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DISCUSSION

(On Papers delivered by Messrs. James and Mac Millan)

G. Wrigley (U.K.):

I would like to ask Mr. James this question. Given the present situation we have in Trinidad of the displacement of oil workers, what percentage of oil workers does he think would accept this re-employment in agriculture how fast does he think this could be achieved if it was necessary, and what type of farming system does he think would be the ideal in the oil field area in the south of Trinidad to achieve this?

L. James :

What percentage of the displaced would go into agriculture, I don't know. This depends on what they might want to do. Some of them, for example, who may be retrenched now, would probably be getting reasonably substantial severance benefits which they may invest in perhaps a taxi. How long it will take to develop into an economic unit—this is what your question meant to convey—depends to a large extent on the energy of the man, and you will remember from what I've said we have not limited at all the type of investment assistance which we are prepared to give; in fact, we have not limited ourselves to any type of assistance, except that we are not giving cash. So that once a person is prepared to extend himself he will find himself with a developed holding within three years. What was your last question?

G. Wrigley :

What farming system would you suggest for this farming area?

L. James :

Well, you heard from Mrs. Rawlins about land capability. A lot of this depends on what sort of soils you have and so on. What we did at the time was to start on food crops which in Trinidad had a lot of significance at the time. Without thinking too much of it, I think dairy farming has some possibilities.

C. Pilgrim (Barbados) :

I dare say that as long as the wage and income of agriculturalists are going to be less than the average in the town, indeed as long as the income is not going to be more than the average in the town, you are constantly going to get a drift to the town. And I sometimes wonder whether our attempt at forming an agricultural peasantry will really withstand the test of time. I personally doubt it very, very much.

R. Rawlins (Trinidad) :

Most of us as agricultural economists would, I am sure, concur with Mr. Pilgrim in saying that one has to aim at competitive income for rural people if we expect them to make a business of farming instead of expecting a subsistence level and a drift to unemployment in the town. But in Trinidad, for example, we now have a situation in which people will have to begin to realise that

industry cannot absorb people as rapidly as we would desire. Mr. James has demonstrated that even former oil workers can and will adjust to lower incomes in agriculture for the time being, if an economic footing over a reasonable period seems probable. So it seems to me that a considerable number of people may accept re-employment into agriculture, provided they are given certain infra-structural facilities, and provided the lands are made available to them under such terms that they can expect at least a modest family living. I think that this is the basis on which the Trinidad Crown Lands Programme is operating. The levels of incomes which are anticipated for these farmers are certainly not oil workers' wage levels, but people are willing to accept this scheme because the capital is provided for them, because guidance is provided for them, and because they can have at least a modest expectation of living.

L. James :

I would like to observe, however, that in a situation such as we describe in Point Fortin one must get the perspective clear. As long as there is employment available in the oil industry, the person who can find that employment will not be interested in agriculture, even if they think that they can get the same income.

A simple reason is that income from oil is secure and there are many fringe benefits. There is the security due to trade union protection from retrenchment; it is not exposed to the vicissitudes of weather and other things. If a worker is sick, he gets sick benefits which he does not get if he is a farmer, and if he is retrenched he can get severance pay. So, as long as work is available in the oil fields, he is very unlikely to be attracted into agriculture. He accepts agriculture as a last resort.

C. Pilgrim :

I want to enquire from Mr. James how many extension workers were working full time on the project which he mentioned. My reasons for asking this arise from my feeling that we extend our extension work far too much and we don't concentrate it sufficiently.

L. James :

There was one extension officer working with the farmers on our project.

D. Edwards (Trinidad) :

I'd like to follow up the point that was raised about the number of farmers that could be adequately dealt with by one extension officer. From what Mr. James has said it would appear that he has been able within a period of about two years to formulate an approach to developing these farms, and so raise them to a level which perhaps is somewhat greater than the casual reading of his paper would suggest. Would he like to comment on the number of farmers, the approximate number, he feels that he would be able to introduce to the kind of farming that has been involved and the number that can be carried through by a person such as himself? Is it only about 30 maximum or is it somewhat higher?

L. James :

I have some information on this which I essentially cannot recall off hand, but thinking over the period over which I operated, I would say that we started with 32 farmers and at the start this was about as many as I could handle. I was kept busy not only for 8 hours of the day, but quite frequently to fairly late hours. It's still quite obvious to me, however, that given, as Dr. Edwards says, the level of concentrated indoctrination which I have been able to give, after about two years one should be able to increase the initial number, perhaps by another 30 and after the third year by another 30. I ought to handle eventually 100 within a full day's work.

