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THE IMPLICATIONS OF INCOME GENERATION FOR AGRICULTURAL HIGHER EDUCATION IN GHANA

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The Implications of Income Generation for Agricultural Higher Education in Ghana

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TABLE OF CONTENTS

CHAPTER THREE

ORGANISATIONAL TRANSFORMATION MODEL FOR THE MANAGEMENT OF CHANGES/REFORMS DUE TO THE FINANCIAL CRISIS IN HIGHER EDUCATION

CHAPTER FOUR

FINANCIAL CRISIS MANAGEMENT IN AFRICAN UNIVERSITIES

CHAPTER SIX

INCOME GENERATION AND AGRICULTURAL HIGHER EDUCATION AT THE UNIVERSITY OF SCIENCE AND TECHNOLOGY (UST)

CHAPTER SEVEN

REFORMS FOR ORGANISATIONAL TRANSFORMATION FOR SUSTAINABLE INCOME GENERATION IN HIGHER EDUCATION

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ZUSAMMENFASSUNG

In vielen afrikanischen Ländern südlich der Sahara wurden sogenannte Strukturanpassungsprogramme durchgeführt, um die öffentlichen Haushalte zu konsolidieren. Die damit verbundenen Sparmaßnahmen haben an vielen staatlichen Hochschulen eine Finanzierungskrise ausgelöst. Diese beeinträchtigt die Qualität von Forschung und Lehre und erschwert den Zugang zu Studienplätzen. Aus diesem Grund beinhaltete das Strukturanpassungsprogramm in einigen Ländern, z. B. in Ghana, zugleich eine Hochschulreform.

Im Rahmen der Hochschulreform weiteten die Universitäten Ghanas ihre kommerziellen Aktivitäten aus. Die Erträge aus solchen Aktivitäten sollen unzureichende staatliche Beiträge ausgleichen, so daß sich die Universitäten teilweise selbst finanzieren. Obwohl kommerzielle Aktivitäten, z. B. der Verkauf von landwirtschaftlichen Produkten aus den Versuchsbetrieben der agrarwissenschaftlichen Fakultäten, an afrikanischen Hochschulen nicht unbedingt neu sind, besteht unter Fachleuten bis heute keine Einigkeit über ihre Auswirkungen auf Lehre und Forschung.

Das wirtschaftliche Engangement der Hochschulen hat in Ghana heftige Debatten ausgelöst. Kritiker behaupten, die kommerzielle Orientierung vertrüge sich nicht mit den normalen Hochschulaufgaben in Lehre und Forschung. Befürworter halten dagegen, das neue Konzept stärke nicht nur die Autonomie der Hochschulen sondern trage darüberhinaus sogar zur Qualitätssteigerung und zur praxisorientierteren Ausrichtung von Forschung und Lehre bei.

In der vorliegenden Arbeit wird an einem Fallbeispiel die Bedeutung kommerzieller Aktivitäten für die Hochschulfinanzierung sowie für Forschung und Lehre dargestellt. Die „University of Science & Technology“ (UST) in Kumasi, Ghana, gilt als kommerziell erfolgreich. Ihre Einnahmen durch den Verkauf von Produkten aus den Versuchsbetrieben der agrarwissenschaftlichen Fakultät sind seit Beginn der Neunziger Jahre deutlich gestiegen. Dennoch bleiben sie weit unter den gesteckten

Zielen. Die Auswertung finanzieller Daten aus verschieden Quellen sowie eine empirische Erhebung unter Studenten, Professoren und wissenschaftlichen Mitarbeitern führte zu folgenden Ergebnissen:

1. Der Anteil kommerzieller Aktivitäten an der Hochschulfinanzierung blieb unter acht Prozent (7.4 %). Diese Leistung liegt sowohl weit unter dem selbstgesteckten Ziel der Universität (50%) als auch unter dem von staatlicher Seite vorgegebenen Ziel (30 % inklusive Studiengebühren).
2. Die meisten Universitätsbetriebe machen Verlust statt Gewinn und benötigen zu ihrer Aufrechterhaltung ständig Subventionen. Die wirtschaftlich erfolgreichsten Betriebe können gerade ihre eigenen materiellen und personellen Kosten decken, darüberhinaus jedoch nicht zur Hochschulfinanzierung beitragen. Die agrarwissenschaftliche Fakultät verwendet ihre Einnahmen aus der Produktion der Versuchsfelder für Materialien (z.B. Futter, Medikamente und Chemikalien für das Labor). Auf diese Weise kann sie immerhin Forschung und praktische Ausbildung auf den Versuchsfeldern unabhängig von staatlichen Zuwendungen sicherstellen.
3. Die Studenten arbeiten nur für Studienzwecke in den Versuchsbetrieben, nicht um Geld zu verdienen. Obwohl sie ihrer Mitarbeit in den Versuchsbetrieben grundsätzlich zustimmen und darin eine Möglichkeit sehen, praktische Berufserfahrungen und wissenschaftliche Qualifikationen zu erwerben, klagen einige über zu große Arbeitsbelastung, die sich negativ auf ihr Studium auswirke.
4. Professoren und wissenschaftliche Mitarbeiter begrüßen die finanzielle Unterstützung von Lehre und Forschung durch kommerzielle Aktivitäten. Sie beteiligen sich jedoch nur in geringem Umfang selbst an diesen Aktivitäten, weil diese nicht als wissenschaftliche Arbeit anerkannt werden und keine persönlichen Karrierevorteile (z.B. Beförderung) bringen.

Das Fazit aus dieser Untersuchung lautet: Die Verbesserung der wirtschaftlichen Leistung der Versuchsbetriebe erfordert größeres Engagement sowohl auf Seiten des wissenschaftlichen Personals als auch auf Seiten der Studenten. Die Hochschulreform hat diesem Aspekt noch nicht ausreichend Rechnung getragen. Der durch die Hochschulreform eingeleitete Umdenkungsprozeß bietet gute Voraussetzungen für

weitere Verbesserungen. Theoretische Erkenntnisse zur Organisationsentwicklung legen jedoch nahe, daß Widerstände der Beteiligten Transformationsprozesse maßgeblich beeinflussen können. Diese müssen deshalb in Zukunft viel stärker berücksichtigt werden. Dafür sollen hier Vorschläge auf der Grundlage eines theoretischen Modells aus der Organisationsentwicklungsforschung gemacht werden.

Das dreidimensionale Modell für Organisationstransformation von Nevis, Lancourt & Vassallo legt eine vorsichtige Kombination von sieben Methoden nahe, mit deren Hilfe Hochschulangehörige von der Notwendigkeit ihres Engagements im wirtschaftlichen Sektor überzeugt werden könnten.

Die Hochschulreform muß auf organisationstheoretischer Basis modifiziert werden, um die vollständige Transformation im laufenden strategischen Planungsprozeß zu erreichen. Nur unter dieser Bedingung wird es für die Universität möglich sein, ihre kommerziellen Aktivitäten so zu organisieren, daß ökonomische und wissenschaftliche Aufgaben koordiniert werden können. Dies betrifft nicht nur die agrarwissenschaftliche Disziplin, sondern das gesamte universitäre Forschungs- und Ausbildungssystem in Ghana.

Preface

Although higher education the world over is said to be in crises ranging from financial to concerns about quality, relevance, equity etc., the former appears to be most crucial. In sub-Saharan Africa, a declining economic output during the 1980s and the subsequent adoption of harsher fiscal and structural adjustment programmes have exacerbated the situation. Consequently some wide-ranging reforms including revenue diversification among others are being advocated alongside general economic reforms.

Despite the fact that revenue diversification measures like income generation in academia is not new, views concerning its application and implications have remained controversial. Whilst some argue that its adoption will imply faculty pursuit of commercial gain and therefore incompatible with the pursuit of knowledge, others maintain that income generation activities can be integrated with academic activities with the former not only providing financial support but also providing opportunities for improving the quality and relevance of academic output. Opportunities for this complementary co-existence is said to be possible in many fields of study such as the biomedical and agricultural sciences.

To investigate the implication of income generation for agricultural higher education in Ghana the study analysed the conditions under which such activities can yield significant incomes. The study revealed that despite the promotion of income generation activities as a component in the higher educational reform programme in Ghanaian universities started almost a decade ago the level of income derived from such activities was still insignificant. An in-dearth study of the income generation activities of the Faculty of Agriculture at the UST where the practice is alleged to be very successful, revealed that income generation is insignificant because it has not been adequately integrated into the academic programme to promote interest and participation.

This has resulted because the reform programme has not been able to transform the institutions well enough to change the institutional culture and attitudes towards income generation activities. Since the implementation of the reform programme was

not guided by any organisational transformation model members of the academic community were not adequately prepared and induced to facilitate the management of the change process. As such resistance to the change (i.e. the reforms encouraging income generation) was not recognised as part of the multiple realities of the change process that could have been mobilised to generate sufficient support. This limited view of the resistance to the reform (or change) process resulted in a situation where the reality (i.e. view) of the resisters were ignored or even suppressed. Hence the failure to mobilise the much needed enthusiasm, initiative and support.

Since the study revealed no fundamental incompatibilities between income generation and agricultural training a transformation model based on the three dimensional model of Nevis, Lancourt & Vassallo is recommended to guide the strategic planning process being adopted to transform the institution. In the management of resistance to the strategic planning process the multiple realities approach will be most ideal in mobilising support for whatever programmes that may be developed.

CHAPTER ONE
FINANCIAL CRISIS IN HIGHER EDUCATION

1.1 Introduction

Higher education the world over is said to be in crisis that extend from financial to concerns about quality, relevance, equity and specific missions of institutions. However among these problems the financial crisis appears to be of particular widespread concern. Consequently Ziederman & Albrecht (1995, 1) contend that putting the financial structures onto a more solid footing is essential before many of the other problems can be solved.

"In all countries, higher education is heavily dependent on government funding" (World Bank, 1994: 2). However due to widespread fiscal constraints, many governments around the world are re-examining the question of financing higher education (Woodhall, 1995; World Bank, 1994). Calls by stake-holders including students, governments, and other financiers for accountability of higher educational institutions have been on the increase since the 1960s world-wide and this tends to affect financial allocations to them in some instances. Thus higher educational institutions everywhere are grappling with the challenges of preserving or improving quality under conditions of compressed education budgets (World Bank, 1994).

In the developing world the crisis is said to be most acute because of harsher fiscal adjustments and overwhelming pressures for enrolment expansion (World Bank, 1994: 2). As economic output across the African continent declined during the 1980s, national capacities to finance education dropped accordingly (Blair, 1992; Saint, 1992). This compelled most governments to reassess priorities among competing demands for their very limited resources.

According to Amonoo-Neizer (1995) the view that expansion and improvement of higher education as essential for furthering modernisation and fostering of economic growth has lost its attraction in sub-Saharan Africa. Therefore higher education is no longer enjoying a high priority in the allocation of financial resources from

government sources. All these factors have contributed to the declining financial allocations to higher educational institutions culminating in funding crisis that affect installations, libraries, textbook provision, and the material conditions of students and staff (World Bank, 1994; Eisemon and Salmi, 1993; Wield, 1997).

Sanyal (1995) observed that most governments in Africa have been unable to keep pace with inflation in funding expansion in higher education. Instead they resort to several combinations of reform measures like privatisation, cost sharing, cost recovery, organisational restructuring, devolution of financial controls, diversification of revenue sources and revenue or income generation among others to solve the financial crisis facing higher education. The implementation of these reforms are bound to have some implications on higher educational institutions. Diversification of sources of revenue through income generation for instance may require management to assume entrepreneurial characteristics hitherto unknown in higher education.

Although income generation and revenue diversification practices have been in academia for some time now views concerning their application, effects and implications for higher education remain diverse. Those who oppose such practices argue that faculty pursuit of commercial gain is incompatible with the pursuit of knowledge (Fairweather, 1988). Meanwhile other experts like Kogan, Musselin and Friedberg according to Sanyal (1995, 126), all agree that the values of entrepreneurial management are not intrinsically hostile to academic values. Recounting the experience of the Rockefeller foundation's University Development Programme in Africa, Coleman with Cort (1993) reported that several faculties in African universities earn revenue through the provision of goods and services. They however maintain that although possibilities undoubtedly exist for a more intensive application of this kind of cost recovery, the general experience is that it cannot easily be integrated with teaching and research programmes. Fairweather (1988, 57) maintains that although the list of university-developed for-profit ventures are expanding, little attention has been paid to the compatibility of "corporate behaviour" with academic values.

According to Deer and Delong (1982) a direct transposition of theories and methods of organisation development from the experience in industry directly to education as was done in the United States in the seventies has not always been successful. Whilst declining to share the cost of higher education, the business community in the Netherlands warned against market principles becoming dominant in the sector (Biervliet, 1995). In Germany there are wide variations in the interpretations and reactions to the transfer of market oriented strategies, knowledge and practices from the business and industrial sectors to higher education as illustrated in the works of Erik Meurer (1980) and Christian Rollman (1986) to mention but a few. Adesola (1991) also observed that Nigerian universities failed in their attempt to reconcile university traditional roles of teaching, research and service with the imposed role of entrepreneurship.

Examining the issue of revenue diversification in African universities, Ziderman & Albrecht (1995, 14) caution that if it is spread too far, on too broad a front, serious issues concerning the appropriate role of the university may arise. They claim further that the potential for revenue diversification is likely to be quite limited, in practice, for the system as a whole.

Despite these reservations several institutions including the World Bank maintain that an overall strategy to revitalise African higher education must include diversification of university funding and income generation. Many governments in Africa (e.g. Ghana, Nigeria and Kenya) have therefore adopted educational reform programmes with revenue diversification and income generation as vital components. Meanwhile, the reservations about the extent to which these income generation activities and the associated principles like entrepreneurial values required to sustain them being compatible or incompatible with academic values persist. Also the conditions under which these activities could be successfully integrated into academia are yet to be established.

1.2 Reforms as Response to Crisis in Higher Education in Ghana.

According to Tamakloe (1995, 6) until the mid-1970s Ghana had one of the most highly developed educational systems in West Africa. Unfortunately, following a national economic decline from the mid-1970s into the next decade, the quality of the system deteriorated and enrolment rates stagnated due to limited funding from government. In 1987, government launched a major multi-year and sector-wide educational reform programme with financial support from the World Bank and other donors to address the situation. For the higher educational sub-sector (commonly referred to as tertiary education) a University Rationalisation Committee (URC) was appointed to study the system and to make recommendations for reform. Based on the committee's recommendations a government white paper was issued in August 1990 initiating the implementation of the reform programme for the higher education sub-sector with the following components.

a. Restructuring and upgrading of institutions.
b. Review of course offerings and curriculum in order to achieve relevance.
c. Rehabilitation of facilities and upgrading of staff.
d. Expansion of the whole system to increase access and equity.
e. Improving management, efficiency and control of unit cost.
f. Revival of research.
g. Diversification of funding sources.

Prior to these reforms, Ghana's higher education system comprised of universities which were separately administered and other post secondary institutions. A unified higher education system comprising of all post secondary public institutions (i.e. universities, polytechnics, and colleges) has now been established under one umbrella organisation i.e. the National Council for Tertiary Education (NTCE) of the Ministry of Education. Despite this expansion government limited the share of the tertiary education budget to 18.3 percent of the total educational budget which is set at a target of 40 percent of the national recurrent budget from 1996 onwards (Amissah, 1995).
According to the URC since government's role in financing education virtually single-handedly in the long run could not be sustained, cost recovery measures and

diversification of sources of income needed to be pursued. In the view of the URC all tertiary institutions could reduce their reliance on government for financial support if they could be motivated to embrace and develop the new tendencies for generating income through their own activities. In their recommendations the URC notes that students could be placed in jobs related to their fields of training through a work-study placement programme in faculty income generation units. Their work participation could then be evaluated as a contribution to the award of their degrees. Whilst opportunities abound in several fields of study such agriculture, medicine, commerce, pharmacy, engineering etc. for the integration of income generation into academic programmes to improve quality of training and relevance of research institutions have failed to make use of these opportunities. Hence the persistence of "complaints that the graduates of our tertiary institutions are elitist in outlook, resent working with their hands, feel that they are entitled to work in supervisory and prestigious positions with high pay, etc." (URC II, 1987: 103). Thus whilst opportunities are said to exist for agricultural students to acquire practical skills through active participation in the income generation activities of their university farms complains such as "the practical background of some of our higher level manpower, for instance the university graduates, is not good enough to make them actual doers of farm work" (URC I, 1987: 83) persist.

It is envisaged that investment in viable income generating units would yield revenues that could be accumulated and used to start new ones to ensure sustainable alternative income for institutional needs. Thus in addition to the provision of financial resources for the institutions, an integration of income generation into university activities is expected to facilitate expansion and enhance the quality and relevance of academic programmes through student and staff participation. However empirical observations are showing indications of some shortcomings with regard to these expectations.

Blair (1992, 21) observed that many universities in sub-Saharan Africa made very little progress from 1988 to 1991 towards diversification of sources of income. He noted that the income derived from such diversified sources are generally insignificant, except in Ghana where as much as 20 percent of recurrent income is claimed to have been earned from these activities in 1990 and 1991.

Tamakloe (1995, 53) traced the history of income generation activities at the UST to as far back as 1963 (i.e. only seven years after its establishment) with the launching of an endowment fund to supplement government funding. Since then a policy of tolerance and encouragement of income generation has developed over the years as confirmed by the URC ‘s revelation that the UST and the older polytechnics have demonstrated quite amply the effectiveness of this income generation concept.

As a result of this policy many activities of the university have been commercialised. At the institutional level it has taken the form of commercialisation of established service units like the university hospital, schools, swimming pool, book shop, printing press etc. and the establishment of university based limited liability companies. At the faculty/institute and departmental levels it has taken the form of commercialisation of research findings as well as the activities of certain units that were established to support academic activities (i.e. research and teaching) like workshops and farms.

1.3 The Research Problem and Objectives

Although the practice of income generation is not new in African universities participation of the academic community in these activities remain limited and the revenue derived from them also remain insignificant. There is evidence of resistance or foot dragging from some members of the academic community who contend that income generation is fundamentally incompatible with the long established values and attitudes of academia.

Despite the desperate need for financial resources in African universities, income generation is not overwhelmingly accepted as a feasible way out of the financial crisis. In Ghana for example the University of Cape Coast (UCC) in 1987 held the view that university farms should not be commercialised (URC, 1987). Even at the UST where income generation is widespread and encouraged the institution maintained that commercialisation within the Universities should have its limits so that the institutions may not be turned into “factories” (UST, 1988). According to Tamakloe (1995, 53)

the efforts made by the UST to generate income and diversify sources of funding for its activities are not without problems and constraints.

Nevertheless faculties with the potentials are being encouraged through organisational restructuring measures such as granting of financial autonomy to manage their own funds in order to limit any bureaucratic constraints that may hinder their operations. Consequently the faculty of agriculture, which has achieved an outstanding record in terms of the total amounts of income generated, earned the status of a self accounting unit in 1994. It is therefore expected that a critical study of the situation here might provide some clues to the significance of income generation in addressing the financial crisis in higher education in general and their implications for agricultural higher education in particular. Such an analysis could provide answers to pertinent questions such as the following.

i. What accounts for the failure or success of such activities in academia?
ii. What are the main difficulties of integrating commercial activities in academia?
iii. To what extent can the sustainability of these activities be attributed to the peculiar organisational structures and management characteristic of higher educational institutions?

To address the research problems and questions elaborated it is hypothesised that the long established traditional values, attitudes and processes are the inhibiting factors in the implementation of income generation activities in academia. As a result of this income generation without an organisational transformation of higher educational institutions is not likely to:

a. yield any significant financial resources to enable higher educational institutions to solve their financial crisis;
b. facilitate their integration with academic activities to promote quality and relevance of training programmes such as in agricultural higher education;
c. accumulate funds for re-investment in viable income generation activities to yield multiplier effects.

The implication of the theses here is that the existing culture, attitudes and structures do not favour the promotion of income generation activities that can enable the faculties and the universities to earn significant revenues. Therefore the failure of higher educational institutions in general and agricultural faculties in particular to adopt comprehensive organisational transformation models as guiding principles is responsible for their inability to integrate income generation into their normal academic activities to raise significant revenues whilst guaranteeing quality and relevance of their programmes. It is therefore not likely for income generation to contribute significantly to the solution of the financial crisis if the reform measures being adopted with such objectives lack the necessary conceptual framework.

In order to lay the foundation to support the thesis stated above from both secondary and empirical data the study required to fulfil the following objectives:

i. To identify how the failure to adopt a comprehensive model of organisational transformation has resulted in the poor performance of income generation.
ii. To determine the inhibiting factors of the income generation activities in an academic environment and whether they may be attributed to established values and attitudes.
iii. To identify the effects of income generation on agricultural higher education and research.

To achieve these objectives appropriate methods and data were employed to determine the following.

a. attitudes of faculty and students to income generation
b. organisational and institutional structures that affect sustainable and significant income generation
c. managerial practices and procedures and their effects on income generation activities
d. resources availability due to income generation
e. levels of income generated.

1.4 Methodology and Scope of Research

The methodology adopted for the study comprises of a combination of qualitative and quantitative techniques of data gathering and analysis. The quantitative data, which comprises mainly of income levels and financial estimates were gathered from budget reports, financial records, annual reports, committee reports and special consultancy reports conducted for the Ministry of Education.

The qualitative data especially on views and attitudes of the academic community (students and lecturers) at the Faculty of Agriculture of the UST was gathered by means of a combination of both individual and group interviews using a combination of open and closed questionnaires. The data on student views were gathered by the use of structured questionnaires which the students themselves completed with guidelines from their colleagues who had been instructed on how to complete the questionnaire.

Prior to the interviews with faculty members a set of open questions with a statement of the research problem and purpose were distributed. This was then followed up by two group interviews and finally individual interviews with departmental heads and the dean of the faculty. The method of group interview otherwise referred to as collective interview or group discussion was employed because of its usefulness in the determination of the average views of individual members of a group. This method according to Lamnek (1993, 125-171) has developed from the Anglo-American application for the study of group dynamics to its current universal application for market research and opinion pools. It is now particularly useful in organisational development studies, evaluation of intervention or extension services for enterprises and the qualitative assessment of motivation instruments and structures.

For the analysis and review of the practice of income generation and diversification of sources of income for higher education the study relied mainly on published sources. In Ghana the issue of income generation in universities has received much attention. A number of consultants were commissioned to study different aspects of income generation. Also several seminars and workshops have been organised to address the issue. The analysis at this level made use of these reports.

Although the higher educational system in the country comprises of both university and non-university institutions the study is based on the former because it is here that formal structures and values in teaching, research, and service have existed with established traditions. Higher education therefore in the context of this study will be used interchangeably with tertiary education to refer to university based institutions.

The report is organised into seven chapters. In the first three chapters the causes of the financial crisis, the responses to this crisis and the organisational implications are analysed. This is then followed by an analysis of the different revenue diversification and income generation measures adopted as responses to the financial crisis in African universities in general and in Ghanaian universities in particular in the fourth and fifth chapters. The final two chapters cover the implication of income generation for agricultural higher education with particular reference to the Faculty of Agriculture at the UST in Ghana.

CHAPTER TWO
THE IMPLICATIONS OF FINANCIAL CRISIS FOR HIGHER EDUCATION

For the purpose of this study the importance of reviewing crisis management approaches in higher education adopted world-wide can not be overemphasised. The growing interest in the last three decades in international comparison of higher education systems by both scholars and politicians in order to put into perspective individual systems as observed by Teichler (1988) underscores the value of such a review. Although it is seldom possible to directly apply policies or practices from one country to another, important lessons can be learnt for a better understanding and explanation of individual cases.

This section is devoted to a review of the development and causes of the crises in higher education, the measures that have been undertaken to address them and the impact of these measures on academia. Such a crystallisation of international perspective on these issues will go a long way in determining the sustainability of reform policy issues adopted to address similar situations in Ghana in particular and sub-Saharan Africa in general.

2.1 Historical Development

The origin of modern largely state supported university systems could be traced to Germany and France at the beginning of the nineteenth century (Altbach, 1989; Ziederman & Albrecht, 1995). Prior to this, public or state involvement in higher education was minimal. The rational for state support was to provide the much needed technical manpower for industrial development. The establishment of these publicly supported universities then spread to other countries in Europe and beyond. It was exported to developing countries during the colonial era mainly for the purpose of training the required work force for the colonial administration locally and cheaply.

Since the end of the second world war higher education has experienced an explosive growth world-wide with massive investment of public funds. According to Williams (1992, 136) the traditional case for public funding of higher education was three-fold.

The first was the desire by the state to influence and often control an activity that prepared individuals for leading positions in many walks of life. The second and third arguments are based on efficiency and equity grounds respectively. It was generally argued that due to the high cost of investment required for higher education, the state needed to play an active role to ensure an optimum amount of investment in the sector and also ensure equity in participation. These arguments greatly influenced the post world war development of public institutions as well as the growth of public support for private universities in some parts of the world.

From the late sixties to the early seventies, there was a general trend of expansion and structural reforms in most higher educational systems. There was great optimism in the inevitable growth in higher education during this period (Trow, 1973; Scott, 1984). This could be attributed to the spread of optimism throughout the international educational politics that the expansion of education would help to reduce social inequalities and contribute to economic growth (Teichler, 1987: 53). A similar wave of optimism in the expansion and structural changes of higher education in developing countries could be noticed in the late sixties especially after some countries in Africa achieved political independence. According to the World Bank (1994) higher education in most developing countries has been the fastest growing sector of the education system over the past two decades. Between 1965 and 1990, enrolment ratios increased very rapidly in most parts of the developing world: from one percent to nine percent in North Africa, from seven percent to 29 percent in Latin America, and from eight percent to 17 percent in East Asia (World Bank, 1994: 15).

A number of factors have been responsible for the rapid expansion of the higher education systems. One of such factors especially in the so-called developing world is the conception of a relationship between education and economic development. In most of these countries the development and expansion of higher education was conceived as a means of achieving rapid economic growth. This is based on the high correlation between educational standards and economic growth observed in highly industrialised countries (Hanf, Ammann, Dias, Fremerey & Weiland, 1975: 70). Enrolment ratios for higher education in OECD countries for instance, average 51 percent as compared with 21 percent in the middle income countries and only six

percent in low income countries (World Bank, 1994: 15). Based on this observation universities in several developing countries were often looked upon to provide education modelled on that of industrialised countries. Many therefore sought to combine it with a furtherance of the cultural traditions in pursuit of cultural and socio-economic goals obtaining in each country (Goldschmidt, 1987). Several governments in most of these countries therefore adopted measures aimed at expanding the sector with the hope of maximising its contribution to socio-economic development.

A second factor has been the heightening expectations by millions of people particularly those from minority and the lower income groups, that they could gain social and economic mobility through education. These expectations were justified by conditions such as high levels of subsidisation and guaranteed government employment of graduates which greatly increased the private rate of returns for higher education. Higher education became associated with better paid jobs, better living conditions, better health etc. This created an increasing demand for higher education and pressure on governments to provide such education.

Another factor is the rapid accumulation or build up of potential demand for higher education. There are several factors that tend to disrupt the continuous flow of students from the lower levels through higher education to the world of work. The major disruptions are those that lead to the closure of institutions causing disruption of academic work commonly associated with educational institutions in the developing world. Others include limited alternatives to universities in the higher education sector and the inability of universities to expand. This build-up of potential demand which may de referred to as the “waiting room” phenomenon leads to an increasing demand for higher education and pressure for the expansion of the system. Another aspect of the “waiting room phenomenon could occur within higher education itself. When graduates are unable to find jobs they often return to study with the hope of enhancing their chances of securing jobs. Some remain as students for longer periods because of limited job expectations. In some countries like Germany where the cost of studying in the university is not directly borne by the student, low employment or job prospects do not encourage students to shorten the duration of their studies. Nonetheless some

attempts such as payment of fees after the tenth semester are being suggested to discourage students from prolonging the duration of their studies.

In the developing countries, the interplay of these factors within the last three decades has resulted in a tremendous increase in investment in higher education. According to Hanf, Amman, Dias, Fremerey & Weiland (1975, 70) most of the increased investment in education by many countries in Africa and Asia was undertaken at the expense of capital investment. As such it was not long before the job markets for graduates became saturated since the economies could not expand due to lack of capital investment to create new jobs. They maintain that if investment in education is not accompanied by complementary capital investment the benefits for the former will be limited if not lost. As a result of the failure of these countries to maintain an equilibrium between the trained manpower and capital the much expected economic development from the increased investment in higher education was not achieved in most cases. This has partly generated the declining willingness of governments to increase public expenditure in higher education to meet the increasing social demand, and hence the deepening funding crisis in these countries.

By the end of the seventies the optimism in higher education expansion had changed to a situation of pessimism and the introduction of structural changes. By the beginning of the nineties widespread crises were reported in higher education world-wide. Although individual aspirations in higher education remained high the public interest begun to show signs of decline. Although many governments expected universities to expand to meet the increasing demand, they were less willing to provide matching funds. The accustomed attitude of higher education achieving more with more resources could no more be sustained as institutions everywhere were called upon to do more with less resources. Charges of inefficiency and lack of cost-benefit accountability in higher education have since become common. The crisis gradually widened to include issues of identity, productivity, quality and efficiency.

In the United States the crisis hit colleges and universities hard in the recession years of the 1990s. As state governments were faced with fiscal crunches and competing demands for entitlements, programmes and other social services, colleges and

universities had no other choice but to contend with large funding cuts ranging from five to 20 percent. Short term measures such as increasing tuition fees and retrenching staff could not resolve the crisis. Universities and colleges begun to experience a loss of public trust and confidence. This was exacerbated by sensational media coverage of isolated incidents of misuse of public funds, research described as too trivial and faculty misdeeds. Students started demanding industry-relevant training that could enhance their chances in the increasing competition for jobs. The end effect in the USA was a subjection of the university to increased scrutiny and accountability by students, parents, legislators and the general public (Murrill, 1996).

In Western Europe student demands coupled with shifts in government views of research exert pressures on universities which in turn have a toll on their resources (Massey & Hulfactor, 1992). The phenomenon became very acute in Britain during the early 1980s. Similarly in many of the OECD countries a sharp decline in the rate of growth of public expenditure on the sector and in others a levelling-off to reach an expenditure plateau could be observed. In December 1997, there was widespread student protest in Germany against the miserable financial situation of universities.

According to Boyer (1993) funding in higher education is at the heart of the world-wide crisis. As revealed in a recent study “the financial crisis in education in most countries is much deeper than macro statistics reveal; and it is not going to disappear soon, especially in the developing countries, if new solutions are not found” (Eicher and Cheraillier, 1992).

