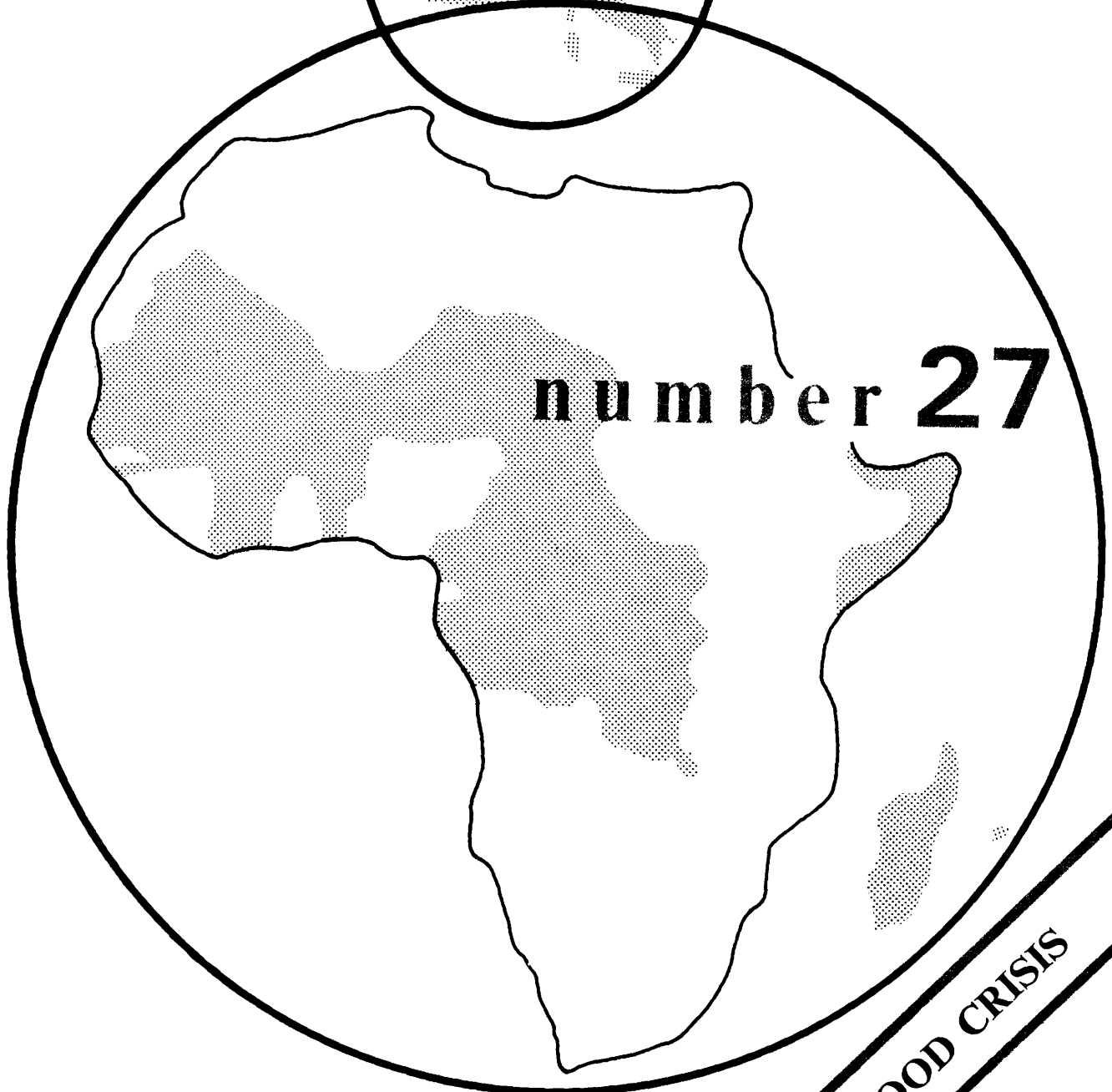


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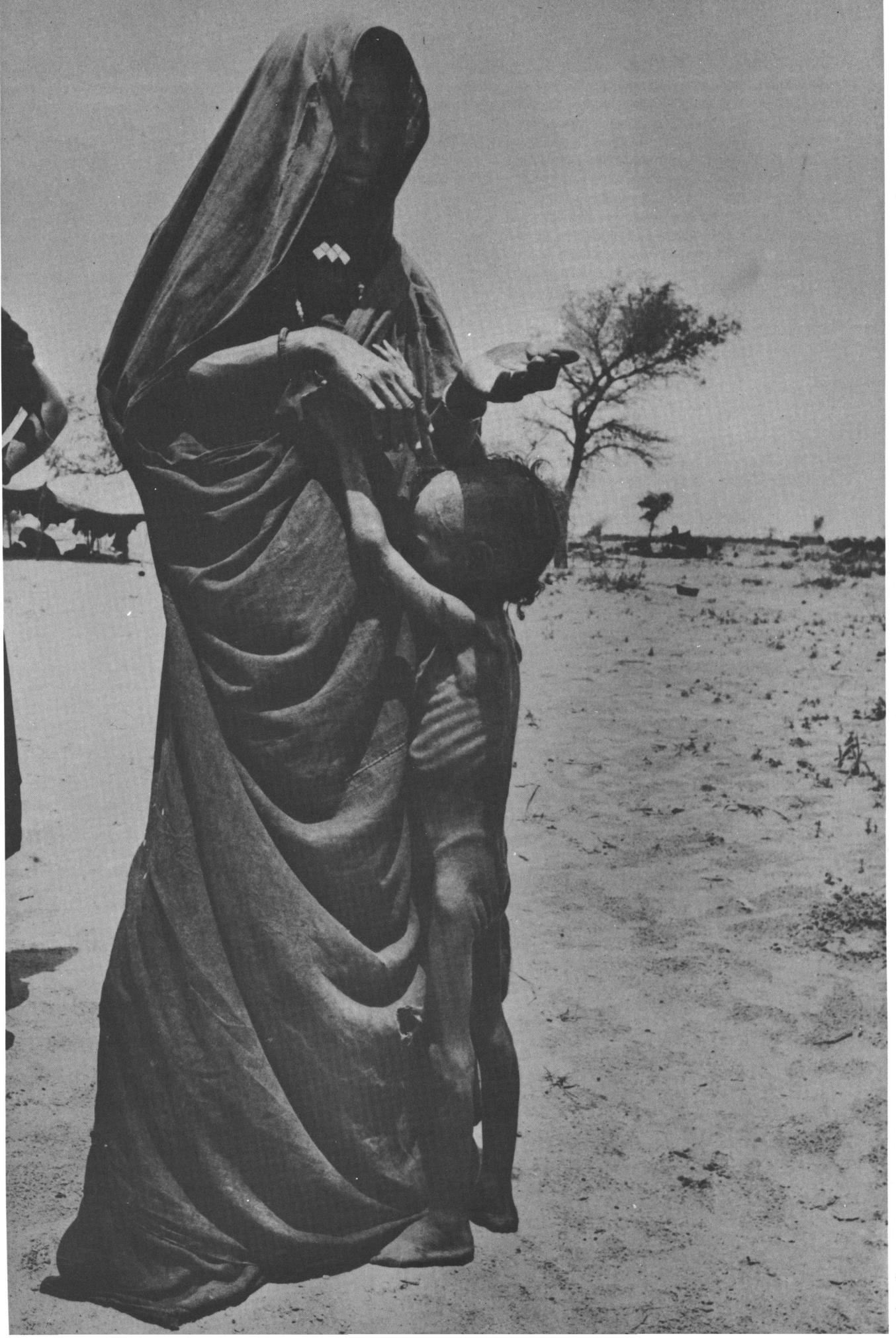
NEWS

September – October 1974



number **27**

FOOD CRISIS





ASSOCIATION NEWS

September-October 1974

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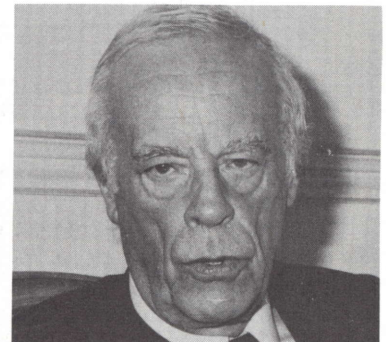
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Born rich, getting rich — and staying poor

In 1974 the developing countries overall will be spending \$ 15 000 m. more than last year for their essential imports. In round figures this consists of an extra \$ 10 000 m. for oil and petroleum products, and an extra \$ 5 000 m. for food and fertilizers. Among them are 25 countries for which the terms of payment have abruptly shifted \$ 3 000 or \$ 3 500 m. for the worse. India alone, for example, must find an extra \$ 1 500 to maintain imports at their 1973 level.

This means that the countries of the world fall broadly into three classes. First there are the rich countries, the industrial countries, whether of the west or of the east. Secondly, there are the countries which are becoming wealthy through their possession of raw materials, more especially of oil, but which are still developing their economic structures. Thirdly, there are the countries which are really poor; and among these there is a special group of 25 countries for which circumstances are especially adverse. It is because of this that Mr. Claude Cheysson, in the name of the Commission of the European Communities, has proposed an emergency aid fund on the world scale to comprise \$ 3 000 m., to which the Community should contribute \$ 500 m. For this reason, too, the United Nations' Secretary General has given a special mandate to Dr. Raoul Prebisch, the former Secretary General of U.N.C.T.A.D., to set about the formation of a special fund for the countries which are worst hit. This has been put in hand to implement the resolutions of the UN General Assembly at its special meeting on raw materials and development.

In this 20th century, the human race is dramatically confronted once again with a scourge as old as time — the scourge of hunger. In this issue of *Association News* the Dossier is concerned with food; and the authorities we have encountered in this connection have one and all emphasised their anxieties. To the results of the current rises in prices are added those of scanty food reserves and bad climatic conditions. In the Sahel, the number of people threatened in 1974 is estimated at 7 m.; and the list of countries affected by famine is growing longer, both in Africa and elsewhere. Besides famine itself, there is the much more general problem of under-nourishment; and the F.A.O. estimates that the protein deficit, already serious in many regions, is liable to increase, so that in 1985 we shall be 20% short of requirements. At the present time the big rise in the prices of fertilizers has led to smaller quantities being imported, and this must inevitably lead to a fall in agricultural production in those countries where supplies are insufficient.

On all these points, people as differently placed as Professor Dumont in our last issue, and in the pages which follow the Director General of the F.A.O. and the Director of the World Food Programme, have views which look in the same direction.

Public opinion is at last beginning to feel concern at this problem. This can be seen alike in international organisations and in responsible levels in individual countries. It is no chance matter that two special international conferences are to follow closely upon one another this year—the population conference in Bucarest during the summer and the food conference in Rome, to be held during the autumn at the instance of the F.A.O. The two problems are closely linked. It is the food crisis which catches most of the limelight, for its tragedy is immediate, whereas the population explosion acts only in the longer term, but is nonetheless progressive. Black Africa has long been under-populated and has not yet reached the point at which the population as such raises anxieties. Nevertheless, things are changing fast, for estimates suggest that the population of Black Africa, without counting South Africa, will be more than 250 m. by 1980. Africa may be the least populated continent but it has the highest rate of population growth.

This is only part of a problem on the world scale which has had no parallel in history. Scarcely four years ago, on May 1, 1970, Robert MacNamara, President of the World Bank, said: "In the first century of the christian era, the world population was 250 m., and it took 16 centuries to double it. Today this population is 3 000 m., and current estimates say it will double in 35 years, and continue growing at the rate of an extra 1 000 m. souls every eight years. It takes a big effort of imagination to project these figures beyond the year 2 000, and the statistics take on an aspect which is almost incomprehensible. A child born today and surviving to the age of 70 will be living in a world of 15 000 m. people; and his grandson will be sharing our planet with 60 000 m. people. In 650 years—the same interval which separates us from the time of Dante—our planet would have 10 human beings per square metre of land, a horror such as even Dante's vision of Hell did not approach.

Such projections of course are artificial. They will not come to pass, for events of some sort will prevent their doing so. Of this we can be certain. If we ask what these events will be, there are only three possibilities we can now foreshadow — general famine, political chaos or population planning." ■

FEATURE OF THE MONTH

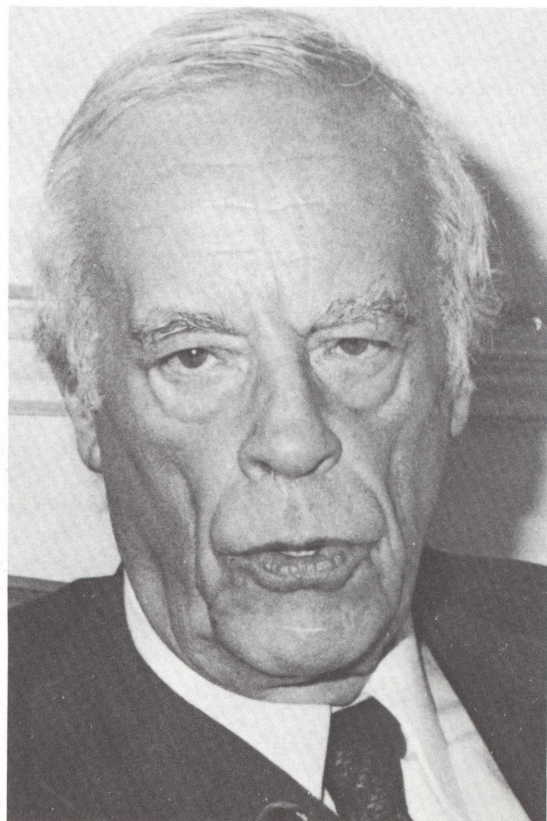
Pierre ABELIN
French Minister for Cooperation
«Cooperation is being given a new look, with the full agreement of the countries concerned»

Paris — A short description of Pierre Abelin, the new Minister for Cooperation in the french government, is that he is an economist and administrator who has made a career in politics. French cooperation policy is in an hour of change and adaptation, as indeed the present french government desires should be the case for all its fields of activity. The moment calls for a summary of what has been done about cooperation so far, and careful consideration among all concerned to produce "a basic doctrine of cooperation continuously adaptable to changing circumstances". This is now in progress; and meantime the revision of the cooperation agreements between France and French-speaking Africa is going ahead in excellent conditions. Pierre Abelin attaches great importance to the success of the negotiations with the A.C.P. He was present at the ministerial meeting at Kingston, Jamaica, and considers the negotiations are going well. It is also his view that the Associated countries, present and future, have a right to priority for european aid.

