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A REVIEW OF THE RESEARCH PRIORITIES AND NEEDS OF
SELECTED AGRICULTURAL COMMODITIES

Interim Comments

TAC SECRETARIAT
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A REVIEW OF THE RESEARCH PRIORITIES AND NEEDS OF
SELECTED AGRICULTURAL COMMODITIES

(Interim Comments)

Tropical Products Institute
London

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Introduction

1. A primary objective of FAO's programme of work is the strengthening of national and international research capacities through the formulation of guidelines on priorities for research and approaches to their solution. This work is foreseen as being of use not only to member countries but also as an input to the work of the Technical Advisory Committee (TAC) to the Consultative Group on International Agricultural Research (CGIAR), and other major international bodies with whom FAO collaborates in the formulation of agricultural science and research policies.

2. To date the CGIAR has given the highest priority to staple food crops within a relatively narrow research framework, namely the international research centre. Whilst maintaining this order of priority the TAC expressed its willingness to examine research proposals pertaining to other crops and to advise the CGIAR on the research needs of such crops. In this aim they were supported by UNCTAD Resolution 50 (III) which drew attention to the need to encourage research and development in natural products facing competition from synthetic materials.

3. As a contribution to these objectives, FAO commissioned the Tropical Products Institute (TPI) to carry out a survey of the research priorities and requirements in respect of the following commodities:

cotton; coconut (including coir); oil palm; groundnuts (post-harvest only); soft oils (sesame, sunflower, safflower and cruciferous oil seeds); hides and skins; jute, kenaf and sisal.

It was agreed with the FAO that the TPI would itself carry out the post-harvest part of the exercise and that the Commonwealth Agricultural Bureaux would be responsible for the agronomic aspects. The following terms of reference were provided by FAO for this exercise:

- (i) A review of their comparative economic and social importance, globally, regionally and internationally (including country groups), in terms of their present and projected contribution to food supplies, employment, industrialisation and export earnings, in the developing countries.
- (ii) An analysis of market potential taking into consideration available figures on projected demand, possible substitution by synthetics and competitive production in developed countries.

- (iii) A review of current research activities in both production and end-use sectors giving examples of the benefits derived from past and current research both on the crops under study and on synthetic competitors and substitutes.
- (iv) An assessment of the potential benefits which might be derived from additional research on each crops and the sector (production or end use) in which research might have the greatest impact.
- (v) Based on the above, an assessment on the need for additional research, including local adaptive research and outreach programmes, and to the extent possible the economic justification for such research.
- (vi) Evaluation of the main priorities for additional research within the group of crops, given a situation of limited resources and inevitable competitive claims; preparation of an outline of the probable costs of any research allocated a high priority, and proposals as to the possible location of any research activities.

4. The completed study will be divided into chapters each dealing with both the production and post-harvest utilization of a particular commodity. Each will stand complete and contain a summary of recommendations for further research and development work. The only exception to this pattern is in the treatment accorded to oilseeds. It is impossible to discuss the economic environment of any oilseed in isolation since each is part of a complex combination of commodities all competing for similar markets. Consequently the economic evaluation of the oilseed economy covers all oilseeds although the production and technical aspects of each selected oilseed remain separate studies. The final chapter is devoted to an assessment of the research needs of the group of commodities viewed as a whole, and attempts to establish priorities for research based on the criteria outlined in the terms of reference.

5. Unfortunately it has proved impossible to complete such a review in the time originally envisaged. Although the major proportion of the study has been completed, the addition of sisal at a later date precludes its final completion before the end of October 1974. Nevertheless it was felt that an interim report, which outlined the general framework of the study and gave some indication of the consultants' preliminary views on the commodities studied would help to prepare the ground for a later more detailed appraisal by the TAC and highlight some of the implications for international agricultural research generally which any decision to implement or reject the detailed proposals would entail.

Economic Evaluation

6. There is growing recognition that the accepted notion of development as an attempt to produce the maximum amount of raw material and then "process" that material into a multitude of products using human ingenuity is an imperfect one. Such a concept does not necessarily result in people being adequately fed, housed and clothed, let alone "content with life", whatever further conditions this state may invoke. Nevertheless,

however imperfect, the yardstick of economic growth ^{1/} and its aggregation into Gross Domestic Product (GDP) remains for the moment the most convenient and effective means by which the development of peoples' living standards may be assessed. Consequently the basic framework of this study is an evaluation of the contribution, as a proportion of GDP, each of the selected commodities is making at present to the development of the developing countries (LDC's) and an indication of their future prospects, which implies varying degrees of inputs, both capital and expertise.