2.2 Effects of the Financial Crisis on Higher Education.

The nature and effects of the financial crisis on academia depend to a large extent on national and institutional economic conditions. Nonetheless in almost all institutions the financial crisis reflect much on the availability of resources for maintenance and expansion. Investment requirements for facilities in higher education are quite substantial and the cost continues to rise with the development of new technologies. Due to this situation, the patterns of optimism in the sector’s growth and contribution to national development are being replaced by more sober appraisals. These

reappraisals have increased in the wake of a growing number of experts who question the relationship between higher education and economic development.

In most African countries the education sector competes with defence for the largest portion of official budgets at the expense of the other vital sectors for economic development. As many of these countries in the sub-region embark on democratisation these tendencies will face greater challenges. Many governments are now aware that they cannot even hope to be able to provide education for the majority of their people without reducing unit cost. The real challenge facing higher education is how to respond to the calls for cost reduction and expansion of the system to meet the pressures of increasing demand and at the same time maintain acceptable levels of standards in quality.

Another manifestation of the financial crisis is overcrowded and deteriorating physical facilities, poor library facilities and general book famine, inadequate staffing, insufficient and outmoded scientific equipment and instructional materials. In the developing countries particularly sub-Saharan Africa, this situation is often exacerbated by the inefficient utilisation of the existing scarce resources like libraries, laboratories and low student staff ratios. A critical examination of the finances of higher education especially in sub-Saharan Africa reveals a very large share of the expenditure for non-academic expenses like feeding, and other subsidised student and staff services (World Bank, 1994)

The declining financial support directly affects all the functions of higher education particularly research and services. The World Bank (1994) reports that between 1977 and 1987 mainstream scientific output measured by the number of scientific publications in national and international journals declined by 67 percent in Ghana and 53 percent in Uganda to mention but a few. This definitely has some far reaching implications for higher education and national development. Since the sector is generally expected to contribute much to economic growth and development this outcome prompts governments as well as all other stake-holders for some reappraisals.

With the scenario above, at a time of bleak economic outlook for most countries in sub-Saharan Africa, it is very unlikely for public financing of higher education to keep pace with pressure for expansion. But in many countries, for political and social reasons governments have had to undertake expansions in the higher education sector at virtually no expense to the beneficiaries. Various governments have begun to realise that it is absolutely impossible for them to continue this in the future.

2.3 Causes of the Crisis in Higher Education

There are several factors that have been responsible for the crisis in higher education. In almost all countries they can be traced to the development of three main factors.

a. Expansion in higher education due to increasing demand.
b. Lack of alternative sources of income as higher education in most countries depend almost entirely on government funding. Meanwhile the capacity of government funding for higher education expansion is decreasing due to fiscal constraints as adverse macro-economic conditions and increased competition for scarce funds persist.
c. Increasing operational cost of higher education due to the upward cost pressure of technology and competitive meritocracy.

Additionally the relationship between government and higher educational institutions also compound the crisis. In some countries restrictions are imposed on the operations of higher educational institutions such as enrolments, financial administration including income generation and allocation, and staff recruitment and promotions. These restrictions often developed due to the fear of misuse of funds. However institutions require more autonomy in order to achieve efficient allocation of resources. It is possible to allow financial autonomy but institute or enforce accountability for public funds allocated to the institutions.

In some countries structural adjustment programmes have been undertaken to solve national economic crisis and this has resulted in large retrenchments of workers in the public sector. Since the private sector in most of these countries is unable to expand to

provide jobs, graduate unemployment increases as the expanding higher education turns out more and more graduates. This goes to generate some crises in higher education because students tend to demand education that can meet the requirements of the labour market. Higher education is sometimes blamed when the competition for jobs becomes very severe. In some cases higher education is said to be training mainly job seekers instead of job creators (who are essential for economic development). In response to these accusations courses on entrepreneurship are organised both within and without to fill in the missing gaps. All these criticisms and demands and the consequent attempts to meet them further complicate the financial crisis in higher education since more resources are required.

2.4 Responses to the Financial Crisis in Higher Education

Governments as well as higher education institutions themselves have adopted various policies and strategies to address the financial crisis. These strategies and policies vary according to the level of state or public involvement in the higher educational system. This involvement varies considerably from country to country but it is often generally identified as the state dominance model in educational management.

State dominance in educational financing may extend from the provision of all or a large proportion of all university funding requirements to include students living expenses. There are often several and varying mechanisms for the transfer of the public funds, for example through ministries of finance, education, or intermediary organisation like a funding council, to the institutions.

State dominance does not necessarily mean or imply state run public institutions. The model is also applicable to private universities that enjoy large proportions of state subsidies like the case in Chile. However in most countries state dominance is predominantly characteristic of public institutions. Most university funding systems in Europe and sub-Saharan Africa fall under this category and are predominantly public with the private ones receiving very little or no public support (Barr, 1993: 722). The rationale for state involvement in funding higher education may vary from country to country. The justification of the concept of university financing under this system is

not of primary concern here. The concern is the risks that universities under this system naturally face because of their dependency on single sources of financing. Issues of financial sustainability and adequacy and their influence on quality especially during times of austerity are concerns for universities with this system of financing. The risk of institutions running into crisis under this model especially in sub-Saharan Africa is rather quite high since most of the universities are public institutions receiving up to 90-100 percent of their funding from their governments (Sanyal, 1994; Blair, 1992). With an upsurge in the demand for higher education in this region at the time when governments are less able to provide matching funds, there is no choice but to seek alternative systems of finance if quality is to be maintained or improved.

In the formulation of national educational policies and reforms to respond to the funding crisis two main models, commonly referred to as cost-recovery and revenue diversification, serve as guiding principles. These two models are hereby considered as responses to financial crisis due to state dominance in contrast to Ziederman & Albrecht (1995), who consider all three as separate models of university financing. Unless otherwise indicated the discussion on cost recovery and revenue diversification below is based on Ziederman & Albrecht because their discussions cover a broad and unique experience of developing countries in these respects.

2.4.1 Cost Recovery

Cost-recovery is simply a system or procedure for the financing of universities whereby the cost of providing the service is directly recovered from the beneficiaries mostly in the form of fees. The model does not preclude state participation in higher education provision since students may receive state grants, subsidies, or loans to meet the cost. It is therefore applicable to both public and private institutions. Until the early nineteenth century the funding of higher education was, to a large extent, dependent on students (i.e. cost recovery) and less on the state. Despite the growth of public or state involvement in higher education financing and provision, the traditional system in the form of cost-recovery through fees has persisted in some countries.

Advocates of the cost-recovery model put forward three arguments in favour of its adoption. Firstly, it is argued that since there is a price on university education in a regime of cost-recovery consumers will demand and ensure they receive good quality education worth the price, make realistic choices and endeavour to avoid waste. Secondly it is argued that universities will react to the demands of students and the labour market which can guarantee quality and relevance. Finally universities under this model are believed to operate efficiently since they have to compete for students.

The central point in the arguments in support of this model is that such a demand driven university system will achieve internal efficiency and societal relevance more successfully than those depending more heavily or directly on direct government support (Barr, 1993: 725; Ziederman & Albrecht, 1995: 13).

Many attempts have been made to implement cost-recovery in sub-Saharan African institutions through the introduction of scholarships/grants and loan schemes. In many instances these schemes have generally not been successful in supporting cost-recovery because they are often used as support mechanisms for student maintenance and not for the payment of fees. Institutional cost recovery cannot be substantial unless tuition fees are high and loans are used to support students paying tuition fees. The general failure of loan schemes for effective cost recovery is mainly because fee levels generally do not represent significant portions of the cost of higher education. Quebec for instance, with the best public sector cost-recovery measures in the world, is able to recover only 14% of instructional cost from loan recipients (Ziederman & Albrecht, 1995: 75). Thus in most cases even if loan recovery were complete, with loan expenditures fully repaid, the vast majority of them would only reduce government burdens for maintenance expenses, and not tackle the problem of diversifying the resource base of higher education institutions (Ziederman & Albrecht, 1995: 69).

From the many variations of student loans schemes being implemented world-wide, the general observation is that they can be very expensive undertakings that do not always work well and offer limited mechanisms for cost recovery. The most important cause of this observation is that many of the attempts include equity considerations

which are difficult to reconcile strictly with cost effective cost recovery. An ideal reform policy is a loan scheme which does not deter access and brings in private funds (Barr, 1993: 727).

A few examples of the experience of implementing cost recovery will throw more light on the socio-political implications associated with cost recovery measures. As a World Bank condition for the implementation of a structural adjustment programme in higher education, Malawi tried to replace student allowance with a minimal cost recovery amounting to only two percent of total tuition cost in 1985 (Woodhall, 1995). Even under such minimal cost recovery, as much as 50 percent of the students were identified as needy and unable to pay the tuition fees and had to be supported by a loan scheme. It was not long before the administration realised that the total amount collected was so insignificant that it could not even cover the cost of administering and retrieving the loan that was instituted to help students pay the fees. The Malawian experience is widespread in the sub-continent.

An attempt to implement tuition fees in Kenya in 1989 and 1991 met strong opposition resulting in the closure of universities in 1991. A very strong stance with substantial cost had to be adopted by government in order to enforce payment of the fees. What can be learnt from the Kenyan experience is that a drastic reform from a situation where state support for students living expenses is replaced directly with the payment of tuition fees can be very costly in terms of political implications as it is bound to face tough resistance. Even a gradual approach starting with the abolition of such allowances in Uganda in 1989 led to student riots and subsequent closure of Makerere University. It was only after a successful campaign to solicit public acceptance was launched that the programme could be implemented. Even in wealthier nations like Britain where foreign students pay fees local students reject fee payment. After more than half a century of free education the British government attempted to introduce tuition fees early 1999 but the British students said they will refuse to pay as a matter of principle (Reid, 1999: A20). Peter Coyne, an expert on educational finance at John Moores University in Liverpool attributes this attitude to a mind-set created in Britain that health care and education grew on trees.

Generally fee policy is one of the most politically sensitive areas of reform in higher education. Student protest against fees easily win sympathies from several walks of life. The conference of rectors and presidents of higher educational institutions in Germany, “Hochschulrektorenconferenz” (HRK), does not see any prospects in tuition fees as a suitable partial remedy to the serious shortage of funding for higher education unless there is a radical reform of the system of state support to individual students (Werner & Göbbels-Dreyling, 1996: 41).

There is also a general believe that cost-recovery through fees is most likely to adversely affect equity and deny access for talented students with scarce resources. It is often feared that participation will depend on ability to pay rather than ability to learn if some measures are not adopted to support talented but financially handicapped students.

Also in a situation of widespread poverty (where the percentage of the needy is likely to be high) loan schemes can not be sustained especially if government happens to be the sole provider. Ghana’s much acclaimed income-contingent student loan scheme is under a similar threat due to exclusive government support and a 100% eligibility or coverage. Attempts are now being made in both Ghana and Nigeria to encourage the banking sector to give loans to students for educational expenses but the prospects of their participation are not very bright. All these problems go to confirm Barr’s (1993, 725) observation that generally loan schemes can harm access, yield no savings, and free no resources for expansion.

Ziederman & Albrecht (1995) conclude that market oriented, student demand driven systems with extensive cost recovery and targeted scholarships may not be practicable in many country settings. It might be regarded as socially and politically unwise to impose the heavy burden of high tuition fees, especially in sub-Saharan Africa, where parental income and savings are low and students do not have recourse to alternative sources of finance. Even in a wealthy country like the USA, Murrill (1990) maintains that students in most universities would be unable to bear the true cost of their education.

Despite these arguments there are several examples of private universities in both rich and poor countries that have managed to survive with fees high enough to cover their cost whilst providing good quality education. Private institutions respond more efficiently and flexibly to changing demand and conditions. The private university of Witten/Herdecke in Germany for example has developed a flexible fee payment scheme which could be an alternative to the problematic issue of loan scheme for cost recovery that could be adopted for public institutions. Here students have three alternatives of paying for the full cost of their studies. They can either pay the full cost by monthly instalments or defer half or the full fees to be repaid as an income contingent loan. The repayment then takes the form of eight percent of their monthly salary for four years in the case of half fee deferred and eight years in the case of full fee deferred.

2.4.2 Revenue Diversification

The limitations and risks of implementing extensive cost-recovery has prompted many institutions to diversify revenue sources beyond charging fees for their traditional academic activities by developing additional forms of income generation from new non-traditional activities. Fürstenbach (1993) classifies revenue from such sources as the “third stream” of university financing. Under this model a conscious effort is made to broaden the revenue sources of universities as much as possible. This conscious effort has generated extensive debates concerning the effects of such revenue diversification measures on academia.

Despite the debates and reservations about its implications for academia there is a considerable growing support for its application to resolve the current financial crisis facing higher education. Bender (1993) reports of a general agreement at the Washington conference in 1992 that under the current circumstances, it is very important for academic institutions to search for diversified sources of funds.

2.4.2.1 The Scope and Practice of Revenue Diversification

The scope of revenue diversification measures being adopted reflect two opinions. One opinion has a restricted view of revenue diversification covering only income generated from non-traditional activities of universities. Warner & Leonard (1992, 3) have noted that higher educational institutions rarely achieve more than ten per cent of their total operational budgets from such restricted sources and that a realistic target will be only five per cent.

The other opinion considers revenue diversification to include cost-recovery of the traditional activities (i.e. tuition fees) and revenue generated from the non-traditional ones as well. Under the this broader view, revenue diversification is considered synonymous with income generation which can be defined as "all income generated over and above the core funding provided by an institution's primary funding body" (Warner & Leonard, 1992: 2). With such a broad coverage income generation could form a very significant portion of university financing. Some British universities for instance derive over 50 per cent of their income from income generation including tuition fees and this could even reach 100 percent with a full student voucher system (Warner & Leonard, 1992: 3; Williams, 1993: 39).

Although the scope of activities that may be considered as income generation tend to vary considerably the trend is generally towards the broader concept. Studies about income generation by Universities in Africa and OECD countries adopt this broader view. The sources from which universities generate income may be classified into four categories as follows.

The first category consist of fees collected directly or indirectly from students for tuition, academic related cost such as examinations and facilities, accommodation, and full cost fees for short courses of continuing or recurrent education. The second category consist of service charges such as research grants and contracts from research councils, government departments, industry and commerce and consulting and the sale of research services. The third category covers a wide range of businesses undertaken by universities. This may include the sale of goods and other commercial

activities such as renting of conference halls and student accommodation, hiring of equipment, labs, science parks etc. The fourth category covers gifts and endowments of institutions, staff or halls of residence by alumni, industry, commerce and other philanthropists.

Despite the wide range of activities being undertaken for income generation most public institutions are not able to derive significant income as may be expected. The significance of income generation among universities that participated in an OECD study on income generation in 1990 is shown in table 1 below. The study revealed that only the University of Nijmegen in the Netherlands and the University of Louvain-la-Neuve in Belgium were able to derive up to 20 percent and 16 percent of their total budgets respectively from such income generation measures or activities. The other universities in the study could not even make up to 10 percent of their budgets from such sources.

Table 1. Significance of Income Generation of Universities in OECD Countries.

Name of University	Country Situated	Income Generated in millions of ECU	Proportion of total Recurrent Budget (%)
University of Nijmegen	The Netherlands	33.7	20
Universite Louvain-la-Neuve	Belgium	29.8	16
University of Leuven	Belgium	19.3	9
Paris Darphine	France	2.2	6
Paris Sorbonne	France	2.8	4
Bordeaux	France	5.6	6
Grenoble 1	France	5.6	7
Oriedo	Spain	3.6	4
Autonoma Barcelona	Spain	8.5	8
Stockholm	Sweden	6.4	Data not available

ECU is the European Currency Unit worth approximately US$1.30

Source: OECD Study, 1990

However according to the study, there is a general trend at least among the participating universities towards increasing income generation. Also the significance of state monopoly in higher education appears to be declining. This trend has

considerable impacts on several aspects and levels of institutional management and structures such as institutional autonomy, governance, academic freedom, established culture and attitudes.

There is increasing evidence from both developed and developing countries of a trend towards financial diversification in higher education and many governments now believe that greater diversity of funding sources can help to overcome the financial constraints facing higher education, and at the same time also improve the efficiency and responsiveness of institutions (Woodhall, 1995: 18). African countries undertaking structural adjustment programmes to salvage their economies often demand institutional responsiveness to cost from their higher educational institutions. The institutions in response resort to financial diversification as a means to widen the bases of financial resources. Measures are also being devised to share the cost of financing higher education with the private sector such as students and their families, the local community and employers, etc. in order to meet the demand for expansion with quality considerations.

Among the reform policies recommended by the World Bank, is a structural adjustment programme for sub-Saharan African higher education through the provision of incentives for institutions to seek new, non-government sources of funding, and linking government funding to performance such as quality, efficiency, increased cost-sharing etc.

Williams (1993, 136) has observed a growing interest world-wide in the introduction of market incentives and forms of organisation in higher education. He sees the relationship between institutional resources allocation and incentive structures for individual members of staff as a difficult but essential management issue for the success of income generation in universities. Consequently he has identified three broad approaches that have been adopted in British universities to reward established staff who generate external income.

The first approach adopts what he terms as the mainstream model. Under this model income generation is treated as part of the mainstream university activity. As such all

income earned is retained centrally and allocated according to a certain criteria but not necessarily based on the amount of income generated. Instead, staff promotion and other consequent career rewards are based on individual staff participation in the income generation activities in addition to the existing criteria. Although this model attempts to legitimise income generation in higher education some argue that it may not encourage maximum participation from those who are already at the top of the promotional ladder.

The second approach is termed as the individual incentives model. Income generation under this model is separated from the traditional university activities. Staff are rewarded for their participation in those activities through the use of market mechanism whilst promotion is based on the normal traditional activities. The decision to participate or not will therefore depend on the individuals capability to combine the two or his evaluation of the opportunity cost involved.

In the third approach income generation is considered as a partnership involving the individual staff, his department or operating unit and the university. The resulting income is therefore considered as a royalty to be shared among the three parties at some agreed proportion. The most common practice is for departments or units to employ non-permanent staff to engage in the income generation activities or projects. This practice may generate some tensions between the permanent and non-permanent staff which can sometimes affect productivity if it is not carefully managed.

2.4.2.2 The Impacts of Revenue Diversification

It is quite certain that in sub-Saharan Africa, the phenomenon of increasing demand for higher education on the one hand and the financial limitations on the other are certain to continue into the next century. It is therefore important to consider what impacts the responses to these changes have had on higher educational institutions and what form the institutions are likely to assume in the future.

There are many who are of the opinion that the success of revenue diversification depends upon how best the institutions are able to adopt certain management

techniques used in business. The adoption of a private enterprise culture aimed at developing a consciousness of the importance of cost, quality of service, user or customer care, and instituting measures to encourage staff participation and the institutional drive to generate funds from within itself is widely advocated (Koso-Thomas, 1992: 131).

The introduction of this enterprise culture is expected to have some influence on the existing attitudes, values and culture in academia. The implications or impacts of such changes on academia is one of the most highly controversial issues in higher education and can only be determined by critically analysing and documenting such effects as they occur.

2.5 The Implications of Entrepreneurial Attitudes Associated with Income Generation in Higher Education

As higher education become more dependent on income generation for the financing of core activities the need for the adoption of entrepreneurial initiatives become more evident and urgent. Entrepreneurial behaviour entails risk taking with detailed financial planning in a way that the current types of income generating activities with which institutions are familiar do not (Rigby, 1988: 101). Most income generating activities in higher education like the renting of under-utilised facilities and the sale of educational by-products entail very little risk. They require no calculated financial investment, and the income earned tends to be a welcome “extra” rather than a necessary part of the overall financial planning. This means that very little entrepreneurial initiatives are involved in most of the income generating activities. However the situation is bound to change once the institutions become more reliant on such incomes for the maintenance of essential activity. When this happens then the income generating activities have to be carefully planned instead of just allowed to happen. According to Rigby (1988, 101) the element of entreperneurship begins to play a role only when institutions start to take risk, plan ventures on a self financing or profit basis with investment in the form of start up costs. Making such investment at a time of financial crisis may require a new management outlook and institutional structures. Once calculated risks taking become involved an appropriate management

structure with the authority and flexibility to respond to and implement incentives, reward successful initiatives and respond to market forces will be required. It is often claimed that wholesale adoption of corporate management styles would be problematic due to the inherent non-profit nature of universities' traditional activities. Nonetheless the development of organisational structures that permit the adoption of entrepreneurial initiatives in the execution of universities' traditional activities will certainly enhance efficiency, increase output and reduce unit cost which are all desirable achievements in higher education whether it is profit oriented or not.

British universities in the 1990s have demonstrated a cultural change that would have been unthinkable ten years before by the inclusion of the concept of entrepreneurship in their mission statements (Fielden, 1990). In 1989 most universities in Britain had as their main goals to increase their income from non-university funding council (i.e. public) sources. Following the trend in the USA most universities in Britain appointed development fund directors to boost their fund raising and marketing initiatives. Requirements like management skills, financial competence or entrepreneurial awareness have become part of the criteria for the appointments of vice-chancellors, heads of departments and deans (Williams, 1993: 18).

Fielden (1990) identified the following changing trends in the organisational structures of many British universities.

i. Redefinition of roles and titles of academic posts (with vice-chancellors and directors willing to adopt the role of chief executive) and placing them on performance related contracts.
ii. Acceptance of the need for and appointment of full-time senior executive management in some institutions.
iii. The designation of directorate level posts responsible for marketing and income generation in a number of institutions.
iv. Designation in most institutions of a directorate or "management team" concept consisting of a small group of senior officers with delegated authority from the council or governing body to take key decisions.

v. Devolution of planning and budgeting processes as incentives to boost the creativity of the new breed of academic managers.

vi. Development of tension between managers at the institutional level and local levels over the balance of powers and roles.

These trends have produced challenges for university management in the 1990s that may extend into the next century. Decentralisation of decision making on the one hand and the adoption of performance-related incentives for managers on the other for example posses a great challenge for university management. The risk of this experimentation in organisational and structural terms will grow less as globilisation reveal the reality for public institutions in general (including universities) to respond and catch up with private sector business practices for survival.

Three opinions have so far emerged with the advent of entrepreneurship in higher educational management culture.

The first opinion is a conservative one that tends to dread the changes and considers the introduction of management practices from business into higher education as a threat to the culture of higher educational institutions. It is claimed here that there is a risk of universities loosing their unique position as centres of creativity and academic freedom.

The second opinion holds the converse view. It is argued here that public higher education institutions are long over due with the adoption of private sector management practices. The contention here is that productivity and relevance of higher education could be enhanced by the application of cost-control and efficiency measures as in business.

The third opinion seeks a balance between the preceding two. It is argued here that although the introduction of some management principles is essential, there are some limits whereby efficiency and value-for-money exercises have to be compromised on qualitative grounds. This is in recognition of a fact that institutions must preserve their

academic nature and research programmes in areas which are not immediately economic or productive.

Although many institutional leaders would opt for the third opinion of trying to achieve a cultural balance, it is here that the challenges are greatest because the dualism generates conflicts that need to be carefully resolved. The task rest on the abilities of the chief-executives of the institutions to adopt management styles that can achieve the most appropriate balance by setting up and maintaining appropriate values for institutional management and decision making processes. Fielden (1990) does not see any possible disadvantage in importing the best private sector processes and techniques into higher educational institutions' management.

2.6 Integrating Entrepreneurial Initiatives into Academic Activities.

Faculty represent a wealth of talent and knowledge in many disciplines that can be exploited to benefit both individual faculty and the university financially. Adopting entrepreneurial attitudes in the execution of academic activities can be an effective means of solving the problem of financial dependence whilst improving quality and relevance without sacrificing the identity of the university. The biotechnological and biomedical sciences have demonstrated how faculties could integrate entrepreneurial and academic values to increase relevance and earn income as well (Murrill, 1996; Fairweather, 1988: 8).

According to Murrill (1996, 241) the integration of clinical practices with teaching and research duties by medical faculties has enabled them to make the following achievements.

a. Additional earnings (derived from clinical practice) which supplements the income of faculty and the institutions as well.
b. Provision of competitive services to the standard of private practitioners.
c. Keeping the medical faculty close to the application of the discipline.
d. Presents additional opportunities for research and clinical studies necessary to further knowledge in the discipline.

e. Offers faculty an opportunity to experience professional growth through the application of their discipline.

It is also beneficial to students because it provides them the opportunity to see and experience the practice of the discipline. This narrows the gap between students educational experience and their future work environment. It also closes the gap between theory and practice with benefits for academia, students and the society in general.

Faculty can involve students directly in their entrepreneurial efforts, giving them practical training in their disciplines that allows them to carry lessons beyond what is possible in the classroom. These entrepreneurial efforts extend the academic horizons and furthers technology transfer with some ultimate benefits for the economy in general.

This practice could be emulated by other faculties like agriculture through farm practice. Faculty farms could serve as reference points for the utilisation of interdisciplinary research results to embark upon agriculture related businesses that can generate income with increased student and staff participation. This could be based on the concept of training with production. An arrangement of this nature offers a good opportunity for the pedagogical and economic goals to be balanced whilst earning income that can either be used to supplement the income from traditional sources or used to provide incentives to the participating faculty and students (Mudariki, 1993). An investment in such an arrangement could yield multiple benefits and attract financial support from several sources.

The commercialisation of such a concept of training with production offers promising opportunities of reconciling entrepreneurial values with those of higher education. Biervliet (1994a, 6445) distinguished four different categories of training with production.

i. Production-Based Training.

Training under this category is principally based on production with a fundamental principle of learning by doing. The student is made to pass through all task and related theory. However unlike on-the-job training or apprenticeship production-based training is basically a training model applied in a training environment to enhance the achievement of the training objectives and post-training employability.

ii. Production as Learning Practice.

Under this category the student is exposed to intermittent periods of theory and practical application devoted to actual production. In this category the pedagogical aims tend to dominate.

iii. Production as Learning Projects.

Here the production process is kept separate from the training curriculum. It is seen as an opportunity for practice in a real or simulated work environment. It can occur parallel to or alternate with the training and located in the same training institute in a production unit. Attempts are made to balance the economic and pedagogic aims.

iv. Production as a Distinct Economic Activity

Under this category the production unit is organised as a commercial enterprise separate from the training programme although it may be attached to the institution or faculty. Income generation for the faculty or institution and improved capacity utilisation of available workshop, facilities, and personnel are the main aims, with no explicit pedagogical linkages between production and the training programme.

Production as a distinct economic activity is increasingly being applied by training centres in the developing countries as an alternative cost-recovery scheme. Even though it may provide both trainees and instructors with the exposure to the “world of

work", it lacks the systematic interaction between training and production, and hence do not fit within the realm of training with production (Biervliet, 1994a: 6446).

The weight of arguments in favour of the practice of training with production varies from country to country, and across different cultures and ideologies. In almost all the categories of training with production the main task is how to overcome the problem of integrating the training and the production components into the curriculum in order to achieve an ultimate balance. Experience has also shown that training with production schemes lack the required competency in developing a production and marketing strategy. It is believed that production and efficiency could be improved by recruiting management with the experience in the private sector to introduce entrepreneurial production management techniques and marketing.

In Ghana just like many other sub-Saharan African countries whose economies are predominantly agricultural the opportunities and benefits for agricultural higher education to develop and implement training with production as income generating units are quite enormous. Applying the experience of the biomedical sciences to agriculture in these countries could enrich the practical experience that their students are often said to be lacking .

2.7 Constraints of Income Generation and Entrepreneurship in Higher Education.

Attempts to promote income generation in higher educational institutions are often confronted with constraints. Members of academic communities often express fears concerning the promotion of income generation and these fears are the motivating factors behind the resistance that are often built up. An effective way to manage the resistance as indicated in the three dimensional model of organisational transformation is to consider the reasons behind these fears. Although these reasons are variable the following represent a general cross section.

i. Reward structures are likely to move towards the income generation end of the spectrum. Some faculty fear that the benefits will accrue to only a few disciplines rather than to the entire institution.

ii. Institutional power may tend to gravitate to the units that generate income.

iii. The well-being of staff is likely to be bound up with the health of the unit to which they belong, consequently their sense of affiliation to the larger body may decline.

iv. It is generally recognised that the modern university is a complex organisation with multiple objectives and standards in teaching, research and community service. This complexity increases with the adoption of more market related approaches in parallel with the existing bureaucratic and collegial means of decision making (Davies, 1997).

v. Some faculty argue that they cannot generate income because there are no opportunities or because their terms and conditions of service prohibit it.

vi. Faculty sometimes claim they already have too many students on the normal programmes to handle, so they cannot involve themselves in income generation activities. The excuses are often based on workload, student-faculty contact hours and quality concerns.

vii. Some faculty feel that it is immoral on their part to commercialise higher education.

viii. It is also sometimes feared that faculty lack the necessary entrepreneurial skills to undertake income generation activities. Such arguments are perpetuated by a mixture of misunderstandings about what income generation is or involves, the fear of competition due to lack of confidence, and the fear of loss of authority to customers who will gain the opportunity to implicitly or explicitly evaluate faculty performance. The task of changing such attitudes is enormous and difficult to tackle unless management as well as all other constituents of higher education see the need for a change.

From the forgone it may be deduced that for any healthy co-existence or integration of an income generation culture with that of higher education a discontinuous change in the latter is required. It is only when the advantages and implications of income generation are seen to be far wider than simply generating additional funds that any healthy co-existence of these two cultures may be envisaged. This can be facilitated if higher educational institutions realise and take the initiative and commitment to

institutionalise transformation processes. However in order to manage the integration of the two cultures it is important to understand the conflicts that exist between them.

2.8 Conflicts between Academic and Entrepreneurial Culture.

It is often generally believed that due to certain specific characteristics of academic culture any attempt to introduce entrepreneurial characteristics of the business sector will generate conflicts. These characteristics are summarised as follows.

1. Individuals within academic institutions are self-motivating, driven either by dedication to teaching or research, or personal academic ambitions to build up departments or institutions. They can be encouraged and given incentives to perform, but not easily instructed. Academic communities therefore tend to value individual freedom to choose research careers and fields or programmes, irrespective of short-term economic (commercial) and political pressure. The ultimate aim is the preservation of an environment of intellectual freedom and enquiry.
2. There is solidarity and respect for the survival of every discipline in academic institutions and they will fight against whatever is perceived as an external threat. There is an inherent desire to preserve an on-going repository of knowledge in all disciplines.
3. Consequent to point three above, it is often argued that it may not be feasible to pursue budgetary devolution to heads based on success in income generation since some disciplines will have little potential to excel in these areas.
4. Performance indicators are very difficult to evolve and implement since quality in teaching and research output do not easily lend themselves to quantitative measures. Quantitative measures in these vital elements of academic institutions' performance can be very misleading.
5. There is little incentive for faculty to pursue further practical development of research with some institutions even frowning on applied research papers and products like software programmes.

