MANAGEMENT PREFERENCES FOR ACCOUNTING, TAXATION AND REGULATION OF FORESTRY FIRMS: A RESEARCH NOTE

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Abstract

This aim of this study is to investigate management preferences for accounting, taxation and regulatory policies that impact on the **sustainability** of the forest resource and associations with the **size, sector** and **structure** of firms in the **forest industry**. The forest industry of Cyprus was examined and the data used to develop a survey instrument suitable to examine forestry managers' preferences in other nations. An important finding is that both the size and sector of firms in the forest industry are factors that should not be neglected by policy-makers when determining accounting standards, taxation incentives and regulation aimed at protecting and sustaining the forest resource.

Context for the study

Cyprus was considered to provide a suitable context for this study as its forests are an important natural resource. They cover 18.65% of the total area of the island (Wilkie et al. 2002; United Nations 2004) and provide not only timber and wood products, but also contribute to a significant non-wood industry, tourism. Thus forest sustainability is an important issue to this small island state.

The Cyprus government first issued a forest policy in 1950 and reconfirmed the policy after independence in 1960. The aim of the forest policy is to conserve and develop the forest resources of the island with the special objectives of forest preservation, climatic protection, water and soil conservation, agricultural protection, public amenity, wild life, forest protection and management, timber and fuel supplies, employment, forest industries, and research and education (National Report of Cyprus 2004). More recently the Cyprus government has started taking steps towards the preparation of a national plan of sustainable forest management, within the framework of the Mediterranean Action Programme (Poulides 2002).

The beneficial role that sound management policies regarding conservation and sustainability can play in the socio-economic development of a country was recently acknowledged in the National Report to the Fourth Session of the United Nations Forum on Forests (United Nations 2004). Wilkie et al. (2002) also acknowledged the significance of the contribution that forests make to the national economy of small island states such as Cyprus when he noted that mainly as a result of afforestation management efforts, between 1990 and 2000 Cyprus registered an increase in forest cover.

Research questions

Accounting standards that direct disclosures in financial reports about firms in the forestry industry may result in wealth transfer and in this way have an impact on management practice and therefore potentially on forest sustainability. Taxation law including imposts and/or subsidies that are designed to encourage or to discourage particular business activities may also have an impact on forest sustainability. Political costs theory suggests that governments can, and do, impose and change regulations on certain activities including forestry management in response to stimuli from the public. The accounting, taxation and regulatory

framework and changes to it may provide sufficiently strong incentives for firms to enter or exit the forest industry. In this study, associations between expressed preferences of managers of forestry firms for specific accounting, taxation and regulatory policies and the size and structure of forestry firms are investigated.

It is of concern that managers of firms in the forest industry may interpret 'sustainable management' in different ways. For instance, in Australia the meaning of 'environment' differs under the environmental Act of each Australian state government. This means that sustainable management decisions made about the same item by managers of forestry firms in each state may be different in order to comply with the relevant Act. The manager of a forestry firm operating in more than one state may be faced with contradictory decisions in respect to the same type of operations. Of particular interest is whether that interpretation is associated with the size or structure of the firm being managed. Firms, including forestry firms, can be categorised by size according to measures such as assets, debt and employee numbers. Firms can also be categorized by sector such as public or private sector; and, within the private sector forestry firms exist in various structures including listed (quoted), unlisted (unquoted) and private companies, family trusts, partnerships and individual operators. Yet accounting, taxation and regulatory policies within the forestry industry apply to all firms without taking into account distinguishing characteristics such as the size, sector or organisational structure of those firms.
The following research questions were identified:

i) Do managers of small forestry firms have different preferences for sustainable forestry practices to managers of large firms?
ii) Is the business sector or structure of a forestry firm associated with different preferred sustainable forestry management practices?

Literature review

For the purposes of this investigation, forestry is considered as the science of regulating the forest resource for the benefit of humanity, and, following Makris (1989) 'sustainable management' of the forest resource is believed to ensure the renewable nature of the forestry industry. To better understand the concepts and issues surrounding the sustainability of forests it is necessary to consider the distinguishing characteristics of the industry. These

include: the time required to produce forest products; the accessibility to land for forestry use; the multiple and varied uses of forests (Kassioumis 1981); and accountability for the stewardship of forests when harvesting the resource and for the land quality and the bio-diversity and wilderness provided by the forest.