7. The broad area of study under consideration is what has become known as the Renewable Natural Resources sector (RNR) which embraces all plant and animal resources usually delineated into agriculture, forestry and fishing. The contribution of any crop or commodity to economic growth is composed of the value of the raw production plus the value added to that production post-harvest by its conversion into required products.

8. Assessed in this manner it is possible to demonstrate that the RNR sector contributed 36% of the total GDP of the developing countries in 1970. Of this amount approximately two-thirds was contributed pre-harvest and one-third post-harvest. In order to make this assessment it was necessary to evaluate the role of over sixty crops, but for convenience of presentation they are amalgamated into fifteen generic groups which although not botanically accurate are generally recognized. Fig. 1 shows the contribution of these generic groups to the RNR sector based on 1970 data. This data base will have altered considerably, but the level of aggregation implied in Fig. 1 is unlikely to have been influenced in relative terms by the magnitude of recent price changes.

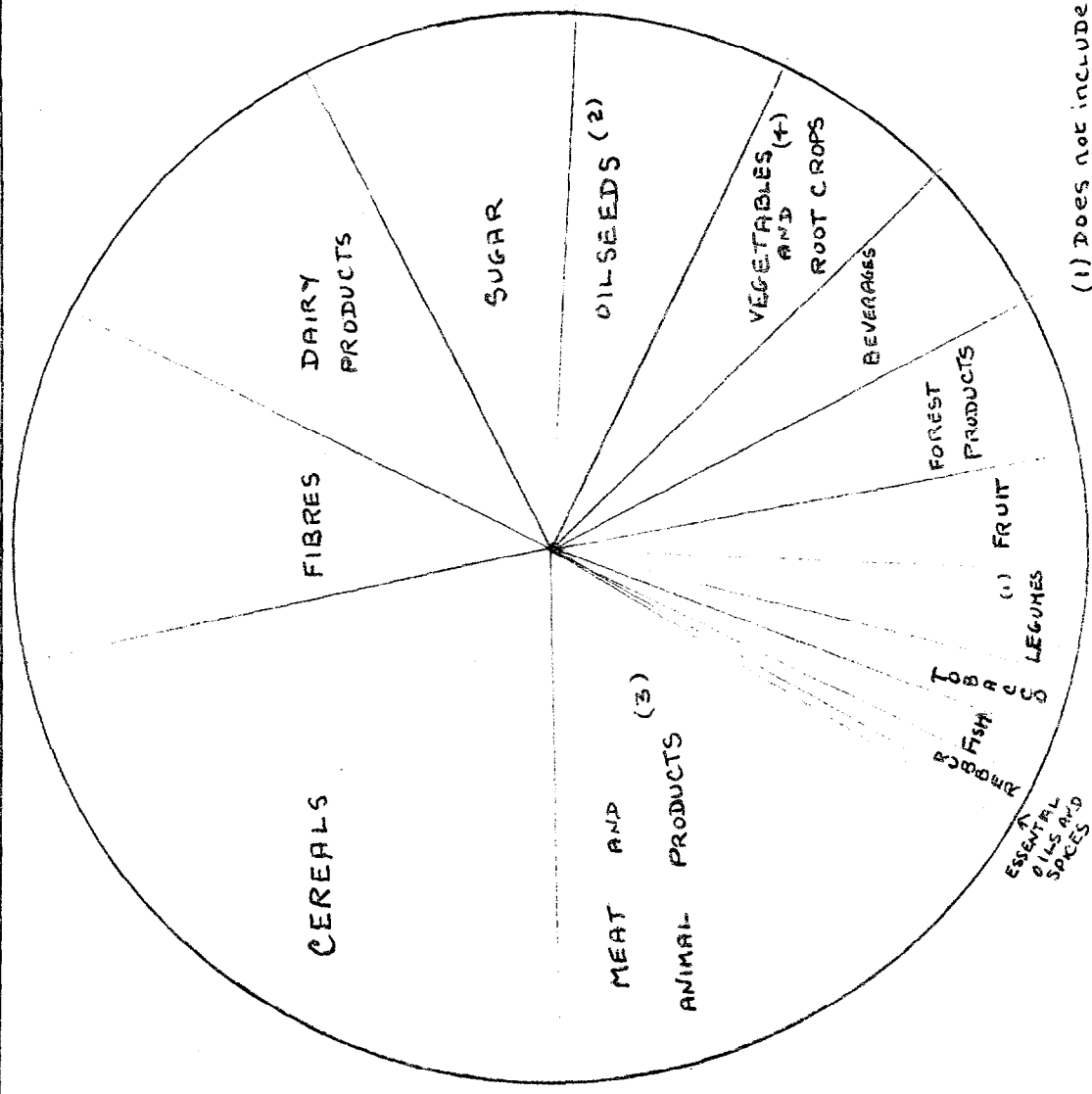
9. Figure 1 serves to illustrate the importance of cereals and livestock to the RNR sector. Cereals, meat and dairy products together account for only slightly less than half the total value of the sector which would seem to support the emphasis currently placed on these commodities by the Consultative Group. Nevertheless, it must follow that the other half is being relatively neglected. A high priority is currently being given to root crops and legumes, but accepting the definitions used, and making allowances for any discrepancies, it is unlikely that these programmes cover more than a further 10% of the RNR sector.