Despite these characteristics of academic culture Lenington (1996) believes strongly that it is only by managing higher education as a business that the financial crisis can be resolved. According to him the resources of higher education are exactly the same as the resources of any business activity i.e. personnel, physical plant and capital. As a primary constituency[1] of higher education the student must be recognised as a potential customer when recruited, a client whilst enrolled and upon graduation as the product of the industry of higher education. Lenington further claims that it is only when higher education learns how to manage its resources that it will be able to contain costs, improve productivity and enhance non-student related revenues. All these visions have great implications for management.

2.9 Summary

From the forgone analysis it can be concluded that higher education particularly in sub-Saharan African will remain under pressure to expand to meet increasing demand. However the rate of expansion of public resources will not match the rate of expansion. So the financial gap will have to be filled through the efforts of the institutions themselves engaging in revenue diversification. It is certain that the more income generation from other sources became a significant portion of their budget the more the institutional structures, values and culture will change. The nature of the change process and its implications are however uncertain. What is certain is that there will be a change, guided or unguided, once the need for income generation persist the changes will be inevitable.

For instance, because of higher education's societal mission and designation as a not-for-profit business, it has always been governed more like a public or government agency than a competitive business entity. It has not been exposed to the sort of competition that motivates industry to contain costs and provide competitive quality products. If income generation is to contribute significantly to higher education finances then it must assume some of these characteristics. The implication of all this

[1] The five major constituencies representing higher educational institutions are students, alumni, faculty, administrators and management.

requirement is that higher education needs to undergo a transformation in order to become businesslike in its undertakings. Since higher education cannot allow the change to occur by itself it will be appropriate to consider some theories of organisational transformations that can guarantee the integration of income generation into academia. The next chapter will examine the type of transformation that is required and the most appropriate model that can be adopted to address this need so that higher education institutions can transform themselves easily to meet the challenges of change.

CHAPTER THREE
ORGANISATIONAL TRANSFORMATION MODEL FOR THE MANAGEMENT OF CHANGES/REFORMS DUE TO THE FINANCIAL CRISIS IN HIGHER EDUCATION

3.1 The Need For Organisational Change

Balderson (1995, xi) described universities as flexible and resilient organisations that had the capability of growing in many directions in the past without having to assess their mission or scope and without being specifically accountable, financially or otherwise, to funding agencies, tax-paying public, faculty, or students. Since the beginning of the seventies the financial stringency and conflicting demands on university resources have generated new stresses within the institutions that no longer permit growth and existence without accountability. These new stresses are threatening long established traditional practices and attitudes in higher education. According to Lenington (1996, x), after 350 years, an era of detailed strategic planning, competitive marketing, and professional management is developing in higher education. This development is an indication of the need for higher education to adopt dramatically new and different ways as opposed to the making of small improvements in their usual ways. As Maureen (1998, xiii) puts it "comfortable, business-as-usual practices, or isolationist thinking will not suffice to meet the challenges facing today's higher education leaders".

The stresses due to the financial crisis in higher education are comparable to the turbulence characterising the advent of globilisation and competition that business organisations world-wide now face. Just like corporate organisations have realised that traditional response modes such as down-sizing and piecemeal structural and process rearrangements are no longer sufficient to guarantee survival, educational institutions must also realise that their traditional response methods are no longer sufficient. Comparing the demise of enterprises like General Motors and IBM to the crisis in America's schools, Peter Senge (1994) cautioned that the world we live in presents unprecedented challenges for which the educational institutions are ill prepared.

Generally, for public or not-for-profit organisations like universities, it is not usual to gain support for such fundamental changes which amount to internal revolutions against themselves. This is especially so when the anticipated changes affect values and practices that are valued and cherished within the prevailing culture. To achieve organisational transformation under such conditions will require the full commitment of management and their task could be facilitated by the adoption of some conceptual models or guidelines. Among the several models that have been developed to guide organisational transformation, the three-dimensional model by Nevis, Lancourt and Vassallo (1996, 33-50) in their work on "Intentional Revolutions" appears to be the most comprehensive and adaptable to higher education.

3.2 The Meaning of Organisational Transformation

Organisational transformation according to Amir & Uri (1986) deals with a radical, basic total change in an organisation, in contrast with improving the organisation and developing its parts. Nevis, Lancourt & Vassallo (1996) refer to it as a process of discontinuous thinking or a process of change whereby innovation and breakthrough thinking become the norm. This implies a paradigm shift since most change have traditionally been thought of as having a beginning, a middle and an end. This new paradigm is operative when discontinuous change becomes continuos. It implies a commitment to fundamentally changing the whole, not just some of its parts i.e. the creation of a new organisational reality. Organisational reality, according to Nevis, Lancourt & Vassallo (1996, 20), is "a combination of tangible and intangible factors that make up members' experience of an organisation and in one way or another shape or reshape their behaviour". Thus changing this reality requires not only changing the practices, policies, behaviours and structures but also the underlying mental models, meanings, and consciousness of the people involved. This requires that management engage organisational members in a process of re-socialisation.

Organisational transformation is a process which does not necessarily imply changing at once, but rather in successive and continuos stages. Both Senge (1996) and Gareth (1989) refer to organisations that institutionalise change (i.e. transformation) as learning organisations and the learning process, according to Gareth Morgan (1989,

139-142) is double-loop learning or “deutero-learning”. To institutionalise this change process or learning process, the new paradigm involves regarding organisations as complex, dynamic, emergent systems of continuously shifting patterns of tangible and intangible things. Intangible things such as an expectation, a culture, a possibility etc. in an organisation are important because of the effects they have on the members’ behaviour. Experience from quantum physics has shown that there is an interrelationship between tangible and intangible things which can produce tangible effects. This dynamic interaction can be very important in managing organisational change. For instance the dynamics of interaction is helpful in the understanding that resistance to change should not only be attributed to human nature (i.e. the resisters) but also to the message to which the resistance is a response.

3.3 Underlying Assumptions Of The Organisational Transformation Model.

In adopting the three-dimensional model for organisational transformation some critical assumptions are made.

The first assumption is that social or organisational reality is not given. It is a development of a common and shared understanding through human interaction. That reality is a human creation which is amenable to changing conditions.

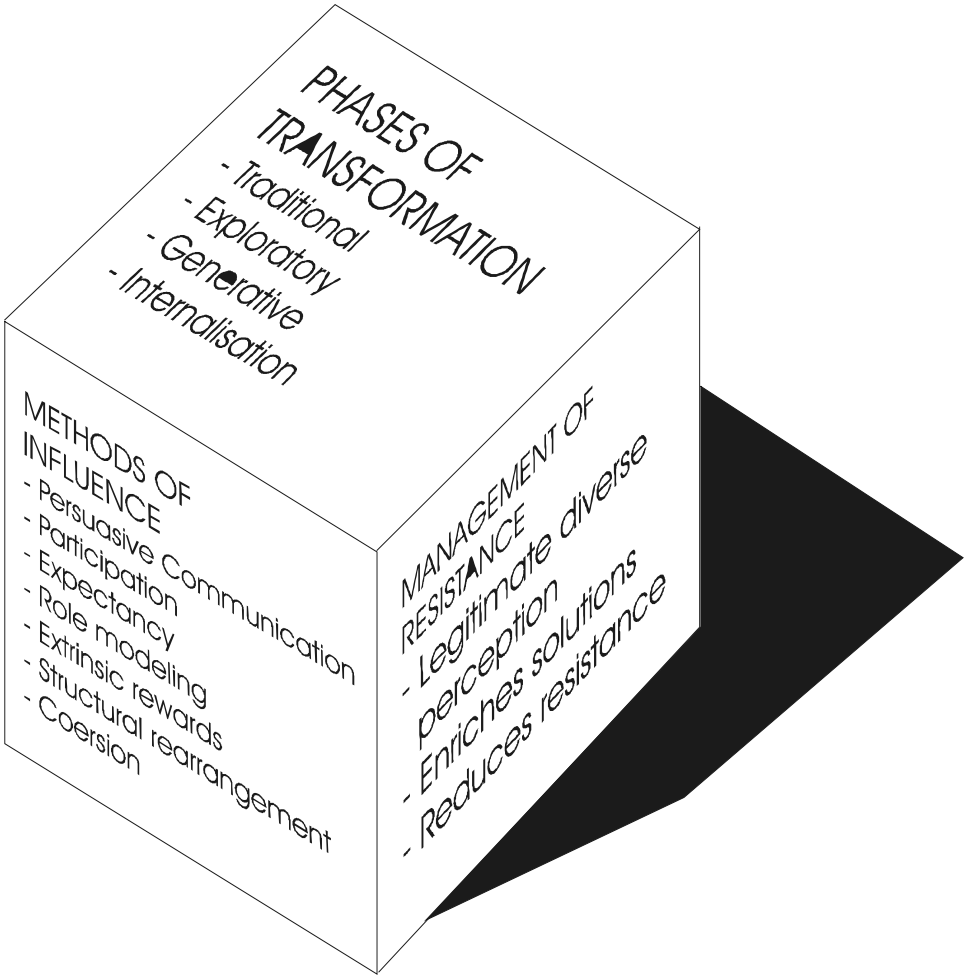
The second assumption is based on the fact that organisational reality is created through the interplay between the external world and the subjective (internal) world of the participants. Consequently with such realities “truth” must be seen as the outcome of multiple realities instead of just one and only one way.

A transformation into a new reality alters in significant and fundamental ways, not only how people do their work, but how they experience themselves. It results in the destruction of the existing understandings and meanings and their replacement by significantly different set of shared understandings and meanings.

3.4 Elements Of The three-dimensional Model

The greatest challenge that management often face in any organisational transformation process is how to influence people to develop or accept a new reality or world-view and then to motivate them to undertake the work required to turn that world-view into a new way of organisational functioning. The three-dimensional model offers management a comprehensive set of measures that can be employed to successfully manage this process (see fig.1 below). The first dimension deals with the major phases involved, the second addresses the methods of influence to be employed

Fig. 1. Three-Dimensional Model of Organisational Transformation



Source: Adopted from Nevis, Lancourt & Vassallo (1996, 34).

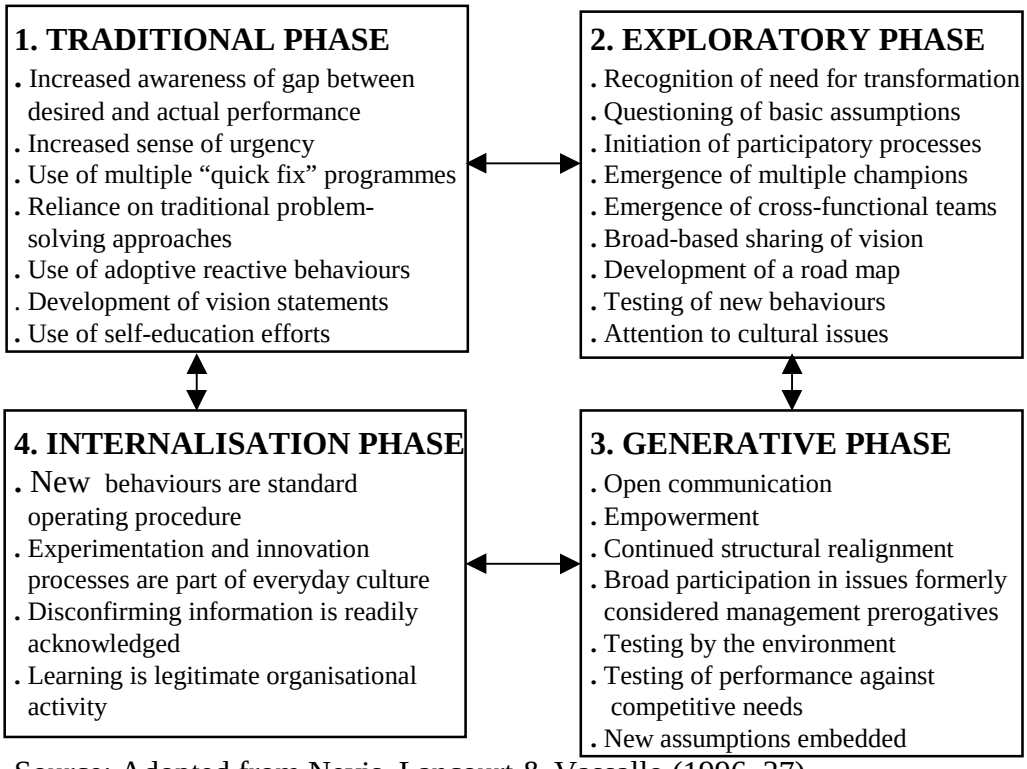
and the third offers clues to the management of resistance. It is important to note that these three dimensions are not mutually exclusive but rather operate in an interactive and holistic manner.

3.4.1 Dimension I - Phases of Transformation

As already noted an organisational change is an attempt to alter significantly the fundamental customs, values and basic assumptions of the paradigm under which an organisation has been functioning. It asks members of the organisation to embark on a difficult and ambitious journey for which the road maps and destinations are often not clear at the beginning.

Figure 2 below shows the key characteristics of each of the four phases as well as the cyclical, non-linear nature of transforming an organisation into one that is capable of continuos adaptation to discontinuous change. Each phase has a number of identifiable activities.

Fig. 2. Phases of Organisational Transformation



Source: Adopted from Nevis, Lancourt & Vassallo (1996, 37).

At the traditional phase the organisation is still involved in its old ways of problem solving techniques. However there is increasing awareness of the inadequacy of the organisation's performance in terms of meeting the challenges facing it. There is an increasing sense of urgency on the part of senior leadership to face up to the new challenges. Some of the senior leadership begin to educate themselves about alternatives which consequently lead to a realisation that the old paradigms are preventing the organisation from moving forward.

At this juncture the organisation moves into the exploratory phase where the need for a transformation develops. As more of the basic assumptions are questioned a lot of sincere talk about new behaviours and paradigms develops, and as aspects of the new paradigms are put into practice a more trusting environment emerges. This generates participation and new structural processes which help to propel the organisation into the next phase.

At the generative phase an environment of open communication and empowerment leads to spontaneous development of new approaches. Participation begins to occur in areas that were previously the preserve of management and this generates a new environment and behaviours, and the underlying assumptions become robust enough to withstand severe stresses and tests. At this stage there is a willingness of both management and organisational members to experiment with radically new ways of doing things. Naturally not all parts of the organisation are expected to move with the same speed into this phase. Some parts are likely to fall back into the exploratory phase on particular issues. However the important thing is that members at this stage begin to think and act as a system and are able to plough back or cycle their experiences or learning into the organisation. This gradually leads the organisation into the internalisation phase.

At this stage experimentation and innovation become part of the organisational life. Disconfirming information is routinely adjusted into the unfolding plans for onward progress which is an indication that organisational learning has become a fully legitimate activity. When organisational members become used to ambiguity and

change they will often find gaps between desired and actual performance and this spurs them on to repeat the cycle continuously.

There are no rigid boundaries between these phases so the time required to move between them varies considerably. The creation of a new organisational reality is a long-term undertaking with the traditional phase requiring about one to three years whilst the remaining three phases may require between two to four years each. The rate at which an organisation completes the cycle will depend on other factors such as the use of all the various methods of influence outlined in dimension II below.

3.4.2 Dimension II - Methods of Influence

In order to successfully transform an organisation, the people who form it must be carefully guided through the complex process to make them think and act differently. Influence here does not refer to the use of power, position, or coercion to change peoples behaviour. It refers to the ability to successfully create a new awareness and consciousness about problems, to support the development of the energy to realise visions through new approaches and behaviours and finally to internalise the new ways of thinking and behaving.

To achieve these outcomes the model suggests a simultaneous use of seven methods of influence. These methods include Persuasive Communication, Participation, Expectancy, Role Modelling, Extrinsic Rewards, Structural Rearrangements, and Coercion. Both research and experience have proved that the concurrent use of all seven methods of influencing behaviour will enhance the speed and success of organisational transformation.

The simultaneous use of both participation and structural rearrangements for instance has been found to produce superior results than the use of either method alone in several change programmes (Nicolas, 1982). A combination of participation and coercive power has proved to be very successful in the management of several barriers in large-scale change efforts (Dunphy and Stace, 1988). Furthermore it has been

proved that successful therapeutic influence on individuals through counselling relies on all seven methods (Strupp, 1976; Marmor, 1976).

Each of the methods are derived from a number of tested theories of behavioural change that have been applied in the fields of individual, organisational, and social change. Methods such as persuasive communication, participation, expectancy and role modelling are said to have a greater impact on the individual whilst others like extrinsic rewards, structural rearrangements and coercion impact more on the organisational environment. So their combined use is expected to satisfy two opposing views of change; the individual perspective which says that to change an organisation the individuals' behaviours need to be changed first and the environmental view which says that to change the behaviour of individuals their physical and social conditions must first be changed. Their combined use is based on the believe that both perspectives are not mutually exclusive.

It must however be noted that when organisational members are bombarded with conflicting sets of messages from the various methods of influence the process of transformation could be retarded. What is required for effective transformation is the application of the various methods of influence in such manner that they send a coherent set of messages at all times. Although some level of influence is required at every stage/phase of the transformation process some of the methods may be more critical than others at different stages of the change process. For instance persuasive communication may be more critical at the traditional phase than at the internalisation phase whilst extrinsic rewards and structural readjustment may not be required at all at the traditional phase. So it is only an integrated use that can guarantee a coherent flow of messages in an effective way to organisational members.

Lastly these same methods of influence can be applied selectively to manage different barriers to transformational change that may come up from time to time. As will be illustrated in the third dimension of the transformational model, the management of resistance or barriers to change, requires a facilitating environment that the various methods of influence may not be able to create.

3.4.3 Dimension III - Management of Resistance

The management of resistance has preoccupied the minds of planners of change ever since the introduction of modern planned changes. The strength of resistance has been found to be responsible for the difference between staying the same and changing. In the organisational world resistance to change has often been identified as being deviant or non-conforming behaviour. As long as resistance is viewed negatively and not legitimately the effectiveness of the change methods will be limited as it only generates friction and diversion of energies. This is because such an attitude often leads to the use of force which the resisters counteract with greater force of rejection.

In the third dimension an alternative approach referred to as the management of multiple realities is being suggested. This perspective assumes that both resisters and proponents of change have legitimate interest in the welfare of the organisation but it only happens that they see problems from different points of view which are all real. Considering the attitude or response of resisters as legitimate as those of the proponents of change creates a bondage among organisational members to work together which will greatly speed up the transformational process.

3.5 Application of the Model for Strategic Planning in Higher Education.

Organisational transformation become inevitable due to turbulence or crisis that threaten the very existence of organisations, thus making continuos existence possible only through drastic reshuffling in every dimension of their existence: missions, goals, structures and cultures. The funding crisis in higher education combined with the shifting of official priorities from the sector are sufficient indications that the very existence of the educational institutions is under serious threat. The implication is that these institutions or organisations cannot continue to function as before. Furthermore the results of the attempts so far being adopted to address this funding crisis all indicate that only a transformation will provide the most suitable environment for any significant achievement. Since the financial crisis manifest itself in all aspect of higher education the best way to tackle it will be to drastically reshuffle institutional

missions, goals, structures and cultures which are exactly the kind of change involved in organisational transformation.

The international donor community has since the beginning of this decade urged African universities to adopt strategic planning to reform their institutions. Over 20 percent of African universities have so far responded to the call and evidence is beginning to show that strategic planning without organisational transformation is not comprehensive and adequate enough to tackle the financial crisis facing the continent's institutions. Faratt & Afonso (1997, 23-30) have assessed the efforts of a few universities that have attempted strategic planning so far. The institutions include Fort Hare (South Africa), Ghana, Dar es Salam (Tanzania), Eduardo Mondlane (Mozambique) and Zambia. Among these institutions the University of Eduardo Mondlane (UEM) is regarded as an exemplar in strategic planning. Although the strategic plan developed had certain shortcomings in terms of specificity, verifiable indicators and academic activities the general process and concept has been successful.

After a period of deterioration the rector of UEM initiated the planning process to regain the university's self consciousness. A document was produced with an analysis of the situation, the need for change, and ideas towards a strategy for institutional stabilisation and development. After a period of intense debate and consultation in all departments a strategic plan with clear objectives covering the interest of all stake-holders was developed. Matos (1993, 3) described the outcome of the process as a coherent strategy for institutional stabilisation and revitalisation as there was considerable consensus among UEM staff, government leaders and donor representatives that it was a worthwhile approach. This success could be attributed to the fact that UEM's process of transformation from the initial conception to the formulation of the strategic plan utilised the methods of influence suggested in the organisational transformation model outlined above. This example confirms the position taken by Carle M. Hunt...et al. (1997, xii) that strategic planning in an institution can transform or reengineer it to make it a leader or pacesetter instead of a follower of others.

In the preceding chapters the responses of African universities in general and Ghanaian universities in particular to the financial crisis will be analysed to determine the significance of income generation as a response measure under the general reforms adopted to solve the financial crisis. The response measures will also be analysed with reference to the three dimensional model of organisational transformation. The results will then be matched to determine whether organisational transformation can influence the significance of income generation in higher education.

CHAPTER FOUR
FINANCIAL CRISIS MANAGEMENT IN AFRICAN UNIVERSITIES

Higher educational systems in Africa especially the universities, were modelled after and influenced by European colonial systems. In Francophone Africa they tended to follow the state control model as they were expected, according to Sherman (1990), to produce graduates with standard degrees and diplomas to facilitate the French policy of cultural and political assimilation. Those in the Anglophone countries reflected the state supervision model characterised by autonomy in research, teaching and governance, but with funding mainly provided by government. Whilst post-colonial governments of the former entrenched their control, those of the latter sought measures to widen and strengthen their control over universities beyond their supervisory and funding roles. In many countries governments took over the appointments of vice-chancellors, key administrators as well as membership of governing bodies of their universities in order to ensure loyalty. The relationship between governments and most university communities (i.e. staff and students) deteriorated as the latter became more critical about national issues like democracy, good governance and national economic management. As many post independent African governments grew increasingly dictatorial they sought to politicise universities which in turn reproduced dictatorial and highly bureaucratic tendencies in university governance (Gaidzanwa, 1994).

Such politicisation of universities' governance created chaotic and unfavourable relationships between governments and universities in many countries in Africa. Since the production, conservation, transmission and refinement of knowledge is believed to thrive better under academic freedom and autonomy these interference and controls from governments often face increased resistance which sometimes results in violent clashes and interruptions of academic programmes.

Whilst the tensions created by the unfavourable university-government relationships remained unresolved, governments in many of these countries became increasingly compelled by macro-economic crisis to reduce their financial support to their universities. Since the general economic output across the African continent declined

during the 1980s governments were unable to fund the maintenance and expansion of infrastructure and facilities as well as the entire system of higher education. In almost every country in the sub-continent, the pressure on governments to ensure economic stabilisation, balance budgets, generate foreign payments and struggle with structural adjustment programmes to get exchange rates closer to international parity for national currencies are persisting (Negrao, 1994 :1). With these macro-economic pressures very little money is made available for universities to compete with other public institutions for allocation. Unfortunately due to the already strained or unfavourable relationships between many governments and their universities the financial cuts to the latter often led to the disruption of academic activities in several instances.

Even in situations where national governments have endeavoured to increase their financial allocations to universities, the purchasing value of such allocations in the international markets (from which books, journals, precision equipment and chemicals for academic effort are purchased) have been lost due to currency depreciation (Mbajorgu, 1992). A study commissioned by the Association of African Universities (AAU) on cost effectiveness and efficiency in African universities revealed the extent to which the value of national currencies affect the state of university financing.

According to the study, although the level of funding of most African universities increased considerably over the years, their purchasing power in the international market significantly declined. On the average funding levels to universities in Africa in 1988/89 was found to be around 50 percent of the real value of 1980/81 (SEPAM, 1991). In Ghana for example the level of recurrent funding to the University of Ghana increased from 64 million cedis (US$ 17 million) in 1980 to 2,465 million cedis (US$ 6 million) in 1991. Whilst this astronomical increase of over 5000 percent in current prices amounted to an increase of only 26 percent in real terms or constant prices, it represented a fall in value to the tune of -65 percent in terms of US dollars. This is due to the rapid decline in the exchange value of the national currency. At the Universite Nationale de Cote d'Ivoire where the national currency was relatively stable due to its parity with the French Franc, the situation was much different. Here, a 300 percent increase (in current prices) in the recurrent allocation from CFA 1,598 million in 1980

to CFA 6,906 million in 1991 represented a very significant increase of 157 percent in real terms and an increase of over 200 percent in terms of United States dollars.

Since African universities require substantial foreign exchange not only for the purchase of their inputs but also for staff development through participation in international conferences and seminars, student exchange programmes and scholarships for further training, the effects of currency depreciation on university activities can be very significant. Many universities in Africa now tend to rely heavily on external donor assistance to undertake most of these vital activities.

From the analysis above it is tempting to agree with Blair (1992, 4) that it is naive to expect any improvement in the financial conditions of universities until there is significant improvement in the state of the economies of the countries in which they are situated. The implication here is that no matter what efforts are made to increase financial allocations to universities, if national economies do not improve, those efforts will not yield any significant results. Hence the development of pessimistic views such as that of Negrao (1994, 1) that adequate financing for African universities is not sustainable implying that inadequate financing will persist as long as their economies remain underdeveloped.

Therefore given the dim prospects of speedy economic recovery in many African countries and the lack of guarantee that economic growth will necessarily translate into adequate and sustainable public funding, it is imperative for the universities to reform their funding systems to promote diversification and the search for sustainable alternative funding. Fortunately many governments now share this opinion and have therefore reacted positively by encouraging their universities to explore opportunities of generating income to supplement the financial allocations from the public purse. The significance of these efforts will now be examined.

4.1 The Significance of Revenue Diversification and Income Generation.

In 1991 the African Technical Department of the World Bank commissioned Robert Blair to assess the progress made by African universities towards revenue

diversification since 1988. In discussing the significance of revenue diversification in African universities his findings will be used as a basis for comparison and assessment. He observed that significant financial diversification and income generation seem discouragingly distant as there was very little progress made during the three years (i.e. 1989-1991) preceding his study. With regard to generating income through fees he observed that several African countries were yet in the process of implementing or considering new systems of student support services and fees. As such whilst a vast gap between the theory and practice of cost-recovery exist in some universities considerable confusion prevailed in others.

African universities are often said to perform poorly in revenue diversification because their income structures show a greater dependence on governments. As illustrated in table 2 below, universities in Anglophone (i.e. English speaking) African countries have more diversified revenue sources than their Francophone (i.e. French speaking) counterparts.

Table 2. University Income Structures (in Percentages).

	Government	Tuition & Fees	Others*
Group 1(e.g. Japan, Germany, Sweden, France)	84	4	12
Group 2 (e.g. USA, UK)	57	15	28
Private Universities (e.g. USA, Japan)	17	52	31
Anglophone Universities (Sub-Saharan Africa)	85	7	8
Francophone Universities (Sub-Saharan Africa)	93		7

*Others include private sector contribution, donors and income generating activities

Source: Negroa (1994, 9)

As compared to the income structure of universities of the "Paris-club[1]" countries, the Anglophone universities have a similar structure with those in group one but less diversified than those in group two (i.e. USA and Britain). However as compared to

similar proportions compiled by Blair (1992, 20) some African universities such as Botswana, Ghana, Lesotho, Makerere, and Witwatersrand indicate diversified income structures comparable to their counterparts in the Paris Club Countries (Compare table 2 above with table 3 below).

Thus although some of the African universities have more diversified incomes than their counterparts in the industrialised countries they are worse of in terms of the effects of scarcity of financial resources. This observation confirms the thesis that there is a strong correlation between national economic environments and their university financial conditions. Thus revenue diversification alone without a strong national economy will not solve the financial crisis facing universities. Nonetheless it can play an important role by enabling the universities to contain the drastic effects of the financial crisis. Hence the recommendation for African universities to target an income distribution structure consisting of 70 percent from government or public sources, 20 percent from fees (paid by students and/or their sponsors) and 10 percent from income generating activities by the turn of the century (Blair, 1992; Saint, 1992). The implication here is that for revenue diversification and income generation to be significant non-government revenue should be at least 30 percent of universities' total income.

Salmi (1991, 4) noted that while the general picture regarding financial crisis may be bleak in many developing countries the crisis of quality can not be generalised. There are some institutions in countries with severe economic problems that have found resourceful ways to cope with their financial crisis to maintain some pockets of excellence. Furthermore a number of countries have embarked upon reform initiatives

[1] Paris Club countries, otherwise refereed to as the group of ten, include the USA, UK, France, Germany, Sweden, the Netherlands, Canada, Italy and Belgium.

Table 3. Sources of Annual Recurrent Income of Selected African Universities (in Percentages)

	1989					1990					1991				
University	Grant	Ext.D	Fees	Inc.	Other	Grant	Ext.D	Fees	Inc.	Other	Grant	Ext.D	Fees	Inc.	Other
Botswana	64.3		18.5		17.2	66.0	0.0	17.1		16.9	73.8		12.6		13.6
Ghana	70.0		1.2	20.0	8.1	70.0		1.2	20.0	8.0					
Jomo Kenyatta	100					100					100				
Lesotho	70.0		21.0	0.1		68.0		14.0	0.5	17.5	75.0		14.0	0.0	11.0
Malawi	88.7		3.3	3.3	3.2	88.4		2.9	4.6	2.9	87.3		4.0	4.5	3.2
Ibadan	85.0		3.3	4.8	3.0	72.0		5.3	3.9	1.7					
Nsukka	91.0		3.0		6.0	93.0		2.0		5.0	92.0		2.0		6.0
Obafemi Awolowo	95.3				4.7	95.2				4.8	95.5				4.6
Swaziland						90.0	5.0		1.0	4.0	85.0	5.0		1.0	9.0
Makerere	82.0	10.0	5.0	1.0	2.0	87.0	10.0	2.0	0.5	0.5	90.0	7.0	2.0	0.5	0.5
Copperbelt	82.0		14.0	4.0		71.0		25.0	4.0		90.0		8.0	2.0	
Zimbabwe	86.0		8.0		6.0	88.0		7.0		5.0	90.0		6.0		1.0
Witwatersrand	70.3		23.8		5.9	70.6		24.5		4.9	68.0		27.9		1.3
Average	83.4	5.0	10.1	5.5	6.2	82.8	5.0	10.1	4.9	6.5	86.0	6.0	9.6	1.6	5.6

Ext. D = External Donor, Inc. = Income Generating Activities, Other = Others including Private Contribution, Investment, Endowments etc.
Source: Robert D.D. Blair

to tackle the financial crisis in their universities and it will be worthwhile considering the effects of these measures and initiatives.

