THE EVOLUTION OF COLONIAL AGRICULTURAL POLICY IN SIERRA LEONE, WITH SPECIAL REFERENCE TO SWAMP RICE CULTIVATION, 1908-1939

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ABSTRACT

This study hopes to contribute firstly to the new awakening among governments and international development agencies in sub-Saharan African about the crucial significance of a historical perspective in development planning in the region. It does this by tracing the evolution of colonial agricultural policy in Sierra Leone, during a period when particular attention was being paid to the staple food crop, rice. It deals with the establishment of the Department of Agriculture and its early attempts to encourage both cash-crop and food-crop production. In this way the study hopes to contribute to the continuing debate about the future of the rice industry in Sierra Leone by examining the main ideas, practical efforts, problems and achievements of the Colonial Agricultural Department while at the same time focussing attention on indigenous initiatives in which the Department itself was keenly interested.

The study shows that the unprecedented food shortages of 1919 and the accompanying riots, read by colonial officials as the result of the persistence of the 'primitive' shifting cultivation system in the countryside and Krio insubordination in town, compelled the Administration to place higher emphasis on food production. It shows how by the 1920s Agriculture Department Officers had come to consider improved swamp rice cultivation as the best solution to the food problem. In 1934, Rokupr Rice Research Station was established and systematic efforts to improve swamp rice cultivation began.

As well as tracing the evolution of Agricultural Department policy, the study shows how African farmers worked to improve their system of
rice cultivation in the Scarcies region, in ways which were of great interest to colonial officials.

Finally, the study shows how the implementation of Agricultural Department policy was constrained by shortage of funds, especially during the inter-war depression. After 1929 many officials were laid off and revenue allocations to the Agricultural Department were kept to a minimum. The development of rice research and extension work during the 1930s is placed firmly in this context and that of the growing need to apply scientific research to African agricultural problems. The study ends with the outbreak of the Second World War in 1939, after which new agricultural policies emerged and the old debates were largely forgotten: a situation which this study attempts to remedy.
ACKNOWLEDGEMENTS

This study of the evolution of colonial agricultural policy in Sierra Leone before the outbreak of World War Two is a response to the growing awareness among governments and international development agencies of the need for a historical dimension in grappling with the current crisis of development, and particularly of food production in Sub-Saharan Africa.

A work of this nature is bound to owe a debt of gratitude to many more people than can be individually mentioned here. But first of all I would like to express my profound gratitude to my sponsors, the British Council, who made this study possible. My ten months field work in Sierra Leone between December 1986 and October 1987 was also supported by generous grants from the University of London Central Research Fund (C.R.F.), the Award Committee of the School of Oriental and African Studies (S.O.A.S.), University of London, and the Africa Educational Trust. To all these institutions I wish to express my profound gratitude.

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Jones who not only made available his rare collections on Sierra Leonean agriculture but was always willing to clarify points of interpretation arising from the sources. He in fact became almost a 'godfather' to the thesis. Further I would also like to express my appreciation to all the farmers in northern Sierra Leone, and to the former colonial Agricultural Officials who willingly and freely shared their experiences with me. I am also grateful to Professor Harry Turay, Dr. Michael Crowder, Dr. David Skinner and Dr. Allan Howard for their advice during the early stages of the research.

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August, 1988
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<td>A.I.</td>
<td>Agricultural Instructor</td>
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<td>A.O.</td>
<td>Agricultural Officer</td>
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<td>A.R.D.A.</td>
<td>Annual Report of the Department of Agriculture</td>
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<tr>
<td>B.C.G.B.</td>
<td>British Cotton Growing Association</td>
</tr>
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<td>B.W.A.</td>
<td>British West African Colonies</td>
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<td>C.A.R.</td>
<td>Colonial Annual Report</td>
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<tr>
<td>C.D.F.</td>
<td>Colonial Development Fund</td>
</tr>
<tr>
<td>C.F.A.O.</td>
<td>Campagne Française d'Afrique Occidentale</td>
</tr>
<tr>
<td>C.O.</td>
<td>Colonial Office, London</td>
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<tr>
<td>Conf.</td>
<td>Confidential</td>
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<tr>
<td>Comm.</td>
<td>Commissioner</td>
</tr>
<tr>
<td>C.S.O.</td>
<td>Colonial Secretary's Office, Freetown</td>
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<tr>
<td>D.A.</td>
<td>Director of Agriculture</td>
</tr>
<tr>
<td>D.C.</td>
<td>District Commissioner</td>
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<tr>
<td>D.O.</td>
<td>District Officer</td>
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<tr>
<td>F.B.C.</td>
<td>Fourah Bay College</td>
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<tr>
<td>H.M.S.O.</td>
<td>Her Majesty's Stationery Office, London</td>
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<td>H.C.S.</td>
<td>Honourable Colonial Secretary</td>
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<tr>
<td>M.P.</td>
<td>Minute Paper</td>
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<tr>
<td>M.A.N.R.</td>
<td>Ministry of Agriculture and Natural Resources</td>
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<td>N.A.</td>
<td>Native Administration</td>
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<td>Northern Province, Sierra Leone</td>
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N.U.C. Njala University College
P.C. Provincial Commissioner, Sierra Leone
P.C.N.P. Provincial Commissioner, Northern Province, Sierra Leone
P.M.B.F. Protectorate Mining Benefit Fund
P.R.O. Public Record Office
R.H.L. Rhodes House Library, Oxford
R.R.R.S. Rokupr Rice Research Station
S.C.O.A. Société Commerciale de l'Ouest Africain
S.L.A. Sierra Leone National Archives, Freetown
S.L.S. Sierra Leone Studies
S.L.W.N. Sierra Leone Weekly News
S.O.A.S. School of Oriental and African Studies, University of London
U.A.C. United African Company
W.A.R.D.A. West African Rice Development Association
CHAPTER ONE

INTRODUCTION

The main aim of this study is to examine the ideas, practical efforts, problems and achievements of the Colonial Agricultural Department in Sierra Leone from 1908 to 1939. During this period the main policy options with regard to the rice industry emerged, and officials began to extend their knowledge of the traditional farming systems in Sierra Leone, particularly as regards the actual and potential innovative ability of farmers.

They took a special interest in indigenous farming systems in the Scarcies region, eventually opening their main Rice Research Station at Rokupr, working on the basic assumption that rice cultivation in mangrove swamps was as striking an example of indigenous technical and entrepreneurial initiative as the parallel developments in the export crop sector elsewhere in West Africa.

Apart from the pioneering work of Paul Richards, little has yet been written about these policy developments, or about the history of rice cultivation in the Scarcies region, outside official files and contemporary publications.¹ This gap in the academic literature on Sierra Leone contrasts with the detailed coverage of colonial agricultural policy and indigenous farming practice in research on other parts of West Africa.² Current writing on development issues is also underlying the importance of such research, for the lack of firm and adequate data of the kind collected by early twentieth century observers.

¹
²
is now considered to be a key issue in the failure of more recent development efforts in the region. Furthermore, as development agencies begin to move away from their former centralised and institutionalised "top-down" approach towards an approach of development from below, they are seeking information not only on the regional and ecological specificity of indigenous farming systems, but also on the historical events which have influenced them. Economic problems have been seen to have deep historical roots, and the experience of the past has been drawn on in confronting the challenges of the present.

This study attempts to address these issues by documenting and discussing colonial policy developments with specific reference to rice production in northern Sierra Leone. The study is divided into two parts, of which the first provides a general history of the Agricultural Department from 1908 to 1939, while the second looks in detail at the Department's Rice Research Station at Rokupr, setting it in the context of the Scarcies swamp rice farming system as observed by Colonial Officials. The Scarcies mangrove system is described at length partly to explain what Rokupr became but mainly because the Scarcies was a major example of rice for commercial use in Freetown - the "granary" of Sierra Leone. On the other hand the clearing of the mangroves in the Scarcies was a major example of African enterprise which predated the colonial era or even the European contact. Certain technical problems are associated with mangrove clearance which is one reason why rice was not grown in the West African mangrove zone for many years. Local farmers in the Scarcies region were therefore pioneers in transforming the Scarcies mangroves into a man-made agrarian landscape, the most radically
transformed of such landscapes in West Africa. It is for this reason that the Scarcies excited the interest of sympathetic Colonial Agricultural Officers like Mr. R.R. Glanville. Later the Scarcies was chosen as research station site, because it was felt that there was a receptive audience of skilled farmers nearby. The paradox though, as is shown in subsequent chapters, was that while indigenous initiative had created the Scarcies "granary" colonial authorities decided to back it up with research instead of concentrating on expanding Scarcies methods to the other mangrove ecologies such as the Bumpeh Creek. This was due partly because in the 1930s there was the growing realization that further yield gains could be had through plant breeding. Hence the station was to concentrate on varietal selection. But as shown in Chapters 8 and 9, subsequent history of Rokupr was blighted by being too close to the Scarcies and so blocked perception of other opportunities, for example improving the uplands. This helps to map out the boundaries of both local initiatives and colonial research efforts. In chapter 9 a final assessment is made of colonial attempts to harmonise these two approaches, and the Agricultural policy debates of the 1930's are related to the realities of the 1980's.

**Sierra Leone: Geographical Background**

In order to set these colonial policy debates and agricultural research findings in an appropriate local context, the next two sections of this Introduction will provide a brief geographical survey of the country and an outline of the colonial administrative framework within which the Agricultural Department operated. The Introduction will then end with a survey of the existing academic literature on Sierra Leonean
SIERRA LEONE:
REGIONAL VARIATIONS IN FARMING SYSTEMS

FIGURE 1

Source: Gwynne Tones et al. (1978)
agriculture, and an account of the archival sources and interviews on which the present study is based.

Sierra Leone, a territory of roughly 28,000 square miles with a population of below 5 million, is sandwiched in between the Republic of Guinea in the North, Liberia in the South-East, and the Atlantic Ocean in the West. The country contains remarkable geographical and socio-economic contrasts. For administrative convenience, it is divided into four main provinces, of which the Northern Province is the main focus of this study. With the exception of the North-Western part of the Province, which embraces the Scarcies region, Northern Sierra Leone is relatively sparsely populated especially the extreme Northeast which has a density of less than 50 persons per square mile.

According to Professor C. Magbaily Fyle, the nineteenth century wars, particularly the Sofa Wars, and rural-urban drift during British rule are the main explanations for the sparse population in the Northeast. This sparse population, and the hilly, dry savannah environment of the region, have posed problems which have been compounded by the longstanding neglect of the region by development planners. To this day it remains relatively inaccessible due to lack of adequate roads. Although farmers in the region still grow a wide range of crops including rice, cassava, potatoes, millet, beans, and sorghum, and also manage cattle, Northeast Sierra Leone is still relatively backward because farmers have problems transporting their surplus crops to market. The situation is made worse by the land use competition between sedentary croppers and pastoralists.
The Northwest corner of the North stands in sharp contrast to the Northeast. Its richest agricultural area is the tidal region which has come to be known as the Searcies. The Searcies region generally refers to the land bordering the main rivers immediately north of Freetown, embracing parts of the present day Port Loko and Kambia Districts. These rivers rise in the highlands of the Republic of Guinea and flow through the country, roughly parallel to each other, from a northeastern to a southwestern direction before emptying into the Atlantic Ocean by a common estuary. From a point ten miles north of Kambia, the Great Searcies forms the north-western boundary of Sierra Leone for a distance of fifty miles. By 1896 the Searcies region, indeed Northern Sierra Leone generally, was part of an extensive commercial system embracing the present day Republic of Guinea. The term "Searcies Region" is used here in a restricted sense to refer to the deltaic region of the Great and Little Searcies Rivers and the inland plains stretching behind them. This is one of the main rice producing regions of the country.

The Importance of Rice in the Economy of Sierra Leone

Rice which is grown both in the Uplands and in the lowlands is of great importance not only to the economic development of Sierra Leone, but also to its social and political stability, because it is the main dietary staple. About 80% of Sierra Leone's farmers cultivate rice in about 61% of the total cropped area. Rice farming in Sierra Leone is vulnerable both to pest hazards and to rainfall variations, and rice shortages and famines have provoked serious social upheavals. For
these reasons Governments in Sierra Leone since the second decade of this century have placed great emphasis on policies to increase rice production. Sierra Leone was then, and to some extent still is, considered to have a comparative advantage in rice production; but as will be shown in chapters three to six the colonial administration thought it would be necessary to move farmers from the impoverished uplands to the swamps in order to realise this advantage. Thus, while colonial policy makers took full note of indigenous achievements in the Scarcies, it can be argued that their view of the Northeast was too dismissive, thus weakening the impact of the Agricultural Department's Research effort on the economy as a whole.

Certainly, as will be shown in later chapters, no spectacular development of rice production took place as a result of colonial initiatives in the period under review. Also, as other authors have shown, with the intensification of gold and diamond mining from the mid-1930's onwards, a major drift of agricultural population took place towards the mines. The rice export trade stagnated during the diamond boom of the 1950's, and since then a wide gap between rice demand and supply has developed within Sierra Leone. For instance, recent production levels are estimated at between 26,000 and 50,000 tons of husk rice per annum. The fact that this is far below current demand is reflected in a national deficit of between 10,000 and 50,000 tons annually.

Colonial Administration in Sierra Leone, 1908-1939

British formal presence in Sierra Leone dates to 1808 when the Sierra Leone Company transferred responsibility for the Freetown Colony to the British Government which was eager to use Freetown as base in its
campaign against the Atlantic Slave trade with West Africa. In this regard it would be a misnomer to describe the period under review as the early colonial period in Sierra Leonean history, except when referring exclusively to the former Protectorate. The term "Sierra Leone" before the Protectorate declaration of 1896 referred only to present day Freetown and adjoining islands like Bunce, Tasso and Banana. In 1896 Britain declared its protectorate over much of the then hinterland of the Freetown Colony, for both economic and strategic reasons.

Since Britain at this time acted on the principle that colonies should be self-sufficient, that is, that they should pay for their own administrations, Governor Frederick Cardew sought to establish the cheapest form of administration. As will be shown in chapters two to six, continuing financial restrictions severely limited the Agricultural Department's efforts throughout the period 1908-1938. Meanwhile, all colonial officials faced further difficulties, including linguistic and cultural barriers as well as the problem of health and of easy access to the Protectorate. The British Administration in Freetown therefore decided to rule the territory through the traditional chiefs who now took the title of "Paramount Chief". While the Krio, because of their early start in education, as junior partners in British expansion in West Africa, were able to fill junior administrative positions not only in Sierra Leone but throughout British West Africa (B.W.A).

Revenue to administer the Protectorate was to be raised from a 5s Hut tax but this measure provoked an armed reaction in 1898- the very year it was enforced. Cardew, already mistrustful of Krio demands for an equal share in government, blamed the Krio for the Hut tax Rising.
Although the David Chalmers Commission blamed the event on maladministration and the tax itself, Cardew, backed by the Colonial Office, proceeded to Europeanise the Civil Service and so to exclude the Krio from positions of influence. Consequently, the era of good feeling, mutual understanding and cooperation which had characterised the Anglo-Krio partnership was now replaced by one of mutual suspicion. On three occasions, in 1919, 1926 and 1939 the Krio faced the charge of subversion for masterminding protests and strikes against the Colonial Administration. The Krio, however, saw these strikes as a legitimate way to ventilate their grievances against the Colonial Administration.20

These developments compelled the Colonial Administration in Freetown to pay greater attention to the Protectorate, which was also the main source of revenue and food supply for the colony. Every effort was made to minimise Krio influence over the Protectorate. For instance in 1906 Bo School was established to prepare the sons and nominees of Paramount Chiefs for tribal leadership and no Krio teacher was allowed.21 In 1919 an Agricultural Training College was established at Njala while an Ordinance eight years later made it impossible for Krios to own land in the Protectorate.22 Meanwhile the Colonial Administration strengthened the position of Paramount Chiefs and tended to be tolerant of domestic slavery until 1927 when it was outlawed.23

To facilitate smooth administration and trade in agricultural, particularly palm produce, a railway was built to link Freetown and the eastern part of the country which was considered to be the main palm
TRANSPORT NETWORK IN SIERRA LEONE circa 1920

KEY

- First Class Roads
- Other Roads
- Railway
- Town
- Station

Source:
J. Barry Riddel THE SPATIAL DYNAMICS OF MODERNIZATION IN SIERRA LEONE (1970) p. 22 and FORDE & JOHNSON, undated, available at the Geography Dept., Fourah Bay College, University of Sierra Leone

FIGURE 3
belt zone.²⁴ By 1915 a branch line had been cut from Bauya to Kamabai in Biriwa Limba country immediately north of Makeni in Northern Sierra Leone.²⁵ As from 1905 feeder roads were also constructed to link up with the railway. Similarly trade, education and missionary endeavours followed the rail line. The settlements which grew up along the railway line became growth poles, but the Northern Province remained only on the fringes of this development.²⁶

The main consequence of this policy was to create wide differentiation in development within regions in the country. In the north, foreign and local capital investment and agricultural trade was mainly limited to key towns on the coast and major rivers such as Kambia, Mambolo, Kichom, Mange, Rokel and Magbeli.²⁷ Without adequate roads to link them to the railway and to these coastal growth poles, producers further inland continued to rely on their pre-colonial trade patterns with their neighbours across the frontiers. This phenomenon was usually considered as "smuggling", but to the people it was a rational response to arbitrary colonial boundaries.²⁸

Meanwhile, in British Colonial agricultural policy the early twentieth-century approach of "laissez-faire" which emphasised that "the primary duty of colonial government was to provide a framework of law and order and an impartial administration of justice and thus 'hold the ring' within which the natural play of economic forces would infallibly lead to increasing development"²⁹ was giving way to a belief that Africa's resources should be actively developed through the application of science. As Major Archibald Church put it,³⁰

What is needed...is a chain of research stations, linked with the universities and research institutions, exchanging
results through the medium of a centrally established bureau, and exchanging research workers. Our greatness as an Imperial power will ultimately be based upon our achievements in this field. Our claim to guide the destinies of so large a proportion of the world's peoples will rest upon the application of the work of our research workers to develop the vast potential resources within our dominions for the material advantage of every people, and upon the type of new civilizations we are able to assist in building upon the sure foundations of their knowledge.

The Colonial Office led the way by establishing in 1921 the Imperial College of Tropical Agriculture in Trinidad, making provision for postgraduate scholarships for the study of tropical agriculture in both Cambridge and Trinidad, and creating Colonial Research and Advisory Committees on various technical matters including agriculture. Thus from the mid-1920's onwards, the British Colonial Agricultural Departments were strengthened by new, scientifically minded recruits. However, as will be shown in chapters four and six, financial problems continued although the Colonial Development Act of 1929 made a little extra money available.

Despite his limited resources, the duties of the Agricultural Officer were extensive:

To investigate native methods of agriculture and to discover what is useful in them; to stimulate the improvement of the indigenous methods of cultivation or the adoption of new methods; to give advice to owners; to instruct native subordinate staff; and to supervise government experimental station.

A major aim of this study is to explore how far and how well all these duties were fulfilled, given the constraints of outlook, transport and funding which existed.
Sierra Leonean Economic Development: Major Studies

The first attempt to present a comprehensive account of the Sierra Leonean economy was made by Saylor in 1967. While impressive, Saylor's work is limited in time-span. He focuses on events after World War II, by which time the main policy options for the agricultural sector had already surfaced. Choices had been made and their regional rationales almost forgotten. Furthermore, in attempting to touch on all aspects of the economy, the author had to make sacrifices in depth and thoroughness. Issues like ecology, demography, technology, land use systems, trade and government intervention in agricultural production receive scant attention. Alpha-Kpetewama, in his generally less successful overview of the economic system of the country does redress the balance in stressing problems arising from the vagaries of the weather, pests and diseases, inadequate extension services, land allocation, credit for small producers and the distortion of market forces; but without proposing any solutions.

On the historical front, Martin Kaniki has provided an important socio-economic survey of the country during the inter-war period, paying particular attention to the export sector and the impact of mining on the general economic growth of the country. However, Kaniki pays little attention to Colonial agricultural policy or to the connections between economic crises and protest movements such as the 1919 Anti-Syrian Riots and the 1931 Idara Rising. Similarly, a recent work by Gilbert Sekgoma provides a useful introductory survey of economic change since 1929 but its coverage of agriculture, especially in the period before World War II, is very scanty.
The most solid general work on the Sierra Leonean agricultural sector is the 1976 collection edited by John Levi, which provides a balanced account of both the subsistence and the export sectors in the 1970's, emphasises the flaws of the agricultural planning approach then current, and calls for a reallocation of resources and a shift from a top-down to a bottom-up approach in agricultural development. A less scholarly but nevertheless an informative general account of recent agricultural development efforts came out two years later. The author, Mr. S.A. Jabati, served for a long time as an Agricultural Officer in the Department of Agriculture. His account combines personal reminiscences and solid facts, and is written in simple, everyday English, but makes no reference to sources used. It is therefore best used as a source of general impressions of Sierra Leonean Agricultural problems and policy efforts. Given the limitations of these general studies, it has been necessary to build up from scratch a picture of the history of agricultural policy, the Agricultural Department's practical work and its relationship to the challenges actually facing farmers in Northern Sierra Leone between 1908 and 1939. However, some help in doing this was provided by the more specific studies published from time to time by the Agricultural Department itself and by independent observers. Many of these studies will be discussed in detail in chapters two to eight, but they will be outlined briefly here before turning to archival and oral sources.

The first empirical account of Sierra Leonean Agriculture was made by a Swedish Botanist, Adam Afzelius, who worked in the Service of the Sierra Leone Company between 1792 and 1796. In this account Afzelius
gave a vivid picture of Sierra Leonean agriculture in the latter part of the 18th century. He was the first to mention that coffee and cotton grew wild in Sierra Leone, while other crops like rice, cocoa, groundnuts, coconuts, ginger and cassava were already in common use. The study also threw light on the vain struggles of the Company Officials in trying to establish a viable agricultural system in the Freetown Colony. It was over a hundred years before another empirical account of Sierra Leonean agriculture was to appear. This work, written from the Southern Nigerian Department of Agriculture, was the first to create public awareness of the serious deforestation problems in the uplands around the Freetown Peninsula. This awareness no doubt strengthened the Colonial Administration in its resolve, reached in 1908, to pay more attention to agriculture and to transform the former Botanical Gardens into a fully-fledged Department of Agriculture. Similarly, Lane-Poole's forestry survey of 1911 confirmed Unwin's report and was accompanied by the establishment of a separate Department of Forestry in Sierra Leone.

By this time the Colonial Office in London had appointed a Superintendent of Agriculture in West Africa. The first person to hold this post, Gerald C. Dudgeon, also produced a readable and comprehensive account of the agricultural and forest products of British West Africa which, in addition to confirming earlier views, for the first time presented an objective evaluation of the agricultural potential of the West African region. This was followed seven years later by Harold Michell's pioneer work on the geography of the country, which covered its administration, agriculture and forestry, trade and communications.
These two works provide a good background understanding of the general agricultural system and related policy issues in Sierra Leone during the first two decades of this century.

It was not until the 1950's that further general works on Sierra Leonean agriculture, covering the flora of the entire country, appeared. The author, Frederick Deighton, was for many years senior pathologist in the Colonial Agricultural Service in Sierra Leone. His works are therefore valuable sources not only of botanical data, but also of information on colonial agricultural policy in Sierra Leone. Between Michell's and Deighton's works statements on the agricultural system of the country appeared mainly in the form of Departmental pamphlets aimed at educating farmers on the adoption of specific methods and cultivars. From these publications it is evident that agricultural policy in the first two decades of this century was attuned to the "Caribbean Model" of development, that is an over-emphasis on export production. However, from 1920 onwards the Department of Agriculture began to give some consideration also to subsistence production and this becomes evident in its publications. For instance, in 1922 Pillai reported on swamp rice growing in the Scarcies region. In this report Pillai showed that Scarcies farmers were as advanced in swamps rice growing as their counter-parts in Southern India. The Rice Commission of 1927 and Mr. R.R. Glanville's Agricultural Survey of the Scarcies in 1930 confirmed Pillai's views and provided more solid data on farming systems in the Scarcies area.

These findings eventually led the government to establish a Rice Research Station at Rokupr in the Great Scarcies in 1934.
Since Unwin's report of 1909, the Department of Agriculture had firmly considered deforestation and soil fertility to be the key problems in Sierra Leonean agriculture, but discussion of the topic lapsed until in 1938 when the Director of Agriculture, Dr. F.J. Martin, produced a pamphlet based on his vegetation survey of the country.\(^5\) This publication which came out at the time of increasing world wide concern for soil conservation following the Dust Bowl Scare\(^6\) in the United States \(^7\) did much to convince the Colonial Administration in Sierra Leone of the urgent need for a more actively conservationist policy in the country. Even more importantly, another work by Martin directly linked land degradation in the country to existing methods of upland rice cultivation which had long since been seen in a poor light.\(^8\) This reinforced the emphasis on swamp rice cultivation which had arisen from the earlier work of Pillai and others in the Scarcies region.

The publications of the 1970's and 1980's continued to address the same issues as those raised in these early twentieth-century Agricultural Department pamphlets. For instance, Andrew C. Millington examined soil erosion and agricultural land-use systems.\(^9\) In two detailed case studies, Paul Richards probed into the ecological specificity of farming systems in Nigeria and Sierra Leone, emphasising the dynamic and innovative nature of African farmers in coping with both environmental and economic stresses.\(^10\) The thrust of his argument is that their initiatives should form the basis for further development. In evaluating Colonial and post-Colonial policies towards food production in Sierra Leone, Richards argued that policies which aim at moving farmers from the uplands to the lowlands are misguided. Together with the neglect of
indigenous initiatives which has characterised development planning since world war II this neglect of the uplands lies at the root of the present difficulties in the agricultural sector."

Other writers share this view. Dunstan Spencer for instance reached the conclusion, after empirical research, that self-sufficiency in food production would be unattainable unless policy-makers were prepared to accommodate the traditional system of farming, offer cash inputs to farmers and undertake a reallocation of resources." In the same vein, Johnny and Konteh argue in favour of traditional (including upland) farming systems." In another study Johnny examined the wide range of choices open to local farmers in the Southern Province in raising agricultural capital outside the formal sector." Finally, Patrick R. Kireta-Katewu has shown that upland systems of mixed cropping have great economic value through their ability to minimise, if not eliminate the risk of complete failure in output."" 

Apart from these works, which are directly concerned with Sierra Leonean agriculture, much of our knowledge of agriculture in the north has to be gleaned from isolated statements of nineteenth and early twentieth century travellers," and the works of historians and anthropologists active in the area." All these writings, with varying degrees of detail, throw light on production and exchange mechanisms in the north during the nineteenth and twentieth centuries. Sibanda's work in particular examines the impact of international market forces on the local economy. He observed that much of northern Sierra Leone was peripheral to the extension of industrial capitalism from Freetown, and that the consolidation of colonial rule there depended on local
collaborators and on a complex network of interest groups. Walter Rodney's work is also especially relevant to this study as he cites pre-colonial records dealing with the origins and early history of rice production in Sierra Leone.

Despite the merits of all these works, it remains true that the literature on the Sierra Leonean economy in general and agriculture in particular is scanty, thin and uneven. The role of the Colonial Agricultural Department in the overall process of agricultural development is especially obscure, and the primary sources used for this study have been essential to explore this topic.

U.K. Archival Sources

Documents and contemporary publications consulted at the Public Record Office, Rhodes House, the Foreign and Commonwealth Office Library, the Royal Commonwealth Society Library and the library of the Institute of Commonwealth Studies, University of London provided a general idea of the framework within which Colonial agricultural policy was formulated, and views and debates which shaped it. However, the relative value of these sources for this study varied and an attempt is therefore made below to indicate the main strengths of each archive or library used.

(i) The Public Record Office

The most useful sources here were the Original Correspondence between the Governors of Sierra Leone and the Secretary of State for the Colonies, which shed light on the personalities and wider circumstances influencing agricultural policy-making; and the Colonial Office Confidential Prints, which helpfully bring together despatches on key debates. Also valuable were the Sessional Papers and Annual Reports,
especially those of the Agricultural Department itself. The C.O.554 and C.O.852 series provide an additional mine of information on specialised economic subjects. The subjects covered by files in these series include Economic Survey reports, Reports on Soil Conservation and Land Use, and Progress reports on Rice production and the Rokupr Rice Research Station. However, because these files are taken out of the context of Sierra Leone's original Correspondences (the C.O. 267 series) the political and social background to these reports is often left out.

(ii) Rhodes House:
This library holds a wide range of sources on Sierra Leone, both primary and secondary. Much of it centres on administration but the diaries, reports and personal reminiscences of former Colonial officials, travellers and traders in Sierra Leone, collected by the Development Records Project, provide valuable insights into the economic, political and social climate of the time. The series detailed in the Bibliography are particularly relevant to the period after 1930.

(iii) The Foreign And Commonwealth Office Library:
This library holds a large collection of Censuses, Sessional Papers and departmental annual reports as well as a rich photographic collection comprising views of colonies and colonial life as seen by Colonial Officials. It also holds rare periodicals and newspapers. Like the Rhodes House Collection, these sources are especially rich for the period after 1930.

(iv) The Royal Commonwealth Society Library:
This contains an excellent collection of rare books and articles about Sierra Leone, including such useful Travellers and Traders'
accounts as John Matthews' *A Voyage to the River Sierra Leone* (1788) and A.G. Laing's *Travels in Timmannee, Kooranko and Soolima Countries, in West Africa* (1825), which give details of agricultural trade and production in Sierra Leone in the 18th and 19th centuries.

(v) The Institute of Commonwealth Studies Library:

This holds very little on Sierra Leone in the way of primary sources but it has a comprehensive index of work in progress on Sierra Leone in the U.K., together with an important and sizeable collection of secondary data on Sierra Leone, some of which relates to agriculture.

**Interviews Conducted in the U.K. with Former Colonial Agricultural Officials in Sierra Leone**

This study benefitted tremendously from the ideas and experiences of some former British Colonial Officials who served in the Agricultural Service in Sierra Leone. Professor E.H. Roberts, former Research Physiologist at the Rokupr Rice Research Station and now at the Department of Agriculture, University of Reading, made available to me many publications, including annual reports on the station, as well as throwing light on its work in the 1950s. Mr. Frederick C. Deighton, former Pathologist in the Sierra Leone Agriculture Department - had long since retired and living in England - gave a detailed view of the fauna, crop pests and diseases in Sierra Leone, as well as the general structure, activities and policy debates of the Agriculture Department from 1924 to about 1954. Mr. R.Q. Craufurd, formerly the Government Botanist in the 1950s and 1960s, and now retired and living at Bishops Stortford, Hertfordshire in England, also threw light on work at the Rice Research
Station during the 1950s and 1960s and was kind enough to allow me to use his collection of material on the Rice Research Station. Professor D.H. Tindall of Silsoe College, Bedford referred me to some useful sources and other contact persons as well as narrating the early experiences of the Agriculture Department in Sierra Leone. Mr. F.R.A. Murfitt, also of Silsoe College kindly allowed me access to his personal copies of A.C. Pillai's reports of swamp rice production in Sierra Leone during the 1920s. Mr. T.S. Jones, now of Sevenoaks in Kent, and who had several times acted as Director of Agriculture in Sierra Leone during the 1950s, was of immense help to me throughout in terms of access to relevant material and clarification of various aspects of the Colonial Agricultural Service in Sierra Leone. Mr. A.K. Murray of Edinburgh, formerly head of the Animal Husbandry Station at Musaia in the Northern Province, kindly wrote about his experiences and observations of traditional agriculture in Northern Sierra Leone. Finally, Dr. F. Jean Jordan, former Entomologist in the Agriculture Department in Sierra Leone, also sent me useful accounts of her recollections of the problems and achievements of the Department of Agriculture during the 1950's and 1960's. She also threw light on the career of her husband, Mr. H.D. Jordan, who was the Director of the Rokupr Rice Research Station until 1964.

The views of these people helped to clarify the issues raised in official accounts in British institutions and libraries. They also indicated problems encountered in policy implementation on the ground. However, in general both the archival and oral UK sources merely map out the boundaries of Colonial Agricultural policy in Sierra Leone and give
some idea of the personalities and institutions through which it was translated into practice. For the detailed information of the implementation of the policies outlined in the UK sources, one would have to turn to Sierra Leone Sources, which are discussed at greater length below.

Archival Sources in Sierra Leone

The archival material available in Sierra Leone falls into two broad divisions: National and Provincial Archives. The latter are also subdivided into Provincial and District Archives. It must be mentioned that the archives are generally in a very bad state for many reasons, including lack of adequate trained archivists, lack of funds to purchase equipment and to provide adequate reading facilities, and lack of adequate and appropriate storage facilities. Consequently, many valuable records are damaged by water, or eaten up by rats, termites or cockroaches, or even destroyed by manhandling. As a matter of policy many of the early Native Affairs Minute Papers in all archives were deliberately destroyed. One would be extremely lucky to find a Minute Paper pre-dating 1912. Even for the latter years there are many gaps. At present the National Archives at Fourah Bay College have no workable catalogue system. Documents are randomly stored so that the location of a source is almost an impossibility. It is a matter of sheer luck, and one can spend hours searching without finding anything, even though the source may be in the archive somewhere. Most of the material is still in open folder files, and often papers get mixed up between folders. Reading facilities are inadequate and not conducive to study - the reading rooms, often in the same room as the documents, are damp, stuffy,
very poorly ventilated and partially dark. During my field trip in 1987, the electricity was on for only a few hours in the week, often at times when it served no useful purpose to the researcher. Further difficulties were imposed by the absence of workable photocopying facilities, and by transport difficulties owing to an acute fuel shortage.

For all these reasons, archival research in Sierra Leone at the moment is a long, tedious and frustrating business. But it is worth the effort because the documents, when found, are really revealing and illuminating, particularly when the focus is on the implications of policy decisions for actions on the ground. Otherwise, much of the material is a duplication of the correspondence held at the Public Record Office in London.

In the Sierra Leone National Archives situated at Fourah Bay College, the Minute Papers on Agriculture from the CSO series were found particularly relevant for this study. These cover the period 1911-1919, and run into hundreds of files, covering the Agricultural Department's origin, structures, activities, policies and problems. The topics highlighted include initial efforts at the Department's evolving a crop rotation system, the introduction of improved seed rice and other crops, local reactions to these changes and local initiatives in cash cropping. There is also information about the soils and vegetation of the country and the effect of this on the farming cycle. This is a vital source for the history of official agricultural policy in the country. Unfortunately, no continuation of this source could be traced after 1919.

Between 1922 and 1928 the Agricultural and Forestry Departments were merged into the Lands and Forests Department, and the main source
available is the Series of Annual Reports of this Department (consulted at the Tropical Product Institute, London). After 1928 the Departments were separated again and the Open Policy Files together with the CSO Confidential Series in the Sierra Leonean archives allow us to look at agricultural policy in detail again.

The CSO Open Policy Files on Agriculture, Forests and Industry, 1928-1942, contain 34 bundles in all, each containing 50 or so files. Many files are, of course, missing. However, these documents provide a wealth of information on specific issues relating to colonial agricultural and commercial policy, implementation of agricultural and commercial policy, implementation of agricultural projects, agricultural research, farmers' Cooperative Societies, development plans, agricultural education, trade statistics, produce inspection, activities of expatriate concerns, and Colonial Development Schemes.

The CSO Confidential series of files on Agriculture, Forests and Industry, 1928-1942, comprises four bundles, one of which is apparently missing, for it could not be found. The surviving bundles are also incomplete. These documents are different from the OPFs only in that they deal with highly specialised aspects of agriculture, forestry and commerce. The series documents the debates behind major decisions for example the creation of the Protectorate Mining and Benefit Fund and the allocation of Colonial Development Act. It also contains information on African economic activities and the general economic policy of the colonial government. The University College at Njala, some 150 miles from Freetown, has no archives but maintains a Sierra Leone Studies collection which contains valuable reports of research carried out by the
University staff and students on various aspects of Sierra Leonean agriculture. Most of these reports are highly technical and deal with factors affecting the yields of rice and other crops. Disappointingly, few records throw light on the history of the Agricultural Department, or even of Njala itself, even though for a long time it was the Departmental headquarters. However, last year a former student and now an employee of the college, Mr. Thomas B. Kallay compiled a factual account of Njala from sources he had compiled himself. There is much one can learn from this book about labour history, the impact of the two world wars on Sierra Leone and the growth of agricultural education during the Colonial period. It is a good, detailed study, but it is flawed by having no references to its sources, so that the reader cannot follow up information on specific issues.

Other relevant material held at Njala includes early issues of the Annual Reports of the Department of Agriculture and the Rice Research Station; and many miscellaneous publications and papers relating to agriculture in Sierra Leone. These papers mainly address ecological issues. The library is held in a small building, but it is efficiently run and equipped with adequate reading and storage facilities.

The other provincial archives relevant to the study include those held at the Provincial Secretary's Office at Makeni, the Koinadugu District Council, and the Agriculture Department, Kabala; the Rice Research Station, Rokupr, and the Kambia District Council Office.

At Makeni the archives are confined in a damp, narrow room in the basement of a colonial structure which houses the Northern Provincial Secretary's Office. The archives are in a neglected state. The archival
room has no door and no reading facility. The room is damp and stuffy, thus providing a conducive environment for insects, rats and even snakes. The documents are randomly stacked; thousands of documents have been and are still being destroyed, often deliberately. To find a useful source one would have to set aside a day or two unearthing a mound of papers from different and unindexed files. More storage space has been given to salary vouchers than to colonial records which, according to the official reasoning, have outlived their usefulness. Groundnut (peanut) and fruit sellers are allowed free and unrestrained access to the archives for the purpose of removing papers in which to wrap their commodities. It is also a tissue store for workers in the Provincial Secretary's office. To be seen working there is to be considered mad or idle. However, post-independence files, especially those on current Green Revolution packages, are kept intact in a well-filled cabinet in the Chief Clerk's office.

Some colonial files which have survived this process, throw light on the rice trade, agricultural shows, seed rice revolving schemes, District economic plans, rice mills, swamp rice clearance schemes, conservation schemes, land tenure, Mabole ploughing scheme, irrigation and drainage schemes, policy towards road construction and agricultural surveys. Thus they provide some indication of the implementation of agricultural policies on the ground.

At Koinadugu District the District Officer's office at Kabala had virtually no useful colonial files. The Decree books held there relate mainly to the amalgamation of chiefdoms, boundary disputes, and the death and crowning of paramount chiefs. But much useful information can be
obtained from the sub-unit of the Department of Agriculture, a few yards north-west of the DO's office. These more or less slender accounts were later supplemented by oral information.

At Rokupr, the archives were no different from those of Makeni. I spent a whole day unearthing relevant documents and only managed to tumble on a few files dealing with mechanisation and irrigation. The archival room was taken up with past salary vouchers. Although the Rokupr Rice Research Station has been open since 1934 and is the only official Rice Research Station in the country, there is not a single administrative file from 1934 to 1970. They appear to have been destroyed either deliberately, to make room for the vouchers, or randomly, during the industrial crisis of 1980 when unskilled labourers went on the rampage, campaigning for improved conditions of service. An alternative view is that the then Director of the Station, Dr. Jones, against whom the strike was directed, took a lorry-load of records to Freetown, ostensibly to deposit them in the newly-established National Agricultural Documentation Centre (NADOC) at Yougi Building. NADOC, however, has no such files, although it does hold a substantial amount of other post-1950 material on the Rice Research Station. Annual Reports and private sources (and Kambia oral and district archival information) are our main sources for Rokupr's history, together with the Freetown archives.

The Library of the Research Station, perched in a small bungalow previously used for dark-room experiments, is also of limited historical use. Much of the material deals with past links between the Station and other agricultural research departments in West Africa, Europe, America, Canada and Asia. There are a few records of colonial research on swamp
rice-farming, with emphasis more on fundamental than applied research. All is not lost though. The Station has a complete set of its Annual Reports from 1954 to 1962. This is the period when the Station's work was extended to cover all the British West African territories. To cover the period before 1954, in which I was interested, the Ministry of Agriculture and Natural Resources produced a valuable Summary of Work carried out at the Rice Research Station, Rokupr, 1934-1953. These records provide a clear picture of work done and the problems encountered. Occasionally, one stumbles on reports left behind by former officials of the Station. There is also a good number of articles and reports on the technical aspects of swamp rice-farming and processing. Finally, I carried out interviews in and around Rokupr to find corroborative evidence for written sources as well as to supplement the documents.

The Kambia District Archives are well organised into classified subjects, and there is sufficient space to hold many documents and still leave enough reading facilities. But like other archives, many of the earlier files have been destroyed. For instance, the file on Haidara Kontorffili which I read there in 1977 was nowhere to be seen in 1987. However, existing documents, such as the monthly Intelligence Reports are very informative on the rice trade and rice smuggling to French Guinea by African farmers and traders in the Scarcies area. Other documents throw light on provincial administration, District economic plans, and on the 1956 peasant revolts.
Oral Interviews

Recording of farmers' experiences was an integral part of the research. Three case study areas were examined: Biriwa Chiefdom in the Bombali District; Wara Wara Yagala, Wara Wara Bofodea and Sengbe Chiefdoms in the Koinadugu District, and Rokupr in the Kambia District. In these interviews an open-ended approach was used. A wide range of issues was explored with a view to getting some understanding of change over time in the agricultural sector generally. A record of the questions asked was taped and later transcribed. At the same time issues specific to each District (as indicated by archival sources) were also examined.

The interviews were conducted in June in the Bombali and Koinadugu Districts, and in August in the Kambia District. These are the peak periods in the farming cycles, and local farmers hardly had adequate time to talk to me about their problems and experiences, but I had to conduct the interviews nevertheless because this was the only possible time to get a lift to this most inaccessible part of the country, particularly Koinadugu. Two options were open to me: either to meet them on their farms, which were often five or so miles away from the town, or else to wait until they had returned from their farms late at night. Either method achieved very little, so I decided to approach the problem through the headman of every village I visited. The headman would then make an appointment with me for a particular day, usually a Friday, when he would assemble the leading farmers in the village. These group interviews were not held frequently, but were far more useful than the individual interviews. Group interviewing has the advantage of editing and analysing several strands of traditions on a particular issue. However,
it also presents problems because age is revered in African traditional societies. This can present a problem of authenticating views expressed by elders in group interviews because it is typically unconventional and rude to refute a statement made by one's superior. Further, in almost every District I was confronted with the following questions: What do we stand to gain from this interview? What do you hope to do with all these interviews? Are you sent by the government or by IADP (Integrated Agricultural Development Project)? Or are you destined to work in our own District?

Villagers demanded my clear identity and the purpose of my research. Their curiosity was justified as I later came to learn. Many of them were fed up with previous researches in their areas which have yielded no further help with their struggles in their current plight. As the town headman at Senegedugu in the Koinadugu District said to me, "The government has been sending people to us to ask us about this or that...and promised to do this or that but till now nothing has been done. We have not got money to hire labour, no good roads, no lorries to transport our crops to market (Freetown), no tools, hospitals - nothing whatsoever. So why should we be talking to you on the same issues?"

The farmers were more eager to make "prescriptions" on which the government should act to resolve their current problems, than to recall the past for its own sake. Consequently, the accounts were flawed. Farmers tended to distort, sometimes unintentionally, past events in order to justify their present demands. However, in the Bombali District farmers were willing to discuss the circumstance surrounding the use and development of animal traction, one of the major projects of the Colonial
Agricultural Department. The oral accounts show that the introduction of the animal traction technology coincided with the acute labour shortage created by the abolition of the domestic slave trade in 1927. The technology itself originated from the Republic of Guinea. Four Mandingo youths were sent to Kankan in Guinea to be trained in the use of draught oxen, and on their return to Sierra Leone they were used to teach other Sierra Leoneans in the use of oxen in farming. Animal traction has had a chequered history. After an initial enthusiasm it was neglected in the 1930s and almost went into disuse in the 1940s, but was picked up again in the 1950s, and then abandoned until very recently when it has been shown to be a better substitute for tractorisation. For farmers in the Biriwa Chiefdom, however, the technology has been in continuous use. The Mandingoes, in particular, told me they could not do without it. Farmers also recalled the £10 Loan Scheme started in about 1953 to facilitate the cultivation of swamps. But they were not able to recall the names of seed rice varieties introduced by the Agriculture Department.

The main current problems of farmers in the Bombali District are crop damage by cows, labour shortages, weed, and lack of capital. In the Koinadugu District, also, land-use competition between pastoralists and sedentary croppers is intense. Both archival and oral sources trace the problem from the colonial period. The Ndama cattle, which are resistant to trypanosomiasis, are found in large numbers in the Koinadugu District, and the colonial government wanted to develop mixed farming in the district. This did not work for logistical reasons: the Fulah - the cattle rearers - did not own land, nor were they keen to cultivate the land; on the other hand, the indigenous population showed little interest
in cattle. Cattle damage to crops became frequent, and violent clashes between croppers and pastoralists could not be avoided. Further, to ensure adequate fodder for their cattle during the dry season, the Fulah, often burned the vegetation deliberately. In revealing these problems, the interviews provided a valuable corrective to the views expressed in official records, especially the view that land clearance for upland rice farms was the major cause of deforestation.

The interviews conducted in Koinadugu District also gave more positive information about the efforts of the Agriculture Department in the 1930s to spread the transplanting technology in the District. These efforts have continued to bear fruit, especially among the Yalunka and Koranko who live in areas where swamps are widespread. In these places rice is produced in abundance using high yielding, short and medium varieties. Also vegetable gardening is a thriving industry among the Yalunka in the Sengbe Chiefdom, but most of the crops perish because of the lack of accessible markets and the inadequacy of the transportation system.

At Rokupr and Kambia in the Kambia District, the interviews were directed at obtaining factual accounts about the origin and growth of these two towns, the innovative nature of farmers in the Scarcies area, and the impact of the Rokupr Rice Research Station generally. From the oral traditions collected by previous scholars it is clear that both Rokupr and Kambia emerged in the eighteenth century as trading towns. This was partly a response to the growing demand for rice and other food items in Freetown and the demand for fish, salt and other manufactured goods further inland. Rokupr and Kambia served as commercial entrepots.
for both the coastal and the interior or inland trades. These towns naturally attracted immigrants from far and wide - Limba, Temne, Soso and Fulah, and now Loko and Mende as well. The traditions of the two dominant ethnic groups, the Limba and Temne, made rival claims to the founding or ownership of these towns.

In the nineteenth century the Temne and Soso frequently went to war for the control of Kambia. The Tonko Limba group also went to war with the Soso for farmlands, and in the course of slave-raiding activities. Lebanese, Syrian, Krio and European merchants also settled in Kambia and Rokupr. Thus population pressure could have acted as an additional factor in the development of advanced swamp rice technologies in the Scarcies region in the latter half of the nineteenth century. By 1894 ethnic and chiefdom boundaries in the Kambia District had been defined. When the international boundary with Guinea was cut in 1896, the long-distance trade in the interior was disrupted but the coastal trade with Freetown assumed a greater importance. To this day Kambia is predominantly a trading town while Rokupr, thanks to the Rice Research Station, remains a thriving centre of the rice industry in the Kambia District. 

The traditions collected for this study in 1987 deal with trade in rice and other commodities, rice smuggling to French Guinea by both farmers and Syrian traders, and labour migration to the Rokupr rice fields during the harvest season. They also refer to changes in the use of working tools, but contain hardly any information about the origin of the transplanting technology. The names of most of the previous officials of the Rice Research Station are within living memory at
Rokupr. Beyond a radius of some twenty miles from Rokupr the Rice Research Station is little known although high-yielding varieties released from the Station are widely adopted in the Kambia District and beyond. It is not clear from the traditions when this adoption process began. In the Rokupr area and Samu Chiefdom the improved varieties have virtually replaced the traditional varieties. However, in the adjoining Chiefdoms like Sanda Mabolontho, Sanda Tenraran, Bramaia, Gbile and Tonko Limba farmers still grow the glaberrima variety alongside the improved varieties, often with the history of those varieties.

The traditions of the Kambia District speak of occasional visitations of locusts and of two major peasant risings. These events are corroborated in the documents and so can be dated. The Intelligence Reports also give information on the rice trade and smuggling, while the Annual Reports of the District throw light on administration.

This study is based on a wide range of sources consulted both in Britain and in Sierra Leone. It traces the gradual evolution of colonial agricultural policy from 1908, when the first steps were taken to establish the Department of Agriculture, to the outbreak of the Second World War, which ushered in a phase of more systematic "top-down" planning. During the period under review, policy evolved less through conscious planning than through a pragmatic and continuing response to a whole range of problems - economic, ecological, social and political. Often the solutions envisaged for the perceived problems were unsuitable, especially in the case of soil degradation on the uplands; but at the same time, observation of African farming methods in the Scarcies di...
lead some officials to adopt a positive and cooperative attitude towards indigenous cultivators.

In Chapter Two the formal establishment of a Department of Agriculture in 1910 is shown to have coincided with an acute famine. The theme of famine recurs in Chapter 3, where the famine-linked anti-Syrian riots of 1919 are shown to have accelerated a shift in policy. Greater attention came to be paid to subsistence production in general, and to the cultivation of rice for the Freetown market. Since colonial officials had a dismissive attitude towards upland farming systems, Swamp rice cultivation gradually came to be regarded as the panacea to solve the food problem. The implications of this policy shift, and of the simultaneous restructuring of the Departments of Agriculture and Forestry, form the main theme of Chapter 4.

Ideas, however sound, require adequate financial, administrative and institutional backing if they are to be effective. In Chapters 4 and 6 it is shown that such backing was often absent in Sierra Leone between the two World Wars. During the inter-war Depression, the Department's budgetary allocation and staff were reduced to the barest minimum, so crippling its practical work. Small farmers were even more hard-hit. In Chapter 5 it is shown how increasing economic hardship and ecological stresses occasioned by the locust invasions of the 1930s found expression in a millenarian uprising. Yet in the depths of the Depression, the Colonial Administration finally found funds to establish a new Rice Research Station at Rokupr and to improve the road and transport infrastructure in that region. The background to this decision, and a fine example of colonial and social and economic
research, is provided in Chapter 7 where the swamp rice farming system of the Sarcies region is described in detail. The Rokupr Rice Station was intended to build on this system, and its work is discussed in Chapter 8. The study ends in Chapter 9 with a summary of its main findings, designed to bring out their relevance to present day agricultural policy debates in Sierra Leone.
FOOTNOTES TO CHAPTER ONE


8. Clark, Sierra Leone in Maps, pp.16-17.


12. The 1910 and 1919 rice famines and the accompanying Anti-Syrian riots of 1919 are discussed in chapters 2 and 3 respectively while the locust induced famine of the early 1930's, which is connected with the Idara Rising of 1931, is the focus of chapter 5.


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pp.577-80; Fyly History of Sierra Leone, pp.103-6; Wyse,A.J.G.
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22. Ibid. 


