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AGRICULTURAL RESTRUCTURING IN SOUTHERN AFRICA

**Papers presented at an
International Symposium
held at Swakopmund, Namibia**

24-27 July, 1990

Edited by

**Csaba Csáki
Theodor Dams
Diethelm Metzger
Johan van Zyl**

**International Association of Agricultural Economists
in association with
Association of Agricultural Economists in Namibia
(AGRECONA)**

First published in 1992 by the Association of Agricultural Economists of Namibia

P.O. Box 21554, Windhoek, Namibia.

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Printed in Namibia by Windhoek Printers & Publishers (Pty) Ltd,
P.O. Box 1707, Windhoek, Namibia.

Distributed by the Association of Agricultural Economists of Namibia,
P.O. Box 21554, Windhoek, Namibia.

ISBN 99916/30/10/4

THE ROLE OF UNIVERSITIES IN HUMAN RESOURCE DEVELOPMENT FOR AGRICULTURAL DEVELOPMENT IN LESS DEVELOPED COUNTRIES

C L Machethe

INTRODUCTION

The development of most less developed countries (LDCs) will be determined by the progress achieved in the development of the agricultural sector. Agricultural development, in turn, is dependent on progress achieved in the development of human resources. Human resource development concerns activities such as education, health and nutrition, which directly contribute to the welfare of human beings. According to Harbison (1964) "... human resource development is the process of building the knowledge, the skills, the working abilities, and the innate capacities of all people in a society". Human resources may be developed through formal education, beginning with primary education and ending with post-secondary education at colleges, institutes and universities. Meyer (1990) describes formal education as education which takes place in a planned way at recognized institutions and has rigid entry and exit points. Human resources may also be developed through non-formal education. Such education may take the form of in-service training through the provision of short courses designed to equip the participants with specific skills, conferences, workshops and agricultural extension service for farmers. Harbison (1964) identifies a third way of developing human resources, namely, self-development. Self-development entails individuals' acquisition of greater knowledge, skills or capacities through preparation on their own initiative, e.g. through reading and learning from others in informal contacts. Improvements in health and nutrition are the other means of developing human resources.

This paper is concerned with the formal and non-formal education aspects of human resource development. Specifically, it focuses on the role which universities can play in human resource development for agricultural development. Although the main responsibility of universities is to provide formal education, they can also play a significant role in providing non-formal education. However, there are certain factors which constrain universities in successfully performing these two tasks. The inferior status of agriculture as an occupation severely restricts the number and quality of students who enrol for agriculture degrees in LDCs. Lack of funds and manpower render universities less effective in providing non-formal education.

This paper attempts to answer the following questions:

- Why does agriculture as an occupation have an inferior status in LDCs ?
- What can be done to improve the status of agriculture ?
- What non-formal education programmes can a university embark upon ?
- What possibilities exist for the easing of constraints caused by lack of funds and manpower?

In attempting to answer the above questions, the author is constrained by the limited knowledge of university education for agricultural development and the status of agriculture in other African countries. Consequently, the paper will draw heavily on the experience and observations in less developed areas of South Africa.

THE NEED FOR HUMAN RESOURCE DEVELOPMENT

The importance of human resource development has long been recognized by economists such as Adam Smith and Alfred Marshall. Today, it is widely accepted that human resource development is a necessary condition for growth and development.

Shortage of skilled manpower for agricultural development is one of the most important constraints to the socio-economic development of LDCs. According to the World Bank (1980) "faster economic growth in Africa requires accelerated development of human resources". The extent to which African countries succeed in increasing the supply of skilled manpower will determine the progress achieved towards improving the quality of life of people in these countries. A strong commitment by governments of African countries to the development of human resources through both formal and non-formal education is, therefore, required for growth and development. In emphasizing the need for human resource development, Harbison (according to Hannah, 1966) states that "the basic problem of most of the underdeveloped countries is not a poverty of their natural resources but the underdevelopment of their human resources; hence their first task must be to build up their human capital".