4.1.1 External or Foreign Sources of Funding.

African universities receive various forms of assistance from external or foreign sources. Early post independence external assistance concentrated on the establishment of universities and training of local staff. After a decrease in the 1980s, external support to African universities has stabilised and may even be rising (Wield, 1997: 44). As the ability to support core activities such as research, staff development and infrastructure from local resources decreased due to the funding crisis external support for them is growing in overall significance. For those countries implementing structural adjustment programmes with drastic depreciation in the value of their national currencies, the real value of external support has risen accordingly. Consequently many African universities now encourage the development of link arrangements with partner universities abroad to undertake collaborative research, staff exchange and travel for conferences, the acquisition of library and other equipment, vehicles, computers etc. Such link arrangements for collaborative efforts especially in research enjoy some support from many international organisations. Research funding from external or foreign sources, which range from 50 - 75 percent in most universities in Africa is said to be very vulnerable to donor changing priorities (SEPAM 1991: 10; Blair, 1992: 34). Therefore efforts must be made to diversify the funding of research to include local non-governmental sources (i.e. private and para-statals) and income generation by the universities themselves.

Although contract research is growing the prospects are not as good as in the industrialised economies because of the small size of the manufacturing sector. In many instances the multinationals operating in African countries, who have the capability to fund contract research, rely mainly on their parent companies abroad for such services. However with improved research management planning and the development of efficient financial systems, the potential for contract research could be increased as a major source of revenue diversification. As compared to non-university based research institutions in Africa the universities are relatively well-endowed in

terms of equipment and reservoirs of expertise, so they have a greater potential to attract contract research and collaborative research with external support.

The sources of external support are variable and range from foreign national donor agencies such as Rockerfeller Foundation, USAID, ODA, CIDA, GTZ, DAAD, DANIDA, FINNIDA, NORAD, DSE, SAREC, NUFFIC, IDRC etc., to international donor agencies such as the World Bank, African Development Bank (ADB), Commonwealth Fund, EEC etc. and individual governments and universities in the industrialised world. It is expected that as the private sector grows, many medium to small scale indigenous corporations will require research services to boost the prospects of contract research.

Despite the significance and importance of external support for African universities there are some problems. According to David Wields (1997, 42) most external support is implemented in relation to policies developed by each donor agency rather than integrated into the beneficiary university plans and practices leading to fragmentation of their activities. In response to the crisis in African higher education many institutions have begun transformation processes and restructured their management and organisations to improve quality and relevance and they seek external support in terms of resources. In order for African universities to realise the full benefit of external support, donor agencies need to realise that the crisis in African universities manifest itself in complex and very specific ways that are not amenable to simple across the board prescriptions. Consequently donor acceptance of co-ordination will help African universities to get committed to their unique strategic planning efforts to transform their institutions.

4.1.2 Partnership with Industry for Revenue Diversification.

Corporate support for academia and concerns about the effect of such funding are not new (Fairweather, 1988: 1). Hutt (1983, 107) traced the origin of corporate support for academia to the beginning of the 20th century.

Industries turn to colleges and universities as a source of research talent, new technological development, and skilled employees that can give them some renewed competitive edge (Kahn, 1988: 13). The edge by academic leaders searching for needed revenues generates competition among institutions to set up research centres, science and technology parks and long-term research projects with funds from industry. Such co-operations are encouraged by governments with the hope that they will stimulate innovation as well as research and development necessary to restore economic vitality. Both institutions and industry have the opportunity to reap financial benefits from the outcome of such collaborative research efforts.

Despite the success and benefits of these collaborations, some concerns about loss of autonomy and academic freedom due to commercialisation of institutional research prevail. It is believed that there are some conflicting principles and interest between higher education and industry with regards to issues concerning trade secrets, patent protection, and publications. Whilst the academic imperative is to seek knowledge objectively and to share it openly and freely, the industrial imperative, which is to accumulate profit, tends to treat knowledge as private property (Fairweather, 1988: 10). According to Hutchins (1962) both governments and industry hire universities to achieve certain ends which may not necessarily coincide with the academic principle of seeking truth.

As the interest for the protection of intellectual property grows, university-industry partnerships will emerge as opportunities for technology transfer and marketing of intelligence. Already, in many countries, concerns about the exploitation of knowledge for economic gains being inconsistent with the missions of institutions and the preservation of academic freedom are waning. This is due to the realisation that significant contributions of scientific equipment and funds to support operational budgets can accrue from the various forms of university-industry partnership and the development and marketing of intellectual property. According to Fairweather (1988, 13) little evidence exist to support or contradict claims about the effectiveness or impact of the newer industry-university research relationships.

In the industrialised countries these partnerships are being encouraged whilst the less industrialised countries are yearning for such partnerships. University-industry linkages for the purpose of raising income in sub-Saharan Africa are very weak. The lack of research and development co-operation between industry and universities in these countries could be attributed to the following reasons.

1. No immediate need for the co-operation
2. Little or no need for firms to compete
3. Sophisticated technology is imported as turn key package deals
4. Firms with international joint ventures (e.g. multinationals) rely on research and development of partners or parent firms abroad
5. Most firms are not large enough to be able to afford to pay for research and development

Research contracts to universities are growing slowly in some African countries. Continuing professional education courses, industry endowed staff positions and arranging staff exchanges with industry are not well developed in most campuses. Consequently most of such training is undertaken abroad, so the income that could have been derived from these opportunities is lost to well established universities in the industrialised world.

4.1.3 Consulting

Boyer & Darrell (1985, 3) define consulting as the application of one's professional and scholarly expertise in the community outside the academic institution. It is considered alongside with the service function of faculty as legitimate aspects of faculty role and therefore in conformity with the traditional functions and role of academia.

With the advent of the financial crisis in higher education and the consequent scrutiny of institutional activities, concerns about the appropriateness of faculty consulting are being expressed. Some of the concerns being raised about faculty consulting include the neglect of students and other university responsibilities, abuse of academic

freedom, conflicts of interest and illegal use of institutional resources (Boyer & Darrell, 1985). Some critical observers of faculty consulting identify it with other moonlighting[2] activities.

Advocates of faculty consulting argue that the abuses represent only isolated instances so they refer to the concerns as only speculations. They argue that there are immeasurable benefits of faculty consulting to the individual, the institution and the society in general which far outweigh those alleged abuses.

Consulting activities for local industry as well as international organisations are rapidly developing in sub-Saharan Africa as well. With the support of the international donor agencies this activity could grow as a potential source of revenue for universities in sub-Saharan Africa. Some international organisations operating in these countries now engage the services of local consultants to save cost. The use of faculty expertise as local consultants promotes the development of the industry and also helps to retain experienced faculty on campus thus reducing the incidence of brain drain away from the universities. Without consulting some experienced faculty are likely to be attracted to better paid jobs outside the universities or abroad.

Although consulting by academics in African universities is on the increase, its potential of contributing significantly to university financing is undermined by weak or non-existent institutional structures to support, monitor and regulate them. Consequently many consultants fail to pay their institutions when they use university facilities and time to execute their consulting jobs. Even in countries like Ghana, Lesotho and Nigeria (Nsukka) where some institutional structures (i.e. consulting units or centres) exist many academics choose to undertake private consulting without channelling them through these centres. It has even been observed that despite the development of consulting infrastructures by universities in some countries it has not always been possible to get assignments from governments who, due to personal interest, prefer to procure such services from abroad (SEPAM, 1991: 9).

[2] Moonlighting activities are those done by faculty but are not directly related to the faculty member's profession, field of study, or discipline e.g. an engineer doing farming.

The adverse effects of uncontrolled consulting is a worry for academia in general. According to Colclough (1995) the present problems facing universities throughout the sub-continent are partly caused by the fact that their staff are frequently absent, spending much of their time on consulting activities rather than teaching, as a means to enhance their income. Some regulatory mechanisms do exist in many institutions but there is a general reluctance to enforce them. The reluctance is due to a general believe that the income to be derived from any strict monitoring and "taxing" of such small-scale private consulting would be less than the cost resulting from the loss of staff morale if the extra effort by individuals is seen to be penalised (Williams, 1993: 49). The problem is not limited to sub-Saharan Africa alone. Williams (1993, 47) further alleges that there are some concerns in several universities world-wide that institutional consulting is being undercut by the long established practice of individual staff consulting, a substantial amount of which go on without being reported or monitored.

The above notwithstanding, academics have been observed to demonstrate excellent entrepreneurial and profit making attitudes in their private consulting activities. If institutional management could take up the challenge of harnessing and developing these entrepreneurial skills to be channelled into income generation activities, considerable incomes could accrue to the institutions. As these attitudes within academia develop through their involvement in private small-scale consulting, it is expected that the academic community in general will become more accommodating and device appropriate ways of applying entrepreneurial and market related principles in higher education.

4.1.4 Continuing Education and Extra-mural Studies

Universities in sub-Saharan Africa have considerable comparative advantages in the organisation of management and professional upgrading training programmes for those in active employment and vacation courses. In many countries the universities are more endowed with facilities, infrastructure and qualified personnel than the private training institutions. In this category of activities the universities have better opportunities of earning extra income as long as the market exists. The potential of

these activities developing as significant sources of income for universities is said to depend on the national economic environment. The ability of universities to exploit such opportunities will depend on their capabilities of ensuring efficient management, organisation, marketing and the calculation of realistic full-cost fees.

Consulting centres can possibly take up the management of such activities if they are adequately staffed and tasked. With effective marketing they can easily be developed to attract foreign students in the area of study abroad programmes as is being done by institutions in the United States and Europe. Universities in sub-Saharan Africa that structure their programmes to accommodate such studies stand the opportunities of earning significant revenue as the market develops.

The Institute of Public Administration and Management (IPAM) of the University of Sierra Leone for example achieved some outstanding performance in income generation through such activities. The institute runs short and long-term training courses in computer studies, accountancy and management. It also undertakes consulting services, plans conferences and seminars and runs canteen services all based on business principles (SEPAM, 1991). Universities of Lesotho, Witwatersrand, Botswana and Ghana do generate substantial income through programmes in business, accounting, computing, executive development, adult education, African studies, cultural enrichment and language studies.

4.1.5 External Hire of Facilities

Many institutions in sub-Saharan Africa generate income from the external hire of their teaching and residential accommodation and catering facilities for conferences, exhibitions, church, business and other organisational meetings. Income from such sources if used to build new facilities and maintain the existing ones could further enhance their income generation. Conscious planning and investment in space utilisation and infrastructure development could yield significant income for institutional needs. The success stories of conference management centres in the UK and Australia are useful experiences for African universities to emulate.

One of the most valuable assets of many universities apart from faculty is physical capital. Institutions blessed with large tracts of land could seek arrangements with private investors to develop these lands for the purpose of earning income. These lands could be used for estate development, leasing, renting, development of science and technology parks etc.

4.1.6 Donations and Fund Raising.

In the USA where the opportunities for fund raising are vast, institutions make conscious efforts and investments to cultivate friendship with alumni, foundations, corporations and other philanthropist from whom they obtain significant donations. The entrepreneurial efforts of the higher educational institutions in the USA in 1986 yielded a total voluntary support of US$ 7.4 billion (Kahn, 1986). Most institutions have appointed development officers with entrepreneurial drives purposely to pursue strategies to solicit donations. These donations range from cash to equipment, and other fixed assets like buildings and land. A successful fund raising strategy must include several components aimed at ensuring an effective method of initiating, implementing and ensuring effective reporting on donations.

The potential of these activities generating significant income and resources for universities in Africa is difficult to assess. Success here will depend to a great extent on good entrepreneurial skills in fund raising which are either not well developed or scarce in African universities. The potential of these sources generating significant incomes for universities is said to depend on the state of the national economy and the wealth of individuals. This may explain why many alumni associations in African universities are quite dormant.

There are instances of isolated raising of substantial funds towards capital projects which indicate that the potential exist and could be exploited. Universities such as Makerere, Nsukka, Witwatersrand etc. have foundations that organise fund raising activities from time to time. Nsuka for example organised general and specific appeal for funds which earned US$ 166, 970 in 1990 and US$ 356, 777 in 1989. The foundation at Witwatersrand operates as an independent trust fund to use immovable

assets to generate income as well as procuring contribution to the foundation. However there are no reports about or documentation of professional chairs, fellowship or research institutes as sources of financial diversification in African universities.

4.1.7 University Business Operations

Some institutions have explored the opportunities of on-campus commercial ventures in order to generate supplemental income. The list of activities include among others advertising, radio and television, fitness centres, day care and basic schools, food services, manufacturing and other service companies, copy shops, research testing, hotels, interest on cash investment, operation of bakeries, flour mills, commercial farms, lottery, insurance, banking, pharmacy, soap making etc.

Whilst acknowledging the success of some universities in some of the above mentioned activities, there is always a caution against the danger of taking such ventures as if they were normal programmes and ignoring the fact that they need to be seen as commercial ventures if they are to succeed and become viable (SEPAM, 1991: 9). In some universities however these activities have tended to become more of cost generating than income generating. The success of universities in the operation of these activities is no where comparable to the private sector and as such the potential for them to develop as significant income sources become limited when faced with competition.

The development of academically related businesses such as science and technology parks have not been successful in sub-Saharan Africa. University of Witwatersrand is reported to have made an attempt to develop a science park without success. It is claimed that African economies are not in a position to support such developments in the immediate future. In the case of other academically related businesses like publishing and the sale of books, where the potential is claimed to exist, the performance of universities is less than expected in many cases. It is doubtful whether universities, who often encounter managerial problems and difficulties with the maintenance and replacement of ageing equipment, will be able to compete effectively

with the private sector if the market develops well enough to attract private participation.

Generally universities' involvement in business operations has generated much criticism from both within and without. In November, 1983 the United States Small Business Administration protested against this practice, claiming that it amounted to an unfair competition by non-profit organisations with small business. Similar protest by the business community were also noted in the Netherlands.

Two factors have constrained the development of University business enterprises.

1. General conservatism of the university community (especially faculty) which makes them reluctant to reconcile the appropriateness of business ventures with institutional mission and objectives.
2. Lack of experience with the practice of financial management and forms of management control for small business development.

Despite these criticisms and setbacks Kahn (1988, 26) has observed that institutions that have been most successful in this area have applied the practices and principles of the business sector. He further noted that it is only when such ventures are operated with a profit motive that they can yield significant income for the institution. If they are operated as a service to staff or students they are not likely to be successful and may even end up generating cost.

4.1.8 Sale of Goods and Services.

Many African universities are engaged in the sale of goods and services from university farms, laboratories and workshops etc. Income earned from such activities is often considered as a welcome "extra" and as such little entrepreneurial efforts are made to maximise revenue. Investments are often made for the educational purpose (i.e. research or teaching) and not necessarily to earn income. It is often very difficult to obtain data on these activities (Woodhall, 1995: 21). In some instances there is even

a danger that such “by-products” of higher education may turn out to be cost generating instead of revenue generating.

The engagement of universities in the operations of commercial enterprises and the sale of goods and services appear to be the most controversial among all the income generating measures. Critics in universities question their impacts as well as their compatibility with the values of universities in teaching and research. Despite the controversies Woodhall (1995, 21) still maintains that universities must become more entrepreneurial, cost-conscious and profit oriented and embark on both near-term and long-term income generating activities if they are to survive the present crisis.

Depending on local conditions African universities may adopt a number of the above mentioned measures to diversify their income sources. The significance of the income generated depends to a large extent on the strategy that is adopted in the implementation of these measures. Some of these strategies are discussed below.

4.2 Strategies for the Promotion of Income Generation in African Universities.

The AAU in collaboration with other sponsors organised seminars, workshops and meetings to promote financial diversification and income generation in African universities. Through the discussions held so far institutional leaders have become more aware of the nature of the financial crisis and the need to put in more hopes in revenue diversification and income generation. Despite the growing wave of awareness and interest there remains some reservations concerning how to organise these income generation activities to yield significant financial resources without adverse effects on the normal academic activities. The lack of tried and tested strategies with strong theoretical backing to guide management on the integration of revenue diversification and income generation activities with academic activities is responsible for the little progress being made or achieved by African universities in this respect. The implications of some strategies and proposals for the promotion of income generation activities in academia are being discussed under broad groupings below.

4.2.1 Organisation and Management of Income Generation Units/Activities

The management and decision making processes and structures (e.g. the committee system) especially in Anglophone African universities is believed to have serious consequences on income generation activities. Under this system of management the university council, which is the main governing body normally has numerous committees to deal with administrative and academic matters. Some of the characteristics of the committee system of management that inhibit the successful operation of income generation include unnecessary delays in decision making, waste of time and energy in the preparation of committee meetings, inability to take decisions on pressing matters without reference to a committee, weak monitoring capability and limited accountability. These characteristics are said to be incompatible with the practice of business principles that are required for successful operation of income generation activities in universities since profit making is rarely an incentive for committee efforts.

The consensus is that the committee system of internal university management must be rationalised to enhance effective management and cost reduction if income generation is to yield significant financial resources for universities. It is being suggested that managers of units that generate income in universities should be given considerable autonomy and should not be encumbered by reporting to many committees. There appears to be no clear cut management strategy that is agreeable to all. Whilst some argue that income generating activities should be insulated from the main stream academic activities, others advocate for a strategy that will integrate them with academic activities. So it appears that there is no clear strategy to adapt or change the committee system to accommodate the operation of these activities with business principles so that they can yield significant revenues. Meanwhile Blair (1992, 7) argues that university reform and financial diversification will not succeed until the management systems are radically changed.

Experience from many universities with income generation activities suggest that there is a probable relationship between the ability of an activity generating significant income, the management of the activity (organisational structure within which it

operates) and the nature of that activity. Tarpeh (1994, 48) classifies the several areas of opportunities which universities could explore into two main categories. The first group comprises university functions related activities (i.e. academically related activities) such as consulting, contract research, continuing education, extension etc., which readily draw on the teaching and research skills of academic staff. The other group refers to academically unrelated activities such as guest houses, printing press, real estate, book-shops, and other business operations which would need to draw more on the practical business expertise from outside the university. The implication here is that these two different categories require different organisational structures and management practices. This suggests that a commercial farm and a research and teaching farm if placed under the same organisational structure is likely to yield different results not only in terms of their income generation but also their general output.

4.2.2 Cost Centres with Management Information Systems for Effective Monitoring

The Banjul roundtable recommended that all university activities should be recognised as cost centres so that income earned and expenditure incurred on each activity could be readily determined. Such a radical approach is required to facilitate the determination of not only the income generated but also the expenditure incurred including an appropriate apportionment of university overheads. This requires proper records systems and at best an efficient management information system. Unfortunately the existing records systems in several African universities according to Blair (1992) are totally inadequate for an environment in which real financial management, cost centres and income generation can operate.

In many universities financial data for most of the income generation activities are either not available or not easily accessible. The non-availability of data especially with regard to finance is a common occurrence. As long as information gathering, storing and retrieval remain inadequate transparency and accountability cannot be guaranteed.

4.2.3 Incentive Systems

In most universities the participation of faculty and students in income generation activities has not been properly integrated into the main stream of academic activities. There are therefore no formal or well laid down rules and regulations for the recognition and rewarding of exceptional contributions or sanctions for failures and abuses. The establishment of appropriate formulae agreeable to all parties for the sharing of income generated between the participating staff and students and the institutions can have a very positive impact on the level of participation and income generated. To encourage participation it may be necessary to go beyond the monetary incentive by linking participation with academic work for students and promotions for academic staff.

In the case of consulting the need for appropriate incentive packages to encourage faculty to channel such activities through their institutions as income generation activities for the institutions to derive some income from them can not be overemphasised. In relation to consulting and commercialisation of service units the advantages of privatising the units or running them purely along business lines with market determined remuneration structures requires priority consideration.

4.2.4 Cultural Identity, Orientation and Image Building

Since universities depend on other constituencies for funding they have to develop strategies to market their image to their sponsors and to attract new sponsors if they are to ensure sustained flow of financial support. This is not an easy task given the various groups within the community of sponsors who are all vying for their attention and services. A university needs to embark on an image building drive by identifying its cultural identity and orientation that meets the expectation and needs of its sponsors.

The University of Kassel, which is now being considered as one of the most important investment in North Hessen since the end of the second world war, now enjoys considerable support from its sponsors (both public and private) because it has

successfully tailored its identity and orientation to meet their needs and expectations. Two and a half decades ago when the University was being established with an orientation towards maintaining several forms of higher education qualifications under a single roof many were sceptical about its future and associated its breakaway from the traditional classical German university system with socialist and leftist ideologies. According to Ludwig (1996, 419-426) the sceptics of those days are the University's partners today because it has managed to win their confidence with this non-traditional system. It managed to achieve this by placing more emphasis on the practical application of the qualification and skills of its students. The graduates came out to meet the expectations and requirements of the regional economy and this has been instrumental in winning it the status that it now enjoys among its sponsors who now identity the institution as a partner in development.

In contrast to the case of the university of Kassel many universities in Africa have emphasised much on meeting international standards at the expense of adaptation to local needs resulting in the lost of confidence. Hence the accusation of African universities as "ivory towers", centres of parasites and elite in the midst of poverty and underdevelopment (Mudariki, 1993: 2). There are many (including the World Bank) who share the opinion that African universities have failed to produce the right type of intellectuals and technocrats who are able to solve the continent's many crises. Consequently it is common to find university trained unemployed engineers whilst the productive sector suffers from the use of obsolete technology and inexperienced work force. African universities therefore need to give their cultural identity much thought in order to adopt measures that will chart their orientation to national needs to win local support. They have to work together with local economic forces to promote and consolidate development, the proceeds of which, will serve as a sustainable source of resources for their own existence.

4.2.5 Government and University Relationship

According to Blair (1992) urgent reforms are required in the relationship between African universities and their national governments because the relationship between them in most African countries is quite turbulent with inhibiting policies that tend to

make a mockery of university autonomy. The first step in the betterment of the relationship is the stabilisation of university financing by ensuring that state contribution is rational and practical. Although the details of these relationship will vary from country to country and from time to time, a system of incentives for efficiency and financial reform is very essential.

The major incentive for change is for the universities themselves to clearly define their identity and adopt strategies aimed at positive achievements with which they can build distinct and good images for themselves. This will establish confidence between them and their communities which include governments and improve their relationship.

Many experts are of the view that a reduced role of central government in the governance of the universities would enhance autonomy and place them in a better position to diversify financially and generate income. Government involvement in the appointments of presidents or chancellors and council members reinforces the impression that the university is just another department of government, which has grave consequences on their revenue diversification efforts.

CHAPTER FIVE

THE IMPLICATIONS OF THE HIGHER EDUCATION REFORM PROGRAMME AND INCOME GENERATION IN GHANAIAN UNIVERSITIES.

5.1 Educational Reform Programme.

Ghana's higher educational sub-sector, comprising of universities, polytechnics, diploma-awarding colleges, teacher training colleges and other sector-specific institutions, used to be rated among the best in quality and standard in Africa. The older generation of the university community for instance often refer to the good old days of the 1960s when their prestige was high, resources and opportunities seemed unlimited and the University of Ghana was rated as one of the best in Africa (World Bank, 1992: 5). These glorious times were rather short lived. As the nation's economic output declined from the mid-1970s to the 1980s, public or government revenues could only cover 35 percent of total expenditure. Consequently public resources for the maintenance of the higher education system fell from 6.4 percent of GDP in 1976 to 1.4 percent in 1983. Government was no longer able to construct, complete or even maintain existing educational facilities. Since most of the educational institutions were mainly dependent on government funding, the national financial difficulties greatly affected the maintenance of quality and expansion of the system. Lack of equipment and essential teaching materials combined with low moral among staff due to low salaries led to a fall in standards. With a fall in real wages of up to 80 percent from 1970-1979 many skilled workers at all levels including university faculty were compelled to leave the country to seek better paid opportunities in other countries.

The cost of maintaining the institutions, especially the universities, is said to be relatively high due to the fact that they are essentially residential and self-contained. The three older universities for instance are situated on large tracts of land in large urban communities, providing both staff and students with subsidised housing and standard municipal social services. This extra non-academic cost, which is borne by government, is said to be one contributing factor to the high cost of the universities in Ghana. It has also been a major limiting factor in the expansion of the universities. These limitations or constraints on expansion led to the development of small and expensive elitist

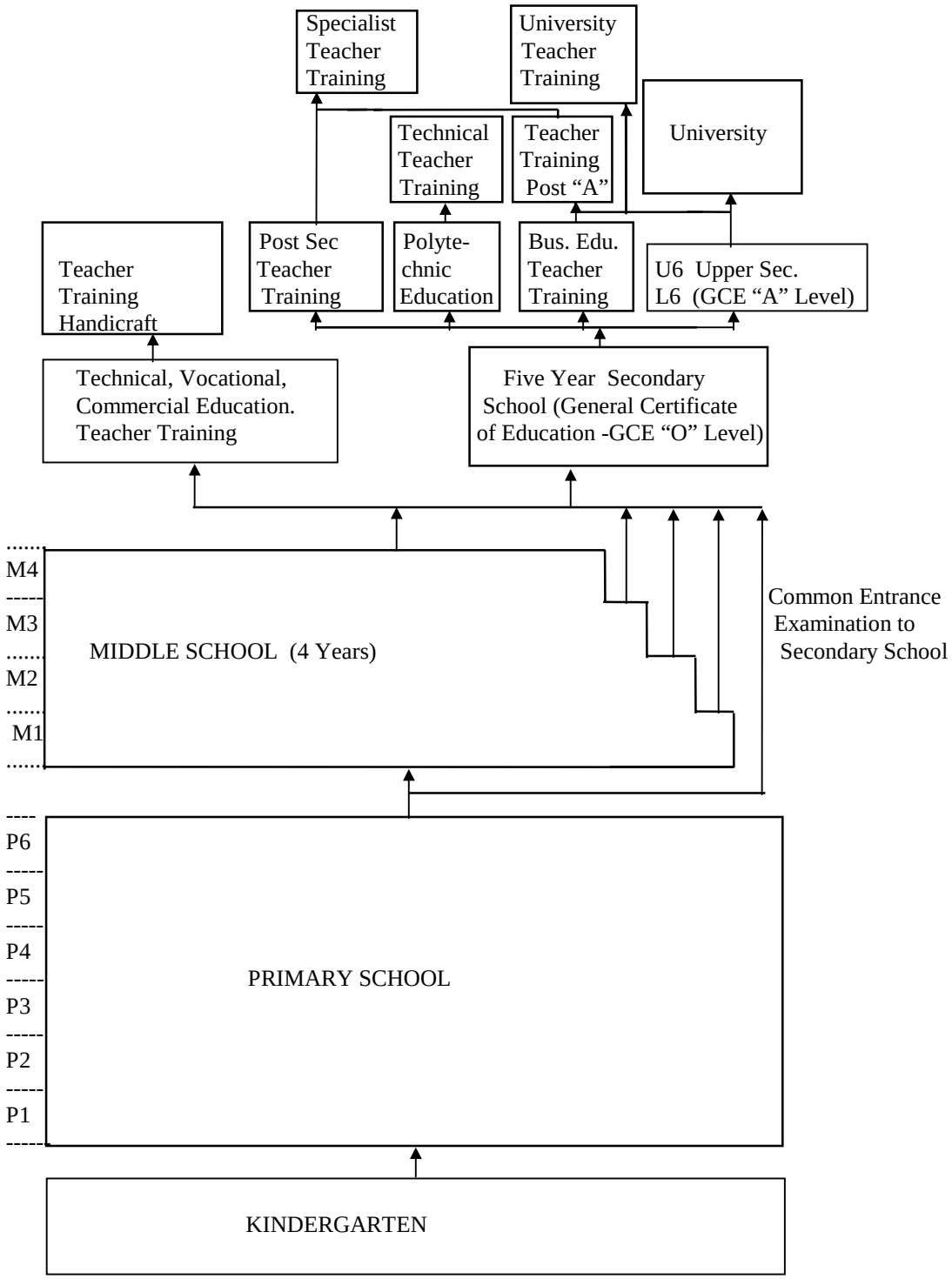
institutions. In 1987 for example, the University of Cape Coast with 1974 workers had only 1492 students (URC, 1987: 110).

In order to arrest the national economic decline, an Economic Recovery Programme (ERP) was launched in 1983. Since the programme's success was perceived to depend on the availability of a skilled work-force, considerable provision was made for the education sector. Educational expenditure since the launching of the programme in relation to GDP increased from its 1983 level of 1.4 percent to an average of 3.6 percent in the early 1990s. The share of the national recurrent budget spent on education consequently rose from 27 percent in 1984 to 37 percent in 1990 (Tamakloe, 1995: 7). Within the context of national recovery and development, government initiated a comprehensive educational reform programme in 1987 in order to correct the negative consequences of a steady decline in the quality of education over the past decade attributed to inefficient management, scarcity of educational materials and qualified personnel (URC, 1987).

Before the implementation of the educational reforms, the structure of Ghana's educational system (see fig. 3 below) comprised of four levels; primary (six years), middle (four years), secondary (seven years) and a variety of tertiary institutions. Private participation in educational provision was then mainly at the pre-school and primary levels where about five percent of the relevant age groups were enrolled (URC, 1987). At the tertiary level the supervision, direction and control of the institutions were scattered among different ministries and government agencies outside the Ministry of Education (MOE), while the polytechnics and the universities remained under the higher education division of the MOE. As a result of this spread over many institutions with different academic and administrative standards and procedures, there was much duplication and inefficiency in terms of delivery and co-ordination.

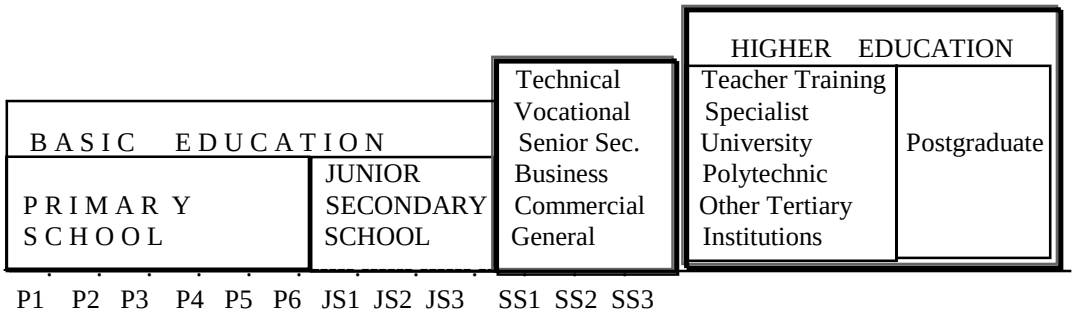
Since the launching of the reform programme a new structure (see Fig. 4 below) has been put in place. The new structure comprises of six years primary school, three years of junior secondary (JSS), three years of senior secondary (SSS) and a variety of tertiary

Fig. 3. Old Structure of Educational System - Ghana.