In many countries a considerable number of management decisions are made by balancing business limits such as plant capacity, with ecological limits such as wildlife protection (Ferguson 1987). However successfully striking a balance is difficult. Relevant literature concerning sustainable forestry and management practices suggests that a successful forestry firm has particular variables (Gatzojannis 1984). The following variables have been suggested as having a bearing on the success of forestry principles: the availability of relevant information provided through accounting (financial) reports; the existence of taxes or subsidies assisting or prohibiting growth; and government regulation of forestry practices. An assessment of these variables may improve our understanding of best practice in sustainable forestry management.

A primary objective of any forestry firm, as with other profit-orientated firms, is to ensure the maximisation of net profit after tax (Rubenstein 1994; Chant et al. 1991). However in the long-term, a forestry firm will remain successful only if its managers can balance the profit requirement with an ability to manage the forest resource in a sustainable manner. Rubenstein (1994) suggested that another arm of a forest industry firm is to achieve management practices that are scientifically and socially acceptable in forest harvesting and forest renewal techniques. He also argued that a firm must be able to communicate with the public, keeping it informed on the long-term nature of a sustainable forest and building communication bridges between forest users and non-users. Often managers use the financial report as a medium for the communication of environment-related financial information.

In respect to sustainable forest management the following specific objectives have been identified in the literature: forest land base research and monitoring, forest health and protection, sustainable growth and harvest, stewardship through forest practices and public education, communications and involvement. In addition, Slee (1985) stated that management objectives for native forests should be to use the forest productively or to manage it exclusively for conservation programs. These objectives incorporate the preservation of the forest's genetic

resources. These objectives are also considered to represent the main ideas of forest firm managers and are similar to the common and special objectives outlined by Gatzojannis (1984) which include: forest protection, silviculture, harvesting, reforestation, afforestation, building, planning, research, administration, roads and various other measures.

Gatzojannis (1984) did not envisage homogeneous objectives for all entities. Furthermore, he did not distinguish the objectives between different sized forestry firms or forestry firms in different sectors or with different business structures. He adopted a broad theoretical perspective that there is an inter-relationship of forest production, forest recreation and forest ecosystem protection, social income, encouragement of rural populations, amenities provided by the forest and the need for nature conservation. Watson (1990) argued that business structure was a contributing factor when making environmental decisions affecting the forest industry. Rubenstein (1994) provided a different view when he suggested that the conceptual framework of a forestry firm is based on the decisions of senior management and the board of directors. Both managing mechanisms have external influences that ultimately decide the cost of the resource, the forest. For the purposes of this study the interests of managers of forest firms were not taken to be homogenous. However it was assumed that all managers have a common concern and that is the environment's renewable resources should not be used beyond the limit of regeneration and natural growth.

Dargavel and Leslie (1987) claimed that multiple-use forest management is considered to be forest production plus other uses' including wildlife, scenery, water and watershed values. Others have identified these various uses of forests as incompatible and argued that a possible option is to stop forest production altogether in forests such as native forests. In contrast, Ferguson (1987) argued that the provision of other forest services may be well suited with activities such as wood production and harvesting. He suggested that government incentives such as taxation imposts or subsidies, and regulation or the lack of regulation, and the possibility of reorganising the management of forestry firms are very important factors in forest sustainability as well as future growth and diversification.

Government charges such as taxation can act as a disincentive leading to players exiting from the industry. Dumsday and Chisholm (1991) linked the clearing of forested land to the availability of specific taxation deductions to farmers. Buckley (1991) noted that the main

types of charge include charges for rezoning, environmental protection, tradeable resource quotas, subsidies and bounties and special purpose grants. Theoretically, the charge imposed or the price for a corresponding right should be related to the magnitude or value of the environmental good or service which it affects.

Dargavel and Leslie (1987) presented an examination of new prospects for hardwood forests, their industries and communities, based on the results of a survey sent to forest industry firms and consultants. One outcome of the survey illustrated that forestry activities could be improved. In particular the respondents expected the improvement of existing logging rules and regulations. Dargavel and Leslie also suggested that managers of commercial forests needed to incorporate social, economic and environmental values into accounting processes in order to achieve sustainable forest management.