Pierre Abelin receives the visitor without any fuss, is deliberate in his speech and gives the impression of unruffled assurance and confidence in the future. A doctor of civil law, he holds the diploma of the Ecole des Sciences Politiques. He has held a succession of responsible high-level jobs in a number of organisations, many of which were inter-professional or international. These included the french Union of Exporting Industries; the Cotton Industry Export Committee; the Cocoa Import Group; the franco-ethiopian Railway the french company for the promotion of textile fibres and the french Coffee and Cocoa Institute.

Since 1945, he has sat in the National Assembly as Deputy for Châtelleraut in the Vienne region, and has been its mayor since 1959. Several times he has been a Secretary of State, more especially in the Finance and Economic Affairs Ministries, the President's Office and the Information Office.

Between 1949 and 1958 he represented France in U.N.O. He is Secretary General of the Democratic Centre, a member of the Committee of the Reform Movement, President of the Conseil général for Vienne and Vice-President of the National Assembly.



Pevsner - Nap.

► *The french-speaking countries in Black Africa were surprised and disturbed at the elimination of the State Secretariat for Cooperation, but they are reassured at seeing it return as a separate Ministry for Cooperation. Apart from outward appearances, does this indicate any recent change in french cooperation policy, which is your special care, particularly in regard to the french-speaking countries of Black Africa?*

The Ministry has existed before, and its reestablishment reflects the desire of the french president to emphasise the importance he attaches to french-african cooperation. The countries which have very special relationships with us are those of Africa south of the Sahara and those in the Indian Ocean, though this of course does not exclude the maghreb countries which come currently within the province of the Ministry for

Foreign Affairs. I am pleased to be able to say that relations between the Quai d'Orsay and my ministry are extremely close, cordial and positive.

The french cooperation policy is continuously changing, because it has to adapt itself to growing requirements which differ from one country to another, partly depending on their development level and their social structure. So we must do all we can to give a new look

to our cooperation with Africa and the countries in the Indian Ocean, especially since new problems will doubtless arise through the association with the European Community of English-speaking countries which have close relationships with some of the countries already associated. It is because this new look has got to be achieved that I have appointed a working party, led by Mr. Stephane Hessel, to define some of the fundamental data and lay down the general approach.

The important point, as you stressed, is that we do not intend to lay down a formal list of methods of cooperation. The working party, which is working on our methods and lines of action adapted to the new situations, will doubtless have proposals to make, and it will be for the french government to consider them. The important thing is that our general line of action, the objectives of french cooperation and



the forms it is to take, should be decided upon in full agreement with the countries concerned.

There is no desire on our part to impose a rigid system, but much rather to provide a service. We want to give the wishes of the countries concerned as full a value in practice as they have in our intentions.

► *So the reconstitution of the cooperation portfolio as a full-scale ministry seems to correspond with the new look objective, with the renovation and adaptation of french co-operation policy?*

Yes. This was stated very clearly by the President of the Republic and emphasised vigorously and with great definition by the Prime Minister, M. Chirac, in the government declaration to the National Assembly and the Senate, when he presented his administration.

► *You stated recently that President Giscard d'Estaing would be going to Africa during the early months of next year. With this important visit in prospect, can you tell us how things stand regarding the revision of the cooperation agreements between France and French speaking Africa?*

Several of the conventions, I think seven or eight of them, have already been revised, and the work is in progress on the others. For example, Upper Volta, with which our relationships are extremely friendly, has asked for the cooperation agreements to be revised, because they have now been operating for 14 years. Niger has also asked for revision; but the President of Niger, whom I had the honour of meeting recently, and to whom I indicated that we should be ready to examine any proposal, has asked for time to consider this.

Convention renewals are currently being negotiated with us by Dahomey, and also by the Ivory Coast, which, like many of the other countries, maintains very cordial relations with France.

► *Recently you made an initial visit to Africa, more especially to Upper Volta and the Ivory Coast. What were your impressions?*

It was rather a flying visit I paid, both to the Ivory Coast and to Upper Volta, but it was extremely interesting.

In the Ivory Coast, President Houphouët Boigny gave me a particularly friendly reception, and I was able to have several hours conversation with him at various times during the full day which was the main part of the time I spent in his country. The Ivory Coast is enjoying a remarkable expansion. In the years ahead it will, like France,

have a number of difficulties in its balance of payments. The country as a whole gives a general impression of strength and the administration is vigorous. The cooperation between France and the Ivory Coast is really excellent, and is developing extremely well, though of course some of the arrangements now in operation need to be re-shaped.

In Upper Volta the predominant impression is that things are being taken very seriously, for the government of General Lamizana is fully alive to the problems it is having to face. It is confronted with increased difficulties arising both from the drought and from the currency fluctuations. I was able to visit some parts of the Sahel and see for myself that, over the past year, some degree of improvement had indeed been achieved. It is clear, nevertheless, that it is long-term action which is needed, both bilateral and through the multi-lateral organisation under the chairmanship of General Lamizana. Work must be pushed ahead as actively as possible in planning and carrying out a number of major projects which would result in lasting and very effective improvements in the living conditions which prevail in several countries threatened by persistent drought.

On the latter point we have to recognise that the investments required are very considerable, requiring the agreement of a number of countries and contributions to their financing. France is of course well placed to organise the coordination needed and to play an important part in the campaign.

► *Will the geographical distribution of the french aid be the same as in the past, or will there be changes and new lines of approach?*

There will necessarily be changes, but these are already marked out. A country like Ivory Coast does not receive much benefit in the form of credits from the french F.A.C. (Aid and Cooperation Fund). Upper Volta, on the other hand, has a third of its budget covered by the F.A.C. Since these countries are in such different positions, the forms of cooperation are already dissimilar, and this will be increasingly marked as the countries develop.



Pevsner - Nap.

enable us to lay down a policy which will be effective and acceptable and which will develop against the background of friendship we are so anxious to maintain.

▶ *Mr. Abelin, I should like to mention a criticism sometimes urged against french cooperation policy. France's european partners dispute the inclusion of the expenditure for oversea departments and territories in the general statistics of french aid to developing countries. What do you think about this?*

I think that what is done for the oversea departments and territories is extremely important, and that it is indeed part of the general effort made by France. Whatever be the status of the countries and territories under consideration, what has to be considered is the scale and quality of the effort, rather than the legal and constitutional links with the territories in question.

▶ *You recently attended the meeting at Kingston, Jamaica. This was the second meeting at ministerial level in the negotiations for the renewal and enlargement of the Yaoundé Convention*

The important point is that we do not intend to impose forms of cooperation...

▶ *When it comes to french technical and cultural cooperation, is there a problem regarding the training of the cooperation personnel?*

There are indeed problems about training cooperation personnel, but in general the countries associated with us regard the cooperation as producing quite good results. I am referring more particularly to technical cooperation. In some cases increasing numbers of cooperative personnel are asked for, and this is quite general, despite the fact that our experts and other cooperators are already very numerous. I believe it is France which, in terms of the number of cooperators, is now making the biggest contribution to technical cooperation.

These are the questions which are arising. There may also have to be a different distribution of cooperative personnel, aimed, for example, to increase the number assigned to rural improvement schemes, which are very important to most of the countries concerned. The surveys we shall be making in the next few months, in consultation with the individual countries, will take us beyond the statements of principle and

... but there is absolute priority for the countries associated with the European Community, or which will be associated by Convention.



How do you think these negotiations are getting on, and what prospects are there of reaching an early agreement?

I think the prospects are good. At any rate we agreed the principle and settled some of the arrangements about the completely new point of providing a guarantee for the export receipts of countries producing raw material and agricultural produce, rather than industrial goods. An agreement was also reached on the general conditions under which this guarantee should operate.

This was breaking completely new ground. In the past there have been long discussions about stabilising the prices of raw materials, and though isolated results were obtained for specific products on the world scale, there has never yet been any real agreement which would guarantee export receipts. By this I mean an agreement which would not only relate to specific products, but which would take into account the position of the country concerned, the difficulties it is experiencing and the conditions affecting its development and standards of living.

An agreement has now been successfully concluded between the European Community and 44 French-speaking and English-speaking countries. The african countries were very ably represented at Kingston by Mr. Babacar Ba, the senegalese finance minister; and France was very gratified to note that both the french-speaking and the english-speaking countries of Africa have appreciated what has already been done, and the Association contracts which have hitherto been made, even though these did not concern all the countries. We have thus set up a precedent by interesting many other countries, which are now in a fair way to membership of these Association agreements.

This is a result of which all the african countries, and France herself, may justly be proud.

► *Is there not still a problem among the Nine regarding the amount of the future European Development Fund?*

The countries Associated with the European Community would naturally

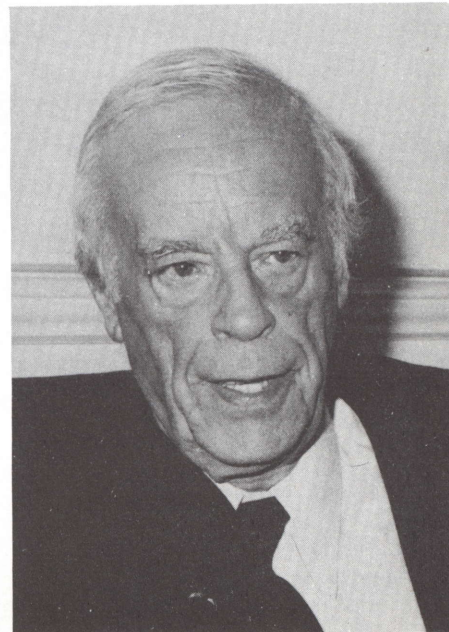
be very glad to have as much aid as possible, but it is a fact that some of the european countries are themselves facing balance of payments difficulties at the present time. It is a fact, too, that other efforts are being made on a bilateral basis; and under these conditions it is clear that the E.D.F. will not have credits at its disposal on the scale requested by the A.C.P. It is nevertheless already settled that the contributions formerly made by the E.D.F. will be trebled in value, without counting the support given by the European Investment Bank, which is itself to be materially increased.

► *The new agreement with the A.C.P. will mean a considerable enlargement of the Association. In addition, an agreement was recently reached between the Nine for aid to non-associated developing countries. Negotiations are also in progress with the mediterranean countries, especially the Maghreb countries to which you referred just now. Food aid is being increased and the Council of Ministers of the Nine recently gave its approval to the "Cheysson Fund". Some people are now talking about the danger of dispersion of european aid, suggesting it is being unduly scattered. Do you think this a fair criticism?*

There would indeed be a source of difficulty and confusion if a distinction were not drawn between the aid of which I was speaking just now, determined by precise and definite conventions, and such other steps as may be taken by the European Community, whether in the aid proposed by Mr. Cheysson and asked of us by the UN Secretary General, or in other connections. In our view, priority goes to the aid laid down in specific conventions and definite undertakings. As a community, and as members of it, we have also agreed to give various types of aid to countries which are not Associated; and if the Cheysson Fund indeed comes into existence—which implies that aid is provided also by other countries, including the United States, Japan and the oil-producing countries—the aid we shall be giving in 1974 to non-Associated countries will be of the same order of magnitude as what we are giving to Associated countries. I must repeat, however, that absolute priority goes to the Associated countries which are, or are about to be,

linked with the European Community by specific conventions.

► *The fight against under-development should not be merely the affair of governments, international civil servants and specialists. If it is to be lasting, effective and generally accepted, it must also have the support of public opinion. It is on this basis that the french government's suggestion of a world information day on development problems was accepted by U.N.C.T.A.D. 3 and by the UN General Assembly. On October 23*



Pevsner - Nap.

1973, one of the measures taken by France was to distribute—mainly through the schools—150 000 copies of an excellent little booklet entitled "Guérir la misère du monde" (curing the ills of the world). What do you think of action on these lines as a method of making public opinion increasingly aware of the problem?

France approves any step which may be taken on the world scale to interest public opinion in matters related to the populations and problems of developing countries. I am personally in favour of any initiative in this field.

**Interview with
A. LACROIX**

Eric DJAMSON, Ambassador of Ghana:

« The institutional provisions of the new Convention are equally important »

The Hague. — Ghana is well enough known in English speaking countries; the name brings to mind a busy, cheerful country, the world's leading cocoa producer, and even a good football team. But Ghana, one of the first black african countries to gain independence (in 1957) is not as well known in the French-speaking countries. The Ghanaian ambassador to the E.E.C. describes his country and gives his point of view on the current E.E.C.-A.C.P. negotiations.



