. This section identifies the target market(s) and its characteristics, product(s) to be produced according to consumers taste and preferences, type of pricing to adopt and promotional activities required as well as inputs availability. Figure 1 shows the different vegetables that are produced and consumed in the area. Spinach topped the list of those who want to produce them for consumption only (38%). Spinach was followed by cabbage, carrot, potato and tomato in that order. Being consumers, their opinions reflect the likely demand trend for these vegetables. This indication may be helpful in the selection of specific enterprises to be undertaken by the project.

Twenty four percent of those indicated their intention to produce spinach for sale making it the most popular vegetable in the project area. Tomato, cabbage, potato and carrot followed in that order if they were to be produced for sale only. In choosing crops for production, either for consumption or for sale, the consumption pattern of the local people is very important. When asked to indicate the most consumed vegetable in their households, potato topped the list with 27%, followed by cabbage (21%), spinach (19%), carrot (18%) and tomato (16%). For the vegetable project in the community to be sustainable, it must consider seriously these vegetables, as they appear to be the food crops that may be in high demand.

The immediate communities of the project site being Danville, Lomanyaneng and the surrounding areas as well as vegetable wholesalers and retailers in Mafikeng and Mmabatho were identified as the main target markets. The results of my survey indicated that residents of the communities surrounding the project site consume vegetables daily and most often travel to Mafikeng to buy these. Production at the site could take advantage of this demand. However, the extent of the demand will depend on other factors like quality, price and reliability of supply. The other markets considered for the project include South African fresh fruits and vegetables in Klerksdorp. Botswana is another potential market. In order to identify the vegetables to be produced on the project, a market survey was undertaken in order to establish an empirical evidence of the present and future demand for the most common vegetables. The coverage of the survey included super markets, cafes, wholesalers as well as vendors in Mafikeng and Mmabatho. Information about the product, including its source of supply, unit prices, demand situation, quantity sold per month, and seller's ranking of ten highly demanded vegetables on the market were sought from the respondents. The quantities of vegetables sold by the respective marketing agents in the Mafikeng and Mmabatho area indicated in Table 1. The results of the survey for ten highly demanded vegetables on the market are presented in the first column of Table 2. The market survey was further supported by two other surveys; one from the Danville and Lomanyaneng communities regarding their views on vegetables which they consume most in their households. The respondents of the other survey were the former participants of the defunct project regarding the vegetables, which were more profitable as well as information about any associated marketing problems. The results of the survey are as presented in the second and third columns of Table 2. It is clear from the table that all the respective surveys selected similar vegetables according to the

demand situation on the target markets. A summary of the ten best selling vegetables according to the super markets, cafes and the major wholesalers in Mahikeng and Mmabatho is provided in the first column of the table. On the other hand, the preferred vegetables for consumption by the surrounding communities are listed in the second column of the table. According to the participants of the defunct project, the vegetables that were in higher demand are ones presented in the third column of Table 4.2

They indicated that the main sources of supply to the target markets are located in Lichtenburg, Klerksdorp, South Rand, individual farms and other South African fresh produce markets outside Mahikeng. This implies that local producers may have price advantage in terms of transportation and handling costs and can therefore take larger market share provided they can supply quality products consistently. Besides the local empirical evidence of demand for the selected vegetables, further analysis of the national statistics on the demand for vegetables by Liebenberg and Groenewald (1996) also supported the selected products. The National Department of Agriculture's statistics on the quantity of important vegetables sold on sixteen major fresh produce markets in South Africa also indicate that the vegetables that were selected by our market are the most demanded by consumers (NDA, 2001). From all the above discussions, it can however be assumed that as the average income of the people increase, the net effect would be that producers would make profit from income growth.

Raising of tree seedlings is the main activity currently being undertaken at the site. These seedlings are provided to the community free of charge. If the project were to go commercial, this service cannot continue to be provided free of charge. The following aspects of the nursery and its seedlings were investigated. Figure 2 shows the number of the respondents who collected seedlings from the nursery. The majority (58%), who did not use the services of the nursery, cited lack of knowledge as the main reason. Since knowledge of the existence of the nursery in the community seems to be limited, there is therefore a need to embark on publicity and education campaigns about the existence and the importance of the nursery. This will impact positively on the marketing of products from the nursery. The majority (84%) of the respondents went for shelter trees, while six and 10% collected fruit and ornamental seedlings respectively. As indicated earlier, these seedlings were collected free of charge. However, majority (78%) of the respondents indicated that they were prepared to pay for them. When asked how much they were willing to pay for the seedlings, the majority (78%) of the respondents

indicated that they were prepared to pay up to R5.00 for seedlings. This shows that the people generally have positive attitude toward the use of tree plants and the nursery in general.