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27. Ibid., and Evelyn (Ag.Governor) to Secretary of State, 31 July 
1919, encl.16 in C.O. 267/582. 

28. Personal Communication with Mr. Christopher Fyfe, Letter dated 
23rd October 1986; cf. Fyly, C. Magbaily "Commerce and 
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Fourah Bay College, Freetown, 1977). 

29. Masefield, G.B. A History of the Colonial Agricultural Service 
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42. Dudgeon, G.C., *The Agricultural and Forest Products of British West Africa* (London, 1911)


45. See for example, Scotland, D.W. An A.B.C. on Cotton Cultivation in Sierra Leone (Pamphlet No.8) (Freetown: Government Printer, 1924); Cultivation and Fermentation of Cocoa (Chocolate) Pamphlet No.3 (Freetown: Government Printer, 1924); The Cultivation of Coconut in Sierra Leone (Pamphlet No.7) (Freetown: Government Printer, 1923); Prospects and the Cultivation of Lime in Sierra Leone (Pamphlet No.1) (Freetown: Government Printer, 1914 revised 1924); Hopkins, W. Coconut Cultivation and Prospects in Sierra Leone (Freetown, Government Printer, 1915); Dawe, M.T. The Preparation of Ginger, 1923-1924 crop (Leaflet No.1) (Freetown: Government Printer, 1923); "Cultivation of Onions in the Colony" Sierra Leone Royal Gazette No.2271, 1925. "Castor Beans For Export" Sierra Leone Royal Gazette No.2125 (1923); Scotland, D.W. Some Hints on Maize Cultivation (Pamphlet No.9) (Freetown: Government Printer, 1924).


47. Pillai, A.C. Correspondence and Report on Irrigation for and Cultivation of Rice in Sierra Leone (Pamphlet No.4) (Freetown: Government Printer, 1925); Further Report on Irrigation for and Cultivation of Rice in Sierra Leone (Pamphlet No.5) (Freetown: Government Printer, 1923) See also Governor Maxwell to Churchill, 24 March 1922, C.O. 267/595.


55. Richards, Coping with Hunger, Chaps. 1, 2, and 9.


62. Thomas, B.K. The Growth of Njala: A Historical and Social Sketch of Njala as an Educational Institution up to 1980 (Njala University College, 1986) This work is based on Secondary Sources enriched by oral documentation.


*JHSSL: Journal of the Historical Society of Sierra Leone.
PART I:

THE EVOLUTION OF COLONIAL AGRICULTURAL POLICY IN SIERRA LEONE, 1908–1939
CHAPTER TWO
THE ESTABLISHMENT OF THE DEPARTMENT OF AGRICULTURE, 1908-1918

The year 1908 was an important one in the history of Sierra Leone's Agricultural Department, for two main reasons. Firstly, it was during this year that the post of Curator of the Botanical Gardens was changed to that of Superintendent of Agriculture, and sent for training in Ceylon and India, following recommendations made by Mr. G.C. Dudgeon, the first Superintendent of Agriculture for British West Africa, after his 1907 visit to Sierra Leone. Secondly, it was during this year that Mr. Proudfoot, the Principal of Bo School, expressed the view to Dudgeon that "no white man was at present sufficiently acquainted with West African agriculture to be competent to give advice on the subject". These events set the scene for the creation of an Agricultural Department that would eventually begin to learn from Sierra Leonean farmers, as well as passing on to them the results of its own experiments.

In 1908 itself, however, Mr. Proudfoot's opinion was not widely shared. The then Governor of Sierra Leone, Sir Leslie Probyn, thought that African farmers knew little about scientific agriculture:

There is no idea of rotation of crops or of the use of manure. The exhausted land is allowed to fall back into forest growth, and in this state it remains for seven years, when the land is again cleared and burnt. If you suggest deeper cultivation than can be got by a hoe, you are told that the oxen have never been accustomed to work, and that they would be of little use, as there are no roads. On asking why there are no roads, you are told they are not wanted, as the native bush path meets all requirements in a country where agriculture is limited to the primitive system of bush fallow. We have a circle of inertia, and our duty is to break it.
The Curator of the Government Botanical Gardens, Mr. G.W. Smythe, went even further, arguing that forest industries in Sierra Leone, particularly rubber and palm produce, were at risk of extinction under the shifting cultivation system and persistently calling for Government action to remedy the situation. He argued that population pressure, combined with "primitive and extravagant" farming methods, had reduced fallow periods to between 4 and 7 years. For a country that depended mainly on forest products like rubber and palm kernels for revenue, this situation was very serious. Smythe was in favour of a system of permanent cultivation involving deep hoeing, stumping and the use of ditch or compost manure. As Probyn explained in 1905,

The improved cultivation recommended merely consists in taking out of the soil all the roots of the bush that has been growing there for perhaps hundred of years: experience shows that a small piece of bush not higher than say 3 feet is growing from a huge root thicker than a man's thigh... It appears to be obvious that an area, the soil of which is being sucked of its nourishment by large numbers of these useless roots, must be an area in which it is impossible to expect good crops. All that Mr. Smythe advises the Chiefs to do is that the roots should be removed. To assist the Chiefs in doing this proper tools for up-rooting are supplied and the Chiefs are recommended to adhere to the system of mixed cultivation (this being absolutely essential)."

Smythe and Probyn received confirmation of their views on the first visit to Sierra Leone of the new Superintendent of Agriculture for British West Africa, Mr. G.C. Dudgeon, in 1906. Mr. Dudgeon's appointment was part of a general movement to give greater central support to the various Governors of British Colonies in their decisions on agricultural policy. At the same time, each colony was linked up with the Royal Botanical Gardens at Kew and with the Imperial Institute, established in 1887 to promote the exchange of scientific knowledge.
within the Empire. Governors were encouraged to send local soil, seed and plant samples to these institutions for scientific analysis to determine their general economic and agricultural potential, if any; on the other hand the Colonies were financially committed to the up-keep of these institutions, particularly the Imperial Institute.®

At the end of his 1906 tour of the Proctectorate, Dudgeon confirmed Probyn and Smythe's poor view of local farming methods:

The obviously wasteful plan of clearing a fresh piece of ground every two or three years, for the sake of growing a scanty crop of grain or other food supply, is necessitated by the fact that no ploughing is giving to the soil, and the sole means of renovating it, so as to produce further crops, is to allow it to return to bush growth for a period of eight or more years...”

In the long term, Dudgeon recommended that the Government should induce farmers to plough their farms. But since there were no ploughs available at that time, he suggested that they should give priority to improving the hoes in use, because as he said

The small, crude instrument which is in general use for scraping the surface soil into heaps for Cassava and other cultivation is more effective in diminishing the value of the soil upon sloping land than improving it, in tolerably heavy rains most of this soil must be washed away, thereby leaving nothing for the nutriment of a following crop.”

He cautioned that rotation of crops should be adopted only when deeper cultivation could be ensured, otherwise crop rotation would be counter-productive. Further, he advised that efforts be made to train work-oxen and then to introduce “the simple Indian two-bullock plough”. Until this was done he advised that experiments with permanent cultivation should be limited to “small pieces of land... deep-hoed experimentally and crops grown upon them.”®
When Dudgeon's report reached the Colonial Office, his suggestion for deep hoeing and ploughing was met with some scepticism. An alternative suggestion was made, that farmers should try the Jamaican method of making "a heap of all bush litter", letting it decay, then breaking it up and forking it in. It was also suggested that leguminous crops such as pigeon peas and cow pea and stock droppings should be used in these experiments.  

Once Dudgeon was gone, Governor Probyn took prompt steps to implement his suggestions. Firstly, an Experimental Farm was established at Batkanu in the Northern Province, to be followed in later years by farms at Moyamba, Kenema and Yamandu in the Southern and Eastern Provinces; and Koya in the Freetown area. These experiments were carried out by the D.C.'s under the supervision of Mr. Smythe. A campaign was launched by the D.C.'s to encourage the Chiefs and their people to adopt the new methods of permanent cultivation and to experiment with small-scale cash cropping. Improved seeds of cotton, fibres, cocoa, rubber and groundnuts were imported and distributed to the Chiefs free of charge.  

As Paul Richards has noted, this emphasis on encouraging farmers to diversify away from rice production sprang from the prevalent "Caribbean Model" of colonial agricultural development. In this model, development was to be pursued by "concentrating on export cash crops with little or no thought for indigenous food supply". As late as 1908, Dudgeon was clearly following this model, writing at length about rubber, oilseeds, cacao, groundnuts, fibres and ginger - but not rice - in his report on agricultural work done by officials in the Sierra Leone Protectorate.
Meanwhile, in 1906 the Sierra Leonean administration ordered a number of agricultural tools including the "Kodalli" hoe - very large, about 2'8" long and with a blade 8 inches wide - which was in common use in India: together with spades, axes, double hand saws, cutlasses and grindstones. At first these implements were distributed free of charge to Chiefs and 'progressive' farmers. But later when the scheme proved difficult to maintain financially the tools were either sold or given as loans. 

At first Chiefs and their leading men were keen to experiment with the new methods provided the inputs by Government were forthcoming. In the Northern Province Paramount Chiefs Brima Sanda of Loko Country, Bai Inga of Mange Bureh in Temne Country and Almamy Sorie of Samaya, in the Soso Chiefdom of Tambakha, showed enthusiasm to experiment with the new methods. In the District Headquarter towns the D.C.'s were busy experimenting along the lines of Dudgeon's suggestion.

When Dudgeon visited the Batkanu farm during his next tour of Sierra Leone in 1907, he was strongly impressed by the efforts of the Karene District Commissioner. The "Kodalli" fork-hoes had been used effectively to gain a "very heavy crop of rice". Encouraged by this development Dudgeon recommended that the Government should publicise the achievements made at Batkanu and that more Experimental Farms should be established so that each District was represented. Each Experimental Farm was to be supervised by a European. All experimental work was to be fully recorded to form the basis for a future Agricultural Department. Dudgeon also recommended that provision be made for the establishment of an Agricultural Department in the near future, headed by a Director with
expert knowledge of tropical agriculture. In anticipation of this the post of Curator of the Botanical Gardens was to be changed to that of Superintendent of Agriculture. Dudgeon envisaged that the new Department would carry on the Curator's work in encouraging export crop cultivation and diversification, by introducing seeds from other Colonies and by extending the range of native crop varieties through selective breeding.  

Governor Probyn then took up these recommendations, and suggested to the Secretary of State, Joseph Chamberlain, that the proposed Agricultural Department should be headed by a newly recruited Director. The Colonial Office approached Southern Nigeria where Mr. W. Hopkins was selected to be the first Director of Agriculture in Sierra Leone. Before taking up this appointment, Hopkins was to be sent first to the Institute of Botanical Gardens in Ceylon and then to India to acquaint him with the "necessary experience of agriculture in the tropics". Once Hopkins arrived in Sierra Leone after these visits the mechanics for establishing a formal Agricultural Department would be worked out.

At the start of 1908, then, Governor Probyn might well have thought that the issue of agricultural policy was well and truly settled. If he did he was mistaken, for this was just the time when it was becoming evidently clear at the District level that Dudgeon's optimism was ill-founded, and that farmers would not easily cooperate in his schemes. Mr. St. John Oswell endeavoured to explain the recommended system of crop rotation to an Assembly of Chiefs of the District, and asked whether they would like to try it in their farms. The unanimous answer was 'No'.
because the Chiefs thought that permanent cultivation was not feasible on their fragile soils. Oswell later reported that

The practice of planting more than one crop on the same land... (in quick succession) was compared to a mother who had 3 or 4 children at one birth, and the Chiefs declared she could not bring them up well. The land sown with 3 or 4 crops (consecutively)... was compared to that mother.  

At Bom, the nearly all farmers gave up planting groundnuts earlier distributed to them by the Government because, as the Paramount Chiefs explained to Dudgeon at Kumrabai in 1907, under the new methods the land got exhausted fast and yields correspondingly declined to an all-time low. Dudgeon attributed this failure to shallow cultivation and accordingly encouraged the Chiefs to make another try, this time with much deeper cultivation. He promised them that the Government would obtain more nuts for them.

With regard to the agricultural implements distributed to the Chiefs, it was later discovered that many farmers used the "kodalli" fork-hoe to work the swamp and to make heaps for dry season crops like cassava and sweet potatoes. The small plantations and rice farms for which they were intended were still being worked by the simple, crude hoe. By 1911 the Government had stopped allocating funds to subsidise the Agricultural Implements Scheme. Thus when Chief Musa of Mano filed an application in June 1911 for more implements the official response was that "If he wishes tools for agricultural purposes he should provide them himself".

At Bo School, founded in 1906 for the sons of Chiefs and nominees of Paramount Chiefs for the preservation of traditional values, where the agricultural methods spelt out in Probyn's Scheme and later endorsed by
Dudgeon had been tried out for some years. Mr. Proudfoot was driven by 1908 to the humble conclusion quoted at the beginning of this chapter. While Dudgeon was unimpressed by this view in January 1908, by the following year he had warmed to the view that some elements of the traditional culture could usefully be incorporated into the improved method that would be evolved eventually. He stated in report on his 1909 tour that

It would be satisfactory if experiments could be carried out in many parts of the Protectorate, and the attention of the Chiefs and headmen drawn to them... Success in agricultural work in the country is to a large extent dependent upon such work combined with a careful look out in order to detect any development in the native towards initiative work, the spark of which, when seen, should be judiciously fanned 'into a flame'; the proper precaution being taken to prevent it being smothered by excess of bounty. 

Dudgeon also called for a similar shift in emphasis in crops cultivated. He stressed that economic viability should be the determining factor in promoting the cultivation of any crop, and he placed a new emphasis on improving the staple Sierra Leonean food crop, rice, for two main reasons. Firstly, because Sierra Leone had a comparative advantage in rice production; and secondly because there was a high and steady demand for rice in Coastal West Africa. He stated that for a long time the export of the crop had been contemplated but was always impeded by transportation and milling difficulties. However, in 1909 the Sierra Leone Coal Company Limited was prepared to meet these problems and to experiment in rice trade along the West African Coast. In following up this suggestion, Governor Probyn was assured by Mr. Newton of the Coaling Company that it was possible to export rice at a
profit and that the Company was prepared to meet the cost of "hulling machines for rice" at "no expense to the Government".23

Meanwhile, Dudgeon continued to stress the value of other crops such as cow peas and beans, cocoa, ginger, tobacco and groundnuts which he believed also had a market potential. He recommended that the new Agricultural Department, when formally established, should concentrate not only on the cultivation of these crops but also on improving their processing, storage and marketing as was done in Southern India. The Department, he said, should consider the possibility of introducing a small, simple plough from the Canary Islands which was equivalent to those in the East where the new Director was currently in training.24

In general, Dudgeon's submission in 1909 indicated a gradually deepening understanding of Sierra Leonean agriculture. He was beginning to take an interest in rice, the most important crop for many farmers, and to realise that it was a weakness for agricultural officials that they knew very little about the details of the traditional agricultural systems which they sought to change or modify. Meanwhile, in Sierra Leone, official interest in these issues was heightened by an acute rice famine which occurred in 1910. This was caused by the abandonment of the farms in the previous year following an exceptionally early start to the rainy season. This breach of the normal rainfall regime made the clearing and burning of the farms impossible:

...the exceptionally constant falling of rain from January to May...interfered with the proper burning of the bush (a necessary preliminary to render the soil suitable for sowing), and created a condition which presented great difficulties to the farmers in planting rice and other edibles. Rice planted early in the year 1909 practically dried up by the unexpected dry weather after the first rains; that planted later was almost
swamped by the heavy rains which came later, both sowings producing very indifferent results.\(^5\)

In the worst-hit areas, the failure of the rice harvest meant the destruction of local tree crops:

But it was not only in rice that scarcity prevailed; the production of almost every locally grown article of food declined, and, as a consequence, prices went up, thus increasing the cost of living to all classes of the community, a condition which may be in some measure permanent.

So acute was the scarcity of rice and other locally produced articles of food that in some localities the people were compelled by hunger to cut the rice before it was properly ripe, and to destroy numerous palm fruit trees to obtain the edible cabbage therefrom.\(^6\)

Local traders exploited the situation in their own interests and the rice scarcity led to soaring prices "far beyond the means of the great majority of the population". The price rise was exceptionally steep:

In normal times locally grown rice fetches about 7s.7d per bushel of 84lbs. but during the months of June to August 1910, when the scarcity reached famine point, the price had risen to 25s for a similar quantity, and at this unprecedented figure it was not possible for the labouring classes to purchase: such a condition in the matter of the principal food supply was undoubtedly serious.\(^7\)

The situation was socially and economically paralysing and politically explosive. The Government could no longer afford to ignore the subsistence sector, particularly the rice industry. To ease the situation the Colonial Administration in Freetown lifted the 10% ad valorem duty on rice imports and proceeded to import huge quantities of various food items with rice accounting for 75% of the total imports. Food imports in 1910 amounted to £187,871 which reflected an increase of 120% over the level of 1909. Of this rice claimed £75,660 which was a
steep rise of 4400% in value and 6900% in quantity above the levels of 1909, as shown below.

**TABLE 1: FOOD IMPORTS TO SIERRA LEONE, 1906-1910**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>VALUE IN £</th>
</tr>
</thead>
<tbody>
<tr>
<td>1906</td>
<td>102,662</td>
</tr>
<tr>
<td>1907</td>
<td>107,685</td>
</tr>
<tr>
<td>1908</td>
<td>88,562</td>
</tr>
<tr>
<td>1909</td>
<td>85,523</td>
</tr>
<tr>
<td>1910</td>
<td>187,871</td>
</tr>
</tbody>
</table>

*Source: Annual Report of the Collector of Customs, 1910, C.O.270/45*

**TABLE 2: RICE IMPORTS TO SIERRA LEONE, 1909-1910**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>QUANTITY (Cwts)</th>
<th>VALUE £</th>
</tr>
</thead>
<tbody>
<tr>
<td>1909</td>
<td>1,991</td>
<td>1,681</td>
</tr>
<tr>
<td>1910</td>
<td>139,324</td>
<td>75,660</td>
</tr>
</tbody>
</table>

*Source: Ibid., p.9.*

In order to prevent a recurrence of the famine, the Governor obtained large quantities of seeds of cereals and other edibles from the neighbouring British Colonies and had them distributed among the Chiefs in both the Colony and the Protectorate free of charge, to be planted under the direction of the D.C.'s. On the part of the local population, the adverse effects of food shortage induced the native farmers to increase their acreages to such an extent that officials could even hope for a revival of rice exports in 1911.

In the event, exports of locally grown rice continued to fall in
1911. Output recovered, but most of that year's crop went to local consumers.30

During and after the First World War, the effect of growing local demand was reinforced by shipping shortages and exports fell even further, as shown below.31

The crisis of 1910 reinforced the new official view that food crop production needed to be taken more seriously. In 1910, when the Department of Agriculture was finally created under the Directorship of Mr. W. Hopkins, its first task was to address the problems behind the 1910 rice famine. The Department's investigators found that the crisis caused by the 1909 rains failure had been deepened by weed problems which they linked to poor sowing or broadcasting methods. The farmers sowed

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BUSHELS</th>
<th>VALUE (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1909</td>
<td>55,537</td>
<td>10,034</td>
</tr>
<tr>
<td>1910</td>
<td>35,114</td>
<td>5,925</td>
</tr>
<tr>
<td>1911</td>
<td>22,621</td>
<td>4,716</td>
</tr>
<tr>
<td>1912</td>
<td>30,712</td>
<td>5,712</td>
</tr>
<tr>
<td>1913</td>
<td>21,548</td>
<td>3,991</td>
</tr>
<tr>
<td>1914</td>
<td>18,705</td>
<td>4,855</td>
</tr>
<tr>
<td>1915</td>
<td>19,600</td>
<td>7,228</td>
</tr>
<tr>
<td>1916</td>
<td>3,192</td>
<td>1,364</td>
</tr>
<tr>
<td>1917</td>
<td>1,022</td>
<td>697</td>
</tr>
<tr>
<td>1918</td>
<td></td>
<td>93</td>
</tr>
</tbody>
</table>


only one bushel per acre instead of the standardised 1½ to 3 bushels per acre.32
However, the Department of Agriculture did not yet choose to focus its research effort on these problems. Instead, it developed a programme of new experiments in crop rotation, designed to meet the long-established aim of replacing the local shifting methods of cultivation with permanent cultivation. The most novel aspect of this programme was the establishment of a permanent experimental station in the Protectorate, at Njala.

The Njala Experimental Station

Long before the establishment of the Department of Agriculture in 1910 it was the general opinion that the future of Sierra Leone as an agriculturally based economy lay in the Protectorate and not the Colony. Touring the Protectorate in 1902, Governor King-Harman stated that "large tracts of land remain untouched, and the whole country from an agricultural point of view is capable of great development." Governor Probyn was even more blunt when he said in 1906 that "it is this Protectorate which is really West Africa; the Colony itself is Anglicised." "

The Sierra Leonean Botanical Station had been based since 1895 in Freetown; however, by 1910 the staff of the Agriculture Department had become convinced that there was a greater need to undertake their investigations on the spot in the Protectorate. The new Director of Agriculture, Hopkins believed strongly that these investigations should include a study of the native system of agriculture because

Like all agriculturists the natives of the country are very Conservative in their ideas. There is a greater barrier than the old habits and customs of the natives to be overcome, this is superstition plays a very important part in the Agricultural methods of the farmer.
To surmount these difficulties it is important that the Officers of the Department should know the various methods of farming.

It was therefore decided that the proposed Experimental Station should be established at the very heart of the Proctectorate.

Consequently, in May 1911 Douglas W. Scotland, the Assistant Director of Agriculture, was entrusted with the duty of locating a suitable place in the Protectorate for the Station. Since only the South was connected with Freetown by a railway and since it was the Official Opinion that that region had the best palm belt in the country, and so the greatest agricultural export potential, Scotland naturally turned his attention there. At first several sites - Bataima near Taiama, Jama on the Tabe River and Mayosso - appeared ideal but somehow Njala (then spelt Jala and meaning "on the bank of the River"), a village six miles off Mano and about four miles up the River Taia from Mano, in the Ronietta District, was finally decided on. Its main advantages were its proximity to the railway and its wide range of soil types, thought to be representative of those throughout the Protectorate, together with its nearness to water, which would make nursery experiments possible throughout the year. The land, measuring 1,000 to 1,200 acres, was leased from the Paramount Chiefs through the Tribal Authorities at £8 a year; in addition £57 was paid in compensation for the villagers evicted plus £2 for any economic crops (Kola nuts, oranges etc.) they left behind.

In 1912 an Experimental Farm was formed on part of the site at Njala. The emphasis continued to be placed on trials of both local and extraneous varieties of various economic crops. With the appointment of a
Veterinary Officer a poultry farm was established at Njala. Efforts were also made to experiment with various rice varieties (local and exotic), millet, groundnuts, and maize. Later on attempts were also made to plant rice on the same plot for two consecutive years. As well, efforts were made to plant groundnuts in ridges or rows in order to facilitate the easy harvest of the crop. The results showed conclusively that certain rice varieties respond more positively to deep hoeing and that the Sierra Leonean soils could neither withstand more than one bushel of seed rice per acre nor two rice crops in immediate succession.

Inspite of a large number of bird scarers, very poor returns were obtained from the plot which was planted earlier than normal. All the rice birds in the Njala region teamed up and wreaked "great havoc" on the farm, reducing yields to insignificant levels. The groundnut plot with ridging methods was also a disastrous failure.

At this point Hopkins felt that what was needed was to widen the Department by engaging a third European Official so as to facilitate the frequent touring of the Protectorate by one or more European Officials at a time. Drawing from his Southern Nigerian experience he felt that the Department was not making headway because it was too distant from most of the farmers. With the appointment of a third European Officer the training of local "Native Travelling Instructors", who would eventually man sub-stations in addition to translating experimental results to farmers, would begin.

However, Governor Merewether and his Colonial Secretary Evelyn, were very pessimistic about the future of Njala Experimental Station and were not keen to invest more in it, not even to build quarters there for
the Officers of the Department, and so initially turned down Hopkins's request. ** Hopkins, however persisted and tried to justify the use of funds to local staff by arguing that

... trained natives of the country are listened to, and their advice taken much more readily than a stranger's as would be the case if a West Indian was appointed who would learn the language first. **

By mid 1913 the Secretary of State for the Colonies had reluctantly endorsed Hopkins's requests. Three Scholarships were to be offered each year to ex-Bo School boys, each of whom would then spend two years pursuing a practical training in agriculture in the Department. ** But before Hopkins could implement his new scheme the First World War broke out and the Department lost rather than gained more staff. Hopkins himself resigned in September 1915 and left the country, possibly out of frustration. **

The Impact of the First World War

The general effects of the war on Sierra Leone's economy and society have been treated by Fyle, Cox-George, Van Der Laan, White and Sibanda. ** However, none of these works deals in detail with the impact of the war on agricultural development, nor do they show its impact on specific administrative departments. In this section of the chapter, therefore, the general impact of the war will be touched on briefly, before going on to the agricultural implications of these trends.

With the outbreak of war Sierra Leone was declared a naval base and at the same time the War Department launched an intense recruitment campaign to provide carriers for the war in East Africa, Mesopotamia and
neighbouring Cameroun. It is believed that nearly 30,000 West Africans were recruited; of this over 8,000 were Sierra Leoneans and over half of the latter were drawn from Northern Sierra Leone. Furthermore not less that 9000 men, mainly from the Koinadugu District were engaged in the building of the northern rail branch from Makeni, to Kamabai. This was bound to militate against increased agricultural production since there was already a perennial labour bottleneck in rural Sierra Leone. The Agricultural Department was also affected: throughout the period of the war there was an acute shortage of labourers in the Experimental Farm at Njala which threatened the closure of the Farm by Governor Merewether.

**TABLE 4: SIERRA LEONE: GOVERNMENT REVENUE DURING THE WAR, 1914-18**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EXPORTS</th>
<th>IMPORTS</th>
<th>REVENUE</th>
<th>EXPENDITURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1913</td>
<td>1,731,252</td>
<td>1,750,303</td>
<td>618,382</td>
<td>622,439</td>
</tr>
<tr>
<td>1914</td>
<td>1,250,478</td>
<td>1,405,049</td>
<td>496,474</td>
<td>680,146</td>
</tr>
<tr>
<td>1915</td>
<td>1,254,621</td>
<td>1,255,755</td>
<td>504,404</td>
<td>546,770</td>
</tr>
<tr>
<td>1916</td>
<td>1,223,544</td>
<td>1,290,827</td>
<td>551,106</td>
<td>532,940</td>
</tr>
<tr>
<td>1917</td>
<td>1,580,219</td>
<td>1,532,808</td>
<td>546,449</td>
<td>512,843</td>
</tr>
<tr>
<td>1918</td>
<td>1,516,871</td>
<td>1,064,407</td>
<td>583,159</td>
<td>544,011</td>
</tr>
</tbody>
</table>

+ Surplus Balance
- Deficit Balance

Sources: 'Revenue and Trade of the Colony... 1906-15', C.O. 270/47; Cox-George, Finance and Development, p.171.

The war also led to a downward trend in revenue for the Government: export production dwindled, as the Table 4 shows.

The economic slump was partly created by the Wartime labour shortages, but also by the loss of the Hamburg market for palm kernels and by wartime limitations on shipping facilities for export crops. The volume of both exports and imports therefore dwindled; at the same time, export commodity prices were constantly falling while those of imports...
rose upward. Consequently the internal economy showed a characteristic reaction. Because of the fall in producer prices some farmers turned to alternative crops like piassava but many gave up cash-cropping and intensified subsistence production, mainly rice, cassava, and sweet potatoes. The effect on revenue was immediate. Railway revenue, for instance, fell by £35,167 and £39,885 in 1914 and 1915 respectively. Reporting the economic repercussions of the war for administrative development, Governor Wilkinson explained that

The effect of the war on the trade of Sierra Leone has been to produce a marked decline in the revenue and despite the exercise of the strictest economy and the elimination of all items of expenditure that are not absolutely essential, it will not be possible to provide the needs of the colony next year without resorting to additional taxation ... I therefore hesitate to recommend that the government should at the present time embark on any scheme by which it would be pledged to provide a large sum of money within a specific time.®

The effect on development was predictable. There was a large-scale retrenchment of both European and African staff in nearly all departments including the Department of Agriculture where the appointment of the new Assistant Mr. R.H. Bunting was terminated. And when Hopkins also left in 1915 it became virtually a one-man Department.® Many Districts went without D.C.'s.® All development projects were temporarily suspended except for top-priority ones like the building of branch railway lines to Makeni and Kamabai which were expected to stimulate production. Duties were improved on both imports and exports making it less profitable to engage in export trade. Many Krio and Lebanese traders who could not compete with expatriate firms ploughed their resources into the internal rice trade.
Meanwhile, however, Freetown experienced a more or less continuous short-fall in rice from 1915 onwards, a situation that was well reported by the Krio press in Freetown. This was due partly to the diversion of the agricultural labour force to the war effort; but mainly to the rice levies imposed on farmers by the War Department. As usual, traders (African and Lebanese alike) exploited the situation in their own interests, to the extent that D.C.s had to launch a campaign to advise farmers not to sell all their rice cheaply to traders. But in spite of their campaign, D.C.s lamented that farmers remained victims of their "fatal improvidence." Indeed, small farmers had little option but to sell, because in addition to the Colonial Hut tax, periodic cash contributions were now demanded from them for the war effort. In a situation of declining export trade, their only feasible source of cash income was rice.

Thus the war mobilised forces which motivated the increased production of rice. Rice exports from the Scarcies were more than doubled during the war period as Table 5 shows. Moreover, as Governor Wilkinson later noted, these exports did not take into account rice exported by seaborne transport which at the period was the main means of transportation in the region. One can draw two main conclusions from the evidence: Firstly that the war greatly stimulated rice production in Sierra Leone, particularly in the Scarcies region. Secondly, and perhaps more important for the future of the rice industry in Sierra Leone, there was no longer any doubt among Government Officials that the Scarcies had great promise for a commercially thriving rice industry. From that time onwards, it was in the keen eye of the
Colonial Government and was to occupy a central place, as it still does, in the future policies of the agricultural sector.

TABLE 5: RICE EXPORTS FROM THE SCARCIES, 1914-1916

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TYPE</th>
<th>QUANTITY (BUSHELS)</th>
<th>VALUE (£)</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>Husk</td>
<td>3,643</td>
<td>683.5s.0d</td>
<td>Freetown</td>
</tr>
<tr>
<td>1914</td>
<td>Husk</td>
<td>14,840</td>
<td>8.810.15s.6d</td>
<td>French Guinea</td>
</tr>
<tr>
<td>1914</td>
<td>Clean</td>
<td>23,413</td>
<td>11.706.10s.0d</td>
<td>Freetown</td>
</tr>
<tr>
<td>1915</td>
<td>Husk</td>
<td>4,185</td>
<td>---</td>
<td>Freetown</td>
</tr>
<tr>
<td>1915</td>
<td>Husk</td>
<td>13,551</td>
<td>2.617.19.0d</td>
<td>French Guinea</td>
</tr>
<tr>
<td>1915</td>
<td>Clean</td>
<td>28,820</td>
<td>15.237.15s.0d</td>
<td>Freetown</td>
</tr>
<tr>
<td>1916</td>
<td>Husk</td>
<td>3,229</td>
<td>625.19s.3d</td>
<td>Freetown</td>
</tr>
<tr>
<td>1916</td>
<td>Clean</td>
<td>27,475</td>
<td>15.503.11s.0d</td>
<td>Freetown</td>
</tr>
</tbody>
</table>

Sources: Annual Report of the Collector of Customs, 1917. C.0.270/47; also Wilkinson to Secretary of State, C.0.267/565 and 577.

It is therefore understandable why, as will be shown in later chapters, Douglas Scotland, Hopkins's former deputy and from 1915 his successor as Director of Agriculture, emphasised the development of swamp rice varieties for Commercial agriculture. Even before 1914, he and other agricultural officers had been highly impressed by the advanced nature of the wet rice culture in the Great Scarcies region where the transplanting method was "distinctly advanced compared to other parts of the Protectorate". In a tour made in 1911, Scotland had found that farmers in Mambolo were already cultivating their "potow potow rice on the same lines as in India and the Far East". Mambolo was therefore chosen as the most suitable site for a proposed experiment in swamp rice seed selection. Swamp rice varieties from the Mambolo area, and others from British Guiana, India and Ceylon were planted in experimental plots with a view to ultimately selecting the best types for commercial
agriculture at Mambolo. Unfortunately, the experiment was a failure, owing to lack of local cooperation.

They allowed the birds to destroy the rice when in ear, and the people made public footpaths through the plots to reach their own farms. As many of these plots were exceedingly small, in some cases practically all the plants were destroyed and many valuable samples lost.\textsuperscript{5} 

Mr. R.H. Bunting, the briefly employed Assistant in the Department later found out that the Chiefs and people behaved the way they did because they feared "that Government wanted to take the land from them".\textsuperscript{6} After that experience the idea of promoting commercial farming in swamp rice varieties was shelved for the time being until another suitable site was spotted. However, Scotland did not forget the idea and it was taken up again after the war.

Meanwhile, however, in 1914 both the Agriculture and Forestry Departments had turned their attention towards the upland cultures. While the latter attributed the dwindling of the volume of export crops in the first few months of the war to the persistence of 'primitive' shifting cultivation system;\textsuperscript{7} the former was more concerned with the ecological hazards of bush-fires, palm wine tapping and soil erosion.\textsuperscript{8} Scotland believed these hazards, especially bush fires, were sealing the fate of agriculture in the Northern Province. "The annual fires in the grass and savannah country", Scotland explained, were "ruining what little agricultural prospects are left in the Northern Districts."\textsuperscript{9} However, in the stringent financial conditions of wartime, and with a shortage of European Officers, little could be done to develop new systems of cultivation, even on the Department's own experimental farms, before 1919.\textsuperscript{10}
Another policy development which was suggested in 1914, but delayed by the outbreak of war, was the extension of the Veterinary Officer's role to include running a stock farm where animals could be trained for both the plough and the pack, and experiments in stock breeding could be carried out alongside investigation into diseases of stock. In the event, far from extending the Veterinary Officer's role, the Department had to make do without him altogether from 1915. The Department's soil survey and seed distribution schemes were perhaps more effective. In 1914 seven soil samples were selected from the Njala area and sent to the Imperial Institute for scientific analysis. It was shown that the soils lacked lime, calcium, phosphorus and potash; that they possessed certain plant poisons which impaired plant growth and also contained plenty of termites which destroyed organic matter. This led to emphasis on the use of organic manure in farming, and to the popularisation of methods of increasing soil fertility by growing leguminous crops.

Experiments now began at Njala to find ways of improving soil fertility and in 1917 the results were summarised by Mr. W. Waterland, an Assistant Agriculturist from the West Indies. His report focused on experiments with rice growth at the Experimental Farm. He showed that unless manure was applied the land experienced rapid loss of fertility when continuously cropped with rice, and that the present method of green manuring was inadequate to maintain the fertility lost. On the other hand, the local system of 6-7 years' fallowing between crops was not to be recommended either: the natural fertility of the soil at Njala was such that even if it was allowed to recuperate under fallow for six years
it would not regain adequate fertility. Therefore he recommended one year’s fallow followed by mulching and the application of manure.74

This report re-emphasised the dangers of soil erosion and brought the Agricultural Department once more into cooperation with the Forestry Department. Between 1910 and 1913 the latter Department had been concentrating on surveying. By 1913 it had completed its survey and demarcation of the Freetown Peninsula into Crown lands and Forest Reserves. An arboretum was established at Heddle’s Farm, Mount Aureol and tree crop plantations were lined up along the shores of the Southern province, at Songo, Waterloo and Yongoro on the Bullom shores. With regard to the Protectorate, Lane-Poole wished to bring all remaining forest under Forest Reserves but the land holding system made this impossible. Governor Merewether was of the opinion that four or six Forest Reserves in the Protectorate would be adequate. Each reserve was to have a nucleus of good forest with an outer area of bush and open land which could then be planted up with trees. A large area of mangrove along the Coast, was to be reserved to meet the future demand for firewood in Freetown.75

In 1916 Lane-Poole was transferred to Western Australia but his successor as Conservator, Kenneth Bumbridge, was determined to see the plan through. Coming to the same conclusion that the method of shifting cultivation and bush-fires were robbing the Government of vital revenue from palm produce and timber, Bumbridge was determined to bring at least 30 per cent of the Protectorate under the control of the Forest Department.76
However, by October 1917 his own successor, Mr. Eric Macdonald, was expressing profound pessimism about the future pointing out that only about 1000 square miles of land was still in high forest in Sierra Leone. The main problem the Forestry Department had was to get the Chiefs themselves to realise the gravity of the situation.

... in the majority of cases it is not easy to make the chiefs view the matter seriously as they think the land will last out their lives and the trouble will come in the time of their children, who can look after themselves.

He warned that

If these people can not be induced to adopt other methods than felling and burning forest every year and later leaving the land a prey to bush fires, the end is obvious and not far distant.77

Macdonald shared Scotland's faith in crop rotation reinforced by green manure, providing a secure basis for permanent cultivation. However, Governor Wilkinson refused to promote such permanent cultivation by legislation; he also had little faith in the possibility of evoking a suitable crop rotation system to take the place of the existing bush-fallow system. The cattle industry, he said, was hampered because the main tribes of the Protectorate knew nothing about cattle breeding, good fodder was not easy to come by while the tse-tse fly was a constant menace. As far as the "green manuring scheme" was concerned, Scotland's new line of emphasis would have "only an academic interest for many years to come. ... I build my own hopes", he wrote, "on the future cultivation of products such as para rubber, cocoa, citrus fruits, coffee, coconuts and swamp rice: these forms of agriculture can be carried on without manuring and do not impoverish the soil."78 The only obstacle was that the farmers were largely unfamiliar with the cultivation methods of these
crops. Already, he said, plans were afoot to overcome these problems by establishing small plantations throughout the country manned by trained local apprentices. It was also his intention "to put public institutions in the Protectorate on an agricultural basis". By that he meant remoulding education in the Protectorate to serve the agricultural needs of the people.

Thus at the close of the period 1908-1918, Official opinion had come full cycle. Probyn's view that Sierra Leonean farmers were in need of education, and Dudgeon's early enthusiasms for non-food export crops and permanent cultivation, were being reaffirmed. Despite Wilkinson's awareness of the potential of swamp rice cultivation, this quotation from his 1917 Annual Colonial Report could easily have been written ten years earlier:

As in other countries the farmer in Sierra Leone is conservative in his ideas. In spite of the obvious advantages afforded by improved methods, he prefers to work the land as he has always worked it and as his fathers have worked it before him. The only way of overcoming this unprogressive mental attitude is by means of education combined with the policy which is now being pursued of establishing an experimental farm or plantation under the Agricultural Department, in each District.

However, both the financial squeeze upon the agricultural Department, and the complacency of top officials, were about to come to an end. A fresh rice famine and an "influenza epidemic" shook the rural economy in 1918-1919, even more severely than the harvest failure of 1909. The resulting unrest culminated in the Anti-Syrian Riots of 1919 and in a major revision of agricultural policy, as will be shown in Chapter Three.
FOOTNOTES TO CHAPTER TWO

1. Probyn to Elgin. 29 Nov. 1909. C.O. 270/43.


5. Probyn to Lyttelton. 10 June 1907 Correspondence on Botanical and Forestry Matters. C.O. 879/88.


8. Ibid.

9. Ibid.


14. Scotland to HCS, 14 June 1911, Ag. 5/1911.
18. Probyn to Elgin, 29 Nov. 1907, C.O. 270/43.
21. Scotland to HCS, 14 June 1911, Ag.5/1911.
23. Ibid.
24. Ibid.
26. Ibid.
27. Ibid.
28. Ibid. pp. 6,9 and 29.
29. Ibid., p.10.
32. Scotland to HCS, 2 Dec. 1912, Ag.5/1912; See also Ag.1-3/1913.
36. Hopkins to HCS, 20 Mar. 1913, Ag.19/1913.
37. Hopkins to HCS, 11 Jan. 1912, Ag.10/1912.
36. Hopkins to HCS, 8 Nov. 1911, Ag.20/1911.

39. Ibid.


41. Hopkins to Evelyn, 10 and 17 Sept. 1912, Ag.50/1912; Scotland to HCS, 25 Oct.1912, Ag.57/1912.

42. Minutes of 23 Oct. and 5 Nov. 1912, Ag.50/1912.

43. Hopkins to Governor, 23 Oct. 1912, Ag.50.1912.

44. S.S. Cols. to Merewether, 6 May 1913, Ag./1913; A.R.D.A. 1913.


50. Governor's Circular to all D.C.'s, 18 July 1914, Ag.8/191A.


52. Ibid; and Sibanda, "Colonial Policy and Development", pp.145-147.


56. "Memorial on improving conditions in Sierra Leone by Mr. W. Addison, Retired D.C." enclosure in Governor Slater to Secretary of State, 9 June 1923, C.O. 267/602.

57. Van Der Laan, *Lebanese Traders in Sierra Leone*, pp.27-78.


64. A.R.D.A. 1911 in Hopkins to HCS, 11 Jan.1912, Ag.10/1912. Mambolo is located on the mouth of the Great Scarcies River.


66. "Report by Mr. R.H. Bunting on a Recent Visit to Mambolo in Connection with swamp rice experiment being carried out there", 15 Aug. 1914, enclosure in Ag.14/1914.


69. Scotland to HCS, 19 Aug.1917, Ag.35/1917; cf. Ag.145/1917.

70. A.R.D.A. 1914-1917, C.O. 270/47; N.B. The Department did not even produce an Annual Report for 1918.


79. Ibid.

In Chapter Two, it was shown how the country-wide famine of 1910 and the increase in swamp rice production during World War I led to an increased focus on rice in Sierra Leonean agricultural policy. In 1919, the country fell into the grip of yet another famine, the worst ever recorded in its history. This chapter examines the implications of the so-called anti-Syrian riots which followed, for the development of post-war agricultural policy.

The anti-Syrian riots have received a fairly full treatment from historians; however, opinions about their true nature remain widely divided. Some writers tend to regard them as the genesis of incipient nationalism in Sierra Leone - the beginning of political awareness. Some focus on their racial overtones and engage in debate over the connection between these riots and the economic tensions between Krio and Syrian or Lebanese traders. While much is known about the commercial background of the riots, much less is known about the agricultural problems which lay behind the food shortages of 1919, and little attempt has been made to explore the implications of the riots for future agricultural policy-making in Sierra Leone. In this chapter, an effort will be made to address the latter issue and so provide a new perspective on the riots themselves.
Background to the 1919 Riots

In Freetown, the centre of the riots, the hardship of the First World War was followed by soaring prices in the post-war boom. (See Table 6).

**TABLE 6: COMPARATIVE TABLE OF PRE-WAR AND POST-WAR COST IN FREETOWN, OF COMMON ARTICLES OF DOMESTIC USE**

<table>
<thead>
<tr>
<th>ARTICLE</th>
<th>QUANTITY</th>
<th>COST 1914-1915</th>
<th>COST 1919-1920</th>
<th>% INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosine</td>
<td>per case</td>
<td>12s.</td>
<td>34s.</td>
<td>183</td>
</tr>
<tr>
<td>Butter</td>
<td>per lb. tin</td>
<td>2s.3d.</td>
<td>5s.</td>
<td>122</td>
</tr>
<tr>
<td>Cheese</td>
<td>per lb.</td>
<td>1s.6d.</td>
<td>3s.6d.</td>
<td>133</td>
</tr>
<tr>
<td>Milk (Ideal)</td>
<td>per large tin</td>
<td>- 9d.</td>
<td>1s.6d.</td>
<td>100</td>
</tr>
<tr>
<td>Lard</td>
<td>per lb. tin</td>
<td>1s.</td>
<td>3s.</td>
<td>200</td>
</tr>
<tr>
<td>Sugar</td>
<td>per lb.</td>
<td>- 4½d.</td>
<td>- 11d.</td>
<td>144</td>
</tr>
<tr>
<td>Tea</td>
<td>per lb.</td>
<td>2s.6d.</td>
<td>5s.</td>
<td>100</td>
</tr>
<tr>
<td>Bacon</td>
<td>per lb.</td>
<td>1s.6d.</td>
<td>3s.6d.</td>
<td>133</td>
</tr>
<tr>
<td>Chicken</td>
<td>each</td>
<td>2s.</td>
<td>4s.</td>
<td>100</td>
</tr>
<tr>
<td>Eggs</td>
<td>per dozen</td>
<td>1s.6d.</td>
<td>3s.</td>
<td>100</td>
</tr>
<tr>
<td>Rice</td>
<td>per cup</td>
<td>1d.</td>
<td>- 4d.</td>
<td>300</td>
</tr>
<tr>
<td>Beef (fillet)</td>
<td>per lb.</td>
<td>9d.</td>
<td>1s.9d.</td>
<td>133</td>
</tr>
</tbody>
</table>

Average increase of 141%


Elsewhere in Sierra Leone, prices for foodstuffs were equally affected by the inflationary trend, which reached its peak in 1919. In the Karene District in Northwestern Sierra Leone the price of palm oil jumped that year from 4s. a gallon to about 18s.; native rice went up from 5s. to 25s. a bushel at Makeni and 64s. in Bo. As the Manager of Messrs Peterson Zochonis in Bo explained, every trader exploited the situation and sold "...for just what he can get". However, the
traders' activities were not the root cause of the high prices, which in the case of rice reflected instead a sudden and grave shortfall in production.

This problem has its origins in March 1918, when the clearing of farms was affected throughout Sierra Leone by early rains. As good burn could not be achieved the farms had to be cleared by hand, a very laborious task. Farmers had not enough labour to cope with the situation. Consequently, half of what was brushed could not be cleared and had to be abandoned. Weeds took a toll in the cleared portions. In the Karene and Railway Districts particularly, blight disease invaded the rice farms. In the Koinadugu District farmers complained of farms being ravaged by bush hogs and monkeys. At the same time there was the universal problem of rice not "filling...ears" because a protracted drought accompanied the rains. All these factors portended disaster in terms of rice output for consumption in 1919. The situation was made worse by "a severe epidemic of influenza" which over-ran the whole country in August 1918. This was preceded by an outbreak of smallpox in 1916 and yellow fever in 1917 but their effects were far less serious than that of the influenza epidemic.

The influenza epidemic of August 1918 started in Freetown, but by the end of the month it had covered the length and breadth of the country. Reports of hundreds of deaths reached Freetown from the provinces, where up to 70 per cent of the population were believed to have contracted the disease. In the Karene District many families were either "wiped out or depleted" in such a way that farms had to be
abandoned. Throughout the country a large number of the agricultural labour force was immobilised.

A disastrous harvest resulted; and as rice shortages and rocketing food prices brought the population of Freetown to starvation point in mid-1919, their discontent was mainly, if not exclusively, directed towards the Syrian community, which dominated Sierra Leone's internal rice trade. Daily-waged workers and labourers in the Sierra Leone Government Railway (SLGR) who felt cheated out of a War Bonus downed tools on July 14 1919. They were soon followed by their colleagues in the Public Works Department (PWD). By this time the substantive Governor, Wilkinson, was on leave. The Acting Governor, Evelyn, proved unequal to the task. He dithered and wavered. Consequently, on the evening of Friday 18 July 1919 matters boiled over and the celebrations to mark the anniversary of the end of the war climaxed in a determined and aggressive attack on Syrian property. The so-called anti-Syrian riots had thus begun.

The police could not contain the situation and Acting Governor Evelyn was compelled to call in the army to disperse the crowd and restore order. By the time the army had arrived Evelyn reported that about 10,000 Syrians had been attacked and looted and over 200 arrests were made. To ensure the safety of the Syrians Evelyn instructed the Municipality of Freetown to house them in the Wilberforce Memorial Hall and two other buildings at Garrison Street and to be maintained at Government expense; others were also housed at the Government Rest House in Bonthe. Meanwhile reports were reaching Freetown about raids on Syrians at Bauya, Mano, Makump, Kangahun, Waterloo, Moyamba, Bo.
Ronietta, Port Loko and Karene, beginning from the 25th July. The only district where raids were not reported was Koinadugu where there was no Syrian trader. Though violent and destructive in character, the riots were brief, lasting only a few weeks. Yet their unprecedented nature made it necessary for the Secretary of State for the Colonies, Lord Milner, to demand a full report on the circumstances surrounding them.

As stated earlier, views on the anti-Syrian riots diverge widely. Rather naively, the Syrian community believed they were mere victims for, as far as they were concerned, there was absolutely no reason for the riots except that they were resented by the Krio. The Krio however justified the action against the Syrians by the fact that they hoarded rice during a period of great need and also contravened the Proclamation Order by charging exorbitant prices for their rice stocks. The government controlled price was 22s.6d. for a bushel of 84 lbs. Three Lebanese were actually prosecuted and convicted for charging far above the stipulated price. It was also alleged that many Syrians had sent their rice stocks up-country where still higher profits were possible.

Ultimately, and after much investigation, British officials concluded that Syrian profiteering was not the root cause of the riots—instead, the Krio traders had seized the opportunity of the food shortage to inflame passions against their old trading rivals. As Evelyn put it,

"Certain things are pretty clear from the despatches which we already have: . . . the first is that the riots both in Freetown and the Protectorate were inspired and largely controlled by the Creoles; i.e. by the more or less educated descendants of liberated slaves and not by the aboriginal inhabitants of the Community."

In the immediate aftermath of the riots, the Secretary of State admonished Acting Governor Evelyn that "under no circumstances" should he
allow "the lawless action of the people of Freetown...to succeed in expelling the Syrians from the country and (that) if renewed attacks (were) made on them they (the Krio) will be punished with utmost vigour". As long as the Syrians complied with the orders of government, they were to be assured of full protection "in their persons and property". Also Evelyn was assured of any support, military or otherwise, necessary to restore order and stability. A military reinforcement from the Gold Coast (now Ghana) was secured to protect the rail line along which the main trading activities in the protectorate took place. Suspects, 245 in all, were tried in an independent court presided over by Mr. Justice Ernest V. Parodi flown from Britain for the purpose. Sentences ranged from 7 days to 7 years and 6 months each imprisonment with hard labour, the highest sentence going to a Krio believed to have been one of the prime movers of the events.

Agricultural Policy Implications of the Anti-Syrian Riots

Although the form and violence of the 1919 riots had been blamed on the Krio, Governor Wilkinson realised that the underlying problem of rice shortages demanded long-term government attention. From 1919 onwards agricultural policy had the new aim of keeping a balance between cash crop and food crop production, the latter as a way of ensuring adequate food supplies for the towns, particularly Freetown, so as to stave off any recurrence of the 1919 social upheavals. Governor Wilkinson emphasised the importance of adequate agricultural data on which to base a programme, agricultural education and scientific research in agriculture. Perhaps more important, because "shifting cultivation" was
still considered to be the country's key agricultural problem. Governor Wilkinson wished to encourage permanent swamp rice cultivation in place of long-fallow upland rice farming. He was influenced in this aim not just by Scotland's discoveries of 1911 and by Sierra Leone's wartime experience, but also by his own previous experiences in South East Asia. Finally, he placed great emphasis on working with people in the Protectorate, rather than in the colony.