The positive role played by education in agricultural production is acknowledged by many experts and well documented in literature on development (Jamison & Lau, 1982; Lockheed et al., 1978; Moock, 1981; Pudasaini, 1981, 1983; Schultz, 1975; Welch, 1970). The results of these studies indicate that education contributes positively towards the process of making farmers better decision-makers. Formal education at university level produces researchers, teachers, policy-makers, agricultural extension workers and managers, all of whom contribute towards the process of agricultural development in LDCs. The higher agricultural productivity in developed countries is partly attributed to the higher levels of education achieved by people engaged in the agricultural sector of these countries. The results of a study by Hayami & Ruttan (1970) clearly confirm this point.

Although it is generally accepted that there is a shortage of skilled manpower for agricultural development in most African countries, quantification of the demand for skilled manpower is difficult. Williams et al. (1989) provide some indication of supply of and demand for agricultural manpower in Southern Africa. They conclude that the demand for professionals with degrees is great. An analysis of available data obtained from Bembridge (1987) regarding the employment of university agriculture graduates indicates that only 53 percent of vacancies in the departments of agriculture in less developed areas (homelands) of South Africa were filled in 1986. Bembridge (1987) also observes that the number of land holders per field-level extension worker in these areas is twice the recommended figure of 500 for LDCs. The above statistics may not be representative of the skilled manpower situation in African countries, but do provide some indication of the severity of the human resource constraint in certain parts of the continent.

ROLE AND CONSTRAINTS OF UNIVERSITIES IN HUMAN RESOURCE DEVELOPMENT

The underdevelopment of human resources for agricultural development in many African countries provides a challenge to faculties of agriculture to play a meaningful role in easing the human resource constraint. Although the major functions of an agricultural faculty should be to provide formal education and conduct agricultural research, faculties in LDCs may be compelled by circumstances in these countries to perform an additional task

of providing non-formal education. Universities in LDCs are constrained by several factors in their endeavour to develop human resources for agricultural development through the provision of formal and non-formal education.

Problems affecting formal education

Faculties of agriculture in some LDCs experience difficulty in attracting (a) sufficient numbers of students and (b) good-quality students to enrol for degrees in agriculture. Enrolment for degrees at two universities with faculties of agriculture in less developed areas of South Africa is illustrated in Figure 1.

It is evident from Figure 1 that the proportion of students enrolled for agriculture degrees at the two universities is low. The low student enrolment results in underutilization of facilities.

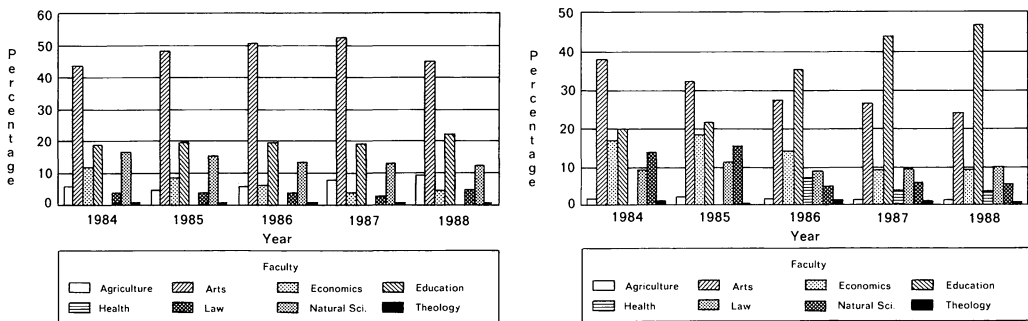


Figure 1: Student enrolment for degrees according to faculty at the Universities of Fort Hare and the North

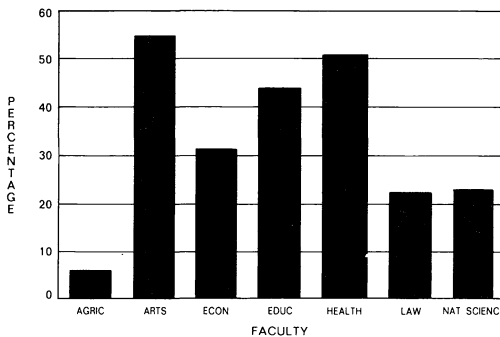


Figure 2: Female enrolment for degrees according to faculty at University of the North in 1990

It is not only the number of agriculture students which is a cause for concern but also that of female students enrolled for agriculture degrees. An inter-faculty comparison of the proportion of female students enrolled for degrees at the University of the North (Figure 2) indicates that the faculty of agriculture has the second lowest proportion (Faculty of Theology has the lowest proportion, but this is not shown as there are no females enrolled).