► *Mr. Djamson, would you care to give a brief personal description of your country?*

Well Mr. Trench, I would like to thank you for giving me this opportunity to give you a short description of my country. I am rather surprised that you mentioned football as the strong point of Ghana. We are very good sporting people, but perhaps the items for which we are best known in the English speaking world, and perhaps in other parts of the world, are our cocoa, gold, diamonds and timber. We also feel proud that we were the first black african country to attain independence, in 1957, and our independence has provided a watershed for further independent

movements in Africa, the francophone and anglophone African countries. We do still have a good football team, which was well on the way to the world cup series but for Zaïre!

A small country like Ghana may appear to the outsider as an infinitesimal drop in the ocean, but Ghana has played a very important part on the African scene over the years. We are a country of 9 million people. We are hemmed in on one side by Ivory Coast, on the other side by Togo and then in the north by Upper Volta. As a small country we need to be on very good terms with our neighbours and I would say that this is now the case. The first Prime Minister who became President

was the late Dr. Nkrumah, and he was known throughout the world as the man who spearheaded the independent movement in Africa. Since 1957 we have had a lot of exciting moments. We started by trying to industrialise our country, to diversify the economy, and we ran into trouble. We faced a lot of economic difficulties. It is due to these economic difficulties, I would suggest, that we had a first military take-over, in 1966. We decided to go to the negotiating table with the creditors, but this did not produce any good result because the creditor nations insisted on their pound of flesh. We had to resort to all sorts of economic measures, like devaluation of our cur-

rency. The last time was in 1971—Ghana's currency was heavily devalued, as a result of which I would say there was complete economic chaos, and I would suggest that this was one of the incidents which led to the military take-over, the second military take-over, on the 13 of January, 1972.

There were some political undercurrents as well, but we Ghanaians are a peace-loving people. Our social system has been based on mutual respect and mutual confidence, and democracy is not altogether a new thing in Ghana, because our family system, our tribal set-up with a chief at the top, is based on democracy. The chief assumes an elective position. He is elected as chief from a family which is known as the stool family. If that particular chief behaves in such a way that he loses the confidence of the people, he is removed. He is destooled.

In the context of the Brussels negotiations, perhaps you could tell me what Ghana's relations have been with the E.E.C. countries up to the start of the negotiations last year?

We have gone through various contacts with the E.E.C. countries. We had various contacts with the Europeans in the 15th century, the Portuguese, the Dutch, the Swedes, the French and the Danes, until we became really colonised at the end of the 19th century after the Berlin Conference. The scramble for Africa followed, and came under the British colonial rule. We remained under the British until 1957. I would say that in that respect we are proud members of the Commonwealth and we feel that the Commonwealth idea has brought people of diverse backgrounds together and that is a remarkable contribution to civilisation. In a way it is our membership of the Commonwealth which has now got us to the negotiating table with Europe. This is not to say that without being members of the Commonwealth we would not have been at the negotiating table. I would say that up to and including 1973, when the negotiations began, our position has been exploratory, we have been wanting to know what the E.E.C. is all about and what it can offer. We have been monitoring the activities of the E.E.C.

We attach importance to the Common Market because, apart from our membership of the Commonwealth and our partnership position with regard to the Commonwealth Trade Agreements, between ourselves on one side and the United Kingdom and other Members of the Common Market, we also recognize the importance of our association with other European countries like the Netherlands, which is a very great trading partner; Germany, we have a very buoyant trading relationship with Germany; the same thing goes for France. Therefore, we would like our interests to be protected vis-à-vis the Common Market. This is why we have been studying the position very quietly but I would say not disinterestedly.

The other factor which militated against our association earlier than the 1973 negotiation stage was that Britain was refused entry after the first application in 1963. We as members of the Commonwealth were witnesses to this refusal of British entry. While not suggesting that there was any link between ourselves and Britain which would make us react in one way or the other, I would suggest that there is a psychological reaction. We would definitely be very cautious of rushing in where Britain was unable to enter.

We would like to know whether the Association derogates from our sovereignty and whether this concept of Euro-Africanism was brought into being through that Association. We would like to know more about it. This is why we have been hesitant.

Nevertheless, I would say that the real decision regarding association was taken long before 1973. We were reminded of the time that it took Nigeria to complete negotiations, so as far back as 1969 we started thinking seriously about negotiating.

The negotiations seem to be making quite slow progress. On what points in particular are there differences of opinion? Do you feel the English-speaking associates see entirely eye to eye with their French colleagues, who have had sixteen years of association with the

E.E.C. countries and perhaps approach the talks with different attitudes?

Yes, I think they do so on rather important questions. I would start off by saying that in my opinion the progress is not all that slow, you have to think in terms of the fundamental positions taken by the two groups of partners; you also have to take account of the fact that the African, Caribbean and Pacific Group, forty-three or so of us, is quite a formidable number to handle. Then you have to think of your own group, the enlarged E.E.C., there are nine of them, they have their own problems. We often have a situation where the Commission comes and tells us, we do not have a mandate from the Council of Ministers because of internal problems. If you take account of all these things you come to the conclusion that perhaps the progress that has been made so far has not been all that slow.

The question of the English-speaking countries seeing eye to eye with the French-speaking countries does not arise at all because, as far as we are concerned, we have a system whereby we report our progress at the negotiating table to our own Council of Ministers, which is held periodically. The harmonizing factor, the basis of our negotiations, stems from the eight principles of Addis Abeba. There, our Heads of State under the auspices of the O.A.U., drew up what I would term a Charter for the negotiations, and we stick to this religiously, while making allowances for reasonable divergencies. Then we have internal consultations, and I would say there is no problem of seeing eye to eye or not seeing eye to eye. We have a common spokesman and we make it a point that our common spokesman represents the views of the whole A.C.P. Group. Yet one has to be realistic in these matters—even twins—I suppose you are married Mr. Trench?—if not and when you do become married, if you have twins you will see that however identical they may be, they have their differences of temperament. Therefore, if I say that we have no problems, I am not stating that we do not have to iron out a few divergent views here and there, it would be unrealistic for a diplomat to say that. I want to say there is no cleavage dividing the francophone group from the anglophone group.

► *Mr. Djamson, the new Convention will have four main sections: the commercial, the financial, the industrial and the technical. Which of these seems to you the most important for Ghana's development?*

Perhaps I might be over presumptuous in saying that the other main section might be the institutional provisions of the Convention. I think it would be wrong of me to pretend that any one of these by itself be much more important than the other because the whole Convention is supposed to be a package deal. Naturally we would like to think that our negotiations regarding the financial and technical operations should be looked at from this angle. We do not want to be consigned to a position of being perpetual beggars depending upon aid. We do not want to be stampeding the corridors of financial institutions in Europe for ever for our livelihood. If anything we want it to be understood that aid which comes from the developed countries, the industrialized countries, the affluent countries, should be so arranged that the same aid will make further aid redundant. We want to be self-reliant. We recognize that no country, even the powerful industrialized countries of the world, is ever self sufficient. We want to be self-reliant. We want to feel that we have a positive contribution to make to the progress of the rest of the world.

Therefore, I would say that trade, yes, we want to feel that we get the best out of our trade with Europe and on the footing of equality, of course, and we would like to see the transfer of technology from the industrialized countries of Europe to developing countries. This we know will maximise our export earnings, because if we are able to upgrade our products then we will finish being perpetual producers of primary products for the factories of Europe. So we attach great importance to the concept of the international division of labour and we consider that all these together are important for us, but they will be much more important if they are looked at from the point of view of self-reliance for the Associated countries and our future Convention.

► *Until this self-reliance comes, how important do you consider E.E.C. aid, the E.D.F.?*



C.C.E. — J.L. Debaize

M. Djamson presents his credentials to Mr. Ortoli, president of the EEC Commission.

Well, this is an important element of our relationship with Europe. I would suggest that this aid has been so planned that in the end it is in the interest of the donor as well as the beneficiaries. Now, we want to feel that the aid which has been coming to us and which has been received in anticipation of planned developments is not suddenly or arbitrarily discontinued. Therefore, the E.D.F. aid is a significant aspect of our future relationship and we consider that this aid must be considered in relation to the actual needs. We consider that the aid which has been given in the past could be much more adequate and therefore any future aid must be based on the actual needs of the Associated countries.

► *And do you think the A.C.P. should have a bigger say in running the E.D.F.?*

Oh yes, this is certainly our view, we have made no secret of this, we have informed the Commission that E.D.F. aid must not be a unilateral affair. This is why we have stated that the programming and the application of aid and all the subjects coming thereunder should form part of the development project of the particular receiving country; and also we want to feel that aid is divorced from the trade performance of any particular country.

It should not be seen from this angle, that if a country extends reverse preferences to the E.E.C., that country should be

a beneficiary of greater aid, or anything of the kind.

Of course on the question of reciprocity we have made our views known. We think we should participate vigorously in the administration of the aid. We have also presented our views to the Controller Delegate, whose functions we consider to be rather anachronistic—that our financial institutions must be brought into this and they must be made to help in the administration of the aid.

► *Do you mean the Central Bank of Ghana?*

I was thinking of, say, our Investment Bank, our Commercial Banks if necessary, our Central Bank, our Agricultural Development Bank, we do have a Housing Bank, all these institutions in their various fields of operation should be brought into the whole Administration, that is if we become beneficiary of any special E.D.F. aid.

We feel that any Convention between the recipient countries and the E.E.C. should guarantee export proceeds. We do not want to be at the beck and call of the see-sawing tendency of the market, because this has inhibited progress in the developing countries. I am from a cocoa producing country and we have suffered from this see-sawing effect of the cocoa market. We do not want this kind of unforeseen contingency, we want to know the risks, at minimum, which we can have for our export produce, so

that we can plan our development in anticipation of what we shall receive."

► *The A.C.P. Heads of State meet at Mogadishu and their Ministers at Dakar in June or July, probably to define the main lines of the form and content of the future Convention. What sort of agreement would you like to see come into force on February 1, 1975, supposing the negotiations manage to keep to schedule?*

I will put this in rather a nutshell and state say that we want to see a Convention based on mutual respect for the parties, that is to say, the E.E.C. on one side and the A.C.P. countries on the other side. We want to see a Convention which aims at giving the best that is possible to the parties, that is the E.E.C. and the A.C.P. and of course this should be based on the eight principles which we have already presented to our partners, the E.E.C. We want to see that there is considerable improvement on past Conventions; if you take for instance the question of the rules of origin, we want to see that that aspect is so construed that it will give rise to greater flexibility and therefore more progress industrially in the A.C.P. countries. We want to see also a new approach to the agricultural policy of the E.E.C. Well this is enough of a problem for discussion within the E.E.C. itself, but we want, as we have stated on many occasions, a blanket free entry for our products to the Common Market. We also want to see that our relationship is one which aims at security of these countries. Africa includes the poorest countries in the world—we want the standard of living of these countries to be considerably enhanced as a result of our association with the Common Market. Our view is that the A.C.P. countries must also be given the opportunity to contribute their quota to civilisation and the way to do it is to give them all the security that they need, both economically and socially. ■

Interview by B. TRENCH

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Marketing aids in the development of international trade

by Lambert AMON-TANOH

Lambert Amon-Tanoh is Director General of the Ivory Coast External Trade Centre (C.I.C.E.), a government company set up in 1971 "to promote and develop trade between the Ivory Coast and other countries, with special regard to Ivory Coast exports". Below are extracts from a lecture he gave in Brussels in September 1973. After a critical analysis of existing international trading conditions, Mr. Amon-Tanoh proposed improvements which have lost nothing of their freshness since his lecture was given.

First and foremost - Union of producers (1)

"ACCORDING AS YOU BE STRONG OR WEAK, THE COURT WILL DEEM YOU WHITE OR BLACK". LA FONTAINE CANNOT HAVE KNOWN HOW TRULY HE SPOKE.

The buyer is strong in his isolation, and still more in the finance at his command. When he buys from a producer who is weak because he is one of many, and because he cannot afford to wait for his payment, the terms of the bargain he will strike will be very different from those which would have prevailed if the buyer had had only limited resources and only a single producer had come into the auction.

The main motive force for stabilising price levels for the basic raw materials we sell **must be the union of producers**. This can operate nationally in the first instance and internationally in the next stage.

Coffee and cocoa, of course, are not the same thing as oil; but the results

which have already been obtained allow us to be reasonably optimistic about those we may be able to obtain in the future if we continue on the same road.

International agreements are a first concrete step towards a direct meeting between consumers and producers. They make it possible for representatives of developing countries to play an effective part in the marketing, and to play it themselves. Moreover, they give us a chance of making our difficulties better known. Still more, they bring the producing countries together and enable them by their unity to deal better with the financial, industrial and commercial strength of the people with whom they are doing business.

Getting used to audio-visual sales methods

And now we must see how we could improve the value—and thus the price—of our products.

The tendency is to think of "processing" which, of course, is an aspect of "industrialisation".

(1) Editor's subtitles.

Malawi

African development sometimes moves faster than the statisticians. The Malawi embassy in Brussels has brought it to our attention that in our interview with the Malawi ambassador (Association News No. 26), the future capital of Malawi was wrongly given as Blantyre instead of Lilongwe (pop. 74,000), The local language is Chichewa, not Njanja, and Lake Nyasa is now called Lake Malawi. Per capita G.N.P. 100 dollars in 1971.

We apologise for any confusion these errors may have caused.

This is one of the answers to the question, and I shall speak of it later. It is, however, only one answer, and there are many other. **It is not only the industrial processing of primary materials which can add to their value.** There are, in the first instance, improvements in the product itself, such as the Allen cottons in the Ivory Coast, grafted mango and the solo pawpaw. There is the additional value given by presentation, conditioning and packaging. Still more, there is the improvement known as "positioning", which plays an increasingly important part in the so-called "consumer society".