Even before the riots, Governor Wilkinson had already noticed that the cultivation of swamp rice in the Karene District in Northwestern Sierra Leone was associated with a "teeming population". He had decided to favour a policy of developing these local technologies in the Scarieces region by advancing money for seed rice in some cases; offering a good price for rice through the Food Committee; encouraging direct purchase of rice from the producers; and prohibiting the requisition of rice at rates below those ruling in the open market.

In 1919, in the wake of the riots, the Director of Agriculture renewed his warnings that some drastic measures were needed to halt the "abuse of the land" by the natives; and the Conservator of Forests expressed the opinion that the farmer was not only lazy but a 'pest' to the oil palm industry. However, Governor Wilkinson could not accept that the farmer should carry all the blame. He argued that to seek to divert farmers from the tried methods they know for a supposedly superior but unproven method would be tantamount to creating another situation of starvation.

In Wilkinson's view the people needed to be taught gradually until they could understand and build their confidence in the methods. Such "a
flank attack", he said, "might succeed where a frontal attack might be too costly" and he therefore recommended the establishment of a system under which "the principles of a sound system of planting" might be taught to every child in the Protectorate. With this aim in view, Governor Wilkinson established at Njala in October, 1919, an Agricultural Training College to train teachers who "would be able to disseminate agricultural knowledge throughout the country through the medium of the rural schools". He had every faith that the College would "result inevitably in the improvement of farming throughout the Protectorate". A European Agricultural Instructor was engaged and the curriculum was given a strong agricultural (practical and theoretical) bias. But like Bo school, the intake to the college was limited to the sons of chiefs.

It is clear from this, however, that Wilkinson believed that education, coupled with an attitude of empathy and understanding of the natives and their cultures would achieve the agricultural breakthrough which Scotland and others had been pursuing unsuccessfully before 1919. His priority, he said, was "to develop to the full the country's known agricultural resources and to make a study of the possibilities of the rest". He was still committed to the strategies of seed distribution, for the encouragement of native planting; and of establishing small model farms and economic plantations in various parts of the country. He criticised the Department of Agriculture for emphasising the experimental cultivation of crops without demonstrating the practical usefulness, in financial terms, of such undertakings to the farmers and pointed out that efficient marketing and communication systems were perhaps more vital in agricultural development.
Another necessity that Wilkinson stressed was for a functional Agricultural Department with an efficient management. The ideal Agriculture Department, he said, should have at least three specialist staff: a scientific specialist, who could be either a mycologist, an agricultural chemist, an etomologist or an economic botanist; a practical specialist, with experience of rubber, cocoa, or citrus cultivation; a gardener trained, for example, at Kew; plus a general agriculturist. And he lamented that the Agricultural Department had none of these. The dearth of trained personnel hindered the department in its drive to undertake valuable research. By now, Wilkinson also had a far more sympathetic attitude towards local farmers than that quoted at the end of Chapter Two, saying of the Agricultural Department:

I should like them to deal at first hand with the native, learning his language, if necessary and working in sympathy with him. It is painful to have them describing the native as a "pest" or as lazy and inefficient. Their value as advisers to government is limited both to their necessarily limited knowledge of so large a subject as agriculture and by their lack of sympathy with the people. And until we have some direct way of conveying agricultural knowledge to the natives the creation of a staff of specialists would fail in usefulness in that they would be unable to apply their discoveries.

The Colonial Office and the Director of the Botanical Gardens at Kew, Sir D. Prain, held similar views.

Indeed, Wilkinson's shift towards emphasising swamp rice, and contacts with African farmers, needs to be understood not just in the context of the 1919 riots but also within the broad limelight of the post-war economic situation. The economic stresses, practically the trade recession which accompanied the war and was renewed in 1920-21, surfaced the risks and dangers arising for states like Sierra Leone from
their dependence on a monocultural form of development. The situation was a source of concern in the Colonial Office and naturally this led to a critical reassessment of Colonial Agricultural policies in the Empire. As far as West Africa was concerned there was fear that the region faced the possibility of losing its place in world trade, in the face of fierce competition from the Eastern world, except and unless the quality and variety of export products were greatly improved. Part of the problem was believed to be the "inappropriate" and bookish type of education the Christian Missions had been propagating:

The project...of giving education to the labouring classes...will be found in effect prejudicial to their morals and happiness. It will teach them to despise their lot instead of making them good servants in agriculture and other laborious employments to which their rank in society destined them.

The criticism of academic type education went hand in hand with the call for the uplifting of traditional institutions and of developing the Africans' abilities within the parameters of those institutions. With the 1919 riots in Sierra Leone reinforcing such ideas through the role of the Krios, it is understandable why Governor Wilkinson would at this time opt for a farmer-centred reform of agricultural policy. Thus when Douglas Scotland again in 1921 came up with a programme emphasising crop-rotation and green manuring, Acting Governor Maxwell (Wilkinson had just gone on leave) failed to be impressed, pointing out to Scotland that the time for theory was over:

It is of course an easy matter to make a scientific rotation. what is required, however, is an economic rotation. that is. a rotation each crop of which will be of actual monetary value to the farmer: a rotation in which two successive crops consist of pigeon pea is quite useless. the native does not eat them and he can not sell them. I am not in accordance with the Director that the
problem is one of educating the native to the fact that progress in Agriculture is only possible by permanent cultivation. The average native farmer cares nothing about progress in Agriculture but he does care for results and if he can be shown a method of permanent cultivation which will give him better results than shifting cultivation he will in time adopt it, as a matter of fact he has done so in the naturally irrigated areas of the Scarcies Rivers. The problem for the Department (of Agriculture) is to translate its theory into practical methods well within the means and capacity of the native farmer. I agree with the Director that the discovery of a rotation is important but I doubt whether he has so far got one that the native farmer is prepared to take up.42

It is clear that the Colonial administration in Sierra Leone was now out of step with the policy of experimental crop-rotation previously pursued by the Agriculture Department. A senior pathologist in the Colonial Agricultural Service in Sierra Leone, Mr. Frederick C. Deighton, testified that the row that resulted over differences in policy out-look in the Agriculture Department led Governor Wilkinson in 1922 to amalgamate the Agricultural and Forestry Departments into the Lands and Forestry Department under the dynamic and impetuous personality of Morley T. Dawe, because as was said at the time "Doggy needed a Master".43

Despite the importance he attached to such long-term measures, Wilkinson realised that the food problem needed an immediate solution. Already, there was an acute shortage of rice in Freetown. He therefore sanctioned a scheme by which the government could become actively involved in the rice trade. So from 1921 onwards, the government would import Indian rice in bulk and then retail it locally, mainly to the Freetown dwellers, at much subsidised rates. "The distribution was regulated by means of permits authorising the issue of rice on sale. Tickets, each worth a certain number of cups of rice, were issued to individuals and exchanged by them for rice at one of the distributing

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centres." A total of 970 tons of rice was imported by the government, plus 87 tons, 9½ cwt. which was acquired from local firms. In all the stock cost £60,391.17s.7d. which worked out roughly at £47.8s.4 per ton. However, since the aim was to distant another social upheaval in the towns, Government retailed the rice at £35.11s.8d. per ton and consequently a loss of £8,572.8s.8d. was made. This action may be viewed as a foretaste of the current policy of subsidising urban food prices, and from current experience one major side-effect could be to act as a disincentive to local farmers. At the time, however, the policy was thoroughly approved by the Secretary of State who agreed to write off the deficit incurred in the rice sale.

**Governor Wilkinson's Irrigation Scheme**

Meanwhile, Wilkinson proposed an ambitious irrigation scheme to the Secretary of State. Perhaps not realising that this technical know how already existed in the Scarcies region, Wilkinson asked for an expert in irrigation from India to be sent to Sierra Leone to study and report on the agricultural potential of the swamp rice regions of the country and to teach the people the technical aspects of swamp rice cultivation "by simple methods of irrigation". Such instructors, he suggested, could be obtained from either India, Malaya, the Dutch Indies or Ceylon. Lord Milner's Agricultural Advisers, Colonel W.M. Ellis R.E. former Chief Royal Engineer for Irrigation at Madras and Mr. D. Chadwick, former Director of Agriculture, Madras, advised that a prerequisite to any such action should be a thorough survey of the wet rice areas, describing the general nature of these lands, the character of rivers, the topography of
adjacent lands, the ecology, the vegetation and the soils. This task he believed would be more efficiently accomplished by an officer already conversant with local conditions than the "temporary engagement of an expert". The selection of a suitable expert and the formulation of a relevant programme of operation would depend on such topographic and hydrological data. Since this was not readily available a full-scale irrigation project along Wilkinson's lines was ruled out for the time being. Instead his second suggestion to obtain "native agricultural instructors...from India...to train Protectorate natives in the technical details of cultivation of rice by simple methods of irrigation" was endorsed.

On the basis of this advice Lord Milner, on the 29th June 1920, informed Governor Wilkinson that the services of "a highly qualified technical expert" would not be required but that the...

...first step would appear to be to arrange some elementary practical instruction for the native rice growers themselves, who should be taught on the spot how to prepare and level the ground, how to dig channels for irrigation, and what kinds of rice are suitable for cultivation under various conditions, etc.

For this purpose the services of two Indian rice experts were obtained. These were Mr. A. Chinnathambi Pillai, a man of some "scientific attainment", and Mr. G. Naik, "a practical paddy cultivator of south India with no scientific attainments and unable to speak and write English". As Agricultural Instructors they were subordinate to the Director of Agriculture and their basic task was to examine and suggest the best ways of improving local swamp rice cultivation techniques. They were stationed at Gbinti, in the Loko Massama Chiefdom in the Little
Searcies River where the local Paramount Chief welcomed them and provided them with all the land they needed for experimental purposes.

Pillai and Naik divided the land into four plots, three of which were planted (between July and September) with local varieties, using local methods while the fourth was planted with an Indian variety (brought by the Instructors) along Indian lines. At the same time the Senior Instructor, Pillai, made periodic visits of the deltaic areas of the Searcies Rivers to collect on the spot data from local farmers on farming operations in the Searcies during the wet season. This took him up to Mambolo on the Great Searcies delta. On the basis of these visits Pillai stressed that what obtained at Mambolo and Loko Massama held good for all other areas in the Searcies delta, including the Samu Chiefdom on the northwestern frontier. All this time Naik was permanently stationed at the experimental farm at Gbinti.

In his report of January 29th 1922, Pillai gave a comprehensive and detailed description of farming operations in the Searcies delta. He noted among other things that the people were hard working; that the farming cycle "leaves nothing to be desired"; that wet rice culture had "continued uninterrupted since the latter half of the 19th Century"; that there were in existence over ten local swamp rice varieties selected by the farmers themselves; that the household unit constituted the basic labour force; and that no artificial irrigation and little, if any, tendering of crops was done. Yet, paddy yields compared favourably with India where intensive methods of cultivation were employed:

The results were startling. If it is made known to the rice growing public of other countries that the Africans are getting up to 4,000 lb. in an acre of swamp without tilth, without manure, without weeding, and without artificial irrigation and
COASTAL SIERRA LEONE SHOWING SWAMP RICE AREAS

Source: Adapted from HEWAPATHIRANE
THE GEOGRAPHY OF THE SWAMP RICE REGION OF COASTAL SIERRA LEONE

FIGURE 4
lastly, by continued cropping for over thirty years, some will doubt the truth of the statement. But I submit as myself they did the work and saw the crop from planting to harvest; the yield is as I expect from the beginning (Vide progress reports). I would have been disappointed if the yield ranged less.**

He estimated the average yield from the experimental farms at Gbinti to be 2,000 lbs. husk rice per acre while that of the Scarcies deltaic swamp generally varied, he said, from 1,000 to 4,000 lbs. per acre.**

All this convinced Pillai that the Scarcies method of swamp rice cultivation was already far advanced and adequate to meet the needs of the time and that to better it would require long and expensive scientific experiments. Nevertheless, he realised that important socio-economic problems like weeds, particularly the "elephant grass", lack of security of tenure, land pledging, and the pattern of succession were serious impediments to the extension of the swamp rice culture in the Scarcies area. He therefore recommended:

**TABLE 7: COMPARISON OF PADDY YIELD BETWEEN SIERRA LEONE AND INDIA**

<table>
<thead>
<tr>
<th>NAME OF COUNTRY</th>
<th>AMOUNT OF RAIN FALL IN INCHES</th>
<th>AVERAGE ACRE YIELD OF RICE (HUSKED)</th>
<th>HOW OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malabar</td>
<td>116</td>
<td>950 lbs.</td>
<td>Statistics from India, 1909-10</td>
</tr>
<tr>
<td>South Canara</td>
<td>145</td>
<td>860 lbs.</td>
<td>-</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>125</td>
<td>1,434 lbs.</td>
<td>Average of the plots cut by me on swamps</td>
</tr>
</tbody>
</table>

Source: Pillai, Correspondent and Report on Irrigation. p. 21
(i) that the existing Scarcies methods be extended to other parts of the country where wet culture was possible;

(ii) that an agricultural survey of the swamp tract be carried out to find out the extent of land available for irrigated rice and to "give an idea of the magnitude to the task for improvement";

(iii) that the actual and potential farmers be assured of security of tenure, especially if they moved from the uplands to the swamplands;

(iv) that a leaflet "enumerating all the good points" of swamp cultivation should be prepared with a view to educating all farmers at village level on the Scarcies technologies;

(v) that model farms be established in various parts of the country to demonstrate the wet rice farming operations as spelt out in the leaflet; and

(vi) that at a given point in this development new scientific techniques such as artificial irrigation could then be introduced.

He argued that this line of expansion would be cost-effective, and would ensure not only an abundant food-supply but also a reasonable surplus for export while at the same time the clearing of the swamps would render the coastal strip a mosquito-free zone:

In my humble opinion, the development in this branch of agriculture will result in abundance of food which will be sure and cheap and beyond that there would be surplus for exportation."

In transmitting Pillai's report to the Colonial Office for expert advice, Acting Governor J.C. Maxwell referred to it as "a careful and
valuable report" and agreed that serious consideration should be given to the possibility of reforming native administration in order "to enable the ordinary native to retain a large proportion of the fruits of his labour and so have a greater incentive to work". He was here alluding to the security of tenure. Indeed so impressed was Maxwell with this report that he instructed that Pillai spend the early part of 1922 observing and reporting on the southern littoral along the lines of the Scarcies area.

Pillai was now posted to Nongoba Bullom Chiefdom in the Northern Sherbro area of the southern province with a view to reporting on the potential of the southern littoral for irrigated rice and "to show the people there the cultivation of irrigated rice". Since Naik was employed to demonstrate the practical work of rice cultivation on Indian lines and Pillai's report showed that Indian methods were impracticable under existing conditions and technical knowledge, Governor Maxwell decided to dispense with the services of Mr. Naik. Naik was therefore sent back to India on 22 April 1922 with full benefits due him.

Meanwhile, Pillai had moved to the deltaic areas of the southern littoral for a purpose of an agricultural survey of that region as a first step in the implementation of his own scheme which involved the introduction of local Scarcies paddy techniques to the southern planters. For this purpose, two Temne expert swamp rice planters from Gbinti in the Loko Massama Chiefdom were hired by the Government. Another, Mr. J.S. Borbor was to act as Pillai's interpreter while three ex-Bo schoolboys including Kanray Foula and Vandi Parka (Kpaka?) were to supervise the local Temne farmers. Pillai's first impression was that there was a
vast area of land with great potential for swamp rice farming which was never cultivated. Also, that little farming generally was being done in that part of the country and that the methods of farming among the Sherbro in that area were defective compared to the advanced Temne methods; and finally, that the Indian methods of cultivation were equally inapplicable to the south but that the Scarcies methods would be more suitable there. Hence the need "to demonstrate to the Sherbro people the Skarcy or Temne method".\textsuperscript{51}

At this point Pillai returned to the Scarcies (in April 1922) to observe conditions there during the dry season period (April - October) as a source of reference for the southern region. He noted that the Scarcies offered good fodder for grazing cattle in the dry season; that the region tended to attract "strangers" from far and wide who had come to buy rice cheaply; that swamps close to the sea became intensely salty at this period (the degree of saltiness depending on the degree of proximity to the tidal flow); and that high tide water passed twice a day and spread for an hour each time. In general the swamps were submerged for one day in a month. In April a high amount of silt was deposited which made boat or launch travelling risky in places. He also got the impression from the Mambolo people that occasional low yields were a result of salty conditions.\textsuperscript{52}

In May Pillai returned to the Sherbro region with his men, bags of Scarcies seed rice, Scarcies farming implements etc. It was on this visit that the Sherbro in Bum-Kittam area explained that previously they undertook little swamp rice cultivation because of

(i) uncontrollable floods during the rains;

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(ii) the hard work involved in cutting and clearing the mangroves before planting;
(iii) the scarcity of labour;
(iv) the poor yields in the initial stages and
(v) the risk of attack by fish on young seedlings.

From May to mid-August 1922 Pillai devoted his attention to training illiterate natives in swamp rice cultivation and to introducing the Scarcies method of planting. This involved him in setting up demonstration plots along the lines of the Scarcies. For this the Sherbro Chief generously provided the land in which to carry out the experiments or demonstrations. Pillai then divided the land into two parts. One portion was worked by the two Temne planters according to Scarcies cultural methods; the other, the largest, was worked for the Chief by his people according to Sherbro methods of cultivation. The results showed conclusively that the Scarcies method of cultivation was superior to that of the Sherbro. Unlike the latter which required weeding and yielded poorly, the Temne plot required no weeding and the crops were good "in height, in tillers and in healthy growth, it is superior to the Sherbro crop".

Pillai argued that the main defects of the Sherbro method were, firstly, that not enough seedlings were cultivated in nursery, so that some parts of the cleared swamp were left unplanted. These were then colonised by aquatic grasses "which makes working of such farms in succeeding years difficult". This undesirable situation, said Pillai, was due to a lack of incentives in farming.
The second problem Pillai identified was that of late land preparation. The Sherbro did nothing to prepare the land by brushing, weeding or cultivating it until it was time for transplanting. Yet this intervening period could have been devoted to preparing the flood area to receive the crop when transplanting came. The failure to do this often resulted in the farms being flooded before they were completely planted up. The Sherbro did not do this because they feared that preparation of the farms would result in weed growth before transplanting. In the event, because preparation was done in a hurry, grass and weeds were not properly controlled and these soon choked the young rice seedlings. Finally, the Sherbro used a relatively slow and inefficient method of transplanting. The Temne method was quicker and more thorough than that of the Sherbro because, Pillai explained, while the Sherbro used either hands or sticks which meant making holes on the mud before fixing the seedlings the Temne by comparison used a special iron planting tool which involved them in less exertion and was more efficient.

In view of these defects, Pillai argued that the future demonstration programme should concentrate on teaching the Sherbro on the spot how to raise a nursery, when one should commence preliminary cultivation, how one should use his cutlass and how one should do the work "one time" (to use a native expression) instead of piece meal. In short, to show the Sherbro people everything that was found advantageous and good in Skarcy method and thus to educate the Sherbro to the level of Temne cultivators in rice farming - everything the Home Despatch aimed at on the practical side.

The Bonthe District region being the greatest food deficit region in the entire Protectorate showed the keenest enthusiasm for the Temne methods of cultivation. For instance, five farmers from Nganinga: Mr.
Memo, Mrs. Johnny Williams, Mrs. Lefever, Mr. Shanuka and the Headman applied through Pillai to be loaned the services of the expert Temne planters. Pillai loaned them freely to these and any other Sherbro farmers who made a request. These on the spot demonstrations were believed to have greatly improved the Sherbro methods of cultivation.®7

The practical experiments carried out by Pillai however confirmed the view expressed by the people that fish damage was a problem. The damage occurred at flooding time when the leaves and shoots of rice seedlings were eaten at the margin of the farm. No grain damage was noticed however, since the floods receded at harvest time. He recommended two methods of combating this problem. The first was the method already employed by the Sherbro, that is, to screen or fence the farms; the other was to encourage extensive cultivation of the swamps since it was believed that fish damage was mainly noticeable on the fringes of the farms. This might not eliminate the problem but would reduce the damage caused by fish. Concerning flooding which was also stressed by Sherbro farmers, Pillai advised the adoption of the transplanting method; early planting, say in May, to establish the crop before the floods; and the use of long-duration varieties which should mature by January.®8

Regarding the training of educated natives Pillai rendered a great service to the Protectorate. The Bo school boys besides being fairly young had hardly any knowledge of swamp rice cultivation. Therefore they could not act as supervisors to the expert Temne farmers. Instead Pillai apprenticed them to the Temne farmers to teach the boys every farm
operation by practical means. The boys responded with zeal and by October, after a period of only five months, they were

...in a position to demonstrate to everybody the Temne method of rice growing by actually stepping into the field, by handling the cutlass, by cutting grass and by transplanting.  

So much for the practical demonstrations; meanwhile, the second part of Pillai's report on the Sherbro area had to do with the theoretical details of the tidal areas, particularly the Bum-Kittam and Wanje Basins. His survey showed that a little, somewhat haphazard, swamp rice farming was done before his arrival, but about 200,000 acres of swamp were lying waste. The main crops were cassava, rice, and sweet potatoes but piassava and palm kernels were also exploited for cash. The educated men especially preferred other trades like tailoring, goldsmithery, carpentry, hawking, shoemaking, serving as clerks in European firms and acting as middlemen in Afro-European trade to farming. Further, the villages were thinly populated; there was high out-migration of young people seeking better conditions in the Scarcies and in Freetown. Weed problems, hunger and misery characterised life in the region.  

Pillai identified four main ecological zones in the Bum-Kittam river up to about Gambia which is subjected to tidal influence all the year round. Much of this area could be reclaimed for rice cultivation. The second region stretched from Gambia to about four miles above Gbapp. One area was only subjected to tidal flush during the day period; in the wet season there was a steady flow of water westward to the sea during which time paddy cultivation would be impossible due to uncontrollable floods. The third ecological zone refers to the region immediately south of the junction of the Bum and Kittam Rivers. Here too there was a fairly good
current during the rainy season which flooded not only the river margin but also all the country for some distance north and south. The fourth zone refers to the portion of the basin which stretches from the junction of the Bum Kittam Rivers to Lake Kasse which was flooded for a considerable distance in the rains and the water level hardly rose several feet above the land. But there was some 500 square miles of flood land which was suitable for rice cultivation. In another report, Pillai suggested that the Bum-Kittam Creek, leading out of Lake Kasse, could be used as one of the drainage channels, for the flood waters.\textsuperscript{71} Turner's Peninsula forms a natural 'bund' between the sea and the flooded hinterland. If it were possible to cut a channel through Turner's Peninsula a vast area could have been made available for rice cultivation.

Apart from providing all this detailed local information, which went well beyond the scope of pre-war investigations, Pillai also made recommendations about the staffing of the Agricultural Department. He suggested that the Bo school boys he had recently trained as swamp rice cultivators should be retained by the Department of Agriculture, and that Temne rice planters should be hired to help spread the Scarcies methods throughout the country. He argued that the pre-war emphasis on Paramount Chiefs as a medium of agricultural or technical innovations was misplaced and should be stopped. D.C.s and agricultural officers should instead shift their attention towards sub-chiefs and village elders who, in his view, were closer to the farmers and therefore had "local agricultural knowledge". Finally, he thought that prisoners could profitably be employed in mangrove swamp clearance: this could serve to initiate them in swamp rice technology and so provide them with a living later.\textsuperscript{72}
Aside from these recommendations on staffing, Pillai argued strongly that the Scarcies methods should be immediately induced in other parts of southern Sierra Leone, not only in the coastal Chiefdoms but also in the inland valley swamps. In this respect Pillai would reasonably be said to have laid the foundations for the Agricultural Department's later programme for the expansion of wet rice cultivation in Sierra Leone. However, Pillai did not stay to see his recommendations implemented. His services were terminated on 30th October and he left the country for India on 1st November 1922. The reasons for his departure can only be conjectured. Perhaps it was realised that his recommendations could be carried out adequately with local expertise, and perhaps top administrators wanted to prevent further clashes between him and the agricultural staff, of the type which had earlier arisen with the Agricultural Instructor, Mr. Waterland.

As early as July 1921 Mr. Pillai was pressing to be returned to India because there was a deepening disagreement between him and Mr. Waterland over how the rice experiments were to be carried out: Waterland insisting on "minute details by themselves"; Pillai emphasising the practical usefulness of the methods employed. Tensions rose high and on 12 July 1921, on the pretext that Pillai was in a habit of reporting late for work Waterland physically manhandled Pillai. A Committee of the Executive Council proved Waterland's accusations to be unfounded and Waterland was dismissed and sent back to the West Indies. From that time onwards Pillai, whose work "on local methods" Governor Wilkinson referred to as "...most illuminating and full of promise" was now subordinate to the "Secretariat and Political officers", while Scotland
and his officers were told to "test their own theories at any other time using their African overseers and other subordinates" but not to interfere with Pillai.  

Reactions to Pillai's Scheme

Although Pillai's work and recommendations were generally considered by both officials in Sierra Leone and the Colonial Office as vital for the development of the rice industry in the country, they were not uncritically accepted. In fact, his reports elicited varying responses. Colonel Ellis for instance questioned the wisdom of the Scarcies farmers' use of three or more seedlings per stand, emphasising that the method was uneconomical and that even at Madras a single seedling produced better results. To satisfy Ellis, Mr. Morley T. Dawe, the newly appointed Commissioner of the Lands and Forest Department ordered that trials be made at the Experimental Farm at Njala. In these trials Scarcies seed rice was used in upland conditions. The results showed that three transplants to the stand were superior to a single seedling. Governor Slater finally concluded that

...there is very little which we can teach the denizens of the Sierra Leone swamps in the matter of rice cultivation. The only steps of a technical kind which it appears desirable to take are - (i) an agricultural survey of the swamp tract; and (ii) the preparation of a leaflet enumerating the good points of swamp rice cultivation... The main obstacles to development are...economic and administrative, and they raise questions of very crucial importance, viz.,

(a) slavery or domestic service;
(b) the fixing of chiefs' fees;
(c) security of tenure for purchasers of land.
A subsidiary question under this head is whether it is desirable to encourage immigration from the bush to the swamp.
This extract suggests that the wisdom of developing swamp rice using locally initiated techniques as recommended by Pillai was no longer in question. The main policy issues remaining were whether or not the farming population should be diverted from the uplands to the lowlands; and how best to regulated institutions of slavery, tenure systems and traditional administration to meet the needs of the swamp package. Once these problems were solved and more data on the physical aspects of each local swamp was obtained then all that would remain would be to popularise the rice policy via extension work.

Taking up the issues of 'immigration' and 'tenure', the Acting Commissioner of the Southern Province, Mr. P. Shuffrey, naively envisaged no problem in getting farmers from neighbouring chiefdoms to move down to the lowlands "...provided satisfactory arrangements are made with the Jong Chief". Although he was aware that "uneducated natives...distrust any form of land concession which depends on a document" Shuffrey still believed that "some of this distrust would be removed, and the foundation laid for a sound system of land tenure, if the Government leased the areas for allotments and then sublet them to the planters". Shuffrey believed that all land which was unused "save for the nomadic fisherman, and the collector of wild honey" was effectively unowned, so that the implementation of his suggestion would "injure no one".

However, this view was immediately and vehemently challenged by top officials including the Acting Governor Farley, the Acting Colonial Secretary, Mr. W.B. Stanley, and the Commissioner of the Southern Province, Mr. Howard Ross. They all considered Shuffrey's move to be dangerous, unnecessary and completely contrary to British policy towards
Ross however conceded that it might be possible to convince the coastal chiefs to accommodate any "strangers" who would like to settle and cultivate the swamps. Stanley backed Ross, pointing out that in the Gambia agricultural immigrants paid a minimal fee or "a hand shake" to the Paramount Chiefs.

Other areas of conflict bordered on the socio-political reforms suggested by Pillai which found support from the outgoing Director of Agriculture, Douglas W. Scotland who opined that indeed "the native administration and the social side of the native" needed improvement. Pillai and Scotland advocated an adjustment in the socio-political structure at the Local Administration level that would ensure maximum labour efficiency, more extensive land use and the rapid diffusion of new ideas in agriculture. The latter demanded, as Pillai noted, a shift of emphasis from Paramount Chiefs to local dignitaries as agents of social and economic change. But Acting Governor Furley thought it would be folly in British policy towards the natives if such a strategy was followed.

To attempt anything except through the Paramount Chiefs, or on the other hand to ignore the interests of sub-chiefs and village headmen would be prejudiced to success; and to start operations with the disruption of tribal authority and organization as a basis would, in my opinion, be disastrous and quite unnecessary. Although administrative difficulties exist, it is desirable to avoid misconception and exaggeration.

However, these areas of disagreement were few, negligible by comparison with the central and consensus issue of expanding swamp rice cultivation in Sierra Leone. In this, the Sierra Leone Government as a whole and the staff of the Colonial Office were in agreement. Such a policy, it was believed, would not only solve the food deficit problem
but would also provide a surplus export, reduce the pressure on the uplands, stem the tide of deforestation, enrich the timber and other forest industries, restore agro-ecological balance in the uplands and so help to promote the newly introduced cash crop industries. What could have been more desirable? All that was needed, it would seem, was to give such a policy a firm administrative and technical base. In the next chapter we shall see how these issues were grappled with.
FOOTNOTES TO CHAPTER 3


20. Memorial by the Syrian Community in Freetown to Lord Milner, 26 Jul. 1919, C.O. 267/582.

21. Humble Memorial by the Citizens of Freetown in the Colony of Sierra Leone: enclosure in Evelyn to Milner, 4 Sept. 1919, C.O. 267/582.


27. Wilkinson to Milner, 20 Oct. 1919, C.O. 267/583. They were withdrawn in October 27 1919 when conditions returned to normal.

29. Richards, Coping with Hunger, Ch. 1.


32. "Correspondence relating to the proposed Sierra Leone College of Agriculture and Protectorate Training College at Njala" (Sierra Leone: Sessional Paper No. 13 of 1925), C.L.O. 270/65, p.1.


34. Ibid.

35. Ibid.

36. Ibid.

37. Sir D. Prain to the Under Secretary of State, Colonial Office, 10 Dec. 1917, Ag. 45/17.


42. "Agricultural Resources of the Protectorate" by Douglas W. Scotland enclosure in Maxwell to Churchill, 20 Nov. 1921, C.O. 267/593.

43. Interview with Mr. Frederick C. Deighton, England, Apr. 1986.

45. Wilkinson to Milner, 21 Jan. 1920, in Correspondence and Report on Irrigation for and Cultivation of Rice in Sierra Leone, Pamphlet No. 4 issued by the Agriculture Department (Freetown: Government Printer, 1925) pp. 1-3. I am grateful to Mr. R.F.A. Murfit who kindly allowed me to read his copy at Silsoe College, England.

46. Correspondence and Report on Irrigation, pp. 5-7.

47. Richards, Coping with Hunger, p. 13.

48. Correspondence and Report on Irrigation, p. 3.

49. Ibid., p. 4.


51. Correspondence and Report on Irrigation, p. 4.

52. Correspondence and Report on Irrigation, pp. 8-24. Note too that in addition Pillai submitted monthly reports to the Director of Agriculture some of which were never published but which can be found in original despatches, Administrative reports and Agricultural Department files.

53. Ibid. Pillai cites Wood, R.C. Facts and Figures p. 52. Wood was Principal of the Agricultural College at Madras where Pillai received his training. Pillai mentions that in this book Wood stated that yield of good deltaic land in Madras varied between 2000 to 4000 lbs. per acre, husk rice. See also Maxwell to Churchill, 24 Mar. 1922, C.O. 367/595.


55. Correspondence and Report on Irrigation, p. 21.


57. Ibid.


end of the exercise, Borbor (Pillai's interpreter) was said to have become an expert paddy cultivator!

61. Ibid.


64. Ibid.

65. Ibid., p. 3.

66. Ibid., p. 4.

67. Ibid., p. 8.

68. Ibid., p. 8.

69. Ibid., p. 9.

70. Ibid., pp. 11 ff.


73. Ibid.


75. Ibid.

76. Despatches on Rice Cultivation, C.O. 270/65. p. 3.

77. Ibid., p. 16.

78. Ibid., p. 4.

79. Ibid., p. 13.


81. Ibid., pp. 7 and 12.

82. Ibid., p. 9

83. Ibid., p. 5.
As we saw in Chapter Three the First World War and post-war economic depression had a decisive impact on Sierra Leone. Short-falls in rice supply had become a recurrent problem while government revenue continued to experience a deficit in the region of £30,437 per annum. To Governor Wilkinson, the whole situation called for a radical shift in policy and for more dynamic, down to earth scientific agricultural research. To facilitate this, and to cut down administrative costs, it was felt that the two technical departments should be amalgamated into a single Lands and Forests Department, under a new and dynamic Commissioner.

Establishment of the Lands and Forests Department

In January 1922 the amalgamation was affected and Mr. Morley T. Dawe, a man with a vast knowledge in agriculture based on experiences in Ceylon and then in Uganda, became the first Commissioner of Lands and Forests. In practice, however, the change was not enforced until September of the same year when Dawe assumed office, with instructions to take a new look at the agricultural system of the country and then to formulate a pragmatic policy for improving it.

Mr. Dawe, later described by Governor Slater as "...able and energetic ..." seemed by every account a match to the problem. His initial preoccupation during the next two months or so was to familiarise
himself with the work of his predecessors and to acquaint himself with the nature of the agricultural system of the country generally. With regard to the latter he made a brief visit to the Njala Experimental Farm in November, and followed this up between December 1922 and August 1923 with two extensive tours of the entire Colony and Protectorate. These tours were eye-openers to Dawe on the complexities of the agricultural issues of the country. He realized among other things that although the Sierra Leonean farmer was not necessarily averse to change if properly directed and the new methods shown to be superior to his, existing methods of cultivation were primitive and haphazard. He confirmed the opinion of his colleagues in the Forestry and Agricultural Departments that the country was in danger of being completely deforested, that the land was much impoverished, that the farming cycle was contracting annually, that labour was critically short and also that the existing extension unit of the Department of Agriculture was quite out of touch with the farmers and hence ineffective.

Consequently, Dawe developed an urgent desire to put the whole agricultural system of the country on a sound research base in order to search for a solution to the technical defects of the system. It was Dawe's opinion that the soil profile in Sierra Leone, for instance, presented a unique puzzle. At the same time he perceived that the oil-palm industry, the main revenue earner in the country, was threatened by competition from the East. To avert this imminent threat, he argued, there was a need to inject new life into the entire agricultural system by systematic and organised research.

...One of the fundamental principles of the policy of this department should be that of organised research and
investigation; work which it is necessary, as a rule, should precede experiment and development."

Dawe then developed a scheme which entailed coordinated work by all the government departments; the strengthening of the staff and research base of the Lands and Forests Department; the decentralization of agricultural programmes and the effective use of trained African Instructors who would introduce improved methods in a "personal and practical ..." way to the farmers."

Dawe organised his Department into an Administrative and a Technical Section, the latter comprising Divisions of Agriculture, Forestry, Research and Plants and Produce Inspection. (see Diagram.)

Fig. I: THE NEW DEPARTMENT OF LANDS AND FORESTS

HEADQUARTERS/ADMINISTRATIVE STAFF

[Freetown]

Division of Research  Division of Agriculture  Division of Forests  Division of Plants and Produce Inspection

[Protectorate]

He also recruited a qualified agricultural chemist and an entomologist: the former to focus his attention on soil problems and on improvements to the lime and oil palm industries, as well as to investigate the crops of the country generally; and the latter to tackle the problems of crop insect pests and to map the tse-tse fly areas in the protectorate as well as a step towards the establishment of a cattle industry.
In the long term, Dawe recommended that the Protectorate be divided into agricultural circles approximately to the three Administrative Provinces. Each province was to have a Superintendent of Agriculture, and each District an African Agricultural Assistant. He also recommended that a Research Laboratory be established, and finally, that a Sierra Leone Society be formed (or revived) with branches throughout the country. The main purpose of this society would be to serve as propaganda machine in the spread of improved technologies to the farmers.

Dawe's scheme placed great emphasis on agricultural diversification on the uplands, and on the introduction of economically viable crops, especially cocoa, coconut, cotton and coffee according to their suitability and adaptability in the varied ecological regions of the country. This latter aim was a common obsession of agricultural officers at the time. More recent critics have even seen it as a driving force behind the campaign to increase swamp rice production, which is then described as "a covert conservation policy to move shifting cultivators from the uplands to the swamps ..." so that the uplands could be devoted to cash cropping. This motive may well have reinforced the government's aim discussed in chapters two and three, for rice itself to be grown as a cash crop. Meanwhile, some food crops like maize, cassava, yams and fruits also received attention. Soil exhaustion and labour bottlenecks were approached by cattle schemes aimed at establishing mixed farming and ox-plough technologies.

The Lands and Forests Department was intimately connected with the Royal Botanic Gardens, Kew, the Imperial Institute, and the Imperial
Bureau of Entomology all in London. By 1924 all the technical Sub-
Divisions of the Department of Lands and Forests were reasonably well
staffed and definite lines of research had been undertaken by Dr. F.J.
Martin, the Agricultural Chemist, and Mr. E. Hargreaves, the
Entomologist. Agricultural policy in Sierra Leone had thus entered a
new phase.

I. The Diffusion of Swamp Rice Technology, 1922-1928

Once the Administrative and Research bases were set then the swamp
rice policy took off. The Director of Agriculture, Douglas Scotland, had
urged that no time be wasted in implementing Pillai's suggestions
particularly those that referred to the dissemination of Searcies methods
of paddy cultivation. In keeping with this policy, he said, he had taken
immediate steps to retain the three Africans trained by Pillai. Dawe
hardly needed any reminding for, as mentioned above, the issue was
uppermost in his list of priorities. In a memorandum of 10th May 1923,
Dawe argued that the substitution of upland rice by swamp rice
cultivation was necessary to halt the process of deforestation and
impoverishment on the uplands, and to provide more secure food supplies
for an expanding population. He wanted this shift to be encouraged by
"persistent propaganda" and by assuring agricultural immigrants of
security of tenure and the exercise of free labour.

Paul Richards has recently challenged the basic assumptions of this
policy, pointing out that it is at the root of the chronic agricultural
problems of the country, even today. Nevertheless, this policy has
been consistently pursued in Sierra Leone for over five decades now with
no obvious intention of turning away from it. On the contrary, the
tendency has been to intensify rather than change it.

(i) Expansion in the Southern Province, c.1922-5

Partly because swamp rice technologies were at a rudimentary stage
in the south and partly because it was a chronic rice deficit region, it
was considered expedient to start the diffusion process in the Southern
littoral. Efforts here were mainly building on the foundation laid by
Pillai in 1922. With the resumption of the process in 1923, Scotland
designed a project to be focussed on the Bagru River and the delta of the
Jong River. He advised the selection of trial sites during the rainy
season, in areas where there was no considerable flooding. These trial
sites would be cleared in the dry season; meanwhile early nurseries were
to be prepared when the rains permitted from a combination of Sherbro
rice and the best varieties of the Scarcies. Finally, the trial plots
should be divided into groups using different methods of transplanting or
rice varieties. The plots were to be observed throughout the growing
period until harvested. Scotland believed that trials along these lines
would throw light on the best time for making seed beds; the ideal time
for transplanting; the amount of seed to be sown per acre; the quickest
and best method of transplanting and the best type of rice suited to
Sherbro localities.

It is not clear how many of Scotland's suggestions were followed but
there is no doubt that the sites he suggested formed the main areas of
concentration for the demonstration of the Scarcies methods. For
instance, in 1923 the focus was on the Sembehu-Bagru river region. The
local Agricultural Instructor, Mr. J.S. Borbor was put in charge of the scheme. A total 160 bushels of Scarcies seed rice was brought by the Government and distributed freely "amongst chiefs who possessed swamplands in their chiefdoms". The most popular varieties distributed were the Pa Biss, Pa D.C., Pa Litoma, Pa Kalimodu, Pa Lall, Pa Taka and Pa Indian, the latter probably referring to a cultivar introduced by Pillai from India.  

The scheme aimed at encouraging the chiefs and their people to cultivate the Coastal wasteland with swamp rice. As the agricultural staff was small the success of the scheme came to depend largely on the cooperation of the Political Officers like Howard Ross, the Provincial Commissioner and Mr. E. Harnetty, the D.C. However instead of concentrating on the farmers as Pillai had recommended, they inspired the Chiefs, particularly Paramount Chief Albert Caulker of Bumpe, Paramount Chief Lamina Soloko of Bagru and Paramount Chief Abraham Tucker of Jong. Their response was instantaneous. With zeal they mobilised every farmer in their District to take to the call for extensive swamp rice expansion. Albert Caulker even induced a section of his Chiefdom already experiencing a shortage of suitable upland farms to move down to the lowlands to cultivate the swamp farms, and "let it be known that 'strangers' will be welcome and will be granted land on which to build houses". Chiefs like Albert Caulker who helped to promote Government policy were favoured and regarded as progressive. Generally, however, in the initial stages the greatest enthusiasm for swamp rice cultivation in the south seemed to have come mainly from areas where the 'hungry season'
and rice shortages were frequent occurrences, that is, where pressure on
the uplands was greatest.22

Yields were reported to be satisfactory, at least 50 per cent higher than in
the uplands. Farmers zealously learned the new technologies in record
time so that by 1925 the services of an instructor were dispensed with
while the distribution of seed rice by Government almost halted, probably
because farmers were already well served. In 1924 only 84 bushels of
Scarcies seed rice were distributed. Indeed, by this time the Bagru
River basin was said to have been literally carpeted with rice fields.23
In January 1925 Governor Slater visited the region to inspect progress on
the new scheme. He was favourably impressed with what he referred to as
the "striking change taking place in the swamp areas on either side of
the waterways" which had now converted "the whole area (into) one vast
rice field".24 Dawe optimistically referred to this development as a
major "milestone in the agricultural progress in the southern
province".25

In contrast to the Jong-Bagru River basin, where the response to the
new technologies was strikingly good, in other areas like the Gbangbama
District, it was cool.

Likewise, efforts by the Agriculture Department in 1927 and 1928 on
Cassava Island on the Moa River estuary and the Lake Mabese (a tributary
of the Wanje River) region, which is tidal, also met with a dampening
response from the farmers. This apparent indifference to swamp rice
cultivation in places was probably connected, as Pillai noted, to
technical difficulties. A survey of the grasslands and the Burn-Kittam
and Wanje Rivers in 1928 by an officer in the Agriculture Department

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revealed that in addition to deep flooding the region was sparsely populated, causing labour supply problems. It was suggested that labour saving devices like quick maturing varieties and the plough should be introduced in the region. 

In 1927 the Agriculture Division nevertheless continued the Scheme when seven demonstration farms were made in the Pujehun District, eight in the Mano River region and a further nine in the Sumbuyu District. At the same time quick maturing varieties of "Indo-China rice" brought by R.R. Glanville from Guinea, were successfully established for the first time in the tidal areas of the Nongoba Bullom District. Considering that swamp rice technologies, especially the Scarcies methods, were a novelty in the South the effort could be said to be satisfactory. As the Commissioner of the Province, Howard Ross, commented persistent application of the same methods was bound to produce results "on lines of natural development unhampered by coercive haste".

(ii) Expansion in the Central Province, 1925-1930

In 1925 the Agriculture Department turned its attention to the Central Province. Here the starting point was the Pendembu District to the extreme east of the country. As in the south expert Temne rice growers were engaged to demonstrate the cultural methods of the Scarcies and about six bushels of Scarcies seed rice were obtained and distributed among the farmers. The same varieties as in the South were used but Pa Litoma was later to supersede all others in this region. Political officers cooperated as usual and the farmers responded well.

Starting with eleven in 1925, the number of demonstration farms in the District rose to almost 300 by 1929.
Over the years the number of swamp rice farms in the Central Province quadrupled so that in the early 1930’s Pendembu District alone was said to have had no less than 600 rice farms, one-half of which were in the Luawa chiefdom. Everywhere, the results were reported to be startling. Although adequate statistical data are not easy to come by average yields were incredibly estimated to give a "forty-five-fold-return" giving a strong incentive for the adoption of the new technologies.30

However, it is possible that these figures were deliberately inflated in order to justify the superiority of swamp rice culture over upland rice culture. Also, if one considers that in illiterate societies informed transactions, including exchange of gifts, barter, ceremonial and ritual functions go unrecorded it is easy to imagine how the above figures would have been unintentionally erroneous. Also, traditionally as David P. Gamble discovered among the Temne in Northwestern Sierra Leone, farmers have been reluctant to publicise their farm returns for fear of being bewitched.31

Whether or not high returns were a motivating factor in swamp rice expansion in the Central province, the farmers certainly learned the new technologies with remarkable swiftness. After 1929 it was found unnecessary to continue with demonstration lessons as farmers could now do it just as well!32 This speed may be explained by the fact that rudimentary wet rice technology already existed in the region prior to the spread of the Scarcies cultural methods. The main impact of the latter, it would seem, was that it catalysed existed technologies. Nonetheless, the results were not evenly spread out. In areas like the
Moyamba region where the production of cash-crops such as ginger was strong the response to wet rice technology was cool.  

(iii) Expansion in the Northern Province, 1927-1930

The Northern Province, which embraces the Scarcies, was the last to receive attention from the Agricultural Division of the Lands and Forests Department. And when work was begun there in 1927 the main concentration was on the Koinadugu District which, like the pre-twentieth century Sherbro region was frequently a food deficit area. A considerable amount of effort was also exerted in the Bombali and Karene Districts. According to Mr. R.R. Glanville, the Superintendent of Agriculture Division in the entire Northern Province, the basic aims of the Agriculture Division were to increase the area under swamp rice and to introduce "the transplanting method into areas where it is unknown to the people". The implication here is that swamp rice cultivation was already in existence and that all the farmers needed to learn was to perfect their techniques by incorporating the advanced Scarcies methods.

To achieve this the Agricultural Division engaged two expert Temne swamp rice planters in each of the three districts in the Province. The co-operation of the political officers in the Province was solicited to augment the Agricultural staff. Also selected varieties of Scarcies cultivars mainly Pa Litoma, Pa D.C., Pa Biss, etc. were obtained. But the manner of distribution of seed rice followed a slightly different pattern from that in the other two provinces. Whereas in the Central and Southern Provinces seed rice was distributed freely, in the Northern Province (with the exception of Koinadugu District) it was not. In fact...
in the Karene District, northwest of the province and closest to the Scarcies, the farmers were required to provide the seed rice themselves. In the Bombali District (just south of Koinadugu District) the farmers had to buy the seed rice.35

Several reasons for this policy suggest themselves. Firstly, that the Scarcies varieties were already common among farmers in the adjacent districts, particularly Karene. Secondly, that some areas in the north were relatively richer than others so that while Koinadugu was subsidised Bambali and Karene Districts, which were relatively well-off, were not.

Many hundreds of demonstration farms were made throughout the Province with remarkable results. Again the farmers were said to have learned the new technologies – making of nurseries and transplanting – so rapidly that in the third year, that is 1929, practical instruction by Temne farmers was no longer necessary. Rapid expansion was facilitated in the Koinadugu District by regularly passing on the fixed capital of seed rice to fresh participants.36

II The Introduction and Spread of Other Crops

As already stated one effect of Dawe's swamp rice policy was to make the uplands available for a wider range of non-rice cash crops, as well as for the afforestation policy of the Forestry Division which aimed at rescuing "the few remaining areas of high bush forest from destruction at the hands of the ubiquitous rice-farmer".37

From 1925 onwards sub-stations were established in places like Batkanu, Binkolo, Kabala, Makump, Port Loko, and Kambia to serve as seed and plant multiplication and distribution centres for the Northern
Similar stations were established or revived at Kenema, Yamandu, Bumpe and Bonthe in the Eastern and Southern Provinces, and Waterloo and Songo in the Colony area. A vast number of improved economic crops like kola, coffee, lime, rubber, oil-palm, sisal, cocoa, cotton, ginger and tobacco were introduced for onward distribution to farmers. Foodcrops which were not likely to impoverish the soil such as cassava, Chinese yams, potatoes, banana, maize and oranges were also introduced. Initially, cash-cropping met with similar enthusiasm as the Scarce's swamp rice technologies in the south and eastern provinces. Glenville noted that "there was widespread enthusiasm amongst would-be producers in the Northern Province" and it was generally upheld that ginger from the north was "greatly superior to that grown in the Central Province, as it was much cleaner and more carefully prepared in every way".

Unfortunately the late 1920's was another period of sliding commodity prices. This and the problems of lack of accessible markets and roads to transport their crops led to backsliding. Cash-cropping also competed for labour, which was short, with subsistence cropping. This reveals a major contradiction in colonial agricultural policy: while committed to the commercialisation of agriculture the colonial state could not provide the basic infrastructure, let alone the reform of the social relations of production needed to facilitate that policy. Thus just as the policy of subsidising urban rice consumers acted as a disincentive to farmers to export rice to Freetown, and as an incentive to intensify what officials branded as 'smuggling' across the borders, so
also the lack of adequate price support and infrastructural development
limited the growth of cash cropping, at least of ginger, in the North.

III: Dawe's Cattle Policy

The decision to establish a cattle industry had its origin partly in
the fact that Freetown, indeed the country generally, was too dependent
on French Guinea for its meat and dairy needs. The annual meat demand of
Freetown alone was estimated in the region of 4,000 head of cattle
imported from Guinea at a very high cost.*0 On the other hand Dawe
believed cattle or mixed farming would help to restore soil fertility and
would minimize labour bottlenecks by using ox-ploughs, while the
possibility of using draught animals would actually ease transport
difficulties. The cattle policy thus aimed at solving both the protein
deficit in the Freetown area, and some farming problems.*1

The Cattle Census of 1923 showed overwhelmingly that the Northern
Province was the most suitable area for a cattle industry in the country;
but Dawe decided to make a start in the Colony. Eventually, the Cattle
Farm was located in the eastern part of the Colony, between Waterloo and
Songo Town. This area was seen as being easily accessible for officials
of the Lands and Forests Department; near to Freetown's large market for
dairy produce; and a potential gateway to the Protectorate, "from which a
communication may be later maintained with cattle ranching in the
Northern province".*2 It was further proposed that "Efwatakala" grass
(Melinis minutiflora) should be established for fodder while provision
was made for the establishment of a Veterinary and Livestock Division.