10. However, cognizance must be taken of the amount of research and development contributed to commodities by the private sector. In the case of sugar, tobacco, rubber, oil palm and beverages this is considerable, especially in the form of utilization research. In the absence of any specific data on the size of this contribution it would be unwise to draw conclusions, but the injection of substantial private capital into the development of a commodity must necessarily weaken its claims on both bilateral and multilateral aid funds. This argument may not carry as much weight in the production sphere but a more detailed assessment is required before a clear decision is taken.

^{1/} The prefix "economic" is used because growth in any sense is most conveniently measured in monetary terms - it is the only common denominator. However, it does not preclude improvement in non-monetary terms but tacitly acknowledges that certain conditions which are an improvement in living standards cannot be quantified. This is the nature of the imperfection.

FIG. I

The Contribution of Commodity Groups to the Total Value of the RNR sector in LDCs 1970



- (1) Does not include soyabeans and groundnuts
- (2) Includes soyabeans and groundnuts
- (3) Includes hides and skins
- (4) Includes tomatoes

11. This still leaves us with several important commodity groups, notably forest products, fish, fruit, oilseeds and fibres. Together this group accounts for about 26% of the total value of the RNR sector but the latter two contribute 16% of this, which would seem to support the selection of commodities for this study. Of the omitted commodities forest products and fish have barely begun to exploit their potential within the LDC's, but a great deal of thought has gone into their development in the tropics. Fig. 1 demonstrates their relatively small contribution at present but it is anticipated that their progress over the next decade could be rapid. Tropical fruits, which tend to be dominated by the banana, have been given considerable bilateral assistance, but certain exceptions such as the mango could well benefit from assistance.

12. Consequently, the oilseeds and the fibres along with hides and skins which are an integral part of the livestock sector, seem to be the prime outstanding commodities so far as gaps in the present programme of internationally financed research are concerned. However, it is perhaps worth noting that within these two groups, cotton, coconuts and groundnuts are by far the most important crops accounting for three quarters of the combined total value within LDC's. This fact should be borne in mind whenever reference is made to fibres or oilseeds as a generic group.