There is in fact a tendency to consider product quality without considering its environment; and when the products' natural coverings are taken into account, to think only in terms of the technical criteria of the packaging firm or the transporter. There are often cases, too, in which the presentation of a product has been decided in the first instance by thinking of the user or final consumer, without taking account of changes in the habits of purchase and consumption.

In food, for example, distribution practices have changed enormously during the last two decades. Today 90% of retail sales in Federal Germany are by self-service, 85% in the Netherlands, 70% in Great Britain. In France, between 1969 and 1971 the proportion of retail food turnover in the supermarkets rose from 10% to 21%, and in food shops of the traditional type it fell from 24% to 17%.

What are the consequences of this?

One of them is the change in commercial communication. The audio-visual approach supersedes the personal sales talk. The conversion is total when it comes to what the Americans call "vending" by automatic slot machines.

So, for example, it is no longer the trader who will be breaking off two or three bananas from the bunch to please the customer. Individual lots have to be prepared in advance and adequately preconditioned in clusters or "blister packs" in transparent plastic wrappings which cling around the product. The same principle applies to all fruit of small or medium size, such as the orange, the apple, the lemon, the lime, the mango, the mangosteen, the guava or the papaw.

Now in most of these cases we are still exporting either in bulk or at best in

units which correspond to the needs of our traditional retailer customers. The units are broken up by the importer or the wholesaler, who thus provides a service and adds a value which might have accrued to us in the first instance.

In this same context of a **trend towards audio-visual selling**, it is easy to see how important the trademark becomes to the buyer. It takes the place of the tradesman, personifies the product and becomes the guarantee of origin and quality. Yet even today how many are the cases in which the trademark is put on the goods by the wholesaler, or even by the shop itself? Here again is an added value which might easily have accrued to us. The point has been quickly appreciated by Israeli and South African producers of avocado, apples and oranges.

The same argument applies to many other products, such as groundnuts, timber, coffee, hides and skins.

The process of positioning consists of the use of advertising and public relations to give the product an image in the mind of the buyer or the user, distinguishing it from direct or indirect competitors. This, too, is of great importance in a period in which the very least of the consumer's requirements can be satisfied in a thousand-and-one different ways.

I need scarcely give examples or quote individual trademarks. We have names such as "Pepsicola" in the drink trade. We have had the expansion in coffee sales in Great Britain for some years past. There has been the growing sale of Italian pasta throughout Europe. I need scarcely mention the wearing of "jeans".

There are many economists who prefer to talk in terms of big aggregates and econometric models and formulae, who look down their noses at marketing, packaging, advertising, promotion and merchandising, loftily describing all this as the small detail, the marginal phenomena.

Yet when all is said, margins count for a good deal. For many products as much as 50% of the final price consists of the cost of packaging, advertising, promotion and merchandising. Moreover, in sectors in which the sales elasticity is low, a good marketing policy may lead to a turnover to match the whole national product of several of our associated countries.

An increase in the added value can come also from an **intrinsically novel product**. The avocado and the mango are recent examples of this. There are other fruits and other vegetables which grow wild in Africa and which could easily become cultivated crops. For this purpose, however, they must not be regarded simply as local curiosities. They have got to be tried out in Europe, tested in the shops and production and marketing have got to be organised.

Finally, value can be added by **processing on the spot**. Palm fruit can be processed into oil, the oil can be made into finished products. Coffee can be powdered and lyophilised. Fruit can be canned and preserved. Cotton can be made into textiles, round timber can be sawn and stripped, made into panels and board, into furniture and tool handles.

Everything I have said points to the need for keeping close touch with all the links in the chain between the production stage and the final consumer.

New markets and selling organisations

I should like to sketch out the question from the standpoint of markets and selling organisations.

As we all know, the Ivory Coast exports nearly a quarter of its cocoa to the Netherlands in the form of beans. Everybody knows, too, that an array of finished products emerge from the raw cocoa; but we who produce it do not know where and by whom it is ultimately used or consumed. The same applies to coffee and round timber.

This is a clear example of our dependence. Do you suppose any industrial company worth the name would agree to work in Europe today in such a state of ignorance?

Markets in eastern countries

For us, and for products which are distinctively tropical, any talk about new markets leads to thought about the Chinese continent, about the U.S.S.R. and the countries of Central Europe. I do not need to insist unduly on this side of the question, because it has been stressed very fully in the American and European press during the past two or three years. Its importance was made

clear to us by the C.I.C.E. mission in May and June to East Germany, Bulgaria, Hungary, Poland, Rumania, Czechoslovakia and Yugoslavia. There is a real chance here for us Africans—provided we jump to it.

New markets in Western Europe

There are other new markets, too. These may be less obvious, but in the short term they may well be more remunerative.

I was speaking just now about the possible effect of advertising and public relations as factors in determining the attitude of buyers and thus in the creation of markets.

An example is the British market for coffee. In only four years, between 1967 and 1971, advertising produced a change in consumer habits. As a result, the imports of coffee beans into Great Britain rose from 80 000 to over 110 000 long tons, and those of soluble coffee increased almost 10-fold, from 1 400 to 10 400 long tons.

I need hardly recall the launching of the avocado, which was almost unknown five years ago, but the European market for which is now nearing 20 000 tons.

This is another area in which, behind the big economic trends, there is a changeable reality; and even in sectors which are generally hanging fire or losing ground, markets can be made and lost again, new products may appear, new potentialities may be discerned.

A careful look through the import and consumption statistics shows us quite a collection of curious anomalies and potential loopholes.

How, for example, does it happen that the people of Federal Germany, who are among the world's biggest consumers of soft drinks and fruit juices, import only a quarter as much pineapple juice as the French?

How does it happen that Great Britain, outstandingly an importer of sawn timber rather than in the round, buys more round timber than sawn from the Ivory Coast?

How does it happen that groundnut oil has lost so much of its image and market supremacy which it undoubtedly had 10 years ago?

In some cases, you will say, there were technical reasons. I agree.

In others there were problems of production. This, too, is correct.

But above all, the reason is that firms and national administrations have not been attentive enough in following the trend of markets and the activities of competitors. It is because the actions did not come in time. It is because use was not made of the instruments of production stimulus and sales promotion which marketing puts at the disposal of those who really want to use them.

It is not only a matter of securing bigger sales, but often also of defending one's share of the market.

I have spoken of the virgin markets of Eastern Europe. Now, too, we can see that there are immense possibilities open to us also in Western Europe.

The new markets in Africa

There is a third category of markets open to us. These are in the other countries of the Third World, and more especially in the Associated countries, the other countries of Africa.

Here, too, the import statistics show up flagrant anomalies. In Upper Volta and Mali, for example, imports from the Ivory Coast are only 18 and 13 % respectively of total imports. In Senegal the corresponding proportion is only 5 %, in Dahomey and Niger 4 %, in Liberia 0.4 % and in Ghana and Nigeria 0.2 %.

There can be no better example of the structural weakness of our trading.

It is agreed nowadays that the solution lies in industrialisation and regional organisation. I hope the E.C.W.A., the Economic Community of West Africa, will prove to have been an important step in this direction.

It is not enough, however—far from it—to set up the legal and administrative structure of such a community. This will not in itself give vitality to the countries concerned as an industrial and commercial unit. In practice the West African community is still to be brought into being.

Its existence depends in the first place on concerted action between governments and administrations on industrial projects, customs and fiscal regulations. It depends at least as much, too, on considerable information and trade promotion campaigns and market prospecting.

Not only the traders, but still more the users and consumers who constitute the real potential market, are prisoners of habits they have inherited from the past. They know little of what is going on in neighbouring countries, and, worse still, they are apt to distrust goods which come to them across their frontiers.

Herein lie the importance and the objectives of events such as the Lagos Fair and the forthcoming Dakar Fair. It is only too easy for these to be seen in Europe merely as prestige operations, they are in reality the fulfilment of the meetings, treaties and conventions which would otherwise have been a dead letter.

It is with the same purpose in view that the Ivory Coast External Trade Centre is organising this year a commercial mission to the countries of West Africa, consisting exclusively of business men from among its compatriots. Next year we shall be organising a similar mission to the countries of Central Africa. It is no act of folly to send the Ivory Coast promotion caravan around its neighbouring countries every year or so. It has become very clear to us that it is not only in industrial goods that our trade is insufficient. There are markets for which we do not need to go as far as Europe for our coffee, our bananas, our pineapple, our vegetables and as our textiles are also marketable among our African neighbours.

Industrialisation, regional organisation and sales promotion are very closely linked.

Review of the current marketing infrastructure

In the same way the question of increasing the added value and kindred questions of diversifying our markets are linked with the present marketing infrastructure, both on the import and on the export side. Firms which produce goods in industrial countries set up branches or subsidiaries in Africa to sell the products they manufacture in their own countries. It is quite natural that they should do so.

What is less natural is that it is not Africans and African companies which are set up to sell in the countries where our products are bought. Yet, oddly enough, this is an aspect of the question which is seldom or never mentioned in Europe. The same applies to

transit and ocean transport. **No african country has a commercial fleet worthy of the name** except, of course, for cases where it is only the flag which is African. Yet, in all the world's maritime transport, it is the Third World which provides 41 % of the load.

There is much talk about the external trade of the Associated countries, but in the last resort how much of it is really theirs? All that is really left to them is the production. In some cases they have not even the responsibility for bringing it to the coast.

Economists talk of imports in value c.i.f. and of exports in value f.o.b.; and certainly this is the practice in invoices and customs declarations. But what is the state of things in the transaction itself? It is in the market that prices and quantities are decided; and it is in the internal counting houses of commercial companies that decisions are reached on what shall be done with the profits.

There can be no denying that the companies which operate currently have achieved a great deal. They have created markets; they have experience which we lack; they are affiliated to foreign groups and have whole networks of connections in the markets of these countries. It would be sheer folly to think in terms of an over-night takeover of their work.

Yet what is being done in the longer term to enable us really to take our trade into our own hands? How many citizens from our countries are to be found in Europe, even if they are only there as learners of the job, in the offices of companies which really handle the prospecting and where the actual contracts are negotiated? From the standpoint of the development of our countries and therefore of their peoples, I think this is a serious situation and it is urgent to find a remedy.

We should be able to **train Africans** for this work. It could of course be done only by degrees, but starting now and not tomorrow. Ultimately these Africans

would be able to take over part of the trading, forming new companies with the help of their governments and competing with the existing companies and those of mixed ownership.

But this is not the whole story

There are of course many other problems:

— For example, we do not have **full and correct information regularly brought up-to-date** on what is going on in the trade into our markets. The latest surveys available to us are 2 or 3 years old, or even more;

— Another problem is that **our countries are not well enough known to the public**. Reference to them, therefore does not help us much in our trade. This year a canvass of french housewives by the C.I.C.E. showed that no more than 40% of them mentioned the Ivory Coast when they were asked how many African countries they could name off-hand. When they were asked what products were exported from the Ivory Coast only 54% of them mentioned bananas without prompting, 31% mentioned pineapple, 10% textiles and 10% pineapple juice.

— Another question is concerned with **methods of settlement and therefore of financing**. Sales on commission are the general rule for many products; but it often happens that settlement is spread over very long periods, and to these are added the incomprehensible delays which occur in many remittances from Europe to Africa. It is easy to imagine the losses which these delays must represent on the financial side.

— Another matter for anxiety is that some of our competitors have, during the past 10 years, secured results which abundantly demonstrate the effectiveness of modern methods of marketing, transport and sales promotion. Yet the

firms which market our products have, for the most part, made no change whatever in their approach and working methods.

— I have spoken of trademarks, but I have not been into the question of **quality standards and regulation on description of origin**. It is certain, for example, that the ease with which industrialists can obtain and use substitutes for cocoa butter is extremely damaging to us.

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I cannot cover the whole ground, but I think I have sketched out our chief problems to which most of the others can be traced, and I have suggested roads which could be followed to find solutions for them.

At the Dakar conference on African Industrial Development in November 1972 (1), Mr. Ferrandi quoted François Perroux as using the expression «aided trade» to cover all the forms of assistance and protection I have mentioned. These, as Mr. Ferrandi emphasised, can only be considered against a dynamic background "by which I mean providing developing countries, in the same way as does direct financial aid, with additional resources which will enable them to get rid of some of the obstacles to the re-allocation of their factors of production".

This remark seems to me particularly apposite, and I hope I have shown that aids to marketing are fundamentally different from aided trade. In their case, too, the essential purpose is to blast some of the obstacles out of the way. It can be hoped, by regional organisation, industrialisation and the modernisation of trade, to lay the foundations for a situation of greater justice and humanity.

Some people say **TRADE NOT AID**, or **AID THROUGH TRADE**. What I am asking for is **TRADE AID**, by which I mean aids to better marketing. ■

L. AMON-TANO

(1) See Association News No. 21.

Man can and must prevent the tragedy of famine in the future instead of merely trying with pious regret to salvage the human wreckage of the famine, as he has so often done in the past. We will be guilty of criminal negligence, without extenuation, if we permit future famines. Humanity cannot any longer tolerate that guilt." *Norman E. Borlaug, winner of the Nobel Prize for Peace, 1970.*

Facing



the food crisis



Jean Guyaux

1974 will be marked by some of the biggest international conferences ever held, the most important of which must be the F.A.O. World Food Conference to be held in Rome in November under the auspices of the United Nations.

