

PROBLEMS OF INTRODUCING AND DEVELOPING NEW CROPS

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There are a number of different and sometimes conflicting motives for developing production of new crops. The chief motives may be to provide an additional export crop to increase the country's earning power of foreign exchange. The second motive may be to improve the balance of payment position by being able to reduce the need of importation of certain products. A third motive and one which is likely to have high political appeal is simply that of putting more money into farmers pockets. A fourth motive which could also have strong political motive would be to prevent farmers' earning power decreasing when the value of the crops they are at present producing falls with a fall in the world market prices; this motive particularly in Buganda is of pressing importance. A fifth motive which is of more direct agricultural interest is that of providing crops which could be grown in rotation with cotton extensively on group farms and irrigation areas, etc. Such crops if possible should be capable of being mechanised in order that they do not compete with labour requirements with cotton. A sixth motive is to provide suitable raw materials for industrialisation in Uganda. It is no use rejecting a possible new crop for example on the grounds that on a per acre basis it gives a lower return than an existing crop at present prices. This argument has been applied to the consideration of alternative crops to cotton for group farms. That one cannot grow cotton to the exclusion of all else should be obvious unless one is to abandon the notion of arable rotation altogether. One must get the best return that one can from other crops and if the initial return is not all that it might be then attempt to improve it by reducing costs by more evolved mechanisation. To demand of a new crop that it must give a guaranteed return of not less than a minimum figure even to farmers totally inexperienced in its production techniques is about the most certain way to stifle any new enterprise. The motive of putting more money into farmers' pockets - which unless it is satisfied will prevent any new crop becoming accepted may involve Government in the expenditure of development funds since there may well be a lag period between initial farmer production and the attainment of sufficient production at high enough quality for it to be advisable to launch the product on the world market on a commercial scale. The lag period is a necessary one for the establishment of technique by farmers, the multiplication of seed stocks to a sufficiently large scale and for setting in motion the machinery of handling, cleaning, grading, storage and marketing. One cannot hope to achieve all this in a season. Meanwhile somebody must finance the farmers who produce the crop. A price must if possible be fixed in the development phase which is expected to be able to be maintained once the commercial marketing is in progress. The motive of reducing imports is one that needs careful consideration. It is tempting merely because an imported product is on sale at a high retail price and which could be produced locally - Kenya fresh vegetables, German sauerkraut, Australian Seville Orange marmalade to mention only three - to suppose that such a product is worth producing locally. The chief difficulty here is that if there is any success at all in developing production then the local market will be very rapidly overflowed and one is then forced to look for other outlets for the produce.

I would like now to turn briefly to some aspects of the marketing of the crops. One of the first considerations which I feel is important in a country so small in size as Uganda is the extent to which any increase in production of a particular crop by Uganda may alter the demand position on the world market. Another way of stating the same question is, "Is the present world production and trade of a particular commodity so small that an increase of the order which is likely to be of any significant value to Uganda's economy would be sufficient to alter the market. For many specialised crops such as nutmegs, pimento, cloves, etc. world trade is specialised by countries of production and some individual countries have practically a monopoly, but for other crops such as soybeans, haricot beans, ginger, maize and rice the number of producers and consumers is much larger and Uganda's contribution would be unlikely to significantly alter the supply position on its own. However, one must add a warning about what may happen when the development of a new crop in this country is being encouraged at the same time development of the same crop in many other countries. As an example of this one must mention Cacao where there appears to be a danger that an enormous promotion campaign undertaken by a European cacao processing organisation at the time of the scare over Swollen Shoot Virus in West Africa, may lead to a situation where all those countries in which there has been a great resurgence in interest in the crop are ready at about the same time to