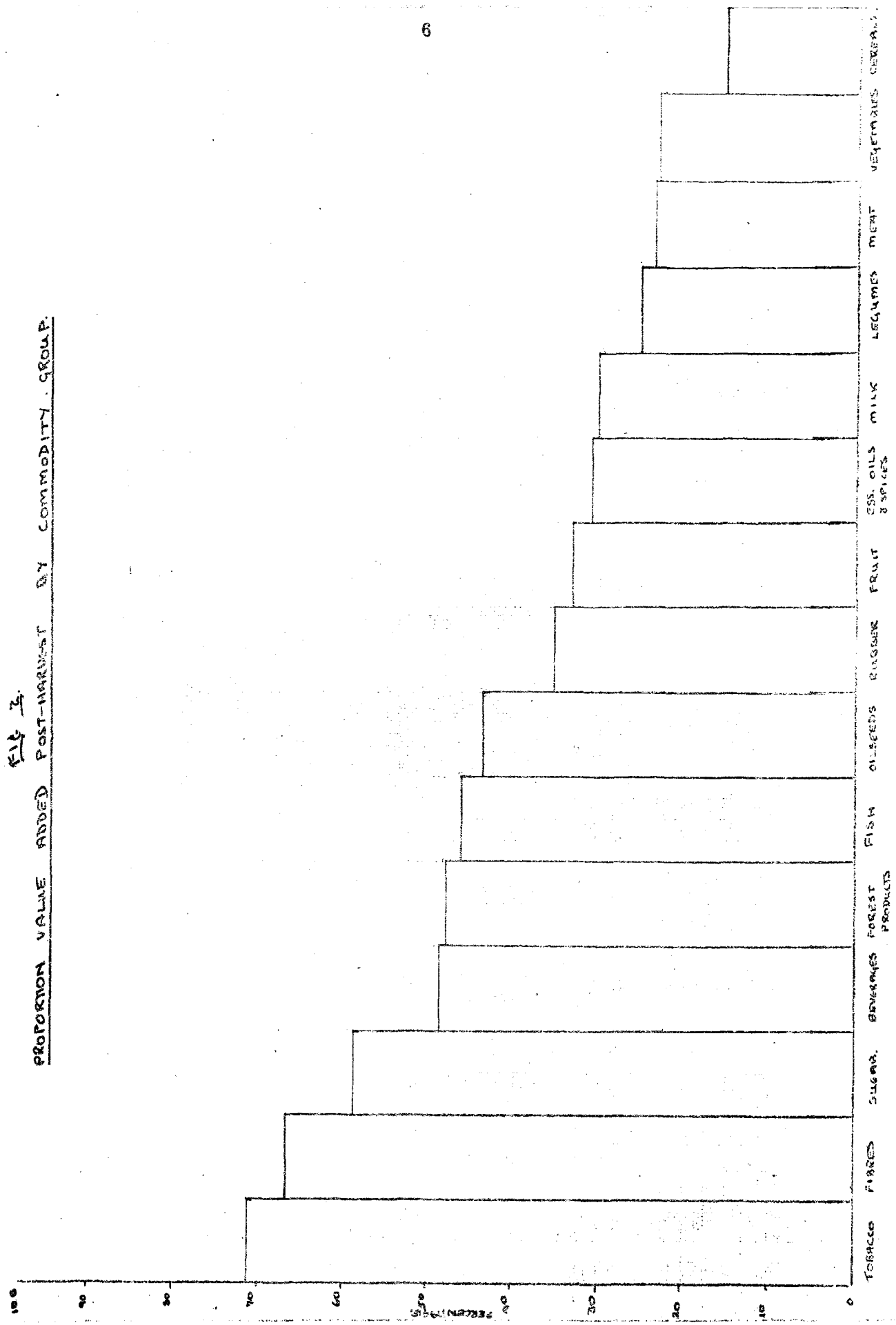
Specific Economic and Social Criteria

13. Within the broad economic framework previously outlined there are hidden specific economic and social factors which are often considered as primary objectives of development in their own right and to which particular emphasis is therefore attached. They include the contribution a commodity makes to industrialization, its export earning potential and its capacity to provide employment. From the international agency point of view the number of countries benefitting from a commodity's development is also highly relevant.

14. Since Fig. 1 takes account of the post-harvest value of individual crops their contribution to industrialization is already covered, but it is perhaps of interest to isolate this component from the broader economic assessment. Fig. 2 illustrates the comparative importance of the production and end use sectors of each commodity group within LDC's. For example, fibres as a group obtain 66% of their total value from post-harvest activities, but the figure for cotton is significantly higher than that for jute and sisal. The oilseeds are not quite so "industrialized", but almost half their value is obtained beyond the farm-gate. It is perhaps significant that those crops presently supported by the CGIAR, namely cereals, meat, legumes and root crops all have a relatively poorly developed post-harvest sector.

15. In terms of actual employment it is impossible to obtain reliable information. The International Institute for Cotton recently estimated that in the order of 8 million people are employed in the textile industries of LDC's and an independent figure of 3/4 - 1 million people has been given by those employed in the tanning industry of LDC's. The industries based on oilseeds are so diverse that not even a rough estimate is available. It seems likely to be somewhere between the two figures quoted. In addition to industrial employment it must not be forgotten that these crops provide the livelihood of millions of small farmers, and in doing so also contribute to their understanding of the market economy, since in instances they are cash crops.

FIG 2.
PROPORTION VALUE ADDED POST-HARVEST BY COMMODITY GROUP.