The conference's preparatory committee says there is already a world food crisis. Other observers believe this year's harvests will be decisive. With world cereal production down for the first time in more than 20 years in 1972, rocketing food prices have had disastrous consequences for the poorest nations. Climatic and market factors have combined to put food, fertilisers and energy out of the reach of the most needy. Food aid has drastically diminished just when most needed, crippling development programmes. Official aid is less in real terms than 10 years ago, while in some countries mounting debts wipe out what aid is received. The "Green Revolution" has still to make itself felt in many developing countries, especially in Africa, and there is evidence that the rate of growth in agricultural production in developing countries has slowed in recent years. Under conservative estimates, 500 million people are hungry in the Third World today, making world hunger the most urgent issue of international affairs.

On the eve of the UN World Food Conference, Association News looks at the problems of world hunger and the development of food crops in Africa.

«The development of agriculture should be considered the first priority by most Third World countries»

Dr A. H. Boerma Directeur general of the F.A.O.

Dr Boerma emphasises that agricultural development should be the first priority of most Third World countries. Although the world food situation is close to crisis—this year's harvests will be vital—he is nonetheless confident that the developing countries will be able to feed themselves, and he strikes the most encouraging note in this Dossier by saying African agriculture «may be reaching the turning point». Higher prices now being paid could give subsistence farmers the necessary incomes to benefit from the techniques of the «Green Revolution».

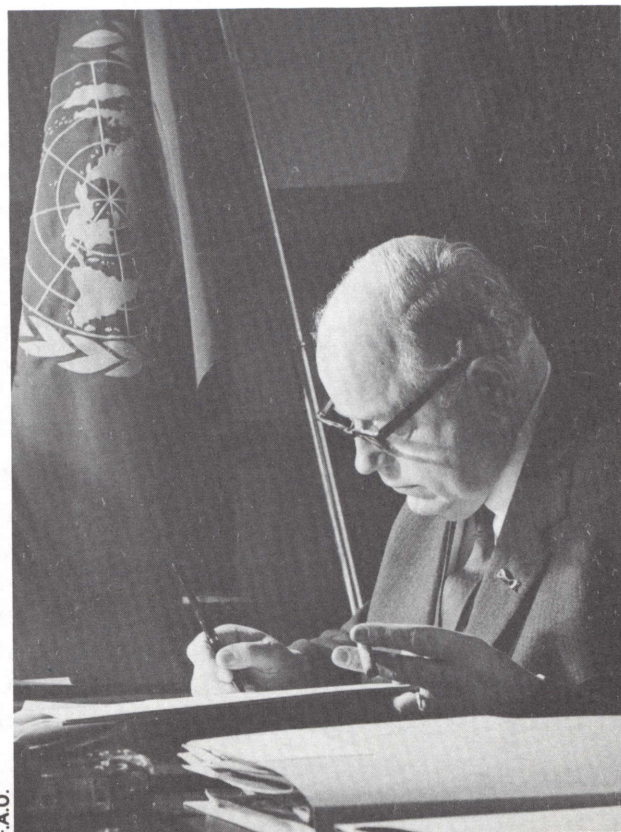
► *Dr Boerma, is there a world food crisis?*

No, I don't think that we could say that there is actually in existence at the moment a world food crisis. At the same time the overall food situation is more critical than it has been for a very long time and if this year's harvests are very much below our expectations we could, in fact, find ourselves face to face with crisis on a world scale. We have recently had a couple of very poor years for food production; in 1972, indeed, world food production actually fell below the level of the previous year, the first time that this had happened since the end of the Second World War. Since then production has picked up—1973 was a good year and the prospects for 1974 seem good. Nevertheless a couple of bad years have virtually wiped out the reserve stocks which in the past have been our insurance against disaster. Last summer the wheat reserves of the major exporters, apart from those held by the Soviet Union, on which we have no information, had dropped to 29 million tons, equal to about four weeks' world consumption. By the end of June they probably stood at about 21 million tons. To reverse this trend toward a complete disappearance of reserve stocks, we will need record production and yet at this critical moment our plans could easily be thwarted by the shortages and high price of chemical fertilizer; partly a result of a shortage of fertilizer manufacturing capacity and partly a consequence of the increased cost of the petroleum used in fertilizer manufacture.

All in all the world outlook must cause us a great deal of anxiety.

► *1970-80 is the Second United Nations Development Decade. What are the targets of this programme, and are they being met?*

The target set for the developing world during the Second Development Decade is a 6 percent annual growth in gross domestic product,



Dr A. H. Boerma: african agriculture may be reaching the turning point.

Dr Boerma became Director General of the U.N. Food and Agriculture Organisation in 1967 after being the first Executive Director of the World Food Programme. He studied agriculture at Wageningen (Netherlands) and became General Director of Food in the Netherlands in 1945-46. He was a member of the Boyd Orr commission set up in 1946 to consider the creation of a World Food Office, and in 1948-51 he was the F.A.O.'s European representative. He has contributed to studies on many aspects of food production.

including a 4 percent annual growth of agricultural production. In fact, the widespread poor harvests in the first two years of the Decade mean that the developing countries would now have to increase their agricultural production by almost 5 percent per year throughout the rest of the Decade if they were to achieve the overall target. In the last ten years or so the developing world has achieved a rate of increase of agricultural production of only 2.9 percent per year—in Africa south of the Sahara it was 2.6 percent—and the current shortages and high prices of fertilizer will certainly make it more difficult to raise the rate of growth even higher. On the other hand, the present critical situation has focussed the world's attention on the problems of agriculture and this might well lead to more vigorous and more effective action to raise food production.

► *In the advanced countries the industrial revolution often seemed to have been made possible by an "agricultural revolution" which preceded it. Farm production per capita almost doubled in Europe in the 18th century, for example. If you agree with this, do you not think development programmes should aim to bring about this agricultural revolution rather than concentrate on launching Third World industry?*

I believe that agricultural development should be recognised by most countries of the Third World as their first priority. The developing countries are predominantly agricultural countries. Most of their people live in rural areas and work the land and most of their exports are of agricultural products. The skills and experience of their farm people are important national resources which must not be abandoned but must rather be built up further. Malnutrition is widespread in the developing world and greatly reduces the effectiveness of the workforce. Many of the developing countries are spending far too high a proportion of their limited reserves of foreign exchange on food imports to make up deficiencies in their own production. These countries cannot turn their backs on agriculture; rather it must provide the primary motive force for their further progress. However, I feel that your question throws up something of an artificial barrier between agriculture and industry. In F.A.O. we do not see them as being mutually exclusive activities; rather we would see them as interdependent. For example, agriculture can provide the basis for the development of industry. In the developing world there is tremendous scope for the processing of agricultural products, both the preservation of foodstuffs and the further processing of products produced for export markets. These industries can provide extra employment in rural areas where there is frequently much unemployment and especially underemployment. By enhancing the value of export products they can increase the export incomes on which the developing countries are so dependent for financing their progress, although it must be noted that the tariff systems of most developed countries discriminate against processed products. And through the operation of such simple industry there is built up in the local population the experience and the manual and organizing skills which will later be needed for larger and more complicated industries.

► *Will research into artificial foods have any significant results for the Third World?*

This is a hard question to answer very specifically because of the difficulty of drawing the line between a completely artificial food and a food which is compounded of normal nutrients to produce a new food, like the cereal flours enriched with various protein concentrate and vitamin supplements which are becoming more widely used for infant and child feeding in the developing world. Probably the most "artificial" of the foods that seem in sight at present are those derived from yeasts grown on petroleum fractions. These, it must be remembered, are still at an early stage of development in the industrialized countries where they are at present considered to have a potential as livestock feed. However, the future of these products has recently become a little uncertain with the new supply and price problems for petroleum. Then there are the various extracts of protein-rich vegetables, usually soya beans, which are processed into meat substitutes and meat extenders. These are already widely consumed in the prosperous countries of Europe and North America and seem certain to increase their foothold in the food markets of these countries over the next few years. But these products also seem unlikely to contribute to a solution of the food problems of the developing countries in the near future.

All in all, I feel that the research that will be of greatest value to the developing countries will be research aimed at improving more conventional branches of food production; for instance, research aimed at the development of cereals combining high yield and higher protein content with lower input requirements.

✦ *Turning to Africa, the F.A.O. "State of Food and Agriculture" reports for 1971 and 1972, the start of the Second Development Decade, recorded "satisfactory production increases" and "very good crops" for Africa. Is the situation in Africa still encouraging?*

No, the situation in Africa at present is far from satisfactory. The dominance of weather over Africa's agriculture is one of the basic problems of the continent. In the six Sahelian countries stretching along the southern fringes of the desert droughts lasting several years have, as is well known, already precipitated a full scale food crisis. There is similarly a food crisis in part of Ethiopia. But a number of other countries have also had lower than average rainfall recently; these have included Cameroon, Gambia, parts of Ivory Coast, Northern Nigeria and Togo. Largely as a result the recent performance of agriculture in the African region as a whole has been very disappointing. During the decade of the 1960s agricultural production in the region rose by about 2.4 percent per year at the start of the period and by about 3 percent per year at the end. But the unfavourable weather since 1972 has resulted in a severe setback, and for developing Africa as a whole, food production per head of population is now lower than it was in 1961. As a consequence there is an increasing dependence on imported foods and imports of cereals have risen by about 40 percent over the past ten years. But even this does not fully reflect the deteriorating food situation in many countries where there are chronic shortages of basic foods. In 1973, the food situation in the Africa region was the worst of all the developing regions.

Despite 20 years of development work in Africa, observers say the introduction of modern agricultural techniques has had only marginal effects on the mass of African farmers. Why is progress so slow, and why has there been no real "green revolution" in Africa?

Where cash crops produced for export are concerned the African region has scored some modest gains. Where production of food for local consumption is concerned the region has advanced very little. This is largely because practically all food production is in the hands of very small farmers working at a subsistence level. The small surpluses they produce are mostly sold in local markets at prices which will not pay for improved seeds, fertilizer, pesticides—the inputs that are necessary for higher productivity. The infrastructure of all the services that are necessary to introduce and maintain enlightened agricultural methods is still at a very rudimentary level in most African countries. But changes are coming; I feel that African agriculture may be reaching the turning point. One of the great incentives to agricultural development could be the high rate of urbanization; growing urban populations with their increasing demand for food could provide the markets on which more productive agriculture could be built. As in most parts of the world, Africa has recently seen substantial rises in prices of farm products. It may be some time before these higher prices filter down to the farm level but the long term result will certainly be an increase in farm incomes which will both provide an incentive for higher production and provide the cash that will be needed for investment in supplies and equipment.

Can black Africa feed itself now, and will it be able to in future?

Even if the food situation in Africa is at present most unsatisfactory and even if the outlook for the immediate future is not good, the people of the region should be able to feed themselves now and in the foreseeable future. There are certainly a number of constraints on agricultural production in Africa. There are considerable areas of desert and large marginal areas which receive little rainfall. A good deal of the land is of low fertility and a number of pests such as the tsetse fly and the weaver bird are widespread. But the population density in most of Africa is not high and, even taking these problems into account, the land should be able to support even larger populations at an adequate level. The problem is not a scarcity of resources but a shortage of technology, a shortage of organization and a lack of investment in agricultural development.

The second half of this century is witnessing a population explosion in the poor countries, where the birth rate is more than double that of the rich countries. The amount of cultivated land per head is being drastically reduced. Yet population growth has usually been accompanied by an equivalent growth in production, and some areas of Asia are able to feed themselves thanks to the intensive cultivation of small farms. What is the outlook for Africa?

I feel that two comments should be made about your question. One is that you seem to imply that population growth will

almost automatically lead to increased production; it does not and in Africa it has not. The second is that although many smallholders are intensifying their cultivation in Asia it is not so far these farmers who are achieving the greatest results in increased production. It is the medium and large land holder who is scoring the greatest production gains. Although we are glad to have the extra food, whoever is producing it, it does remain an unsatisfactory aspect of the package of practices which make up what we call the "Green Revolution" that it is not stretching more deeply down among the smallholders and peasant farmers of the world. Too often they lack the knowledge and the resources to raise their productivity, and they generally have poor access to government services such as credit and extension. Turning now to Africa, one may say that it is not the region where increased population need cause the most anxiety. Here we do not have the pressure of expanding population bearing heavily on very limited and very inflexible land resources. But of course an increasing population does add up to more mouths to be fed and, as we have seen, Africa is not managing to feed its increased population without importing substantially more food from abroad. These imports are inevitably a heavy burden on the region's hopes and plans for economic development, especially with the recent increases in prices and the reduced availability of food aid.

Furthermore, in all of the developing world the high rate of population growth is posing employment problems—there is just not the work in rural areas for the additional people and not the investment in urban industry to provide alternative jobs there. While the data available on rural employment and underemployment in Africa are very limited, there is widespread evidence that agricultural and other rural employment opportunities are neither matching the rapidly increasing labour supply nor providing sufficiently attractive incomes. The result is a high rate of migration to towns and cities where the employment situation is actually no better, usually even worse.

What are the implications for Africa of the sudden huge price rises in world commodity markets?

The great price rises in world commodity markets have done little for Africa. The prices of all of the region's export crops have risen but exports have mostly remained stationary; only tea exports have risen appreciably. There has been an increase in sugar exports, too, but within the region. At the same time the prices for the substantial quantities of cereals and other foods which Africa imports have all risen. And, of course, we all know what has happened to the prices of fertilizer and the other agricultural inputs which Africa should be importing and using at a very much higher level than at present.

What should be done in Africa?