put their products onto the world market. When this happens prices must surely fall disastrously. One way of taking advantage of the fall in the world price of commodities which Uganda would do well to consider seriously is to become a buyer rather than a seller. With the present interest in industrial development in Uganda one would hope that the direction in which industrialisation would proceed would be one or would involve a greatly increase local utilisation of agricultural raw materials. This would have very many advantages among which would be firstly that the profits which normally go to middlemen outside Uganda and account for the large proportion of the difference in the price for the Uganda farmer and the final European consumer could become available in this country. Secondly, and perhaps of more importance, would be the better control of quality which we should be able to achieve in the export of processed finished products rather than raw materials. Exported agricultural raw materials tend to be rather bulky and to contain quite a lot of waste material, the most important is water. For many agricultural materials in transit between Uganda and their final destination there is a risk of serious deterioration. Two agricultural products I would like to draw attention to particularly in this connection are groundnuts and ginger. Groundnuts as you know have/ the cause of a considerable scare in importing countries because of the common contamination by a fungus called Aspergillus flavus which may produce a toxin called aflatoxin making the groundnut poisonous to stock and possibly also carcinogenic to humans. The only way of being certain to avoid the development of aflatoxin is to make sure that a minimum moisture content is maintained in groundnuts during transit. For a land-locked country this is very difficult. In considering the export of ginger as dry ginger there is a similar problem. The value of ginger to the importer in Europe or the U.S.A. will depend upon its having a minimum moisture content though it may be possible to get the ginger to this degree of dehydration before it leaves Uganda yet since the journey after leaving this country is so long and since it is so difficult to maintain any close control over conditions on the journey it may well mean that some exports in this form will be valueless when they reach their destination. In such cases of groundnuts and ginger there might be two approaches. The first would be to try and introduce a system of controls and inspections during transit so that we can meet the stringent regulations for the products exported in this form, but the second and to my mind a more intelligent approach would be to give up trying to export this form of produce and to process it locally to a less vulnerable and more valuable state.

This leads me to a discussion of the vital importance of quality in exported produce. I am not sufficiently an economist to know the terms in which quality might be given an economic index but I sometimes fear that economists may underestimate the importance of quality especially if at the time when they are considering a particular product there is no price differential between a first rate product and a second rate product. In such circumstances it might be argued very inadvisably that if it was a little cheaper to produce a second rate product then there will be no point in bothering to produce a first rate product. Anyone at all familiar, however, with the workings of a large produce market such as the Covent Garden market for vegetables in London will be aware of the importance of quality in terms of the good name that a country may gain by the recognition of production of consistently good quality. In this market a producer who has established a good name must never allow any produce appear under his trade mark which is below his accustomed standard, even if it were possible to sell it, because once this had happened no buyer would ever again be certain of the quality associated with the mark. Producers for such markets who wish also to sell the second grade produce will sell under an entirely different trade name. In the international produce markets however, a commodity tends merely to be recognised by its country of origin regardless of variation among different producers within the country. It is for this reason, to return for a moment to the specific instance of Covent Garden, that it is so vitally important that Uganda should not allow any second grade produce to appear. At the present time or at least up till the end of the 1964/65 season Uganda's name stood very high and Uganda produce commanded a premium price. If once our reputation is tainted even our better produce may be expected to command a lower price. When trying to enter the world market with a new product the quality of the first consignment will set a standard. If one releases rubbish onto the market from Uganda then even if the quality of that product can subsequently be raised to a more acceptable standard the prejudice against the product built up by the early consignments may be very difficult to overcome. It is for this reason one may assume that the Uganda Government has

wisely refrained from selling its early cacao production though this policy must have been expensive to pursue.