Meanwhile, in the Protectorate steps were being taken to introduce
pack animals. In Tonko Limba Chiefdom, Karene District, for instance
donkey breeding was started at Bubuya, the Chiefdom Headquarter town. The experiment was successful and it was reported that donkeys carried "loads from Bubuya to Kambia and back", a distance of some twenty three miles. This encouraged a similar experiment at Mabonto in the Simiria chiefdom in the Bombali District with three Gambian donkeys and one jackass. While these two experiments at donkey raising by Paramount Chiefs were successful, an older experiment carried out by European officials at Port Loko dating back to 1910, was a "complete failure".

In 1926 Dr. J.G.H. Frew was flown to Sierra Leone by the Colonial Research Committee of the Colonial Office in Britain, to undertake a survey of the tse-tse fly areas in the country and to report on bearing of this disease on cattle raising in the Protectorate. This report confirmed that the Northern Province was the best suited for cattle raising because of its open landscape and its almost total freedom from the tse-tse fly hazard. The Ndama cattle which was prevalent in the region was shown to be naturally resistant to trypanosomiasis.

In the following year, Dawe sent the Assistant Conservator of Forests, Mr. D.G. Thomas, to neighbouring French Guinea to study local agricultural methods. While in Guinea Thomas made a detailed study of the crops and technologies used by farmers. Among other things, he realised that the French Government in Guinea successfully met the problems associated with shifting cultivation, especially deforestation and land degradation, by the adoption of the ox-plough in the most affected areas, such as the Lake Cercle which he said compared ecologically to parts of Karene, Bombali and Koinadugu Districts in Northern Sierra Leone.
Thomas also learned that this ox-plough saved labour and increased both acreages and output: and so he reasoned that it was the right technology for Sierra Leone. Besides, Thomas was assured by Monsieur Brossat, the Director of Agriculture in Guinea, that the French Government would be prepared to help train Sierra Leoneans at the Tillage College and would subsequently be willing to supply the government of Sierra Leone with the necessary implements and trained oxen. 

As a result of Mr. Thomas' suggestion the French Government was approached and it was arranged to send three Sierra Leoneans on a training course to the Ploughing College at Kankan in French Guinea. The Principal Superintendent of Agriculture in the Northern Province, Mr. R.R. Glanville, was to accompany the candidates to make the necessary arrangement for their course of study. The Commissioner of the Northern Province, Mr. Stanley was asked to select the candidates: whose knowledge of how to handle cattle; access or proximity to cattle; and ability to "make efficient ploughing instructors" were considerations rated higher than their ability to read and write.

The popularity of this scheme among the wealthier farmers of Northern Sierra Leone was greatly increased by the fact that domestic slavery had been legally abolished in Sierra Leone on the 22 September 1927. The Mandingo of the Bombali District, where slave-owners felt they were bound to lose their control over labour following abolition, were the first to show interest in this new idea. Two of the candidates for the training in Guinea, Borbor and Lamina Sarifu, were from the Biriwa chiefdom in the Bombali District, while the third Lamina Koroma, a Temne ex-soldier, was from Sanda Tenraran chiefdom in the Karene District.
Koroma was nominated by the local D.C., Mr. E.F. Sayers who was keen to spread the new technology in his district. Glanville was also to be accompanied by one Farma, an Agricultural Assistant, and Paramount Chief Bai Lama of Sanda Tenraran Chiefdom, Karene District. The whole journey, using an overland route, took one month from April 25th to May 25th 1928.

The details were straightforward. It was a six-month course, the first four months to be spent in general work in the college, especially ploughing and harrowing; and the other two months in learning how to repair ploughs and other implements including yokes for the oxen at the forge. After the course itself, Glanville spent fifteen days visiting many areas of agricultural interest in and around Kankan, in Cercle de Labe. Perhaps this was the most significant aspect of the visit to Guinea because it gave him the opportunity to make comparisons and to formulate suggestions for the Sierra Leone Government. He observed, for instance, that in the Kissidougu and Dakedugu cercles, which ecologically approximated the then Central and Southern provinces in Sierra Leone, cash crops like cotton, pineapples and plantains, flourished. Meanwhile, in the Labe cercle which is similar to Northern Sierra Leone, ox-ploughing and swamp rice cultivation were economically viable industries. Also, he realised that both indigenous and exotic crop varieties were encouraged and developed by the French Government and that in some cases, for example cotton, local varieties out-performed the introduced types. His major discovery, however, was the amazing success of the newly introduced 'Indo-China' rice variety in the annually inundated alluvial lands of the Niger and its tributaries.
In French Guinea transplanting was not used in rice growing. The seeds had to be sown in April, a month before the water level began to rise, on land which had been ploughed twice between December and March. Harrowing would then follow as necessary. Glanville was quick to reach the conclusion that parts of the Northern Province were similar, geographically, to Kankan where the plough and Indo-China rice were proving very successful in yield terms. He specifically mentioned Karene, Port Loko and Koinadugu Districts as the most suitable areas for the introduction of such technologies.

Accordingly, Glanville proposed that the efforts of the newly trained ploughing instructors should be extended to include demonstrations of how to grow Indo-China rice. After a few years, he thought that the possibility of establishing a Ploughing School and a Farm, preferably at Batkanu, in the Northern Province should be considerable. He concluded:

I am most anxious that these two projects - ploughing and Indo-China rice cultivation - should be taken up very thoroughly as I know of no two things more likely to prove conducive to the welfare and prosperity of the Northern Province. Successful results should be obtained in a comparatively short time if sufficient energy and care are concentrated on the work.

E.F. Sayers, another senior Colonial Administrator who had worked for many years in the Northern Province, took Glanville's ideas even further:

I would like to see a Fordson tractor on those swamps running mile long furrows across them, and have them drained and dyked to regulate inundation as desired. What a dream eh? - increased food supply - lower mortality, - more workers, - more and better fodder, more livestock, - manure - timber destruction diminished; more surplus energy for export products, - more imports, more trade, increased by capital wealth and taxable capacity; therefore more funds for education and medical assistance, and transport facilities; quite an interesting series of cycles or shall we say spirals towards? - Utopia? Good old plough!
As will be shown in the next chapter, these objectives remained a dream not because of lack of enthusiasm from farmers but rather from lack of practical commitment by the Colonial Administration to make it a practical reality. The limited level of market demand for farmers produce also continued to act as a brake on innovation. Up until the mid 1920s and beyond there was no road to link the trade centres of Mange, Rokupr and Kambia with the main centres of production in the interior, like Kukuna, Tonko Limba, Kamakwie, Samaya and Kabala.

Traders and Paramount Chiefs in these growth or collecting centres were often joined by Administrative Officers in pleading with the government to do something about the infrastructure in the region.

The Ploughing Instructors were expected back by the end of November 1928 when they would go to Njala, Karina in the Bombali District and Batkanu in the Karene District to spread the technology among Chiefs and "Big men". But even before the trainees had arrived from French Guinea, some of the wealthy Mandingo farmers in the Biriwa Limba Chiefdom who had recently lost hold of their slaves had proceeded to order sets of L'Africa ploughs and trained oxen from Guinea "to try their luck next season on the swamps". Paramount Chief Bari Lama of Sanda Tenraran even wanted to send some of his children to his contemporaries in French Guinea for instruction in ploughing. The Sub-Chief of Karene, N'fa Nonko, who had led a local campaign against the abolition of the domestic slave trade, was also eager to be part of the new development. Indeed, many Mandingo elders and dignitaries in Biriwa Chiefdom still remembered their determined resistance to the abolition Act, an issue
which they said was only atoned for by the introduction of the ox-plough.\textsuperscript{1}

The Ploughing Instructors were finally sent out to Bombali, Karene, Koinadugu and Port Loko Districts in 1928. The Government also bought six ploughs in 1928 for farmers at Batkanu in the Karene District.\textsuperscript{2}

This was not enough to meet the growing demand for the new technology by rich farmers throughout the Northern Province, and efforts were redoubled in the following year when a further thirty ploughs and thirty harrows were purchased by the colonial government from French Guinea and then sold to farmers throughout the Northern Province. Glanville summed up their achievements thus:\textsuperscript{3}

During 1929, 80 acres of land were cultivated by the Plough and during 1930 this area has been doubled. All operations in connection with the actual ploughing have succeeded almost beyond expectation. Both ploughs and harrows have been a success and there has been little difficulty in training either oxen or ploughmen.

In all the four Districts of the Province a total of 28 farmers had adopted the plough, and 31 ploughs and 18 harrows had come into use within a space of just two years.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|c|}
\hline
District & Farmers & Ploughs & Harrows \\
\hline
Karene & 10 & 13 & 12 \\
Bombali & 5 & 5 & 2 \\
Koinadugu & 8 & 8 & - \\
Port Loko & 5 & 5 & 4 \\
\hline
TOTAL & 28 & 31 & 18 \\
\hline
\end{tabular}
\caption{PROGRESS IN OX-PLOUGHING, 1928-1930}
\end{table}


The main limiting factors on this growth continued to be the number of Ploughing Instructors and the availability of implements and spare
parts. These and the lack of capital for small farmers tended to limit
the technology to wealthy farmers. Nevertheless, the scheme continued to
make modest progress. In 1931, for instance a total of 133 acres were
ploughed by seventeen farmers in the Bombali, Karene and Koinadugu
Districts.

IV: The Experimental Fruit Farm

Besides dairy products and meat, fruit was another item which was
conspicuously scarce even though Freetown had been exporting fruit in
the late nineteenth century. That the colony had the potential to
support a viable fruit industry was seen in the fact that between 1920
and 1926 there were efforts by an American Company, Elders and Fyffes to
establish a banana industry there. In 1924 the Company sent two banana
experts on a feasibility study to Sierra Leone. They explored not only
Sierra Leone but as far south as Angola and came to the conclusion that
Sierra Leone was well suited for the industry, although a banana disease
known as "Punama" was said to have hit Freetown at this time. The
"Punama" disease was not considered a serious impediment as legislative
procedure was believed to ensure its eradication. That the Company did
not carry out its plans of setting up the banana industry can only be
understood in terms of a counter-policy in Sierra Leone.

The brain behind this was Dawe who found it inconceivable that a
potential revenue earner like the fruit industry should be exploited by a
completely foreign company. Dawe hoped that if he could establish a
fruit industry in the colony area, this might stimulate renewed interest
in agriculture; and it might make a significant contribution to national
revenue.
With this in view Dawe drew up a scheme for an Experimental Fruit Farm which Governor Slater endorsed and transmitted to the Secretary of State in May 1926 for his consideration. In that very year the Chairman of the Tropical Fruit Committee of the Empire Marketing Board, Sir Edward Davson, K.B.E., visited Sierra Leone with the issue of a Fruit Industry for Sierra Leone looming very high in his agenda. Davson was no doubt impressed by Dawe's scheme. No sooner had he returned to Britain than an invitation was extended to Governor Slater, Commissioner Dawe and the Agricultural Chemist Dr. F.J. Martin to a Meeting of the Tropical Fruit Committee scheduled to take place at the House of Commons on 34 July, 1926. The Sierra Leone Fruit Industry Scheme was to be thoroughly discussed. When the meeting finally took place the scheme was unanimously approved, and Dawe and Slater were invited to settle the final details.

From his tour of the Colony area it was already clear to Dawe that "ample suitable lands for the development of an important fruit giving-industry" existed in the eastern part of the Colony, that is, between Songo Town and Bonthe Sherbro shore. This land he estimated between 50,000 to 60,000 acres: But there were technical problems to be overcome before it could be profitably utilised. The soil was infertile and poorly drained especially in dry months (November to April). One part of the land was swampy and needed to be drained; the Western part was dry but needed terracing. However, there was one major incidental advantage: two fruit farms could be established in the different ecologies. It was decided that the two Fruit Farms should be established near Newton and at Masampa (near Benguema) respectively. The farm on the
high ground would be divided into plots ranging between 100 and 200 acres or more and the submerged portion into plots of between one and ten acres.

To meet the technical problems encountered in the site proposed, one of the Agricultural Assistants, Mr. D.G. Thomas, was posted to neighbouring French Guinea to study how the French coped with similar difficulties. At the same time Dawe travelled from Toronto to the United States of America in August 1926—after attending the Canadian National Exhibition. His aim was to visit the States of California and Florida in order "to learn in particular something about the citrus industry of those States" with the hope of drawing ideas from the American model to improve the local fruit industry in Sierra Leone. The American tour by Dawe was a self-sponsored leisure trip, which he nevertheless considered to be vital to the future development of the fruit industry.

Both Dawe's report and that of Thomas conveyed a new optimism and confidence in the proposed fruit industry. For instance, Thomas showed that the French succeeded in Guinea partly because the government was able to attract metropolitan capital to finance the scheme and partly because production was limited to small scale plantations which African smallholders later tried to emulate. He therefore saw no reason why the same measure of success could not be achieved in Sierra Leone using similar approaches.

The two reports were taken seriously and everything was done to ensure that the scheme worked. The list of fruits to be grown was stretched to include bananas, grapefruits, oranges, limes, lemons,
avocados, pine-apples, mangoes (of Indian varieties) and tomatoes. By the end of 1927 Dawe received the green light to make the first start. However, at this point the depression intervened and the fruit industry never became, as was expected, a thriving commercial enterprise.

V: Agricultural Education

In line with his aim to revive Sierra Leone’s agriculture, and to put it in a sound footing, Commissioner Dawe felt a need to attune the educational system of the country as a whole to his agricultural scheme. He had a vision of a uniform practical, comprehensive and scientific education accessible to everyone interested. At the very least, he sought a close coordination of function between the Department of Lands and Forests and the Department of Education. This he believed would facilitate the diffusion of new ideas of agriculture throughout the country. These views were shared by Governor Slater and the Director of Education, Mr. F.C. Marriott both of whom became very critical of the Agricultural Training College which had been established at Njala by Governor Wilkinson after the 1919 riots.

Their main criticisms were that the cost of maintaining it outweighed its achievements; that there was no assurance that the pupils admitted at the college would ever become teachers at the end of their training; that instead of providing agricultural education for as many teachers as is possible the College had become a watertight compartment to which only the most original pupils were admitted; and that the curriculum was too limited and unpractical. Governor Slater was particularly shocked to find that there was no coordination between the
college and the Department of Agriculture even though the two occupied the same grounds. His ideal view of an Agricultural college was that of an institution:

where courses of instruction should be available for all, agricultural instructors, overseers, and apprentices, student teachers and independent farmers. The curriculum of students should include English, mathematics, and agricultural economics, of which the apprentices as well as the teachers would take advantage (of). The work of the students should be closely correlated with that of the experimental farm, so that whilst learning the value of practical operations in the field, they could themselves perform considerable amount of actual work now being done by labourers.

Accordingly, it was decided in 1925 that a new Agricultural Training College was to be built. Money to the tune of £34,500 was voted for a permanent structure to be located on the hill top overlooking the Njala Agricultural Station. The new college was to be commodious enough to accommodate 120 day students and 60 boarding students, lecture rooms, offices for the full time staff including the Commissioner of Lands and Forests, laboratories, and a Research Division. No fees were to be charged except for Mission and private students who would be required to meet part of their maintenance expenses.

A detailed comprehensive curriculum with practical and theoretical emphasis was drawn up and the functions of the new college were further reaffirmed thus:

a) to give a sufficiently sound working knowledge of English and arithmetic to enable the boys to profit by the more difficult and specialised instruction which they will subsequently receive at the college.

b) to teach the first principles of agricultural science, school and domestic gardening, carpentry, blacksmith's work, poultry rearing, and local hand crafts.
c) to give four years of character training preferably on Boy's Scout lines if possible.

d) to cultivate habits of 'industry' pride of race and real love of agriculture, as far as possible to create the desire for knowledge of agriculture as a system, and so lead boys to adopt of their own will the career that beyond all others will make them useful to their country, namely that of the teacher-farmer.  

At first, Governor Slater hoped that Krio enthusiasts would take advantage of this institution to broaden their outlook 'in the heart of the Protectorate' but Mariott, the Director of Education, believed that besides creating accommodation problems, such a move would radically change the purpose of the College and the principle on which protectorate education was based. Instead it was suggested that similar institutions should be established in the colony: one for men, and another for women. Unfortunately, the Great Depression soon set in and these educational plans envisaged for the colony were never put into effect.  

Thus in the period under review there was a structural reorganisation of the Agriculture Department with heavy emphasis on scientific agriculture, research, agricultural education and close cooperation with other technical departments. This approach to agrarian change in Colonial Sierra Leone was a response to earlier, haphazard efforts in the Agriculture Department and to the economic challenges of the time. Unfortunately, the country was robbed of the architect of the scheme. Towards the close of 1927 Commissioner Dawe's health began deteriorating and in April 1928 he was transferred to Cyprus as Director of Agriculture. The following year the Great Depression entered its most acute phase, necessitating new responses and having a severe effect
on existing administrative structures. In chapter five we shall examine these changes in full detail.

2. A.R.L.D. 1922, p.1. Unless otherwise indicated all ARLD sources (1922 to 1928) were consulted at the Institute of Tropical Products, Grays Inn Road, London.

3. Despatches Relating to the Appointment of an Entomologist For Sierra Leone (Sessional Paper No.6 of 1924), C.O. 270/65.


6. See for instance The British Empire Forestry Conference, Report by the Forestry Authority, Sierra Leone (Sessional Paper No.7 of 1924), C.O.270/65.


8. Goddard, T.N. The Handbook of Sierra Leone (London, 1925), pp.161-169. Goddard was Colonial Secretary in Sierra Leone and so was very much involved with policy matters. He shared the same concern that the existing "system, has been responsible for the wanton and wholesale destruction of high forest which has taken place year after year to provide new lands for farming".


16. Despatches on the subject of Rice Cultivation in Sierra Leone (Sessional Paper No.8 of 1924), pp.10-12.


21. Sierra Leone, Swamp Rice Cultivation in Sierra (Sessional Paper No.4 of 1925). Governor Slater to Secretary of State, 20th January, 1925, C.O. 270/65. "Strangers" refers to agriculturists from adjacent chiefdoms.


27. Ibid., p.22.


30. Ibid.

Netherlands, July 1974) 63 pp;
Pilgrim, John "Social Aspects of Agricultural Development in Sierra Leone II - Technological Development", *Sierra Leone Studies* (SLS) ns No.22, Jan.1968, pp.20-30. Consulted at Farah Bay College Library, University of Sierra Leone (Hereafter F.B.C.)

33. Ibid., pp.13-14.
34. Ibid., p.8.
35. Ibid., pp.9-10.
36. Ibid., pp.8-10.
41. "Cattle Breeding Schemes for the improvement of a Veterinary Department in Sierra Leone", Director of Agriculture to HCS, 5 Aug. 1938, CSO A/41/29.
43. Ibid.
44. Ibid.
45. Ibid; Report on the Tse-Tse Fly Survey of Sierra Leone (Freetown, 1929) in Njala U.C. Library.
47. Ibid.


51. Ibid.

52. Ibid.

53. Ibid.


55. Interview with Mr. Henry Bai Kanu, Work Oxen Director, Tower Hill, Freetown, May 1987. Mr. Kanu outlined the history of the technology from its introduction to now, assessing the strengths and weaknesses along the way. See also Stackey, P.H. *Farming with work oxen in Sierra Leone* (Ministry of Agriculture and Forestry/NUC, Sierra Leone, 1981).


57. Address delivered to H.E. the Governor by Syrian (traders) Settlers Kambia, 5 Mar. 1932, encl. ib., CSO P/12/32; Address delivered to H.E. the Governor by Krio Settlers in Kambia, 15 Mar. 1932, encl. la. CSO P/12/32; Handing over Notes, Kambia District, 1932, CSO P/12/30; Sayers, E.F. to R.S. Hector, 15 Jun. 1934, encl. 53a, CSO P/12/30.

58. Glanville to Director of Agriculture, 2 Nov. 1928, CSO A/20/29.


60. Glanville to Scotland, 20 May 1929, CSO A/20/29.


64. A.R.D.A. 1931., p. 10.


66. Ibid., pp.10-12.

67. Ibid., pp.7 and 10.

68. Ibid.

69. "Memorandum on the Fruit Industry in French Guinea" by D.G. Thomas, Ibid., Appendix II.

70. Report on a visit to California and Florida by M.T. Dawe, O.B.E., Ibid., Appendix I.

71. "Memorandum" by D.G. Thomas, Ibid., Appendix II.


73. Correspondence Relating to the Proposed College of Agriculture at Njala (Sessional Paper No.13 of 1925), C.0.270/65, pp.216-7.

74. Ibid., pp.201-9.

75. Ibid.


CHAPTER FIVE

RETNRENCHMENT AND REBELLION, 1929-1931

This chapter explores the initial impact of the Great Depression on the Sierra Leonean Agricultural Department, a theme which will be continued in chapter six. It will identify the main policy shifts which the Depression necessitated and also show how the Department's officials were becoming aware of the continuing adaptation of local farmers to ecological hazards - and of the limits to their success as highlighted by the locust plague which formed the backdrop to the Idara Rising of 1931.

The Government's Revenue Problems, 1929-32

The first indication of what Governor Brigadier General Sir J.A. Byrne referred to as an "unprecedented trade depression" was the sharp decline in 1929 of the prices of export products. As a monocultural economy Sierra Leone was highly vulnerable to changes in the international markets. Up until 1930 palm produce was the main source of revenue. Markets for this collapsed from 1929 onwards and the result was a sharp fall in national revenue, a situation Governor Byrne lamented:

It is unfortunate that our prosperity should be so dependent on one crop, especially as we have no control whatever over its market price. We shall, I fear, be continually subject to these anxieties and disappointments until we tap some other source of revenue. We must not, however, relax our efforts of those new agricultural projects and to increase the output of those on which we now rely. This is one of the main objects of the intensive road building now taking place in the Protectorate. But agricultural development requires time and we cannot count on rapid or sensational results. What we must look to and hope for ... is the exploitation of our mineral wealth.
Meanwhile, in January 1930 Governor Byrne issued a circular to all Government Departments instructing a drastic cut in public expenditure followed by the practice of "rigid economy".2

However, export prices continued to fall very rapidly. By mid 1930 the price of palm kernels in Liverpool had fallen by over 60%, from £18.10s per ton in July in 1929 to barely £11.12.6d in mid 1930. A huge government deficit of £103,920 would not be avoided. Consequently, the Government was compelled to adopt strict austerity measures. Import and export duties were scaled up; railway freights were also pushed up; a poll tax of £2 was imposed on non-African residents in the country; and the Central and Southern Provinces were amalgamated in the new Southern Province in pursuit of administrative efficiency.3

These government measures led to further falls in producer prices. Throughout the 1930s some Sierra Leonean farmers in the North organised trade boycotts in a bid to force the price up; others simply bartered their wares across the border to French Guinea where prices were relatively higher.4 As early as 1930, this kind of action led to a drastic reduction of exports and imports, and Acting Governor Luke was forced to reduce the export duty and the railway freight on palm kernels so as to allow farmers to realise 9d. more per bushel for their palm kernel produce.5

Thus, railway and export tariff measures made little, if any, impact on the ever-widening gap between revenue and expenditure: The Government was compelled to resort to retrenchment. A Retrenchment Committee was set up in August 1930 and recommended laying off many Government
employees. African as well as Europeans, and making drastic reductions in salaries."

In the Agricultural Sector, the salaries of Director and Farm Manager at the Newton Fruit Farm were cut by a third; the post of Assistant Agricultural Chemist was abolished and with it went all the employees in the Laboratory Unit. Also abolished were the posts of Manager of the Oil Palm Plantation, one of the four positions of European Inspector of Plants and Produce, and the positions of 29 African assistants and 4 Apprentices." Furthermore, from 1930 to 1937 allocations to the Agriculture Department declined considerably more than government spending in general, as shown in Table 9.

**TABLE 9: GOVERNMENT EXPENDITURE ON THE AGRICULTURAL SECTOR, 1928-1937**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL EXPENDITURE (A)</th>
<th>AGRICULTURE (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1928</td>
<td>£815,373</td>
<td>£38,686</td>
</tr>
<tr>
<td>1929</td>
<td>£871,086</td>
<td>£25,925</td>
</tr>
<tr>
<td>1930</td>
<td>£805,724</td>
<td>£24,331</td>
</tr>
<tr>
<td>1931</td>
<td>£884,004</td>
<td>£20,975</td>
</tr>
<tr>
<td>1932</td>
<td>£831,921</td>
<td>£18,557</td>
</tr>
<tr>
<td>1933</td>
<td>£891,686</td>
<td>£14,593</td>
</tr>
<tr>
<td>1934</td>
<td>£603,208</td>
<td>£13,646</td>
</tr>
<tr>
<td>1935</td>
<td>£587,574</td>
<td>£13,996</td>
</tr>
<tr>
<td>1936</td>
<td>£879,370</td>
<td>£14,387</td>
</tr>
<tr>
<td>1937</td>
<td>£919,265</td>
<td>£17,915</td>
</tr>
</tbody>
</table>

Sources: Blue Books 1927-1938; ARDA 1929-1937

In 1932, Director Kirby attempted to circumvent these limits by temporarily engaging 25 African Agricultural Instructors at the low rate of 30s per month per Instructor. When he found out, Acting Governor Cookson sternly reprimanded Kirby for such a unilateral action. By 1933, Cookson had decided that the Agriculture Department had been
generally parasitic in absorbing "a vast expenditure of money for a very small profit". Cookson went on:

Multiplicity of ideas as to new crops has been definitely harmful, and its harmfulness is one of the strongest reasons for reducing the staff of the Agricultural Department. Chiefs in the Protectorate have constantly complained in recent years that they have been urged to grow this or that, only to find that there is no market for it.

He was even more critical of the Research branch of the Agricultural Department which he said was doing nothing more than just pushing forward for enactment "Voluminous Pest Ordinances which ... (were) ... unnecessary." The Government would therefore do without it and in future would prefer to seek advice, when necessary, from a Private Research Institute, the Sir Alfred Jones Laboratory. Cookson had equally unfavourable remarks for the Forestry Department. He therefore felt justified in reducing the European staff of each Department to three.

Clearly, the Agriculture Department had nothing spectacular to show for its efforts, in practical terms, by 1932. Nevertheless, considering that Agriculture was the most important sector of the economy, Cookson's determined effort to reduce that Department was surely an irrational decision. It is possible that Cookson was so overwhelmed by problems of the deepening depression that he failed to realise that the very financial 'starving' of the department to date was also related to the rather sluggish performance it had so far shown. Another relevant point is that agricultural experiments often take a long time to produce any meaningful results. Perhaps the most convincing explanation of Cookson's attitude is that he equated agricultural development with export production at a time when palm produce was giving way to iron ore.
as the export commodity in which officials took most interest. By 1932 gold and diamond deposits had also been discovered in Sierra Leone and were later to be mined with great success.11

New Policy Directions

The slump in palm produce prices, while clearly linked to the decline of Agricultural Department resources overall, also had some positive effects in reinforcing official interest in swamp rice which was considered a potential alternative to palm kernels as a viable cash crop.32 This policy aim determined the line of development which the Agriculture Department was to pursue for the next few years. Swamp rice cultivation was to receive a renewed impetus.

This shift of emphasis coincided with the passing of the 1929 Colonial Development and Welfare Act in London. This Act, often referred to as a major landmark in British Colonial Policy, introduced a new concept of Colonial development based, ostensibly, on the mutual benefit of both the metropolitan government and Colonial dependencies.33 But in the area of agricultural policy in Sierra Leone, perhaps an equally significant event was the slightly earlier creation of the Colonial Advisory Council on Agriculture and Animal Health, which had Mr. (later Sir) Frank A. Stockdale as its first Agricultural Adviser. Throughout, Stockdale's aim was to unify the Colonial Agricultural Service in order to promote more economic development and efficient marketing of Colonial economic produce through the dissemination of scientific agricultural techniques.34

With regard to marketing, the Empire Marketing Board also agreed in 1927 to make a considerable annual grant to the Colonial Office to meet
the emoluments of an Economic Botanist whose duties would include the frequent visit of the Colonies to establish closer contacts on marketing, exchange useful ideas and economic plants. The first person to hold this post was Mr. H.C. Sampson, economic Botanist at Kew and former Director of Agriculture at Madras. In 1928, hearing that Stockdale and Sampson were soon to visit West Africa, Governor Byrne extended a special invitation to them to visit Sierra Leone. This invitation came in the wake of two important reports, by the Sierra Leone Rice Commission in 1927 and by Mr. Frederick C. Deighton, Mycologist Botanist, in 1928, both of which stressed the great potential of the Searcies swamp for rice production. The Acting Director of Agriculture, Dr. F.J. Martin, was keen to obtain more expert opinion on the possibilities for irrigation in the swamps, the economic viability of the venture and the possible political repercussions of such an undertaking at the local level.

The invitations were accepted: Stockdale visited Sierra Leone in November and Sampson in December, 1929. In their reports after the visit both experts strongly expressed the opinion that Sierra Leone was undergoing a transition in Agricultural Development, moving from a 'primitive' extensive system to a more permanent and modern system of production which involved water control and efficient cultural management techniques. They agreed that the Searcies region and the adjoining inland valley swamps held the key to the growth of large-scale rice production in Sierra Leone, although the efficient exploitation of these swamps would require first a thorough agricultural survey of the region, and secondly a knowledge of agricultural methods in South-East Asia where
conditions were believed to be the same as those obtained in the Scarcies region.\textsuperscript{16}

More specifically, Stockdale recommended that the central administration of the Agriculture Department should be centralised again at Njala: Mr. Douglas Scotland, the then Director, had temporarily moved the Headquarters in Freetown when he also had to act as Commissioner of the Lands and Forests Department after Dawe had left in 1928. He also recommended that extension work should in future be based on experiments carried out in sub-stations and manned by Agricultural Officers whose duties would be to examine problems identified by farmers and to translate the results of experiments back to the farmers. Work done in the Experimental Station at Njala should be coordinated with these efforts. The Station at Njala should also investigate the potential of the inland swamps around Njala itself, and select and distribute suitable rice varieties in the Njala area. Also, the Station should undertake experiments to identify permanent crops for the uplands. Finally, the use of the ox-plough technology in the North of the country should be encouraged and the type of ploughs best suited to the conditions in different parts of the country should be ascertained.\textsuperscript{10}

Stockdale also thought that the Departmental Structure required reform; accordingly, Governor Byrne announced the appointment of Dr. F.J. Martin, former Senior Chemist, as Assistant Director of Agriculture in December 1930. He also suggested the appointment of five Agricultural Officers to replace the former Provincial Superintendents, and reduced the research staff to three: Mr. Doyne (chemist), Mr. Hargreaves (Entomologist) and Mr. F.C. Deighton (Mycologist). The former
Superintendent of Agriculture, Northern Province, Mr. R.R. Glanville, was assigned the task of conducting an Agricultural Survey of the Searcies to properly assess the potential of that region for a fully fledged rice industry and to locate a suitable place for an Experimental Rice Research Station in the Searcies.20

Re-organisation of the Agriculture Department

The reforms suggested by Stockdale came on top of a series of changes necessitated by the Depression retrenchments discussed above, and the separation of the Forestry and Agricultural Departments in 1929.21 The Department of Agriculture was reconstituted under the Directorship of Mr. A.H. Kirby, former Director of Agriculture in Tanganyika. He was, in the words of Dr. F.J. Martin, then Agricultural Chemist, a man of "...ripe experience and considerable knowledge of tropical countries".22 The new Department comprised the former Agricultural Division, the Division of Research and the Division of Inspection of Plants and Produce under Commissioner Dawe's Lands and Forests Department. Director Kirby however preferred to mould the Department in a slightly different way from that of his predecessor, Dawe.

As soon as he assumed office in January 1930, Kirby toured the entire Protectorate to familiarise himself with local agricultural methods.23 He also visited the main experimental stations in the country. The following year, on his directive, Mr. G.M. Roddan, Agricultural Officer, Njala produced a comprehensive report on Agriculture in the Colony Peninsula.24 On the basis of all this Kirby concluded that.25

Broadly, native methods are sound, for they are the results
of experience; but thoroughness and seasonal promptitude in carrying them out are absent, through the very character of the African.

He believed much could be achieved by close cooperation with the farmer—working in partnership with rather than in opposition to him. For this reason he opposed any form of experimental work not based on the agricultural needs of the region in which it was established. Kirby wanted to keep the drive towards introduction of exotic plants and seeds to a minimum, to maintain a balance between export and subsistence production and to improve existing crops, like rice, which showed great potential for export.26

Kirby was equally critical of Dawe's Agricultural Extension system based on highly trained Native staff because in his view, the "Bookish" type of Instructors were uneconomical and useless. He preferred "the unread native, taught simply and practically what he has to teach and working among his own people". This kind of Instructor was to be drawn from the Vernacular Schools, and taught and trained "in the simple instruction that they have to pass on; and it is all to the good if they can be given an opportunity of extending their experience by being employed from time to time at experimental stations."27 Kirby thus shared Dawe's view that the educational institution is "the most direct agent" of change. But they differed in their views about the nature of that education. Dawe emphasised technical and scientific education; Kirby believed that agricultural education should not be complex, and should be geared to extension work in the vernacular. Further, Kirby was of the opinion that the existing Extension Programme was out of touch with the farmer, mainly because the latter was not given a positive role
in the programme. To correct this mistake Kirby proposed to establish "demonstration and seed supply farms" which were to be manned by Native Instructors in each Chiefdom, and "Native Central Farms" administered by the Native Authorities in each District. To maintain the 'Native Central Farms' Kirby suggested that part of the tax revenue from each District should be entrusted to the Native Authorities "to provide their own social and agricultural services which would be introduced into and moulded upon the native's own manner of life". By this strategy, he said, the local farmer would come to identify himself with and participate in the agricultural programme intended for his improvement. This could be reinforced by establishing Farmers Cooperatives in various parts of the country as a means of facilitating production and disseminating 'sound' agricultural methods.

Also, Kirby held that the Produce and Inspection Division was made less effective because it was seen by the producers and traders as an "Agricultural Police Force" instead of as a source of education in the improvement of the processing and marketing of commodities. For this reason he insisted that Inspectors inspected produce at the point of production, and not at the ports because:

This gives a means of teaching the producer and middleman what is wanted and how to make it available; and lessens the cost to the community (usually beginning with the producer) of the transport and removal of low-grade contents and adulterants.

So important did Kirby consider the work of Produce Inspectors that he made it a departmental rather than a divisional matter.

Thus while Dawe placed most emphasis on scientific research and education, Kirby believed that the Agricultural Department's Chief
function should be practical instruction and demonstration. However, the full adoption of Kirby's broad, comprehensive and practical scheme was prevented by the revenue crisis described above. Kirby himself resigned a few years later.

**Research on Rice, 1930-1931**

Although Kirby's plans for systematic extension work were never realised, much valuable research on swamp rice cultivation was done within his Department, in response to Stockdale and Sampson's recommendations. On the 26th February 1930 Mr. R.R. Glanville began a fresh survey of the Scarcies. By May 27th the exercise was over and Glanville submitted his findings. These confirmed all previous reports about the high potential of the Scarcies for a thriving rice export industry. The report also showed that much could be done to improve the processing, storing and marketing of the commodity. Glanville also very meticulously examined the ecological hazards like floods, weeds and salinity farmers had to cope with and emphasised that labour was a critical problem. A vast amount of tidal swamplands, running to above 50,000 acres was still to be exploited. The report in general strengthened the previous optimism about the growth of the rice industry in the Scarcies region.

In April-September 1932 Glanville followed up his report by travelling to India and Ceylon. The main aim of his trip was to visit the South Kanari District, the wet side of the Madras Presidency, during the peak farming season. In Ceylon he was to observe rice breeding work at Paradeniya, and the testing of pure strains in Western Ratnapura in the Central and Southern provinces. He was able to have a fruitful
discussion with the economic Botanist of the Department of Agriculture in Ceylon, to observe the preparations of fields, and to visit all the rice breeding areas and institutions in Madras. A loan of £500 was raised from the Colonial Development Fund to meet the expenses of the journey.31

In his report from India Glanville noted that in Madras, rice-growing generally had no direct parallel with Sierra Leone; however, he was impressed by the water-management techniques and the good paddy yields obtained in India and Ceylon, and he secured many new planting materials for use in the swamp rice programme in Sierra Leone. He recommended that a start be made with two Rice Stations, at least one "with adequate facilities for experimentation and breeding work in the Searcies region and an inland-valley swamp plant-breeding station at Makeni".32

While he was aware that Sierra Leone farmers in the Searcies were obtaining as good a crop as in India, Glanville believed that was due more to high fertility than to any farmer ingenuity. "In Sierra Leone", he said, "the farmer's methods are comparatively haphazard and wasteful; and therefore one of our first duties is to improve his methods of cultivation". His only justification for such a statement was that farmers in Sierra Leone unlike their counterparts in Ceylon and India were not applying "water control, manuring, and thorough cultivation."33

Famine in Northern Sierra Leone, 1929-1931

While officials thus focussed their attention on the Searcies region, small farmers elsewhere in Northern Sierra Leone were coping with one of the worst famines in their history. Locust pests had colonised the entire Northern Province causing very severe damage to crops.34
While this incident showed that Sierra Leonean farmers continued to be vulnerable to natural ecological hazards, the differences between the locust induced famine and previous famine episodes was marked. The famine of 1910 was caused by irregular rainfall in 1909 and that of 1919 was caused by a combination of rainfall irregularity, weeds, bird attacks and the influenza epidemic of 1918. In both cases the famines were countrywide and seasonal, lasting at most part of the year. But in 1929-31 the famine was localised to the Northern Province, mainly because the Savannah grassland areas of the North with its moderate humidity of about 80% provided the most convenient habitat for these pests. Further, famine continued to be a danger in the north from year to year, because locusts continued to invade northern farms regularly well into the late 1950's. Finally, the famine in the North coincided with the Great Depression which, in the words of David Anderson "struck savagely at the economies of all the African Colonies from 1929 until 1935", and so crippled the small-farmer economically. These problems, which seemed to defy all solutions, culminated in the Idara Rising of 1931.

Although locust invasions were reported in 1841 and 1893 respectively, their effects compared to those of 1929 and after were brief and negligible. In February and March 1929 the first of several locust swarms of an unprecedented scale entered the Northern Province through its North-Eastern corridor and then flew in a south-west and westward direction until the entire province was covered by the plague. Subsequent invasions were either through the same route or through the North-West corner of the country; except that in 1934 there was a South-Eastern invasion through Liberia, which caused slight damage to crops on
LOCUST INVASIONS INTO SIERRA LEONE
MAY - DECEMBER, 1930

Source: Kirby 'LOCUST WORK IN THE NORTHERN PROVINCE' CSOA/90/29
the Southern littoral. These locusts were variously identified as Migratory, Red or Desert Locusts. At first the effects were slight but by July 1929 most hilly areas in the north were reported "stripped of all vegetation" and by the close of the year the total damage caused to crops was considerable. In January 1930 another mat of locusts had spread throughout the Port Loko, Kambia and Karene Districts and the Bolilands around Mateboi became new breeding grounds. By May the Koinadugu District and other areas like Batkanu, Mange and the Scarcies area were all severely attacked. By all accounts this was the worst locust invasion known to have hit the country in terms of its total impact on farming and food output.

Although the Agriculture Department held the view that the severity of the locust plague in latter years was mitigated by the fact that most swarms invaded mainly in the dry season when most cereal crops had been harvested, the predominant view expressed by contemporary farmers and the Krio press in Freetown was that locust presence, at whatever time of the year meant disaster. In 1955 the Acting Director of Agriculture, Mr. T.S. Jones, wrote:

In Sierra Leone locusts usually appear in the dry season—from November to March. They fly in large swarms and cover up to 100 miles a day. At night they settle and may cause damage by feeding. This overnight settling should not be confused with settling for breeding purposes, when they may remain on the ground for a longer period. Breeding in Sierra Leone is commonly in grass country and particularly in areas of short grass or grass which has been burnt. Eggs are laid in "pots in the top few inches of soil. Soon after hatching the hoppers congregate into bands which during the day move across the grounds stopping to feed in the evening, before resting, and again before starting to move in the morning. It is at this stage the greater damage occurs and it is possible to exercise control. If left undisturbed the hoppers finally develop into adult locusts which again take flight:
It is implicit in the above remarks that invading swarms of locusts remained in Sierra Leone throughout the period when they were most dangerous to crops, leaving only at the "adult stage" when they ceased to be very harmful.

The presence of the locust swarms produced other destabilising consequences as the Weekly News of 10 August 1929 succinctly put it: "... a considerable number of farms (were as a result) half planted, and very many (others were) left unplanted". This meant that as in 1909 and 1918 the amount of land cleared was considerably reduced. The reasons are not hard to find. According to the Agriculture Department, farmers adopted a "wait and see" strategy during every locust invasion. Farming operations were automatically stopped and later resumed only when the locusts had gone, or when it appeared they would stay much longer than expected. Since farming operations in the tropics are very time-sensitive, this delay strategy could have had a negative effect on output. But perhaps the most important reason, also stressed by the Agriculture Department and other contemporary sources was that the need to combat, control or contain each "plague" diverted all agricultural labour from actual farming covering, at times, the whole duration of the particular invasion.

As will be shown, all efforts to contain, if not extirpate, these locusts by local farmers and the Colonial Administration proved unavailing. Consequently, famine swept the Northern Province and reduced people to eating "survival" or "ignoble" foods like the cabbage of palm trees known as sargor in Tonko Limba country, bitter roots and leaves and bush yams. Even the locusts themselves were consumed. Since the
Freetown Colony depended mainly on the Northern Province for its food supply. A severe short-fall in rice and other foodstuffs was experienced in Freetown. At the same time, small-farmers in the North found it increasingly difficult to pay their House tax. Various escape routes and measures including migration were taken to evade payment. To prevent adverse consequences on the already dwindling revenue and political and social instability the Colonial Administration therefore joined forces with farmers in controlling the locusts.

Efforts to Control the Locusts, 1929-1931

The Colonial Administration in Freetown was, to say the least, nervous about the affair. In a letter to the Lieutenant Governor-General of the French West African territories, Acting Governor Cookson stated that he had "waged war against locusts" in Sierra Leone. The Director of Agriculture, Mr. A.H. Kirby, referring to the period as one of "disturbing and discouraging circumstance" (sic) went further to state that the "Locust Campaign is an emergency similar to war; and, as in war, means for necessary fighting have to be found even if they appear in themselves to be costly". The circumstances described above would also support the view that farmers were even more determined to rid themselves of the locust menace. It would however seem that farmers and the administration approached the problem from different angles and apparently achieved different results.

Farmers' Anti-Locust Strategies: Farmers at first appear to have had very little knowledge about locusts and so may have underestimated the gravity of the situation. According to the view of contemporary farmers the first method adopted was associated with the pacification of the...
Ancestral Spirits through various forms of sacrifices and ceremonies because, as often when an uncanny situation had to be met, it was generally believed that the locust plague was an indication that the ancestors were displeased for one reason or the other with people on earth. Also, raised platforms were erected in all farms from which to drive the locusts with noisy chants and stones. These measures however did not help. Farmers discovered that while they exhausted their energies during the day, the locusts were more active and more destructive to crops when the sun was down. In 1930 therefore farmers were compelled to change their strategy. The next strategy was to fence the farms and to dig pitch-filled trenches of "about 2' wide and 18" deep across the line of movement of the hoppers", and then gently drive them into the pitch and destroy them. When found clustered in an open area locusts were killed by flogging. Trenching and flogging was a very laborious task which required a large supply of labour to be effective; yet labour was scarce. However, compared to the earlier methods these proved moderately successful.

The Government's Anti-Locust Campaign, 1929-1931

As already stated the Government took the locust affair very seriously. Their Anti-Locust Campaign involved the Royal West African Frontier Force (RWAFF), Agricultural Officers, Political Officers, Chiefs and Farmers. Emphasis was placed on scientific observation and reporting of the movements of locusts in the country. For this purpose the Assistant Director of Agriculture, Dr. F.J. Martin (former Agricultural Chemist) was put in charge of the campaign.
Leaflets were occasionally produced to educate chiefs, farmers and agricultural officers in how to observe, report about and destroy locusts when seen. In the leaflet Locusts: Information and Guidance details regarding locality, date, time of day, direction of flight, general colour, date of departure, date of laying eggs (if at all) and date of observation of locusts were requested by the Agriculture Department. In addition all places where swarms had rested were to be identified and the area dug up to nine feet square to look for egg-pods. Also "any birds or other animals or insects which are observed to feed on or kill the eggs, hoppers, or fliers, or are seen to accompany hordes, swarms, or laying females, should be noted, and specimens of everything, including egg-pods, sent to the Entomologist, Njala, the date and locality being given for each collection". And when eggs were actually found further 'test diggings' were to be made in "four equidistant directions to ascertain the extent of the area, and the limits marked by heaps of stones or in some way which will remain for some months".

A special plea was made to Paramount Chiefs, Sub-chiefs, Headmen and farmers to communicate these and other details promptly and accurately to the D.C. who would then contact the Agriculture Department at Njala for immediate action.

Eradication measures recommended by the Agriculture Department included both chemical and practical methods. The former involved the use of poisoned baits made of Paris Green, common salt, sawdust and water; spraying and dusting of food-plants and hoppers with Paris Green or other arsenical compound were also recommended. Other measures pushed, for example flogging and trenching, were based on local farmer
initiatives. In addition, however, farmers were advised to spend the evenings and early mornings collecting locusts in nets or bags and then crushing them. Moreover, and contrary to the traditional policy of the Agriculture and Forestry Departments farmers were also specifically advised to burn the vegetation in which the hoppers were found.

At Njala the Research team was busy experimenting on captured locusts to determine when breeding started, when the maturity stage was reached and at what stage locusts were likely to be dangerous to crops. All leaflets produced by the Department were translated into Mende and Temne by Agricultural Officers P.J. Moss and R.R. Glanville respectively. This Scientific approach had its impetus from the Locust Committee of the Economic Advisory Council of the Colonial Office and Imperial Bureau of Entomology in Britain.

The R.W.A.F.F. was divided into two groups and concentrated at Port Loko and Batkanu. In mid 1931 Mr. M.G. Roddan, Agricultural Officer Western Area, was added to the Anti-Locust Campaign which made it possible for Roddan to concentrate on Koinadugu District while Martin took care of the Scarcies, Karene and Port Loko areas. The number of Court Messengers was increased to reinforce the R.W.A.F.F. and "Locust Scouts" or "locust out-breakers" were despatched into the remotest areas. Dr. Martin, Officer in charge of the Campaign, was expected to issue a concise Weekly Bulletin of progress and to popularise their work with intensive propaganda. He was also to produce maps showing the distribution of locusts outbreaks in the country.

The campaign also emphasised external networks. Thus a mutual exchange of information on the locust issue was maintained with
neighbouring French Guinea. Close contacts were also maintained with the Secretary of State, the Locust Sub-Committee of the Imperial Economic Committee and the Imperial Bureau of Entomology.61

The Government's approach to the problem did not actually eradicate or even contain the locusts but it nevertheless achieved some measure of success as well as throwing much light on the locust problem as a whole. For instance, in 1930 alone the Anti-Locust Campaign Team was able to estimate that no less than 9,000 square miles was affected by locusts in Northwestern Sierra Leone. Of these the team destroyed a total of 1,279 different hordes of hoppers which had covered approximately 1,917 acres in land area, distributed by Districts as follows:

<table>
<thead>
<tr>
<th>District</th>
<th>Hordes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>238</td>
</tr>
<tr>
<td>Karene</td>
<td>364</td>
</tr>
<tr>
<td>Port Loko</td>
<td>512</td>
</tr>
<tr>
<td>Kambia</td>
<td>158</td>
</tr>
<tr>
<td>Koinadugu</td>
<td>7</td>
</tr>
</tbody>
</table>

The total length of trenches dug was 35,455 yards.62 This work taxed all the resources of the Department of Agriculture and of the farmers. The campaign continued in 1931, when it involved a total of 37,511 man-days work (detailed in Table 10) which is an indication of the extent to which the agricultural labour force was diverted from farming.63

The Research Unit at Njala led by Frederick C. Deighton (Entomologist) and Mr. E. Hargreaves (Entomologist) had by the end of 1930 begun to produce useful information about locusts. Firstly, it was becoming clear that the Locusta migratoria and schistocerca gregaria type were the most frequently found locust species in Sierra Leone.64 The routes of locust migration into the Country were as described earlier. Eggs, which hatched by the end of May, were deposited mainly along
<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>CHIEFDOM</th>
<th>NO OF HORDES DESTROYED</th>
<th>AREA INFESTED (ACRES)</th>
<th>NO OF MAN DAYS WORKED BY NATIVE HELPERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>Kolifa Mabang</td>
<td>129</td>
<td>170</td>
<td>1,527</td>
</tr>
<tr>
<td></td>
<td>Malal mara</td>
<td>92</td>
<td>89</td>
<td>1,769</td>
</tr>
<tr>
<td></td>
<td>Makari</td>
<td>14</td>
<td>22</td>
<td>383</td>
</tr>
<tr>
<td></td>
<td>Biriwa</td>
<td>3</td>
<td>2</td>
<td>61</td>
</tr>
<tr>
<td>Karene</td>
<td>Gombahun</td>
<td>25</td>
<td>58</td>
<td>526</td>
</tr>
<tr>
<td></td>
<td>Sanda Chenraron</td>
<td>19</td>
<td>57</td>
<td>1,430</td>
</tr>
<tr>
<td></td>
<td>Saffoko</td>
<td>36</td>
<td>60</td>
<td>1,561</td>
</tr>
<tr>
<td></td>
<td>Kase</td>
<td>53</td>
<td>62</td>
<td>3,782</td>
</tr>
<tr>
<td></td>
<td>Pendembu</td>
<td>137</td>
<td>130</td>
<td>3,127</td>
</tr>
<tr>
<td></td>
<td>Sela Limba</td>
<td>47</td>
<td>62</td>
<td>587</td>
</tr>
<tr>
<td></td>
<td>Tambaka Yobunji</td>
<td>29</td>
<td>105</td>
<td>1,979</td>
</tr>
<tr>
<td></td>
<td>Tambaka Simibunji</td>
<td>18</td>
<td>33</td>
<td>864</td>
</tr>
<tr>
<td>Kambia</td>
<td>Samu</td>
<td>45</td>
<td>50</td>
<td>636</td>
</tr>
<tr>
<td></td>
<td>Mambolo</td>
<td>52</td>
<td>91</td>
<td>2,920</td>
</tr>
<tr>
<td></td>
<td>Magbema</td>
<td>51</td>
<td>41</td>
<td>1,989</td>
</tr>
<tr>
<td></td>
<td>Tonko Limba</td>
<td>10</td>
<td>9</td>
<td>811</td>
</tr>
<tr>
<td>Porto Lok</td>
<td>Bake Loko</td>
<td>63</td>
<td>106</td>
<td>2,448</td>
</tr>
<tr>
<td></td>
<td>Mafoki</td>
<td>128</td>
<td>174</td>
<td>2,715</td>
</tr>
<tr>
<td></td>
<td>Masimera</td>
<td>241</td>
<td>385</td>
<td>1,461</td>
</tr>
<tr>
<td></td>
<td>Bure</td>
<td>13</td>
<td>27</td>
<td>1,145</td>
</tr>
<tr>
<td></td>
<td>Loko Masama</td>
<td>15</td>
<td>18</td>
<td>748</td>
</tr>
<tr>
<td></td>
<td>Kafu Bullom</td>
<td>52</td>
<td>138</td>
<td>4,957</td>
</tr>
<tr>
<td>Koinadugu</td>
<td>Dembele Musaia</td>
<td>1</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Fulasaba</td>
<td>3</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Kamuke</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Dembelia</td>
<td>2</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Dr F.J. Martin 'Anti-Locust Campaign in the Northern Province 1930-1931' Enclosure in Kirby to HCS, 4 Sept. 1931. CSO A/90/29.

the Little Searcies and Great Searcies and Rokel Rivers thus making the Searcies area vulnerable to the worst out-breaks of hoppers in the country. Hargreaves observed that:
A period of about six weeks is required for the newly-hatched hoppers to reach the winged state, and during this time they feed ferociously, food consisting of green grasses of various kinds, including rice, maize, fundi (Digitaria exilis), guinea corn, millet, lalang (Imperata arundinacea) and other uncultivated species. They have not been reported to attack cassava, groundnuts, sweet potato or yams.