H. Williams (Trinidad) :

In regard to Dr. Edwards' question and Mr. James' reply, I hope we shall bear in mind that Mr. James is not typical of the extension officer who is serving in the cities. If a man of his calibre can deal with only 100 people in a day at best, after 3 or 4 years, this is probably pretty near the truth. I wonder what the others would say they could achieve ?

C. Pilgrim :

In a sense the last speaker, Dr. Holman Williams, has anticipated me almost completely. I was wondering whether it would not be good economics to spend a good deal more money in raising the level of the persons whom we put in direct contact with our farmers. The practice has generally been that of having someone who is a little better, not much better, in direct contact with the farmers, but experience does suggest that this practice is open to serious questions.

H. A. L. Francis (Antigua) :

I'd like to address a question to Mr. James: to what extent was squatting considered a hazard in his particular section of Trinidad and whether his particular scheme had any effect in alleviating the squatting problems.

L. James :

All the persons who were squatting in the area were allowed to join the scheme. In fact, only one did not join and that was because he was a permanent worker and not eligible for Crown Land. Incidental to this is the observation that past experience in agriculture is often an asset. This has not been fully analysed, but the present indications are that people who have had experience in the agriculture by evidence of their squatting, are not necessarily the persons who would learn new agricultural skills quickest.

V. Ferrer (Trinidad) :

Could Mr. James tell us if there is a marked homogeneity of population in the area he is working and whether he thinks that the degree of homogeneity affects the growth of a co-operative spirit ?

L. James :

Well, it depends on what you are measuring when you measure homogeneity, whether it is homogenous economics, homogenous

social customs and that sort of thing. But to try to give an answer to the question, however, I will say that there is a degree of homogeneity in that the people have been subject to a similar type of background and experiences in industry; there is also a type of heterogeneity in that they come from different parts of the West Indies, for example, some of them come from Grenada, some from Barbados, some from Trinidad, which brings an element of different backgrounds. There is an element of heterogeneity in terms of family obligations: some have larger families than others, besides, family aspirations may be different. This is one of the important things which limit co-operation, for example, one man with four children going to high school will not get the type of co-operation that he would like from his neighbour with one child going to primary school. Their requirements are completely different. Among the farmers, for example, there are some with refrigerators in their houses; they are going to find it very difficult to get co-operation from their neighbours who do not have a refrigerator. So that although there are elements of homogeneity, it is trivial disparity which tends to limit or retard the growth of co-operation in that community.

Chairman :

May I now invite questions and comments on Mr. MacMillan's paper?

Manery (Canada) :

Mr. Chairman, in his paper, Mr. MacMillan indicates that the maximum rent on land in Aranjuez is \$10 per acre annually. He also indicates that the tenancy rights have risen to the value of more than \$2,000 per acre. I wonder if he would comment on what the circumstances are which permit tenancy rights to rise so rapidly but the annual rent to remain at what appears to be constant.

A. MacMillan

The rent paid by a tenant to the estate is \$10 per acre per year: it has been so since 1936. Until recently there has been no effective legislation with which the estate could support a claim to increase the rent — and so, in a sense, the \$2,000 paid for tenancy rights (by the incoming to the outgoing tenant) is a reflection of the productive land in this district. As land has become scarce and its productive capacity has increased, so have the values of tenancy rights increased. Incidentally, when land rights are transferred on the Estate's books, the Estate Company only receives a nominal fee.

Manery :

I'm not clear. It appears to me that if it is generally known by the owners of the land that the tenancy rights are being sold for this amount, they would logically increase the rental rate so that the business proposition of trading in rights would seem less effective and therefore the tenancy rights would be sold for somewhat less.

A. MacMillan :

This is what they would like to do and what they have been

thinking of doing for a long time, but they haven't. In fact, they have to go so far as paying somebody to relinquish his tenancy rights, so that they might use the land for other purposes.