I want to turn now to another aspect of marketing, market research and the way in which Economists are able to assess the potentialities of new crops. The first comment I would like to make is that it is not possible satisfactorily to gauge the market potential of a product before such time as genuine commercial samples are available. It is very easy by hand grading, etc. to produce small quantities of very high quality produce but if one is unable to match this in commercial production except by introducing enormous extra costs then one may be misled. What is still more unsatisfactory is what might be called hypothetical marketing, i.e. trying to find the market for something for which one has not yet produced. Two questions, nevertheless, which perhaps should be asked more often than it is when considering the possible economic production of a new crop are simply, "Do other countries find this crop economic to produce and to sell or not?" and "Is the standard of living of the people producing the crop up to that which we would want our own potential producers to achieve?" If the answers are yes to both questions and there are not really major differences to soil and climatic factors then it is reasonable to suppose that with sufficient initiative and drive that a new producer should also be able to make a profit, always provided that, as I have already discussed the extra production is not a significant proportion of the world trade in the product. When considering the potential economics of production of a new crop there is a temptation for economists, hungry for any figures to feed into their calculating machines, to choose ones which may not be valid for the exercise. I would like to mention in particular the selection of the national average yield figures per acre over say a 20-year period as a reasonable figure for the expected per acre yield of the crop in question. If it were profitable to grow and export these crops at such low yield levels then it is also probable that somebody would have done so already. The figure one must work to is the yield per acre which can reasonably be expected from the variety in question of the crop under competent systems of management. Let me give a specific example and refer to beans, a crop in which I have taken a certain amount of active interest over the last few years. Here the average national yield cannot be more than about 200 lbs. per acre but with one of the varieties of white haricot beans which we have selected at Kawanda one should not get less than about 1000 lbs. per acre and may get up to about 1500 lbs. per acre. If one is costing the labour input in terms of cultivation, time land preparation, sowing, etc. then these might well be about the same for the poor quality seed of an unimproved variety as for good quality seed of a selected variety, the difference in yield of 800-1300 lbs. per acre will make a considerable difference to the computation of the economics of producing the crops. Let us not when trying to develop new crops suppose that we are going to be able to develop them with bad husbandry. Let us not even try to do so.

I want to turn now to what might be described as the mechanics of getting exploitation and production of a new crop under way. In nearly every case the first need is for a number of years of intensive research work. Some crops which are at present arousing a certain amount of increased interest in Uganda have been given this necessary attention, among these one must mention maize, sorghum, groundnuts and beans. A number of other crops however, which are discussed from time to time with great enthusiasm may have been mentioned perhaps in the research sections of about four annual reports of the Department of Agriculture as being under observation or trial but this will very likely mean little more than that somebody who was already overworked in another full time job had planted out a few plants of so and so in an odd corner and more or less seen whether they could grow if left to themselves. Crops which have been given this sort of treatment at various times in Uganda are many. To attempt to assess crops on such a basis is almost certain to lead to the view that they are not suitable. Another mistake that is very easy to make is to attempt to assess the potentialities of a new crop on the basis of observations only of a single cultivar of the species or even occasionally on the wrong but closely related species, as happened with observations intended to be on the growth of *Piper nigrum* but which were in fact *Piper guinensis* the false cubeb. One of the most important things which students learn in their agricultural botany in the enormous range of characters and potentialities within a single crop species. Different genotypes may be adapted to very different conditions. It is interesting to consider what might have been our view of the possibilities of growing cotton in Uganda if somebody had introduced in 1965 from the Gezira Cotton Scheme in the Sudan the main commercial variety for an observation trial of

the possible potentiality of cotton in Uganda. Cotton which is capable of yields of lbs. seedcotton per acre in Sudan yields of the order of . One can envisage that if cotton had never been grown here before that a single paragraph in an annual report would have reported that this crop had been tried but had not been considered of value for Uganda as the yields were not satisfactory. I would like to mention here a crop which came to be written off for a long period as a potentially useful crop in Uganda and which continued to be regarded in the same way even when a particular reason for its rejection was no longer applicable. This was wheat. In the early trials of wheat in Uganda the rust diseases which had at that time been little studied in E.A. was so severe that no attractive yields could be obtained. 20 years or so later when the programme on wheat breeding in Kenya had made great strides by breeding and selection in overcoming the problem of rust diseases by regular issues of varieties able to resist the diseases, the attitude was still firmly held in Uganda that wheat could not be grown because of the rust problem. This had become an article of faith. To take to its logical conclusion and our understanding of the enormous potential variability within crop species one might almost adopt the position that if it is seriously desired to develop a particular crop in Uganda then given manpower, finance, time and the absence of too many totally inhibiting restrictions that it should be possible to select or breed a variety or varieties which will give satisfactory yields. This may of course be a slow process but if the crop is wanted sufficiently and the money provided for research striking results can be expected.

What is a total waste of research skill, time and money is to mount an improvement programme on a research scale and then not be prepared to make the further necessary investments for the development of the improved variation as a commercial proposition. There are a number of crops which I have already mentioned where there has been a danger of this situation coming about but one would be happy to think that this danger has now been recognised and that appropriate steps are being taken.

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