16. A further factor that is difficult to quantify is the extent to which any research programme is likely to benefit the mass of developing peoples. One obvious but relatively crude indicator is the number of countries producing a crop. On this basis cotton, oilseeds and hides and skins all rate highly, being produced in some seventy developing countries. Jute, kenaf and sisal are more geographically specific with six countries accounting for virtually all their production, but jute in particular is critical to the livelihood of virtually the entire Bangladesh population.
17. Of equal if not greater importance to LDC's than "adding value" is the problem of obtaining foreign exchange to buy the products of the developed world necessary to sustain their development. Thus the contribution a commodity makes to export earnings is a major factor in assessing its importance to an economy. All the commodity groups mentioned are important export earners, together accounting for approximately one-third of the value of all RNR based exports from LDC's. Cotton and cotton goods are the primary RNR export from LDC's and oilseed products are one of the five most important. Jute, sisal and hides and skins have a lower total value but jute and sisal in particular are of extreme, if not, critical importance to the foreign exchange earnings of selected economies.
18. Finally in economic and social terms any research programme must bear in mind the future demand for a commodity, particularly in relation to competition from the developed countries, and especially the possible development of synthetic substitutes. The fibres in general have long been exposed to synthetic competition and have inevitably lost a proportion of their markets. Yet cotton in particular has fought back and its prospects are perhaps brighter now than they have been for many years. Research has yielded important results and the demand for cotton goods is buoyant. Jute and sisal have not been able to mount a major counter attack to synthetic competitors in research terms, but have relied principally on maintaining a competitive price. Recent events have made this extremely difficult, if not impossible, and both fibres have steadily lost ground. Their future is perhaps more in doubt than is cotton's, which is possibly an argument in favour of providing support. Hides and skins or subsequently leather, are also subject to increasing pressure from synthetics coupled with a relatively low increase in demand. However, leather still has many properties that have not been duplicated satisfactorily by synthetics which, given adequate finance and international cooperation in providing adequate supplies of good quality raw material, gives rise to optimism about its future. The oilseed economy is the fastest growing of any of the commodities studied, and has the advantage of a very broad products base. Synthetic competition is apparent in specific fields and will undoubtedly broaden its impact but there is every reason to expect that the benefits of a coordinated research programme would be substantial.

Research Requirements

19. No attempt is made in this paper to outline any detailed research proposals which might anticipate the findings of the completed study. However, it is perhaps pertinent to draw attention to some of the characteristics of the selected commodities which place them in a different light to those presently supported by international finance.

20. The commodities presently supported are all commonly regarded as staple foods, which implies several built-in advantages where international cooperation is required. Firstly, the political climate is sympathetic to any research programme designed to increase world food supplies, especially in developing countries. There is therefore little disagreement in principle with such schemes. Secondly, the nature of staple food production in developing countries means that the emphasis must inevitably be put into the production process. As is amply demonstrated by Fig. 2, there is, as yet, no post-harvest sector of any consequence. Finally, the production problems requiring attention were those that lent themselves to a centralised research effort, although local adaptation plays a significant part. All these characteristics make international research cooperation somewhat easier than with the commodities selected for this study.

21. As evidenced by the present study, the selected commodities do not have the support in principle given to the staple foods. The previous sections of this paper are an attempt to illustrate the worthiness or otherwise of these commodities for some form of international assistance. Secondly, the area to which assistance might be directed is much broader. The fibres, leather and oilseed economies are not solely concerned with what is produced on the farm, but also with the commodities utilization beyond the farm-gate, and with overcoming any competition for its markets. It follows that, even if agreement is reached on funding a given commodity, there may be disagreement as to the problems which should be tackled. Furthermore, the existence of a "commercial" sector can mean a conflict or duplication of interests between private industry and international finance, or possibly make it very difficult for either bilateral and multilateral funds to support meaningful research programme. This may be because support of one commodity would risk endangering another, or that support for an industry might reflect adversely on a donor country's own industrial interests.

22. The point is rapidly being reached at which some guidelines are needed for organizing and financing research on agricultural commodities which have a far broader activity base than the staple foods. Current UNDP and IBRD studies on jute and cotton may well provide an answer but the ultimate criterion is whether or not that answer represents the optimum use of the limited agricultural research funds available to the LDC's.

23. Each crop has its own specific requirements, but certain broad guidelines may be worth discussing. A convenient and meaningful distinction can be drawn between "production", "utilization" and "promotion". All the selected commodity groups require assistance in each of these fields in different proportions, but the desire and ability of donors to contribute to them varies enormously.