In order to produce good-quality professionals, faculties of agriculture must attract good-quality students. Although admission requirements for faculties of agriculture may differ between countries, between universities within the same country and according to discipline within agriculture, good matriculation examination results are normally required for subjects like Mathematics, English, Biology and Physics.

An inter-faculty comparison of the proportion of students who took Mathematics, Physics, English and Biology in matric at the University of the North is made in Figure 3. It is evident that the proportion of agriculture students is the lowest for Mathematics and Physics.

An indication of the performance of first-year students in the four matriculation subjects at the University of the North is given in Figure 4 for four faculties. The diagram shows the proportion of students in a particular faculty who obtained a mark of at least 50 percent in a particular subject. The proportion of agriculture students who meet the above requirement is the lowest in each subject, especially Physics, Mathematics and Biology.

If student performance in Mathematics, Physics, Biology and English is used as a proxy for quality, the above analysis indicates that the faculty of agriculture draws students of lower quality in relation to that of students in other faculties. This lends support to the view that a significant number of students enrol for degrees in agriculture as a last resort.

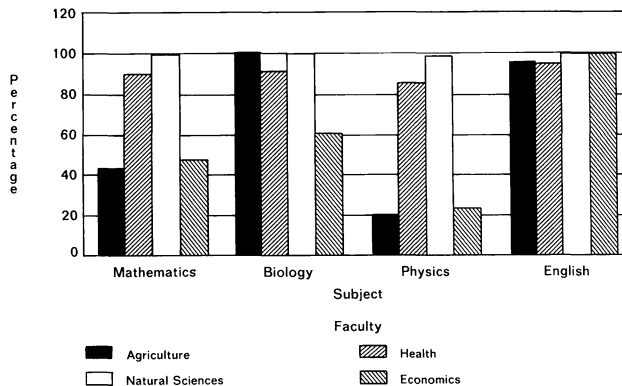


Figure 3: Student enrolment for matriculation subjects according to faculty at the University of the North in 1990

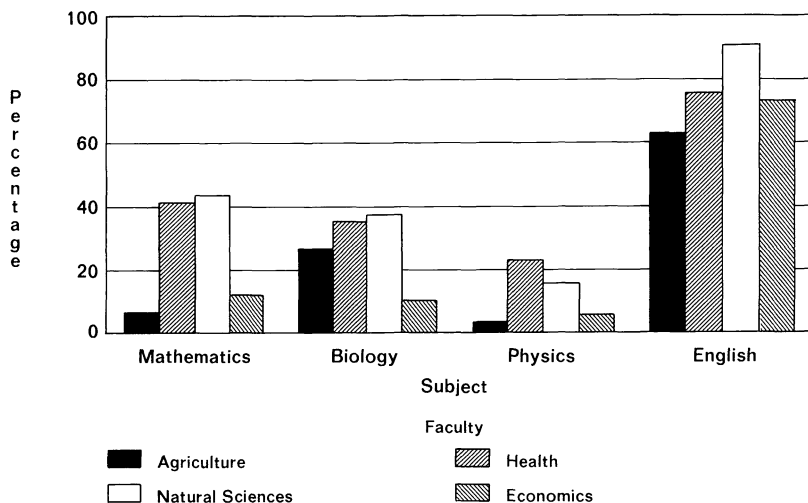


Figure 4: First-year student performance in matriculation subjects at the University of the North for 1990 (50% plus)

Inferior status of agriculture

Various reasons may be given for the low proportion and lower quality of agriculture students. The reasons may differ between countries. Some of the reasons for the lower enrolment for degrees in agriculture in relation to enrolment for other degrees at some universities in South Africa are outlined by Machethe (1988). It is the contention in this paper that the most important explanation which is likely to be valid in most African countries is the inferior status of an occupation in agriculture. Hannah (1966) states that "With a few exceptions, agriculture has little status, is not very well understood by the educated classes and by government workers in the developing countries, and is seriously handicapped by a lack of trained personnel and the leadership necessary to make it move forward".