With regard to sustainability and sustainable practices, regulation can be used to achieve sustainable development. Dumsday and Chisholm (1991) noted that the introduction of controls imposed on tree cutting resulted in excessive tree retention where trees were kept even in the case of fire hazard. Stephenson developed a model (1977) which is presented in Chant et al. (1991) based on the assumption that enforcement problems by an authority are non-existent. He constructed a simulation that investigated the relationship between pulp/paper productions and the generation, cost and control of pollution. Stephenson observed that a firm would minimise treatment costs and effluent fees payable by selecting treatment procedures that permit minimum compliance with effluent standards. Thus it may be seen that the regulations may not be strong enough to prevent or even discourage all undesirable practices. Of concern is whether forestry management practice exploits such situations in order to enhance profit opportunities. In this study it was considered that the goals of increasing profit and achieving sustainable forestry management, could be enhanced through effective use of accounting information, and compliance with taxation policies and other relevant government regulation. Further, it is asserted in this study that to be successful, specific accounting, taxation and regulatory policies promoting forest sustainability must be be practical in their application and theoretically suitable by clearly recognizing the diverse nature of forestry firms.

Methodology

Research techniques used to pursue answers to the questions in this study included review of relevant available literature regarding the environment and more specifically, the forest resource, together with interviews. In particular, data was collected from a pilot study involving personal interviews with a broad range of interviewees randomly selected from a population of managers of forestry firms, government legislators, accountants and forestry consultants in Cyprus. This data set formed the basis for a later questionnaire that was sent to a similar set of recipients in a second setting, Australia. The specific accounting, taxation and regulation policies deemed to assist in the sustainability of the forests were generated from a review of the relevant literature and from the interviews conducted in Cyprus. The following subject areas were addressed in the interviews and in the questionnaire that was developed:

a) Accounting practices that would consider intra-generational valuations and the impact of forestry in calculating costs while influencing management decisions that enhance net profit after tax;
b) Taxation policies that would result in companies committing to the future viability of forests and their intra-generational survival; and,
c) Regulation policies that would protect the sustainability of forests.

Interviewing was considered to be appropriate as open-ended questions could be used that would assist in identifying the particular policies that are thought to promote the sustainability of forests. A total of 47 people, coming from three of the four regions in Cyprus, were interviewed.

Data and results

Descriptive data have been summarised and are presented in Tables 1-6. In Tables 1-3, the policies preferred by managers of different sized forestry firms are marked with asterisks. In Tables 4-6 the data presented indicates the views of managers by way of numbers in ascending preference; that is, 1 = strongly disagree, to 5 = strongly agree.

Accounting practices

The summarised results in Table 1 relate to the size of the forestry firm as a defining characteristic of management preferences and views as far as ‘accounting practices’ that

impact on sustainable forestry practices is concerned. For example, managers of small forestry firms indicate a belief that small firms incur a disproportionately high cost relative to large firms if required to make disclosures about environmental and sustainability issues. This response implies that managers of small firms support differential reporting for forest industry firms. This response is important given recent moves to harmonise accounting and financial reporting on a global basis irrespective of size or sector (Faux and Wise 2004). While a theoretical solution to the problem of financial reporting overload is provided by differential reporting, the challenge of how to make managers of small firms accountable for sustainable management practices, if not through the traditional mechanism of financial disclosure, still needs to be addressed. This data also identified an expressed preference by managers of large firms to include information on environmental policies in financial reports. This may be reflecting the better capacity of large firms to deal with financial reporting requirements.

Tables 1-3, Size

Table 1: Accounting policies associated with the size of the firm

Size	S	L
Environmental disclosure policy to be shown in financial reporting		*
Accountants to provide key environmental financial data		*
Small firms pay a high price for disclosing environmental information	*	
Accountants to provide data that will assist future generations		*
Must improve traditional financial accounting data for forest reporting		*
Accountants to include costs/benefits of converting traditional accounting processes and procedures		*
Evaluate in monetary terms the other forest services to the community		*

S = Small firms; L = Large firms

Taxation policies

Table 2 contains selected preferences in respect to 'taxation policies' that impact on sustainable forestry management practices. The responses from managers of small firms imply that in the absence of appropriate incentives the managers of small firms in the forestry

industry may not engage in sustainable forestry management practices. The potentially adverse impact of this apparent preference of small firm managers is an area worthy of future research and consideration by policy-makers.

Table 2: Taxation/Subsidies associated with the size of the firm

Size	S	L
Special taxation incentives need to be granted to forestry operators	*	
Needs to be a change of attitudes to promote the creation of taxation incentives	*	

Regulation policies

Table 3 contains a summary of responses in respect to the 'regulation policies' which are deemed to have an impact on sustainable forestry practices. The data confirms the views that emerged in Tables 1 and 2 that managers of small firms prefer that: (1) small firms should be subject to less regulation than large firms; and that (2) small firms should be provided with appropriate government incentives in order to promote sustainable forestry management. Additionally, the data in Table 3 indicates a preference by managers of small firms to have access to a broad range of forest resources to support business activities. Several implications were drawn from this outcome for further exploration in the questionnaire including that small firm profit margins are likely to be smaller relative to large firms and so different incentives may be needed for small and large firms to more efficiently promote sustainable forestry management practices.