Africa comprehends many countries faced by varied problems, some countries rich in natural resources and others desperately short of them. However, in all of the countries of the region there is the need for much greater concentration on agriculture in national development plans. Farmers must be helped to improve their cultivation and they must be helped to obtain

fertilizers, improved seeds and all the other inputs that are needed to raise productivity. Marketing and rural credit systems must be built up. A determined effort must be made to build up national food reserves to safeguard against the consequences of poor seasons; too many African countries struggle through from season to season and one poor season can bring famine and dislocation of national development plans.

A great deal can be done outside Africa to improve agriculture inside the continent. A few African countries benefit from special trading arrangements with some of the prosperous countries but most of them face tariffs and other protective measures which make it almost impossible for them to build up the exports which could contribute so much to their progress. Recent studies that we have made at F.A.O. on international agricultural adjustment have shown that relatively modest trade concessions by the prosperous countries could make very substantial contributions to the export incomes of the developing countries, and also to employment opportunities in these countries. I think that the prosperous countries will have to make these concessions if we are to make any further progress. The opportunity to trade on open markets is just as important as aid to the Third World.

► *What is the World Food Conference about and what do you hope for from it?*

The special World Food Conference to be held in Rome next November is the product of mounting world concern about the prospects for food production in both the near future and the longer term. I have already spoken of this critical situation, of the rundown in food stocks and the serious shortage of the fertilizer which we so badly need if production is to be increased fast enough to rebuild our reserves. These were among the



Naud

Millet field in south Mauritania. Modernising this back-breaking agriculture seems more urgent than industrialisation.

Cultivating millet by modern methods: the technique is there, the problem is how to apply it. Compare photo above.



Naud

factors which led the Conference of Non-Aligned Countries in Algiers last September to call for an emergency conference at ministerial level to formulate a programme of international cooperation to overcome the increasing shortage of food. A similar proposal was then made to the General Assembly of the United Nations by Dr. Kissinger, the US Secretary of State, later the same month, and the decision to hold a food conference next November was the outcome.

The business of the conference will fall into two main sections. The first will be an assessment of the present food situation and the prospects over the coming years. The Conference will then turn to discussion of concrete proposals for improving food supplies and distribution. We hope that from these discussions will emerge a positive programme for action and a firm inter-governmental commitment for action. "Commitment" is very much the key word here. We are not short of ideas for solving the food problem and the world as a whole is not short of the

resources and technology for putting these ideas to work. What we are short of is the commitment to action; governments and people continue to be reluctant to exert the effort and make the sacrifices that will be necessary to put world food production and distribution in order, and all the time we drift closer to disaster.

I think that we have some reasons for cautious optimism about the outcome of this conference. Public awareness of the precariousness of the food situation is greater than it has been at any time in years and people are very concerned, very eager to see positive action. In addition there is today a greater community of interest between the rich and the poor countries than there has been before. All countries are suffering the effects of high food prices and of shortages of raw materials. These are new elements of the situation and I think that they can be very helpful. ■

Interview by B. TRENCH

Traditional millet stores in Niger. The old way of life may no longer be able to cope with the present conditions.



Europe and the food crisis in the developing countries

by Dr Hans-Broder KROHN(*)

For the first time in many years the world is now confronted with an acute food supply crisis. Hundreds of thousands of people are threatened with starvation.

In late 1973 and early 1974 world market prices for major foodstuffs rose to a record level: maize and soya bean prices were twice as high, wheat prices three times as high and rice prices four times as high as the averages for 1971 and 1972. The same holds good for sugar, whose price has also reached a staggering level in recent months. For a time, neither rice nor sugar were obtainable on the world markets.

Cereal buffer stocks have fallen to an ominously low level, so that for the first time in many years there is anxiety about the results of the next harvest.

Two urgent questions must therefore be asked today:

a) How should the supply problems of recent months be viewed? Is this a passing phenomenon caused by a combination of exceptional circumstances, in particular poor weather conditions? Or should it already be regarded as the beginning of a structural world deficit in essential foodstuffs?

b) What steps should be taken to improve the situation in the short and medium term? What part can be played by the developed countries, and in particular the European Community? Must we draw conclusions for agricultural policy and development aid policy?

Two indicators reflect most clearly the acute shortage in world supplies of the most vital foodstuff—cereals:

The world market price for wheat, which had been stabilized in the fifties at a level of between \$ 60 and \$ 70 per ton, and had not moved since, shot up to \$ 200 in late 1973 and even reached \$ 220 in February 1974. When it became clear in the spring that stocks would last until the new harvest, this was of course very quickly followed by a tendency for the market to move downwards. In April 1974 the price of wheat was down to \$ 160 per ton.

It is estimated that the major producer countries will have wheat stocks of 21 million tons at the end of the 1973/74 crop year (1 July 1974), as compared with 29 million tons at the same time last year and 62 million tons at the end of the 1969/70 and 1970/71 crop years.

What is responsible for the sudden deterioration in the world supply situation? It is due to a slight drop—33 million tons in all (1)—in world cereals production in 1972/73. This drop in

production was, however, particularly apparent in the Soviet Union, India and Australia and was not offset by a corresponding increase in production in the major exporting countries.

Thanks to the availability of stocks in the major producer countries, especially the United States and Canada, it was possible to prevent a bigger catastrophe; the crop shortfall was at least partially offset by drawing on available stocks.

The consequences for developing countries

The strained supply situation on the world cereals market had serious economic and social effects on a number of developing countries:

In countries such as Algeria, Indonesia, Senegal, Sri Lanka, Ivory Coast and Malaysia, whose cereals requirements are to a large extent covered by imports, the Governments found that they had no alternative but to double or treble the prices of basic foodstuffs (rice or bread) at extremely short notice. This led to social and political tension in some cases.

At the same time the sharp rise in food prices resulted in an additional burden on the balance of payments, which was also severely strained by increased oil prices and the rise in the prices of imported industrial products.

The extension of cereal-growing areas in the United States, dearer oil and other factors at the same time led to serious shortages of fertilizers, especially nitrogenous fertilizers and phosphates, whose prices more than trebled compared with 1971.

What is the food supply outlook in the developing and developed countries for the next few years?

On the demand side, the future world food situation is crucially affected by two factors—the further growth of world population and, accompanying a rising standard of living, the improvement of both the quantity and, above all, the quality of food.

For at least the past twenty years, the supply situation in most developing countries has been precariously balanced.

It is true that since 1952 the developing countries as a whole have succeeded in increasing food production faster than the population has risen. The improvement in the food supply per inhabitant, however, has been slight—0.7% in the period 1952-1962 and 0.3% in the period 1962-1972.

The increase in production was by no means sufficient to bring about a marked improvement in the chronic malnutrition situation, which affects the population of Asia in particular. According to F.A.O. estimates, some 400 million people—i.e.,

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(1) In the sixties world cereal production had only dropped on two occasions, in 1963 and 1965. However, the reductions were much smaller—2 and 4 million tons respectively.

one in five inhabitants of the developing countries—are undernourished. While in Western Europe every inhabitant consumes on average 22% more calories than are physiologically necessary, in the developing countries there is an average deficiency in calorie intake of 10%.

For the period 1970-1985 the average increase in world population is calculated at 2%—i.e., world food production must increase by at least 2% per annum simply in order to feed the extra population and maintain the present unsatisfactory level of supplies.

Assuming that per capita income will continue to rise in both the developing and the developed countries, extra demand for food to improve individual nourishment must be reckoned with. In the developed countries this will above all be reflected in a further increase in meat consumption and thus indirectly in cereals consumption (from 578 kg. in 1970 to 637 kg in 1985). It is estimated that in the developing countries consumption of fruit, sugar and vegetable oils will also rise very considerably as well as meat consumption.

In the light of these two factors, the increase in world food demand is estimated at 2.5% per annum for the period 1970-1985. However, a distorted picture is obtained if demand is considered as something cut-and-dried, since the situation in the industrialized countries could develop in an entirely different way from that in the developing countries. The annual growth of demand in the industrialized countries is estimated at only 1.6%—a result of low population growth (0.9%) and the generally more than adequate supply situation—while in the developing countries demand should increase by 3.7% per annum, more than two-thirds of which is accounted for by population increase (2.7%).

What are the prospects for the next years of meeting the increased demand for food resulting from population growth and the desire for more food of better quality?

In view of very slow, and perhaps in the long term even static, population growth in the industrialized countries, there should be no difficulty in providing the population with an adequate supply of food of high nutritive value. Even in the years to come the problem should be less one of ensuring adequate supplies than of stabilizing markets and preventing structural surpluses.

For the developing countries it is assumed as a working hypothesis that it will be possible to increase production in the coming years just as it was in the sixties. This would mean that up until 1985 the developing countries would increase their food production by 2.7% per annum—which would be just enough to feed the extra population but insufficient to secure the necessary improvement in food supplies. An annual production increase of 2.7% seems a realistic assumption to work on when it is considered that:

Out of 71 developing countries examined, more than 40 were able to increase food production by over 2.7% on average and more than 20 were even able to increase production by over 4% per annum in the period 1953-1971;

In recent years remarkable progress has been made in the use of fertilizers (since 1967 consumption has increased by 19% per annum);

In the sixties, thanks to the introduction of high-yield varieties of wheat and rice, there was a considerable improvement in the supply situation (dependence of Pakistan and India on imports).

If the developing countries do not manage to achieve a bigger increase in food production than in the period 1962-1972, they will be forced either to do without the necessary improvement in the food situation or import food from industrialized countries to an even greater extent than in the past. In view of the, to some extent, menacing food situation, the first solution would hardly be politically acceptable.

It would undoubtedly lead to social stress such as has occurred in a number of developing countries in recent months owing to short supplies and high prices. The second way is hardly feasible from an economic point of view, as it would confront many developing countries with foreign exchange problems of unprecedented proportions. On the basis of the assumptions made with regard to demand and the development of production, F.A.O. predicts a net import requirement of 73 million tons of cereals for 1985, as compared with only 13 million tons on average from 1969 to 1971. Even if cereal prices were to return to a "normal" level of only \$70 per ton there would be a burden on the foreign exchange position of \$5 000 million equivalent to more than half the official aid which the developing countries at present receive from the industrialized countries.

Outlook for world food

To sum up, the outlook for the world food situation in the next few years is as follows:

- 1) In the next ten years in the world as a whole, it is unlikely that there will be a structural supply deficit and certainly no shortage of cereals since production in the industrialized countries will exceed their foreseeable requirements. Of course, acute supply problems can arise if—as has been the case in 1973/74—crop failures occur at the same time in a number of major producer countries: hence the need, as F.A.O. has been emphasizing for the past year, for concerted stockpiling of strategic reserves.
- 2) In the coming ten years, even if they do not radically change their economic priorities, the developing countries will probably be able to meet increased demand resulting from population growth.
- 3) However, if the developing countries also want to improve their supply situation, increased efforts must be made to increase food production if the supply deficit is not to be covered by massive imports. It is up to every individual developing country to fix priorities on the basis of the political options open to it. Similarly, the starting points for raising production could vary according to country. Efforts may be concentrated on making available additional agricultural land (by irrigation schemes or reclamation), or on measures for increasing productivity (provision for fertilizers, pesticides, seed).

What can Europe, and the European Community in particular, do to help improve the food situation in the developing countries? Has it paid enough attention in the past to the agricultural

problems of those countries? The contribution made by Europe (and the rest of the Western world) to improving food supplies in the developing countries was previously mainly confined to two types of measures:

financial and technical aid for agricultural development; provision of food aid.

In the area of financial and technical aid to agriculture most European countries have in the past made only a very modest contribution. According to estimates, bilateral aid expenditure by the Community's Member States on agricultural schemes in developing countries amounted in the past to no more than 8 or 9 % of total official aid.

The E.D.F. and agriculture

The situation with regard to Community aid is much more favourable, with the European Development Fund attaching growing importance in recent years to the financing of agricultural schemes. With a proportion of total E.D.F. aid of 37 %, agriculture currently leads all other sectors (first E.D.F. 1958-1963: 16 %; second E.D.F. 1964-1969: 30 %). In all, 500 million u.a. have been spent on development of agriculture under the E.D.F. since 1958. Thanks to European financing, a number of important schemes for improving the food situation have been carried out (particularly involving rice, oil palms, groundnuts, millet and stockbreeding).

The World Bank, including the I.D.A., has committed itself to financing agricultural projects to much the same extent. Since 1969 roughly a quarter of total World Bank loans have been in connection with agricultural projects.

Compared with the Western countries' efforts to promote food production in the developing countries by means of investments and technical assistance, there was in the past relatively greater readiness to grant food aid whenever shortages occurred. This was especially true of the United States, with 35-45 % of that country's development aid being accounted for by food supplies during the past twenty years. The developing countries have in recent years been able to cover much of their supplies shortfall by means of food aid from the Western countries (*).

Since 1968 food aid has also been playing a growing part in European development aid policy. Under the International Food Aid Convention the European Community is required to provide 1.3 million tons of cereals annually as aid to developing countries. Apart from this, the Community has for several years been supplying considerable quantities of powdered milk and butteroil, which, besides aiding the developing countries, also helps reduce the surpluses which exist from time to time.

The bulk of Community aid is sold to the local population. The proceeds are used to finance investment projects in the

recipient countries. A small portion is earmarked for free distribution in disaster areas (droughts, floods, refugee camps).

The Community and the Member States spent an estimated 200 million u.a. on food aid in 1973.

What demands does the Community see itself facing in the future both in the long term and in the next few months?