Hargreaves also discovered that one natural control measure was the cannibalistic instinct of adult locusts and the fact adult locusts were "preyed upon by birds, monkeys, dogs and other animals, and the natives themselves much appreciated the adults as food, in most areas". He strongly advised against the control measure involving the burning of grass in February and March as locusts preferred such burned areas for ovipositioning. Indeed of all the methods applied by the Anti-Locust Team only trenching proved relatively successful but even so its efficacy was reduced by its labour intensiveness and the crude local tools used. Thus although Director Kirby continued to stress that "locust work belongs in the first place to the Agriculture Department" the truth was that up till about the end of 1935 there was still "no really satisfactory way of controlling flying swarms...".

THE IDARA RISING OF 1931

For peasants in Northern Sierra Leone, these harrowing days coincided with a period of general reform in Islam and with a revival of Mahdism including the belief that "the world must first be in decided disorder before the restoration of a better state of things becomes a crying need." Islamic Holy Literature or Batakis (as these epistles were known in Sierra Leone) was widely disseminated to prepare believers for the coming of the Mahdi or deliverer. News about the Batakis, believed
to have descended from heaven, spread like wild fire, creating fear and consternation everywhere.

You would first see a ceremony going on ... and when you asked what it was all about you would be told a 'bataka' had come advising such and such a sacrifice to ward off the plague..."7a

The Muslim interpretation of the locust plague and other problems in Northern Sierra Leone was thus that they were manifestations of Allah's wrath for turning against Him: the Batakis provided the last chance for the 'wicked', suffering masses of Sierra Leone to mend their fences with Allah before meeting an impending doom. A renowned Muslim preacher in Freetown received a Bataka and promptly declared the following day, Monday "a day of intercession to Almighty God, to save the human race from famine and certain diseases more terrible than the flu".73

It is around this background that the Idara Rising of 1931 in Tonko Limba Chiefdom, north-east of Kambia is to be understood. So serious was the economic hardship in Northern Sierra Leone that some Paramount Chiefs like Brima Sanda of Sanda Magbaiamba and Alimany Bombor Lai Yusufu of Tonko Limba took to trading cattle for rice.74 Tonko Limba traditions attest that it was during such trading expeditions that news about Idara spread in North-Western Sierra Leone. Interestingly, Idara later claimed to possess supernatural powers enabling him to control locusts and other calamities that had plagued the protectorate for years. Not surprisingly the authorship of the 'Batakis' came to be associated with Idara.7a

However, little is known about Idara himself and there are many conflicting interpretations of his mission in Sierra Leone. The problem is compounded by the fact that the French authorities in Guinea, where he came from originally, seem to have known virtually nothing about him.
and Idara himself seems to have deliberately withheld any information about himself except as it concerned his mission. What is so far known about him has been based on isolated statements in some official reports, his letters to the Colonial authorities and chiefs and from contemporary accounts. 

Idara himself claimed to be a "Prophet of Mohammed", and a "Mahdi", but the Colonial authorities held a reverse opinion. Although at first they thought he was a "sincere Mohammedan propagandist", after the so-called "Idara War" of 1931 he was referred to as "an ignorant charlatan who can not even read the Koran". Indeed it is believed that Idara was snubbed by the more learned Muslims. His teaching however had a strong millenarian theme to which he was impeccably committed and his followers in Sierra Leone, mainly small farmers and traders had no doubt that he was the Mahdi. 

Idara first came to the attention of colonial officials in May 1930, when the D.C. of Karene, Mr. E.F. Sayers, met him at Yana in the Soso Chiefdom of Tambakha. By July 1930 Idara was at Bubuya, in the Tonko Limba Chiefdom in Northwestern Sierra Leone, apparently on the invitation of the Limba Paramount Chief, Almany Bombor Lai Yusufu, who hoped that this "Holyman" would ward off the locust plague in his chiefdom, bless his land and so conjure up a good harvest for his people. Idara assured the Chief and people that with Allah everything was possible and that they should pray earnestly day in and day out. He was confident that the locusts would give way and that the cause of events would again turn in their favour. But he warned that they must amend their ways and attune their lives to Allah. This involved a reform of all social institutions...
and practices which he considered incompatible with true religious practices.® The Colonial Administration initially found this message compatible with its own civilising mission, and so were tolerant of Idara. Idara himself complimented the Colonial Authorities for allowing religious tolerance, particularly the worship of Allah.®

However, as his following grew, Idara became ever more critical of all forms of exploitation of the people by the Chiefs and the well-off generally. He openly preached against extortion by the learned Muslims, against forced labour and against the payment of taxes.®

The first effect of Idara's preaching was in the payment of the Hut Tax. Many refused to pay and instead took on the road to join forces with Idara at Babuya. The Colonial Administration which was already experiencing difficulties with finances took no chances. Idara was charged with subversion and was issued with an expulsion order on 9 February 1931. He refused to obey and threatened to behead D.C. Tyndall of Kambia and his clerk-interpreter Thomas Taylor. On the following day Idara wrote an open letter to the people of Kambia in which he proclaimed the demise of British rule and asked his followers to neither pay the tax nor fear any white man. French or British. He promised them protection from the consequences.®

Meanwhile reports were reaching Tyndal and the Provincial Commissioner, Frere, that Idara had been mustering arms and that people were flocking in to Bubuya to join him.® On the 16 February 1931 Lieutenant H.J. Homes was despatched to lead a contingent of the R.W.A.F.F. against Idara at Bubuya, in order to disperse the "disorderly" and "ignorant" crowd gathered there and to arrest Idara himself.®
NORTH WESTERN SIERRA LEONE SHOWING Areas Affected By The Idara Rising of 1931

Key

Chiefdom Boundary
District Boundary
Route taken by troops showing the flag

1 Kambia District
2 Port Loko
3 Tonkolili District
4 Bombali District
5 Moyamba District

Scale unknown
Source: Sally Aldridge "IDARA" (1969) p.i

FIGURE 6
At Bubuya the local population including the Limba Paramount Chief, his family and entourage, fled the town. Idara and his followers engaged the troops in battle at the Miligie Bridge where both Idara and Lieut. Holmes were killed. Meanwhile, Idara’s Shekunnas or disciples were still active at Port Loko, Makeni and Marampa in the Bombali District and in the Ribbi Chiefdom, Moyamba District. These regions were not brought under Government control until March 14 1931.

The serious threat to house tax revenue might have justified the Government’s high handed method of dealing with Idara, but it does not detract from the fact that his Movement while essentially religious in character drew on grievances caused by a long term trend of socio-economic hardship for small farmers in Northern Sierra Leone. The incident brought North-Western Sierra Leone once more to the eye of the Colonial government in Freetown. Hitherto the administration had done little more than investigate the agricultural system of the region; but the period 1932-1939 was to witness efforts by the Administration to actively improve it, both through road construction and the establishment of the Rokupr Rice Research Station.
Notes to Chapter Five


2. Ibid.

3. Ibid., p.33 CAR 1930, p.6.


8. Kirby to Cookson, 30 May 1932, CSO A/44/32; and Kirby to Cookson, 21 Jun. 1933. CSO A/46/32.


10. Ibid.


17. Martin, F.J. "Swamp Rice Cultivation in the Searcies Area", 16 Sept. 1929, CSO A/171/29. More details of these findings are given in chapter seven.


20. Byrne to Passfield, 7 Dec. 1929, CSO A/196/29; and Passfield to Byrne, 14 May 1930, CSO A/20/30.


25. Kirby to HCS, 13 May 1931, CSO A/46/32.

26. Ibid.

27. Ibid.
28. Ibid.
29. Ibid.
30. Glanville, *Agricultural Survey of the Scarcies, 1930*. A copy of this can be found in the F.C.O. Library, London. The findings are given in detail in chapter seven below.
31. Passfield to Byrne, 14 May 1930; Cookson to Passfield, 16 Mar. 1931, and Passfield to Kirby, 6 Mar. 1931; all in CSO A.20/30.
33. Ibid., p.9.
35. Hargreaves,E. 'Locusts', SLS No.20, Dec.1936, p.125; *Sierra Leone Agricultural Notes*, No.28 Locusts, Kabala KS/21/02.
36. "Locusts", Acting Director T.S. Jones to All Agricultural Officers, Northern Province, 8 March 1955, Kabala, KS/21/02.
41. Ibid., and *History of Locust invasions from 1929* (Leaflet produced by the Agriculture Department in 1955), Kabala. File KS/21/02. See also D.C. Kambia to Kirby, 2 Jul. 1929; D.C. Kabala to Kirby, 2 June. 1929; and "Anti-locust Campaign in the Northern Province, 1930-1931; all in CSO A/90/29.
42. "Locust", Jones to all Agricultural Offices, Northern Province, 8 Mar. 1955. CSO A/90/29.
43. SLWN. 10 Aug. 1929, p.12.

44. Reports in CSO A/90/29; Summaries in C.A.R. 1929-1931.

45. Moore-Sieray, D. "Idara Kontorfili (c.1890-1931) and the 1931 Insurrection in Northwestern Sierra Leone", B.A. (Hons.) Dissertation, University of Sierra Leone, (USL), June 1978, esp. ch.3; SLWN. 10 Aug. 1929, p.12.


49. Kirby to HCS, 2 Jun. 1931; and Kirby to HCS, 4 Sept. 1931, CSO A/90/29.

50. Moore-Sieray, D. 'Idara Kontorfili', pp.71-84.


52. Kirby to HCS, 4 Sept. 1931; and H.H. Stocks, D.C. Kambia to Kirby, 2 Jul. 1929, CSO A/90/29.


54. Sierra Leone Agricultural Notes No.28 Locusts: Locusts (Agricultural Department, Leaflet No.6); and Kirby, Locusts: Information and Guidance in CSO A/90/29.


58. See for instance Uvarov, B.P. Instructions For Observations on Locusts (London: Imperial Bureau of Entomology, 1930), CSO A/90/29. Uvarov was the Senior Assistant, in charge of locust investigations.


61. Ibid.

63. Ibid.


66. Ibid.


68. Kirby to HCS, 4 Sept. 1931, CSO A/90/29.


70. Margoliouth, D.S. On Mahdis and Madism (Published for the British Academy by AUP: Undated) Donated copy at SOAS Library, London. pp.1-2. I am very grateful to Asmau G. Saeed of the Department of History, Bayero University, Kano, Nigeria for calling my attention to this source.

71. "Batakis" SLWN, 4 Oct. 1930, p.9; Moore-Sieray, "Idara Kontorfilli", pp.76-78 and Appendix 'A'.


74. "Batakis", SLWN, 4 Oct. 1930, p.9, Yusufu is said, according to Tonko Limba Traditions, to have put his son Amadu Posseh in charge of this trade.

75. Moore-Sieray, "Idara Kontorfilli", pp.72 and 77.


79. Ibid.


CHAPTER SIX

POLICY DEVELOPMENTS, 1932-1939

As shown in Chapter Five, the Agricultural Department under Kirby had begun in 1930 to place greater emphasis on broadening the export base, intensifying research on soils and crop pests, and improving existing methods as a means of increasing production. However, revenue shortages and retrenchment had limited its effectiveness in practical terms during the period 1930-1932.

Kirby continued in office and no new policy initiatives took place between 1932 and 1934. Constrained by lack of staff and funds the Department of Agriculture continued to emphasise a policy of concentrating efforts in localised and strategic places, and in making such work relevant to local conditions, rather than spreading its activities over a wide area.

Director Kirby aimed at maximising the use of available resources by creating a balance between export and subsistence production. With regard to the former, work at the Experimental Station at Njala was focused mainly on problems of upland farming especially with regard to the suitability of introducing improved export varieties such as the Nigerian oil palm, coffee, fruits, ginger and kola. Equal emphasis was also placed on diversifying the range of food crops by introducing high yielding varieties of such crops as cassava, maize, yams and potatoes.

The desired effect of this policy or rather shift of emphasis, as A.R.D.A. for 1932 shows, was to foster the general spread of improved ideas of agriculture almost by their own momentum. It was hoped that
this would result in a great increase in food as well as export production. Meanwhile, from 1932 onwards annual rice production was estimated at 200,000 tons of clean rice. Much of this was believed to have come from the Searcies area. This development helped to strengthen official interest in developing the swamp rice industry in the Searcies mainly for commercial purposes. Towards the end of 1932 an Agricultural Officer with a vast knowledge of rice production both in the Searcies and in the Far East. Mr. R.R. Glanville, was put in charge of the Northern Agricultural Circle "to advance rice production in this very promising area and to carry out trials for improvement in cooperation with farmers". Consequently, between 1932 and 1934 there was a steady increase in rice exports from Sierra Leone in spite of the continuing decline of producer prices, as illustrated by the following table.

**TABLE 11: RICE EXPORTS, 1931-1934**

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity (Tons)</th>
<th>Value (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931</td>
<td>177</td>
<td>1,596</td>
</tr>
<tr>
<td>1932</td>
<td>554</td>
<td>4,054</td>
</tr>
<tr>
<td>1933</td>
<td>3,170</td>
<td>1,671</td>
</tr>
<tr>
<td>1934</td>
<td>4,431</td>
<td>1,204</td>
</tr>
</tbody>
</table>


More and more expatriate firms like U.A.C. and C.F.A.O. became actively interested in the export rice industry. But it was becoming clear that the full economic impact of the rice industry would not be realised unless milling, marketing and road transport services were improved.
In 1934, therefore, the Chief Agriculturalist in Trinidad, Professor C.Y. Shephard of the Imperial College of Tropical Agriculture, was asked by the Colonial Office to visit and report on the state of agriculture in Sierra Leone. Dr. F.J. Martin, who had just replaced Kirby as Director, took Shephard round various agricultural stations and the main production centres, where lively and extensive discussions were held with agricultural officers, D.C.s and farmers. This and his own personal observations led Shephard to the conclusion that agricultural efforts had been severely constrained by the thinness of the agricultural staff on the ground, "frequent changes of policy", lack of co-ordination of effort, frequent reshuffling of Agricultural Officers, "frequent changes in the qualifications demanded" for Agricultural Instructors and above all by the lack of adequate financial support.

Shephard observed that very often there were only three European Officers to service a region of over 27,000 square miles with a population of 1½ million. In such a situation reshuffling of officers was almost inevitable but it rendered policies on the ground meaningless as he explained:

Immediately an Officer has gained the confidence of people in one district, and has persuaded them (the people) to try some new method or crop, he is urgently despatched to another district to relieve an officer proceeding on leave. He may not revisit the first district for a year or more, and, in the meantime, the farmers, lacking expert guidance, may meet with failure, and lost heart. Such failures discredit the entire work of the department in the eyes of farmers, and hinder the introduction of improvement of tested merit. It is essential that the department should maintain continuity of effort in whatever work it undertakes.

He also noticed, much to his dismay, that relative to alternative occupations emoluments in the Agricultural Service in Sierra Leone were
the lowest on record while allocations to that department had been reduced from £26,000 in 1929 to merely £11,000 in 1934."

Accordingly, Professor Shephard proceeded to make the following recommendations for improvement, many of which traversed grounds already dealt with by Frank Stockdale and Sampson during their 1929 visit. These included the permanent establishment of the Agricultural Headquarters "in an agricultural area such as Njala"; an increase in the European staff to eight or at least six; a policy of adaptive research, that is, an insistence on introducing methods and crops that had been scientifically shown to be well suited to specific ecological conditions in Sierra Leone; and a greater awareness of the problem of indebtedness among farmers. On the last issue, he recommended the establishment of efficiently run credit, marketing and processing cooperative societies in strategic areas. These societies would also become vehicles for the dissemination of improved methods in agriculture.

With regard to the Scarcies Rice Industry entering the export economy, he recommended the Department to go beyond the selection of suitable rice varieties to identify potential markets and the varietal preferences there; and to maintain the purity of seed rice by rigid inspection and efficient milling. For this work, he thought an Agricultural Officer should be permanently stationed in the Scarcies area. For this he recommended Mr. R.R. Glanville. Shephard also observed that farmers in Sierra Leone were generally receptive to proven new ideas and also innovative. For instance farmers in the Scarcies had developed efficient working cooperatives as a response to the scarcity of
labour. He therefore strongly advised the need to build on local initiatives.\textsuperscript{10} In conclusion he said that

The Agricultural Department of Sierra Leone has fallen upon evil days. It has passed, like many institutions and individuals, from affluence to penury. It has been reorganised with alarming frequency. It requires, more than anything else, a policy carefully framed in accordance with its resources, and an opportunity of pursuing that policy without interruptions. It is desirable that both the senior and junior staff should be strengthened, and that the activities of the department should not be extended beyond the areas and subjects compatible with efficiency.\textsuperscript{11}

Soon after Professor Shephard’s report Governor Sir H.M. Moore filed an application to the Colonial Development Fund for a grant to sponsor a rice improvement scheme in the Scarcies and around Port Loko. The scheme was “designed for the improvement of methods of growing and storage of rice in Sierra Leone with a view to building up an export trade” through breeding, introduction and selection of suitable types of rices; the multiplication, storage and distribution of such varieties to farmers; and the milling of selected rice of high standard for the export market.\textsuperscript{12} The whole scheme was costed at £6,980. The Secretary of State promptly gave his approval. With funds available a Seed Rice Revolving Scheme was launched in the Scarcies while at Cline Town in Freetown a rice mill was established.\textsuperscript{13}

Martin also considered Professor Shephard’s report as very valuable, partly because he and Stockdale had independently of each other reached similar conclusions and partly because it confirmed his own views.\textsuperscript{14} In an earlier Memorandum on Agricultural Policy in Sierra Leone, Martin too had critically analyzed past efforts in the Agriculture Department and attributed lack of progress to a large number of factors. Firstly, there
had been four Directors between 1925 and 1935, all of whom "had different ideas and no policy was put through to its logical conclusion. It is this lack of a sustained policy that has hampered the efforts of the Department for many years". Secondly, Martin felt the Agriculture Department had been starved of funds, perhaps because of the Government's hope that mining or mineral wealth might replace agriculture as an income and revenue earner. He demonstrated his point with the figures in Table 12.

This table shows that the average reduction in all Government spending was 24%, which was less than half the reduction in the Agriculture Department's budget. As a result of these severe financial constraints, expenditure on the Department had to be drastically adjusted "with the result that much of the work started in the period 1924 to 1933 had to be abandoned in the period 1930 to 1933 owing to lack of funds", so that "expenditure on the Agricultural Department spent during 1924-1931, must now be regarded as not having been spent to the best advantage". Martin suggested that if such wastages were to be avoided in the future then the government should commit itself to a stipulated annual budget for the Agricultural Department, say of £20,000, irrespective of any fluctuation in national revenue.

Martin also observed that in the past not only did Government make very little use of the services of the Department, but that it also tended to keep the Department ignorant of the economic arguments regarding crops to be introduced, the place of agriculture in education, or future policy regarding transportation, all of which affected the work of the Agriculture Department. He pleaded that the Director of
TABLE 12: REVENUE AND EXPENDITURE FOR TECHNICAL DEPARTMENTS, 1928-1935

<table>
<thead>
<tr>
<th>Department</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1935 Estm's</th>
<th>Percentage Reduction 1928-1935</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue [excl. CDF]</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>826,319</td>
<td>740,646</td>
<td>742,972</td>
<td>706,616</td>
<td>679,204</td>
<td>582,701</td>
<td>561,889</td>
<td>28</td>
</tr>
<tr>
<td>Expenditure [excl. CDF]</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Expenditure</td>
<td>815,374</td>
<td>871,087</td>
<td>805,724</td>
<td>694,428</td>
<td>656,384</td>
<td>618,956</td>
<td>587,997</td>
<td>24</td>
</tr>
<tr>
<td>Administration</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>68,419</td>
<td>70,778</td>
<td>70,342</td>
<td>65,564</td>
<td>57,086</td>
<td>55,152</td>
<td>57,680</td>
<td>16</td>
</tr>
<tr>
<td>Medical incl. sanitary</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>84,335</td>
<td>88,800</td>
<td>86,328</td>
<td>76,380</td>
<td>72,746</td>
<td>67,247</td>
<td>66,505</td>
<td>21</td>
</tr>
<tr>
<td>Education</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>45,937</td>
<td>50,034</td>
<td>40,331</td>
<td>41,068</td>
<td>40,079</td>
<td>39,473</td>
<td>40,840</td>
<td>11</td>
</tr>
<tr>
<td>Agriculture incl. New Fruit Farm but excl. Masanki</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>30,457</td>
<td>30,632</td>
<td>27,364</td>
<td>20,976</td>
<td>18,557</td>
<td>14,594</td>
<td>14,751</td>
<td>52</td>
</tr>
<tr>
<td>Survey</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Survey</td>
<td>10,540</td>
<td>10,607</td>
<td>10,771</td>
<td>9,021</td>
<td>7,122</td>
<td>7,550</td>
<td>8,103</td>
<td>23</td>
</tr>
<tr>
<td>Geology</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>2,300</td>
<td>4,730</td>
<td>3,621</td>
<td>2,427</td>
<td>2,384</td>
<td>2,521</td>
<td>3,278</td>
<td>-</td>
</tr>
<tr>
<td>Forestry</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Forestry</td>
<td>7,988</td>
<td>8,549</td>
<td>5,823</td>
<td>5,448</td>
<td>4,816</td>
<td>5,076</td>
<td>5,171</td>
<td>35</td>
</tr>
</tbody>
</table>


Note that none of Martin's estimates do not correlate with the estimates in Table 9, p. 144 probably indicating a deliberate distortion by Martin who was eager to make a point in favor with his policy.
Agriculture would be allowed a place in the Legislative Council, to give him an opportunity to be informed of such policy issues. Finally, he was also very critical of the inefficiency of the extension programme and the Department's previous over-emphasis on export production.20

Martin's submissions which confirmed earlier criticisms of the Agriculture Department had the full support of Sierra Leone's Colonial Secretary, Mr. W.R. Blood, who reiterated that20

There is little doubt that in the past the absence of a settled agricultural policy has resulted in the useless squandering of many thousands of pounds, and the considerable cutting that has taken place in the agricultural vote during the past year or two is no doubt due to the Government's reluctance to vote large sums of money in the absence of a settled policy, as well as to the general poverty of its resources.

The Governor, Sir Henry Moore, assured Martin that he was equally anxious "to develop the Colony's agricultural resources"; and Lord Plymouth, who had just been on a visit to Sierra Leone, also intimated to Moore that the agricultural programme in Sierra Leone, which he considered earlier to have been "rather starved", would always receive sympathetic consideration in the Colonial Office.21

Thus with renewed enthusiasm Martin set about framing a comprehensive, balanced, consistent and sustainable agricultural policy. By the end of January 1935 the draft policy was ready.

This policy, heavily influenced by Nigerian precedents under Faulkner22, had seven main objectives: to ensure local food self-sufficiency for the people; to improve the cultivation of export crops like palm produce, cocoa, coffee, rice, ginger, kola, chillies, fruits and piassava; to arrest the process of deforestation by increasing the period between successive 'brushings' of the same area; to improve post-
harvest technologies to ensure a sustained market for export crops; to maintain high standards of quality for export produce through efficient supervision; to encourage cooperation between the Agricultural Department and other Departments, particularly Education; and to reorganise the extension arm of the Department to reflect local realities. These provisions particularly the last one reflected awareness of past mistakes: change in the traditional system was now to be conditioned by experiments on the spot to prove what was feasible locally.

These objectives were to be realised by specific strategies. With regard to self-sufficiency in food, Martin recommended more intensive swamp rice cultivation in both tidal and inland valley bottom swamps, the growing of foodstuffs other than rice and garden crops in swamps during the dry season, and the introduction of improved methods of cultivating these crops. Likewise, the threat of deforestation in the uplands was to be met by encouraging the expansion of rice cultivation in inland valley swamps, using improved methods of cultivation. On the other hand, export production was to be sustained through the establishment of improved marketing structures, the dissemination of improved production, processing and marketing technologies, and the intensification of the Inspection Service. The policy thus aimed at striking a balance between export and subsistence production. The Executive Council accepted this policy document with hardly any modification.

The only area of difference between Martin and the Government was on the financial support for the policy and the line of emphasis to be pushed. As we have seen, Martin wanted the Government to commit itself to a fixed, long-term financial support for the agricultural programme.
However, the Government would agree only to review the situation regularly in the light of the prevailing circumstances.\textsuperscript{26} When Stockdale again visited Sierra Leone in 1936 he did not comment on this issue, but merely endorsed Shephard and Martin's policy and then advised greater cooperation between the Agriculture Department and other technical Departments, especially Education, which Stockdale said should be integrated with the programme of the Agriculture Department.\textsuperscript{26}

Following Stockdale's advice for a greater unification and centralisation of the local agricultural service and in view of the financial constraints imposed by the depression, Colonial Secretary Blood pleaded with the D.C.\textsuperscript{s} to cooperate with the Agriculture Department in implementing Martin's new policy. Their main contribution was considered to be "the dissemination of knowledge and the creation of real interest on the vital subject" of agriculture.\textsuperscript{27} They were also to study the agricultural needs of people in their districts and then formulate plans which would give effect to the agricultural policy. It was to become essential for each incoming D.C. to familiarise himself with "the agricultural proposals for his new district" before resuming formal duty.\textsuperscript{27} Likewise Agricultural Officers were "to take full advantage of the specialised local knowledge of the Administrative Staff and consult with them with regards to the conduct of their work particularly when questions of demonstration, propaganda, food production, introduction of new economic crops, inspection and marketing are concerned".\textsuperscript{27} Such close cooperation of all Departments was believed to be not only economical but also efficient.
Meanwhile, projects likely to contribute to revenue like the Seacres rice scheme and the Inspection of Produce would receive "first call on the funds available". This was because, as the Colonial Secretary impressed on the Director of Agriculture:

We are concerned with enabling the peasant to produce a money making crop or crops from which he can obtain the cash to provide for the purchase at least of those essentials which he can not grow, and to pay his taxes from which alone Government can find the money for his development.

This meant that emphasis was to be placed mainly on research and standardisation of crops such as palm kernels, palm oil, rice, fruit, piassava and ginger and possibly extended to kola, coffee, cocoa and beeswax as well.

By 1935 the Experimental Rice Station established in the Seacres in the previous year had begun to show results. Through pure line selection of the best of local and exotic rice varieties such as G.E.B. 24 and Kuvunginpothala from India, and No. 79 from British Guiana were shown to be ecologically suitable and socially acceptable by local farmers who were impressed by their high yields. To facilitate the distribution of improved varieties and agricultural methods as well as strengthen the export industry in this commodity a Seed Rice Revolving Scheme and a three-cone rice mill were established, with Colonial Development and Welfare Act funds, in the Seacres and Cline Town respectively.

Within the limits of its staff the Agriculture Department had thus begun both to implement its pre-war policy of diversification and to intensify its extension services with propaganda in a bid to popularise the swamp rice policy of the Government. A new substation was also established at Makeni to multiply, demonstrate and distribute improved
export crops such as ginger, citrus, Deli oil-palm, Robusta coffee, Canary banana, smooth Cayenne peppers and Queen pineapples. Also, improved foodcrops like yams, cassava, kono groundnuts, beans and sweet potatoes were multiplied and distributed to farmers. At the same time in the annually inundated areas around Makeni swamp rice demonstration plots using G.E.B. 24 were also made. So successful was this scheme that by the end of 1935 the "annual hungry seasons, bordering on starvation conditions, which were common ten to fifteen years ago, now no longer recur" and Director Martin was confident that "in a very few years the whole character of the rice crop in the Searcies will be affected by the work of this (Experimental Rice Research) Station".

However, weather seasonality and the increasing diversion of agricultural labour to the rapidly growing mining industry undermined the efforts of the Agriculture Department. In both 1935 and 1936 early rains in the uplands reduced areas under cultivation by about 25%. At the same time attractions to the new mines reduced the supply of agricultural labour, which was already very critical, by 14,000 man-years thus creating a situation in which increased demand for rice was combined with decreased production. While the annual total rice production of the country in good years stood at 175,000 tons annual rice demand in the mines alone was estimated at between 4,000 and 5,000 tons of clean rice. This development clearly indicated that the rice export industry had perforce to be curtailed.

Anticipating an acute rice shortage in 1937 due to the ecological conditions in the uplands Director Martin summoned a meeting of the main rice dealers in the country in December 1936 to deal with the situation.
At this meeting it was decided to restrict rice exports, remove import restrictions and control rice prices as and whenever necessary. Although rice was indeed short in September and October 1937 the Government's fear of a prolonged general famine did not occur: and though rice export slumped to merely 204 tons this was due mainly to the gradual recovery of the export price of palm kernels from £20.10s. per ton in May to £26.18s. in December 1936. It was a noticeable trend among farmers that when the price of kernels improved there was little inclination to part with their rice stocks and vice versa.

In 1937 Martin decided to prepare for a fresh policy initiative to tackle the rice problem, by becoming better informed about the physical aspects of agriculture in the country. For this reason he undertook a Vegetation Survey of the whole country while at the same time two of the Agricultural Officers, Mr. G.M. Roddan and Mr. R.R. Glanville surveyed its southern and northern littorals respectively. The results were a mixture of joy and sadness. Roddan and Glanville's reports showed once again that immense possibilities existed for profitable swamp rice cultivation in the areas surveyed. Martin's survey of the uplands, however, revealed that land degradation in the uplands of Sierra Leone had reached a critical state, particularly in the northern highlands where most land was already out of use, or was being only marginally cultivated. Population pressure, intensification of shifting cultivation practices and bush fires were considered the main cause. These facts were of major concern to the Government because the maintenance of high bush, especially in the eastern province was considered to be essential
to the well being of the main cash crop industry in the country - palm kernels. As the Director of Agriculture pointed out, the kernels are directly responsible for a large part of our revenue - £80,000 as export duty; £60,000 to the railway for freight; hut tax, about £80,000, is largely paid from the production of palm kernels; and indirectly the export of £750,000 worth of kernels must mean a big return in customs duty on goods brought into the country. The safeguarding of this industry, therefore, is not only desirable, it is a necessity.

As Paul Richards has argued, and as our earlier evidence has confirmed, these fears had deep historical roots:

A prime aim of policy was to ensure that the history of rapid decline in exports of Camwood and wild rubber, due to over-exploitation in the late nineteenth century, was not repeated in the case of palm produce exports...

The fears of the Colonial Administration were soon to find justification in what seemed a world-wide concern for soil erosion hazards. This renewed concern for proper land use systems, as David Anderson has shown for Kenya, gained force from "the international alarm generated by the catastrophic experience of the Southern plains of America in the Dust Bowl, at its height in 1935".

In Sierra Leone official concern for land degradation, believed to have been related to local husbandry methods, has a long history but it assumed greater importance following the major food famine of 1919. In 1937 there was yet another serious short-fall in rice harvests over a wide area in the country, following an unusually heavy rainfall in April which prevented a good burn in the uplands and so intensified the labour bottleneck in the Protectorate already made worse, as earlier shown, by the mass drift of agricultural population to the new mines in Kono (Eastern Province) and Marampa (Northern Province). As a result about
half of the brushed areas could not be cleared while weeds took a toll on the little that was cleared. At the same time the countryside was hit by a new wave of ecological hazards. Early in the year there were reports of a widespread attack on crops by "Army Worms" (Laphygma exempta) and "Rice pentatomid" or "Shield-bug" (Aethemeues Chloris). The former affected mainly the southern planters and G.E.B. 24 Nurseries at the Rokupr Experimental Rice Station, and were described by the Government Entomologist, Hargreaves, as pests which feed mainly on grasses and rice although their total impact was believed to be slight. The latter, the shield-bug, had a more general effect. Direct damage to crops was said to be minimal, but their mere presence was another disturbing element to farmers already coping with other stresses.

Another factor for the short-fall in rice in 1937 was the continuing menace of locusts. The records show that from 1929, with the probable exception of 1943 and 1944, locust invasions into Sierra Leone were a regular, annual feature until the late 1950s. With the exception of 1929-1931 and 1937, damage to crops was relatively slight, at most "50% loss to the rice crop in the affected areas". In 1937, however, considerable damage to fundi (millet), upland rice and swamp rice nurseries was reported, mainly from northwestern Sierra Leone. One such report by the Agricultural Officer of the Northern Province stated:

As far as wetland rice is concerned the damage is negligible. Sowing was delayed about two weeks and the crop will consequently be later than usual on the market. Some damage was done to hill farms, mainly fundi and rice in the vicinity of Mange... From Karemne District...reports indicate serious damage...a considerable area of this District has been affected and much damage incurred... The considerable check which farming operations have received

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as a result of the outbreak of locusts is bound to be reflected in the next rice harvest.

The D.C. Port Loko, Mr. E.F. Sayers also reported that:

The line of invasion appears to have been from the Sanda country down between the two Skarsies rivers and it is chiefdoms there situated that have undoubtedly suffered some damage to crops. Makonte, Bure and Mambolo the people of these chiefdoms have however vigorously combatted the pests by trench digging.

To the north of Kambia, P.C. Almany Bombor recounted the damages in his chiefdom saying. "Over 100 fundi farms completely destroyed. About 50 swamp rice farms completely destroyed. All corn planted on upland rice areas completely destroyed (sic)".

The combined effects of these ecological hazards produced fears of an acute rice shortage, to the extent that the Agriculture Department distributed on loan, to Karene District alone, a total of "197 bushels of upland seed rice and 55 bushels of swamp varieties...to 90 farmers and 1,153lb. of yams...to 62 farmers". In Freetown the Government appointed a Food Controller to regularise the price of rice in "Freetown and various up-country centres taking off the import duty on rice, and reducing the freight of rice from Freetown to inland centres". More funds were made available for the intensification of the Anti-Locust Campaign.

With such problems in the uplands, mounting conservationist concerns again surfaced. In 1938, a soil conservation committee was set up with the Commissioner of the Northern Province (as Chairman), the Assistant Colonial Secretary, Mr. P. Wilkins, as Secretary. The Committee was to meet twice annually to review existing fundamental research into the general issues of soil erosion and soil conservation in
Sierra Leone, and to advise remedial measures to tackle the problem. At its first meeting on May 13, 1938, the intensification of swamp rice cultivation was once more recommended as a panacea. At last the excuse was there for an accelerated programme of swamp rice cultivation.

Recognising that labour supplies were a major problem for swamp rice farmers in 1939 the Government launched a fresh Swamp Clearance Scheme backed by a £500 annual grant from the Protectorate Mining Benefit Fund (P.M.B.F.), to induce small farmers to cultivate the mangroves with hired labour. From this fund, which later increased to £2,000 a year, intending farmers were loaned money to help them to hire expert mangrove fellers from the Searcies for the initial clearing.

In 1938 an agricultural sub-station had been opened at Sembehun with Roddan in charge, and he was able to administer the Loan or Clearance Scheme. Furthermore, a revolving seed rice scheme was begun whereby improved seed was loaned to farmers at the rate of 1½ bushels for each bushel borrowed. Finally, the P.M.B.F. also approved an application for the establishment of an Inland Swamp Farm at Makeni to demonstrate improved methods of permanent cultivation in inland and valley bottom swamps in the northern interior.

Meanwhile, by 1939 Native Administrations throughout the country were independently administering their own Pure Seed and Demonstration Farms. There were also proposals to establish Demonstration Farms in the marshy lowlands around the northern mining towns; and for a Land Settlement Scheme "whereby grants would be made to families from the impoverished uplands to enable them to move and settle near the tidal swamp lands". These proposals did not seem to have taken off the
ground by 1939; however, in that year the C.D.F. approved two applications for a Seed Multiplication Farm at Rokupr and for an Irrigation and Drainage Scheme aimed at hiring an expert engineer to explore the possibility of irrigating the flooded and saline regions of the northern and southern littorals for rice cultivation. Thus by 1939 the Government's swamp rice policy can reasonably be said to have taken off but it was still to show results.

As we saw in Chapter Four and in the last few paragraphs of this chapter, the Government was awake to the agricultural labour crisis intensified firstly by the abolition of the age old system of domestic slavery in 1927 and in recent years by labour recruitment in the formal sector, especially mining. It will therefore be instructive to close our examination of the post-Depression era by a look at what was going on with ox-ploughing in northern Sierra Leone.

Mr. R.R. Glanville, the pioneer of ox-plough technology in Sierra Leone, remarked in his 1937 report on the technology that "The progress of ploughing has been a series of ups and downs but there is no doubt that it is now established and will spread surely if slowly". At first ploughing seemed to have been limited mainly to the Mandingo ethnic group, a late 18th Century settler group in the Mabole River area in the Biriwa Chiefdom of the Bombali District in northern Sierra Leone. They were not only adept at cattle rearing but were also the people mainly hit by the Government decision to abolish the institution of domestic slavery in 1927. In the 1920s there were still only about twenty-eight ploughs available to farmers in northern Sierra Leone but in geographic terms the technology was scattered over a reasonably wide area.
During the 1930s about 100 acres were ploughed each year, yet in
general terms the period 1929 to 1938 showed a marked fluctuation both in
acreages ploughed and in the number of farmer adopters, as Table 14 below
shows.

In 1937 Glanville tried to explain the reasons for the high turnover
of adopters within the project and therefore the general failure of the
ploughing scheme to grow during this time. Firstly, he said the early
adopters were mainly wealthy chiefs who entered the scheme without
serious enthusiasm, partly on “account of its novelty and partly to gain
‘kudos’ with Government”.61 Secondly, the period coincided with regular
invasions of locust swarms which ravaged farms and so discouraged many
farmers from investment in farming. Two other possible reasons which
Glanville overlooked were the rush to the mines at Marampa in the
Northern Province and Kono in the Eastern Province; and the fact that
the region north of Makeni is very hilly and mountainous. On the first
point, given the ecological imbalance caused by locusts and the
unpredictability of the weather, it is reasonable to assume that many

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**TABLE 13: DISTRIBUTION OF VICTORY PLOUGHS BY 1935**

<table>
<thead>
<tr>
<th>District</th>
<th>Number of Ploughs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karene</td>
<td>8 plus 6 French model</td>
</tr>
<tr>
<td>Bombali</td>
<td>7</td>
</tr>
<tr>
<td>Port Loko</td>
<td>4</td>
</tr>
<tr>
<td>Koinadugu</td>
<td>9</td>
</tr>
</tbody>
</table>

TABLE 14: PLOUGHING IN THE NORTHERN PROVINCE, 1929–38

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Farmers Ploughing</th>
<th>Acres Ploughed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>1930</td>
<td>17</td>
<td>133</td>
</tr>
<tr>
<td>1931</td>
<td>17</td>
<td>133</td>
</tr>
<tr>
<td>1932</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1933</td>
<td>12</td>
<td>75</td>
</tr>
<tr>
<td>1934</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>1935</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>1936</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>1937</td>
<td>12</td>
<td>over 100</td>
</tr>
<tr>
<td>1938</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: as Table 12.

Small farmers in the northern highlands would have found mine labour a more attractive proposition than hazardous farming! Further, this was also the time when the railway extension to Kamabai was begun and the Bombali and Koinadugu Districts were the main sources of labour for this service. On the second, farmers in this part of the north may have been aware that ox-ploughing in the hilly uplands could actually have intensified soil erosion: certainly, the pioneers' ploughing was limited to the riverine grasslands or bolis where many farmers did not own any land. The possibility therefore is that many farmers at the time rejected the technology partly on these considerations. Another possible
reason for the failure of ploughing was the lack of ploughs and spare parts and also the lack of adequate numbers of Ploughing Instructors in a region where even cattle rearing was a relatively recent innovation for a majority of the inhabitants. Furthermore, oxen were increasingly becoming more expensive: the opening of the mines in the early 1930s added fresh sources of demand for the long-established trade in cattle which the Mandingo were prepared to lead."n

However, despite what appeared to have been a generally dampening response from farmers, Glanville was nevertheless optimistic that, with only a little encouragement from the Government, the plough culture would create a great and decisive impact on agriculture in the north."n

When I visited Karina and Rowari in 1937, I was very agreeably surprised at the progress that had been made, and I am quite certain that as long as ploughs are made available by the Department there will be no going back, but a steady advancement which will eventually have a very important bearing on agricultural development in the Northern Province.

The report by Glanville impressed Dr. Martin, the Director of Agriculture who quickly announced his intention to incorporate ox-ploughing within the swamp rice schemes not only in the north but also in the Southern Province."n Already trials to this effect were being carried out at both the Njala Experimental Station and the Rokupr Rice Experimental Station but apparently without success. Indeed recent research suggests that oxenization is not and never could be a panacea in many parts of Africa because, firstly, it is uneconomic, given typical farm acreages; secondly, it is ecologically damaging; and thirdly, it is too risky for poor farmers."n The technology, however, works well in some more
restricted contexts such as the bolis and riverain grasslands in Sierra Leone.

This chapter examined a crucial phase in the evolution of colonial agricultural policy in Sierra Leone. It showed that policies before 1934 lacked consistency and continuity due partly to inadequate financial backing from Government and partly to the frequent changes of the Directors of Agriculture. The period from 1934 onwards saw a relaxation of funding constraints and a clearer policy focus on conservationist concerns. It is in these circumstances that a formal agricultural policy emerged in 1935 with a heavy tilt towards swamp rice cultivation.
FOOTNOTES TO CHAPTER 6

1. A.R.D.A. 1932 p.1. Unless otherwise indicated the A.R.D.A. series for the years 1930 to 1954 were consulted at S.O.A.S., University of London.


3. Ibid.


7. Ibid., p. 2.

8. Ibid., p. 3.

9. Ibid., pp. 2-20.

10. Ibid.


16. Ibid., p. 4.

17. Ibid., p. 7.

18. Ibid., p. 10.


22. Faulkner, O.T. and J.R. Mackie West African Agriculture (Cambridge, 1933); see also Richards, P. Coping with Hunger, p. 9; and Indigenous Agricultural Revolution, Ch. 1.


24. Ibid.


28. Ibid., p. 3.

29. Ibid.


31. Ibid.


34. Ibid., pp. 5-6.


36. Ibid.

37. Ibid., pp. 4 and 5.


51. A.R.D.A. 1937. p. 2. The Director of Agriculture, Dr. F.J. Martin was appointed to the post.

52. The campaign is said to have cost the Government over £2,000 in such years: c.f. Kirby, "Memo. on Locust Control for Sierra Leone", 3 Jul. 1930, C.S.O. A/90/29.


54. Ibid.

56. Roddan. "Cultivation of Swamp Rice".
61. Ibid.
62. Personal communication with Richard Fanthrope who has conducted extensive and intensive field research in the region for a Ph.D. thesis for the Department of Anthropology, University College London, centred on Biriwa Limba, Bombali District.
63. On the root of this trade, see "Karene District Report for 1914", Merewether to Harcourt, 28 Apr. 1915, C.O. 267/565 where cattle are said to have been sold in Mende country. See also the "Annual Report of the Northern Province, 1920", C.O. 270/49.
PART II:

SWAMP RICE CULTIVATION:

AGRICULTURAL POLICY
AND PRACTICE
1908-39
The "Searcies" refers to the rivers immediately north of Freetown which drain much of the Northern Province. The British Colonial Administration in Freetown referred to them as simply, the "Northern Rivers"; the French authorities in French Guinea called them "Rivieres du Sud". It was an area of intense and sustained economic activity, particularly in swamp rice cultivation, long "before the advent of European traders" and was the main supplier of rice and other foodstuffs to the Freetown Colony since its inception in the late 18th Century. Sierra Leone lies within the West African Rice Zone from Cassamance in the north-west to the western Ivory Coast in the south-east. It is generally believed that Sierra Leone has a comparative advantage in rice production in West Africa. The origin of rice cultivation is however a matter of considerable speculation. This chapter focuses on swamp rice cultivation in these tidal rivers to show why the region was and still is a vital nerve centre in the development of the Sierra Leonean rice industry.

Origins of Rice Cultivation in the Searcies Region

Although the origins of rice cultivation in the Searcies are not known, Hopkins thought it dated from "remote ages" and Scotland emphasised that the plant was indigenous to the region:

...Wild rice covers large areas of land along the flooded banks of the Bum-Kittam River, in the Sherbro, and it is
also found growing extensively in the small Scarcies River, around Gbinti. *Oryza Barthii* is a perennial as it withstands the dry season by the development of rhizomes. It is an article of diet amongst the tribes inhabiting the banks of the Bum-Kittam, but it is not eaten nowadays by the Temne and Buloms on the Small Scarcies River, owing to the heavy yields of rice they obtained from their paddy fields. The... grain is smaller than the cultivated rice, it is of cream colour and of a good flavour.  

He even had local names for this wild variety.

**TABLE 15: LOCAL NAMES FOR ORYZA BARTHII [NOW O. PERENNIS]**

<table>
<thead>
<tr>
<th>ETHNIC GROUP</th>
<th>REGION</th>
<th>NOMENCLATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherbro</td>
<td>Bullom-Kittam River</td>
<td>Teteki</td>
</tr>
<tr>
<td>Sherbro-Mende</td>
<td>Bullom-Kittam River</td>
<td>Ngafabei (Den) Rice</td>
</tr>
<tr>
<td>Mende</td>
<td>Mende Country</td>
<td>Ngewambei (God’s Rice) [ngow mbei]</td>
</tr>
<tr>
<td>Bulom</td>
<td>Little Scarcies</td>
<td>Antecheck</td>
</tr>
<tr>
<td>Temne</td>
<td>Little Scarcies</td>
<td>Pela-pa-gnkriff (Devil Rice)</td>
</tr>
</tbody>
</table>


Other sources indicate that long before the 17th Century rice was already the main staple diet of people in what became Sierra Leone. In 1786 John Matthews, a European slave trader who had an unrivalled knowledge of the west coast observed that

> On the North side of Sierra Leone river the land is low and level, and produces great quantities of rice; the cultivation of which, and the making of salt, are the chief occupations of the natives, who, on both sides, are called Bullons.

Portuguese writers in the 15th Century also mentioned that local rice producers supplied slavers in Bunce Island and other trading depots.
THE SCARCIES REGION SHOWING MAIN VILLAGES MENTIONED IN THE TEXT AND THE LOCATION OF ROKUPR RICE RESEARCH STATION

FIGURE 7
By this time it is likely that farmers had moved on from using *O. Barthii* to *O. glaberrima*.

Although there are problems of exact dating it is generally agreed that the cultivation of *Oryza glaberrima* which is indigenous to Africa was followed by the adoption of the exotic *Oryza Sativa*. A former Director of the West African Rice Research Station at Rokupr, H.D. Jordan, maintained that

Upland rice growing in Sierra Leone is of considerable antiquity although exact information on its initiation and development is not available. At first cultivation was almost certainly of varieties of *oryza glaberrima*, the indigenous cultivated rice of Africa, although upland varieties of *oryza sativa* later came into the country...

The popular view in the literature is that the *glaberrima* strain was first systematically cultivated in the Upper Niger delta which the main exponents of this theory refer to as the "Sudanic Complex" of cultivated plants. According to this theory the head waters of the Niger River forms the cradle of rice cultivation in sub-Saharan Africa with secondary dispersal points at Senegambia, Futa Jallon massif and probably Sokoto in northeast Nigeria. Brooks dates this process to the 3rd and Jack Harlan to the 4th Century AD. Harlan and Brooks believe that the diffusion of *glaberrima* varieties was a result of conscious human action. "It seems evident", says Harlan, "that crop distribution in Africa depended more on the distribution of tribes and cultures than on the ecological adaptation of the plants". Using climatic evidence Brooks on the other hand suggests that rice cultivation diffused widely across western Africa during the wet season c700-1100 A.D. through the agency of "Mande trading networks". Considering the proximity of Sierra Leone to Futa Jallon and the Niger basin and the historic connections, through
trade. that existed between Sierra Leone and peoples of the Sudan we can reasonably assume that the cultivation of *O. glaberrima* began early in Sierra Leone, perhaps accompanying the discovery of iron in A.D. 600, largely independent of any external influence.\(^{16}\)

Colonial investigation of swamp rice cultivation in the Scarcies region began in 1911, as we saw in Chapter 3. During the 1920s and 1930s further detailed studies were made beginning with a request by Sierra Leone's Colonial Secretary for information as to the potential of the Southern Province for the promotion of irrigated rice culture. In response, the various D.C.s sent very favourable reports.\(^{16}\)

For instance, at Ghangbama District it was ascertained that there were two main types of swamps or *kpeti*. Tidal swamps, found mainly along the larger rivers flooded by rising tides and usually covered with mangrove, were "capable of yielding repeated crops without any diminution".\(^{17}\) The main tidal areas were the Bumpe River, the Bum Kittam, the Jong, and Kife rivers. Settlements were only just beginning to be formed there — Mandis, Gbali, Mosally, Makondo and Nyougualua were all of relatively recent foundation. Two crops of rice were grown annually. During the early rains a quick variety known as "Kogbai" was planted and harvested in December. With the fall of the river in the dry season a variety known as "Gbali" which withstood the increased saline conditions and the intensive heat of the sun was planted and was usually harvested in June. The second type of swamp was the "water-meadows" or "Bati", which were extensive along the coast and were also farmed. Such swamp types are common around Sembehun (Mauna Governor's) in the Gallinas and skirt the northern side of the Mbessi.
In 1921 the Indian expert rice planter, Pillai, made a more specialised study of the Bum-Kittam-Wanje region, where he identified three methods of rice cultivation: in the first, which took place between February and March, the grass of the swamp was cut, dried and burnt. When the land etc. etc. cleared the rice was broadcasted and covered with a native hoe. This rice was harvested about June, that is, before the flood covered the swamp. The variety usually planted was Balli. This was practised throughout the non-tidal areas and was only carried out in small patches.