E. Timothy (Trinidad) :

Mr. MacMillan raises great fears about the future of Aranjuez. I think these fears in themselves point to a particular aspect that makes Aranjuez quite peculiar, and which I think did not come out too clearly in his paper. He is trying to differentiate between a suburban and an urban area and trying to fit Aranjuez somewhere in this differentiation. However, what I think he misses is that fact that Aranjuez is what the sociologist and the demographer might describe as an urbanised area in the sense that this urbanised area takes in the main city as well as the fringes and suburban areas. We know that as the city expands agricultural land gives way to industrial and commercial expansion and so on. But because of some particular situation regarding the Aranjuez Estates Ltd., the land has not given way to urban development. I imagine there is some kind of law or some kind of arrangement which makes the land remain agricultural land. Now, if Mr. MacMillan would realise that this is a particular situation and that it is sort of an artificial situation—the urban area is expanding, but Aranjuez is remaining agricultural because of special built-in mechanisms to keep it agricultural—then all these fears would not have so much meaning. Because of the peculiar situation of Aranjuez, it will remain in a doubtful situation for a very long time until Aranjuez Estates Ltd. decide to perhaps change the use of this land and sell it to people who want to build houses. But, while it remains in a setting somewhere between urban and suburban, while suburban growth is going on on all around it and beyond it and agriculture is remaining because of its particular mechanism, then I am afraid we should not worry ourselves too much about these fears.

A. MacMillan :

I entirely agree with you, but what I meant was that the position is not particularly secure at the moment. The Estate is very anxious to see the area go under housing: it is only because they have not got permission that they have not done that years ago. I know that there are complications—the land is not necessarily good for housing; it is subject to flooding in parts, and this sort of thing—but I am extremely worried about this at the moment. In Trinidad there seems to be a shortage of really good, agricultural land, and even if it is not all farmed now, every acre of it will be needed for agriculture in the future.

H. A. L. Francis (Antigua) :

Mr. Chairman, while Mr. MacMillan seeks to preserve by law the agricultural status of Aranjuez, he points out that even the poorest of the gardeners were prepared to spend high proportions of their income on the education of their children; education or the passing of examinations is seen as the key to future success and so on. He also points out that this factor leads to high productivity of the Aranjuez farmer, but unfortunately, it is tradition in these families which has preserved Aranjuez to some extent. If they are educating their children (I think quite obviously to go into employ-

ment other than agriculture) and are themselves presumably going out of existence, it seems that we are going to preserve Aranjuez by law but have nobody to farm Aranjuez after we have preserved it. I wonder whether he chooses to comment on how we are going to achieve our objective of preserving Aranjuez as an agricultural area in the long run?

A. MacMillan :

I did mention that it is encouraging to see quite a number of educated younger gardeners are recognising that their education can assist them in planting and developing the land. In fact a large number of younger people are still working in the gardens, I think probably more than ever before, and some of these have secondary education. As long as there is a high level of unemployment in Aranjuez, there will be plenty of younger people entering gardening. If opportunities for employment in other sectors increase there will be a reduction in the number of gardeners — but this will serve to relieve the pressure from shortage of land on those remaining. I think you may find there are fewer gardeners, but I don't think that you will find that in the future there is none at all.

E. Sauer :

I just wanted to comment on the farmers of Aranjuez. I wondered if the estate would not be more interested in preserving the land in agriculture rather than getting out of it if they got a more equitable payment. This \$10 an acre looks to me grossly inadequate. I know in some of our expanding city areas in the United States, gardeners are getting perhaps as much as 40 times that much rent for gardening land because of it being close to the city.

A. Ali (Trinidad) :

Mr. Chairman, I'd like to comment on what has gone on so far in the discussion of Mr. MacMillan's paper on Aranjuez. I think that what Mr. Francis has said and from what Mr. MacMillan has answered, we have the solution to the problem of Aranjuez for the future, because with the going out of the "old heads" in Aranjuez and with the remaining few farmers being young people who are interested in farming as a real business, we would have a good farming community. But certain things need to be modified. The infrastructure in particular in Aranjuez needs to be modernised as Mr. MacMillan has said, and on this basis from what Prof. Sauer has said, an economic rent could be charged and this could solve the whole problem of keeping Aranjuez a vegetable area in Trinidad.

A. MacMillan :

I'd just like to comment on that briefly, because it has raised some of the more crucial matters relating to the future of Aranjuez. Now, Prof. Sauer raised this idea of raising the rent. Raising the rent would in fact solve a lot of the problems, but you have the farmers on the one side and you have the Estate on the other, and neither is prepared to take the plunge at the moment. The Estate is not prepared to develop the infrastructure, because if they are going to do so by laying down irrigation pipes, good drainage and this sort of thing, they are going to again "condemn" the land to agriculture for a number of years; and so they are not prepared to do this unless

they get a firm statement from the Government that this land will never go under housing or at least, not in the foreseeable future. So we need an approach from three sides and it is very difficult to get three people to agree about anything, particularly something as touchy as this.