Key
"O" Level = Ordinary Level Secondary School
"A" Level = Advanced Level Secondary School
Bus. Edu. = Business Education

Fig. 4. New Structure of Educational System - Ghana.



Key
P = Primary (1...6yrs)
JS = Junior Secondary School (1...3yrs)
SS = Senior Secondary School (1...3yrs)

education comprising of both university and non-university institutions. At the pre-university level the reforms covered structural, curriculum and organisational aspects aimed at improving efficiency and accessibility to the relevant age groups especially in the rural areas. The structural change from a 17 years cycle of pre-university education to 12 years has brought the system in line with international practice.

In 1986 government appointed a University Rationalisation Committee (URC) to study and make recommendations for reform of the higher educational sub-sector. Based on the committee's recommendations government issued a white paper in August 1990 expressing concern for the sectors performance as follows:

"During the more than two decades of tertiary education, Ghana's system has had a reputation for providing good quality graduates. During the same period, however, reviews of the impact of the Universities on society and the national development process, have urged a reappraisal of course content and orientation as well as a revision of the very models of institutional organisation in order to avoid growing disjunctive between university education and national development process"(Rep. of Ghana, 1991).

Following the publication of this white paper some far reaching reforms have been initiated and are being implemented with assistance from the World Bank, the African Development Bank and other sponsors/donors. The reforms are not only to adjust the system to accommodate the effects of the changes at the lower levels but also in

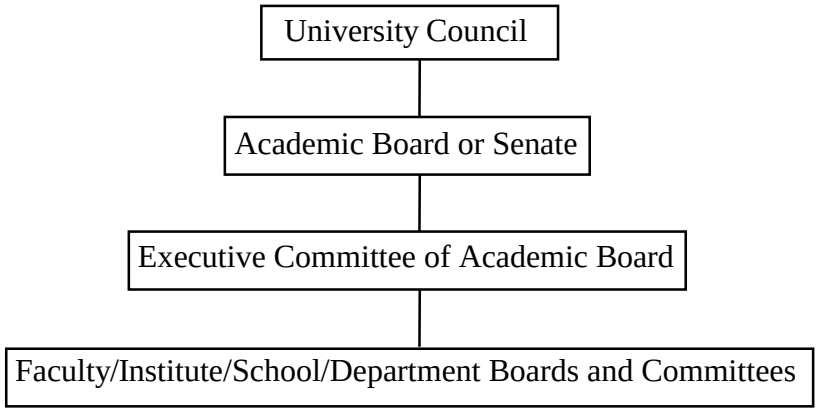
response to the serious crisis in the sector. The reform programme is aimed at establishing an integrated higher education system with the following programme objectives; restructuring and upgrading of institutions, review of course offerings and curriculum to ensure relevance to national needs, revival of research, rehabilitation of educational facilities and upgrading of staff, expansion of access, improved management, efficiency and cost reduction and diversification of sources of funding.

5.2 The Ghanaian University System.

Ghana now has five universities; the university of Ghana (UG) established in 1948 at Legon near Accra, the nation's capital, the University of Science and Technology (UST) established in 1951 at Kumasi, the University of Cape Coast (UCC) established in 1962, the University of Development Studies (UDS) established in 1992 with campuses to be located at Tamale, Kintampo, Navrongo and Wa, all in Northern Ghana, and the University College of Education of Winneba (UCEW) established in 1994. All the universities are mandated by the Acts that established them to train graduates in their respective areas for which they have facilities as well as research and service through extension and the dissemination of the relevant knowledge for national development. These Acts further provide for the establishment of university councils as governing bodies with principal officers comprising of a chancellor (who is the head of state), a chairman of the university council, and a vice-chancellor as the academic and administrative head. A pro-vice-chancellor is appointed to act in the absence of the vice-chancellor. There is also provision for a permanent administrative set-up comprising of technical and professional staff (e.g. registrars, finance officers, accountants, auditors, engineers, architects, planners etc.) headed by a registrar who also acts as secretary to council.

The task of policy formulation and decision making is performed through the committee system which is the nerve centre of the administrative machinery of the universities. The university council as a governing body constitutes the apex of a hierarchical structure of a system of committees for university management (see fig. 5 below).

Fig. 5. Hierarchical Structure of University Management



Council membership comprises of government nominees (one of whom is the chairman), the vice-chancellor, the pro-vice-chancellor (non-voting), the registrar (secretary but also non-voting), and elected representatives of convocation, students, and the labour unions like the University Teachers Association (UTAG) and the Teachers and Educational Workers Union (TEWU). Issues are supposed to be generated and discussed from the departmental levels and passed through by referrals to the faculty boards, academic boards and finally to council for ratification. The council or academic board may under certain circumstances set up sub-committees that report directly to them. The day-to-day administration and management of the university is vested in the office of the vice-chancellor who is assisted by the registrar and his administrative staff.

It is generally believed that universities in Ghana have not lived up to expectation with regard to their contribution to the social and economic development of the country. There are many including government who have expressed frustrations that the universities have not sufficiently used their resources to contribute more directly to the economy (Djangmah, 1991: 4). The universities on their part attribute this inability to the financial neglect by various governments. Faculty generally feel unappreciated, rarely consulted on national development issues, and squeezed for resources whilst expected to follow government directives (World Bank, 1992: 4-5). Consequently some faculty regard the reforms at the university level as part of government directives which undermines their autonomy.

Although the universities have consistently regarded themselves as grossly under-funded evidence suggest that since the start of the reform programme they have received relatively more resources than the other sub-sectors. Recurrent budgetary allocation for education rose from ten percent in 1990 to 15 percent in 1992. In some instances the universities have used their direct access to decision makers (by means of lobbying) to achieve actual expenditures well above budgeted levels. In 1990 for example they managed to obtain real expenditures of almost 40 percent over the budgeted levels (World Bank, 1992: 7).

The capital budget of the universities is financed from the Public Investment Programme (PIP) which is a three year rolling budget set up for education and financed from the domestic capital budget and external donors. Allocations from the capital budget for the universities have been mainly used for the rehabilitation of existing buildings, completion of some of the numerous abandoned building projects started decades ago, and the importation of essential equipment. In 1990 for example, the universities received over 80 percent of the total PIP allocations for the entire higher educational institutions.

Despite this apparent massive infusion of financial resources into the university sector government acknowledges that it is still not sufficient. Government as well as the universities themselves are aware of the adverse effects of the high inflationary pressures on the financial allocations as noted above. Consequently as a component of the reform programme government is encouraging the universities to diversify their sources of income. One such means of income diversification is the generation of income using their own resources.

5.3 Income Generation Activities

According to the URC the higher educational institutions themselves have contributed to their own financial insecurity by relying on government for full financial support. This phenomenon is attributed to the manner in which the institutions were established and propped up over the years. Whilst others relied mainly on government funding UST and the older polytechnics explored different avenues of getting extra resources. They

initiated programmes to enhance their own capacities to earn supplemental incomes. From this experience government is now pursuing a policy of encouraging universities to engage in the generation of supplemental income using their own facilities. Consequently the universities have been advised to appoint Business Management Advisers to maintain an overview of the business activities of income generating units or projects.

As at 1987 the URC observed that the University of Ghana had started with income generation in a rather modest way at the halls of residence level with great potentials in the consulting, agriculture, bakery, book selling and furniture making. In response to the policy noted above the university now encourages all faculties and departments to engage in income generation ventures. In 1995 fourteen income generating and potential income generating units could be identified. They consist mainly of units that were established to provide centralised services for the university such as the University Book Shop, Guest Centre, Printing Press, Schools, Central Cafeteria, Consultancy Centre, Estate Organisation, and the Development Office. Research units such as the Kade Research Station, the Agricultural Research Centre at Kpong, the Agriculture Research Centre at Nungua and the Katamanso Commercial Farms have also been identified as potential income generation units. The university has also made provision for the appointment of a Business Management Adviser based at the central administration to co-ordinate these activities.

At the UST, several units which were established and funded directly by the university to provide it with essential services have now been commercialised and made self financing i.e. they no longer depend on government subvention for their operations. These units include the University Book Shop, Photocopy Unit, Printing Press, Construction Unit, and Manufacturing Unit. Faculties and research institutes also generate income using their own facilities like farms, laboratories, workshops etc.

There has been a considerable change of attitude with regard to income generation activities at UCC. As at 1987 the URC noted that the UCC did not believe that university facilities like farms should be income generating. However due to the decline in government funding and the encouragement by government to generate their own

income UCC has accordingly embarked upon a number of income generating activities including the restructuring of its support services into commercialised service organisations or production units. Subsequently units such as the book shop, printing press, the development & physical planning office, science workshop, carpentry workshop, wood/metal workshop, transport section, the electronic unit, and the university farm have been identified as potential income generating units. The university has established a central co-ordinating unit, the University Business Management Board, to oversee the performance of the income generating units. The board's responsibilities also include policy formulation and the monitoring of the operations of the units and reporting their findings to the finance committee. The board has so far identified joint partnership and private investment as two possible sources of funding for the potential income generating units of the university.

The University College of Winneba (UCEW) has been encouraged by the MOE to integrate income generation with its main academic activities right from its inception. The University has therefore formed an income generation management committee to oversee its income generation activities.

For the purpose of this study the management and significance of income generated from these activities at the four universities for which data is available will be discussed under two broad groups; centralised service units and academically related or faculty based units.

5.3.1 Centralised Service Units

These units were established to provide a range of services mainly for the needs of the universities and their respective communities. These units are now being reorganised as income generating units at the various universities. They will be considered under the various types of activities.

5.3.1.1 University Book Shops

All the three older universities (i.e. UG, UST and UCC) set up Book Shops purposely to serve the needs of their respective communities comprising mainly of students and faculty. Only the UCC book shop had additional objectives to publicise the publications of the university and its staff and to make profit for expansion to cover a wider clientele from the on set.

The services of the three book shops have now been extended to cover the general public. They now deal in university as well as secondary school textbooks, stationary, children's books, greeting cards and other educational accessories.

At the UG the book shop is administered by a management team comprising of a manager, an assistant manager and an accountant. This team reports to a management committee comprising mainly of lecturers. The management committee, which also reports to the finance committee of the university, takes major decisions and makes policy changes on the operations of the book shop. The shops at the UST and UCC have similar management structures. They both have management boards comprising of senior members with the day to day management being entrusted to managers and their core staff.

The UG book shop is one of the largest and the oldest (established in 1953) in the country and with its location advantage at the national capital its market covers the whole country. As a policy the book shop has a target of 25 percent mark-up on all books sold. However the available financial data from 1986 - 1993 revealed that it was unable to maintain this target. Whilst the gross margin was as high as 38 percent in 1987 it fell to as low as 14 percent in 1993. This rather erratic gross margin is reflected on the net profits as indicated in Table 4 below. This has been attributed to management's inability to maintain an effective and consistent prising policy.

The book shop is unable to exploit its large market potential to generate significant income for the institution due to structural inflexibility and weak managerial controls such as improper inventory, and improper cost accounting. The management team has

not been allowed to undertake any significant marketing analyses, efforts or strategies apparently because the university is reluctant to undertake full scale commercialisation.

Table 4. Financial Performance of University of Ghana Book Shop 1986- 1993.

Year	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**
Gross Margin (%)	-	38	24	20	14	19	15	25
Net Profit (Millions of Cedis)	4.4	12.1	9.6	9.5	5.1	14.1	11	47.4

Source: Ministry of Education - Projects Mgt Unit, Accra.

UCC book shop is believed to have a potentially large market. Its catchment area extends from the central and western regions with the highest concentration of schools to cover the large number of teacher training colleges distributed throughout the country and the UCEW.

Despite this large market potential its financial returns have often reflected losses as indicated in table 5 below. This is attributed to the fact that the management of the book shop is unable to control its operational costs. Although the sales income increased considerably by (177 percent) from 1989 to 1991, cost of sales alone increased by 132 percent over the same period. Considering all cost and incomes the shop made a loss of over five million cedis every year from 1989 to 1991. It is thus now a cost generating unit to the university even though one of the objectives has been to make profits.

Table 5. Financial Results of UCC Book Shop (1989 - 1991) in Millions of Cedis.

Year	1989	1990	1991
Income from Sales	13.687	24.549	37.981
Stock Adjustments & Other gains	-0.742	-0.048	.291
Cost of Sales	15.004	24.063	34.763
General & Admin. Cost	3.157	5.478	8.571
Net Profit (Loss)	-5.216	-5.079	-5.063

Source: Projects Management Unit, Ministry of Education, Accra

The market of the UST book shop is said to cover the whole of the northern sector of Ghana as it is the largest in this sector. Like the others it also has problems and limitations. Lack of working capital for the accumulation of stocks and its inability to embark upon an aggressive marketing campaign tend to limit its operations and profits. The shop is entirely autonomous and pays all its running cost. The only financial data available for 1994 however indicate a very favourable financial climate. Out of a sales volume of 73,916,715 cedis it incurred an administrative and selling cost of 62,739,498 (i.e. 85 percent of sales) to make a net profit of 11,177,216 cedis (25 percent of sales).

It is worth noting that although the shops at UST and UCC have similar management structures the former makes profit whilst the latter incurs losses. Thus the sustainability or significance of income generation cannot be attributed to management structures alone. It is also worth noting that despite the net profits made at UG and UST their operating costs are rather very high. If they were to be paying taxes their profit margins would have decreased drastically.

5.3.1.2 Printing Presses

The UG Printing Press was established as a joint project between the Government of Ghana, UNESCO and the Netherlands. It was established as a demonstration station for the School of Communication Studies and also to support the circulation of a rural newspaper “Wonsuom” for the dissemination of news on health, education, and modern farming practices. After the discontinuation of the project the printing press turned into commercial printing with the university as its major client.

The school of communication studies oversees the operations of the press but the day to day management is contracted to a private printing contractor due to the inability of the university to employ a qualified printer. The printing requirements of the university alone is said to be capable of engaging the press in full operation (i.e. 100 percent capacity) all year round. However due to the poor state of equipment and the lack of a permanent printer the press is unable to satisfy all the university customers and as such is loosing them to private printing firms. It also lacks sufficient working capital to support its operations. The press also has staffing problems and it’s financial records are not

properly kept due to the lack of an accountant. These bottlenecks inhibit its income generation efforts to a large extent despite the great potentials available.

UCC's Printing Press was established as a non-profit making service unit to cater for the printing and book binding needs of the university community. As such all cost are borne by the university and any possible revenues generated are paid directly to the university coffers.

In 1989 the university attempted to commercialise the press by commissioning a feasibility study. Although the study reported that the press had immense potentials the recommendations made which included management and staff training, were not implemented. Meanwhile due to obsolete equipment the press does printing at cost that are not competitive enough so it is operating at a loss. Available financial data for 1991 and 1992 in table 6 below indicate that the losses are on the increase. This is yet another cost generating unit for the university.

Although the printing press at UST was established as an integral part of the university to cater for the printing requirements of its administration and the faculties, its services were also made available to the general public. In 1992 the press became completely autonomous, taking over the payment of the staff from the university. The university however still maintains control of the press through a management board. In spite of the old age of the equipment the press is able to ensure that they are generally in good working condition. Due to its diversified nature of products such as textbooks, exercise books, typing sheets, forms, letterheads, receipt and requisition books, journals and periodicals, calendars, posters etc. the press is fully engaged.

Table 6. Summary of Financial Results of UCC's Printing Press (1991 - 1992)

Year	1990	1991
Income (in Millions of Cedis)	20.218	25.453
Salaries & Wages (in Millions of Cedis)	15.600	15.600
Other Cost (in Millions of Cedis)	13.594	23.444
Net Profit (Loss) (in Millions of Cedis)	-8.976	-13.591

Source: Projects Management Unit, Ministry of Education, Accra

Although the press has a reputation for good quality work lack of a vigorous marketing strategy is limiting its market to the university community. In 1993 for example only 17 percent of the sales came from outside the university with sales from the university alone taking up 83 percent. The financial data for 1993 indicate that there is the need for the press to improve efficiency and reduce cost so as to improve on its profit margin which stood at only two percent of sales (see table 7 below).

Table 7. Summary of Financial Results UST Printing Press, 1993 (in Millions of Cedis).

Item	Amount	% of Sales
Sales to University Departments	64 418 075	83
Sales to Customers outside University	12 766 980	17
Production Cost	62 264 899	81
Selling & Administrative Expenses	13 115 321	17
Net Profit	1 804 835	2

Source: Projects Management Unit, Ministry of Education, Accra

5.3.1.3 University Schools

The UG basic schools, which comprise of a nursery, a primary school (established in 1955) and a Junior Secondary School (established in 1987), are all entirely financed by the university. The schools cater mainly for university staff. Out of the 2,008 children in 1995 for instance 95 percent were wards of staff with only five percent being wards of outsiders considered “friends” of the university.

The schools are headed by a headmaster and a deputy who report to a management board. The board is responsible for policy making and comprises of a chairman, five appointees of the university academic board, the finance officer and representatives of other interest groups such as the Parent Teacher Association (PTA), the school staff, and the university junior and senior staff associations.

Until recently the schools charged very minimal fees and so all expenses were borne by the university. As university funds dwindled the schools were often unable to provide

sufficient stationary. Since the appointment of an economist as head, fees have been gradually increased to reflect the real cost of educating a child in the school. The management board has now decided to revise the fees annually to reflect the rate of inflation. Despite these changes the financial accounts of the school indicate that it is far from becoming an income generating unit for the institution. From the summary of the accounts in table 8 below it could be realised that the university is increasingly subsidising the schools. As such it is more or less a cost generating unit to the institution.

Table 8. Summary of UG Basic Schools Finances 1987-1991 (in millions of cedis)

Year	**1987**	**1988**	**1989**	**1990**	**1991**
Expenditure					
Salaries	9.656	11.780	17.540	23.098	38.157
Goods & Services	2.441	2.930	3.991	6.984	9.100
Total	12.097	24.710	21.531	30.082	47.257
Income					
Fees	0.471	2.597	2.690	4.748	13.746
Reimbursement		0.254			
Net (Subsidised)	-11.626	-11.859	-18.840	-25.334	-33.511

Source: Ministry of Education - Projects Mgt Unit, Accra.

With the good reputation that it has been able to establish over the years coupled with its location in an area where its customers are in a position to pay economic fees, it is believed that the schools can be financially self supporting.

Like the UG, the UST established a complement of basic schools in the 1960s comprising of nursery, primary and junior secondary to cater for the dependants of its staff. With time the schools started admitting children of non university staff. Due to the good reputation of these schools the demand for places from outsiders increased rapidly. In 1995 with a population of 1720 children at the university primary, 50 percent were wards of outsiders. The proportion of places reserved for staff children has now been raised to 80 percent in order to cater for all staff wards.

All the schools have individual heads but they are all under a management board made up of senior members of the university. School fees are revised annually to reflect economic reality but outsiders pay over 50 percent more than staff members. Despite the fee differentials the demand for places at the schools is increasing. The management board is planning to meet the challenge through expansion. If this is implemented the schools may stand a good chance of earning significant revenues for the university. Despite the lack of financial data it is assumed that its income generation potential is very feasible.

5.3.1.4 University Guest Housing.

The UG guest centre was started with funds from the Ford Foundation of the USA to provide boarding and lodging services for guest of the university. It has a capacity of twelve flats, 24 bed-sitters, three bungalows, a conference hall, a reception and a restaurant providing catering services.

The management of the guest centre is entrusted in a manager who reports to a manciples management committee which intend reports to the finance committee. The finance committee is responsible for policy making whilst the manciples management committee makes proposals on operational issues to the finance committee for approval. The manciples committee is also responsible for the determination of operational policies, approval of repair works, purchasing of equipment, furniture and the appointment of staff other than the manager.

Since the centre was established as a service unit preference is often given to university request/demands on rather uneconomic terms which undermines the income generation efforts of the centre. The extended occupation of some of the residential facilities by newly appointed staff of the university for instance reduces the income that could have been derived by renting such facilities to guest. Due to the very low rates charged to university guest, the centre is unable to generate substantial revenues to maintain their facilities well enough to compete with other private providers in the city. Despite these weaknesses the centre is able to generate sufficient income to pay its workers and

maintain some facilities due to the good patronage of its services. The volume of revenue generated from 1987 to 1993 is presented in table 9 below.

Table 9. Revenue of Guest Centre Operations 1987 - 1993 (in Millions of Cedis).

Revenue \ Year	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**
Restaurant Sales	7.829	10.019	27.727	40.746	38.494	48.500	60.779
Accommodation	5.471	7.588	22.487	35.586	56.379	69.713	69.787
Total Revenue	13.30	17.607	50.214	76.332	94.873	118.213	130.566

Source: Ministry of Education - Projects Mgt Unit, Accra.

Both the UST and the UCC have guest houses located in Accra to cater for their staff and guest hotel needs on official assignments. The UST has two guest houses one of which offers catering services. It also has residential facilities located at the main campus in Kumasi to cater for the university's guest. The charges for these services are quite low and often do not reflect economic realities. The units are maintained for their service function and not for their income generation. All cost are borne directly by the university and revenues are also paid to the central administration. Since financial data for these services are not available it is not possible to determine the significance of income generated.

5.3.1.5 Cafeteria Services.

At the UG a central cafeteria was established to supplement those at the various halls of residence in the provision of free meals to students. After the policy of free food for students was reviewed in 1985 and students had to feed themselves, the cafeteria was commercialised. Despite the attempt made by the cafeteria to provide meals at reduced rates for students, private caterers have effectively reduced its market. However it is able to utilise the advantage of its facilities (e.g. bar, bakery, rental space etc.) to provide catering services for groups of individuals and institutions including the registry on contract basis. It is not possible to ascertain the capability of the cafeteria to generate income for the university because of lack of financial data on its operations despite the fact that it has five accounting staff. At best it is serving as a service unit with the

university as its main customer where it has to compete with the catering section of the university guest centre.

The catering facilities for students at the various halls of residence in all the universities have now been rented to private caterers who serve the general public including workers and students. This has been found to be the best alternative since the universities cannot themselves run these catering services on economic terms.

5.3.1.6 Development Offices

In all the three older universities there are development offices charged with the responsibility of managing the acquisition of land, planning, designing and supervising the construction and rehabilitation of all university infrastructure facilities including buildings. The organisation and management of the development offices may vary from university to university but the general staff composition are similar. They are generally staffed with a wide range of technical expertise including architect planners, architects, engineers, quantity surveyors, draughtsmen and tradesmen. With such technical teams the development offices are capable of executing various types of consulting services and other activities like architectural designing, supervision of construction works, surveying, valuation etc.

In recognition of this potential, the UG established the consulting section of its development office in 1987. It is managed by a board. However its ability to compete effectively with other architectural and consulting firms is hampered by lack of autonomy in both management and financing from the university. This situation is not motivating enough in terms of income generation although the potential exist in terms of expertise and market.

Despite the lack of detail financial data in all the development offices it is generally believed that they have the potential to generate income at very low cost if they are properly organised and motivated. The development offices are yet to take advantage of the opportunities offered by the fast growing construction industry in the country to get actively engaged in income generation for their institutions. Meanwhile some of the staff

do undertake small scale consulting privately which often go unreported or unnoticed by the university.

From 1988 to 1991 the development office at UCC declared an insignificant income of 22,000 cedis which covered only 0.15 percent of their total expenditure. This is mainly attributed to the fact that the office was set up and still operates as a service unit of the university and it is not encouraged to take up outside jobs.

5.3.1.7 Maintenance & Other Services

The three universities in Ghana had to establish units to provide their respective institutions with a variety of essential services which were then not easily available. At the UG the estate organisation was established as early as 1958 with nine sections all catering for the needs of the university community. The different sections and their respective functions are summarised in table 10 below.

At the UCC there are similar units providing a range of services. There is a carpentry workshop under the maintenance department making furniture such as beds, bookshelves, tables etc. for the various departments of the university as well as staff and student residential needs. Although the workshop is relatively well equipped with machinery, inadequate staffing has reduced its capacity to operate at a maximum level. It is managed by a supervisor with employees classified as “casual” primarily due to the low level of their qualifications. The workshop is not able to meet even the university requirements on time. It however has the potential to generate substantial income especially if it could diversify into the manufacture of products like windows and door frames for the construction industry. Meanwhile any income earned from its current operations is paid into the central university account since it does not keep its own finances. Although there are no financial figures available it could be observed that the workshop is not actively engaged in production that can earn significant income.

Table 10. Sections and Functions of the UG Estate Organisation.

Section	Functions
Works	Block making for construction work Car spraying
Carpentry	Production of assorted furniture & coffins Making of vehicle upholstery
Generation	Maintenance and repair of a wide range of equipment and appliances (e.g. gas and cooking appliances).
Water & Sewerage	Maintenance of water & sewerage facilities. Provision of water through a mobile tanker to the university community during periods of water shortage.
Refrigeration & Air Condition	Maintenance of the relevant equipment.
Transport Workshop	Vehicle mechanical, electrical and vulcanising services.
Traffic	Management of the university's fleet of vehicles. Bus and haulage services.
Telephone Exchange	Maintenance of university telephone system. Commercial operation of telephone and fax services.
Administration	Administration & Management of the different sections of the estate organisation listed above.

Source: Ministry of Education - Projects Mgt Unit, Accra.

There is also a transport section for the servicing of the university's vehicles. Its services are also open to the entire university community and individuals from outside the university. It has buses that it hires out to students, staff, clubs and associations. The section is supervised by a transport officer. Although it is the largest workshop in the region, the income it generates through private jobs is on a very small scale. With proper management and re-organisation, the section has the potential to satisfy the regional market. From 1988 to 1991 its financial returns reflected losses due mainly to a huge salary bill (refer table 11 below). Although the earnings continued to increase at a very significant rate (89 percent and 122 percent at the two intervals for which data were available), the wage bill always far outstripped earnings. The reason for this state of affairs lies in the fact that services to the various departments of the university are not valued and accordingly credited to the section. If this anomaly is corrected the section is likely to be able to make some profit.

Table 11. Financial Results of UCC Transport Section 1988, 1990 & 1991 (Millions of Cedis)

Year	1989	1990	1991
Income from Services	1.751	3.317	7.361
Salaries & Emoluments	18.161	25.390	18.293
General & Admin. Cost	2.029	.871	.700
Net Profit /Loss	-18.439	-22.944	-11.632

Source: Ministry of Education, Projects Management Unit (PMU), Accra.

At the UST there are similar units under the estate organisation, maintenance and transport sections. A manufacturing unit catered for all the furniture needs of the university. There is also a construction unit responsible for the execution of minor construction works for the university. Attempts were made to make these two units autonomous but the university remained as their sole customer. Their inability to win contracts from outside the university has limited their operation to a great extent. Some of the units providing services like vehicle maintenance, communication (e.g. telephone, fax etc.) have very little chances of expanding to earn significant revenues due the proliferation of private providers who even manage to win customers from the university community.

Unlike the manufacturing and construction units the photocopy unit's operations appear quite sustainable. As a security printing unit its main function is to print examination question papers for the university. It was successfully made an autonomous unit in 1989. The unit now undertakes contracts from outside the university such as the West Africa Examinations Council (WAEC), the Ministry of Education and the Chartered Institute of Bankers. It also does the printing of examination questions for a number of secondary schools in Kumasi and provides photocopy services for the university community.

The unit is managed by a manager who reports to a management board comprising of senior members of the university. Its market could be very extensive but it does not make any efforts to advertise its services. Due to lack of financial data it is not possible to determine the significance of its income generation efforts. One significant problem

that is likely to affect the income generation potential of the unit is the state of its equipment which all need replacement in the very near future.

One other service unit which has a potential of generating income but is unable to do so due to managerial problems is the swimming pool.

Most of the service units discussed above are well equipped with qualified personnel and equipment and their services have both good potential and existing markets. Despite these opportunities the sections are unable to exploit them to generate significant incomes due to the following reasons.

1. The units were all established as service units of the various universities and not as income generating units.
2. There is no incentive to generate income as all incomes are directly paid to and managed centrally.
3. The sectional heads are not motivated to run their units as profit centres.
4. There are weak controls on transactions and documentation. This leads to a high probability of financial misappropriations and losses.

5.3.2 Academically Related Income Generating Activities

Academically related income generating activities going by Tarpeh's (1994) classification discussed in chapter four above may be further grouped into two main categories: Consulting and faculty/teaching based activities.

The promotion of income generation in these two fields of academically related activities normally attracts the concern of academia who often see the phenomenon as a risk to the promotion of knowledge. This is therefore an area that deserves critical assessment if the question of the implications of income generation for academia is to be addressed. The attempt by Ghanaian universities to generate income in these fields will now be considered.

5.3.2.1 Consulting

The problems and limitations that inhibit institutional attempts to benefit financially from faculty consulting as noted in chapter four above also prevail in Ghanaian universities. In order to address the situation the government of Ghana entered into an agreement with the United Nations Development Programme (UNDP) to organise consulting in Ghanaian universities. The programme which was intended to establish Consulting Centres at the universities with financial and technical assistance from UNDP started in 1989 with the following objectives.

1. To attract consulting contracts from public and private sources nationally as well as internationally.
2. To co-ordinate all consulting work being undertaken by the university communities and also provide advisory and support services.
3. To put the universities' professional and technical expertise at the disposal of the nation for development.
4. To minimise the brain drain by helping lecturers to earn supplemental incomes and also to generate additional income for the universities.

The UG Consultancy Centre was thus established in 1989 with a group of professional, administrative and other support staff. It is run by a management committee with an advisory board comprising of the Vice-chancellor as chairman, and eight other members including representatives from the UNDP and the Ministry of Finance and Economic Planning. The board reviews the activities of the management committee and also advises and makes recommendations to the committee on matters relating to the development of the centre. The management committee is chaired by the Pro-vice-chancellor with the director of the centre, the finance officer and one representative each from the faculties, institutes and schools of the university as members. The committee is responsible for policy formulation, as well as the co-ordination of all consulting projects being undertaken by members of the university. The responsibility of the day to day administration of the centre is vested in a director assisted by an administrative secretary, a project co-ordinator, an accountant and other supporting staff including a secretary, a clerk/typist, a driver and a messenger. The centre was later re-organised and it is now

headed by an acting director assisted by a business manager but without a project co-ordinator.

The centre is a corporate member of the Ghana Association of Consultants and currently bids competitively for jobs in the open market. It is an independent unit but works closely with all the academic units of the university. Although the centre has great potential in terms of the availability of expertise it is not very aggressive in its promotional and self marketing efforts. The tendency of the centre to wait for customers to approach it and its inability to ensure that all consulting work done by individual academic staff are channelled through the centre are its main weaknesses. It lacks an effective monitoring mechanism and an attractive incentive package to ensure that private consulting works are channelled through the centre. The financial analysis shown in table 12 below from 1990 - 1993 indicates the centre has been making a considerable turnover which could be increased if it is able to secure sufficient projects to increase its profit margin.