It should be made quite clear that the world food problem cannot be solved by means of Europe and North America producing more food at home and then supplying it in the form of food aid to Asia and Africa; rather the developing countries must be enabled to meet the bulk of their requirements by producing the food themselves. It is hardly conceivable that annual supply deficits of the order of 70-80 million tons, as predicted by F.A.O. for cereals in the eighties can be covered by intensified food aid from the United States, Canada and Europe. Such action would come up against financial limits.

Food aid cannot and must not be used as a pretext for permanent surplus production within the Community. This holds good for cereals, but even more so for products such as milk and sugar.

This does not mean that the Community would have to suspend its food aid programme in the near future. On the contrary, there should be a certain amount of stockpiling to prevent the food supply situation from deteriorating further in the developing countries.

All efforts must be directed at increasing food production in developing countries within the next ten to fifteen years to such a level that they are no longer dependent on food aid from the industrialized countries. The most useful contribution which the European countries can make in this respect is to substantially increase their development aid for agricultural projects, if necessary at the expense of other sectors. It would be desirable for all Member States of the European Community to undertake to give top priority in portioning aid by sector to food production in future as is already the case with the E.D.F.

For the immediate future the Community sees itself confronted with two questions which are very likely to be at the centre of discussion during the World Food Conference in Rome in November of this year:

— What contribution can the Community make in conjunction with other industrialized countries to offset future variations in production of essential foodstuffs more effectively than in 1972/73 (stockpiling)?

— What can the Community do to mitigate the negative consequences of the present shortage of fertilizers for the developing countries?

Reserves

The past twenty years' experience has shown that the stability of world cereal prices, and above all world supplies in bad years, can only be safeguarded if adequate reserve stocks are held somewhere in the world. Shortages on the world cereals market in recent months are to a great extent due

(*) For comparison

— Cereals imported by developing countries in 1972: 36 million tons. Food aid in the period 1970-73;

— U.S.A. 11 million tons;

— European Community 1 million tons;

— World Food Programme 9.6 million tons.

to unexpected high imports by the Soviet Union (some 20 million tons), a result of that country's poor harvest and its inability to meet demand solely by drawing on its own stocks.

The problem is not therefore one of "if" but of "how". Who is to bear the physical and financial responsibility in future for ensuring that in times of need sufficient quantities of cereals and possibly of other essential foodstuffs are available? Countries with surpluses, consumer countries, or both?

One solution to this problem would be for all consumer countries to sign an international agreement whereby they undertake to hold reserve stocks corresponding to a certain proportion of their cereals consumption, which they could fall back on as an initial measure in the event of crop failure. The amount of reserve stocks to be held could be fixed on the basis of the long-term risk of crop failure, to be determined statistically. The exporting countries could also be encouraged to enter into a commitment to hold stocks proportionate to their share in world exports of cereals, while a lesser burden could be imposed on the developing countries with regard to the stocks they would have to hold. Such a system, which would have to be supervised by F.A.O., has two important advantages:

- the financial burden would be fairly evenly distributed;
- it is likely that if reserve stocks were held in different places throughout the world, negative effects on world market price levels would be minimized.

Fertilizers

As a result of price increases many developing countries are at present experiencing considerable difficulty in obtaining fertilizers, especially nitrogenous and phosphatic fertilizers, since many developing countries do not have the necessary foreign exchange cushion to import fertilizers freely at world market prices, which are currently extremely high. The obvious thing to do would be to obtain fertilizers from the industrialized countries and make them available to the developing countries as part of development aid. This idea was at the basis of the proposal for an international fertilizer fund first submitted to the Special Session on Raw Materials of the United Nations General Assembly in April 1974. The proposal assumes that

owing to the relatively low level of fertilizer utilization in the developing countries, the increase in earnings is greater than in the industrialized countries.

However, the problem is more complex than this. The following points in particular should be emphasized:

- In the light of the present worldwide fertilizer shortage, partly caused by the increase in American consumption, to set aside specific quantities of fertilizer for developing countries would further push up prices on the world market;
- It would not be very realistic to organise worldwide rationing of scarce fertilizers;
- It is quite possible that the fertilizer situation will soon return to normal particularly when planned additional capacities, especially in oil-exporting countries, enter into production.

The best support which industrialized countries could give to increasing the use of fertilizers in developing countries consists in the short and medium term of three measures:

- The industrialized countries should provide foreign exchange subsidies for the developing countries which are hardest hit as regards fertilizers and food by price rises in the energy sector, to enable those countries to continue to meet their vital import requirements for the next year or two. The European Community has stated that it is prepared to make a substantial contribution of up to \$ 500 million to such immediate action at international level. It will then be up to the recipient countries to make the best possible use of this aid—for instance, financing "commercial" imports of fertilizers with it—in accordance with their priorities.
- The Community should support efforts by the developing countries to produce their own fertilizers. This is primarily up to the fertilizer industry, but it is quite possible that official financial or technical aid will also be granted for setting up or operating fertilizer factories in the developing countries.
- The supplying of fertilizers in the context of aid programmes may be envisaged, but such supplies must be part of an integrated overall programme for a specific agricultural development project. Unless the plant varieties involved respond positively to fertilizers, and unless there is adequate irrigation and detailed technical instruction on how to use fertilizers, the danger of misuse cannot be excluded. ■ **H.B. KROHN**

Famine - a fight to the finish

by Dr H.G. DION

Canada is one of the world's great granaries. H.G. Dion, special agricultural counsellor for the Canadian International Development Agency, describes the current state of world food crops and the progress of the "Green Revolution". Despite the reservation of some observers, post-1945 advances in crop science have been astonishing. Present cereal production could be "quadrupled". But, Mr. Dion warns, population control remains essential if the world is to continue to feed itself.

The present food crisis has caused many people to worry that food shortages have become a permanent part of life. Has population now outstripped our ability to produce food, fulfilling Malthus' prediction?

The continuing "Green Revolution" in agriculture has bought time for the human race to limit its growth. Scientists have been able to prevent millions of deaths through famine in recent years. But can they continue, or is time running out?

If we try to analyse the present food crisis, we can identify a number of factors that have contributed to it.

- Poor crops in Russia induced the Soviet Union to purchase food stocks abroad.
- Campaigns in Canada and the United States to lower wheat production, and in Japan to reduce rice production, have diminished national reserves.
- The grain trade has been ignorant of the true state of national and world grain reserves. Fears of trading in a world dominated by surpluses made the exchange of information undesirable in a competitive market. The result: the grain trade was unaware of rapidly falling reserves.

A further major contributing factor involved the shift in the Humboldt current off Peru, reducing drastically the catch of anchovetta, a major source of fish-meal. Prices of soybeans and all alternate sources of protein for animal feeding soared. At the end of the chain, prices of meat and livestock products rose sharply.

Add to these factors changes in demands and attitudes.

Standards of living have increased throughout the world. Not only do we consume more meat and eggs and higher-value foods, but so does the rest of the world. The change in attitudes is illustrated by the actions of the Soviet Union. A few years ago, the Soviets' response to poor harvest would have been, "let's tighten our belts." Now, the attitude is, "let's maintain the dietary standards of our people, even if we have to spend foreign exchange to do it." Rapid communica-

tion effects another change in attitude. In the bad old days, there were droughts in the Sahelian zone of west and central Africa; cattle and people starved; but the news travelled slowly, and our ability to mobilize food supplies and transport them was limited. We accepted famine as a normal part of life for those peoples. Today, we can do something about famine, and our national and international consciences make sure we do, thus increasing the demands on food reserves.

Add to all these factors the continued increase in world population, the demands upon food production of millions of additional mouths, particularly in the developing world, where population has been increasing as fast as food production.

What are the prospects in the short run? Even with good harvests in North America, better crops in India and South-East Asia, it will take some years to rebuild what are considered normal reserves, and grain prices are expected to remain high. Similarly, unless the Humboldt current and the anchovetta catch return to normal, soybean and other protein feeds will remain costly and meat expensive. Thus high prices will remain for at least some years and if the agricultural community is lucky, farmers will continue to get what their produce is worth in terms of other goods. Agricultural commodities have always been underpriced, since we have operated on the basis of a perpetual surplus. Nations will be wary of regenerating a price-depressing surplus, and supply is likely to remain roughly in balance with demand.

The lessons

What has the food crisis taught us?

First, that our national and international information with respect to food stocks needs to be reinforced, so that our actions are not handicapped by lack of knowledge and our reactions are not overpronounced because of unforeseen crises. Second, that the efforts of Canada, the United States and Japan in particular, to cut back on foodgrain production have succeeded in removing the surpluses which were national embarrassments, but have also removed the role these surpluses played as "buffer stocks", so that the world no longer has a cushion against poor harvests. In the days of surpluses, the world had 90 days supply of wheat in storage; now there is only 27 days supply. The former represents a surplus with low prices and the latter a scarcity with high prices. Third, that our food supply situation is in so precarious a balance that it can be upset by a purchase by the Soviet Union representing only 4 per cent of international sales. A close balance between demand and supply makes good sense in the case of automobiles and other manufactured goods, since temporary

shortages can be overcome by delaying consumption. In the case of food, consumption cannot be delayed. Manufactured goods can be scheduled for production—but food is subject to all the vagaries of the weather, and the unpredictability of all biological systems. As insurance against unpredictable poor harvests, the world needs buffer stocks of food, which cannot be considered as surpluses. And the maintenance of buffer stocks must be recognized as of more importance to the importing countries than to the exporting countries, which have carried the responsibility in the past.

Fourth, we have learned that we did not have to ship massive amounts of food aid to India, that India had in fact lifted itself to almost self-sufficiency. India's imports were largely to replace food exported to Bangladesh. An examination of India's achievements in six years in raising wheat production from 12 million tons to 26 million tons a year has impressed us all. It is sobering to think that if this hadn't happened in India, we would be searching for 15 million tons of non-existent wheat to send there—almost equivalent to Canada's total annual export!

Planting out rice in the Niger valley. Agronomic science could greatly increase the return this boy gets for his work.



Great progress possible

Yet, the Green Revolution has just begun in India. While about one-third of the acreage is in the new high-yielding varieties, two-thirds is not, and the increases in production can be expected to get still larger in the future but more slowly, of course. Only one developing country has had a complete Green Revolution for any crop, and that is Mexico, for wheat. Its revolution began about 1945, with wheat production in that year of about 400 000 tons and in 1956, it was essentially complete with almost all the acreage in the new high-yielding varieties, and total production of 1.2 million tons, more than enough for national needs.

What about other countries and other crops? For wheat on a world basis, in the years 1966 to 1971, the area planted in high-yielding varieties went up from 1.5 to 21 million acres in the developing world. But with the exception of Mexico and India, no wheat producing country had more than 10 per cent of its wheat acreage in the high-yielding crops. The revolution is just beginning. For rice, the Green Revolution began with

the development by the International Rice Research Institute in the Philippines of IR-8 which more than tripled rice yields where it was adapted. Even in the Philippines, the high-yielding varieties do not occupy more than 60 per cent of the rice acreage, while in India, the figure is about 14 per cent. Nevertheless, in the five years 1966-1971, the total acreage in the new rice varieties went up from 2.5 to 25 million acres and is still growing.

The international centres, originally sponsored by the Rockefeller and Ford Foundations, have demonstrated what can be achieved in plant breeding, and have injected a new factor into agricultural development. The International Centre for Maize and Wheat Improvement (CIMMYT) in Mexico and the International Rice Research Institute (I.R.R.I.) in the Philippines, have demonstrated that by "genetic engineering" to redesign the plant's "architecture", and more particularly, to build in high-yielding potential, fertilizer responsiveness and the broadest possible spectrum of disease resistance, it is possible to make a quantum jump in yields—to increase yields by a factor of two or three or more. When the new varieties, with the package of recommended practices, are demonstrated, producers can see the differences and the "early innovators" make the change, since the results are obvious. The new high-yielding varieties with increases of 200-300 per cent make the agricultural revolution possible. The Village Development Schemes in India were not demonstrably successful because they lacked the lever of the **large** increases possible with technology based on the high-yielding varieties; when the high-yielding varieties changed the production picture in India, village and rural development took off and continues to move. Ten years ago, even optimists were pessimistic about the possibility of changing Indian agriculture. As an act of faith, those optimists imported 18 000 tons of seed from Mexico in 1966; they were vindicated because the yield jump was big

enough, Indian wheat production changed, and continues to change.

What about other crops?

The Green Revolution in wheat has been restricted to the spring bread wheats. Work at CIMMYT on the Durum wheats, for pasta and cous-cous in the Mediterranean-North African region has demonstrated that the success with the bread wheats can be duplicated with the Durums. Some countries are already stepping up production based on these new materials.

Triticale is also part of CIMMYT's program, in partnership with University of Manitoba which pioneered North American development of this wheat-rye hybrid. The crop is expected to fill an ecological gap between the wheat-barley-rye cereals and the sorghums and millets, and to push cereal production into presently submarginal areas. It is already the most highly productive grain crop in parts of Ethiopia and on the lower slopes of the Himalayas.

Barley work has just begun at CIMMYT with the objective of doing for barley what has been done for wheat, and improving it nutritionally. Corn improvement has not really taken off yet except in North America and Europe, primarily because hybrid corn requires the cultivator to purchase new seed each year. This practice is not well adapted to the needs of subsistence and small farmers who are hardly in the cash economy.

CIMMYT has recently developed promising "composites" for which it is not necessary to buy new seed each season. Within the next year or two, we can expect to see a Green Revolution based on corn beginning in Latin America and in Africa. The new corn, which incorporates a gene for high lysine content, is no longer an inferior human food in terms of amino-acid distribution. It should qualify as a first-class protein source, with great improvement in the quality of the diets and state of health of millions for whom corn is the basis of the food supply.