The current production of the existing tree nursery stands at 195189 seedlings per year. From the results of the community survey, it was observed that the people know the importance of the seedlings and many of them have obtained seedlings from the site for planting in their houses as shade trees or for decoration. They also indicated that they were prepared to buy the seedlings at various prices ranging between R2 and R15 with majority opting for R7 and above. The foreman also indicated that during Abor days all the seedlings are usually taken by the various organizations. In this respect, it is suggested that these organizations could be convinced to budget and pay for whatever quantity they consume at a much cheaper price. This could server as a good and reliable source of market for the nursery.

The survey indicated Lack of storage facilities, poor communication network, lack of marketing finance, lack of means of transport, poor road infrastructure, lack of marketing information, lack of management skills and training and theft as marketing constraints faced by the Mahikeng Forestry Nursery and vegetable project. These marketing constrain faced by those involved on the Mafikeng Forest Nursery and vegetable projects have also been found to be consistent with that of other authors working on the marketing analysis of agricultural products. For example, Kohls (1985) and Southworth et al (1980) found that, lack of storage facilities affects producers and inflict losses on them. This loss is not only in financial form but also in terms of physical losses as confirmed by Adams and Horman (1977). Poor communication and lack of access to working capital was also identified as major marketing constrains. This assertion is consistent with the work carried out by Chirwa (1998) and the Ministry of Agriculture in South Africa (1996). Transport infrastructure and transportation difficulties were also identified as critical marketing constraints and these factors are in no contrast with the findings of Abbott (1993), Ellis and Hine (1998). Therefore improvement in transportation infrastructure and transport itself will go a long way to assist producers. Financial difficulty was also a constrain identified during the survey. This was further confirmed by Dorward et al (1998) and Abbott (1993). Though all of these findings had been confirmed by other writers, the extent to which they affect producers varies from crops to crops and from one location to the other. The extent of their variation has not been dealt with in this work.

There is a sound inventory of inputs already existing at the project site. However, additional inputs like seeds, fertilizers etc that would be required for the production activities are all available in Mafikeng and some towns within the province (Lichenburg, Klerksdorp, Potchefsroom). The management of the project should adopt low cost strategies such as buying inputs in bulk from low costs but quality sources. Marketing strategy is the marketing logic by which the project aims to achieve its financial objectives. The other things that need o be considered besides the target market and the existing demand are the promotional strategy, quality strategy, positioning and the marketing expenditure levels. Launching of the project is necessary to create awareness among the community and other possible target markets. Promotion or advertisement, sign boards could be placed at vantage points in simple and familiar language of the target group to direct buyers to the farm. The local media like the Mafikeng Mail may be used for advertisement. Direct marketing is also recommended for example by selling to institutions, hotels and supermarkets as well as individuals thin the communities.

The competitive and quality strategies should focus on the product, in terms of service as well as inputs. High quality standards in all sectors of the project should be maintained to ensure products of good quality. This should include; maintaining a hygienic environment, making use of improved seeds and methods of production, using healthy cultural practices, planting and harvesting at the right times, good record keeping, continuous and timely supply and establishment of long-standing good relationship with customers in ways that locks them in and makes them dependable. To be the best in vegetable supply in the Mahikeng area high positioning could be a great vision for the project. This can be achieved through; production of quality products, expansion of total demand through promotional activities, indirect protection of the market share by keeping costs down, and keeping prices in line with the value as seen by the customers and expansion of market share even if the market size remains constant by sticking to quality products and innovativeness as well as responding well to the dynamics of the market especially regarding consumers taste and preference.

From the survey and analysis was revealed that vegetables were mostly demanded by the people. It was also found that most of the top ten vegetables consumed n this area come from Lichenburg, Klerksdorp and South Rand and if local producers can produce better quality and assure constant suppliers, they will have transportation advantage and a large market given that the results prove that demand for vegetables are almost inelastic. This

might also skewed in favour of customers who will benefit in the form of lower prices. Based on the results of the market survey of seedlings especially the species shown in Table 5, it is recommended that existing poor road network to the site be improved, project management should have a workable marketing plan where promotion aspects have to be emphasized, contract farming is recommended to guarantee ready market for the project and other advantages such as financing and technical advice, regular market research should be undertaken to review the enterprises as dictated by the market demand, management of the project should negotiate for contract production of tree seedlings with DWAF and other government departments and other interested parties for Abor days. However, it is recommended that the seedling should be paid for.

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