The second method was in vogue in the region from Gbapp to the mouth of the rivers. Here the rice seed was sown with the early rains in May. Then the grass and the weeds were cleared and heaped on the edge of the farm. Among the varieties sown were Robatti, Samba and American. Finally, there was the transplanting method which involved first raising the seedlings in nurseries and then transplanting them on the tidal areas about July. This was the most advanced method which Pillai said should replace all the others. Interestingly enough, Pillai's report or observation was corroborated by the D.C.'s 1920 reports referred to earlier and Dapper's 17th Century report. There were however some variations in the three accounts in matters of detail. The three sources are in agreement on the three methods and the timing of the farming operations. Ross and Pillai made no mention of any fallow period; Dapper mentions two or three years of fallow in the non-tidal areas.

Again Ross is silent about the farming implements used while Pillai and Dapper described them fully. Pillai observed that sticks and a
triangular hoe were the main tools used which agrees with Dapper's observation that

...with the sowing one goes ahead, who scatters and who sows the seeds on to the field, which others with curved iron tools (which scratch) hoe under the soil...

There is also a slight difference in the varieties used. Dapper is not specific about the varieties used in the 19th Century but by the timing of the operations it is clear that both quick and long-duration varieties capable of withstanding immersion were used. Pillai, as already noted, identified the Balli for the non-tidal areas, the Robatti, Samba and American for the tidal areas. For the non-tidal swamps Ross mentioned no variety. But for the tidal areas two varieties were popular: the Kogbai was planted and harvested in December to be followed in the dry season by the Gbali which was planted about March and harvested in June. Finally, Ross said nothing about gender roles in the cultivation system whereas Dapper and Pillai emphasised the degree of division of labour and the importance of women in the farming process. In addition to their household duties of preparing the day's meal, fetching water and tending children, women did the weeding in the farms and helped the children in bird-scaring. Dapper and Pillai also stressed the misery of small farmers, the scarcity of farm labour, and the inadequacy of the farming methods to meet the food demand of the region. However, all sources agreed that sociological factors were vital in the understanding of the agricultural systems of the Southern Province.

Despite these divergences, the underlying similarities between the three sources are striking; they are important in throwing light on the fact that while the crude technologies of the 17th Century had not gone
through major transformations by the 1920s, with Dapper’s “curved iron tools” comparing directly with Pillai’s triangular hoe, yet the range of rice varieties used could well have expanded, as suggested by Pillai’s note of the Samba and American varieties. This is also suggested by Jordan and Carpenter, who argue that the Oryza Sativa which now tends to be the dominant variety was introduced from outside the region, either by trans-Saharan or by Portuguese traders. Local farmers recall that new varieties of rice were acquired from European ships, tree groves (i.e. deposited by birds) and even elephant droppings. Later the Agriculture Department also introduced many exotic varieties.

The systematic and intensive cultivation of the mangrove swamps in the Scarcies can be traced to the late 19th Century, probably in direct response to the increasing food demands of the Freetown Colony. By the mid-19th Century, food supplies from the wider northern hinterland had already become the life-blood of the colony and an African Department aimed at ensuring a good relationship between the colony and the hinterland was established.

All available sources state that mangrove swamp cultivation started in the Scarcies tidal swamp region, in particular at Mambolo in the Kambia District in about 1880. In the Great Scarcies, the first swamp cultivated is believed to have been at Matantu opposite Kupr as Rokupr was formally known. Kupr is the local Temne equivalent for the vegetation that then populated the upper reaches of the Great Scarcies River. The nomenclature, Rokupr, came into being in response to the question: “where are you going?”. “Ro” is the prefix for “to” or
"towards". So that "Ro-kupr" means "to the place of the Kupr". Hence Rokupr.²⁷

As soon as a beginning was made in swamp rice cultivation around Rokupr and Tombo, neighbouring villages like Bisau and Rosint followed suit. However, and according to Glanville, it was not until 1885 that the first mangrove swamps were cleared at Tombo and Rokupr by one Setson and a Kruman respectively.²⁷ So much was the enthusiasm of the farmers in those regions that by 1900 almost all the suitable land that could be cleared with the existing technology was already brought under cultivation; and by the 1930s double cropping was reported in areas like Konta and Wula in the Great Scarcies. Two different varieties were used: Pa Litoma (believed to be a selection from Pa Mane) for the first crop and Pa Kima for the second.²³

This evidence casts doubt on the popularly held view that Temne farmers began the cultivation of mangrove swamps in the Scarcies. The names Setson and Kruman are not Temne names. Setson was probably a European trader while 'Kruman' could well have designated a 'crew man' from Liberia (or a man from the Kru tribe in Liberia)!

In his 1922 Report, the Indian rice expert Pillai made mention of a copy of a manuscript which he said detailed "the purchase of Tumbo tract by a Portuguese ancestor of the present Alimami of Tumbu (Alimami Zau Bai)...(in) 1822". The land in question stretched from Romando to Kaikonki and was apparently "bought for 1,000 dollars and two slaves from Bai Sherbro of Kafu Bullom, who, it seems, then held jurisdiction over this tract..."²⁹ However, even if the Portuguese and the Kru pioneered the swamp rice technologies, which seems unlikely, the fact still remains
that these intermediate technologies were taken over, transformed and put to more extensive use by the Temne.

**Cultural Practices**

(a) **Transplanting**: In the Searcies region the 1930s method of transplanting is believed by Pillai, Glanville and others to date to the 1880s and is reasonably well documented. Two conflicting views are usually put forward. One in favour of external, the other of the indigenous origin of the technology. Generally there is an agreement that the technology went through three stages in development. Firstly, seed rice was first sown broadcast following the first light rain in May - June as in the uplands. But it gave uneven germination in the farm due either to waterlogging or erosion during a heavy downpour. Secondly, experiments were made with sowing pre-germinated seed before the heavy rains, "but it was found that the current of water carried away a quantity before the seed could put out roots". With seed rice being scarce at this time of the year and the danger of total failure great, a final experiment provided the answer. According to Pillai, in the Great Searcies:

One man named Bokari attempted to fill or supply these gaps with a few rice plants pulled out from the bush farm, where it was then grown purely for grain. This shows that even then, swamp farm crop was so tempting that one thought it better to loose something on the bush in favour of swamp. The crop on this supplied portion was so good, and it gave such decidedly better yield, that he continued to do the same the following year. Others copied him. Finally, rice sown on the bush was pulled out by all for planting only on the swamp. I believe it is for this reason that we find nursery always on the bush and the seed-rate so much less reduced than recorded in other countries.

Martin's account is even more graphic and precise
On one occasion a farmer, who had his rice washed out of the ground by a heavy storm, having no further seed rice, collected the seedlings and planted them back into the soil. The result from the transplanted area was so successful that the method was adopted the next year for the whole farm and subsequently it spread throughout the whole Sarcies area. The good crops resulting from the transplanting method had much to do with popularising the tidal swamps as desirable areas for rice production.34

It is clear from these two accounts that rice transplanting developed naturally as an indigenous innovation in adaptation to the natural ecology of the swamps used. At its rudimentary stage transplanting must have been carried out by hand since "the mud was soft enough to allow the rice to be inserted by hand".35 Soon, however, the Temne acquired, probably from the Soso of French Guinea, the idea of using a small specialised tool to make the holes:

In French Guinea the rice was transplanted into holes made with a small native hoe. When the work was taken up in Sierra Leone a rounded stick, used as a dibbler, was substituted for the hoe.36

Sori Kamaseri was the first farmer to replace the hoe used by the Soso with the dibbler, which F.J. Martin described as "an implement made of wood and iron, which may be likened to a screwdriver with the flanged point exaggerated and a V cut in it".37 This is the implement still in vogue except that today the Temne have both a wooden and an iron form of it, the latter made locally by blacksmiths. In short, the technology is indigenous although the idea behind it was borrowed from the Soso. All this indicates that local farmers in the Sarcies are receptive to new ideas and are continuously innovating and adapting outside innovations to their own local requirements.
(b) Nurseries: During the 1920s and 1930s, observers found that farmers preferred to make their nursery beds (Temne - foon foo) on high ground, back from tidal swamps which was often in short supply, particularly in the Loko Masama area along the Little Searcies River. Between March and April the nursery site was cleared by brushing and burning before the seed was sown broadcast as in the uplands at the rate of about five bushels to the acre. This was usually in May or early June. Depending on the fertility of the soil farmers could predict their output in advance. It usually worked out at one bushel of nursery seed for twenty bushels after harvest. When poor and fragile soils were used continuously for nurseries, the seed bed was burnt by first spreading grass or rice straw on the ground. Thus burning had three main advantages: "it destroys weed seeds, reduces the soil to a fine state of division and increases the supply of readily available plant food".

Seedlings were left in the nursery for six or eight weeks and then were uprooted for transplanting. Seedlings are rooted and the soil shaken from the roots by hitting the seedlings against a stick or the ankle before being tied into bundles of about twelve inches in circumference using a palm leaflet. But if the seed bed was on heavier soil the mud was usually removed from the roots by washing. From these small bundles (Temne - Ehgbon) were made larger bundles known as Elik (approximating one head load) were compiled. Glanville described the process in detail as follows:

When tied, the bundles are laid out side by side, on a looped rope, the free ends of which are tied to two sticks placed about 9 inches apart. The bundles are placed so that their root ends are alternately pointing in opposite directions. When enough bundles have been laid out to constitute a head load, a stick is inserted through the
looped end of the rope, twisted once, and then, keeping the rope taut, the bundles are rolled up around the stick. By adopting this method a neat and compact result is obtained. When the large bundle has been tied the rice leaves are trimmed down to about 9 inches from the roots. Trimming is usually done with a knife or cutlass but occasionally the excess foliage is removed by a rotary movement of the hand when the small bundles are being tied. This trimming is very necessary if growth has been vigorous in the nursery, as it not only checks transpiration whilst the roots are becoming established, but also helps to prevent the newly planted seedlings from being beaten down into the mud by heavy rains or tidal flooding.39

(c) Rice Varieties: When Frederick Deighton, the mycologist of the Agriculture Department, surveyed the Scarcies between December 1927 and January 1928, he discovered among other things that there were many rice varieties some of which were early, and others late duration rices. The early or short season varieties (usually three months duration) included Pa D.C., Pa-Indian, Pa Bizabodi, Pa-Litoma, Pa-lal, Pa-Loko and Pa-Segbema of Batkanu; the late or long season varieties included Pa-Wo, Pa-Kaulo, Pa-pos, Pa-bolo, Pa-runko, Pa-koincho and Pa-biss.40 Other varieties also used were Pa-Poto, Pa-Koba, Pa-Mane, Pa-Merken and Pa-Yaka.41 Names referred to the person who introduced them or the circumstances surrounding their introduction. (See Table 16.)

Most of these varieties were reasonably high yielding. In 1922 Pillai considered the average yield per acre in the Scarcies to be 1,434 lbs. of husk rice which he said compared favourably with Madras in Southern India where water control systems were used. Five years later the Rice Commission estimated yields in the various rice ecologies to be 45 bushels (or 2700 lbs.) of husk rice per acre for tidal swamps, 30 bushels (or 1800 lbs.) for inland swamps and between 15 (or 900 lbs.) and 20 bushels (or 1200 lbs.) for the uplands.42
TABLE 16: DISTRIBUTION OF RICE VARIETIES

<table>
<thead>
<tr>
<th>Variety</th>
<th>Rokel</th>
<th>Port Loko</th>
<th>Little Scarcies</th>
<th>Great Scarcies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pa Litoma</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
</tr>
<tr>
<td>Pa Indian</td>
<td>X</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
</tr>
<tr>
<td>Pa Kaplu</td>
<td>-</td>
<td>-</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Pa Lal</td>
<td>XX</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Pa Kalimodu</td>
<td>-</td>
<td>X</td>
<td>XX</td>
<td>X</td>
</tr>
<tr>
<td>Pa Bis</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>XX</td>
</tr>
<tr>
<td>Pa D.C.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>XX</td>
</tr>
<tr>
<td>Pa Bolo</td>
<td>-</td>
<td>XXX</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Pa Fodea</td>
<td>-</td>
<td>-</td>
<td>XX</td>
<td>X</td>
</tr>
<tr>
<td>Pa Kima</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Pa Koba</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Pa Rep</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Pa Yaka</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Pa Lat</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pa Poto</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Pa Suru</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Pa Yente</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

XXX Very Plentiful  XX Plentiful  X Sparse

Source: R.R. Glanville Agricultural Survey (1930) Appendix C p. 35

(d) Labour Use: There was a relatively high concentration of population in the Scarcies region, where average land holdings were not large. By 1930 there were 21,277 household units in the region with an average holding of 3 acres.43 Despite this dense population, labour supply was still a problem for farmers, especially in the clearing of the mangrove trees and that of the pernicious tough grassweed or *paspalum vaginatum* known in Temne as Keireh-Keireh, which was a job for hired specialist labourers. The expert cutters of mangrove trees were known as Mattebu or Matteboi while
TABLE 17: DEMOGRAPHIC PATTERN OF THE SCARCIES REGION

<table>
<thead>
<tr>
<th>District</th>
<th>Chiefdom</th>
<th>Area in Sq. Miles</th>
<th>No. of Houses</th>
<th>Population</th>
<th>Pop'n Per Mile*</th>
<th>Rivers Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kambia</td>
<td>Samu</td>
<td>172</td>
<td>2,847</td>
<td>22,776</td>
<td>132</td>
<td>Great Scarcies</td>
</tr>
<tr>
<td></td>
<td>Mambolo</td>
<td>99</td>
<td>1,846</td>
<td>14,768</td>
<td>149</td>
<td>Gt. and Lt. Scarcies</td>
</tr>
<tr>
<td></td>
<td>Gbile</td>
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<td>632</td>
<td>5,056</td>
<td>81</td>
<td>Gt. Scarcies</td>
</tr>
<tr>
<td></td>
<td>*Mabgema</td>
<td>117</td>
<td>2,544</td>
<td>20,352</td>
<td>174</td>
<td>Gt. Scarcies</td>
</tr>
<tr>
<td></td>
<td>Bure</td>
<td>52</td>
<td>1,197</td>
<td>9,576</td>
<td>184</td>
<td>Lt. Scarcies</td>
</tr>
<tr>
<td>Port Loko</td>
<td>Mafoki</td>
<td>101</td>
<td>2,168</td>
<td>17,344</td>
<td>171</td>
<td>Port Loko and Rokel</td>
</tr>
<tr>
<td></td>
<td>Bake Loko</td>
<td>93</td>
<td>1,642</td>
<td>13,136</td>
<td>141</td>
<td>Port Loko</td>
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<tr>
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<td>Loko</td>
<td>327</td>
<td>4,292</td>
<td>24,336</td>
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<tr>
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<td>Masama</td>
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<td>390</td>
<td>4,109</td>
<td>32,872</td>
<td>84</td>
<td>Rokel River and Gbabai Creek</td>
</tr>
</tbody>
</table>

* Embraces Rokupr 1,413 170,216

Source: Glanville. Agricultural Survey of the Scarcies (1930), p.3.

the weed was the province of skilled labourers known as Etura or "Bulls". The activities of teredo worms (Temne Anbilo ramant) helped in the clearing of mangrove trees by forming burrows in the timber. Even so mangrove clearing was tedious and required the formation of cooperative labour gangs (Krio - Kompin, Temne - Kabotbo) as Glanville observed in 1930:
The felling of the high fringing mangrove is a difficult matter... The tangled mass of roots, the strong sea breeze and the tendency of the wood to splinter, all make the job too dangerous for novices. In the early days of mangrove clearing there were many fatal accidents, and nowadays all such work is done by professional gangs.45

Glanville provided a vivid description of the way in which these experts handled the situation.

Felling is accomplished as follows - lanes are cut through the mangrove forest. The trunks are left untouched until all aerial roots have been cleared. These lanes are cut parallel to each other and at right angles to the prevailing wind from the west. Felling is begun at the eastern end of the block to be cleared. The sea breeze does not as a rule spring up until after noon. In the morning the mangrove trunks are cut half-way through on the side away from the prevailing breeze. In the afternoon, when the wind rises, the cut is completed from the other side. In this way all the mangroves are made to fall in the same direction.46

Felling of the mangroves was usually done in the dry season and clearing could go on for as long as three years, sometimes much longer. Mangrove bark fetched a handsome price among bakeries in Freetown and was a much preferred firewood locally.

Frere identified two other types of swamps in the Scarcies area in 1925. He called them by their local names: the Aryamp and an Forkoh. The former referred to reedy and grassy swamps lying inland away from the reach of tidal wash; the latter referred to the inland swamps immediately behind the mangroves, identified by the profusion of palm trees there. Both swamps, Frere explained, were equally very difficult to cultivate with local implements in view of entangled mats of grass. Cultivating these swamps therefore demanded a large amount of labour which at this time was very scarce.47
To cope with this problem of labour shortage local farmers formed work groups or farmers' cooperative societies. In a recent paper on the subject, Magbaily Fyle traces the origin of the institution among the Temne to the desire to reduce the tedium in farm labour as well as to relieve labour scarcity during the peak periods. Fyle stresses that rulers and heads of settlements had the best access to such labour. Similarly Frere, D.C. Port Loko in the early twenties observed that

The Paramount Chiefs and rich men do their planting early, while the poorer portion of the community have to wait until they can find time for their own planting later in the season.

Indeed in his Agricultural Survey of the Scarcies in 1930 Glanville observed that in the Little Scarcies 358 acres of cleared swamps were temporarily abandoned for lack of labour; in the Great Scarcies he estimated that there were 2,246 acres of such land. To augment household labour some wealthy Temne 'Big men' kept slaves. For the majority of poor, small farmers however, the solution lay only in their pulling resources together, as Frere stated

The poorer farmers form a club for working the land, known as "Kibottoh", with a headman called a "Boasim". They give one or two of their sons to be workers in this club, or a daughter in marriage to one who has men in the club. Each member is entitled to a full day's work from the club and in return provides the food for all the members for that day.

In principle, members usually twenty or thirty in number, worked each others' farms in ordered rotation with the host providing food and music to entertain the group. By the 1920s, however, labour like land had come to acquire a market value, and an element of hired labour then entered into the traditional relations of production. But payment in kind was the most common.
Should a man not be a member of this club, or have other means, he mortgages his crop in advance to a trader, who advances (him) money... (to hire labour). The hired labourer is not paid (money), but at the end of his day's work, is entitled to cut a large bunch of rice to take away with him. This large bunch is the last he cuts and is the signal that he is knocking off for the day.  

Beside land clearance, farmers in the Searcies region also spent a lot of time coping with local ecological hazards such as flooding, salinity, weeds, rice diseases such as Helminthosporium and Fusarium, insect pests mainly Sitotroga Cerealella and a weevil Calandria oryzae, fish, hippopotami, monkeys, cutting grass, locusts, rice-birds and crabs. These problems elicited creative responses from farmers. For instance, with regard to flooding which caused severe damages to rice crops between July and October, farmers planted late maturing varieties such as Pa Litoma and Pa Koba in such ecologies. Excessively saline and weedy swamps, however fertile, were avoided by local farmers. Monkeys, cutting grass, hippopotami etc. were hunted and killed while children were used as bird-scares. With fish and crabs "local farmers build small palm leaf fences to keep them off their farms". As agricultural officers later came to learn it was in response to such hazards that local farmers planted several instead of single seedlings per stand. Further, because of the "severe plagues of locusts" which hit farmers with incalculable damage to crops, "Pa Koba, a late maturing variety...fell from favour and was replaced almost entirely by rices of quicker maturation".

But perhaps the greatest scourge of peasants in the Searcies region was the vicious circle of poverty created by fragmented holdings, lack of access to capital, inefficient marketing structures and inadequate
infrastructural amenities such as roads, transport and health care services. It is to these problems that we now turn.

(e) Land Use: Two systems of land tenure exist in Sierra Leone: the freehold system limited mainly to Freetown and a limited number of other urban areas: and communal ownership which is predominant in the former hinterland. In the Scarcies the latter system was and is still in vogue. Land is theoretically owned communally by the Tribal Authorities but in actual fact divided into family lands.

Among the Temne in general, the system operates in favour of fragmentation of holdings. Household heads are obliged by custom to subdivide their own units of land among their senior wives who in time pass it on to their children. In 1949 the Chief Commissioner of the Protectorate observed that "this (practice) has led to some family lands being subdivided into plots too small for the present system of shifting cultivation to be carried on without serious consequences to the uplands".

In the Scarcies area, land ownership was originally obtained either by inheritance or by virtue of being the first cultivator of a given area. However, by the 1920s the system had undergone a major transformation as land came to acquire a market value. "Good swamp land" was valued at between £5 and £18 per acre. Glanville thought that sale was not yet as common as "renting and pledging (which were) every day occurrences". The renting or leasing of agricultural land in the Scarcies started mainly as a result of growing indebtedness among small farmers who "on account of debt, lack of labour etc., find it impossible or inexpedient to use all their land, and this allows non-land owners to
obtain land for at least temporary use. Usually the yield potential of the land in question determined the amount of rent to be paid but "for good rice farms", observed Glanville, "£4 or thirty bushels per acre are representative amounts". In practice land owners were often unable to redeem their land/situation which made the tenant or pledgee the virtual owner. In the period under review a greater part of the land in the Scarcies was under pledge. At the same time, every household head was obliged to pay the Chief or Headman some tribute, usually in kind. The amount depended on the individual's total rice harvest but "five bushels for every hundred bushels harvested" seemed to have been the norm.63

(f) Credit: Many small farmers became ensnared with debt in the hungry season just before the harvest, when they mortgaged their crops or part of them as a measure of last resort. This vicious circle of poverty of the small holder in the Scarcies area is graphically described by the 1927 Rice Commission set up by the Central Administration to report on the rice industry. The Commission reported among other things that

The native usually incurs debt during "the hungry" season and he undertakes to repay this at harvest time. The interest is high: frequently he engages to repay two bushels of rice for every bushel borrowed. If he borrows money or obtains goods from a small trader, he will undertake to repay a bushel of husk rice for every two shillings borrowed; or, if it is near harvest time and he is lucky, he may be allowed to cancel the debt by repaying rice at the rate of 3s. a bushel. In some districts the practice is so prevalent that practically the whole crop is disposed of in this way, excepting perhaps that portion belonging to the chiefs or headmen.

...No matter how high the price of rice may be, the benefit is not felt by the small farmer, as he has engaged to dispose of his crop for 2s. or 3s. a bushel of husk. High prices have no interest for him and prosperity passes him by. Each succeeding season brings the same tale. He must carry on until the next harvest, and to carry on he must borrow once again."
The Rice Commission blamed these problems partly on "farmer improvidence" and on existing technological inadequacies. It was also observed that farmers worsened their situation of vicious poverty by their proclivity to engage in fruitless and unnecessary litigations in the local courts especially after harvest. However, it could also be argued that small farmers were inevitably forced into these circumstances. In the late twenties real cash was scarce because non-rice cash crops like palm kernel, palm oil and kola nuts had virtually lost their market value. To meet his tax obligation to the Colonial State, pay his tribute to his Chief, buy agricultural implements, buy apparels for himself and family, fittingly attend traditional ceremonies and meet a host of other obligations the farmer had scarcely any option but to use his rice crop. Unfortunately, other groups in society, namely traders, exploited this situation much at the expense of the small producer as will be shown in the discussion that follows. Meanwhile, small farmers made continuous efforts to diversify production.

Non-Swamp Rice Production in the Searcies Region

Besides swamp rice which was mainly produced for the market, farmers in the Searcies area also produced other foodstuffs such as upland rice, groundnuts, cassava, palm oil and palm kernel, fish and salt, and sold their surplus on the local market. The need to maintain customers or trade in these items led to the creation of Temne diasporas first in the adjoining chiefdoms and then in the Freetown and other regions. Today there is hardly any chiefdom north of Kambia without a Temne resident.
This could have also precipitated migrations from the nearby uplands to the Searcies.  

(a) Upland Rice Production: In the 1930s Glanville noted that "Upland farming (was) practiced everywhere on the higher ground in the upper section of the rivers". There were more upland areas close to the Great Searcies than in the Little Searcies but everywhere mixed cropping and shifting cultivation were and are still practiced. The main non-rice crops grown in the uplands were Benniseed, guinea corn, okra, maize and bulrush millet which were grown in mixed stands with rice as the main crop.

In addition, there were also small fundi (millet), sweet potato, cassava and groundnut farms grown as pure crops astriding the tidal marshes. As Richards has pointed out, the same farmers used plots on both upland and swamp farming areas.

(b) Cassava Production: In some areas, especially in parts of the Little Searcies where flooding is most pronounced, conditions for swamp rice cultivation were limited. For instance in areas like Katonga, Katoma, Kikam and Mando in the mid Little Searcies region where the soil is predominantly sandy, local farmers grew mainly cassava "...in very large areas". It was grown to meet local needs with a surplus to exchange or barter for rice in more favourable rice areas along the Searcies. Between April and May the cassava was made into kondogballa by cutting it first into pieces and half-boiling it and then sun-drying it until it was hard. The Limba living about thirty miles or so north of the Great Searcies know this type of cassava food by the name of tillan. It was mainly used as a hunger-breaker during August and September.
in the middle belt of the Little Scarcies it was an export crop. Some of it was sent to Freetown; the rest to Mange near Port Loko, Rokupr and other areas.  

(c) Oil Palm and Kernel Production: In other less favourable areas for swamp rice cultivation in the Little Scarcies particularly Katoma and Makampita, farmers turned to the cultivation of palm produce in very large quantities. Oil palm thickly populated the uplands along the Little Scarcies between Mange Bureh and the mouth of the Little Scarcies River. Trade in oil palm and kernels in this area was said to have been brisk "but in the actual rice areas (that is the Great Scarcies) the people have little inclination for the work. They do extract oil for their own consumption, and if time permits, the nuts from the collected fruit are broken and the kernels sold". This industry, especially the processing aspect, was solely in the hands of women.

Observing the industry in 1930 Glanville was full of admiration for its advanced nature, and described how the oil was processed:

I noticed that a net, shaped like a miniature hammock, was sometimes used to express the oil from the pericarp. The net is fixed at one end, and by twisting the other end with a stick it is possible to compress the pericarp much more tightly than is possible with the hands alone.

Although the quality of the fruit seemed of below average to him, Glanville nevertheless believed that the method of palm-oil production in the Scarcies area "could be profitably adopted in other parts of Sierra Leone".

(d) Fish Production: Fishing and salt industries are the oldest and most important industries in the Scarcies region. They predate, according to Glanville, the coming of the European traders in the mid-
In the dry season between February and May plenty of fish accompany the spring tide up the river. Local inhabitants of the entire Searcies region from Mange in the Little Searcies to Samu in the Great Searcies were quick to take advantage of this industry. Fishing was mainly done by young men in the dry season when most or all of the yearly operations in the rice farms were over. The main equipment for the job was a casting net and small native canoes. The bulk of the catch was bonga, a tasty fish measuring about 6" long and about 2½" wide; awefu, about the size of herring were also caught. The catch was taken to town and "dried over smoke fires" by the women "and any not required for local consumption (was) packed in hampers" or ansansa and then exported to "Freetown, Mange (near Port Loko), the adjoining chiefdoms, Makeni, Bo and other areas". The fish trade from the Searcies region was mainly, though not exclusively, in the hands of women and was and is still thriving.

(e) The Salt Industry: This is the oldest and most important form of commercial production in northern Sierra Leone; the sea and salt impregnated soils along the tidal sea board were the main sources of supply. A gallon of sea water was reckoned to contain 4 lb. of salt. Like the fishing industry the salt was operated only during the dry season "when favourable conditions prevailed". In the early twentieth century it was a major occupation between March and May for almost every young man and woman on the Northern Seaboard. By 1930, although small quantities were still produced in Mambolo and Loko Massama Chiefdoms, the industry had become "localised entirely in the deltaic areas of the Samu Chiefdom" where it still exists though in a much attenuated form.
Originally, three main methods were used to obtain salt. Salt could be obtained by the evaporation of salt water; by collecting salt deposited on mangrove leaves during high tide; and by extracting salt from salt impregnated soils. The purest form of salt was obtained by the second method but that and the first were by 1930 almost abandoned in preference of the third method which formed the main source of supply.

In the Great Scarcies River deltaic banks are formed in places by the mud occasionally deposited during high tide. These deltaic areas are colonised by mangrove forests. In the dry season when the tides ebb "salt water is left behind, and, in the course of time evaporated to dryness. When this happens the soil is found to be impregnated with salt to a considerable depth, whilst on the surface the salt crystals cover the ground like frost". To remove this salt "a scraper made of hoop-iron" was used; the salt impregnated soil was then collected in heaps and covered with straw or leaves. Eventually the salty soil was transported, by men, women and children to the village or town where the main processing was done jointly by women and men. Children were charged with the responsibility of fetching water and firewood. Glanville gave an excellent description of the process of extraction:

The method of separating the salt from the soil is as follows. The salt impregnated soil is placed in a specially constructed strainer - "ka yong". This consists of a hollow inverted cone made by lining a frame work of palm leaves with puddled mud. The cone is truncated, and across the bottom is a stick grid on which a layer of straw is placed. This allows water to pass, but prevents any soil falling through the bottom.

The strainer is three quarters filled with soil. Salt water is added up to the top. The water, percolating through the soil, removes the salt in solution, and is caught in a basin as it drains off. Very often the water is collected in a mud-lined hole dug beneath the strainer.
In lieu of a special strainer a basket lined with coarse cloth may be used.

The washing down of the soil in the strainer is repeated at least once. Two or at most three washings are sufficient to remove the bulk of the salt. To indicate when the soil has been sufficiently washed the native keeps a palm fruit floating in the receptable in which the salt solution is collected. As long as the palm fruit floats he knows that salt is being removed from the soil. When it sinks he terminates the washing process, the lowering of the density of the solution indicating that salt is no longer available in economic quantity.

All that remained was to evaporate the water from the concentrate, by placing the basin either over a specially made bee-hived shape mud oven with an opening on one side for firing and a truncated top to allow the positioning of an iron or tin basin on it; or over "a large iron pot containing boiling water". The residue after the salt water had been evaporated was a fine crystalline salt overlaid by one that was more loose and coarse in texture. Later when cool the hard cake was crushed by a stone or stick while the more course and loose type would be further strained to remove any remaining moisture. The salt so formed was and is still known in the Scarcies as "Mer ma-run" and contains a high quantity of magnesium sulphate or Epsom salts. Because this salt is manufactured in the Samu chiefdom in the Kambia District, it is generally known in Sierra Leone as "Samu salt".

Salt was a very scarce and sought after commodity in inland areas, not only in Sierra Leone but also as far north as the Upper Niger River in French Guinea. Salt from the Scarcies region was widely traded within the Sierra Leone-Guinea plain. This salt was carried in hampers (ansansa or Ta sankar), about 3 feet long and 6 inches wide, holding almost 151bs of salt. In the early twentieth century the price of salt within Sierra Leone was 4s. per bushel of 80lbs, which compared well with
the imported type which was about 6s. per bushel. The Fula and Soso of
neighbouring French Guinea bartered cattle or slaves for salt: "ten
sankas of salt could purchase a slave" while four sankas, and a piece of
cloth could secure one a good wife. Salt could also be used as a medium
of exchange. Finally, it could be stored in the sankas or baskets, which
were put in the "rafters of houses, where the heat from the fires kept
them dry". As imported salt became cheaper and more widely available
supplies of locally manufactured salt shrank, to reach a mere 30 tons per
annum by 1930. However, the industry still exists in an attenuated
form.

So far it is clear that Scarries farmers while emphasising swamp
rice cultivation tried to strike a balance with other forms of
production. With the exception perhaps of cassava in the middle Little
Scarries all other forms of production - fishing, salt production, mat
making, house building, etc. - seem merely to have supplemented earnings
from the main crop, rice, and to have taken place in the slack season for
rice farming. This productive use of leisure periods by African farmers
contrasts with the outsiders' view of them as lethargic, lazy, lacking in
motivation and inefficient in their use of resources, particularly
labour which has often been considered to be in surplus existence. Even
Pillai thought that:

these families are having more labour than they require, more of arms than they can manage and more produce than their work deserves. Otherwise the whole swamp would have been converted into fine rice fields by this time. The people here are getting their wants or necessaries easily without struggle or uncertainty. Rice, fish, palm oil and vegetable are their wants. These are easily attainable.
Another notion challenged by our knowledge of Scarcies history is that of a lack of well organised trading networks prior to the European contact.

**Rice Trade in the Scarcies Region**

It is hardly possible to discuss any activity in the Scarcies region in isolation from other activities in Northwestern Sierra Leone, since the coast and the immediate hinterland were intimately connected through trade, religion and politics. Therefore while the focus in this section is on the Scarcies, occasional references regarding rice trade in the northern province generally will be made in so far as they help to throw light on the trade in the Scarcies.

Although there are no firm statistics about levels of rice production and exchange within Sierra Leone particularly before the 1920s, yet the rice trade between Freetown and the Scarcies area probably began as early as the 1780s. European and Krio traders began to settle in the Northern Rivers in order to tap this trade. By the 1850s, Freetown's supply sources had widened to include Futa Jallon, Kankan, Timbuctu, and even Bambuk in the upper reaches of the Niger. However, the Scarcies remained one of the main sources of rice for the colony. Following the demarcation of the Anglo-French boundary in 1890 which defined each country's specific area of influence, and the declaration of a Protectorate over much of the former Freetown hinterland in 1896, much of the interior trade was disrupted and supplies from the Scarcies became even more vital for the survival of the colony settlers.

From 1896 up to about 1930 the archives consulted for this study contain no concrete data on the Scarcies rice trade; one likely reason is
that much of the rice from the Northwestern part of the country was transported by sea and so escaped the notice of government statisticians, who concentrated on railed stocks. [See map for Scarcies—Freetown Trade Routes.] Also, as Glanville realised in 1930, perhaps half the rice bought by traders in the region was kept in the Scarcies and resold later in the "hungry season" to farmers, at over 100% profit.91 However, some estimates were made in 1927 by the Rice Commission, which put rice production in the Scarcies at over 1,000,000 bushels of husk rice per year, and estimated annual exports from the Scarcies and Port Loko area at 4,500 tons of clean rice per year.92

By the 1930s, the Scarcies rice trade was mainly in the hands of Syrian and a few Krio traders stationed in Mange, Mando and Konta in the Little Scarcies; and Kupr (Rokupr). Sino, Kasiri, Mambolo, Kichom and Kambia in the Great Scarcies.93 The main river towns like Kambia, Rokupr and Mange and Port Loko also acted as entrepôts for supplies from the adjoining chiefdoms. The Scarcies and its hinterland exported mainly rice, palm kernels, palm oil, groundnuts, benniseed and kola; and then imported cotton goods, iron bars to make weapons and agricultural implements, sugar, and domestic utensils.94 Hinterland rice prices fluctuated between 3s.6d. and 4s. a bushel, as compared to the price in Freetown and other rice deficit areas like Pujehun, Bombali, Pendembu, Gbangbana, Sumbuya, Koinadugu and Bonthe, which ranged between 8s. and 16s. per bushel.95 (See Table 18.)

This wide margin between producer and retail prices is very striking; and another area in which traders exploited small farmers was in the unit measures used from one area to another. Traders deliberately
refused to adopt a standard measure, although farmers in the Scarcies had by the 1920s developed their own standard units. For instance two bundles of harvested rice (called *an pen*) were reckoned to be one-eighth of a bushel; Anbara was one bushel; Barathora half a bushel; and Gbunktutu a quarter bushel. Traders disregarded this system and imposed on farmers a rather complex system which was neither uniform nor standardised. Some traders adopted a system of weights; others used a

TABLE 18: RICE PRICES (PER BUSHEL) IN FREETOWN, 1923-1927

<table>
<thead>
<tr>
<th>Months</th>
<th>1923 Prices</th>
<th>1924 Prices</th>
<th>1925 Prices</th>
<th>1926 Prices</th>
<th>1927 Prices</th>
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<td>11.0 - 12.0</td>
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<td>12.6 - 14.0</td>
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<td>13.0 - 16.0</td>
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<td>10.0 - 11.0</td>
<td>9.0 - 11.0</td>
<td>10.0 - 11.0</td>
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Kerosine case reckoned to be equivalent to a bushel. But as the 1927
Rice Commission observed this "Mixing up standards...only gives opportunities for duping illiterates". If the farmer sold by the kerosine case he was sure to lose 1lb. in every bushel measure; and if by weight, the loss was 5lbs. per every bushel sold. Just as the units of measure differed widely so also did the producer prices fluctuate widely and frequently: Glanville made the following observation:

The opening price of the season is usually 4s. per bushel of husk rice but as soon as the farmers have been coaxed to bring in their produce the price often drops to 3s.9d. or 3s. 6d. Part cash and part goods is the usual way of making payment.

One way in which small farmers reacted to fluctuations in prices and measures was to move between trade routes. In 1923 for instance, much of the trade from Mange in the Little Scarcies shifted westwards towards Rokupr in the Great Scarcies. In 1925 the Branch Railway Stations in the north (Makeni, Makump and Kamabai) experienced a similar reduction in trade as producers from these areas decided to take their goods to Port Loko, Mange or Kambia instead. Some may also have played off Syrian and Krio traders against European firms like the African and Eastern Trade Corporation, the Société Commerciale de l'Quest African and G.B. Ollivant, which were active at Port Loko, Mange and Kambia respectively by the 1920s.

Meanwhile, farmers kept up their rice saleable production. In 1926, Mr. W.B. Stanley, the Provincial Commissioner, estimated that 3,000 tons of rice was exported from the Scarcies annually and that an additional total of 8,984 tons of other produce also came through the Northern Railway Line. He also stressed the fact that the Scarcies exports more than doubled the total exports of the province.
I calculate that at least three times this amount of produce is exported from ports on the Great and Little Searcies Rivers, the Port Loko Creek and the Rokel River.

Mr. N.G. Frere, who became Provincial Commissioner in 1927, produced figures which corroborated this report. Total exports from the Searcies also seemed to have gravitated upwards as seen in the figures collected by Glanville at Kambia for the 1928 to 1930 period (Table 19).

Stanley and his predecessor Hooker held that during the 1920s Searcies farmers turned mainly to cassava, potatoes, millet and other food (root) crops for local consumption while producing rice mainly for the market. Meanwhile, demand for rice in Freetown was growing so fast that foreign imports were still needed to supplement local production. By 1927, not less than 1,000 tons of chiefly Indian rice was being imported annually into Freetown "much of which (was) consumed by

TABLE 19: PRODUCE BOUGHT BY TRADERS AT KAMBIA, 1928-30

<table>
<thead>
<tr>
<th>Produce</th>
<th>1928 Tons</th>
<th>1929 Tons</th>
<th>Total Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palm Kernels</td>
<td>895</td>
<td>757</td>
<td>1,652</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>30</td>
<td>33</td>
<td>63</td>
</tr>
<tr>
<td>Rice</td>
<td>287</td>
<td>327</td>
<td>614</td>
</tr>
<tr>
<td>Ground Nuts</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Beniseed</td>
<td>318</td>
<td>145</td>
<td>463</td>
</tr>
<tr>
<td>Kola</td>
<td>30</td>
<td>50</td>
<td>80</td>
</tr>
</tbody>
</table>

the Krus, although a portion was sent up to (towns in) the Protectorate. However the late 1920s ushered in not only depression followed by retrenchment but also an unprecedented boom in lorry and launch transport systems. This was made possible by the improvement of roads and the availability of faster motor launches and lorries. From 1906 onwards Colonial Governors in Sierra Leone had come to see the link between agricultural development and transport infrastructure and made efforts, within the limits of available revenue, to build roads. Initial efforts in this direction aimed at first linking up, in the Southern Province, areas around the railway and the coast; and in the north linking Freetown to collecting centres in the Scarcies such as Kambia, Rokupr, Mange and Port Loko. Thus by the late 1920s there were trunk roads linking Freetown and Kambia on the Great Scarcies; Port Loko and Batkanu; Batkanu and Makeni and Kamakwie; Makeni and Kabala. From Kambia the road then went only about 20 miles further inland. The aim of policy was to have access to key areas of production.

The growth of lorry transport and further rice production was then encouraged when the price of palm kernels fell at the outset of the Great Depression in the late 1920s. Farmers, in order to maintain their original incomes to meet competing demands, had switched from palm kernel to rice production. This had the obvious effect of contracting the supplies of export produce. This and government's heavy taxation of trade through import and export duties and increased rail freights meant that export trade was not so profitable. Many traders, Europeans and Syrians, squeezed out of the export trade diverted their capital into the rice trade. Local traders and wealthy individuals also followed suit.
Some actually invested in swamp rice production in the Scarcies; the majority however preferred to invest in the transport industry so as to participate in the internal rice distribution process.\textsuperscript{106}

For instance a Swiss trader, Galizia who had been stationed at Kupra (Rokupr) since the early 1920s seized the opportunity of the transport boom, bought lorries and motor launches and formed the Rokupr Transport and Trading Company (R.T.T.C.) to transport trade goods such as rice, palm kernels and kola from the Scarcies area to Freetown, and manufactured goods, mainly taken on contract from expatriate firms in Freetown, to the Scarcies.\textsuperscript{109} He not only expanded to other areas in the Scarcies, notably Kasiri, but also attracted other Swiss traders, probably relatives like Mons. Knusli, who established himself at Mambolo, to join him in tapping the rice trade at its source.\textsuperscript{110}

The other European firms such as Messrs. Drake at Rokupr, U.A.C., C.F.A.O. and G.B. Ollivant were mainly concerned with bulk trade in other items like palm kernels and preferred, with regard to rice, to either advance loans to local enterprise at a high rate of interest or else to employ contractors to run their launches and lorries. Two Krio businessmen, one Davies and one Mr. I.C. Johnson were believed to have run motor launches from Kambia, Rokupr and Freetown on a contract basis.\textsuperscript{111}

By far the largest participants in the Scarcies rice trade during the early 1930s were the Syrians. According to Glanville there were about 100 Syrian resident traders spread out from Port Loko around the Rokel River to the Great Scarcies around the Guinea border in towns such as Mange, Mando, Sino, Mambolo, Kasiri, Kichom, Mabili, Foredugu and
They and the European firms handled the bulk of the produce from that part of the Scarcies as well as from Koya, Masimera, Mafoki and Marampa Chiefdoms. Besides the resident traders, there were many Syrians who did not actually reside in the swamp rice areas but visited them only to make cash advances to small farmers and then to collect their debt and to make more additional purchases during the harvest season.113

Wealthy local dignitaries or 'Big Men' like P.C. Brima Sanda of Sanda Chiefdom, Alikali Mela of Bake Loko chiefdom, Rande Bali and others close to the Scarcies area also pooled resources together and formed the Bake Loko Transport Company in 1929 to challenge Syrian or Lebanese preponderance in the Scarcies rice trade. They ran both lorry and motor launches to distribute European manufactures from Freetown further inland and to evacuate agricultural produce, mainly rice, from the Scarcies and nearby chiefdoms to Freetown and other urban centres in the country. Their launches, taking the names "Canada", "Unity", "Sahrmarank I", "Sahrmarank II", "Kennedy" and "Mohamdyaa", also took passengers along the routes.114 Interspersed with all these groups was a growing number of petty traders estimated at over 100 in each of the Little Scarcies and the Great Scarcies.115

Half of the rice bought by traders in the Scarcies was husk and had to be cleaned before being exported to Freetown and elsewhere. In the absence of rice mills traders employed local women adept in the traditional way of cleaning rice using a mortar and a pestle. The women were paid at the rate of Is. per every bushel of rice cleaned.116 Payment was either in cash or in kind. To ensure that there was always enough labour to clean their rice stocks traders encouraged women to
accept advanced loans of head-ties, "lappas", mirrors and cooking utensils: so that often women merely exchanged their labour for trade goods.137

The rice trade and transport boom occasionally attracted migrants from nearby chiefdoms, including Tonko Limba further north. Many came either to labour in the trading firms or to work the fertile swamps on a contract basis, and then returned to their chiefdoms after the harvest season. But some stayed on. The number of such strange farmers and labour migrants increased steadily with the establishment of the Experimental Rice Research Station at Rokupr in 1934 to the extent that it has become necessary to have a tribal headmanship and sub-chief positions for tribes like the Limba at Rokupr.138

In this chapter an attempt has been made to map the trajectories of local initiatives mainly in swamp rice cultivation in the Scarcies region. It was shown that swamp rice farming in the Scarcies was already well advanced by the 1930s. The study also showed that the Scarcies farmer was continuously innovative and that farming was not only an art but also a way of life. Rice production and trade were put in the context of the wide range of other activities which Scarcies farmers undertook.
FOOTNOTES TO CHAPTER 7


4. Hopkins, W. "Agriculture in Sierra Leone", Journal of African Society, V, 14 p. 143; "Administrative Report for 1921" by Douglas W. Scotland, C.O. 270/50. It has recently been shown that oryza barthii commonly known as oryza perennis (and sometimes as oryza longistaminata) and oryza breviligulata (or oryza stapfii) are the main wild rices known to West Africa. It used to be held that the latter (i.e. o. breviligulata) was ancestral to the African Rice, oryza glaberrima and the former (i.e. o. perennis) to the Asian Rice, o. sativa. Most taxonomists now accept that both culturated species have a single common wild ancestor (o. perennis [o. barthii]) and that o. breviligulata is a collateral weedy development of o. glaberrima. The picture is complex, however, because o. perennis and o. breviligulata both cross with culturated species. c.f. D.H. Grist, Rice 5th Ed (London, 1975)


8. Lewicki, Tadeasz West African Food in the Middle Ages (Cambridge, 1974) p. 33 and Note 114 p. 147: My thanks are due to Dr. Humphrey Fisher for calling my attention to this reference. See also Carpenter, A.J. "The History of Rice in Africa" in Buddenhagen, I.W. and Persley eds. pp. 3-4.


17. Ibid.


20. Ibid. Dapper: 1668
21. Ibid.


23. Interviews conducted by the author in Northern Sierra Leone, 1987; see also Glanville, R.R. Agricultural Survey of the Scarcies. (1930).


25. Hargreaves, J.D. "The Evolution of the Native Affairs Department" SLS No. 3 (1954), pp. 164-84; Lasite, J.A. "The Department of Native Affairs and the Development of British Policy in the Northern Interior of Sierra Leone, 1850-1900" (Unpublished M.A. Thesis, University of Sierra Leone, June 1975); Fyfe, C. "European and Creole Influence in the Hinterland of Sierra Leone before 1896" SLS, (June 1956).


27. Temne traditions within and around Rokupr are unanimous in this.


29. Ibid.

30. Pillai, A.C. Correspondence and Report for and Cultivation of Rice in Sierra Leone Pamphlet No. 4 (Freetown: Government Printer, 1922) p. 18; this emphasis on the Portuguese was also made by Dr. P.E.H. Hair, Department of History, University of Liverpool: personal communication, 29 Dec. 1985.


33. Pillai, Cultivation of Rice, p. 19. Pillai's account was based mainly on oral sources he himself collected in the Scarcies region.
34. Martin, "Rice Growing", p. 41.


41. Glanville, Agricultural Survey, pp. 8, 10 and 35.

42. Martin "Memorandum", 16 Sept. 1929, CSOA/17/29.

43. Glanville, Agricultural Survey, pp. 39 and 41.

44. Frere, "Swamp Rice", pp. 39 and 41.

45. Glanville, Agricultural Survey, p. 3.

46. Ibid.

47. Ibid.


49. Fyle, C. Magbaily "Traditional Farm Labour Organisation Among the Temne of Sierra Leone", Unpublished and undated type script in author's possession. I am grateful to Professor Fyle for allowing me to read it.


51. Glanville, Agricultural Survey, pp. 6 and 16.


54. Ibid. Recent research continues to show that labour, rather than land, is the main bottleneck in rural Sierra Leone. See for instance Karimu, John and Paul Richards "The Northern Area Integrated Agricultural Development Project: The social and economic impact of planning for rural change in northern Sierra Leone" (I.U.C.: London 1980); Njoku, A.O. "Labour Utilization in Traditional Agriculture: The case of Sierra Leone rice farmers" (Unpublished Ph.D Thesis, University of Illinois at Urbana - Champaign, 1971).

55. Glanville, Agricultural Survey, pp. 3, 5, 6, 14, 16 and 18-25.

56. Ibid., pp. 5, 6, 15, 16, 18, 20, 22 and 23.


63. Ibid.


65. Ibid.

66. Interviews conducted at Rokupr with Mr. A.B.S. Turay, former Deputy Director of R.R.R.S., 21 August 1987; Pa Adikali Long-Boy, Limba Tribal Headman, Rokupr. 22nd August 1987; Pa Saidu Jones (Painter).
Pa Yomboya Turay (Carpenter); Pa Kanu of Royanka (Retired Security at
the R.R.R.S.); Pa Burch Dumbuya and Pa Bai Kamara, 23 August 1987.
Also Pa Kodore, a Lebanese resident trader now in his late 80's who
had settled at Rokur since the 1920s. Pa Kodorie narrated to me how
he and other traders recruited shop boys to help haul the produce
bought to the wharf where launches were always waiting to take them
to Freetown and to carry manufactured goods from the launches to the
shops.


68. Richards, P. Coping with Hunger p. 13; Indigenous Agricultural
Revolution pp. 31-33.


70. Ibid. The region was also the main supplier of foo-foo (another form
of cassava meal made from fermented cassava) to Freetown.

71. Ibid., p. 9.

72. Ibid. For a detailed study of this industry elsewhere in Africa see
Susan M. Martin's Oil Palm and Protest (Cambridge 1987).

73. Ibid.

74. Ibid., Appendix E, p. 38.

75. Ibid., pp. 9 and 18.

76. Glanville, "Salt and the Salt Industry of Northern Sierra Leone". SLS


80. Ibid., p. 38.


82. Ibid.

83. Ibid., p. 55; see also Howard. A.M. "Big Men, Traders and Chiefs:
Power, Commerce and Spatial Change in the Sierra Leone-Guinea Plain"
(Unpublished Ph.D. Thesis, University of Wisconsin, 1972); "The
Relevance of Spatial Analysis for African Economic History: The
366-388.

85. Ibid.

86. Pillai, "Cultivation of Rice", p. 20.

87. For an elaboration see Fyle, C. Magbaily "Commerce and Entrepreneurship"; "Precolonial Commerce in NorthEastern Sierra Leone" Working Paper No. 10, African Studies Centre, Boston University, 1979; Howard, "Spatial Analysis"; Skinner, African Historian, Chapter 3; Moore-Sierray, "Pre-Colonial History"; Fyle, A History of Sierra Leone; Michell, P. "Trade Routes in the Early Sierra Leone Protectorate", SLS No. 16 (1962), pp. 204-7; Deveneaux, G. "Trade Routes and Colonial Policy in Nineteenth Century Sierra Leone" JHSSL, iii, Nos. 1 and 2. (1972); Finnegam, R.H. Survey of the Limba People of Northern Sierra Leone, (Her Majesty's Stationery Office, London 1965); Jones, Adam From Slaves to Palm Kernels.