(a) Production research

Ideally, internationally-financed production research should be based on co-ordinated national programmes which would ensure the participation of all available facilities at the national level and a common approach between national programmes using an agreed list of priorities. Unfortunately, national programmes are seldom well defined which makes it very difficult, if not impossible, for international funds to be dispensed on that basis. Again it is often the extension, rather than the research facilities that are inadequate. In the face of these limitations the answer to date has been the international research centres,

but this is only one of a wide range of alternatives. It should be perfectly possible for international agencies to support production research on the basis of properly coordinated programmes based on national institutions, or even to support a specific project of global importance carried out by a particular national or regional research institute.

(b) Utilization research

Faced with competition from synthetics, utilization research is vital to the future of most of the crops under study. It may take the form of expanding the inherent properties of the commodity or adapting the existing product to new end-uses. Unlike production research, end-use research is seldom geographically specific, being more dependent on expertise and sophisticated technology. It therefore lends itself to centralisation, although a programme of research centrally coordinated and contracted to individual research organisations has the same effect. Since most of the advanced technology is situated in the developed countries with facilities in various localities it is rarely necessary to establish new centres. Of greater importance is the need for close contact with relevant industries, and regular communication with those responsible for the salient elements of production research such as breeding programmes. There is an obvious need for coordination and for a forum within which the priorities may be agreed. The extent to which this is a role which could be filled by existing international agencies or institutions needs to be decided.

(c) Promotion

All the production and technical research in the world is useless unless means are provided for "selling" the improved products to the public. This requires a single dynamic market research organisation with close contacts with the wholesale and retail trade. In view of the commercial connotations of promotion it is often difficult for public monies to be used for this purpose and for either multi- or bilateral donors to support it for political reasons. Yet it is apparent that these activities cannot be divorced from the utilisation and production activities.

Given the difficulties involved, a formula needs to be found whereby the various research activities relating to a commodity are coordinated but within which international funds are only used for their intended purpose.

One solution would be for international funds to only partly finance any comprehensive commodity development programme either by funding specific projects or by contributing to only a production or utilisation research fund and leave the promotional activities to be financed jointly by the producing countries themselves and the relevant industry.

Commodity Requirements

Oilseeds

24. The oilseeds are the most diverse and complex of the commodity groups selected. Despite the fact that a coordinated programme of research for the development of oilseeds as a group would be likely to present a stronger case for international research funds than any particular oilseed in isolation, it is felt that their diversity and inherent competition makes it unlikely that a common set of priorities could be agreed for all oilseeds by any "oilseed committee". It is therefore suggested that proposals with respect to individual oilseeds might first of all be assessed in their own right before any attempt is made to formulate an "oilseed programme".
25. A strong case can be made for supporting both coconuts and groundnuts particularly in the light of the present emphasis on staple foods. Both crops are in effect staple foods within their primary production regions. Over half the total production of coconuts is utilised as food at the subsistence level and approximately 40% of groundnut production is similarly used, excluding the food value of their processed products such as the oil. Furthermore, they are the two most important oilseeds in economic terms and supply significant export markets. Their products form the basis of several agro-industries and they also benefit a relatively large number of developing countries.
26. Given their present state of development any research effort into coconuts and groundnuts must be predominantly on the production process. Preliminary findings to this effect have already been formulated for coconuts but the consultants were not asked to consider the production problems of groundnuts since it was felt that sufficient consideration was already being given to them. However, it has become apparent during the preparatory stage of this study that any research has had comparatively little impact at the farm level. There is an urgent need to improve the productivity and competitiveness of groundnuts.
27. A possible solution is for essentially production research programmes to be formulated on a single commodity basis with the dual aim of tackling major research problems and at the same time reinforcing existing research facilities. Programmes of this nature would need to be associated with the relevant utilisation research especially in the case of coconuts where stronger links between the breeder and processor would be particularly welcome. Similarly, detoxification of the oilcake merits close attention as does the impact of synthetic products on the market for lauric oils. There is at present no framework or coordinated programme within which any attempt is made to solve the problems of either coconuts or groundnuts. It is suggested that consideration should be given to supporting research along the lines indicated above. Alternatively there is a possibility that groundnuts might be incorporated into the existing CGIAR supported centres, ICRISAT being the most appropriate.
28. The second major group of oilseeds consists of oil palm, cottonseed and soyabeans, all of which make very similar economic contributions to the oilseed economy of the developing countries. Cottonseed is the most geographically widespread followed by oil palm and soyabeans. It may be argued that the vast proportion of soyabean and oil palm production comes from one or very few countries, but it can be demonstrated that this is true of all oilseeds. Even the apparent dispersal of cottonseed production hides the fact that few countries produce well over half the total LDC production. Furthermore the

producers of oil palm and soyabeans are growing in number. In addition both cottonseed and soyabeans could make substantially greater contributions than at present to food requirements either by direct human consumption or through animal production. The three oilseeds mentioned are also perhaps the three most competitive oilseeds within a generally expanding sector.

