Profitability and Comparative Advantage of Banana Production in The Sultanate of Oman

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Abbreviations:
DRC: Domestic Resource Cost, RCR: Resource Cost Ratio

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Abstract
Banana is one of the most important fruit crops in Oman. The total production area in Oman increased from 5798 acres in 2008 to about 10415 in 2011, it achieved about 61584 tons comparing with 29000 tons in 2008. This shows that the contribution of the banana production increased from 2.526% to 4.506% of the total agricultural products in Oman (MAF; 2010). However, there continues to be dependence on imports as a second strategy for food sufficiency, since the present methods of production makes the imported food cheaper than home grown produce. This situation is still a major cause for concern because the country is losing foreign exchange. Therefore, this research aimed to determine the profitability and comparative advantage of banana production in Oman from an import substitution perspective. Financial and economical profit were estimated to determined the profitability of banana production. Also, domestic Resource Cost (DRC) and Resource Cost Ratio (RCR) indices were computed to determine the comparative advantage of banana production. The results indicate that banana production in the Sultanate of Oman has a profitability and a comparative advantage.

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1. Introduction
Edible Banana belongs to the family Musaceae (De Langhe et al., 2009; and genus Musa (Al-Busaidi K., 2013). Bananas classified as tropical and subtropical regions crop. It considered one of the most important fruits crop which contributed to the stability of rural communities by means of providing work for farmers for livelihood (De Langhe et al., 2009). It reported that 87%t of bananas produced globally are consumed locally (Biodiversity International, 2012).

Sultanate of Oman is an arid country but the mass of banana production occurs in the southern part of the country (Dhofar Governorate) (AL-Saady N.A.; 2010) where the monsoon rains contribute to a favorable agro-climate for banana cultivation. The total production area in Oman increased from 5798 acres in 2008 to about 10415 in 2011, it achieved about 61584 tons comparing with 29000 tons in 2008. This shows that the contribution of the banana production increased from 2.526% to 4.506% of the total agricultural products in Oman (MAF; 2010).

Omani’s economy is largely dependent upon the crude petroleum industry, which contributes between 39.2% and 48.70% to the gross domestic product (GDP) during the last decade. The agricultural sector (which includes agriculture and fisheries) contributes approximately 2% to the country’s GDP. However, the Omani government has taken steps to diversify its economic activities toward agriculture in the food security agenda and saving foreign exchange.

Omani’s population increased from about 901,000 in 1970 to about 4157399 in 2015 (National Centre for Statistics and Information, 2015). And about Rial Omani (OR) 32.2 to 59.1 million between 2000 and 2003 worth of fruits is required to meet the needs of Omani’s people (Ministry of Economy, 2004). This situation is still major cause of concern...
because from the balance of payment point of view the country is losing foreigner exchange. Thus, the broad objectives of the Omani agricultural policy is to have some form of food security through continuous supplies of fruits locally, stable price, consistent quality and growth in business relating to agriculture. It is therefore, the government is concentrating its efforts to promote and facilitate investment in agriculture, particularly in Fruits production. This is seen as a prerequisite and a precursor to the development of the agricultural sector.

2. Literature Review

2.1. Domestic resource cost (DRC) and resource cost ratio (RCR):
DRC is a measure of the cost (to society) of intervention, which has been increasingly used to measure the cost of government intervention in countries where import substitution or export promotion is an important objective, it is useful to estimate the economic profitability of that particular activity. The efficiency of producing a commodity can be evaluated form the amount of resources that goes into its production and the cost of domestic currency required to save or earn a unit of foreign exchange for that particular activity. In DRC estimation, all outputs and inputs are valued at economic prices. To facilitate this comparison the DRC can be estimated as:

$$DRC_i = \frac{\sum_{j=k+1}^{n} a_{ij} v_j}{p_i} - \sum_{j=1}^{k} a_{ij} p_j$$

(1)

$$RCR_i = \frac{DRC_i}{OER}$$

(2)

Where:-
DRC = Domestic resource cost per unit of commodity i;

$$a_{ij}$$

1 to k, = coefficients for traded inputs;

$$a_{ij}$$

k +1 to n = coefficients for domestic resources and non traded intermediary inputs;

$$v_j$$ = shadow (social) price of domestic resource or non traded input;

$$P^b_j$$ = border (social) price of traded input;

$$P^b_i$$ = border (social) price of traded output.

A comparative advantage exists in production of a commodity when NEB > 0 or positive NEB. A comparative disadvantage exists when NEB is negative and NEB=0 is neutral advantage/disadvantage (Gittinger, 1984).

3. Methodology
The competitiveness of a commodity can be measured by comparing the social cost of earning or saving foreigner exchange from exporting or importing a unit of that commodity (Scandizzo and Bruce, 1980; Schiff and Valdes, 1992; Masayoshi and Takehiko 2001; Zainalabidin et al., 2003). Furthermore, the domestic resource cost (DRC), net economic benefit (NEB) and resource cost ration (RCR) were used to measure the
competitiveness of the industry in saving foreign exchange. These criteria have been used widely in comparative advantage studies by different authors for various agricultural commodities in the Asian region (Gonzales, 1984; Hoey et al., 1989; Mad Nasir, 1992; Zainalabidin et al., 1992; Zhong Funing et al., 2000; Chen Chunlai and Findly).

3.1. Data and scope of analysis
The data were used in this study are secondary data, which were collected from viruses scourers of data such as Ministry of Agriculture and Fisheries, Ministry of National Economy and COMTRADE between 2000 and 2004.