M. Alexander (Trinidad) :

Mr. Chairman, in his paper, Mr. MacMillan sets out to describe the effect of economic growth and differential earnings on the farm people through the labour markets. I have some questions here which I'd like to ask him. One is what kind of model, economic model, does he have in mind for the labour market in Trinidad? Secondly, why would the rising cost of living be felt more strongly in urban than in rural areas? And the third question, what plans does he have, or what are his views on investment in capital equipment for gardens. Let me read the statement: "As soon as investment in capital equipment for gardens becomes obviously more attractive than investment in other fields gardeners will re-invest". How will this come about? How is it expected to come about?

A. MacMillan :

Well, I'm afraid the first question is absolutely outside anything I can possibly say. I may have inferred a few ideas about the labour market in Trinidad, but I think I mentioned that it is full of anomalies and I am at a loss to understand them. All I can do is try to observe some of the effects of the labour market of this particular area and I am certainly not in a position to hazard any guesses as to how it would behave in the future for the rest of Trinidad.

The inference of my suggestion that the rising cost of living would be felt more strongly in urban areas is that socially it is difficult to maintain a low standard of living in those areas. You can see it around Port-of-Spain. In the developed northern areas where there is not a conglomeration of loose housing but where there is a definite urban social structure, I think you will find that you have to keep up a higher standard of living than you would in the country districts and it is likely to rise a bit faster.

Now, to your last question. One of the things I have been stressing throughout the paper is that the gardeners in Aranjuez have a very good business sense and this is why I suggest that if it is put before them, they would be quick to see when capital equipment for the garden becomes more attractive than outside investment.

V. O. Ferrer :

In your paper, Mr. MacMillan, you say that there are a number of possible innovations which would either increase crop yields or reduce unit costs. It seems very likely that a reduction in costs by further mechanisation and the increased use of weed-killers would reduce the yields of individual crops, but it would make it possible to grow more crops per year. I can see that, but I am not clear on what you mean when you continue to say that simultaneous introduction of new chemicals, particularly effective nematocides and bacteriocides, would more than compensate for hand labour. I wonder whether Mr. MacMillan would be prepared to elaborate?

A. MacMillan :

You would like to have specific examples.

Over the last year I have been trying out a number of new practices under farm conditions in Aranjuez. Most of the trials have been of a rough nature : I have been trying to see whether the improvements fitted into the system of production, and the gardeners have kept some records of the results. One way of using mechanical means to increase the intensity of cropping during the year is to use a tractor-mounted ridging plough to make banks towards the end of the dry season — then plant wet season cabbage on the banks : this could be harvested in September when the banks could be reformed by splitting to allow the planting of another crop for Christmas. This would allow greater intensification because it would overcome the limitation imposed by a shortage of labour available for banking during the short periods in which the ground is readily workable in the wet season. Let us suppose that the introduction of this practice tends to reduce yields at the same time as it reduces costs : if this happens it may be necessary to introduce a complementary practice which would tend to increase yields. An example of this would be the use of nematocides, which (on small-scale trials in the area) have shown themselves to be very effective. This is just one example of what I meant by the use of chemicals to "compensate for any yield reductions caused by the substitution of machine for hand labour". I am convinced that we must think in terms of introducing several complementary innovations simultaneously if we are going to make any progress in modernising the production system in Aranjuez.

E. Mathurin (St. Lucia) :

In reference to the same paragraph to which Mr. Ferrer referred, Mr. MacMillan says that farm income will increase by reducing the number of people dependent upon agriculture for a living. You do not say whether those who remain on the land will farm more intensively. I would like you to clarify how farm income will increase just by people leaving the land.

A. MacMillan :

I had assumed that if they leave the land it would be because there would be too many of them on the land, and that the same amount of effective work could be done by fewer people. That's perhaps a wrong assumption — there may be a drift from agriculture because agriculture is not paying, and land may become abandoned. I think that this is extremely unlikely at the moment ; I think that if anybody leaves the land it is because there are too many people working on it — and so you would find that the income it generates would be distributed among fewer people, and hence would be individually higher.