The status of an occupation is determined by several factors. One of the most important among these is the remuneration associated with an occupation. A positive correlation between status and remuneration is postulated. There are indications that professionals in agriculture in some LDCs receive a lower remuneration than their counterparts in other occupations. A comparison of salaries of newly employed graduates in the departments of agriculture and education in one of the less developed areas of South Africa indicates that a graduate with a four-year degree in education received, on average, a salary which is 15 per cent higher than that of a graduate in agriculture holding a degree of the same duration (Machethe, 1988). The gap between the salaries increased with the number of years of employment. The large outflow of graduates from agriculture departments to education departments in less developed areas of South Africa may be

attributed to this discrimination in salaries. The discrimination in salaries against agriculture derives from the low status given to agriculture by government officials.

The inferior status of an occupation in agriculture is also the result of a misconception among members of the society of the nature of tasks involved in such occupations. An occupation in agriculture is often regarded as a 'dirty-hands' career meant for uneducated men. Hence, the lower quality of students enrolled for agriculture degrees and the lower proportion of females in the faculties of agriculture.

Non-formal education and some constraints

Non-formal education may be described as any organised systematic teaching outside formal and informal education systems. It includes in-service training, agricultural extension, adult literacy campaigns, instruction in health, nutrition and family planning. This paper is concerned with the first two aspects.

Non-formal education has the potential advantage of making good the deficiencies in formal education. Non-formal education programmes have a shorter duration and, therefore, skills are acquired within a shorter period than in formal education programmes.

In-service training is usually the responsibility of the employer. In LDCs, this responsibility may shift to universities due to a shortage of skilled manpower. Departments of agriculture in most LDCs are the largest employers of graduates in agriculture and they are usually short of the skilled manpower required to provide in-service training. The inability of departments to provide in-service training compels faculties of agriculture to engage in in-service training programmes to develop human resources. Faculties may organize short courses, conferences and workshops specifically aimed at the provision of needed skills and knowledge to workers who may come from both public and private sectors. At present, it would seem that universities and institutes abroad are ahead of African universities as regards the provision of short courses, conferences, and workshops. While some of the courses are undoubtedly useful, there is a danger that Africans attending them may return with highly developed knowledge which is, in fact, of limited practical use.

Faculties of agriculture must play an increasing role in providing in-service training which is relevant to the situation in LDCs. However, universities in some countries may be constrained by lack of funds and manpower. They may not have the necessary facilities and faculties may be understaffed.

With regard to agricultural extension, some faculties find it appropriate to provide extension services to farmers in addition to their formal extension education programmes. This may be necessitated by the shortage of skilled manpower in agricultural extension in government departments. In some faculties, it may be impossible to provide extension services due to financial and manpower constraints. This may be especially true in LDCs where most farmers cannot afford to pay for the service.

CONCLUSION

Faculties of agriculture in LDCs have an important role to play in human resource development. It has been shown in the paper that this may be achieved through the provision of both formal and non-formal education.

The inferior status of an occupation in agriculture appears to be an important factor limiting the number and quality of students who enrol for degrees in agriculture. It is, therefore, suggested that, for faculties of agriculture to play a meaningful role in human

resource development, attention needs to be given to the improvement of the image of an occupation in agriculture. This should involve educating communities in LDCs about possible careers which may be pursued in the field of agriculture and the nature of work involved. Emphasis needs to be placed on recruiting females to enrol for degrees in agriculture. Such efforts should not only be directed at adults but also at school children. However, publicity for agriculture alone is not a sufficient condition. It must be accompanied by improvements in remuneration for professionals where this is unattractive.

In order to ease the financial and manpower constraints of faculties of agriculture in the provision of non-formal education, the private sector must increase its role. The private sector could assist in the provision of finance for the acquisition of needed facilities and manpower. Foreign financial assistance could also help ease these constraints. Possibilities for cooperation between faculties of agriculture in African countries should be considered with a view to easing the skilled manpower constraint.

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