Table 12 Financial Reports of the UG Consultancy Centre for 1990, 1993 and 1994.

Year	1990	1993	1994
Revenue	6 282 650.33	11 647 829.31	23 141 831.30
Expenditure	9 371 702.33	4 330 710.70	19 924 360.70
Net Profit	-3 089 052.33	7 317 118.61	3 217 470.60

Source: Ministry of Education, Projects Management Unit, Accra.

At the UST it was proposed that an already existing unit, the Technology Consultancy Centre (TCC) be reorganised as the nucleus of the Consultancy Centre. Although the TCC made the necessary preparation like acquisition and furnishing of an office with assistance from UNDP for the consulting section, the proposal has not yet been implemented. Meanwhile the centre has assumed responsibility for the co-ordination of consulting activities with very little success. Since the proposed structural rearrangement has not been implemented the centre lacks the requisite staff to launch a vigorous campaign to win consulting jobs. This has been attributed to the lack of interest by faculty in a centralised body to take charge of consulting.

The UCC consultancy unit, though seemingly vibrant, also has problems of not vigorously scouting for consulting jobs and marketing itself effectively.

5.3.2.2 Teaching/Research Based Income Generation Activities.

In order to execute their teaching and research functions academic activities in the various universities are organised according to areas of specialisation into faculties, schools, colleges and institutes all of comparable status headed by deans or directors. In order to support their academic activities some of these sections have established certain facilities . As the need for academic institutions to generate supplementary income arose some of these facilities which happened to possess the opportunities have been used to earn extra income. Such units have therefore assumed two roles i.e. supporting academic activities on one hand and earning income on the other. Although it is natural to assume that their former function is supreme the attraction of the latter function cannot be overlooked especially in an era where the generation of supplemental income is rapidly asserting itself in academia.

There is a very wide variation in the faculty based activities that are being used to generate income in Ghanaian universities. They may vary from teaching and research facilities such as laboratories, workshops, demonstration and research farms, to by-products of research, equipment for teaching and research purposes, and the organisation of extra-mural programmes etc.

5.3.2.2.1 Teaching/Research Based Income Generation Activities - University of Ghana (UG).

The UG has a number of these units which have some potentials of generating income. They include the Kade Research Station, the Katamanso Commercial Farm, and the Agricultural Research Station at Kpong.

1. The Kade Research Station

The Kade research station was established in 1958 with financial assistance from the then Cocoa Marketing Board (CMB) of Ghana to undertake research mainly into tree crops of the forest zone such as cocoa, cola, citrus, oil palm etc.

The station has 150 acres of citrus, 130 acres of rubber, 80 acres of cocoa, 20 acres of cola-nuts and 10 acres of mangoes under cultivation. Sheep rearing was introduced as an attempt to integrate ruminants into perennial crop cultivation since the sheep could help to control weeds and fertilise the soil with their droppings as well. The station also has a nursery to support its demonstration and extension activities.

Insufficient funding for the operation and maintenance of the various farms has necessitated the commercialisation of some of the operations of the station to generate supplemental income. The general practise is that after the completion of a stage of research the farms are commercialised to generate income for their own maintenance. These farms sometimes offer opportunities for researchers at other stages of the crops. This system of alternating between research and commercialisation makes it extremely difficult to determine when a farm is exclusively available for research and when it is available for commercial operations. It is however being maintained because it will be uneconomical if commercialisation is not done along side research. Devoting the farms mainly for research without commercialisation is considered a waste of resources. Hence the convenient marriage between research and commercialisation. Naturally the level of income generated with this system is expected to be lower than the case will be under full scale commercialisation. However the system is more sustainable than maintaining the farm solely for research purposes without commercialisation. Commercialisation in this system is not necessarily profit motivated. It is motivated by the need for sustainability by reducing waist and making savings for either reinvestment, promotion, or maintenance to ensure continuity of research. Under these circumstances academia may have very little reservations towards income generation.

The station has a management board with the dean of the faculty of Agriculture as the head. It is headed by a research fellow who reports directly to the board. However the

day to day supervision of the commercial activities of the station is done by a farm manager who in turn reports to the research fellow. The farm manger makes all decisions on the commercial activities of the farm subject to approval by the research fellow, but major policy decisions require further approval by the board. The managerial arrangement here emphasises the priority of research whilst making room for the necessary flexibility required to achieve results in income generation efforts.

A market analysis of the station indicates that there is a good market for the products of the station. A competition between industrial customers (mainly fruit canning industries such as ASTEK Ltd etc.) and fresh fruit vendors (commonly referred to as market women) has compelled the station to resort to a bidding system of selling their citrus products. The station's rubber production has both local and international demand. An export company buys para-rubber from the station for export to Taiwan. The growing demand for fruits has created a demand for seedlings from it's nursery as many farmers are shifting to the fruit crop cultivation. There is also a growing demand for all other crops produced by the station such as cola nuts, cocoa, mangoes and plantain.

The revenue figures of the station from 1987 to 1993 presented in table 12 below indicate that it has great potential of earning sufficient income for the station and the university at large. It only requires a policy action as the management appears quite capable and very suitable. The research activity presently has more priority than the commercial activities. If a policy of rating both activities equally for instance is to be adopted then the small hindrances of the station's commercialisation such as labour and equipment shortages could easily be solved to enable it maximise its commercialisation efforts particularly in the nursery.

Table 13. Revenue of Research Station 1887-1993.

Year	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**
Revenue (000 cedis)	12 186	15 263	23 238	34 641	27 742	25 380	53 829

Source: Source: Ministry of Education - Projects Mgt Unit, Accra.

2. The Katamanso Commercial Farm

The farm at Katamanso was established as a separate commercial wing of the UG's Agricultural Research Station at Nungua. Animals that were no longer useful for research purposes were transferred to the farm to be bred for commercial purposes. A credit facility was made available to the farm from the Agricultural Development Bank for the purchase of the necessary equipment for its operation.

Although the farm is a commercial one it is headed by a research fellow with a farm manager and other research officers. The farm manager reports to the research officer. The level of autonomy of the farm is left to the discretion of the research fellows as it is not clearly defined. The income generated from the farm is used for the expansion of existing facilities. A comparison of the installed capacity and the 1994 production levels (table 14 below) shows that the farm is operating far below capacity despite its potential and the demand for its products.

Table14. Installed Capacity and Operating Capacity as at December, 1994.

	Layers/ Annum	Broilers/ annum	Eggs Crates/day	Sheep/ annum	Beef/ annum
Installed Capacity	10 000	14 000	200	500	200
Operating capacity	2 000	4 800	40	150	120

Source: Ministry of Education, Projects Management Unit, Accra

The summary of the financial results of the farm from 1987 to 1990 (table 15 below) indicates that although it is supposed to be a commercial venture it continues to operate at a loss. Even without accounting for the payment of staff it is making losses. This is a clear indication that the farm has serious managerial problems and is therefore not in a position to generate income for the university. At this present state it is rather a cost generating unit for the university.

Table 15. Summary of Financial Reports 1987 - 1990 in millions of cedis.

Year	1987	1988	1989	1990
Sales	8.521	7.986	9.251	7.005
Cost of Sales	4.293	4.838	5.632	2.753
Selling & Admin. Exp.	4.627	6.396	9.311	8.930
Net Profit (Loss)	(0.399)	(3.249)	(5.692)	(4.678)

Source: Ministry of Education, Projects Management Unit, Accra.

The erratic nature of the cost and revenues of the farm is an indication of lack of proper management, financial control and planning and the adoption of little or no market principles resulting in poor pricing policy. Although the farm is a commercial unit it is staffed and managed like a research unit. The need for a leadership and staff with entrepreneurial qualities in such a commercial unit cannot be overemphasised as the results in this case clearly proves the point. If the sales and administrative cost (excluding the wages of the employees) continue to exceed sales revenue then it can not survive as a commercial venture.

The inability of the university to staff and run the commercial farm based on business principles is a clear indication of the need for a drastic change in the managerial culture in higher education if income generation is to be sustained as a means of addressing the perennial financial crisis. This is an indication that without an institutional transformation to address these issues income generation will not yield any significant financial resources for the university.

3. The Agricultural Research Station - Kpong

The Kpong Agricultural Station was established as a pilot project by the United Nations Food and Agriculture Organisation (FAO) in 1954 to conduct research into soil management under mechanisation and irrigation. It was subsequently transferred to the ministry of agriculture which also passed it on to the University of Ghana in 1958. Starting with research into a variety of crops like sugar cane, rice and green legumes the station widened its scope to include beef cattle research in 1968.

It is managed by a Senior Research Officer assisted by four other research officers, two farm managers and three Assistant Farm Managers. It also has a Management Board comprising of senior lecturers including the Dean of the Faculty of Agriculture.

Income generation at the station has been erratic. Between 1970 - 1978 the station was engaged in commercial operations but the research activities drained resources from the commercial activities. In 1986/87 a loan was obtained from the university to revive the commercial activities but the same problem continued until the attempt was again abandoned for lack working capital. Even though the station now concentrates on research the output here has been very minimal since the beginning of the nineties.

Although the station is said to have great potentials in the production and milling of rice, and the commercial production of beef cattle it has been unable to exploit these opportunities to generate any significant income as illustrated in table 16 below.

Table 16. Income & Expenditure of UG Agricultural Station at Kpong (in million cedis)

Year	1987	1988	1990	1991
Expenditure	22.427	28.206	47.091	62.821
Government Grant	17.836	34.951	44.986	53.869
Income Generated	1.223	1.100	2.938	4.090
% of Total Income	6.42	3.05	6.13	7.06
% of Total Expenditure	5.45	3.90	6.24	6.51
Surplus (Deficit)	(3.368)	7.441	0.833	(4.863)

Source: Ministry of Education, Projects Management Unit, Accra.

5.3.2.2.2 Teaching/Research Based Income Generation Activities at UCC

At the UCC faculty based units that have income generation potentials include the Science Workshop, the Electronic Unit, and the University Farm.

1. The Science Workshop

The Science Workshop is an integral service unit of the science faculty of the University of Cape Coast comprising of four different sections as follows.

i. A machine workshop for gear cutting, metal shaping, screw thread cutting, key cutting, drilling and boring, hydraulic pressing and shaft straitening.
ii. A welding and fabrication section for electric and oxy-acetylene gas wielding and cutting, bending and rolling of sheet metal for various metal constructions.
iii. A carpentry section for the construction of wooden equipment for the various laboratories; and
iv. An office machine section for the repair and maintenance of office machines such as typewriters, duplicating and adding machines, wall clocks and weighing scales.

Although the workshop was set up to serve the needs of the faculty of science, its services now extends to cover the entire university community and even beyond. Private work for the university staff and other customers outside the university are also done at a fee but the proceeds from the commercial operations are paid to the general university accounts. Since the workshop does not keep any financial accounts the volume of these commercial operations is unknown. However it can be concluded that so far as the sections are not directly encouraged to generate income the volume of this activity is very likely to be limited.

2. The Electronics Unit

The unit was set up as an integral part of the Physics department mainly as a teaching illustration unit and to repair and maintain laboratory equipment. It now undertakes repair work of household electronic devices for students and staff of the university. The operations of the unit are supervised by a senior technician who reports directly to the head of the physics department.

Due to a very strong competition from several electronic repair shops in the city the section can only increase its income generation by diversifying into the repair of a wider range of equipment in order to extend its market beyond the university community.

3. The University of Cape Coast Farm

The university farm has undergone several changes since its establishment. It was started as a purely commercial venture with a motive to provide part of the food requirements of the university community. After the establishment of the faculty of agriculture at the university to train teachers in agriculture for the secondary schools in 1975 the farm was transferred to the faculty to support its teaching and research activities in 1989. It is headed by a farm manager with two assistants who report to the dean of the faculty of Agriculture.

With the inception of the higher educational reforms and especially in response to government's policy of encouraging universities to generate their own income, the commercial operations of the farm are being revisited. Consequently the objectives of the farm has now been extended from research and teaching to cover commercial production as a demonstration to students and farmers.

In response to the latter the farm now undertakes meat processing, poultry and egg production and research support services on commercial basis. Since the farm does not keep a separate financial account of its activities it is not possible to assess the significance of income generated.

5.3.2.2.3 Teaching/Research Based Income Generation Activities at UCEW

The University College of Education of Winneba (UCEW) benefited from a donation of equipment by the Projects Management Unit (PMU) of the Ministry of Education (MOE) as an encouragement to integrate income generation into its normal activities. Hence there are now four income generating units comprising the Students Dance Band, the Art Department's Production Unit, the Home Science Department's Production Unit and the University Farm. The University has also formed an income generation management committee to oversee its income generation activities.

1. The Students Dance Band.

Part of the donation of equipment from the PMU in support of income generation comprised of musical equipment which were given to the music department to form a band in 1992 which has since become a major income generating unit. The band is not able to extend its operations to other cities in the country mainly due to transportation problems. Meanwhile a mechanism has been put in place for the sharing of the proceeds. The university takes 50% whilst the rest is shared among the organisers and the other members of the band. With such a mechanism to encourage participation the band stands a chance of generating income for the institution as well as members without any adverse effects on academic activities. The participants even learn and improve their skills through practising as members of the band. It therefore serves as an opportunity for students to improve their learning and practical experience whilst earning some income. This is one example of an effective mechanism whereby income generation has been effectively integrated into academic work.

2. Home Science Department.

The production unit of the home science department comprises of a snack bar and a cloth making section. At the bar fast foods, snacks and drinks are sold to the university community as well as to the general public. The cloth making section offers training opportunities for youths in dress making at a fee. In 1995 there were seventeen trainees who had paid an amount of 60, 000 cedis each as course fee for the entire duration of the training period of three years. The section makes dresses for school children, suits, garments, choir robes and other clothing which they sell to the general public.

Both sections face strong competition from private sector providers of similar activities. Unfortunately the inability of management to adopt effective marketing strategies to face up to the competition is making them loose patronage. One of such weaknesses is their inability to keep proper financial records.

3. The Art Department's Production Unit.

The Production activities of the Art Department comprise of ceramics and textile making. Upon the realisation that the products of the teaching activities in the department could be a source of income to both the department and the university in general the department made constructive efforts to integrate commercial production or income generation into its academic programme. In order to boost the commercial production a professional potter has been hired. Lecturers supervise and aid students in both their academic and commercial production activities. The commercial division is headed by a lecturer who reports to the Income Generation Management Committee of the university. The products of the commercial unit which include ceramics products, "batik" and "tyre & dye" have a very high demand. The Ghana Education Service and other ministries depend on the unit for the supply of woven curtains and other materials. Although there are no financial data for the assessment of its financial performance it can be concluded that the arrangement is another effective way of integrating academic work with income generation without any adverse effects.

4. The University Farm.

Since the establishment of the farm in 1963 it has been used for demonstration purposes at the various institutions through which it has passed from the ideological Institute to the Specialist Training College. Since the establishment of the University in 1994, the farm has been serving as a demonstration and training project with commercial production as an integral part supplying crop and animal products to the university community.

The farm manager with an assistant each for animal and crop production reports to the registrar. The entire staff of the farm comprising of 25 workers are paid by the university. The commercial activities include the raising of pigs, poultry, cattle, grass cutters, and a variety of crops such as maize, rice, cow pea and soya beans. In order to expand its income generating activities the farm has acquired more land to go into large scale commercial production of rice, palm oil and coconut production. As part of the aid from the Projects Management Unit in support of income generation the farm received a

tractor in 1989. This tractor is being hired out to the general public including staff to earn income.

Financially the farm is administered like any other department of the university with limited allocation of specific amounts at a time. Such restrictions do not promote flexibility which affects the commercial operations of the farm on business principles. Despite this limitation financial data from August to December 1994 indicate that the farm can make profits or at least break even if it is to pay for all its staff. Within this period the farm made a total revenue of 4.5 million cedis from its sales and a stock of birds valued at five (5) million cedis with a production and sales cost of 4.9 million cedis. Since the farm is at the same time being used for teaching and demonstration it must be recognised that this service is also part of its unvalued production. Thus the farm helps to earn income while supporting academic work.

5.3.2.2.4 Faculty Based Income Generation Activities - UST

Almost every teaching and research unit at the UST is engaged in income generation to supplement funding allocation from government. Table 17 below summarises the activities in the various faculties and research units that generate income. From the list below one may hastily conclude that income generation is very extensive at the UST and therefore the income generated should be significant. It may also be expected that since the university has been involved with income generation for over a decade now the attitude and volume or significance of the income generated should portray a completely transformed organisation. As the analyses in the next chapter will reveal this is unfortunately not the case.

Table 17. Summary of Faculty Based Income Generation Activities at UST

Faculty/Departments	Income Generating Unit	Activities/Products/Services
Agriculture		
Agric. Econ. & Farm Mgt.	Potential	Consulting
Animal Science	Animal/Poultry Farms & Hatchery	Poultry, Hatchery, Meat, etc.
Crop Science	Production Unit (Farm)	Crop Yields, seedlings, Latex
Horticulture	Production Unit (Farm)	Seedlings, Wreaths, flowers, Landscaping materials, etc.
College of Art		
Art Education	Potential	Postgraduate Research Output
Industrial Art	Sewing & Ceramic Units	Textiles & Ceramic Products
Painting, Sculpture, & Rural Art & Industry	Production Unit	Beads, Kente Strips, Book-marks, Batik, Tie/Dye materials
Book Industry	Publication Unit	Publishing & Typesetting
School of Engineering		
Agricultural Engineering	Commercial Production Unit	Farm implements, spare parts
Chemical Engineering	Potential	Consulting, Research products
Civil Engineering	Network Training Centre	Consulting, Training
Geodetic Engineering	Production Unit	Consulting Services
Mechanical Engineering	Machine Shop, Well Pump & Air-condition & Refrigeration. Units	Hand pumps, Gears, Air-condition & Refrigeration.
Electrical/Electronic Eng.	Production Unit	Production & installation of traffic lights, equipment repair, consulting.
Environ. & Dev. Studies	Faculty Projects Office	Declining income generation
Architecture	Departmental Projects Office	Architectural designing/Consulting
Building Technology	Faculty Projects Office	Consulting Services
Planning	Production Unit	Training, Consulting
Housing & Planning Res.	Potential	Consulting, Workshop Products
Pharmacy	Faculty Production Unit	Consulting, Product Dev. & Sales
Sciences		
Chemistry	Production Unit	Chemical analyses, Repair services
Computer Science	Production Unit	Short Courses, Systems Development
Physics	SSLAPU, Optometry Unit Training, System development	School Lab equipment, Optic products.
Medical Science	Production Unit, Potential in Labs	Embalming cadavers
Social Science	Limited potentials in language Dept	Translations, Recordings, Equipment Leasing
Mining & Mineral Engineering		
Kumasi School of Mines	Departmental Production Units	Consulting Services
Tarkwa School of Mines	Laboratories, Machine & Welding Shops.	Short Courses, Lab. Analyses and & Consulting for Mining Companies, Repair and fabrication Services
Renewable Natural Resources	Fish Ponds	Fish Fingerlings
Library	Reprographic Unit, Production Unit	Photographic, Photocopying, E-mail, CD-ROM Literature Search Services
Dairy/Beef Cattle Res. Station		Milk & Milk Products,
Anwomasu Commercial Farm		Palm Fruits & Seedlings

Source: Author's compilation from UST Annual Reports

CHAPTER SIX
INCOME GENERATION AND AGRICULTURAL HIGHER EDUCATION AT THE UNIVERSITY OF SCIENCE AND TECHNOLOGY (UST)

6.1 Historical Development and Infrastructure of UST

The University of Science & Technology (UST) was established by an Act of Parliament on April 22, 1961, officially inaugurated on November 29, 1961 and started awarding degrees in June, 1964. Its main purpose is to provide higher education through teaching, research and dissemination of knowledge in science and technology according to the national needs (Tamakloe, 1995: 14).

It is situated on a ten-square kilometre piece of undulating land about seven kilometres away from Kumasi, the second largest city in Ghana. It has a "self-contained" campus with academic and residential accommodation for both lecturers and students with the necessary complementary public facilities like banks, shopping or commercial area, a hospital, basic schools, churches and recreational facilities. Until 1998 residential accommodation with utility services such as water, electricity and sanitation have been provided free of charge to students. Rates for staff residential accommodation are subsidised as an incentive to attract and retain qualified staff. It is however not possible for the university to provide accommodation for the increasing number of its staff and students. In 1992 for example, about 63 percent of academic staff, 90 percent of senior administrative staff, and 97 percent of junior staff were provided with university accommodation. With six halls of residence the UST managed to accommodate about 88 percent of the students officially.

The central part of the campus is occupied by the students' halls of residence, the main university library, the great hall with a seating capacity of about 2,000 and an office block for the central administration.

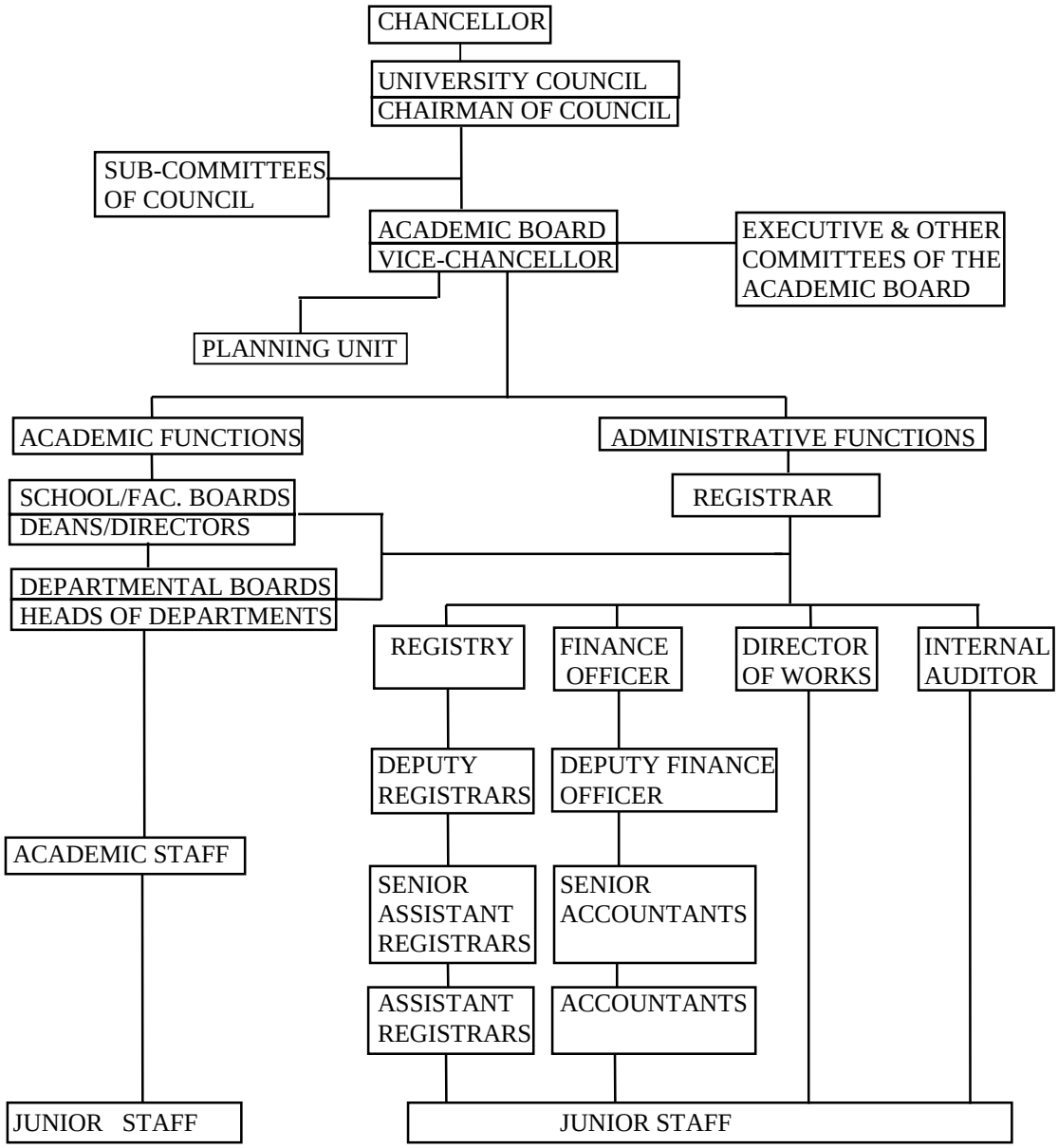
6.2 Organisational Structure

In order to execute its functions the university's activities are organised into academic and non-academic. The academic activities, involving teaching, research and dissemination of knowledge are performed by five faculties (Agriculture, Environmental & Development Studies, Pharmacy, Science and Social Science), two schools (Engineering and Medical Sciences), two institutes (Mining & Mineral Engineering and Renewable Natural Resources) and one College of Art. All ten are of comparable status headed by deans with a total of fifty constituent departments also administered by heads. Other academic units include the Board of Post Graduate Studies, Bureau of Integrated Rural Development (BIRD), Technology Consultancy Centre (TCC), Centre for Cultural Studies, Institute for Technical Education (ITE) and the Dairy and Beef Cattle Research Station at Boadi.

Departmental and faculty boards comprising of senior members serve as governing bodies at each level. The dean and all heads of departments in a faculty are responsible to the faculty board which in turn is responsible to the academic board. The academic board is the highest decision making body on academic as well as non-academic matters of the university subject to approval by the university council. It has eight sub-committees comprising of the Executive, Budgetary, Residence, Library, Books & Publications, Appointments & Promotions, Research & Conferences, and Scholarships.

The non-academic function of the university, generally referred to as administration, is headed by the Registrar. It is subdivided into the registry, development office, internal audit and the finance office. Figure 6 below illustrates the organisational structure of the university.

Fig. 6. Organisational Structure Of UST



Source: Adopted from Tamakloe (1995, 23) with modifications

6.2.1 Financial Administrative Structures

The finance section is headed by the finance officer. As chief accounting officer of the university, according to Tamakloe (1995, 38), the finance officer is responsible to Council through the vice-chancellor and performs the following functions.

a. Ensuring that funds and properties of the university are used in accordance with the statutes and regulations laid down by Council and that no moneys are spent without proper authority.
b. Ensuring the safe custody and proper disposition of all university funds and assets.
c. Maintaining proper records of income and expenditure, assets and liabilities and reporting quarterly to the Vice-chancellor.
d. Exercising professional supervision over all accounting staff of the university and ensuring that the accounts of the university are drawn up in accordance with the University's Acts and Statutes.

The Budget Committee of the Academic Board under the chairmanship of the Vice-chancellor is assigned the duty of taking appropriate measures against mismanagement and wastage of scarce resources. As chairman of the Budgetary Committee, the vice-chancellor allocates votes to the various faculties, schools, institutes and colleges who then in turn reallocate such funds to the various departments and notify the finance officer. Deans/directors and heads of departments exercise control over such votes to take care of expenditures under office expenses, departmental supplies, transport expenses, maintenance and replacement of equipment and other approved departmental expenditure. However votes for the payment of salaries and other allowances (personal emoluments) are under the direct control of the finance officer.

6.2.2 Decentralisation of Financial Administration

Since 1968 the UST has progressed from tolerance of income generation to encouragement. Currently "it is the policy of the university to generate income from its operations as much as situations will permit and that units which generate income shall keep the income generated as supplement to the grants received from government and allocated to units. To this end the university encourages its units to use their facilities and personnel to generate income without any detriment to the main duties of teaching and research" (UST Budget Estimates, 1997: 6).

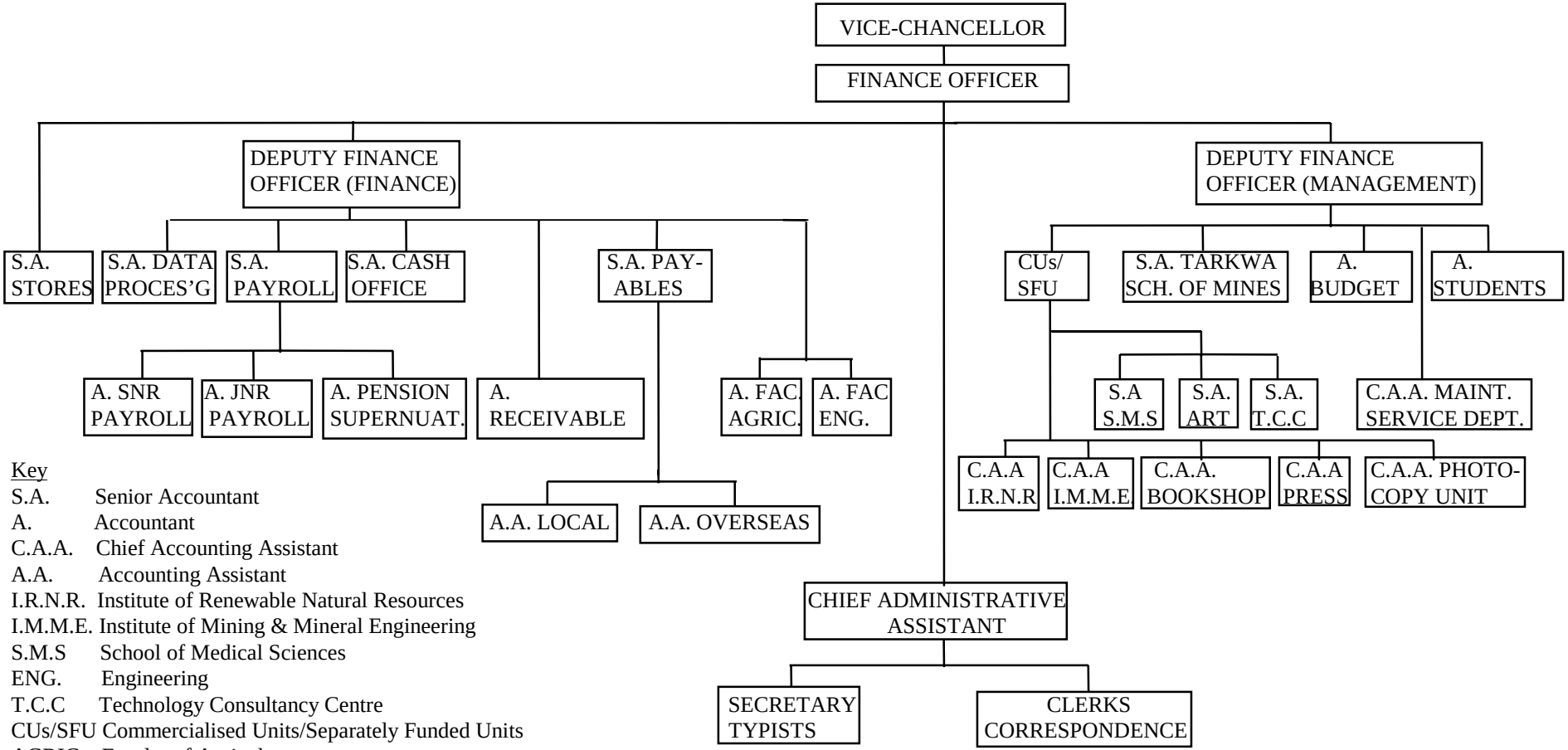
In pursuit of this policy a unique system of financial administration has developed over the years. This system involves the devolution of financial control to faculties and units so as to promote responsibility, self-reliance and accountability in the control and management of their own recurrent budgets on goods and services. It is being implemented by the granting of self accounting status to faculties systematically. Accounting officers are assigned to such faculties and units to work in close collaboration with the heads in the disbursement of funds allocated to them including the management of revenues from income generation activities. The accounting officers report to the finance officer.