I. Johnson (Jamaica) :

It would appear to me that there are a number of inconsistencies in Mr. MacMillan's conclusions. I refer in particular to that sentence in which he says : "even if the labour cost for each crop is markedly reduced by partial mechanisation, the resultant inten-

sification would mean that the total annual input per acre would remain fairly constant." Just how can you justify this, Mr. MacMillan?

A. MacMillan :

Again, it may be a matter of terminology. We are dealing with vegetable crops here. When I talk about intensification in this context, I mean the number of crops grown on one piece of ground in a year. The term "land-use intensity" might be more suitable. By mechanising one or two operations in the production system, you may in fact be able to grow more crops in a year, and the other work which remains unmechanised in growing that particular crop will tend to remain fairly constant.

I. Johnson :

You state that the labour required for each crop is markedly reduced, with mechanisation, yet you continue to say the input will remain fairly constant. Could you explain that?

A. MacMillan :

What I am trying to say is that we have more than one crop in a year. We have a potential of four crops in a year. So even if the amount of labour required for each crop is less, if you can push up the number of crops you have per year, the total labour requirement over the full year may be more. This happened when they introduced the rotovator on a tractor, because it meant that it was possible to increase the number of crops per year. Previously, they might have been able to grow only one crop. After this it became possible to grow two crops a year. You can cut down the labour involved in producing each crop by replacing the fork with a tractor, and forking is a most labour-intensive operation, but your total requirement per acre throughout the year, was higher.

D. C. E. Mathurin :

Towards the end of his paper, Mr. Mac Millian states: "if job opportunities continue to occur in spite of widespread unemployment. . . these two things are unreconciled."

A. MacMillan :

I don't think it's difficult to reconcile the job opportunities and unemployment. It sounds absolutely mad in the same sentence but I think later in the paper I did expound a bit in my summary by giving some example of people who had found it very easy to slip into the labour market in spite of the fact that there was apparent widespread unemployment. Now it may be assuming too much that mechanisation will occur but I believe there is a tendency which I am already noticing in the area, for people to come round to mechanisation, and it is a way of getting over the labour problem. The price of labour is getting higher and higher. Just this year it has risen in the gardens from \$4 to \$5 per day, and so the idea of mechanisation becomes all the more attractive. How are you going to reconcile the partial mechanisation with the unemployment in the area, I don't know.

F. A. Francis :

A statement in the early part of Mr. Mac Millan's paper intrigued me very much. It says, "first, the Indian immigration brought to Trinidad the foundation stock of what is now a very important (and prolific) section of the national society, a section closely identified with agriculture. Secondly, the institution of the indenture system marked the beginning of the widespread payment of wages to the lowest levels of the working class." I was wondering whether he meant by that, that the indenture system introduced the idea of paying wages and if so, I would like him to comment on whether he thinks in the first place, that wages would have been inevitable as a result of emancipation, and secondly, whether wages would not have been higher had the indenture system not been introduced. The use of the word "prolific" in the first sentence of the quotation I just read is of some interest. I was wondering whether he meant by this proliferation of offspring or proliferation of product.

A. MacMillan :

While the beginnings of the indenture system did not mark the very beginning of the payment of wages — that came immediately after emancipation—the introduction of indenture does seem to have, in a way, given official sanction to the giving of certain rates and conditions, thus engendering a more organised approach to wage payment. I am sure that wages would have risen had the indenture system not been introduced. In fact, the anticipation of this seems to be one of the reasons for bringing in the indentured labourer. The "prolific" certainly refers to people.

J. Cropper (Trinidad):

While we have to accept that Aranjuez produces, as Mr. MacMillan says, 30 per cent of the vegetables in Trinidad at the present time, Mr. James has told us that in the South at Point Fortin they are now successfully producing vegetables. I'd therefore like to question Mr. MacMillan's contention that Aranjuez must remain the main vegetable producing area in the island. He does in his conclusion raise several points which suggest that it should: there is an available labour market, the farmers are knowledgeable in growing vegetables, and the infrastructure is already there, even though it does need renewing. I'd like to question several of these contentions. He mentioned the point earlier in his paper that in Central Trinidad and in South Trinidad, labour is cheaper. This raises the question of transport. I believe at the present time most of the transport in Aranguez is by mule cart. Would it be so much more expensive if transport was done by lorries to bring vegetables from Central Trinidad or even from South Trinidad? Regarding the knowledge of vegetable growing among Aranjuez farmers, could not the farmers in Aranguez move to other areas? Then there is the question of infrastructure. Mr. James has been concerned in South Trinidad with the provision of infrastructure for vegetable growing: could he tell us something about the cost of establishing the infrastructure from the start and perhaps Mr. MacMillan might like to compare these costs or any costs Mr. James might give us with the cost of renewing the infrastructure in the Aranjuez area.