89. Fyle, A History of Sierra Leone, pp. 21 and 54.


93. Ibid., pp. 8-9; Glanville, Agricultural Survey, pp. 9, 18, 19 and 21.


99. Ibid.

117. Interview with Pa Kodorie (aged 86, a Lebanese trader who has lived at Rokupr since the 1920s), Rokupr, September 1987. Pa Kodorie is a very good source for the history of Sarcies trade and production since the 1920s and also for the history of the Galizia Brothers, and migrations to and out of Rokupr. He still has a sample of the kerosine case measure. Pa Kodorie has a Tonko Limba wife with whom he had several children.

118. Interview with Pa Kodorie, Rokupr, September 1987; Pa Siman Fatimah (Limba), Carpenter at the R.R.R.S., 23 August 1987; Mr L.M. Bangura (Limba), Senior Maintenance Superintendent, R.R.R.S., 25 August (his father, he told me, worked for the Galizia Brothers as a shop boy); and Mr A.B.S. Turay, former Deputy Director, R.R.R.S., 21 August 1987.
ROKUPR RICE RESEARCH STATION: ORIGINS AND EARLY DEVELOPMENT

Rokupr Experimental Rice Station, (now the Rokupr Rice Research Station) was the first of its kind in Colonial British West Africa. It was established in 1934, in the wake of a bumper harvest which had convinced the Colonial Administration that food self-sufficiency need no longer be a main policy aim. The policy aims of the Agriculture Department from 1934 onwards were to transform swamp rice into a permanent cash crop. This was to be achieved (it was hoped) by supplementing local practices with more "efficient" and culturally "advanced" technologies. The establishment of this Station and the swamp rice schemes that were to follow make it obvious that the Colonial Administration had given up her former "Hands-off policy" in agriculture in favour of a more active intervention in agricultural production.3

No attempt has yet been made at a systematic documentation of the history of this Station. It is the aim of this chapter to fill in this gap by tracing the origin, growth and development efforts of this institution and then to assess its cumulative impact in relation to its original aims and objectives. But first it will be worth exploring the factors surrounding the establishment of the Station, the choice of Rokupr and the conceived nature of the Station.
THE ORIGIN OF THE STATION

The idea of such a station had been "... long contemplated". As we saw in Chapter 2, Gerald C. Dudgeon was the first to recognise Sierra Leone's potential for commercial rice production. In 1908, Dudgeon foresaw the prospect of an export trade in rice, if only the problem of milling could be solved.

Four years later the Department of Agriculture began experiments on rice at the department headquarters at Njala and at Mambolo in the Scarcies region, both with local varieties and with thirty six exotics from India and British Guiana. The aim was to ascertain appropriate seed rates and yield potential of introduced varieties over and above the local types. These initial experiments seem to have had little if any effect on local farmers, who continued to show a preference for local varieties as shown in the tables below.

There was no significant variation in yield between local and exotic varieties. The failure of the experiment was attributed partly to rice pests but mainly to the lack of cooperation by the local people who were apparently unimpressed by and even suspicious of the Department's intentions, as the Director, Hopkins, lamented:

Unfortunately, owing to the suspicion and lack of interest taken in the experiments by the Chief and people, no assistance was given to make the trials a success. They allowed the birds to destroy the rice when in ear, and the people made public foot paths through the plots to reach their own farms. Many of those plots were destroyed and many valuable samples lost. Nevertheless some interesting results were obtained.

Some of the interesting results were that the farmers in the Scarcies region were already far advanced in swamp rice cultivation. Hopkins
believed that local bias, for instance, against the Indian varieties because of the smallness of their grain, would be overcome "when a suitable swamp rice station...(is)...formed".  

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>DEPARTMENT NUMBER</th>
<th>YIELD FROM 1LB. SEED SOWN</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIERRA LEONE RICES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yakkai Red Rice</td>
<td>A.D. 6</td>
<td>14 lbs.</td>
<td></td>
</tr>
<tr>
<td>Bisele Red Rice</td>
<td>A.D. 53</td>
<td>24 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Lokko Red Rice</td>
<td>A.D. 49</td>
<td>11 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Litoma Red Rice</td>
<td>A.D. 42</td>
<td>23 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Potokis Red Rice</td>
<td>A.D. 35</td>
<td>15 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Bensali Red Rice</td>
<td>A.D. 36</td>
<td>16½ lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Merican</td>
<td>A.D. 38</td>
<td>13 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa India</td>
<td>A.D. 33</td>
<td>23 lbs.</td>
<td></td>
</tr>
<tr>
<td>Pa Koba</td>
<td>A.D. 37</td>
<td>20½ lbs.</td>
<td></td>
</tr>
<tr>
<td>BRITISH GUIANA RICES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75 V.1</td>
<td></td>
<td>12 lbs.</td>
<td></td>
</tr>
<tr>
<td>75 V.4</td>
<td></td>
<td>22 lbs.</td>
<td></td>
</tr>
<tr>
<td>75 V.5</td>
<td></td>
<td>16 lbs.</td>
<td></td>
</tr>
<tr>
<td>75 V.8</td>
<td></td>
<td>12 lbs.</td>
<td>Trampled</td>
</tr>
<tr>
<td>H6</td>
<td></td>
<td>12 lbs.</td>
<td></td>
</tr>
<tr>
<td>H6 V.1</td>
<td></td>
<td>14 lbs.</td>
<td></td>
</tr>
<tr>
<td>0.75</td>
<td></td>
<td>14 lbs.</td>
<td></td>
</tr>
</tbody>
</table>

Source: ARDA 1914. C.O. 270/47.
In the wake of the 1919 rice famine and subsequent countrywide anti-Syrian riots Governor Wilkinson, who had the benefit of Malaysian experience, decided that the solution to the country's food problem (long since blamed on shifting cultivation) lay in promoting irrigated agriculture along Asian lines. For this reason, as shown in Chapter 2, a rice expert from Madras, Mr. A.C. Pillai, was sent to report and advise on the issue. After over a year of investigation Pillai observed among other things that farmers in the Scarcies region were achieving yields similar to those obtained by farmers on comparable land in southwest India even without water control systems. His main submission therefore was that there were no obvious short-term technological improvements waiting to be implemented. The rice industry in Sierra Leone needed an Experimental Station to tackle on a long-term basis the problem of water control and to disseminate the methods of the Scarcies to other parts of the country, particularly the southern littoral. The then Secretary of State, Winston Churchill, concluded that local practices were adequate for the present and the Colonial Administration should concentrate on encouraging and building on these local initiatives.

For the time being therefore (and as was discussed in Chapter 4) the Colonial Administration focused attention on the implementation of Pillai's recommendations: to build on and to spread the best of local practices. At the same time the Government Rice Commission of 1927 created a new awareness about agrarian change in colonial Sierra Leone when it underlined, in its report, the need to address the socio-economic context of local agricultural practices. Among other things the report emphasised that the main constraints of Sierra Leone farmers were and
still are labour and the vicious circle of poverty heightened by lack of appropriate marketing infrastructures and litigations immediately after harvest.

The combined results of the surveys conducted by Pillai and the Rice Commission emphasised to the Administration the need for more intensive research on the indigenous agricultural system as a whole if a breakthrough in agriculture was to be achieved. This need for a more secure research base, linked to an understanding of local cultural practices, was reinforced by the tour made by Dr. F.J. Martin, the Agricultural Chemist, through the southern littoral in August 1927. His subsequent report showed how little Colonial Officials knew about the rice grown in the country. Martin observed as follows:

One of the most striking features about the whole of the rice growing in Sierra Leone is the amazing number of different varieties of rice, having different periods of maturation and yielding their best under widely varying conditions. These varieties are known by the natives under non-intelligible native names which differ with the locality and there is little doubt that one of the first objects of the Agriculture Department in Sierra Leone should be the classification and study of the indigenous rices. Rice is the staple article of food in this country and a very big proportion of the labour in this country is expended on its production; it is therefore exceedingly important that the right kinds of rice shall be grown under conditions prevailing in the different localities. This study of rice would occupy the whole time of a botanist or expert for a number of years and would necessitate an experimental farm in a swamp area and within a reasonable distance (for supervision by the same officer) of an upland experimental farm. Nothing impressed me more during my trek than our ignorance of the crop which is the staple food of the country.

However, in spite of the deepening awareness of the socio-ecological specificity of agricultural problems in Sierra Leone, the close of the 1920s and the beginning of the 1930s was to witness a reinstatement of
the Asia to Africa technology transfer option in the colonial political agenda. The gradualist, farmer-orientated approach begun in the mid-20s by the Commissioner of Lands and Forests was shelved. This sudden change in direction was closely connected with the out-break of the Great Depression and the Sampson-Stockdale visit of 1929 examined in Chapter 5. At the same time, however, Glanville's Agricultural Survey report of the Scarcies (undertaken in 1930 on the advice of Stockdale) further emphasised the constraints outlined by the 1927 Rice Commission; and confirmed Pillai's earlier views about the technical competence of the Scarcies rice farmers, thus underlying the need for in-country research. Despite the views expressed by Glanville in this report, the Colonial Administration persevered in following Stockdale's recommendation to send Glanville on to the rice growing areas of Ceylon and South India with a view to gaining fresh ideas on improving the Sierra Leonean rice industry.

The decision to send Glanville to Ceylon and India was based on various perceptions. Firstly, colonial officials in Sierra Leone with experiences of rice cultivation in the East (including Stockdale, a former Agricultural Officer in Ceylon) tended to regard dry rice as "primitive" and wet rice as "modern". Hence the aim of policy was to effect what was perceived as an inevitable evolution from dry to wet rice cultivation. But as Paul Richards pointed out this was a serious misconception because

Local farming methods approach wet rice cultivation through a different route... The essence of local agricultural strategies in many parts of Sierra Leone (as elsewhere in the West African rice zone) is the notion of adjusting to seasonal irregularities by integrated management of the soil catena. In effect, the essential aim is to find ways of cultivating different rices in
different soil and moisture environments in ways which are complementary rather than competitive.\textsuperscript{11}

Secondly, the notion was held that enlightenment would come from the East. Hence the policy aim of substituting Asian rice technologies for African technologies.\textsuperscript{12}

However, on his return to Sierra Leone Glanville was in a deep mental conflict. On the one hand he was in no doubt that indigenous initiatives had demonstrated the potential of the Scarces as a rice growing region. Farmers were already selecting their own local varieties. On the other hand farmers in Sierra Leone were not using any water-control devices comparable to those used by their counter-parts in Ceylon and India, and Glanville thought that was a mark of backwardness. Thus, Glanville finally recommended that the Rice Research Station, when established, should focus not on in-country research but rather on a process of pureline seed selection - the dominant plant breeding strategy of the time in Ceylon, Indian and other Asian countries.\textsuperscript{13} Such research was also known to have improved small-farmer productivity in South African and nearby Nigeria.\textsuperscript{14}

Enthusiasm for an experimental station can thus be related to a number of circumstances. Firstly, from 1919 the Government had become aware of the strategic implications of rice supply for urban dwellers, particularly in Freetown and the mining areas, and saw increased local rice production as a means of preventing another social upheaval. The increase in the non-agricultural population especially with the growth of mining in the early 1930s, and the climate of deepening mutual mistrust in Anglo-Krio relations, could only have intensified this view. K\textsubscript{rio} led Unions or movements were then regarded as posing a
serious threat of trouble, and everything was being done to deny him allies among the urban population. Secondly, during this period of economic recession, traditional export commodities like palm produce were fast losing their value on the international market. Therefore a need was felt to diversify the export base. Rice - especially swamp rice - was believed to have the potential to enter the external export market and it was the aim of the Government to make this possible. Swamp rice cultivation was also seen as a good land use system, and its expansion was seen as a means of reducing pressures on the degraded uplands. These policy aims allowed a "window of opportunity" for a new group of scientific professionals to arise within the Agriculture Department. These people, who were interested in rice for its own sake, were now able to argue their way to achieving control of the level of resources needed to further their enthusiasm.

As was stated in Chapter 4, the dynamic post-1919 policy had already led to the recruitment of a small group of research-oriented officers, trained to make their mark scientifically. This, coupled with the fact that research elsewhere into small-farmer agriculture was showing positive results, and with the availability of new types of research funding with the passing of the Colonial Development Act in 1929, made it possible for F.J. Martin to argue convincingly that indigenous agriculture could effectively be improved by fundamental research. And so with a C.D.F. grant of £3,000 the Rokupr Rice Experimental Station was established in 1934.
The Choice of Rokupr

The choice of location and the form that the station would take were topics of lively debate among top officials, and especially between Kirby (the Director of Agriculture), Glanville (a Senior Agricultural Officer who later became the first Director of the Station because of his depth of knowledge of the area, enthusiasm and ability to speak Temne), and Cookson, the Colonial Secretary in Freetown. One of the reasons for asking Glanville to conduct an agricultural survey of the Scarcies in 1930 was to locate a suitable site for the Station. Glanville decided on Bumbe, one mile south of Rokupr along the Great Scarcies River. He had good reasons for choosing the Great Scarcies: the Great Scarcies has the greatest contiguous area of swamp land under rice in Sierra Leone, together with the greatest area of potential rice land as yet underdeveloped, outside the inland swamps. Also, flooding is less severe and frequent in the Great than in the Little Scarcies River, so there was relatively little danger of experiments there being spoiled. Finally, the most important hinterland rice trading centres of Sierra Leone—Rokupr itself, Kichom, Kasiri and Kambia—were situated in the Great Scarcies; and the District Headquarters town, Kambia, was close at hand. This was important for two reasons: firstly, it would facilitate the participation of the District Officer and his staff in the farm programme; and secondly, access to postal, telephone and other services at Kambia would facilitate easy communication with other agricultural headquarters. Like Njala in the Uplands, the Great Scarcies was thought to be representative of a much wider ecozone, and an ideal site in which
to develop solutions to all the swamp rice production problems in the
country.  

Glanville specified Bumbe in the Magbema Chiefdom, Kambia District
for several reasons: Bumbe was on high ground, and so was suitable for
European quarters; there was an abundant supply of fairly good drinking
water throughout the year; all parts of the Great Scarcies were easily
accessible from Bumbe by motor-launch; and a good road linked Kambia to
Kupr (as Rokupr was known at first) which was only a mile from Bumbe. He
reckoned it would not be difficult to continue the road to Bumbe. As he
summed it up:  

Viewed strictly from the point of view of suitability for
experimental rice work Bumbe compares favourably with
either Mambolo, Kasiri or Kichom. Bumbe is within easy
reach of every kind of swamp land except the salt mangrove
swamp. The actual farm would be located on the marginal
tidal land but salty sedge swamps and deeply flooded fresh
water swamps are all near at hand and available for
experimental work. At Bumbe a small creek runs inland to
Kunta and this could be utilized in connection with
irrigation and drainage.

Although there was little dispute over the choice of the Great
Scarcies generally, Kirby, the Director of Agriculture, queried the
choice of Bumbe and suggested that Kupr would be a more suitable area
because "it is connected by path, 3 hours without interruptions by water
(which Bumbe is not) to Kambia and affords a greater area of rice-
land". Cookson, who was eager to reduce expenditure in a period of
deepening recession, lobbied strongly in favour of Kirby’s suggestion
because it did not require an immediate capital outlay in the form of
road construction. Hence Rokupr was chosen as the appropriate site for
the Experimental Station.

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The Nature of the Station: Determining what form the Station would take was a matter for heated debate. There were two main schools of thought on the issue. There were those like Director Kirby, the Superintendent of Prisons and Colonial Secretary Cookson who believed that the needs of the country would be best met by engaging in 'adaptive' research, enlisting the cooperation of local farmers and being based on what they were already doing. On the other hand there were those like F.J. Martin and to some extent Glanville who favoured the idea that the Station should be a fully fledged scientific research institution. The evidence suggests that there was much disagreement, even between exponents of the same school, reflecting conflicting opinions and interests.

Kirby, for instance, advocated a "slow and steady" farmer oriented approach. He therefore opted for an Experimental Farm in close cooperation with farmers. Pointing to previous projects like the Njala Experimental Station and the Masanki oil palm plantation scheme, which he said were classic examples of "great expenditure of money with little agricultural benefit to anybody" Kirby admonished the government to proceed with caution in rice research in order to avoid the same mistakes. He particularly recommended that initial efforts should be devoted to amassing a solid preliminary base of data acquired in surveys of what farmers already did. If the main aim of subsequent research was to improve seed quality, and attain higher yields through the dissemination and adoption of such seed, then he suggested that the starting point should be to team up with farmers on a mass selection programme and concentrate attention on collecting and determining the
properties of existing varieties. He considered this approach to be both economical and expedient since by the time an Experimental Station run along scientific lines was established it would be possible to envisage the isolation of improved varieties from among the usually "crude local mixtures", and so

...prevent funds from being wasted through having failed to do the preliminary work that is so important and necessary in order to avoid the loss of time and money often caused by beginning investigation before we gain the knowledge that will enable it to be properly planned and carried out.

Kirby's scheme stood in contrast to Glanville's recommendations, made in the report on his visit to Ceylon and South India already referred to. Glanville's visit to South East Asia left him in favour of what would now be termed "South-South" (though in this case literally East to West) transfer of technology. But on his return to Sierra Leone Glanville, taking into account major differences between the two settings, tended increasingly to modify his ideas in favour of adaptive research based on the on-farm experience. Glanville stressed the importance and urgency of "assisting the rice farmers to make mass selection on their own farms...and character studies of all the important rices". And perhaps more importantly Glanville believed that "with the cooperation of the farmers it will be possible to make a beginning with investigations along promising lines". Kirby also found ready support for the adaptive approach from Frere, the Commissioner of the Northern Province, from the Superintendent of Prisons, and from the Colonial Secretary, Cookson.

In this period of deepening depression and cuts in budgets the Colonial Administration was mainly inclined to support schemes that did
not involve a huge capital outlay. Hence the widespread support for Kirby's scheme. The Superintendent of Prisons for instance argued that local farmers already had a "more than superficial knowledge of the rice growing industry" and that therefore there was no need for a "highly technical operation" if the aim was to reach "the farmers in all parts of the country". The Colonial Secretary, Cookson, who already held a poor view of the Department of Agriculture and was keen to reduce expenditure in a period of declining revenue, also argued in favour of a low-cost scheme. He stressed that farming was a simple, common sense operation and required neither scientific inputs nor a huge capital outlay. In a key memorandum, he wrote:

I question whether a highly scientific Rice Experimental Farm is necessary for our purpose or nearly worth the expense. Such schemes must obviously be expensive because they occupy so much of the time of highly paid scientific officers. After all farming of all sorts is largely a question of practice and plain common-sense.

In an earlier memorandum Cookson had cautioned the staff of the Department of Agriculture neither to assume that the "...whole burden of production, etc. rested on their shoulders" nor to aim at any move towards radical changes of the farmer's "present level of techniques, particularly shifting cultivation (which) will require an army of agricultural officers". because, as he said, in Sierra Leone there was still ample land "to allow for shifting cultivation". Concluding he reminded Kirby that

...in any case the Agric. Department itself admits that it is useless to attempt to impose a change in this regard. This being so, and as the native farmer generally is no fool, surely all that is necessary for Agric. Officers to do is to act as advisers and to give native farmers a few practical tips. There is nothing obstruse about agriculture in West Africa; and at any rate we shall never
get native farmers to do anything obstruse, and so why make heavy weather over the business?32

On the other hand the Research Branch of the Agriculture Department led by Dr. F.J. Martin stoutly challenged this view, and argued that earlier reports by Pillai and Glanville exaggerated the depth of African farmers' technical knowledge of rice growing. Martin was vehemently opposed to Kirby's farmer oriented scheme based on farm demonstration and on cooperation with farmers. He argued that it was dangerously conceived because

In effect it means that any varieties of rice introduced, or any suggestions for improved cultivation, should be first tried out by the farmers themselves; as only a portion of such introduction etc. is reasonably likely to be successful, some of the native farmers will have to hold the unsuccessful babies. This will not hold to the popularity (or efficacy of the work) of the Agricultural Officer.33

He therefore preferred to have a fully-fledged Experimental Rice Farm.

The issue was further complicated and sharpened by the labour question, that is, how the unskilled agricultural labour force of the Station was to be recruited. The Superintendent of Prisons supported by Cookson argued that since about 90% of the prisoners were farmers from different parts of the Protectorate, employing prison labour in the Experimental Farm would be the best way of disseminating improved cultural methods in rice farming in the country.34

Kirby was however opposed to the idea of a Prison or Reformatory Rice Farm as a misplaced economy especially given the importance of agriculture as the chief industry in the country.35 Further, he argued that the programme as conceived by the Superintendent of Prisons would be more expensive to maintain than was anticipated because it would involve
building a new barracks in the Scarcies and maintaining a number of extra prison staff, some of whom would need official quarters. And because the size of the farm contemplated was only about 13 acres, prisoners would not be profitably occupied. He suggested that such a programme would be more useful at Njala where prisoners could be engaged in market gardening to meet the growing demand for such commodities in the mining areas. For the new Rice Research Station, Kirby preferred to use hired labour which would be met by levying a tax of 3d. per bushel on all Scarcies rice traders. Martin and Glanville opposed both alternatives and continued to press for a well-funded scientifically based Experimental Rice Research Station.

This disagreement was referred to the Colonial Office in Britain where the final decision was influenced by Frank Stockdale, who like Sampson favoured a costly 'high-input research' based on his experience in Ceylon. As this kind of research was popular with the Colonial Office at the time, by mid 1933 Governor Slater had received the green light to proceed with an Experimental Station in the Scarcies. Three months before this became public Kirby is reported to have 'vacated' his position as Director of Agriculture, possibly out of frustration at all these disputes and delays, and there is no further mention of him in official records. His place was taken by his strongest opponent, F.J. Martin under whom, and with a C.D.F. grant of £3,000, the Experimental Rice Research Station began.
The Establishment of the Rokupr Experimental Rice Station

Once the establishment of the Station had been decided in principle, arrangements were made for the D.C. at Kambia and Glanville to start preliminary enquiries with the Tribal Authorities of the area, which was then "to be examined in sufficient detail" in the dry season of 1933.40 By December 1933 Kupr had finally been chosen and in January 1934 the Station was started.41 Kupr is situated at latitude 9° 01'N and longitude 12° 57'N at an elevation of 7.92 meters above sea level, some 20 miles up the Great Scarcies.42 The original land leased for the purpose comprised 32 acres 15½ of which was tidal swamp, 2 lowlying alluvial non-tidal land suitable for nurseries and 13½ upland with gravel soil.43 It was leased to the Government by the Tribal Authorities acting on behalf of the land owners at the rate of £2.5s. per acre per annum.44 The Station progressively expanded over the years and by 1978 the land under its control comprised a total of 170 acres, 100 of which is upland, and 70 mangrove swamps.45 However, there is a growing restlessness among the local citizens of Rokupr against the state for a return of their land which they now believe they were duped into parting with when all this started all we were told in a mammoth meeting summoned by the Chief was that good strangers - white men from across the seas - were coming to help us with our farming and that we should allow them the use of the land whenever they wanted to. That they will give us kola as presents. We did not sell any land to anyone. Yet today, after the white men had been asked to leave and has left, we are denied the right to use the land and rice is everyday expensive.46

In 1979 and 1987 the land question led to a violent confrontation between landowners and workers in the Station.47
Aims and Objectives of the Station

In the 1934 annual report of the Agriculture Department, the Director made it explicit that

The purpose of the Station is primarily to lay the foundation of an export trade in rice by providing seed of the requisite quality and by evolving and teaching methods of farming and marketing which will maintain the quality of the improved rices as well as lead to increased production.48

As noted in Chapter 4, the trade recession of the 1930s brought home to the Colonial Administration the need to diversify the economy by developing new export crops that would supplement and ultimately replace revenue from palm produce. Sierra Leone's comparative advantage for rice production and the increasing demand for rice in West Africa suggested that the development of a rice industry might prove an economically viable proposition. Production for the market however implied that the quality of swamp rice production was going to be boosted through very expensive research, and that less money would be made available for the improvement of upland farming systems.49 The view of a more recent Acting Director of the Station that the Station was established "...for general agricultural experimentation, but later specialised in rice studies" is not borne out by the evidence cited above only at Njala was there any experimental work related to the problems of the uplands farmers.50 Rokupr itself was started as, and remains, essentially a rice research station, with a strong focus on swamp rice production.

There is however a general agreement about the initial objectives of the Station which can broadly be summarised as follows: the improvement by pure-line selection of the best-existing rices, with a view to their
distribution and increased cultivation in cooperation with farmers; character studies of important existing rices; trial, study and initial multiplication of introduced varieties with a view to distribution to farmers if proved superior, in terms of yield, to local varieties; cultural experiments directed at nursery and farm methods in order to determine the most suitable methods of cultivation, digging, manuring, puddling, planting, seed-rate, the best sites for nurseries, harvesting, storing and processing of rice for the market, increasing of the area under rice by bringing previously uncultivated land into cultivation, resolving any ecological problems which had previously prevented this. - a general study of conditions in the rice tracts - sowing, planting, and yield rates, trade, land tenure, etc.

The over-riding concern however was

...the production of improved seed for supply to the farmers in the delta rice areas; [with] in addition, experiments...to determine in what manner the indigenous methods of cultivation can be improved.®1

In response to these improvements in cultivation two objectives took precedence - improved yields by unit area, and the production of higher quality rice suitable for the export market. White rices were particularly preferred. Thus Glanville observed that some of the existing rice varieties in the Scarcies area, particularly Pa Indian, Pa Kanlu (or Pa Wo), Pa Fodea, Pa Bis and Pa Kalimodu, were "...excellent white rice varieties which should be encouraged as being suitable for export as well as local needs". In relation to the issue of introduced versus indigenous strains, he favoured a balanced approach. He felt that evidence so far suggested that improvement of existing varieties was likely to give better results than the introduction of new varieties but
nevertheless emphasised the value of screening and testing introduced varieties. One serious consequence of this was that the improvement of other existing rice varieties which did not meet this market requirement was neglected or discouraged. Nevertheless, farmers continued to cultivate them on their own because, from the subsistence point of view, these neglected types were sometimes more suitable and therefore more rewarding to cultivate.

Activities at the Station, 1934-1950

Although the main part of this thesis has dealt only with the period before 1939, it is intended to take the history of the Station to 1950, partly because that year marked the end of the specifically Sierra Leonean phase of the Station's activities, but mainly because much that is of interest to present development efforts occurred in the intervening period between 1939 and 1950, which was the implementation of the plans outlined above.

From an administrative point of view five distinct stages of growth and development can be distinguished in the history of the Rokupr Rice Research Station. The first phase covers the period when the Station served only Sierra Leone and was therefore solely administered by the Government of Sierra Leone through its Department of Agriculture. This period ended in 1949. The second phase, from 1950 to 1961, saw the Station transformed into a Regional Commodity Research Centre for all the former British West African (B.W.A.) territories. During this phase it continued to be administered from and by Sierra Leone but the research focus shifted away from issues of immediate practical concern in Sierra Leone. More emphasis was given to long-term fundamental rice research on
the grounds that this would better reflect the requirements of all the former British administered territories in the region. In this period the Station assumed the name "West African Rice Research Station" (W.A.R.R.S.). The third phase, 1962-1964, coincided with the regaining of independence by the former British colonies in West Africa, when the Station again reverted to its phase I status. However, its name remained unchanged until 1964, when a fourth phase lasting to 1971 was begun. In this fourth incarnation the Station was attached to Njala University College and subsequently integrated into the Faculty of Agriculture of the College. The name was changed to Rokupr Rice Research Station (R.R.R.S.) and henceforth the Annual Reports were styled "Experimental Reports" (E.R.). By an act of Parliament the Government assumed full responsibility for the Station in 1972 and has since remained in control. In this fifth phase the overall administration of the now semi-autonomous institution was delegated to an "Interim Committee", now Board of Management, although the Director of the Station is in effect responsible for the day-to-day running of the institution. The personnel of the Station enjoy equal status to their counterparts in the University of Sierra Leone.

The following sections summarise some of the main research strategies pursued by the Station. Particular attention will be focussed on the earliest phase, 1934-1950 but emphasis will also be placed on a number of more recent developments which are in effect a continuation of features established in this earliest phase.

Cultural Practices: Between 1935 and 1953 experiments were carried out on nursery practices. The aim of these was to discover the
relationship between yield variation in seed-rates, and on the one hand, varying lengths of time in the nursery; and on the other hand, variations between dry and wetland nurseries. Before the experiments were made, traditional methods which insisted on upland nurseries, a heavy seed rate of between 300 and 500 lb. per acre and thin and thick seedlings per stand when planting were considered uneconomical and wasteful. However, the experiments showed no significant difference in yield between the experimental fields and the "traditional" fields. Fertility tended to drop after a while in both sites, making it necessary to apply fertilizer in the field. Positive advantages were however shown to result from a wider spacing of 6" to 9" between plants, from reducing the number of seedlings to two to three per stand, and from keeping seedlings for eight weeks in the nursery before planting. A further experiment on wet, bunded nurseries complicated matters further, showing that the nursery period could be reduced from eight weeks to six weeks and that a seed rate of 700-900 lb. per acre (i.e. heavier than local 'heavy rates') was also possible. Wet nurseries were also found to be free from attack by pericaria (A.R.D.A. 1937, 33). These findings were then incorporated in the standard advice given to farmers by Agricultural Department staff. However, the advice had little effect and in 1953 it became clear to Station Officers that the high number of seedlings per stand still being used by farmers was dictated by fear of crab damage and the health of the seedlings. Farmers in fact varied the number of seedlings per stand according to the perceived health of the seedling at the time of planting - 3-5 for healthy seedlings and 10 and before for weak ones.
Low yields were also attributed to poor methods of cultivation and accordingly a series of experiments were designed to test the effects of shallow versus deep digging; and digging annually versus digging in July.\textsuperscript{67} It was shown that deep digging was superior to shallow digging; likewise early digging was considered superior to late digging. On the whole, however, the difference between all types of diggings was reckoned to be negligible. There was little residual effect from the digging and annual digging was necessary to maintain yields.\textsuperscript{68} It therefore became a standard practice to carry out deep, annual digging in February on the Station farm. However, by 1949 it was evident that the generality of Scarcies farmers rejected this idea of early digging. They still preferred late digging just before planting. The reasons given were that early digging allows salt water to penetrate the soil, making it impossible to avoid some further digging later, and that labour was short.\textsuperscript{69} In fact, if labour was no object (as on the Station) early digging had a positive impact on yields, but the yield increment seems not to have been enough to compensate local farmers for the additional effort involved.

**Introduction and Testing of Rice Varieties:** Having arrived at standard cultural methods (or so it was hoped) the next move was to improve the yield potential of both existing and introduced varieties through a programme of selection, introduction, trial or experimentation, multiplication and distribution. This went on simultaneously with experiments on cultural factors and in close cooperation with farmers. At the time of the establishment of the Station there were at least twenty native swamp rice varieties in the Scarcies area\textsuperscript{70} some with
yields of up to 1,400 lb. per acre or more. Nevertheless, using external models from the Eastern countries to measure local achievements, Station officials turned a blind eye to indigenous initiatives and local farmers' constraints, notably labour. Thus yields were considered to be much below the optimum obtainable while many of the existing varieties were considered unsuitable for export mainly because of their red pericarp, even though this was not necessarily a disadvantage in potential West African markets. The initial aim was to concentrate on developing pure line selections of the best local varieties, with a second step in which these selections were to be tested in comparative yield trials against exotic types, before being multiplied and then released to farmers. The preconditions for selection were "duration, height, freedom from disease, absence of awns, good tillering and even heading...grains having red pericarp were discarded at sight". Before any seed was considered 'improved' and released to farmers it first had to show that it was at least 25-30 per cent superior in yield to the control types. Among the numerous varieties selected for screening were Pa D.C., Pa Lil, Pa Fodea and Pa Toma. All these were mixed genetically, but were considered to have good market potential. There was a marked farmer preference for early selections of these existing varieties. However, after the Second World War, official enthusiasm for native varieties waned. They were considered too impure in genetic terms, so before the 1950s were out only two varieties: Bolo 108 and Toma 112 were still promoted, the others having been replaced by more recent introductions and selections in favour with scientific researchers.
Meanwhile, in the 1930s and at the same time as this early work on local selections, much attention was paid to the collection and screening of exotic varieties from various rice growing countries elsewhere, particularly Madras, Ceylon, British Guiana, Tanganyika, Burma, Pakistan, Malaya, North Borneo and Orissa, reflecting the network of contacts among British colonial agricultural departments.®7 (See Appendix 1.) Contributions from outside the empire came from French Guinea, Portugal, Hungary and Thailand. By 1950 some 300 exotic varieties had been introduced.®® The aim was to test first their yield potential in relation to existing varieties, and then their ability to adapt to local ecological situations. Pre-1934 introductions such as G.E.B. 24, CO 15, CO 17, Bali, Jeeragasamba, Adt 3, Kar, Baitel Fakir and Pannala were reselected and screened in observation plots.®® However, many of the introduced types were later discarded: some because they were unsuitable for local conditions. "Others, while not being outstanding have shown useful characters, (and) have been kept for future breeding work; others again have been tested in statistical yield trials against proved varieties".®® In this way the Station was able to increase the range of varieties available to farmers for different environments, for example saline soils (Bali) or tidal and deep flooded conditions (Kar Baited Fakir and Panianala.)®® Several of these stress-tolerant varieties became widespread among farmers especially in the Scarcies and Boliland regions, and remains in use today. However it is to be noted that before the 1950s little, if any, breeding was undertaken, nearly all attention was devoted to mass and pure line selection. Some local varieties were however significantly improved by mass selection, although this work
narrowly concentrated on long-duration wet rices for the Scarcies and adjacent wetlands with little or no attention to upland varieties. In the 60s some attempt was made to redress the balance, and pure line selection produced ROK 3 which is suitable for upland cultivation.

The experiments carried out on exotic varieties from 1934 onwards showed that while a few exotics were appropriate to local conditions, no exotic swept before it. Several exotics usefully increased options open to farmers in difficult environments, as in the case of Indo China Blanc in the deep-flooding, Bati lands behind Turners' Peninsula where the entire farming system changed in response to the twin innovations of a good exotic variety and tractors.72

At an early stage in the development of the Station the concern was voiced of how improved varieties might be distributed to farmers: not only to those adjacent to Rokupr but also to the much greater number of farmers with no ready access to the Station. A solution was seen in establishing out-stations along the Scarcies rivers. It was also hoped that some of the most promising cultivars could be further tested in conditions other than those on the Station. So as early as 1936 the Station had established sub-stations at Tombo and Yeliboya on the Little Scarcies representative of saline and deepflooded conditions.73 Seed breeding farms of one acre each were also established at Mafisone, near Rokupr, at Mumbolo downstream on the Great Scarcies River, and at Konta on the Little Scarcies.

The main objects of the farms will be to test the growth of the various varieties now in our possession under different conditions of flooding; for this purpose each farm can be laid out in strip running from shallow water near the periphery to deep water towards the centre of preliminary cultivation will be
Later more sub-stations were established. There was one at Royel not far from Rokupr to test varieties and cultivation strategies appropriate to deep flooding environments, but flooding at this site turned out to be excessive, and this combined with weed problems led to its closure in 1942. Another was opened at Balansera on the mouth of the Great Scarcies River to test salt-resistant rices. However the river was not salty enough and the station was moved to a site close to Pepel at the mouth of Port Loko Creek.

Associated Activities: At the same time, the Department of Agriculture under Director Martin was keen to take additional measures to transform swamp rice in the Scarcies region into a permanent cash crop. Soon after the establishment of Rokupr, a Revolving Seed Rice Scheme was inaugurated by the Agriculture Department, not only to facilitate the distribution of improved Rokupr varieties but also to extend credit facilities to farmers. The Scheme was launched at Rokupr in 1935 with varieties like G.E.B. 24, C.O. 7 and Kavunnginpoothala. The underlying motive of the Scheme was to demonstrate the superior yield of improved swamp rice varieties over traditional upland rice varieties with a view to discouraging upland rice cultivation. Interested farmers were loaned four bushels of improved seed rice at 25% interest after harvest. To qualify they had to allow the part of their farms where the repayable seed rice was planted to be supervised by Station officials to ensure pure strain selection. Later a large number of varieties imported from different countries (both within and outside the former British Empire) some selected locally, also entered the Scheme.
to grow pure strains of the improved varieties Government in 1939 placed a premium of 3d. per bushel on the price at which it bought G.E.B. 24. This was partly to ensure that there was enough improved strain for export. The enthusiastic response of farmers was such that the Agriculture Department just could not meet their growing demand for improved seed. This programme continued for ten years, little affected by the war, expanding year after year in ever-widening circles to the extent that a revolution in genetic engineering could almost be said to have been started in the Scarcies region, as predicted in 1936:

...in a few years time a revolution will have been worked over part of the Scarcies and G.E.B. 24 will have replaced, to a large extent, the inferior varieties now cultivated in certain areas...This systematic application of scientific principles to the breeding, selection and distribution of a crop which is a vital necessity to the colony has met with a whole hearted response from the farmers themselves, a response which owing to our small staff is so enthusiastic as to be definitely embarrassing. No introductions of money crops such as cotton or coffee, and no trials of agricultural machinery, have ever attracted the attention of the farmer as has this marked improvement in a crop that he has already been growing himself for generations.

Indeed this was one of the most successful colonial agricultural projects ever launched and one that involved remarkably little difficulty in operating among farmers. There were hardly any defaulters, at least in and around the Scarcies region, and interest in the project never really diminished. Starting with only 90 bushels in 1935 by 1944 it had gravitated to over 23,000 bushels a year and by 1941 the Scheme had become organic to the agricultural system of Sierra Leone as Native Administrations throughout the territory initiated their own revolving schemes.
When the Native Administrations entered the scheme it is said that acreages in swamps increased by over 50% over the 1940 level and continued to rise in subsequent years in direct relation to the amount of seed distributed.\textsuperscript{48}

Despite this rapid success, in 1945 there was a major reorganization of the Scheme, brought about by considerations of running costs and the need to select pure strains from previous introductions: because nearly all the available proven seeds had been distributed to farmers, and because it felt confident that the expansion of swamp rice cultivation had reached a self-perpetuating stage, the Agricultural Department

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
Year & Quality of Seed Distributed (Bushels 60 lb.) \\
\hline
1935 & 90 \\
1936 & 1,441 \\
1937 & 2,082  \\
1938 & 2,572  \\
1939 & 3,275  \\
1940 & 4,064  \\
1941 & 6,435  \\
1942 & 12,774 \\
1943 & 21,835 \\
1944 & 23,477 \\
1945 & 11,215 \\
1946 & 4,219  \\
\hline
TOTAL & 93,479 bushels \\
\hline
\end{tabular}
\caption{SWAMP RICE SEED DISTRIBUTION SCHEME, 1935-1946}
\end{table}

Source: A.R.D.A. 1946, p. 3.

gradually transferred the administration to the local authorities. On the face of it the transfer worked smoothly. In 1947 over 93,000 bushels of G.E.B. 24 were distributed to farmers, local authorities and government having become actively involved in the Scheme. Seed farmers were maintained by these bodies in the main rice areas of the country.
But seed was now sold, and not loaned, direct to farmers. Since the aim was to prevent debt defaulters, the new administration tended to favour the so-called "progressive" and wealthy farmers. In a further evolution of the Scheme, seed from the seed farms was passed on to "Master Farmers" for further multiplication and distribution.\(^8\)

Meanwhile, the Department's attention was turned to fresh problems. On the one hand improved strains were getting mixed up with local varieties, and on the other the newly introduced varieties, particularly G.E.B. 24 were becoming susceptible to a rice disease known as 'pericaria' (a fungal disease) during nursery stage.\(^8\) Meanwhile, other exotic varieties like No. 79, CO 7, Kavunginpoothala, Ngasein, Toma, Lal and BIS were also multiplied for distribution in the place of G.E.B. 24 but it was soon apparent that Kavunginpoothala too was susceptible to another rice disease, "Helminthosporium", in drier sandy swamps.\(^8\)

These problems, coupled with lack of cash and the physical inaccessibility of most farms within the existing road transport infrastructure, determined the limits of the spread of new technologies in the long run. These factors help to account for the persistence of the old \textit{O. glaberrima} varieties in the Northern Province and other parts of the country.\(^8\) This should not however diminish our appreciation of the Scheme, which may well be dubbed the first successful Green Revolution package in Sierra Leone.

Apart from organising rice research and seed distribution, the Government was eager to improve the marketing structures in the Scarcies region so as to stimulate further production. They also sought to

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introduce improved methods of harvesting and processing rice. A three-cone mill and a parboiling plant capable of handling about 25-30 cwt of paddy per hour was established in Cline Town in 1935 "to mill rice to a suitable grade for export" and to meet the rice requirement of the growing urban population of Freetown. Small 'planter' type mills were also established by the Department of Agriculture in the main rice regions in coastal Sierra Leone. However, most had been shut down by 1947 due to a combination of the high costs of spare parts, inefficient management and corruption. Only the Cline Town plant continued in operation, milling an average of over 11,000 bushels a year.

In the mid-1930s it was also hoped that the establishment of marketing cooperatives in the Scarcies would improve the quality of production, as well as relieving the farmers from the yoke of indebtedness and poverty. Mr. R.R. Glanville was allowed an extended leave in October 1935, so as to afford him the opportunity of research on cooperative societies at the Horace Plunkett Foundation Library, 10 Doughty Street, London, and other agricultural institutes in Ireland. Glanville, in his report, stressed the importance to the smooth operation of the societies' trading role of their first testing and standardising the quality of rice before marketing it. Until a suitably trained European could be found to supervise this work, Scarcies societies were to be closely supervised by Glanville based at Rokupr. So between 1936 and 1939 three farmers' cooperatives were initiated in the main towns of the Great Scarcies: Mambolo, Kichom and Rokupr. These were designed to serve both as marketing instruments and as centres for engineering the dissemination of improved seed and the inculcation of improved seed.
techniques. These societies offered a premium for improved varieties. Farmers responded enthusiastically. In 1937 the Mambolo Society marketed 1,950 bushels of paddy and in the 1937/38 season a total of 9,015 bushels were marketed by both Mambolo and Kichom societies. When the Rokupr Society was set up in 1938 the rice tonnage bought from the three societies was more than the mill in Freetown could cope with. The aim was to tailor each cooperative along the Southern Nigerian model. Unfortunately, with the coming of the Second World War the Government used the cooperatives to impose marketing controls. These controls served only the war effort and were unpopular with farmers. All three societies had closed down by about 1946. When they were later revived in the 1950s they had little success and brought about no marked improvements in the quality of output or in the lives of the farming population.

The extension programme of the Station was facilitated by the organising of visits to the Experimental Farm at Rokupr by chiefs and farmers. In December 1939 selected chiefs and farmers from the Moyamba District in Sierra Leone were taken on a conducted tour of the Great Searcies with particular emphasis on the Rokupr Experimental Rice Station with a view to inspiring the adoption of similar techniques in the Moyamba area. During the tour delegates consulted extensively both with Station officials and with their peers in the Searcies region. Through these sessions a number of "big men" from the Moyamba area acquired first hand knowledge of the working of the Seed Rice Revolving Scheme, the cooperative methods and various other techniques developed in the Searcies. They returned to their district both with improved seeds
and with some idea of how to grow them in conditions of varying water regimes. In the same year, 1939, an experimental station was established at Sembehun in the Moyamba District, endowed with a revolving fund to assist farmers in hiring expert labour from the Scarcies to fell mangroves for tidal swamp rice cultivation, a form of farming which was hitherto unknown in this area. Improved seed was also part of the package. There was even talk of ambitious plans to resettle "families from the impoverished uplands to the tribal swamps" but these never came to fruition.

The Later Development and Overall Impact of the Station

Although it was generally recognised that the concentration of the Station's work in the Rokupr area was at the expense of research on the problems of the other parts of the Northern Province, which in the words of the Director of Agriculture "...naturally suffers", the developments at Rokupr surveyed above nevertheless created a climate of considerable optimism. In 1936 Martin stated that "we can look forward with confidence to a steadily improving and increasing industry in the Scarcies area". The Annual Report for Agriculture for 1936 also remarked

Rokupr has steadily made a mark on rice production in the Scarcies and its influence will increase from year to year as the value of better seed and better methods of cultivation and harvesting are brought home to the farmer.

Indeed Martin was so taken up with this idea that he deprived the Southern Province of one of its Agricultural Officers in order to strengthen the work being carried out at the Rokupr Experimental Rice
Station. It is probable too that it was at about this time that farmers in the neighbouring chiefdoms emigrated to Rokupr, some to work in the station and many to participate in the growing rice processing and marketing industry.  

However, with the approach of war in 1939 this spirit of optimism subsided and was replaced by one of despair, for during the period of the war work at the Experimental Rice Research Station virtually came to a standstill. The staff was reduced and the Station's programme was tailored to meet the needs of the war. Emphasis at once shifted from on-farm research and extension to a capital intensive programme of food production. The programme that resulted was designed to accelerate rice production through "drainage and irrigation" work in Inland Valley Swamps (I.V.S.) and in the polders of tidal mangrove swamps. The work experienced so many teething troubles that few projects were "up and running" until the end of the war. Nevertheless the policy survived for several years after the war. The story is as follows.

Faced with an increasingly non agricultural population in Freetown and in mines as a result of war-time changes, the Central Administration was justifiably concerned about bridging the projected gap between food demand and supply. With a grant of £13,285 C.D.F. an expert irrigation engineer was hired in 1940 "to develop the vast areas of highly fertile swamplands with which the country abounds and which, for a variety of reasons, are at present very largely untouched by the farmer". Much of the enthusiasm for this initiative is believed to have come directly from Tempany, former Director of Agriculture, Malaya, then Adviser on Agriculture to the Secretary of State for the Colonies, when he visited
Sierra Leone in the 1940s. Tempany was much enthused by tidal polders for rice in Burma and British Guiana and thought the same scheme would be feasible in Sierra Leone. The engineer, C.J. Rae arrived in Sierra Leone in January 1941. In the following year three assistant engineers arrived from England and Malaya and many of the local staff were diverted to the Irrigation Department to facilitate the task of empoldering certain swamps in the Scarcies area. While the arrival of the heavy earth-moving equipment from the United Kingdom was expected Rae deployed his huge staff to lay the foundations for a number of large-scale works, which spread from the Great Scarcies River - Rosino, Luti, Yakban - to Makeni and Kenema. In 1943 a further £303,500 spread over five years was again made available from the C.D.W.F. The engineering work on the Luti and Rosino projects was completed around 1944.

However, in 1944 severe flooding was reported first at Rosino and then at the Luti project. Yield in all these projects declined from previous pre-irrigation levels and by 1948 the rice had failed completely due to "increased acidity and toxic concentrations of iron and aluminium salts". A consultant engineer from the U.K. advised the cutting out of the embankments after which yields again began to rise under natural flooding. Later he examined the soil conditions in the empoldered area. He summarised his findings thus:

Briefly, the problem is that [the soils] contain large quantities of sulphur compounds derived from sea-water to enable rice to be cultivated, the soil - which under natural conditions is always wet dries out in the dry season. When this happens, the oxygen from the air is then able to attack these sulphur compounds, and sulphur is formed from them. Certain bacteria in the soil then attack the sulphur and form sulphuric acid. The soil becomes extremely acid and with increasing acidity various metals (in particular aluminium) which were previously locked up
in the soil particles in a form which had no effect on the plant now enter the soil water in concentrations which are lethal to the rice plant. Thus using normal empoldering procedures it is impossible to grow rice on this type of land.

When the Agricultural Adviser to the Secretary of State for the Colonies, Mr. G.F. Clay visited Sierra Leone in 1948 he blamed what he referred to as an "unfortunate experience" to advisers on irrigation "with little or no experience of tidal alluviums, and with the exception of Mr. Rae who spent some time in Sierra Leone, the advice has been the result of short visits."110

After this fiasco and financial waste, one might have expected subsequent research at Rokupr to focus on what had gone wrong: this would have involved devising ways and means of managing the mangrove environment and by the end of the day the basic value of local practices might once again have been realised. But instead, moves began in 1949 to transform the Rokupr Experimental Rice Station into a Regional Commodity Research Centre, which would be devoted to fundamental research on rice for the former B.W.A. territories where rice was of "rising importance"113. A scheme was drafted and in 1949 an appeal for funds to defray the expenses of fixed capital was made to the C.D.F. In 1951 the Secretary of State approved a free grant of £94,950 from the C.D.F. to meet the capital costs of the scheme. The recurrent costs, estimated at £70,200 for a five-year period, were to be met by the C.D.F. providing one half and the other half being shared among the four countries in the following proportions: Sierra Leone 60%, Nigeria 20%, the Gold Coast and the Gambia 10% each.112 Thus in 1951 the Rokupr Experimental Rice Station became the West African Rice Research Station. Henceforth the
research focus was to be placed on regional issues; locally adaptive research centred on the problems of the Scarcies region was discouraged as a focus for concern.

Sadly, as later reports show, the West African Research Station was beset by difficulties in trying to use its situation-specific findings related to the problems of Sierra Leone as a basis for more general work on those of Nigeria, Ghana (formerly the Gold Coast) and the Gambia. While Sierra Leone's problems were characteristic of an ancient crop in a high risk environment, and while well-adapted cultural strategies were found locally as starting-points for research, Nigeria and Ghana for instance were areas of rice expansion, with the different problems characteristic of a "new" crop in higher-potential environments. Not surprisingly, the Station's staff did not work effectively in their new role, and at the same time, this role diverted their attention from consolidating their pre-war adaptive research. Thus despite its initial promise, by the end of the colonial period the Rokupr Rice Research Station could be said to have had very little impact on the local rice farming practices. However, the experience of its early years could still provide a useful basis for further work with a Sierra Leonean focus especially if the work is focused on the improvement of upland as well as swamp rice varieties.
FOOTNOTES TO CHAPTER EIGHT


10. For Glanville's two reports mentioned in the text see Sierra Leone Government: Agricultural Survey of the Existing and Potential Rice Lands in the Swamp Areas of the Little Scarcies, Great Scarcies, Port Loko and Rokel Rivers, (Freetown: Government Printer, 1930), and Sierra Leone Government: Rice Cultivation: Report on a Visit to Ceylon and South India, with Proposals for Sierra Leone, (Freetown: Government Printer, 1933).