At farm levels there were two major data recorded for intermediate and primary inputs. The intermediate data recorded were for seeds, fertilizers (organic and chemical), insects white cover, electricity and pesticides. While the primary inputs were labor, land, hired machinery and capital. The data were in terms of quantity and value cost for each crop per acre. Additionally, outputs were recorded to obtain the average total production in tone / acre. Generally, individual farms computed the results based on production data on costs and returns of the farming in order to derive at an average assessment on costs and returns of all individual crops.

The wholesale prices of local and imported banana were collected from the department of agricultural marketing in the Ministry of Agriculture and Fisheries. These data were used to monitor the stability of the market prices in the local market. These daily raw data records were collected from 2000 until 2004 for the crops involved in the study. The annual mean prices for each year (2000 to 2004) were computed through the calculation and computation of DRC.

In addition, the international prices of whole agricultural inputs and outputs from 2000 to 2004 were collected from the COMTRADE website to be used in the comparative advantage computation. These items were inputs materials such as seeds, fertilisers, insecticides, insect white covers and others. Other services such as tractors and fuel were also collected. In addition, international prices per kilogram of Fruits. International prices were transferred from USD to Rial Omani by using the Official Exchange Rate.

Basically the compilation of revenue and production cost and trading cost profiles collected from the farm and post-farm respectively was in the financial prices or values as previously discussed. These financial values need to be converted into economic values prior to DRC calculations. Conversion factors (CF) were used to convert the financial to economic values. The costs were further categorized into their domestic (non-tradable) and foreign (tradable) components for calculating DRC.

4. Result and Discussion
4.1. Financial and economic analysis
As can be seen from Table 1, the analysis of private profitability showed that in general the banana performed positively, and this study finds out that producers of banana were capable of generating profit under the current situation. Financially, banana was recorded of R.O. 0.100/kg (R.O. 503.03/acre) of profit. While Economically cost of banana production at farm level is presented in Table 1, it illustrates that banana was comparative under the import substitution regime, and considering the social returns for these crops were positive recording R.O. 0.086 (431.63/acre) per kilogram produced.

<table>
<thead>
<tr>
<th>Table 1: Financial and economical cost of banana production at farm level</th>
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<tbody>
<tr>
<td><strong>Inputs</strong></td>
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<tr>
<td>Intermediate Input</td>
</tr>
<tr>
<td>Fertilizers</td>
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<tr>
<td>Pesticides</td>
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<tr>
<td>Plant White Cover</td>
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<td>Electricity</td>
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<td>Pollens</td>
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<td>Organic Manure</td>
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<td>Primary Input</td>
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<tr>
<td>Labour</td>
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<tr>
<td>Hired Machinery</td>
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<td>Working capital</td>
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<tr>
<td>Land</td>
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<tr>
<td>Total cost/Acre</td>
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<tr>
<td>Total cost/kg</td>
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<tr>
<td>Output/ Acre</td>
</tr>
<tr>
<td>Domestic Price (R.O. /kg)</td>
</tr>
<tr>
<td>Profit (R.O. /Acre)</td>
</tr>
</tbody>
</table>

Source: Researcher calculation
4.2. Comparative advantage measures

The estimation of comparative advantage was examined in the study to estimate the efficiency of using the domestic resource of banana production. The indicators used in this study are RCR, DRC and NEB. Basically, the study based its argument on the result of RCR to present the status of comparative advantage of crops covered in investigation. The result is presented in Table 2 and concludes that banana is efficient with RCR value of 0.86. The study found that to generate a unit exchange required R.O. 0.32 per kilogram produced for banana. This meant that the average earning of one R.O. 1.00 for banana requires the spending R.O. 0.32 of domestic resource, thus reflecting reasonable production management and utilisation of domestic resource.

NEB measurement is another factor that was used in the study to express the status of comparative advantage in terms of the social profits per unit kilogram generated by an activity. The NEB measurement showed that banana production was comparative, because the social cost of production per kilogram was less than the social profit. It recorded 0.86 for banana.

<table>
<thead>
<tr>
<th>Description</th>
<th>Banana</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCR</td>
<td>0.83</td>
</tr>
<tr>
<td>DRC</td>
<td>0.32</td>
</tr>
<tr>
<td>NEB</td>
<td>0.086</td>
</tr>
</tbody>
</table>

Source: Researcher calculation

Conclusion

Banana had status comparative advantage; its competitiveness was not strong enough. The government is thus advised to given more and careful consideration to banana production to improve their level of comparative advantage, because banana is one of the most adequate and widely cultivated crop in the Sultanate of Oman and a high percentage of farmers depend on it for the livelihood. Generally, the result of comparative advantage measures showed that the Sultanate of Oman had a comparative advantage in bananas production and enable import substitution. This means that the Sultanate of Oman enjoys the comparative advantage of producing these crops and could save or earn foreign exchange by emphasising on local production.

The banana crop in this study represented an efficient use of Oman’s resources at farm level in the period under consideration. Thus, it recommend that the farm management practices needs to be improved and upgraded in order to understand the optimum production potential of banana. These improvements should include the appropriate handling of recommended inputs and proper post harvest processing activities, therefore as to determine the viability of diverse crops that are well adapted to local conditions. Also, it recommended that a strategic action plan should be constructed that focuses on the enhancement of the efficiency, productivity and competitiveness of banana crop in the Sultanate of Oman.

References


Mayasoshi H., Takehiko H., 2001. A Comparative Study on Agricultural Exports of Three Southeast Asian Countries, Japan Center for economic Research (JCER), Tokyo, Japan.


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