29. There is no necessity for any centralisation of research facilities or indeed any major expansion of existing facilities. However, all three oilseeds would benefit from support being given to coordinated research programmes which ensured that the available expertise was orientated towards those problems of major international importance. In spite of the recent dynamic growth of oil palm production there remains a great deal to be done at the breeding stage and in improving the quality of the oil. In the case of soyabeans any research programme would obviously benefit from the knowledge gained by the U. S. A. in recent years.

30. The final group of oilseeds consists of sesame, sunflowers, rape/mustard and safflower. Together they account for perhaps 12-15% of the total value of the LDC's oilseed economy. Sesame is the major oilseed of this group and holds a particular position in tropical agriculture. In terms of its geographical distribution sesame ranks third, behind groundnuts and cottonseed, but is second only to groundnuts in terms of the acreage it covers. The seed has considerable food value apart from producing a high quality oil and oilcake. These products are in great demand but the crop in general suffers from very low yields. It is possible that major production research could partially improve its productivity but the main effort would seem to be needed at a local level.

31. The role of sunflowers, rape/mustard and safflower is rather more geographically specific each being largely confined to one particular producing country. Efforts are being made to promote the production of sunflowers in certain other developing countries since their productivity makes them highly competitive, but the role of international research funds in their development remains uncertain. Perhaps the most profitable avenue would be to support a small project team designed to solve a specific problems with the assistance of a developing country but on the understanding that the results would be made generally available. Alternatively, consideration might be given to incorporating annual oilseed problems of global significance into the programme of work of the proposed Middle East international centre.

32. The oilseeds have facets which permeate both food and manufacturing sectors of the LDC economy. However, whilst bearing their overall significance in mind, it is contended that from the point of view of international funding, a more productive approach would be to consider their needs individually or within small groups. There seems little need for the provision of major new research facilities, rather a difference in approach to that previously adopted for the staple foods. The primary effort is needed in production research but this must be linked to appropriate end-use requirements. Several different research frameworks are likely to be needed which bear little similarity to the established international research centres.

Fibres

33. This group comprises cotton, jute, kenaf and sisal. Together they represent in excess of 10% of the total value of the RNR sector within LDC's but cotton alone accounts for three-quarters of this figure. All of these fibres in varying degrees require research and development in each of the three spheres previously delineated, namely production, utilisation and promotion. This again implies a completely different approach to that exemplified by the present international centres and also to that postulated for the oilseeds. There is a need for a strong organisational structure which can ensure that a proper balance is reached between these various spheres of activity.

34. Following the recent UNDP Mission Report, ^{1/} it seems likely that multilateral aid will be sought to establish such an organisation for cotton. The precise method of funding has still to be agreed but the principle of a central organisation drawing on bilateral and multilateral funds for implementing an agreed programme of research and development across the whole range of commodity activities seems to have been accepted. The importance of cotton to the LDC's is undisputed and the formulation of a framework which enables funds to be channelled into all three main streams of research is to be welcomed, but it nevertheless remains true that cotton will be competing for funds from the same sources as those now available to the CGIAR without as yet having had its claims and priorities judged on the same basis. This seems an undesirable precedent which could lead to considerable conflict.

35. It is in fact an example that is likely to be followed by jute, following the UNDP Mission and recommendation to establish Jute International. In terms of the developing countries as a group, the role of jute is not of major significance. Its claims rest primarily upon its critical value to Bangladesh. Although jute's main problems are perhaps at the production stage, it requires a balanced programme which acknowledges the interdependence of production, utilisation and promotion research and is therefore flexible enough to allow funds to be distributed accordingly. This again requires a centralised organisation to establish a set of priorities and on the assumption that international funds are to be used it would seem desirable for any proposals to be judged in relation to competing demands made on both international and bilateral funds.