This self-accounting system facilitates access to internally generated income because it makes it possible for units to avoid the bureaucracy involved when such accounts are centrally managed. It is said to boost income generation efforts because of the inherent flexibility. Despite the risk of financial mismanagement the system is being maintained and even expanded because it promotes initiative in income generation, cost control and sound financial management. There are now over ten units that are self accounting comprising of faculties, research units and commercialised units but the ultimate goal is for every faculty to be self-accounting. To ensure efficient utilisation of resources these structures could easily be transformed into cost centres. The emerging structure of the financial administration is illustrated in fig. 7 below.

6.3 The Significance Of Income Generation At The Institutional Level.

For the implementation of the higher educational reform programme, the Ministry of Education in collaboration with the World Bank set a performance target for internally generated incomes in the universities at ten percent of total recurrent income (UST Recurrent Budget, 1995: 1). In a situation like the UST where students do not pay tuition fees achieving a target of ten percent may be exceptional although this target may not even be significant enough to mitigate the financial crisis under consideration. This assertion can be supported by the observation made by Warner & Leonard's (1992, 2) that whilst five percent would be realistic, ten percent would be

Fig.7. Organisational Structure of Financial Administration



Key
S.A. Senior Accountant
A. Accountant
C.A.A. Chief Accounting Assistant
A.A. Accounting Assistant
I.R.N.R. Institute of Renewable Natural Resources
I.M.M.E. Institute of Mining & Mineral Engineering
S.M.S School of Medical Sciences
ENG. Engineering
T.C.C Technology Consultancy Centre
CUs/SFU Commercialised Units/Separately Funded Units
AGRIC Faculty of Agriculture

Source: Adopted from Tamakloe (1995, 24) and Modified

rare especially if revenue from tuition fees is excluded. The implication therefore is that income generation excluding tuition revenue will no where get closer to government sources of income and so stand no chance of being a significant alternative to government funding. The foregone conclusion not withstanding the UST has a mission to generate up to 50 percent of its recurrent budget internally (Tamakloe, 1995: 66). Such a target could be very significant in solving the university's financial crisis if achieved.

The university derives its internally generated income from fees, investments and business operations. Income from fees comprise of charges levied on students for equipment, examination, application & admission etc. and fees paid by overseas students for application & admissions, tuition and accommodation. Investment income is derived from staff accommodation and interest from bank deposits. Income is also derived from a wide variety of business operations. These include production units, consulting, guest houses, a hospital, basic schools, swimming pool, and profits from commercialised units.

The business operations of the university have been classified into three main categories. They are production units, commercialised units and service units. Limited liability companies have been tried without success. Two such companies, Kwamotec Limited and Techchic Limited, incorporated by the university in 1986 from the university's Research and Development activities were liquidated in 1993. Whilst Kwamotech, a soap manufacturing company suffered from gross mismanagement, Techchic (a poultry venture) Ltd was unable to take off due to the inability of the university to attract suitable partners (URC, 1987: 302).

Production Units are mainly faculty based and have developed in response to the encouragement given to the faculties and departments to commercialise their research and also use their resources and facilities to generate income to supplement grants allocated to them from government. A summary of these activities have been presented in table 16 above. A special arrangement for remunerating staff who participate in these activities as an incentive is in operation.

Commercialised Units are service units which were established to provide essential support services for the university and are now self-financing. They are expected to generate adequate income to finance their operations whilst providing the university with the requisite services. Any profit resulting from these activities is paid to the university as income. These comprise the photocopy unit, the printing press, the book shop, the manufacturing unit and the construction unit whose activities have been described above.

Service units such as the hospital, schools, swimming pool etc. which are not financially self supporting are also encouraged to generate income by extending their services to cover the general public. As an incentive they are entitled to use the income generated to supplement their share of government grants.

In spite of this incentive and the long tradition of income generation at UST the overall income generated from these activities remain insignificant. From 1992 - 1997, government was able to provide an average of only 58 percent of the estimated annual recurrent financial requirements of the university (refer table 18 below). This implies that the university has to generate the remaining of 42 percent (average) in order to meet its full financial requirement. Unfortunately the total annual internally generated income accounted for just an average of 4.7 percent of the estimated total requirement.

Table 18. Income Generated as Percentage of Recurrent Estimated Requirement.

	Estimated Requirement	Government Allocation		Internally Generated Income	
Year	Gov't Recurrent Grant	Amount	% of Estimate	Amount	% Estimate
1992	4 687 960 752	3616961051	77	204903518	4.4
1993	10 311 653 739	3708237344	36	297951291	2.9
1994	10 862 818 981	5576053656	50	423381487	3.9
1995	9 238 257 519	5963140000	65	488000000	4.8
1996	15 050 695 051	9051000000	60	569000000	3.8
1997	23 448 683 926	14261000000	60	1084000000	4.6
		Average	58	Average	4.7

Source: UST Finance Office

This implies that the UST is not able to generate sufficient income to adequately supplement its grant from government. Even if the request contain some element of

over estimation further evidence in table 19 below confirms the insignificance of income generation as compared to overall income. During the period for which data are available i.e. from 1978 to 1996 the overall contribution of income generation activities to the university's annual recurrent income reached its highest level of 7.4 percent in 1993. This falls short of the university's own target of 50 percent and the target of ten percent noted by Warner and Leonard (1992, 2) although it includes income from fees.

Table 19. Proportion of Annual Recurrent Income Generated at UST 1978 - 1996.

Year	Income Generated		Government Grants		Total Income
	Amount	%	Amount	%	
1978/79	2 436 278	5.9	38 764 230	94.1	41 200 508
1979/80	2 208 245	5.8	35 924 388	94.2	38 132 633
1980/81	4 475 816	6.6	63 292 655	93.4	67 768 471
1981/82	1 119 819	1.7	65 021 247	98.3	66 141 066
1983	1 253 106	1.8	70 218 988	98.2	71 472 094
1984	4 845 456	3.7	127 090 801	96.3	131 936 257
1985	10 081 110	2.4	411 976 595	97.6	422 057 705
1986	32 758 410	5.3	583 134 080	94.7	615 892 490
1987	29 948 172	3.3	890 837 150	96.7	920 785 322
1988	27 514 432	2.8	961 973 135	97.2	989 487 567
1989	81 902 691	4.2	1 878 125 924	95.8	1 960 028 615
1990	82 715 063	4.0	1 990 284 937	96.0	2 073 000 000
1991	108 012 895	4.2	2 461 987 105	95.8	2 570 000 000
1992	204 905 518	5.4	3 616 959 051	94.6	3 821 864 569
1993	297 951 219	7.4	3 708 237 416	92.6	4 006 188 635
1994	433 381 487	7.2	5 576 053 656	92.8	6 009 435 143
1995	451 114 471	5.4	7 836 088 238	94.6	8 287 202 709
1996	569 000 000	4.3	12 815 497 107	95.7	13 384 497 107

Source: Compiled from Tamakloe (1995, 47) and UST Recurrent Budget Reports.

Table 20 below shows the detail distribution of income generated from the various sources by UST. It can be deduced from the distribution that the general trend is rather inconsistent. This inconsistency may be partly attributed to very significant increases in government allocations to meet demands for salary increases due to inflationary pressures.

Table 20. Proportion Of Income Generated According To Activities 1992 - 1996.

Item/% of Total Income	1992	1993	1994	1995	1996
1. Recurrent Grant	94.64	92.56	92.79	94.56	96.04
2. Student Fees					
i. Applications & Admission	0.44	0.39	0.57	0.87	0.42
ii. Foreign Student Fees	-	0.20	0.71	0.73	0.56
3. Investment Income					
i. Staff Accommodation	1.87	2.49	1.66	1.29	0.76
ii. Interest on Bank Deposits	0.02	0.04	0.04	0.04	0.03
4. Business Operations					2.19
i. Production Units/Consultancy	1.16	1.48	1.45	0	
ii. Guest Houses	0.08	0.23	0.08	0.11	
iii. University Schools	0.45	0.91	1.69	1.24	
iv. University Hospital	0.86	0.88	0.99	1.14	
v. Swimming Pool	0.14	0.07	0.02	0.0	
vi. Profit from Commercialised Units	0.34	0.75	0.0		
Sub-total (2-4) Income Generated	5.36	7.44	7.21	5.42	3.96
Total	100	100	100	99.98	100

Source: Compiled From UST Recurrent Budget Reports

The decline in the proportion of institutional income generated from 1994 to 1996 can be attributed to the policy of financial decentralisation whereby self-accounting units keep their income generated. Hence the zero recording for production units for 1995 in table 20 above. Although the contribution from the production units did not reflect in the university's main budget as income since 1995, it is not entirely lost because it has been transferred to the various faculties/departments. The distribution of the production unit account to faculties and departments now makes it difficult to ascertain the proportion of income generated by these faculty based units. Consequently the income that is generated internally and made available to the institution still does not form a significant portion of its income and from the available data the target of ten percent has not been reached. This revelation, whilst confirming the observations made earlier on in this section, indicates that the target set by the Ministry of Education is more realistic than the university's own target of 50 percent. Thus although the UST is generally proclaimed as a successful pioneer in income generation it's achievement falls short of that of the University of Ghana which is reported to have earned 20 percent in 1989 and 1990 (Blair, 1992: 21).

In pursuance of a policy of sharing the cost of higher education in Ghana between government and the beneficiaries (i.e. students), it was scheduled for students to start

paying rent for accommodation from 1993/94 academic year. Due to the sensitivity of this policy and the violent resistance by students the policy was delayed until 1998. Revenue from these rental charges will significantly raise UST's investment income to propel the proportion of its recurrent income generated internally to over ten percent mark from its 1,877 student rooms. Since the university is blessed with land, investment in the development of student accommodation could be an important source of income for the university in the future.

6.4 Teaching and Research Based Income Generation

Teaching and Research based income generation activities, generally referred to as production units, are widely dispersed and difficult to monitor centrally. As illustrated in table 16 above they can be found in almost every faculty. This is in response to the challenge thrown to them by the university to use their own initiatives to generate income and use such income to supplement their financial allocations from government. The nature of these responses vary from department to department according to their various peculiarities. Whilst some set up structures like projects offices, others appoint committees to study their income generation potentials and advice them on the strategies to adopt. In all these endeavours the departments are guided by the university's principle of pursuing income generation in such a way that the normal academic activities are not adversely affected.

At UST the Faculty of Agriculture happens to be one of the faculties that generate substantial revenue. If there is any implications of income generation for higher education in general and agricultural higher education in particular the faculty of agriculture here may offer the best case of determining such implications because of the level of involvement of the faculty in these activities.

6.4.1 Faculty Profile.

The Faculty of Agriculture at UST consists of four academic departments namely: Agricultural Economics and Farm Management, Animal Science, Crop Science and Horticulture. The Department of Agricultural Engineering, which was formerly part of

the faculty has been transferred to the School of Engineering (UST, 1995: 1). The faculty offers the following academic programmes which are generally oriented towards tropical agriculture.

i. A two-year Diploma in Agricultural Extension & Farm Management
ii. A two-year Diploma in Horticulture
iii. A four-year B.Sc. Degree in Agriculture
iv. Postgraduate programmes leading to M.Sc. MPhil and PhD degrees in several fields of specialisation.

6.4.2 Significance of Income Generation at the Faculty of Agriculture.

In order to support its teaching and research activities the faculty has a number of farms and other facilities which are now generating income as well. The Department of Animal Science has a poultry farm, a livestock farm and a hatchery with a capacity of 19,000 eggs. The Department of Crop Science has an 84 acre farm for various crops whilst the Department of Horticulture also has a total of 46 acres of horticultural farms.

The Department of Agricultural Economics and Farm Management has no farm or facility which it can use to generate income. It is said to have a potential to generate income through consulting in several areas including agricultural policy, marketing, project appraisals, extension, farm management and rural development.

The Department of Animal Science generates the highest income in the faculty from its farms and hatchery. At the livestock section cattle, sheep and pigs are raised and used for research and teaching purposes and the resulting products such as milk, meat and meat products as well as breeding stocks are sold to generate income. Similarly the poultry section in the execution of its normal academic functions produces birds and eggs for sale. It also uses the hatchery for custom-hatching of eggs for farmers.

The department of crop science generates its income from the sale of cocoa and coffee beans, seedlings of various crops, palm fruits, latex from para-rubber, cassava and cowpeas.

The department of horticulture raises seedlings and vegetative planting materials of citrus, mango, avocado pear etc. Apart from selling ornamental plant materials and vegetable seedlings the department also prepares wreaths, bouquets and cut flowers which are sold to generate income.

As may be deduced from table 21 below the animal science department generates significant income from its activities but due to the high cost of maintaining the farms its expenditure sometimes exceed its income levels. Income generation nevertheless plays a very important role in sustaining the department's academic activities.

Table 21. Income And Expenditure Pattern Of Income Generation Units 1992-1996

	Meat Sc.	**Hatchery**	**Sub-total Animal Sc.**	**Crop Sc.**	**Horticul-ture**	**Faculty Totals**
1992						
Income	3607155	5447370	9054525	1207315	1093615	11355455
Expenditure	3091600	6434162	9525762	1574	610850	10138186
Surplus/Deficit-	515555	-986792	-471237	1205741	482765	1217269
% of Income	14.3	-18.1	-5.0	99.9	44.1	10.7
1993						
Income	5513360	15600445	21113805	495790	1117300	22726895
Expenditure	4283400	13580163	17863563	24000	264965	17152528
Surplus/Deficit-	1229960	2020282	3250242	471790	852335	5574367
% of Income	22.3	13	15.4	95.2	76.3	24.5
1994						
Income	1442900	25282240	26725140	1381000	1835540	29941654
Expenditure	1430000	24461765	25891765	140000	4154750	30186515
Surplus/Deficit-	12900	820475	833375	1241000	-2219210	-1010000
% of Income	0.1	3.2	3.1	89.9	-121	-3.4
1995						
Income	3659310	23379598	27038908	1204470	1662064	29905442
Expenditure	980000	8456967	9436967	144400	748802	10330169
Surplus/Deficit-	2679310	14922631	17601941	1060070	923262	10330169
% of Income	73.2	63.8	65.1	88.0	55.5	34.5
1996						
Income	6169229	30448182	36617411	1006430	1653550	39277391
Expenditure	3481800	26464018	29945818	283000	80000	30308818
Surplus/Deficit-	2687429	3984164	6671593	723430	1573550	8968573
% of Income	43.6	13.1	18.2	71.9	95.2	22.8

Source: Finance Office Records

The income earned is used to purchase the necessary inputs such as feeds, drugs and chemicals for the maintenance of the farms. It is worth noting here that with or without income generation the farms and facilities have to be maintained for research and teaching purposes through the allocation of grants from government.

More often than not budget estimates (including operational cost of the farms) submitted to government for funding are subjected to arbitrary cuts. When such cuts occur the priority is to use the amounts released to pay for salaries first so that if nothing is left the maintenance of these academic facilities (farms, laboratories, etc.) suffer. In such instances faculties fall on income generated to maintain their facilities without which academic work will be adversely affected. Any surpluses accumulated are often used for rehabilitation or expansion of facilities and buildings. In 1994 for instance the department of animal science used its surplus income to complete the construction of two offices and the renovation of its buildings.

The other departments (Horticulture and Crop Science) have low maintenance cost and so are in a position to accumulate surpluses which they can use to undertake major developments or to support research activities. Unfortunately their sales volumes are rather small as compared to the department of animal science.

6.4.3 Faculty Participation in Income Generation Activities

Empirical data on faculty involvement and views on income generating activities were gathered by a combination of methods involving the administration of questionnaire, individual interviews and group discussions.

Among the income generating activities faculty generally prefer consulting and contract research. This is due to the fact that they are both recognised as academic work with prospects for career development in addition to the financial and other benefits associated with them. By participation in these activities faculty members can use the results for publications to enhance their career development efforts. Through contract research or collaborative research with external partners it is often possible to acquire basic equipment and resources which can be used for fundamental research as

well. There is also the opportunity for students (especially postgraduates) to participate in the execution of these activities and by so doing they acquire experience that enhances the relevance of the knowledge that they have acquired during their agricultural training programme.

As earlier on noted faculty members confirmed the inability of consulting to yield significant income for the institution due to the persistence of undisclosed consulting. This is being attributed to the fact that some faculty members consider the sharing of the proceeds (as stated in appendix 1) with the university as unfair.

The faculty's income generation activities, which are mainly farming related, are not considered by faculty to be detrimental to academic work once there is control in time management. The positive effects were enumerated as follows.

i. They boost the image of the faculty.
ii. Both faculty and students are enthusiastic because it provides money for the purchase of inputs to maintain farms for academic work.
iii. Promotes desirable business-like attitudes in both faculty and students.
iv. Both staff and students gain experience through their participation.
v. Provides an opportunity to translate theory into practice.
vi. Faculty have an interest because it facilitates teaching.

Despite all the above advantages commercialisation for the purpose of generating income is still not a priority among the activities of the faculty. Faculty insist that the maintenance of the farms is not for the sake of the income they generate but for the purpose of teaching and research. One head of department commented as follows;
"I often tell our young new lecturers that no matter how much income they help generate at the end of the day their promotion will rather depend on their research and publications".

The only motivation for income generation therefore is because the proceeds from the sales can be used for the maintenance of the farms so that normal academic work of teaching and research can proceed uninterrupted. There is thus a general believe that

it is more out of necessity than rationality that commercialisation within the faculty's academic activities are encouraged. Very few, if any at all, have the hope that the commercial activities within the faculty can generate substantial financial resources to cater for the entire cost of maintaining the faculty without government support.

6.4.4 Student Participation in Income Generation Activities.

Since academic endeavour involves both faculty and students it will be incomplete to assess the implications of income generation for higher education without an input from students. To accomplish this task a stratified sample comprising of students from each year group was selected and interviewed.

The responses from the students indicated that they were quite aware of the income generating activities in the faculty. Only eight percent of the respondents, all in first year, could not adequately describe them. As many as 70 percent indicated that they had participated in these activities. There is a wide variation in the nature of their participation. At the crop science and horticulture departments their participation include planting and harvesting of various crops like maize, cassava, etc., weeding, preparation of planting and nursing materials and vegetable cultivation. At the animal science department their participation range from clearing and cleaning of pens to feeding of animals and birds, dipping of animals as a method of pest control, collection of eggs etc. Other activities include the making of yoghurt, butter and cheese at the dairy and beef cattle research station.

Their purpose of participation is either to conduct experiments for their project work or to undertake practical training, both of which are in partial fulfilment for the award of their degrees. Thus their motives of participation are mainly academic as confirmed by as many as 92 percent of the respondents. Participation for the purpose of generating income for the department or themselves is not their primary motive.

It was clearly noted that students on their own engage in various types of income generating activities such as broadcasting on FM radio stations, petty trading, entertainment activities, photocopying etc. which may not necessarily be related to their studies whilst studying. Neither the institutions nor the student self governing

bodies are able to control or monitor these activities in such a way that they can benefit from the income derived from such activities. As such the potential for student activities to generate income for the institutions or their student governing bodies is very remote. The Association of Agricultural Students (referred to as GAAS with membership comprising mainly of students of the faculty) has acquired a farm to mobilise students to participate for the purpose of generating income for the association.

6.4.5 Implications of Income Generation for Academic Work - Students Views.

The perceptions of the respondents with regard to the effects of income generation on academic activities are presented in table 22 below. Whilst 28 percent consider income generation as having positive effects on academic work, 38 percent consider them as having no effect on academic work. From the reasons given in support of the latter view it can be deduced that the interpretation here is that the activities have no adverse effects on academic work. Only 16 percent said income generation adversely affected academic work and 18 percent did not state their effects.

Table 22. Effects of Income Generation on Academic Work - Students' Views

Effects	No.	Percent
Positive Effects on Academic Work	21	28
No Effects on Academic Work	28	38
Negative Effects on Academic Work	12	16
Don't Know	13	18
Total	74	100

Source: Survey Results

Those who considered income generation as having positive effects on academic work gave the following reasons in support of their views.

i. Income generation projects a good image of the university as not only a purely academic institution but also as an organisation capable of translating its research work into practical productive activities.

ii. Products can be used and are used for experiments.
iii. Offers opportunities for both lecturers and students to link theory with practice.
iv. It facilitates teaching and learning.
v. Supplies financial resources for the purchase of inputs to conduct research.
vi. Students have the opportunity to buy products like eggs, meat and yoghurt.
vii. Income generated is used to support academic work like organising field trips.
viii. Equips students with practical experience which raises their confidence level as agriculturist.
ix. Gives students an opportunity to see the reality of the subject in practice.
x. Research results are put into practice as a demonstration to the public through production.

Those who said income generation had negative effects on academic work gave the following reasons.

i. Students get tired after working on farms and this adversely affects their studies.
ii. Workers employed to help students spend their time on income generating activities and neglect students thus implying that preference is given to the former at the expense of academic work.
iii. Faculty and students' involvement in income generation often lead to irregular and late attendance at lectures.
iv. Time tables tend to be overloaded.
v. Time and energy consuming
vi. The desire for commercialisation puts a limitation on experiments which are considered unprofitable.

Those who gave reasons in support of the view that income generation does not affect academic work explained that the actual commercial activities like the sale of products etc. are carried out by paid employees. Also the activities themselves are programmed in such a way that they do not adversely affect academic programmes. Majority of the students (66%) claim that student participation can not be seen as a

distraction of studies because it is part of their academic responsibilities. Thus it may be concluded from the views stated by the students that on the whole the activities are acknowledged to promote learning and relevant training. The persistence of the view that these activities adversely affect academic work indicates that some students still prefer the theoretically oriented type of learning to the practically oriented one probably because of the manual labour involved. However since this group is in the minority it is possible to arrive at a compromise if the principles of organisational transformation such as the principle of multiple realities is adopted in the promotion of these activities.

6.5 Other University Farming Activities

UST has other farming activities that also generate income. Some of these activities which include the dairy and beef cattle research station at Boadi, the Anwomaso commercial farm and the fish farm are all independent from the Faculty of Agriculture. They are nonetheless considered here because they co-operate with the faculty for the enhancement of agricultural training and research. Proposals have been made for the integration of some of these activities like the dairy and beef cattle research station into the Faculty of Agriculture in order to enhance efficiency and proper co-ordination of activities.

6.5.1 UST Dairy and Beef Cattle Research Station.

The dairy and beef cattle research station was established in 1974 at Boadi near Kumasi with assistance from the Canadian International Development Agency (CIDA) as an arm of the faculty of agriculture. It undertakes research aimed at improving the efficiency of ruminant livestock production in the humid environments. It also provides the necessary facilities for the training of agricultural students and farmers in ruminant livestock production and dairy technology.

The station started with the development of its dairy section with a stock of 35 holstein-friesian heifers and five young bulls from Canada. The bulls were later crossed with local N’dama cows for dairy purposes. The beef section was started in

1981 with a batch of 36 N'dama cattle from the livestock section of the department of animal science. Sheep production started in 1984 with an initial stock of five djallonke sheep. As at 1995 the station had in stock 150 beef cattle, 60 dairy cattle and 230 sheep in its 120 hectare farm.

The station is headed by a senior research fellow who is responsible to a management committee comprising mainly of senior members of the faculty of agriculture. This reflects its traditional links with the faculty. It is however a separately funded unit with an accounting officer.

Due to the national economic decline from the late 1970s - 1980s and the subsequent decline in financial allocations to the station, its activities in research, training and extension were adversely affected. Despite these problems the station has made considerable achievements.

The facilities at the station have been used by both lecturers of the department of animal science and researchers at the station to research into various aspects of animal husbandry. Several undergraduate and postgraduate students of the department of animal science have used the station's research facilities and materials for their research projects. All third year agriculture students receive practical training at the station every year. Also students and lecturers from other faculties and institutes of the university such as the faculty of Social Science and the Institute of Renewable Natural Resources use the facilities at the station for their academic work.

Several schools and colleges outside the university do visit the station every year to learn practical livestock farming. Some individuals have also received training in the manufacture of yoghurt, cheese and butter at the station..

Research findings are made known to farmers who come to the station for advice as well as those who meet at workshops and symposia such as those organised by the Ghana Animal Science Association. The station also sells improved breeding animals to farmers.

Other products of the station include butter, cottage cheese, chocolate milk, milk and yoghurt which are sold to the general public to generate income. There is a high demand for its products especially the milk and yoghurt. As depicted in table 23 below the station is able to cover its recurrent needs in terms of materials and consumable entirely from its sales. Although the surpluses still fall short of its emoluments bill the achievement is worthwhile because the station is not expected to pay all its staff especially the researchers whose duties are not income generation but rather research.

Table 23. Revenues & Expenditures - Dairy/Beef Cattle Research Station 1990 - 1996

Year	1990	1991	1992	1993	1994	1995	1996
Sales							
Milk Products	1363580	2904830	6001370	10393220	10246740	11096920	11721700
Live Animals	1053685	925640	2486305	966370	2125850	3330100	2147250
Others	448461	182438	801221	445923	194811	144702	1132800
Total	2865726	4012908	9288896	11805513	12567401	14571722	15001750
Expenditure Materials & Consumable	564600	374225	2130755	2958558	2673455	3251564	4607376
Surplus	2301126	3638683	7158141	8846955	9893946	11320158	10394374
Emoluments			20442804	22403273	25794777	35862144	67997673

Source: Accounts Office, UST Dairy/Beef Cattle Research Station

Due to the quality of its research personnel and facilities, the station is able to attract resources from organisations interested in collaborative research. In terms of research output the station has a very impressive record of publications some of which could be of great benefit to farmers. Such achievements in research which have no immediate monetary value compensates for its inability to be self sufficient through income generation.

Despite the enormous role that income generation plays in the continued existence of the station in terms of helping it acquire the necessary inputs at the right time it is still not regarded as a primary function. The emphasis is as expected on research and teaching while the means for the achievement of these activities is considered incidental. However the researchers are all aware of the important role of income generation in sustaining academic work to the extent that some caution is exercised in

order not to disrupt such activities like milk production. In order of importance the station now puts income generation second to research and teaching. It now receives more priority than community service. Previously service was considered more important than income generation. This shift in priority ratings come about as a result of the role that income generation plays in the maintenance of academic facilities for the much valued research work of the station.

6.5.2 Anwomaso Commercial Farm.

The farm was established purposely to generate income for the university. Although the objective has been to cultivate a 300 acre oil palm plantation only 187 acres was under cultivation in 1993, out of which only 50 acres were fruit bearing. Until the entire planted acreage starts bearing fruit income from the farm will remain very low. The farm also has a nursery producing oil palm seedlings for expansion and sale to the general public. In a bid to diversify its activities the farm now undertakes the cultivation of pepper, egg plant and seed yam. There are also plans to establish a palm oil processing mill to process the palm fruits in order to enhance its income generation.

It is headed by a farm manager who is responsible to a management committee with membership drawn from the senior members of the university. A reconstituted management committee is adopting measures to diversify the farm's operations as a means of revitalising and improving its financial performance.

Empirical qualitative data gathered from the farm indicate the existence of some resentment towards the connotation of the farm as a commercial unit. It is claimed that the farm is unable to attract funds from national and international organisations to carry out its activities in the absence of adequate financial support from the university like the dairy and beef research station because of its status as a commercial unit. Such comparisons persist because the mental models remain unchanged and tuned to behaviours characteristic of an academic environment.

The general feeling of discomfort with the commercial status of the farm contradicts the very purpose of establishing it as a commercial farm instead of an experimental farm. As a commercial unit the farm could have made use of the university's research results that are relevant to its operations to achieve a better urge over its competitors but it appears this is rather not the case. The management of the farm lack the entrepreneurial qualities to explore ways of diversifying its activities and to seek the required funds for investment.

This is an indication that despite the fact that the university has been involved in income generation for a long time the attitudes towards commercialisation in an academic environment remain unchanged. As a result of this even pure commercial units like the Anwomaso commercial farm, which is expected to recognise its commercial role and demonstrate entrepreneurial skills and attitudes, rather wish to be treated as the research units. Similarly the management of the Katamanso commercial farm at the university of Ghana like a research unit has resulted in the farm operating below installed capacity with continuous financial losses (refer table 14 & 15 above).

The attitudes noted here have persisted despite the implementation of the educational reforms which includes the promotion of income generation because the universities have not undergone any form of transformation to be able to do away with the existing cultures so that they can see and do things differently. Such a transformation as described above is best suited to address the question of attitudinal change that can free the minds of the members of the universities to consider new ways of addressing the financial crisis facing them.

6.5.3 University Fish Farming

The university has a number of fish ponds under a fish farms management committee. Some of the ponds are directly under the responsibility of the Department of Freshwater Fisheries and Watershed Management of the Institute of Renewable Natural Resources (IRNR) which has established an aqua-culture centre. As well as being a demonstration and training centre for fish farmers, students and enthusiasts, it also produces fingerlings for supply to fish farmers from all over the country. Harvest

of fresh fish are also sold to fish mongers and retailers and the resulting income is paid to the central administration.

Although it is not possible to assess the significance of the income generated from the university's fish farming activity due to lack of data it was gathered from the department of freshwater fisheries and watershed management that the prospects are quite good. However the department is of the view that the committee system of managing income generating units inhibits the flexibility that is required for efficiency. An alternative could be to appoint managers and make them directly responsible to the corresponding departments to facilitate decision making and implementation.

6.6 Organisation and Management of University Farms for Sustainable Income Generation.

There are generally two schools of thought regarding the management of income generating activities in general and university farms in particular. One school of thought suggests a complete separation and differentiation between commercial activities and the teaching/research activities in terms of organisational structure. The aim here is to minimise a potential conflict since the use of resources for research and teaching is likely to conflict with the profit motivation associated with commercialisation. Under separate operations the profit of the commercial unit could be used to support teaching and research. It is expected that such a separation will encourage efficient and maximum utilisation of resources with the possibility of a two way flow of support (finance and research results) which can facilitate the process of commercialisation of research results.