12. Ibid. p. 7. See also Coping with Hunger (1986).


16. Ibid.


19. Ibid.

20. Ibid.

21. Ibid.

22. Glanville, Report on a Visit to Ceylon etc. (1933) pp. 10, 11, 12.

23. Ibid., pp. 10 and 12.

24. Ibid., p. 11.


30. Ibid.


32. Ibid.


37. Stockdale was Agricultural Adviser to the Secretary of State while Sampson was the Economic Botanist at Kew.

38. Secretary of State to Slater. 25 Jul. 1933, encl. in C.S.O. A/26/30.

39. Ibid.


44. "Memorandum on Agriculture" by Kirby, June 1933 C.S.O. A/26.30; interviews with Pa Abubakar Sidiki Turay, recently retired Duty Director of the Station, Rokupr, August 21, 1987. Pa Turay is a direct descendent (so he claims) of the original landowners of Rokupr.


52. Glanville, Visit to Ceylon and South India (1933), p. 10.


55. Summary of Work at Rokupr, Appendix 4-7, pp. 23-25.


59. Ibid. p. 29; Summary of Work at Rokupr, p. 7.


73. Martin to H.C.S., 12 Apr. 1936, C.S.O. A/37/36.


75. Summary of Work at Rokupr, pp. 8-9 and Appendices 17 and 18.


82. A.R.D.A. 1941.


85. Ibid. pp. 31-32.


89. Interview with Mr. Murfitt, formerly Colonial Agricultural Officer in Sierra Leone, Silsoe College, Brighton, U.K. 1986.

90. A.A.R.D.A. 1936, p. 16.


102. This view is generally held by elders in and around Rokupr; and Rae to H.C.S., 1 Aug. 1943, and in NP/A/3/017 Makeni Archives.
103. Interview with Mr. T.S. Jones, former Agricultural Officer in Sierra Leone in the 1950s, London, April 1988.
105. Interview with Mr. Frederick C. Deighton, former plant pathologist in Sierra Leone, U.K. 1986.
112. Ibid.
CONCLUSION
CHAPTER NINE

THE EARLY TWENTIETH-CENTURY EXPERIENCE
POLICY IMPLICATIONS FOR THE 1980S

This study was undertaken in response to growing awareness among the sub-Saharan African governments and the International Development Agencies of the importance of a historical perspective in development planning. The study has aimed to provide such a perspective for Sierra Leone by tracing the evolution of Colonial agricultural policy during a time when particular attention was being paid to the staple food crop, rice. The study thus sought to contribute to the continuing debate about the future of the rice industry in Sierra Leone by examining the main ideas, practical efforts, problems and achievements of the Colonial Agricultural Department while at the same time giving due regard to the indigenous initiatives in which the Department itself was keenly interested. In this conclusion, some of the main findings of the study will be summarised and related to later debates about the role of the Agricultural Department in the development process in Sierra Leone.

This study has shown that the tendency of foreign agricultural experts to see the main solution to agricultural problems facing the country in terms of technological transfer has long historical roots. This view persisted later despite their awareness that their expertise related largely to temperate rather than tropical agricultural systems. As shown in Chapter 2, the view has its origins in the early twentieth century when Colonial Officials reacted strongly against the practice of shifting cultivation and the simple, crude agricultural implements used by African farmers. As early as 1908, Mr. Dudgeon, the
Superintendent of Agriculture in British West Africa advocated the introduction of crop rotation to replace shifting cultivation and of the plough to replace the traditional hoe. After the harvest failure of 1910, the Njala Experimental Station was established in 1912 to address these issues. But in spite of over half a decade of official commitment to such a policy, another catastrophic rice famine occurred in 1919, as described in Chapter 3. Later research at Njala showed that the local soils could not withstand continuous cropping without the continuous application of fertilizers. Research elsewhere in Sierra Leone showed that the soil structure at the Njala area was not representative of the entire Protectorate, within which there were wide variations in the soil pattern in reflection of different ecological circumstances.

As shown in Chapter 3, these events and discoveries led the colonial administration to modify its initial policy of pure technology transfer, aimed at intensifying swamp rice farming. Governor Wilkinson, with rice growing in South-East Asia fresh in his mind, took a strong interest in wet rice farming systems of the Scarcies region. He admired these systems as an example of permanent cultivation which was well suited to the region. He was keen to extend this system, especially after the 1919 famine and Anti-Syrian riots which he saw as the result of "shifting cultivation" in the countryside and Krio insubordination in the towns. Consequently, from 1920 onwards the Colonial Administration adopted the twin policy of, firstly, encouraging farmers to give up rice production in the uplands for permanent wet rice cultivation in the lowlands, and secondly, subsiding urban rice consumer prices.
The policy of price subsidies, which is still followed, is now legitimised by arguments about "ecological breakdown" and the failure of "traditional" production systems to cope with modern demands. Rice continues to be imported, in a series of "short-term emergency measures", as shown in Table 22 below.

**TABLE 22: SIERRA LEONE: ANNUAL IMPORTS OF RICE, 1954-1977**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TONS IMPORTED</th>
<th>VALUE IN Le. MILLIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1954</td>
<td>4586</td>
<td>0.6</td>
</tr>
<tr>
<td>1955</td>
<td>12065</td>
<td>1.9</td>
</tr>
<tr>
<td>1956</td>
<td>36800</td>
<td>3.3</td>
</tr>
<tr>
<td>1957</td>
<td>31052</td>
<td>2.9</td>
</tr>
<tr>
<td>1958</td>
<td>21784</td>
<td>2.1</td>
</tr>
<tr>
<td>1959</td>
<td>43305</td>
<td>4.0</td>
</tr>
<tr>
<td>1960</td>
<td>28591</td>
<td>2.5</td>
</tr>
<tr>
<td>1961</td>
<td>4108</td>
<td>0.4</td>
</tr>
<tr>
<td>1962</td>
<td>26827</td>
<td>2.7</td>
</tr>
<tr>
<td>1963</td>
<td>20812</td>
<td>1.9</td>
</tr>
<tr>
<td>1964</td>
<td>543</td>
<td>0.1</td>
</tr>
<tr>
<td>1965</td>
<td>18725</td>
<td>1.8</td>
</tr>
<tr>
<td>1966</td>
<td>34549</td>
<td>3.4</td>
</tr>
<tr>
<td>1967</td>
<td>23846</td>
<td>2.4</td>
</tr>
<tr>
<td>1968</td>
<td>10581</td>
<td>2.1</td>
</tr>
<tr>
<td>1969</td>
<td>12680</td>
<td>1.5</td>
</tr>
<tr>
<td>1970</td>
<td>49365</td>
<td>5.5</td>
</tr>
<tr>
<td>1971</td>
<td>26929</td>
<td>2.7</td>
</tr>
<tr>
<td>1972</td>
<td>6668</td>
<td>0.9</td>
</tr>
<tr>
<td>1973</td>
<td>43724</td>
<td>6.0</td>
</tr>
<tr>
<td>1974</td>
<td>45025</td>
<td>7.5</td>
</tr>
<tr>
<td>1975</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1976</td>
<td>3855</td>
<td>N/A</td>
</tr>
<tr>
<td>1977</td>
<td>16451</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: J.A. Binns "Change and Development in the Rural Economy of Sierra Leone", p.94

Meanwhile, as shown in Chapters 4, 5 and 6, the Agricultural Department made a series of surveys of the Scarce region, and as shown in Chapter 8, Glanville was sent to Ceylon and India to see the wet-rice technologies in use there. Experiments with soils and cultivation
techniques continued at Njala. Tree-crop production was recommended for the uplands, and Glanville took a team to French Guinea to learn about livestock use. But in spite of all these studies, in the end very little change in technology was effected, partly because the new technologies suggested did little to solve the main problems of farmers in rural Sierra Leone, which were shown in Chapters 5 and 7 to be ecological hazards, labour shortage and lack of access to credit. The British experience in Sierra Leone and elsewhere in Africa has some similarity with the American experience in China about the same period, which Randall E. Stross refers to as an "album of stories...of encounter between orderly American ideals and disorderly Chinese realities."

The Department of Agriculture had most success when its officers began to modify their main views mentioned at the beginning of this chapter, that Sierra Leone's agricultural problems could best be solved by transfers of technology from other continents. As was shown in Chapter 4, in the mid 1920s attention was briefly focused on building local initiatives, and efforts were made to disseminate the Searcies wet rice technologies elsewhere in the country. The policy had rapid success and the Department of Agriculture became reasonably optimistic not only about achieving self-sufficiency in food for Sierra Leone but also about the possibility of a viable rice export trade. But this latter approach was given up with the outbreak of the Great Depression in 1929.

The pattern of policy shifts, that is, the tendency for agricultural policies to change rapidly and to have a short-term perspective, was and still is a perennial problem of the agricultural sector in Sierra Leone. Indeed in the period before 1935 there seems to have been no single well
defined policy towards the development of agriculture in Sierra Leone. Officials were engaged in what may be regarded as a trial-and-error approach. To sum up the above accounts: Dudgeon, Governor Probyn and the Curator of the Botanic Gardens initially favoured the use of the plough, green manuring and crop-rotation, as a matter of principle. By 1913 these views were being tested at Njala Experimental Station, a process which continued in the 1920s as officials like Hopkins and Douglas Scotland sought to find scientific explanation for the agricultural problems of the country, particularly soil fertility. But in the wake of the 1919 rice famine their attention and research focus switched from general uplands farming to swamp rice, and there was a long debate over South-East Asian versus local (Scarcies) rice technologies. Efforts were made in the 1920s and again in the late 1930s to spread the Scarcies techniques throughout the country. But the Department also tried to introduce improved varieties of other crops to strengthen the export base, especially during the 1930s, as shown in Chapter 6. It was not until 1935 that these diverse initiatives were finally brought together in a formal agricultural policy, which emphasised the need to keep a balance between cash and food crop production. The ineffectiveness of Agricultural Department efforts to improve Sierra Leonean farming techniques over this period is due not only to the misconceptions, and fluctuations in aims outlined above, but also to funding problems which made it difficult for the Department to test its new ideas - and then provide practical help to farmers on any large scale. As shown in Chapters 5 and 6 the Department of Agriculture experienced such a drastic cut in budgetary and staffing allocation during the Depression that it
became almost impracticable to continue some of the pre-1929 projects. Several well meaning, pro-farmer schemes such as that of Director A.H. Kirby had to lapse for lack of financial support and Kirby himself was compelled to resign. His successor, Dr. F.J. Martin likewise suffered similar frustration in that his sound agricultural policy, the first formal policy of the Department, did not receive adequate financial backing from government. In fact, between 1929 and 1938 the attention of Agricultural Officials was diverted from their usual routine to combatting the locust plague which now and again hit Northern and parts of Eastern provinces during this period.

Following the close of this study, these resource problems grew even worse. With the out-break of World War Two and with Freetown as a Naval base for the Allied Powers, all resources in the country - human, material and physical - were diverted to the war effort. About 25% of the estimated population of able-bodied farmers were diverted to the war effort, as the following tables illustrate.

### TABLE 23: AVERAGE ANNUAL EMPLOYMENT (NON-AGRICULTURAL), 1939-1945

<table>
<thead>
<tr>
<th>YEAR</th>
<th>COLONY</th>
<th>PROTECTORATE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>10,000</td>
<td>-</td>
<td>c. 20,000</td>
</tr>
<tr>
<td>1940</td>
<td>14,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1941</td>
<td>28,841</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1942</td>
<td>45,041</td>
<td>23,175</td>
<td>68,216</td>
</tr>
<tr>
<td>1943</td>
<td>35,558</td>
<td>14,900</td>
<td>50,458</td>
</tr>
<tr>
<td>1944</td>
<td>26,091</td>
<td>11,325</td>
<td>37,416</td>
</tr>
<tr>
<td>1945</td>
<td>22,451</td>
<td>11,673</td>
<td>35,770</td>
</tr>
</tbody>
</table>

Source: Cox-George, Finance and Development, p.224.

The cumulative impact of teeming population and rising employment in Freetown, together with declining exports and imports, was to have an
undesirable impact on the Sierra Leonean economy generally. In particular, food became critically short as from 1940 onwards. The food demand of the war population in Freetown had risen from under 15,000 to 20,000 tons or more per year. The situation was further clouded by the growth of mining which, as mentioned in Chapter 5, now competed for labour not only with agriculture but also with the Civil Service in Freetown. The colonial administration rose to the situation by adopting vigorously interventionist, coercive policies in the agricultural sector. Partly as a result of the availability of funds from the Colonial Development Fund (CDF) and partly because of its knowledge of success stories from similar schemes elsewhere, the Government decided to set up a large-scale swamp rice irrigation scheme in the Scarcies region, thus departing from its previous policy of reinforcing indigenous farming methods in this area.7

The control of water in swamps and valley bottoms for the benefit of farmers is new in Sierra Leone and in fact to British West Africa, but it has been successful in other parts of the world, including Portuguese Guinea, and preliminary experiments have shown it to be successful in Sierra Leone. We must look upon this work, therefore, as opening new vistas of agricultural enterprise and inaugurating a new era of agricultural development.

Accordingly an irrigation expert, C.J. Rae, was engaged to empolder the Rosino Bay in an effort to exclude salt-water from Rhizohora racemosa mangrove swamps. Scarcies farmers who approached the problem differently were now considered to be negligent in their practice. These farmers coped and still cope with salinity problems by allowing in the tides during the dry season (to control the iron and aluminium) but then relying on the tides in the wet season to push in fresh river water daily to wash out the sea salt. In practice the hydraulic engineering employed by
the British after 1941 was less effective than these methods of water management and the rice crop dried up from iron and aluminium toxicity. Doubting "whether the land at Rosino and Luti could ever be reclaimed" the Commissioner of the Port Loko Division advised in 1943 that the scheme be discontinued. In the following year a consultant engineer recommended a "drastic replanning and further reconstructional alternatives". The project was thus a disastrous failure both in economic and physical terms.

Meanwhile, the pre-war inland valley swamp rice projects continued to operate with the involvement of the Native Administrations, the Agriculture Department and the local Administrative Officers. These schemes, as described in Chapter 6, were largely sponsored by the P.M.B.F. but again their impact on production was very limited. At the same time a Rice Quota was imposed on all farmers while the Colonial Hut Tax was now payable in rice. These coercive measures resulted in the doubling of effort with "each man left on the land planting more rice than normal". On the whole rice production increased 30% above the pre-war level. Paradoxically this was attributed to the "stimulation of shifting cultivation". Yet instead of accepting this evidence that the upland rice cultivation system was dynamic, effective and durable, officials of the Agriculture Department still preferred to think that this development was "only...justified in war time when food shortage was the alternative and where the farmers had neither the knowledge nor the seed to cultivate swamps". In contrast, Cox-George believes that though some credit for the production increase must be given to a combination of favourable weather conditions, reasonably improved marketing conditions,
and the cumulative impact of the work of the Department of Agriculture, particularly the Seed Distribution Scheme; yet the decisive factor was the imaginative, initiative and enthusiastic response of local farmers to the increased demand for rice in Freetown and the mines and Government's coercive measures. Furthermore, although the Director of Agriculture stated boldly that the war had not diverted attention from the pre-war swamp rice policy, the fact remained in 1944 "the bulk of the country's rice is still produced on the uplands".

Despite the 1941-1943 irrigation fiasco and thus evidence of uplands dynamism, after 1945 the swamp rice policy was reinforced and transfers of large-scale technology began to accompany it. From 1946 onwards the mechanisation of agriculture, using tractors, was seen as a solution to the growing labour problems of swamp rice cultivators. This represents a radical scaling-up of the late 1920s policy, described in Chapter 4, through which the Work-Oxen technology was introduced to Karene in the Birawa Limba Chiefdom, Bombali District, to ease similar labour problems caused by the abolition of domestic slavery in the protectorate. Government enthusiasm and support for the latter technology had waned over the years, and so the way was left clear for the emphasis to shift on to the use of machines. Here, as in the issues of crops grown and of methods of water management, it can be seen that the Colonial Administration was never fully committed to a consistent policy in agriculture. It can be concluded that the sluggish state of the agricultural sector was at least due to these frequent changes in policy.

The situation of flux does not seem to have been improved significantly since independence. On the contrary, the flux has been
intensified. Immediately after the attainment of independence in the 1960s the government of Sierra Leone, in common with those of many other African countries, opted for import substitution policies in order to achieve, as was hoped, a rapid industrial development. This was done at the expense of the agricultural sector. By the end of the decade, however, hard realities again forced the awareness that agriculture is the mainstay of the Sierra Leonean economy and so from the early 1970s the government began to pay greater attention to agriculture; more recently the interests of the small-holder have begun to loom high in policy decisions. But whatever the theory of development in vogue, their practical application has often been overshadowed by power struggles. Elsewhere in West Africa, Ministers frequently vie for agricultural projects as a means of winning political votes rather than ensuring economic growth in the sector. Projects very often get diverted from more to less viable areas.

Further in the period before 1980 political parties tried to discredit each others' policies so that when the All Peoples Congress Party (APC) was ushered into power in 1968, it quickly abandoned schemes like the Palm Oil Plantations initiated by the Sierra Leone Peoples Party (SLPP). This not only meant a waste of scarce resources but also tended to distort the development effort. Further well-meaning policies emerged in the period between 1974 and 1979 but their full impact was never felt due to administrative, institutional and economic factors. Since 1979 there has not been any Development Plan because, as President Momoh said recently:
What we have been doing is to try to put our economic house in order before we begin to talk about a development plan. You can not talk about a development plan when you don't have the means to ensure its implementation. Until we are able to change people's attitudes and help develop the economy, then it would be futile to talk about a development plan.

In the early twentieth century this kind of situation of flux also existed, and was further worsened by periodic conflicts between the administrative and technical departments over policy orientation. Between 1911 and 1934 the Directors of Agriculture, Hopkins and Kirby, faced severe frustration because their schemes were not given priority by the Administrative sector of the Colonial Government, as we saw in Chapters 3 and 5 respectively. In 1934, as recounted in Chapter 5, the Colonial Secretary for Sierra Leone, C.E. Cookson, openly declared that the Agriculture Department served no useful purpose except as a producer of highly technical reports which in the main were useless. Cookson went on:

"My impression is that much of the time of Agricultural Officers is taken up in writing technical treatises and pretty reports. We have seen some of these in the Secretariat; so much so that I was recently obliged to beg the Director of Agriculture to keep them to himself, and to report only what is important or practical. None of these writings have any appreciable effect on the methods of native farmers, except that occasionally new crops are tried.

The pattern of periodic funding cuts for the Agricultural Service, indicative of the low estimation in which that sector is held by some governments, has survived to this day. The first independent government produced a White Paper on Natural Resources Policy in which the colonial focus on research rather than on extension work was condemned, but nothing was done to correct such anomalies." Thus, if
only by default, the colonial experience is still being repeated today. Many projects get abandoned half-way through and agricultural researches are often not pursued to their logical conclusion, mainly because of lack of financial support. For instance, during my recent field research at the Rokupr Rice Research Station the present Director of the Station explained to me that the basic problem of the station has been lack of adequate support from the government. This has made it impossible for any meaningful research to be undertaken. In the current year (1987/1988) for instance, he detailed that of a Le 11.5 million grant which he budgetted for, the government approved only Le 2.5 million, an amount which he said was not enough to maintain the present inadequate infrastructural services. The seriousness of this problem lies in the fact that progress in agricultural research and extension work depends on an adequate, reliable and sustained level of financial support since agricultural experiments take a relatively long time before they can produce results.

One consequence of this lack of funding was, and is, that the development of agricultural extension services in Sierra Leone has been hampered by a lack of adequate research data on which government officials could base their plans. In the period 1908-1939, the emphasis on fundamental research and experimentation which Cookson criticised was partly due to the lack of resources available for adaptive research, that is the practical application of fundamental research findings. As shown in Chapter 5 Kirby's plans to begin adaptive research and extension work in 1933 never obtained the government's full financial backing.
On the other hand, the example of Rokupr shows that some officials preferred fundamental research for its own sake. Despite having found evidence that local initiative was sufficient to transform the agricultural landscape in the Scarcies region, and that the main constraints to further increase in rice production were labour and capital scarcity, weeds, flooding and inadequate road and marketing infrastructures, in 1934 the Colonial Administration directed the Rokupr Experimental Rice Station in the Scarcies to pursue fundamental research on the selection of exotic rice varieties. This directive turned official attention away from the option of extending Scarcies technologies to other mangrove ecologies in the country, and of seeking to manage the mangrove environment better by "adaptive research". As is shown in Chapter 8, this decision should be related to the fact that from the 1920s the Agricultural Department staff had been continually reinforced by the recruitment of scientific professionals, like Hargreaves (Entomologist), Deighton (Plant Pathologist) and Martin (Soil Chemist) who were mainly interested in fundamental research. In this focus "optimum" rice yield was mainly determined by either station yields or comparative yield elsewhere in the world. Station officials never took into account how and why station practices differ, say in availability of labour, with local farmer practices. Consequently, many existing Scarcies rice varieties were considered, without further evidence, to be "below optimum". This could have been a mere "reflex" to continue the argument needed to justify the station rather than obvious "rank prejudice". As was shown in Chapter 2, for instance, when Douglas Scotland failed to achieve a break-through in devising a permanent crop
rotation system for the uplands he began to divert attention to new schemes like citrus plantation rather than admit that existing local practices were much more effective. This is a continuing dilemma in tropical agricultural research today.

In the 1940s, the "great polderization disaster" led to some renewed lobbying for an alternative research strategy. Adaptive research was strongly favoured by Kirby, the then Director of Agriculture. Nevertheless, in practice the station's director in 1954, H.D. Jordan, who worked in Sierra Leone since 1946 as a botanist and from 1954 to 1965 as Director of West African Rice Research Station, commented that the Station had only limited success. Only "progressive" farmers, and not the rank-and-file had been reached by its staff, so that there was as yet no mass movement towards improved technologies. He also conceded that there had been a neglect of some key agro-ecological environments, notably the uplands:

There is thus a full programme for several years ahead for the plant breeder. In addition, many special types are needed for land being developed for rice-growing, for example, and varieties that will stand submergence for the flood plains of the middle reaches of the rivers in the north and west of the country. Upland rice also is capable of considerable improvement. Although the policy of the Department of Agriculture is to reduce cultivation of this crop it will always be grown as the main cereal in any upland cultivation of annual crops, and yields can almost certainly be increased by selection.

Jordan elaborated his case for further attention to upland rice culture by describing it as the hub around which the whole farming culture revolves, which therefore should be developed.

In these comments Jordan was in effect providing a fitting epitaph for Colonial Rokupr. His case is that the exclusive emphasis on swamps.
a policy which Rokupr itself symbolises, was misguided. Indeed locking up a large portion of the Department's scanty resources at Rokupr - in an area that was and still is not in need of externally-induced innovation - was arguably the wrong utilization of resources in the wrong place.

While the research done by Pillai, Glanville and others on the Scarcies farming systems undeniably gave useful insights into viable swamp rice methods, the overall research focus of the department by the 1950s had thus become too narrow, and a major reorientation in the direction of rice research in Sierra Leone was called for. Naturally, one would have expected decolonization to provide the appropriate context for such a new start. Yet ten years later a Sierra Leonean Director, Harry Will, more or less reiterated Jordan's critique of current practice (while apparently being unaware of Jordan's earlier assessment). In Will's view Upland cultivation was crying out for modernization, but all the research resources had been directed elsewhere.**

Earlier observers of the Rokupr Rice Research Station had castigated it further for having a "parochial outlook", a criticism used in justification of a major switch of resources by aid agencies from national to International Commodity Research Centres. In 1968 Robert F. Chandler Jr., then Director, International Rice Research Institute, Los Bonos, The Philippines, while on a tour of West African Rice Research Centres, sounded a warning note about the appropriateness of the research agenda of the West African Research institutes, picking up once again Jordan's theme concerning the neglect of upland rice. He argued that upland soils were easily depleted of nutrients, but that local researchers appeared content to base their approach on the assumption
that a new variety will cure the situation". Accordingly, he admonished the Director of Rice Research institutions in West African to give equal emphasis to wet and dryland rice cultures. Recent research by Johnny, Karimu and Richards tackles the same issues and addresses the need for a policy change much in line with the ideas advocated by Jordan in the 1950s and Chandler in the 1960s.

These criticisms do not imply that Rokupr should be abolished; rather, that the scope of its fundamental research should be extended to include upland as well as wetland rice, and that adaptive as well as fundamental research should be carried out. The wide range of ideas first discussed by the Directors of Agriculture for Sierra Leone in the 1920s and 1930s were perhaps "ahead of their own time", but could now be acted on if politicians and aid agencies take enough interest.

A final problem which hampers agricultural research efforts in Sierra Leone today is that research data, once obtained, often remained unused. Politicians generally do not read research findings or reports, nor do extension workers have access to them. Even research workers rarely consult the records of what went on in the past. The usefulness of official reports in short tends to be limited to that of sporadic and short-term official consumption. Consequently, there is absolutely no continuity of effort. This development re-echoes a similar situation in the colonial period. For instance, as shown in Chapters 4, 6, and 7 colonial officials from the 1920s onwards repeatedly duplicated their social and technical research on the Scarcies farming systems. The Rice Commission's and Deighton's reports on the Scarcies in 1927 and 1928 respectively were basically confirmed by the Stockdale-Sampson report of
1929 and by Glanville's Survey report of 1930. Yet none of the writers of these reports seemed to have read each other's reports, let alone the earlier work of Pillai on the same region. Consequently, there was extensive duplication of effort, and the basic lesson of appreciation of proven indigenous practices had to be relearnt over and over again.

Turning to the area of extension work, the lack of adequate personnel has always been a serious constraint. Throughout the colonial period Director after Director lamented the shortage of a competent staff in the Agriculture Department. There were times, especially before the mid-1930s, when there were merely three European Agricultural Officials in the entire Agricultural Service to service a population of about two million in a land area of about 28,000 square miles. British Colonial Officials like Stockdale and Sampson in the 1920s, Professor Shepherd in the 1930s and Roy Lewis in the 1950s observed that many viable projects in the agricultural sector were frustrated partly by lack of adequate personnel.

As Lewis succinctly put it

"The agricultural officers were too thin on the ground, and the cadre of trained African instructors too small to achieve much in the time required."

This and the lack of an efficient communication system had a negative effect which is still being felt.

Quite apart from this shortage of staff, during the period 1908-1939 the development of an effective extension service was hampered by disagreement as to what form it should take. Before the formal establishment of the Agriculture Department in 1910, extension services
had been limited to Demonstration Plots run by D.C.s at strategic places, often at District Headquarters, with the hope that they would catch the curious eye of farmers who would then try to imitate what was being done. From 1912 to the early 1930s the emphasis was on Experimental Farms distributed in every District and manned by African Agricultural Instructors. These Sub-Stations were to serve as centres for the multiplication and distribution of seeds, and the demonstration of improved methods of agriculture. From the 1930s onwards, as the emphasis shifted increasingly to the application of scientific research to African agricultural problems, arguments began to be made in favour of a specialist group of African extension workers. However, while the potential for employing African officials in the Colonial Agricultural Service was generally recognised, it was a matter of open disagreement as to which type of Africans to use. As shown in Chapters 2, 4 and 5, Directors like Hopkins, Dawe and Martin stressed the use of educated Africans to man the sub-stations and to act as Junior Agricultural Advisers to farmers, but Kirby believed that education was not an essential criterion and preferred instead less educated Africans. Given the crucial nature of the extension arm in agricultural development this lack of agreement about how to staff the Service was and still is a major weakness of the Agricultural Service at the local level. This situation was worsened by the inadequate road, transport and marketing infrastructures of the country. How to make extension work effective continues to be the main problem of the sector today. The extent of agricultural projects today is, as ever, not matched by infrastructural development to facilitate the success of these projects. This, according
to Robert Chambers, has led to the twin forces of "tarmac and roadside biases..." in extension work and also to the "ribbon development along roadsides" in many parts of Africa today.3* So in effect extension inputs still by-pass the small-holder. For the same logistical reasons inputs, besides being outside the means of small producers to purchase, are often said to be delivered late, so reducing their actual usefulness.30

In spite of these numerous problems however, colonial agricultural efforts did achieve some tangible, useful results which continue to have a decisive impact on the local economy. One area in which the Colonial Agricultural Service achieved a measure of success was in the introduction of many improved varieties and crops such as rice, cocoa, coffee, maize, coconut, fruits and vegetables. Many of these are today taken for granted and help either to regenerate the incomes both of individuals and of the government, or to diversify the local diet and so improve the general standard of life in the country. Other major achievements in the period under review were the Seed Rice Revolving Scheme and the Swamp Rice Clearance Schemes begun in 1935 and 1939 respectively. In fact, the former scheme was such a success as to be an embarrassment to the government, which could not keep up with the increasing demand for improved seed rice. As shown in Chapter 6, the combined effects of these schemes were firstly, that the area under swamp rice cultivation was immensely increased, especially because of the introduction of suitable cultivars to stress-prone ecologies such as the deep flooding region in the Southern littoral; and secondly, that the human transformation was completed of the agro-ecologies behind Turner's...
Peninsula in the south and the Searcies region in the north, creating extensive rice fields.

The establishment of Experimental Stations at Njala, mainly for upland cultures, and at Rokupr for wetland cultures was also a great success in terms of the amount of fundamental research undertaken by officials engaged in those stations. By the early 1930s the research team of the Agriculture Department had begun to produce useful research data on Sierra Leonean soils, crop pests and diseases. For instance, the Njala soil scientist, Mr. H.W. Dougall, was able to show the economic value of bush burning in shifting cultivation because burning helped to increase yields and reduce weeds. Consequently, in 1948 the Agriculture Department conceded that "it would therefore appear most necessary to first understand the underlying principles of traditional African farming practices before attempting to impose new and alternative (and possibly not well tried) methods on a conservative people". Later, Dougall was also able to show that the polder scheme in the Searcies failed because Rae, the engineer, failed to "take cognizance of Rosino as a unit of landscape of which the marsh grassland formed an integral part". One strategy of Sierra Leonean farmers in coping with high-risk environments is to maximise their use of the soil by integrating valley bottom and upland land use. The disregard of this in rural planning was a serious flaw.

In the late 1920s the importance of crop pests and plant diseases was increasingly being felt. Consequently, scientific research was focused in this field and the valuable findings of the entomologist, Hargreaves, and the plant pathologist, Deighton, in the Sierra Leone
National Archives, though some of it appeared in a summary form in the annual reports of the Agriculture Department and in Deighton's publications. At the same time in 1951 the Soil Conservation and Land Utilization Committee published a report which remains one of the blueprints for future action in Sierra Leone agriculture. At Rokupr research continued to focus on the pure-line selection of exotic varieties, the ecological problems of the mangrove environment, and also on improved cultural practices in mangrove swamp rice cultivation. In the 1950s research also addressed post-harvest technologies such as seed storage and seed dormancy problems. Many of these detailed, technical reports can still be read in the Annual Reports of the Station and in the Njala and Rokupr Rice Research Station Libraries. Unfortunately, however, recent planning for rural development does not reflect the message in these reports indicating that researchers and Government Officials are either unaware of their existence or else do not bother to use them. This partly reflects the low regard for historical knowledge in development planning which has been found until recently not only in Sierra Leone but also in the Sub-continent generally. This lack of collective memory about the past is at the root of present day development planning problems in Sub-Saharan Africa. The importance of having a sense of history is that it helps to create a sense of continuity of effort between the past and the present so that previous mishaps, and duplication of effort, can be avoided in the future. Colonial research efforts were mainly fundamental in nature. Today, more than ever before, there is a need to translate this body of fundamental research done at Njala and Rokupr into directly applicable forms which
can be used in the enhancement of growth and development in the agricultural sector.

That besides, as shown in Chapter 7, colonial research into the efforts of farmers in the Scarcies area serves to show the capacity of the traditional methods of production to adopt and adjust to varying ecological and environmental situations. Local farmers in the Scarcies area were shown to be highly innovative and adaptive to changing conditions. As early as 1908 Mr. Proudfoot of Bo School, was willing to admit this need to learn from local farmers, and many officials in the 1920s and 1930s continued to emphasise the need to harmonise the interests and priorities of local farmers with their own research and extension. Their views cross-cut with and modified the general enthusiasm for technology transfer which was described at the start of this chapter.

To sum up, this thesis has shown that officials in the Colonial Agricultural Department in Sierra Leone held many different views on what their role should be. Some were well aware of the need to pay attention to local initiatives, and of the need to understand what Paul Richards has described as "the ecological and regional specificity of agricultural development problems" in Africa. Nevertheless, the dominant belief was that the problem of agricultural growth in Sierra Leone, as elsewhere in Africa, was basically technological lag.

This belief in the need for radical technological change is deeply rooted in western economic thought, which as Martin has argued, assumes the inevitability of an evolutionary form of agricultural development, whereby societies evolve gradually from less advanced to more advanced
technological forms as population grows or trade expands, and pressure on existing resources, mainly land, becomes so critical as to lead to diminishing returns in output.  

Colonial agriculturists in Sierra Leone were of the opinion that the persistence of the bush-fallow system and the use of the simple, traditional hoe were signs of a cultural hang-over from a primitive and backward past. To modernise the system in order to facilitate rapid growth in agriculture they sought to substitute "shifting" with "permanent" cultivation by encouraging lowland (swamp) cultivation at the expense of dryland cultivation. This official policy concern was effectively expressed by the F.A.O. in 1952 when it stated that shifting cultivation was the "greatest obstacle in tropical countries not only to the immediate increase in agricultural production but also to the conservation potential for the future". However, recent research has shown that far from being primitive and backward, shifting cultivation is a valuable resource evolved by African farmers to cope with the changing conditions of stressful environments. Furthermore, the concepts of "dry" and "wet" land cultivation have now been shown by empirical research in Sierra Leone to be based on a false dichotomy, since farmers do not make any rigid distinction between "wet" and "dry" lands but rather try to simultaneously maximise resources in both landscapes through a strategy of integration. And contrary to simplistic views of population pressure on land, scarcity of labour is shown to be the main constraint of farmers in rural Sierra Leone. Studies on Nigeria also reveal acute labour shortages in the northern zone where rainfall is generally unpredictable. In other words, our understanding of certain
aspects of Sierra Leonean agriculture has advanced greatly since the period covered in this study.

These advances in understanding help to explain why, even when extension workers reached them, some farmers were reluctant to adopt modern technologies. The emerging consensus is that African farmers are rational in their use of resources and that their key concern is risk aversion. Mixed cropping which had been under attack by Colonial Officials as a haphazard and wasteful use of resources is in fact an innovative resource to cope with problems of uncertainties emerging from the seasonality of the weather and ecological problems. Thus technologies which emphasised monocultural production, such as a switch from mixed uplands farming to swamp rice cultivation, were likely to be of limited use. It is therefore not surprising that even as late as the 1970s official agricultural policy still had a marginal, if any, impact on the farming population in Sierra Leone. Out of a total estimate of 528,196 hectares of land under cultivation, 99% was still operated by small holders using basically the same technologies as of old.

The reasoning behind all this is that during the early colonial period when policy development focused mainly on technology transfer, developers seemed to have learned more from farmers than vice-versa and also that while there was growth there was no development in absolute terms.

Thus, this study provides support for the present trend in development planning which emphasises development from below, that is building on existing local knowledge rather than a top-down approach
which proceeds in the opposite direction. It also emphasises the need for consistency in policy, and adequate funding of both research and extension work. Finally, it has drawn attention to valuable colonial research findings on the Sarcies region, and calls for similar work in future on farming systems of the uplands.
Footnotes to Chapter Nine

1. Interview with Mr. T.S. Jones, former Agricultural Officer in Sierra Leone, 27th July, 1988. Mr. Jones stated that in the 1940s Agricultural Officers in the Colonial Service were mainly trained in Trinidad and Cambridge where no tropical agriculture was taught much later.


5. The Director of Agriculture, F.J. Martin, estimated the pre-war farming population as 383,000. Thus a 25% diversion of that number was bound to create a disturbing effect on production. See A.R.D.A. 1942, p.2.


7. A.R.D.A. 1941, p.3.

8. Commissioner, Port Loko Division, to HCS, 23 November, Makeni. N.P/A/3/017.


12. Interview with Mr. T.S. Jones, UK.


16. Cox-George, Finance and Development, pp.242-244.


32. Lewis, Roy "Agriculture and Planning in Sierra Leone". Corona. 5 No.6, (1953) p.211.


35. Ibid. p.99.


38. A.R.D.A. 1949, p.27.


40. Richards. P. Coping with Hunger, p.1. This point was recently corroborated by Mr. T.S. Jones, a former Senior Colonial Agricultural Officer in Sierra Leone.


50. Chambers, R. Rural Development: Putting the Last First (Harlow, Longman, 1983); Richards, P. Coping with Hunger; Martin, Susan M. Palm Oil and Protest; Binns, J.A. "Agricultural Change in Sierra Leone" Geography 67. (1982), pp.113-125.
## APPENDIX I

EXOTIC RICE VARIETIES INTRODUCED BY THE ROKUPR RICE RESEARCH STATION BETWEEN 1934 AND 1954

<table>
<thead>
<tr>
<th>YEAR</th>
<th>VARIETY</th>
<th>YIELD (lbs &amp; ozs)</th>
<th>COUNTRY OF ORIGIN</th>
<th>DURATION IN DAYS</th>
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<td>N.A.</td>
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<td>N.A.</td>
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## APPENDIX I (CONTINUED)

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<td>U.V.S.</td>
<td>0.4</td>
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<td>1954</td>
<td>D54/42</td>
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<td>Goda Laki</td>
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<td>Pakistan</td>
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<tr>
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<td>Dudh Laki</td>
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<td>Pakistan</td>
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APPENDIX 1  (CONTINUED)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>VARIETY</th>
<th>YIELD (lbs &amp; ozs)</th>
<th>COUNTRY OF ORIGIN</th>
<th>DURATION IN DAYS</th>
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<td>Shingo la Mjane</td>
<td>11.15 3/4</td>
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<td>Sokotera</td>
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<td>2.10%</td>
<td>Orissa</td>
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<td></td>
<td>SR 26</td>
<td>-</td>
<td>India (via Ceylon)</td>
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<td>Seri Raja</td>
<td>-</td>
<td>Malaya</td>
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<td>Baak</td>
<td>3.6½</td>
<td>Indonesia</td>
<td>197</td>
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</table>

Source: File 0201, R.R.R.S.L.
RICE VARIETIES MULTIPLIED BY ROKUPR RICE RESEARCH STATION
(FIGURES IN BUSHELS OF 60LBS. WEIGHT), 1936-57

| VARIETY        | 1936 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 |
|----------------|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Indie Pain 45  | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | 6  | 8  | 38 | 57 | 47 | 123| 99 | 68 | 26 |
| Radin China 4  | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| Lead           | 5    | 5  | 21 | 55 | 56 | 42 | 11 | 36 | 22 | 37 | 61 | 81 | -  | -  | -  | 40%| 56 | 60 | 85 |
| Faya           | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| Nachin 11      | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| S.R.26         | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| R.H.2          | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| Ganting        | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| Indo-China Blanc| -   | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| Anethoda       | -    | -  | -  | 7  | -  | -  | 27 | 38 | 29 | 47 | 39 | 57 | 29 | 122| 31 | 41 | 112| 87 | 25 |
| D99            | -    | -  | -  | -  | -  | 27 | 38 | 29 | 47 | 39 | 57 | 29 | 122| 31 | 41 | 112| 87 | 25 |
| B.G.79         | 9    | 6  | 22 | -  | -  | 15 | 31 | -  | -  | 9  | 8  | 5  | 43 | -  | -  | -  | -  | 77%| 70 | 121| 90 |
| KAV. 12        | -    | -  | -  | -  | -  | -  | -  | -  | -  | 13 | 104| 51| 150| 29 | 44 | 84 | 56 | 66 |
| TUMA 112       | -    | -  | -  | -  | -  | -  | -  | -  | -  | 18 | 18 | 15 | 87 | 197| 169| 200| 114%| 129| 94 | 111|
| BOLO 188       | -    | -  | -  | -  | -  | 10 | 91| 75 | 41 | 54 | 36 | 58 | 74 | 94 | 71 | 29 | 50 | 125| 121| 52 | 15 |
| Ngesein 57     | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | 7  | 140| 126| 110| 86 |
| G.E.B. 24      | 59   | 65 | 62 | 80 | 51 | 14 | 15 | 9  | -  | 25 | 36 | -  | 19 |
| Suswei         | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |

Source: Venkataswamy, T. "Swamp Rice Production in Sierra Leone" (1969)
APPENDIX 2

INTERVIEWS WITH OX-PLOUGH FARMERS

As already stated in Chapter 1 the main aim of these interviews was to endeavour to trace the chequered history of oxenization in the Biriwa Limba Chiefdom through the memories of farmers who had adopted the technology since colonial times. Their accounts corroborated and help to clarify the material on the technology in the Sierra Leone National Archives. These interviews closely show farmers' perceived problems of adoption and their reaction to the technology. Unfortunately only two of these interviews representative of these points are recorded below:

The Account of Alhaji Bah Foday Fofanah, Imam and Village Head of Waridalla, Biriwa Limba Chiefdom, Bombali District, 25th June 1987

Many, many years ago there was one District Commissioner, a white-man, known as D.C. Langley. He announced to us and other parts of the country that there was to be no more slavery - that all slaves were now free. The Section Chief of the Mandingo area, Alpha Nunkoh, who owned many slaves, was prepared to resist the Colonial Government on this action. He mobilised resistance to reverse this official decision because, as he argued, the slaves were theirs by right having inherited them from their great, great grandfathers who had bought them. And besides, slaves were the main source of our prosperity. Chief Alpha Nunkoh hired Lawyer Wright and the case between him and the Government dragged on from 1927 until 1929 when Government finally decided to enforce its decision because it had long since been in the Government
book that domestic slavery should come to an end. The Krio Lawyer, Mr. Wright, was thus not able to win the case.

However, the Colonial Government realised that the ending of domestic slavery would cause much hardship on Alpha Nunkoh and his people who depended on slave labour. Therefore Government advised Chief Nunkoh and other slave owners to send their sons to Bororo behind Kankan in French Guinea to learn the use of the plough. Chief Nunkoh had no option but to concede. Several children of the leading Mandingo families were selected, among them were Alhaji Borbor Sheriff and Alhaji Lamin Sheriff. This was in 1928 and on their return the plough spread among us the Mandingo.

In 1929 Alimamy Kalawa Baimba's father was selected as Paramount Chief of Biriwa Limba Chiefdom. This was the time when the learning proper of the plough and this "cow business" really started. There was one man here at Wariddala known as Pa Foday Salifu Fofana. He sent his children to Karina to study the plough and later they helped to spread the ox-plough technology throughout Mandingo country.

Around this 1927 there was a Director at Njala known as Mr. R.R. Glanville. It was he who came here to teach us how to use the ox-plough. After him came one Mr. Roddan. During the time of Mr. Roddan the cow business slackened. Many farmers were now interested in ginger production although the cows and ploughs were still in use. But under Director Lines again from Njala the technology was again picked up. But Director Lines died a sudden death at Njala. He liked to shout. Workers at Njala downed tools in protest for improved conditions of service, salaries etc. Director Lines refused to listen to these complaints and
instead continued to shout on top of his voice for workers to return to work. In the event high blood went on him and he died. Before him there was one Major A.S. Karin also sent from Njala to teach us the use of the plough. He did this for three years and his health began to deteriorate. He had no assistant and you know what a White man can not live where there is no medical doctor so he was sent back to England. However, we still continued to use the ox-plough.

During Mr. Lines' time a £10 Loan Scheme was started to help farmers adopt or continue the technology. £4.10s. was given in cash and the remaining £5.10s. went in place of the plough. This loan was payable in five years. The £4.10s. was enough to purchase a pair of oxen. Later one Mr. Edwinson W. Sesay, a Limba, was sent as an Instructor in this region - Karina, Sarifula, Wariddala, Manjoro, Madina etc. Everywhere there was a plough. At the same time Mr. Sesay was in charge of the construction of the Karina-Mabole road, from the junction to Karina on to Manjoro. There was another D.C. at Makeni called D.C. One. He constructed this road and the bridge. It was after this work that Government distributed ploughs to farmers in this region. But as soon as the diamond boom started the work again slackened as many farmers drifted to the diamond areas. But I did not go; I and a few others still continued with the plough. Diamond mining was however profitable only to 'powerful' people with capital to purchase expensive machinery. This again turned the tide of migration from the mines to the villages and the ox-plough again became popular. Six years later another White man, Mr. Stark (?Starkey), came to revive the ox-plough technology. He taught us how to make ploughs, seeders, weeders and lifters. This animal power was
brought to us by Mr. Stark. He also introduced the horse cart to transport load to and from the farms. Many Big people have come to help us with our farms but Mr. Stark was the most helpful. Since then animal power has not slackened in this part of the country. After this talk I shall take you round my farms so that you see for yourself the wonders of animal power. Now I can work between nine and fifteen acres of farm without human labour. Our main limitation in this area is shortage of flat lowland like the Boliland areas in Batkanu. So as a result production is limited mainly to subsistence and application of fertilizer becomes necessary now and again.

We have to be grateful to the White man for introducing this technology among us. We the Mandings were too dependent on slave labour. Without animal power life would have been difficult for us here. People would have turned to trade and commerce and this means moving out of the chiefdom to other areas. We are too lazy to work the farms and our children who are educated in English do not want to do any farm work. Only God will bless the White man who thought of this progressive idea.

When this started Alpha Nunkoh was the town head at Karina, Foday Salifu Fofanah at Waridalla; and Foday Bundu, Foday Muctar, Mahmadi Bah, Ali Sarifu, Attamid Sorie, Foday Simellah all cooperated with the White man to send young people to French Guinea to learn the ox-plough. Mr. R.R. Glanville took them at the end of 1927 and returned two years later. A demonstration farm was established at Karina and all interested farmers were encouraged to send their children at Karina to learn the use of the plough. At the same time ploughs were sold at £3.3s. each. During Mr. Starkey's time annual "plough competition" was started at Karina and
various prizes were offered from £25 downwards; others were compensated with horse carts etc. Farmers from all over the country attended the show. Later the first Plough Instructors were distributed to other parts of the country to teach farmers elsewhere. For instance, Alhaji Lamina Sheriff was sent at Batkanu; Alhaji Borbor later resigned. Alhaji Lamina worked from Batkanu to Rokupr and to Makeni, finally retiring at Kabala in the Koinadugu District.

The first sets of ploughs and parts were obtained by the Government at Njala and we got them from Mr. Weldone, the then A.O. at Makeni. The first ploughs were known as Ransome ploughs but Starkey later changed them to "Peketu ploughs" (made locally,) although the idea came from England. "Siscomer" from Senegal, Boiginyou from France and also Indian ploughs. This animal power is more than animal power as far as working the farms is concerned. Our main problem now is that of spare parts. If only Government could help solve this problem for us and control stray cows destroying our crops our main problem as farmers in this region would have been solved.

The Account of Pa Mori Brimah, Limba Sub-chief of Small Bumban, Biriwa Limba Chiefdom, Bombali District. 25th June 1987

During the reign of Alimamy Kalawa of Bumban in this Biriwa Limba country, a white D.C. came. He asked the chief to send young men to be trained in the use of the ox-plough at Makeni. My elder brother Saspo Koroma who was then at Bumban and Alhaji Borbor of Karina were selected for the training as Plough Instructors at Makeni. On their return after the training my brother became the Plough Instructor in Great Bumban.
Later however there was difficulty in getting spare parts for the plough and this discouraged intending Limba adopters but the Mandingo at Karina continued on their own. By this time I was in Freetown but later return after the Big War.

However, it was not until another White man arrived, Paul Steky, that animal traction became more generally adopted among the Limba. The Limba joined the project later partly because they know little about managing cattle but mainly because they were not as dependent on slave labour as the Mandinka. In fact, the White people introduced work-oxen mainly to help the Mandingo farmers after the law was passed that all slaves were free. This was a long, long time ago. I was a small boy then.

In swamp rice farming work-oxen is by far better than Wangai (work group): it helps to develop the swamp better and help to improve yields. Swamp rice needs plenty of water. Our practice to make heaps prior to transplanting cut off the flow of water in places. With the cow the area is well levelled and so even with the least rain water is evenly distributed in the swamp. Cow is really beneficial to man. One cow can do the work of ten men.

However, when the method of rearing cows changed from town or village rearing to bush rearing we began to experience a lot of headache about law suits involving cow damage to crops. Cows have no boundary and cows can wander about 25 miles within a day. Since the farm and the cows are in the same bush the problem of cow-damage to crops has become more serious even though we the chiefs levy fairly heavy fines on defaulters. As this problem continue we the chiefs, on the advice of the government, 342
have decided on a new strategy to control the problem. We have decided to make new cow settlement areas. But this is different from previous settlement schemes. In the first place we the chiefs with the consent of the landowners decide where Fullah cattle owners should settle. But we still have a long way to go because, as I said earlier, cows have no boundary.

I would like to appeal to Government to help with the cow problem. Also Government should try to extend this ox-plough to other parts of the country because I have come to reason that it is good for the common farmer. Government should give farmers loan to buy cows and start work oxen. Another problem is that many farmers complain that there is not enough swampland as compared to upland farms. But this problem we can solve if we divide the people into two: some will concentrate on upland farming, others who have only swamp farms in swamps. Work-oxen is not just for people in swamps; it is introduced to help all farmers in the country. It is like having twins. Each of the children will have to be breast fed and it is here that the Government can be of help to all farmers.

Our great, great grandparent were very open and sympathetic towards the Mandingo who came as traders and Morimen. They allowed them to settle at Karena where they still live. The Mandingo were peaceful but were lazy to work their farms. They preferred to engage in trade and diamond mining. But maybe our fore-fathers were wise to allow them to settle in Biriwa otherwise we would not know about work oxen which has come to be of great help to us.
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Extension and improvement of Koinadugu Cattle Owners' Settlement Scheme. This source details a colonial conservation policy aimed at creating an ecological balance between pastoralists and sedentary crop-growers.

"Introduction of new rice varieties" by Peace Corps and Chinese teams.
Agricultural Notes. This series deals with a wide range of agricultural issues - land tenure, rice pests, rice production, horticulture, etc.

KS/21/02

A brief history of the efforts made in Sierra Leone to establish a cattle industry between 1899-1922. It is shown that the early cattle policy was mis-directed.

KS/17/01

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SL/630 MANR
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SL.330 CDP
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SL.352 PA
Annual Reports and other papers relating to the provincial administration 1921-1930.

SL.301.32 Sem
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The Jordan Papers. A collection of technical papers on rice research in the Scarcies region by H.D. Jordan, former Director of the Station. They deal with subjects such as the control of crabs on tidal rice land, hybridization of rice, the day-to-day work of the station.

Text of address delivered on the occasion of the visit of the Director General of F.A.O. to the Rice Research Station, rokupr, 2nd February 1974 by Mr. Harry Will. 10 p.

Proceedings of the First International Workshop and Seminar on Rice Research, September 29 - October 3.
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List of rice varieties introduced, 1934-1953.

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