36. Similar proposals have been put forward for the hard fibres but do not appear to have been taken up. Although the hard fibres do need research in the production sphere, it is primarily in the utilisation field that effort is needed to expand their end-use capabilities and allow them to meet the competition from synthetics. The most appropriate programme would possibly be a series of related projects on the fibre carried out in a network of institutes with a background of basic fibre research.

^{1/} INT/71/032. The Administrators Fact-finding Mission on an Integrated Programme for Cotton Research and Development.

Hides and Skins

37. The efficient utilisation of hides and skins and other animal by-products is extremely difficult to attain for the simple reason that they are by-products. The supply is not geared to the demand for the end products and there is little incentive in LDC's for the farmer to pay any undue attention to the quality of a hide or skin. The quality of the hide is not reflected in the price he receives for the animal, the result being an enormous wastage and a shortage of hides of acceptable quality. There is an urgent need to improve this situation but the problem is so complex, being related to animal husbandry techniques and infrastructure facilities that it has to be tackled initially at the national level. Beyond that stage there is also a need for utilisation and promotional activities to be expanded. Broadening the utilisation base of leather and "selling" it to the public are urgent requirements but would seem to demand rather better cooperation, between producer and processor and between developing and developed countries, than exists at present. Given improvements in these areas a strong case could be made for international support being given to specific research proposals through a formal body.

Conclusions

38. Whatever might be the detailed proposals and set of priorities formulated by the completed study it is probable that they will imply:

- (a) funds being used to finance a much broader range of research activity than that at present encompassed by the international centres,
- and (b) various alternative research frameworks to that of the existing "international centre" model.

39. On the assumption that the CGIAR accepts responsibility for the research activities of the crops under review, the completed study could normally expect to provide guidelines which would assist the TAC in extending the role of the CGIAR over a period of time. This may still be so but the studies' conclusions are likely to be partially pre-empted by the separate proposals already made to establish international research networks for jute and cotton. Irrespective of the priorities established by this study or the views of the TAC, international and bilateral funds are to be sought to finance jute and cotton research organisations.

40. It is not yet clear whether the CGIAR will be asked to accept responsibility for these centres. In effect precisely the same donors are involved as with existing centres the only difference being the channel of communication. The question of additional finance hardly arises since presumably the cost of such new centres or networks and the desire or ability of donors to contribute to them is much the same whether they are within or without the CGIAR forum. In essence, it seems at present that donors are being asked to accept two different sets of criteria for establishing international research networks. It would seem desirable therefore in the interests of internationally supported agricultural research generally within the developing countries, that this conflict of views should be resolved.

41. It is suggested that the TAC should accept the proposals for jute and cotton research in principle and recommend them to the CGIAR, where they would be competing in an appropriate forum along with other commodity and factor orientated research proposals.

42. Although this would be contrary to present TAC priorities there seems no reason why a list of priorities should mean that the majority of agricultural commodities are entirely neglected. Rather it suggests that some crops are more deserving than others. Recommending jute and cotton to the CGIAR would be a means of assessing their worth. Bearing in mind the current expenditure of \$ 4 million on rice at IRRI, an annual input of \$ 200, 000 into jute research does not seem disproportionate. It is hoped that the findings of the present study will help to redress the balance in favour of other commodity groups such as the oilseeds mainly by demonstrating that substantial benefits can be expected through the use of research networks employing existing facilities at relatively minor costs.

43. Furthermore, acceptance of the jute and cotton proposals implies an acceptance of the developing countries as donors to international agricultural research since both proposals envisage substantial producer country support. It seems highly desirable that the LDC's should be encouraged to support international agricultural research even if only for commodities of direct benefit to themselves and on a modest scale. LDC participation could also serve to stimulate interest in coordinated research programmes which seem the optimum solution in the case of several commodities.

44. The alternative to this course of action would seem to be a situation in which it has been demonstrated that channels are available through which a commodity could hope to obtain international funds without being subject to any agreed order of priorities. This could only lead to similar studies being requested on a range of commodities, and the gradual identification of the CGIAR framework with staple foods alone. This is regarded as a highly undesirable state of affairs in which the only casualty would be the progress of international agricultural research generally.

45. The Consultants hope that their detailed proposals could be considered in a climate of cooperation rather than division. Only then will any proposals receive the degree of attention that the subject merits and the available funds be allocated in a manner that recognizes the breadth of the RNR sector.