A. MacMillan :

I don't think I ever said that Aranjuez should remain the main vegetable growing area in Trinidad. I think there is a need for expansion of vegetable production throughout the island but as far as land capability survey suggests (or what one even knows of it—it isn't out yet), land classified as being suitable for vegetable cultivation here is very limited, and this is one of the main reasons for my contention that Aranjuez should remain as a vegetable producing area. I know that labour is cheaper in other parts: this may be a reflection of its lower productivity; if one were to push the productivity up, the price paid for labour would probably rise over a few years. I believe that this is already happening in Trincity. Transportation is still quite important in Aranjuez but only because access to the gardens is not particularly good in the wet season, and so people have to maintain the mule carts. Mules and donkeys are only used to carry goods within Aranjuez itself. Taxis transport goods to market, but there is an indication that more and more people are using small trucks to transport from their gardens to the market.

Now, moving people from Aranjuez, I don't know. I know nothing about moving people around, but I think that someone has to want to move before he can be moved and the incentive for going anywhere else would have to be extremely strong to get anyone away from Aranjuez at the present time. I believe there is a possibility of vegetable production in the Tucker Valley in the Chagaramas base. There have been suggestions that people from Aranjuez might be taken there to seed the area with informed and skilled people, but I do not know what is happening to these sort of suggestions and I do not know what the reaction of the people in Aranjuez would be. Perhaps the small holders would like to move out. I think Mr. James can answer the last question better than I can.

L. James :

Perhaps I could set Mr. Cropper's mind a little more at ease if I said that the vegetable production which I am speaking of is nothing on the scale that Mr. MacMillan is speaking of, acreage wise. Our production is in a very limited and restricted area. In terms of cost I think it will become necessary to do this — we haven't actually started yet. The cost will obviously depend on where the particular installation is going to be placed, and on its proximity to an available water supply.

PARTICIPANTS TO THE SECOND WEST INDIES
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Pilgrim, C.	
White, M.	Dominica
Yankey, J. B.	
Southwell, G. A.	Grenada
Ure, J. S.	
Johnson, I. E.	Jamaica
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Twyford, I. T.	
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Ali, A.	Trinidad
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Carr, J.	
Clarke, S. St. A.	
Ferrer, V. O.	
Girwar, S. N.	
Herrera, M.	
Johnson, B. F.	United States
Jones, W. O.	of America
Alexander, M.	University of the
Allen, C.	West Indies
Brann, H.	
Cacho, C. P.	
Cropper, J.	
Davis, C.	
Edwards, D. T.	
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FOR AGRICULTURAL ECONOMICS CONFERENCE.

(The person named may, at his discretion, transfer responsibility to another suitable person in his territory and will immediately inform the Department of Agricultural Economics and Farm Management.)

<i>Name</i>	<i>Territory</i>
Mr. H. A. L. Francis, Director of Agriculture, St. John's	Antigua
Mr. C. Pilgrim, Chief Agricultural Officer, Bridgetown	Barbados
Mr. B. Yankey, Department of Agriculture, Roseau	Dominica
Mr. J. Ure, c/o Administrator, Government House, St. George's	Grenada
Dr. I. Johnson, Director of Economics, Ministry of Agriculture, P. O. Box 480, Kingston 6	Jamaica
Mr. D. C. E. Mathurin, Asst. Superintendent, Ministry of Agriculture, Castries	St. Lucia
Mr. W. Dear, Ministry of Finance, Kingstown	St. Vincent
Mr. D. Toolsie, Ministry of Agriculture, St. Clair, Port-of-Spain	Trinidad & Tobago

Agricultural Economists on the staff of the University other than those in the Department of Agricultural Economics & Farm Management.

Dr. G. L. F. Beckford, Department of Economics, U. W.I., Mona, Kingston 7	Jamaica
Mr. B. Persaud, Institute of Social & Economic Research (Eastern Caribbean Branch), U. W.I., Bridgetown	Barbados

**PROCEEDINGS OF THE
FIRST WEST INDIAN
AGRICULTURAL ECONOMICS CONFERENCE**

April 1966

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