Table 3: Regulation policies associated with the size of the firm

Size	S	L
Disagree with control by a central government agency	*	
Government controls to be imposed on certain forestry operations	*	
Strict level of supervision in relation to forestry operations	*	
Logging licences to relate to profits and sustainability		*
Logging licences should relate to sustainability only	*	
Less regulation and more government incentives	*	
Incentives to be provided in the free market		*
Imposition of increased penalties for not investing in green technology		*
Forest products to come from national plantations	*	
Forest products to come from national native forests	*	
Forest products to come from international plantations	*	

Tables 4-6, Structure

Accounting practices

The results presented in Table 4 relate to 'accounting practices' and associations with the business sector and structure of firms. The data indicates there was little harmony in the responses from managers across these organisational units. Managers of government organisations appear reluctant to depart from the traditional financial reporting model. They also indicated they had difficulty in disclosing data for management reporting purposes and this may be reflecting an inability of government financial recording systems to process sustainability and environment related information.

Table 4: Accounting policies associated with the business sector/structure of a firm

Sector/Structure	G	L/UN	Pri	Other
Difficulty disclosing data for management purposes	4	2	3	1
Traditional financial accounting reporting data should be enhanced with sustainability data	1	2	3	4
Provide monetary valuation of forests	1	3	2	4
Provide monetary valuation of forestry services	1	4	2	3

G = Government; L/UN = Listed and Unlisted; Pri = Private; Other = remaining organisations e.g. Trusts, partnerships, sole owners.

Taxation policies

The 'taxation policies' that were preferred by managers according to business sector or structure of the firm are presented in Table 5. There was further evidence of disagreement between managers of government organisations who did not appear to support the introduction of taxation incentives and allowances, and managers of private sector firms who were in favour. This suggests that applying the same taxation policies to all firms in the forest industry regardless of sector or structure would be likely to create implementation problems and possibly compliance problems.

Table 5: Taxation policies associated with the business sector/structure of the firm

Sector/Structure	F/S	L/UN	Pri	Other
Costs of primary production to be allowable deductions	1	3	4	2
Concessional treatment for acquisition/disposal of property	1	2	3	2
Concessional treatment for profits on forest products	2	1	3	2
Concessional treatment for investments in sustainable development	1	1	2	1

Regulation policies

In Table 6 the 'regulation policies' preferred by managers according to business sector or structure of a firm are presented. Overall, disharmony between the preferences of managers in government organisations and managers in all other organisations in the forest industry was again noted. Investigation into whether there is a systematic difference between the preferences of managers of government and of non-government organisations and the implications for the sustainability of the forestry resource is a potentially fruitful area for future academic research.

Table 6: Regulation policies associated with the business sector/structure of the firm

Sector/Structure	F/S	L/UN	Pri	Other
Prefer government legislative controls on forest management	1	3	4	2
Prefer strict level of supervision for forestry/logging operations	1	4	3	2
Prefer less regulation and more government incentives	2	3	5	1
Increased penalties for non-investment in green technology	1	2	3	4
Prefer mandatory submission of annual financial reports	1	2	4	3

Summary

This investigation extended the theory that size, sector and business structure of a forestry firm are likely to be associated with preferences for specific accounting, taxation and regulation policies linked to sustainable forest practices. The data suggest that the accounting, taxation and regulatory practices preferred by forestry firms are associated with the size, sector and structure of those firms. This is a well understood association in the academic literature yet the requirements of the financial reporting regime, the taxation regime and the regulatory framework for the forest industry make no allowance for size, sector or structural differences. Furthermore the data suggest there may be a major difference between the preferences of managers of government and non-government forestry firms. If such factors are not taken into consideration the practices affecting sustainable forest management may not be efficient.

The major contribution of this investigation is that it should provoke policy-makers to consider the different size and business structure including the sectoral differences, of firms in the forestry industry, as managers of those firms are likely to react differently under the same set of rules and regulations. This suggests a case for differentiation of accounting, taxation and regulatory policy on the basis of size, business structure and sector.

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