The operationalisation of this school of thought is not without problems. As noted earlier both UG and UST have not been able to derive any financial resources from their separately run commercial farms (Katamanso and Anwomanso commercial farms respectively) to finance their needs as anticipated because the farms cannot even support themselves. Assuming that their products have the necessary demand to guarantee a profitable survival the reason for their failure may be attributed to their

inability to adopt the appropriate skills and quality of judgement required for profitable existence. Universities have managed income generating units just like the research and teaching units and not as businesses. An organisational transformation process can hasten the rate at which universities learn to manage their businesses in a business-like manner to yield the necessary resources for the solution of their financial crisis.

Within this separation of operations there are three options. The first option is for the university to run them entirely by themselves as university businesses. The second option is to enter into a form of partnership with the private sector whilst the third is to allow full running by private hands and to charge the appropriate rent. In the above two examples the first option was adopted and the result proved that the universities were unable to manage their for-profit businesses entirely by themselves on business principles.

At a national forum on funding of Ghana's tertiary education in January, 1997 the stake-holders (comprising of students, parents, trade unions, policy makers, political parties, and the private sector) supported this option of separation of activities. It was therefore recommended that the institutions should either divest themselves completely or enter into joint-ventures with the private sector investors to take over their income generating activities from which the institutions can earn rent and other commissions (PEF, 1997: 37).

The joint-venture concept is a widespread practice. At the faculty of Agriculture, International Rural Development and Environmental Protection of the University of Kassel in Germany, a "public-private partnership" model is being adopted. In July 1998, the University pre-financed the acquisition of a state farm (Hessische Staatsdomaene) at Frankenhausen near Kassel at a cost of about DM 2.5 million for the faculty's model farm. The faculty intends to transform the conventional farm into an ecological farm. A portion of this farm, about 40 hectares, will be used exclusively for research and teaching purposes and will be managed separately from the rest which will be a commercialised ecological farm. The ecological research activities currently at the faculty's teaching and research fields at Neu-Eichenburg will be

transferred to the new farm. According to the financial plan the repayable amount is to be paid from the proceeds of the commercial section in twelve years. The farm will diversify into processing whereby it expects to work in co-operation with farmers within the region to increase the value of their primary products through processing. The University of Kassel is expected to break new grounds with this concept of "public-private partnership" whereby an enterprise or organisational structure of its kind is able to be financially self sufficient in the midterm without any state support. The project is expected to trigger off new interest in teaching and research in thematic areas such as finance, organisation development and sustainable regional development.

The second school of thought advocates for the combination or integration of income generation into the academic activities as single units. With particular reference to university farms it has been noted that academic activities especially research without commercialisation will be wasteful. In an integrated system, products used for research/teaching are normally transferred for commercialisation to provide financial resources which can be utilised to supplement or fund further research. The failure of separately managed university farms especially in Ghana seems to vindicate the validity of this school of thought.

However the analysis above has shown that under this system of organisation no significant financial resources are generated. This is often due the fact that the commercialisation or income generation is normally considered as incidental activities meant to provide only supplementary funds but the survival of the units still depend on government support. Since profit making is not a priority there is no motivation to adopt measures like the application of business principles to maximise efficiency. Also because the activities are jointly managed it is not easy to assess the income generation aspects to allow for the adoption of measures that can increase production and productivity.

6.7 The Implications of Income Generation for Agricultural Faculties.

As described above the activities at the faculty of agriculture that have opportunities for generating income are consulting, research and farming. The significance and implications of generating income from these activities will now be analysed.

6.7.1 Consulting

Faculty engage in consulting for government and non-governmental organisations. Although faculty are obliged to disclose their consulting activities officially to their departments/faculty, some fail to do so. When consulting is disclosed there is a sharing of the proceeds and measures are taken to ensure that it does not adversely affect academic activities and programmes. On the other hand when consulting is done without declaration, which unfortunately is more often the case, then the department, faculty and the university are all denied the financial benefits although university time and resources may be used. Under this circumstances the activities of the consultant are likely to conflict with academic work due to lack of co-ordination. This is likely to adversely affect academic work. The implication therefore is that without an entirely new approach to the organisation of consulting in universities no significant income will accrue to the department, faculty and university at large. Increased consulting without declaration and co-ordination will certainly be at the expense of academic work with grave consequences for quality and relevance of agricultural higher education. However if an organisational transformation is adopted an entirely new approach could be found in the organisation and management of faculty consulting that will promote transparency, increased participation of both students and faculty with a fair and acceptable distribution of the financial proceeds.

6.7.2 Research.

Due to insufficient funding faculty seek for either contract research or collaborative research with foreign support. Unlike consulting these activities are normally officially channelled and well organised. The motivation for participation of both students and faculty is the associated invaluable benefits. These include opportunities

for the acquisition of equipment, chemicals, vehicles etc. and financial support for other activities such as staff exchange, staff development and travels for conferences. The benefits in real terms, especially when a research project involves external support, are often so significant that there is a risk of diversion of attention and efforts from the normal academic programmes. The only problem here is how to sustain such activities and how to co-ordinate them so that they can play an effective complementary role.

6.7.3 Faculty Farms

The maintenance of farms for academic and income generation purposes is a controversial issue with some implications for agricultural higher education. For politicians as well as some stake holders in higher education in Ghana, farming is often seen as one activity that can help universities especially agricultural faculties to earn significant income to support their own needs. At the 32nd congregation of the UST in February 1999, President Rawlings said that although the universities were established as centres of learning and scholarship, they are in unique positions to earn extra income by tapping the rich resources of their talents in setting up business enterprises like cattle rearing, producing poultry products, cash and food crops. It is often argued that through increased utilisation of university farms for income generation students and faculty participation for the purpose of enhancing quality and relevance of agricultural higher education can be guaranteed. However although faculty acknowledge the later argument they maintain that the university farms are primarily for research and teaching purposes and therefore it is not possible for them to perform financially as well as private and profit-motivated farms. They therefore reject any attempts to evaluate their activities using business-like indicators. Some academics consider the persistent calls by politicians for them to embark on farming to finance themselves as an attempt to shrink their responsibility of financing universities. Meanwhile the universities are responding by muddling through to find out appropriate ways of organising these enterprises to enhance both academic work and income generation.

6.8 Summary

From the forgone analysis it has been established that despite the fact that the UST has been involved in income generation for quite some time now the total income derived from these activities is not significant. The empirical data has shown that the proportion of income generated from these activities fall far below the university's own target (i.e. 50 percent) as well as the target/standard (i.e. 30 percent) set by the Ghanaian government which is in conformity with standards set by the World Bank and experts in university financing.

The URC proposed that income generating units should be supported so that when they are firmly in place the revenue generated could be used to start new projects (URC II, 1987: 298). The analysis so far (using both secondary and empirical data) indicate that these expectations are not likely to be met due to the following reasons.

In the first instance the revenues that these activities generate are not significant enough to cover their operational cost and build reserves to start new projects. Most of them currently have either very high operational cost or are unable to manage such activities well enough to operate efficiently.

The second reason is that these units have very little opportunities of building reserves or making savings. They could have built reserves if government funding for those units could be sustained but the experience is not so, so the revenue generated is rather being increasingly used to run the units.

Finally the units can only generate sufficient incomes if the universities themselves undergo a transformation to change their attitudes towards these income generation units so that they could be regarded as equally important as other activities. In most instances income generation activities are not considered as the main stream activities of the university.

More often than not the latter point is ignored or expected to occur naturally. So proposals like the training of the management of the relevant units to make them not

only seasoned academics but also commercially oriented persist with little positive results. This orientation will require a change of attitude not to overcome or convert opposition or resistance to income generation in higher education but to pave the way for the acquisition of entrepreneurial values.

The investigations into the management of these activities as well as the attitudes of the university community towards them have also revealed no significant changes. The following attitudes which were noted in 1987 by the URC before the implementation of the reforms are still prevalent in UST.

i. Income generation is not considered as university activity
ii. Although income generation activities are tolerated at the UST they are rated least in priority among university functions. They are regarded as temporal or provisional and therefore could be stopped when there is sufficient funding for universities activities from government sources.
iii. They are not integrated into the university's main academic structure.
iv. Participation is voluntary and not mandatory
v. Although there are guidelines, rules and regulations governing the operation of commercial units, the university has not clearly defined their limitations within the academic setting. Conflicts therefore exist between the objectives of the commercial enterprise and the educational service functions.
vi. It is generally believed that the university bureaucracy does not favour the operation of the commercial units as business enterprises.

The persistence of these attitudes are clear indications that the reform programme and the university's attempt at strategic planning have not been able to change the existing culture.

In the preceding final chapter the strategies adopted in the implementation of the reforms especially with respect to income generation as well as the strategic planning attempt will be analysed in the light of the three dimensional model to determine the extent to which the university has achieved transformation. This will then form the

basis for recommendations on measures that can be adopted to achieve the level of transformation necessary to ensure significant income generation.

CHAPTER SEVEN
SUSTAINING ORGANISATIONAL TRANSFORMATION AT UST.

7.1 The Level of Transformation Achieved Through Reforms

The educational reform programme initiated by the Ghanaian government to improve quality and rationalise financing has had some achievements. Quality improvement measures including the provision of key inputs such as library books, laboratory and other equipment, physical infrastructure (lecture rooms, laboratories etc.), and staff development have been implemented. In addition to the considerable internal restructuring within the universities, measures such as the implementation of staffing norms, new budgeting procedures, removal of feeding subsidies for students and the review of student accommodation policy have been undertaken to minimise constraints on expansion.

Cost sharing and income generation are increasingly becoming acceptable features in higher education in Ghana. Whilst new forms of organisational management are being sought to enhance or maximise revenues of income generating units, new opportunities are continuously being sought to generate income in almost all areas of university activities.

Notwithstanding all these achievements the universities including UST cannot be said to have undergone a complete transformation as attitudes of the university community towards income generation and new methods of organisational management remain the same. The calls by some observers for further transformation is also an indication that the implementation of the reforms has not successfully transformed the universities. According to Amonoo-Neizer (1998, 301-309), who was a vice-chancellor of UST during the implementation period, the universities need to seize the initiative themselves by developing or updating their mission statements for adaptation, transformation, reformation and revitalisation for the 21st Century. This observation confirms the findings in this study that the implementation of the reform programme has not sufficiently transformed the institutions to be able to handle the crisis facing them. Several reasons may be assigned for this outcome.

The inability to achieve transformation through the reforms may be attributed to the limited application of the seven methods of influence suggested in the transformation model by the institutional leaders and the external change agent (i.e. government) to win support and commitment of the academic community to the reform programme. Methods of influence such as persuasive communication is absolutely critical in the traditional phase in order to convince organisational members of the need to change. This was inadequately employed as Amonoo-Neizer (1998, 305) has identified the persistence of weak internal communication links between chief executives (i.e. Vice-chancellors) and their staff and students which he attributed to their appointment and control by government. This practice often leads to excessive use of coercion which is normally counteracted by the building of stronger resistance.

An optimum combination of the methods of influence at the various stages is suggested in table 24 below. According to this combination suggested by Nevis, Lancourt, & Vassallo (1996, 43), persuasive communication, participation, expectancy and role modelling are highly essential in the exploratory phase. The empirical investigation at the UST established that even though the university had approached this phase these methods were not adequately employed to mobilise support for the proper integration of income generation with academic programmes. This is necessary because since the introduction of the reforms no concerted efforts have been made to encourage participation in income generation beyond mere exaltation. Whilst no role models in income generation could be identified, the expected rewards for participation have not been institutionalised.

Another important observation at UST was the emphasis on structural rearrangements at the traditional phase which should have rather been reserved for the generative phase. The risk of inappropriate structural changes is greater if done at the traditional phase of the change process.

Table 24. Optimum Combinations of Methods of Influence During the Various Phases of Transformation.

	Phases of Transformation			
Methods of Influence	Traditional	Exploratory	Generative	Internali-sation
Persuasive Communication	xxx	xx	x	X
Participation	x	xx	xxx	Xx
Expectancy	x	xx	xx	X
Role Modelling	x	xx	xxx	X
Extrinsic Rewards		x	x	Xx
Structural Rearrangements		x	xxx	Xx
Coercion	xx	x	x	

Key: x = Routinely useful, xx = Highly essential, xxx = Absolutely critical

Source: Adapted from Nevis, Lancourt, & Vassallo (1996, 43).

Since the reforms were initiated by an external agent (i.e. government) and not the institutions themselves, it was absolutely essential to adopt measures that will win support from the university communities. Prior to the publication of the government's white paper on the reforms all the three older universities submitted comments on the proposals made by the URC for changes in the higher educational sector. The universities in their comments indicated their objection to several aspects of the proposals. There was also strong opposition from students. These disagreements and resistance from the academic community overwhelmed the expected benefits of the programme and this adversely affected any attempt to mobilise support for it from within the institutions. Unfortunately since there were no appropriate measures designed to manage these disagreements, some considerable level of resistance and conflicts of interest were encountered in the course of implementation.

The inability of the university to transform itself to become a learning organisation during the implementation of the reform programme may be attributed to the way the internal and external agents of change approached the issue of resistance and the management of conflicts that arose during the process. In many instances the approaches adopted were more of ignoring or suppressing resistance instead of

accepting it as another reality of the change process. In the course implementing certain aspects of the reforms internal conflicts erupted in the universities. At UST students vented their anger on management for increasing admission and causing overcrowding conditions at the halls of residence and academic facilities resulting in a disruption of academic work. Tensions also developed between the academic and senior administrative staff over issues concerning de-coupling of conditions of service of the two categories of staff. At the faculty of Agriculture the retrenchment of non-academic staff was considered irreconcilable with the policy of income generation since many hands are often required for the maintenance of their farms to generate income. These and many other political reactions fuelled resistance towards the reform programme.

Unfortunately due to the inappropriate approaches adopted in the handling of these resistance and the resolution of the conflicts that arose the programme could not proceed according to the planned schedule. The organisations providing financial and technical assistance to the programme could not offer an appropriate solution to the problem of resistance either. A World Bank monitoring team in September 1992 observed that faculty and student resistance had greatly limited the scope of government action in the implementation of the reforms. Despite this observation the team expressed an opinion that some reforms at the universities could be introduced by government fiat alone (World Bank, 1992: 12).

Such attitudes breed a tendency to see change (in this case the reform) from only one viewpoint and this blocks opportunities of appreciating that the resistors represent part of the multiple realities of the change process. The consequences of such a limited view is the generation of more conflicts which slows down the process of change. This has been the situation at UST and so the university may be said to still be oscillating between the traditional and the exploratory phases within the first dimension of the three dimensional model of organisational transformation.

7.2 Recommendations to Sustain the Transformation Process.

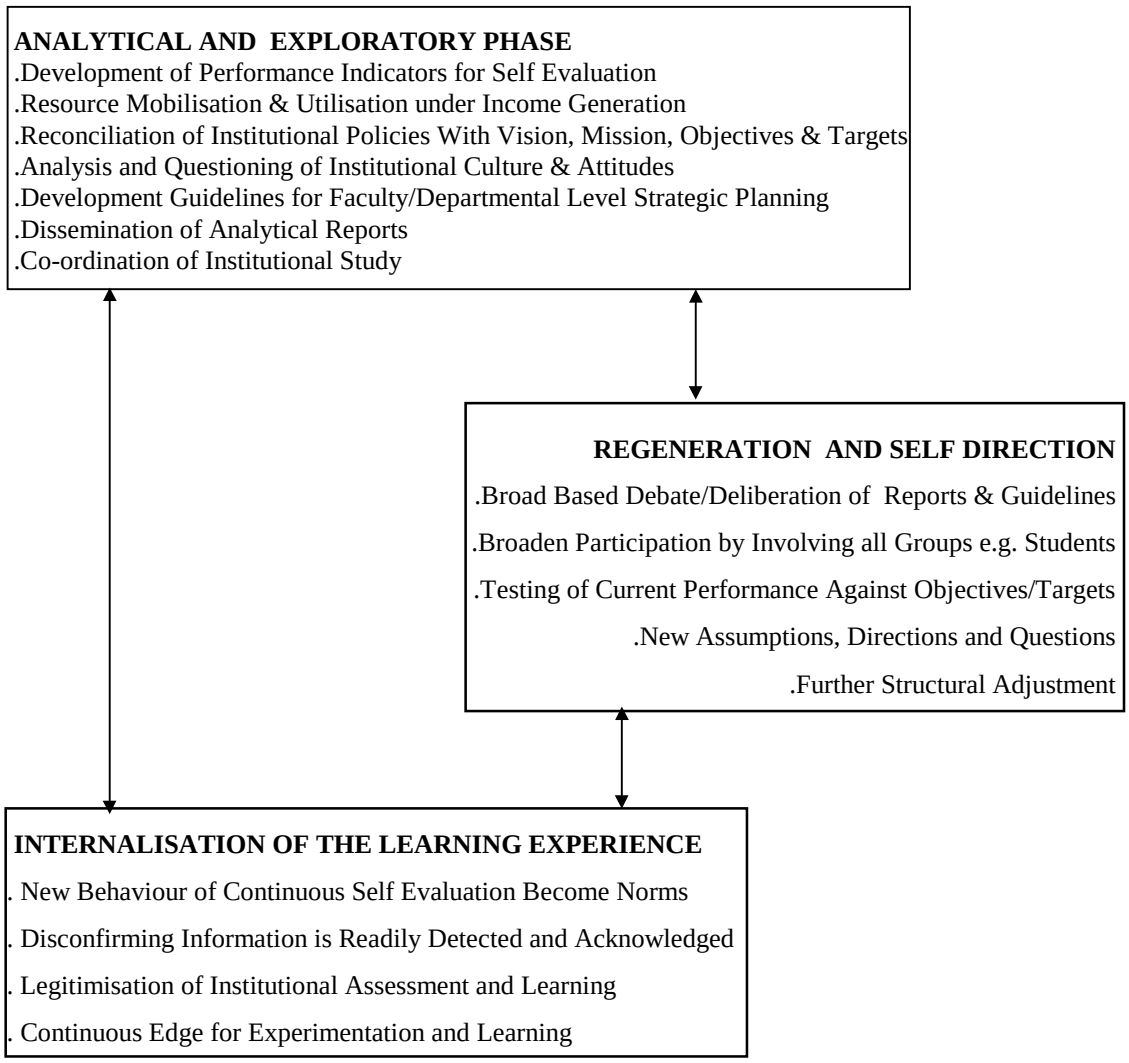
The responsibility, initiative and success of a transformation process rest on the leadership of an organisation. According to Hunt et al. (1997, xii) only leadership can affect the campus culture in a manner that will provide the courage for an institution to move into partly chartered waters, and to catch the vision and mission of what an institution could be through team effort and shared enthusiasm applied to a strategic planning process. Although the process can be initiated by an external agent it is absolutely necessary to have internal commitment to internalise the change process.

In an era of turbulence and change it is only institutions that transform themselves by learning how to learn that can survive. This process of transformation, otherwise referred to as double-loop or "deutero-learning", can help higher education institutions to survive the financial crisis if the methods of influence in the three dimensional model are carefully applied in their strategic planning processes. Such a combined procedure will enrich the strategic planning exercise, improve the chances and speed of implementation of the plans, and guarantee continuos learning to manage change. It will also enable universities to avoid the "wish list" endemic that characterised previous planning, most of which tend to be shelved for lack of funds.

After the launching of a strategic plan (Vision 2000 Plus) by the University of Ghana in 1993 the UST formed a strategic planning committee to undertake the exercise of developing a strategic plan. The process has been quite slow and as at 1997 faculty and departmental plans had been collected by the committee for collation to formulate the university-wide strategic plan. At the same time that the strategic plan was being developed, a separate committee was charged with the responsibility of reviewing the university's statutes. Since the university statutes serves as its constitution it would have been appropriate for these two committees to co-ordinate their work to share information and ideas so as to resolve possible conflicts. However the fact that all these tasks have been done is an indication of the availability of a considerable amount of information to be analysed for a critical self-study to guide the university through a successful transformation process.

With this rich foundation the transformation process can now be reduced to three phases as illustrated in the model in figure 8 below. The recommendations here are therefore to speed up the process by making use of those methods of influence that have not been employed. There is a critical need to effectively utilise methods that will enhance the change of approach in the management of resistance and conflict resolution to the multiple reality approach in order to guarantee support and participation in the formulation and implementation of the strategic plan.

Fig. 8. Recommended Phases of Transformation for UST



Source: Adapted from Nevis, Lancourt, & Vassallo (1996)

The planning unit, which was established in 1991, has been co-ordinating the implementation of the reform programme. The unit is sufficiently equipped with a full

complement of technical personnel and resources to serve as a secretariat for a small technical committee that will conduct studies and advise management (or leadership) on how to propel the university through the various phases of transformation. It is recommended that the size of the committee should not exceed a total of six at a time and should include a member of the planning unit with a qualification for forward planning, a student representative, two academic staff and an administrator. The existing strategic planning committee could be trimmed down to serve this purpose.

In devising means of guiding the institution through the various phases of transformation the committee should devise appropriate means by which the institution can do this using the seven methods of influence. In collaboration with the planning unit the committee could form the nucleus for the development of a research and development unit of the university to undertake specific studies about the university on a continuous basis. Their findings could then be published as academic papers in the university journal and web-site in the future. They could also produce papers for debate at academic and council level.

In addressing the question of integrating income generation into academic work for a mutual and complementary coexistence the committee should adopt the faculty of agriculture as a role model. The success here could then be adopted by other faculties to improve the significance of income generation in the entire university. Due to the several achievements and experiences made in the implementation of the reforms, it is estimated that with this strategy the university will be completely transformed by the second half of the first decade in the 21st century.

7.3 Summary Of Conclusions.

The study traced the development of the financial crisis in higher education to two main factors. Increasing cost of higher educational provision (due to increasing need for expansion and/or changing technological cost) on one hand and the declining capacity of governments to provide adequate funding due to economic constraints and changing priorities. In sub-Saharan Africa where majority of the higher educational institutions are heavily dependent on government funding the effects of the crisis has

been severe because of declining economic output and the subsequent adoption of structural adjustment programmes.

In response to this crisis most higher educational institutions particularly universities have either by themselves or through the encouragement of their national governments adopted certain measures aimed at cost reduction, cost recovery and revenue diversification in order to survive.

The scope of activities involved in revenue diversification extends from donations and gifts to cost recovery through tuition fees and the sale of other goods and services produced by higher education institutions. The integration of these activities, particularly those in the later category, with normal academic work naturally poses some challenges which has triggered off a controversial debate, resistance and conflicts at all levels in higher education.

The implication of the thesis of this study has been that unless a transformation process is adopted in the management of the resistance and the resulting conflicts of interest revenue diversification through income generation will not be able to yield any significant incomes for higher education. Furthermore the complementary effect that these activities are expected to have on quality and relevance of academic output would not be realised without a transformation.

To verify the thesis the study attempted to examine the implications of income generation activities for agricultural education at the UST in Ghana where the practice was claimed to be successful. The determination of the significance of income generation extended from the faculty level to the institutional level using financial data gathered from budget reports and financial records. In determining the level of transformation reached by the institution the effects of the educational reform programme introduced by government on the attitudes of both staff and students was evaluated and compared with the ideal indicators of transformation suggested by Nevis, Lancourt, & Vassallo (1996) in their three dimensional model of organisational transformation.

The study revealed that regardless of the scope of income generation activities adopted the expected proportion of a university's recurrent income that can be derived from such activities will not be more than 30 percent for publicly funded institutions. This proportion could further be broken down to 20 percent for fees and 10 percent for all other income generation activities combined. Adopting these proportions as standard measures of significance it was found out that income generation activities at the UST which even included some forms of indirect fees such application fees, tuition fees for foreign students etc. were insignificant because the total annual recurrent income derived was less than 10 percent (at most 7.4 percent).

At the faculty of agriculture, the role of certain activities such as farming and the processing of meat and milk products is extending from support for academic work such as teaching, learning and research to the generation of financial resources to support these activities. The income generated from these units plays a very important role because it is being used to maintain the facilities to ensure that academic activities are not disrupted for financial reasons. Without the income from these units the provision of adequate inputs such as feeds and chemicals relying on government subvention could not be possible since such subvention is either insufficient or not on time. Despite this important role there is still a segregation between academic work and income generation and participation in the latter is not recognised and rewarded as an academic activity. Although entrepreneurial attitudes and qualities are recognised as essential for the promotion of income generation no efforts are being made to change management structures and practices to support their development. Consequently units which have been separated from mainstream academic activities and designated as commercial units have failed to utilise this opportunity to enhance their income generation and survival as commercial ventures (i.e. commercial farms, limited liability companies etc.). Such units, in spite of their clear commercial purposes are managed like academic units and the staff of these units tend to visualise their performance like academic units and therefore hesitate to use other performance indicators to measure their achievements and shortcomings.

Although students recognise the importance of their participation in these activities for the acquisition of the relevant practical skills and the facilitation of the learning

process, the arguments put forward against their participation in these activities reflect the continuous prevalence of the preference for theoretical route learning as against the practically oriented type involving manual work. All these are indications of the maintenance of the old attitudes despite the development and encouragement of income generation in the university. With these attitudes and conditions it is not expected that interest, participation and initiatives would develop to make it possible for the income generation activities to be able to earn significant financial resources.

Despite the introduction of the higher educational reforms almost a decade ago emphasising the need for income generation the university is unable to realise significant financial resources from income generation because the reforms have failed to transform the university. The slow pace of this transformation process is said to be due to way in which the reform agents (both internal and external) viewed and managed resistance. They failed to recognise resistance to the various aspects of the programme as multiple realities and so they sought to either ignore or suppress it. A similar attitude was adopted in the resolution of conflicts arising out of the implementation of certain aspects of the reforms. Such attitudes have therefore limited participation as not enough measures were adopted to influence the academic community to transform the institutional mode of handling the financial crisis like any other type of crises the institution has faced before. This has proved inappropriate and insufficient to tackle the financial crisis as the income generated in an attempt to diversify revenues has remained insignificant.

Therefore in order to speed up the transformation process to enable the institution in general and the faculty of agriculture in particular there is the need to adopt the three dimensional model of organisational transformation as a guiding principle in the development of strategic planning processes at faculty/institute and university levels. In the adoption of this model the dimension of managing resistance and conflicts by accepting them as alternative aspects of reality will be critical in ensuring success and mobilising energy to support any change measure. Also a careful combination of several of the seven measures of influence suggested in the second dimension of this model including persuasive communication, role modelling, participation, expectancy,

extrinsic rewards and structural readjustment whilst reducing the excessive application of coercion would be helpful.

In adopting an abridged model of transformation the achievements already made particularly with regard to the creation of new structures such as the planning units and the on-going financial decentralisation process need to be consolidated. Consequently it is recommended that an institutional self study, analysis and direction task be constituted around the planning unit which will guide the decentralisation of this self study and “learning-to-learn” character to the various units in the university. With regard to income generation in particular the technical study committee could consider adopting the faculty of Agriculture as a role model for the integration of income generation with academic work to enhance the significance of income generated whilst promoting quality and relevance in agricultural training. Such a model could then be appropriately adopted by other faculties to promote the sustainability of quality and relevance of higher educational output in general.

APPENDIX 1. REGULATIONS FOR CONSULTING BY STAFF, UST-KUMASI

1 OBJECTIVES

1.1 Consultancy should be regarded as a positive way in which the University can make a contribution to national development.

1.2 In considering request on projects for which consultancy services might be provided, the University's prime concern should be with the extent to which any particular service will benefit the work of the work of the University or enhance the quality of teaching of the staff involved.

1.3 The normal university function of teaching and research should therefore always be given priority consideration.

1.4 Consultancy should normally be on official departmental/faculty basis.

1.5 The University will recognise useful and meaningful consultancy service for purposes of promotion

2 PARTNERSHIP

2.1 While a member of staff may act as a consultant to a business/industrial organisation/firm, it shall not be permissible for a member of staff to become a member of staff to become a partner in any business/industrial organisation/firm/enterprise.

2.2 A member of staff may buy or own shares in a business/industrial organisation/enterprise.

3 OPENING OF OFFICES

It shall not be permissible for a member of staff, in pursuit of consultancy services, to open an office outside the university.

4 APPOINTMENT OF FEES

4.1 Where no visible university facilities (i.e. equipment etc.) are used, a nominal of ten per cent of the full fees after deducting all expenses, should be paid to the university or the Technology Consultancy Centre (TCC).

4.2 Where the consultancy service is through the TCC and University facilities are used, the apportionment of the net fee, (after deducting all expenses including wages of technical and junior administrative staff) should be as follows:

70 per cent to the Consultant(s);

15 per cent to Department whose facilities are used;

15 per cent to the TCC

4.3 Where the consultancy is channelled through a projects office or department, the apportionment after deducting all expenses as in ii. above should be as follows:

70 per cent to the Consultant;

20 per cent to the department projects office;

10 per cent to the central administration (to be apportioned as follows:

70 per cent to Accounts Office and 30 per cent to the Registry) to pay for stationery overtime etc.

5 PRIVATE CONSULTANCY

5.1 Recognising that clients needing advice might approach individual members of staff as known experts, it shall be permissible, subject to control, for members of staff to undertake private consultancy.

5.2 Members of staff shall not undertake negotiations for private consultancy without the knowledge of the head of their department.

5.3 Members of staff shall not accept private consultancy without observing the rules and regulations governing consultancy.

6 CONTROL OF PRIVATE CONSULTANCY

6.1 Private consultancy is defined as professional work performed for a fee by a member of staff.

6.2 Purpose of Control.

6.2.1 To ensure that a member of staff undertaking any private consultancy can discharge the departmental duties assigned to him by his department satisfactorily.

6.2.2 To ensure that the private consultancy which is the member's own private concern does not involve the University in any liabilities whatsoever.

6.3 Permission

A member wishing to undertake private consultancy shall apply to his head of department in writing stating

a. the name and address of the client;

b. the type and nature of consultancy;

c. the approximate duration;

d. the facilities required to be used for the consultancy;

e. University facilities required to be used for the consultancy.

An application form designed for this purpose must be completed in duplicate by a member of staff.

Where a head of department refuses to recommend an application for permission to undertake a private consultancy he shall assign reasons.

A head of department shall forward his recommendation for permission to undertake private consultancy by a member of his staff to the Vice-chancellor.

6.4 Indemnity

A member of staff wishing to undertake a private consultancy shall confirm in writing that the university shall not be liable in any way for any claims whatsoever resulting form the consultancy.

6.5 Sanctions

The head of department shall report any breach of these regulations to the Vice-chancellor for necessary disciplinary action against the member of staff concerned.

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