Millets and sorghums are the basic food supply for millions in semi-arid regions too dry for wheat and barley, such as the Sahel and Sudan zones. There has been relatively little improvement in these crops and they are in approximately the same state of development as wheat was perhaps 50 years ago. These crops are the subject of an improvement program at the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) in Hyderabad, India which is in its first year of

development. There is little doubt that the triumph with wheat can be repeated.

Cassava, pigeon peas, chick peas and potatoes are also the subject of intensive research at these and other research stations.

Meat for the rich

If the future for plant production is promising, what about meat, milk and eggs, the animal protein sources? We can forecast that livestock products which depend on the conversion of plant protein to animal protein (and with an efficiency of only 25%) will become steadily more expensive when based on feeds which can be used for human food, or use land which could efficiently produce human food. Of the various kinds of livestock, the ruminants will have a preferred place, partly because the world has an abundance of poor grazing land that can only be utilized by grazing animals. In addition, the ability of the ruminants to convert urea, which is produced industrially, into animal protein gives them a real advantage over poultry and pigs which must use preformed protein. We can therefore expect beef, mutton and lamb to occupy a bigger share of the market and poultry and pork relatively less. As in the past, people in rich countries and rich people in poor countries will continue to eat meat.

The year 2000 and its problems, to which this article is addressed, represents a significant point of time. By that year, the world will have an additional 3 billion people to feed. We can probably feed ourselves in the year 2000 as well or badly as we feed ourselves now—the developing countries could be appreciably better off. However, no country that does not control its population can look with confidence to the future. From the world point of view, continued population growth spells disaster. Our planet is of limited size, the parts of it that we do not now use for food production we do not know how to use, and our reliance is on increasing productivity per unit area. We can perhaps double this in the next 26 years. The rate of increase after that will probably be slower and much more expensive. The idea of trying to feed 12 billion people in 2020 is frightening.

Hungry people have a short, hard, brutal and ugly life. The prospect of reducing the birth rate means a better life for a smaller population. Man need not multiply himself into disaster but the time available for him to take action is short indeed. ■

The World food Programme

Interview with Francisco AQUINO, Executive Director of the World Food Programme

The Sahel drought and other calamities have drawn world attention to the importance of food aid. But outside emergencies, many experts are critical of food aid to developing countries, fearing it has a disincentive effect on food production. Francisco Aquino, Executive Director of the World Food Programme, answers the criticisms in an outline of food aid on the world scale.

► *Mr Aquino, the World Food Programme is perhaps more a World Food Aid Programme. Would you tell us what it is?*

The W.F.P. is a programme of the member nations of the U.N. and F.A.O. which was established in 1962 to provide food assistance for economic and social development purposes, as well as in cases of natural or man-made disasters. It is sustained through voluntary contributions made especially for the purpose by member governments and given directly to the Programme.

The Programme uses food for the part payment of wages of labourers engaged in labour-intensive public works that have an economic significance for the recipient country. The major share of our resources has gone into activities of this sort.

The Programme has also supported projects that have to do with social development; that is to say: mother and child care, school feeding, hospital feeding and, in general, sustenance for the less privileged, the most vulnerable groups of the population of the developing countries.

However, as I have already pointed out, most of our resources—around 50 per cent—have gone into activities that have to do with the economic development effort, particularly in improving roads from farm to market, increasing irrigation or opening up new agricultural land. In this way, the World Food Programme is supporting food production efforts in the developing countries receiving our aid.

Now, as I said in the beginning, the Programme also provides assistance in the case of emergencies, and in this activity we have spent also a considerable amount of resources. However, in relation to what we do in the economic and social development field, it is only about 10 per cent. So, of the one point seven billion (1 700 million) dollars which constitute the cumulative resources of the Programme since we started operations, about

160 million have been devoted to emergencies and the rest has gone to economic and social development efforts.

One thing I'd like to add with respect to our work in emergencies: although W.F.P. has participated in large operations such as in the case of the Sahel and Ethiopia, because of the relatively small amount of resources available to us, the Programme is much better equipped to deal with smaller emergencies which do not call the attention of the mass media and therefore are not likely to receive assistance from the international community in general. We are supporting economic and social development projects in about 90 countries, and we have staff stationed in these countries. Therefore when an emergency occurs which does not call the attention of the international community, we are already on the spot, have resources already in loco, and it's easy for us to come to the assistance of the groups of distressed people who suffer just as much as those who are caught in a great disaster.

► *Could you tell me how food aid is decided for particular countries?*

Food aid from W.F.P. is decided on the basis of priorities established by our Intergovernmental Committee, and also, and very much so, according to the priorities of the recipient countries themselves. Of course, when resources are plentiful, as they were in 1970-71, then the Programme can undertake operations in countries which would not necessarily be considered as suitable for food aid in times when food is very scarce, such as now. At the present time, we are operating practically only in the least developed of the developing countries—as defined by the United Nations—and in countries which are under particular stress because of recent natural catastrophes.

► *And do you succeed in bypassing political difficulties in granting food aid?*

The World Food Programme does not take into account political considerations in granting food aid. We have granted food aid to practically all governments that have requested it and have been found deserving on account of the economic and social conditions prevailing in the country in question.

I must add that the Intergovernmental Committee has never given me any guidance with respect to political conditions to be met by recipient countries receiving our aid, so I don't think the issue really arises.



Francisco Aquino (left) interviewed by Barney Trench.

Mr Aquino has been Executive Director of the World Food Programme since 1968 and has seen the programme's budget increase from \$28 million to \$150 million in five years.

The W.F.P. is based in Rome and operates in 85 countries.

Mr Aquino is a native of El Salvador in Central America. He studied in the USA before becoming minister of agriculture in El Salvador, later joining the boards of the World Bank and the International Monetary Fund, for which he was Central and Latin American spokesman. He was the first President of the Council of the Central American Monetary Union.

Heiderschied

► *Could you tell us what part the E.E.C. plays in the World Food Programme?*

The E.E.C. has played a very important role in the development of the World Food Programme. The Community has been generous with us, particularly at some points in our history. In fact, in 1970 the action of the E.E.C. in giving us 120 000 tons of dried skimmed milk and 35 000 tons of butter oil opened up a complete new era in the expansion of the W.F.P. We attach an enormous importance to the participation of the Community in the World Food Programme. Through it, the burden of food aid is shared more evenly on a world-wide basis and Europe can contribute to the shaping of W.F.P. policies and priorities. The Community has given considerable resources to the Programme. Unfortunately, this has not been a sustained effort, and this causes problems to us because, as you know, the W.F.P. does not operate on a year to year basis. We give assistance for several years on a project basis for well-defined economic and social objectives, to feed very well-defined groups of the population, and if we do not have sustained support from our donors, then we find difficulty in really accomplishing the economic and social objectives that the countries have set out for themselves.

► *I appreciate that the W.F.P. is not solely concerned with food aid, but to consider food aid for a moment: it has been the target of a number of criticisms, such as that it has been a disincentive to local production, that it can disrupt markets and discourage their development, that it has been a means of getting rid of the surplus production in rich countries, that by being granted only from project to project or year to year it does not allow the developing countries to plan ahead, and even that, in the case of dried milk powder or white sugar for instance, it can be nutritionally harmful. Do you think any of these criticisms are justified and if so, are these points being corrected?*

In fact the W.F.P. is concerned **only** with food aid, but with food aid for a purpose; not with the surplus disposal of food. I think we should differentiate between two different types of food aid. This is basic in discussing the question. Food aid given in bulk for very thinly defined purposes, with products to be sold for local currency in the recipient countries, has a tendency to clash immediately with local market price structures and could be, if not handled properly, deleterious to production in the developing countries. Food aid given on a project by project basis with clearly defined economic and social objectives in mind, to feed clearly defined population groups for a number of years is a different kind of game altogether. And this second type that I have described is the only type of food aid that we do in the World Food Programme. Therefore I would reject any criticism in the sense that we are interfering with the market, because we are not selling. We are making food available to people who did not have enough to eat before. In this way we are promoting additional consumption. In other words, we are not catering for the effective demand gap that may exist in a country, a gap which may be closed by purchasing with foreign exchange or with local currency, but we are actually dealing with the "belly gap", that is to say with hunger.

Now, on the question of the harmful effects of some foods, let me say that some critics may be thinking of the problems of people who are rather over-fed in the rich countries. They say that sugar is a harmful food. In countries where people are absolutely under-fed, any addition to energy or to protein is a most important addition to their diet. In the case of milk powder, the criticisms that I have heard are of two types. One is that it does not contain vitamin A and the other is that people may use polluted water to reconstitute the milk and therefore this may be harmful. One of our donors is already supplying D.S.M. (*) with vitamin A added and we hope that others will follow suit.

(*) Dried skimmed milk.

I should also point out that on the one hand the World Food Programme provides food rations rather than a single food such as milk and that, on the other, we see to it that mothers are provided with the right kind of water for the reconstitution of the milk.

It has also been said that food aid is a method for the disposal of surplus production. I think it might have been at some point, but it is not any more, because there are no surpluses in the world. In fact, one of the interesting things about the present food aid picture is that in spite of the absence of surpluses, the World Food Programme is being supported very strongly by traditional and by new donors. We have set for ourselves in 1975/76 a target 100 million dollars higher than the previous one and that target, as I see it now, is going to be fulfilled rather easily. Apart from the traditional donors, all of whom have maintained or increased considerably their contributions, we are getting now very good support from countries which are not even food producers, such as Saudi Arabia, which has recently promised 50 million dollars in cash for 1975/76. This is another welcome development, just as when we had the E.E.C. first coming to the assistance of the W.F.P. I think we have now an entirely new dimension; we have the possibility not only of supporting agricultural development efforts through our food aid projects, but also through the purchases of food in the developing countries themselves.

► *Food aid will surely be with us for the short term, but giving away food must seem difficult to rich countries currently facing inflation. How do you think food aid will develop in the future, and how do you think it should develop?*

I'm sorry, but food aid will probably be with us for quite a few years. The problem of hunger in the world cannot be solved, I am afraid, in the short run—particularly in view of the levels to which population has increased and is going to increase in the

next 20-25 years. In other words, we are keeping a very meagre balance between population and food in the world at the present time, and food aid is a necessary element to avoid not only malnutrition but also starvation, probably for very large numbers of people in the case of a widespread shortfall in production. It seems to me that there is a place for much more food aid assistance of the type the World Food Programme gives. However, I would also think that food aid on a bulk basis also has a place, and that it should be continued in future. Food aid cannot be a surplus-disposal expedient in future. It should be part and parcel of the total production effort of the countries which are more fortunate than others, and it should be given on a continuing basis and for purposes which are very clearly defined in agreements between co-operating nations.

It is not possible any more to think of food aid on a year to year basis. In this context I have been most interested in a paper that has been distributed on the proposed future food aid policy of the E.E.C., in which it is suggested that there should be annual commitments but in a programme that would be rolled over every three years. I think that this is a very good development and I sincerely hope that other areas in the world and other countries will follow suit. I am thinking particularly of countries which are in a position to increase their food production beyond their internal and commercial needs for food aid co-operation with developing countries. I also think that the World Food Security idea, initiated by Dr. A.H. Boerma, Director-General of the F.A.O., is something very worthy and deserves the firm support of the international community. I am hopeful that the World Food Conference to be held in Rome in November this year is going to produce concrete results which are going to give us the possibility of improving our efforts to solve the problem of a better balance between population and food production in the world. ■

Interview by Barney TRENCH

Planting rice, Madagascar. Rice exports have slumped.



Food and health

Professor Michel F. LECHAT and
Doctor I. BORLEE

The statistic that two-thirds of the world was hungry shocked the rich countries in the 1960s. The effect has worn off, partly through repetition and partly through doubt as to what «hungry» really meant. The Third World does not seem to western public opinion so decimated as to have been reduced by the cruellest form of population control. Professor M. Lechat and Dr. I. Borlée of Brussels explain precisely what hunger and malnutrition mean.

“The world is rich, but it does not make good use of the wealth which lies to hand. Millions of people live under the permanent threat of hunger and malnutrition... In tropical and sub-tropical regions there are some 11 million children who suffer from serious protein-calory malnutrition and 76 million affected by moderate protein-calory malnutrition.”

Dr. H. MAHLER, Director General of the World Health Organisation, World Health Day, 1974.

The food requirements of the human being are both quantitative and qualitative. The quantitative requirements are concerned with the input of energy, and the qualitative ones are concerned with proteins, minerals and vitamins.

The energy requirements

All living beings require a constant input of energy. It is needed to keep the organism alive and to enable it to accomplish its physical activities, to work, to grow, to repair used tissue.

The first question is to define the form in which this energy is supplied to the human being, how it is used and how it is measured.

It is supplied by food of three types—the glucids (carbohydrates), the proteins and the lipids (fats). There is a vast variety of diets and food habits, but all the food can be considered in terms of these three components.

Whatever be the food considered—be it rice, wheat, groundnuts, lard, butter, sunflower seed oil, game or fish, to mention only a few—the ultimate source of energy is the sun. It is captured in the chloroplasts, or minute light cells in the leaves of plants which give them their green colour, and the energy passes, as it were, from hand to hand through the whole length of the food chain.

The usual measure of this energy is the calory, which is defined as the amount of heat needed to raise the temperature of a gram of water by 1 °C (between 15° and 20°). The great calory (Cal), or kilocalory, is 1000 calories.

For the nutritionist, it is the calory which is used for energy measurements. This results in some confusion because the measure of energy in physics is the joule. This is the quantity of energy expended in the movement over a distance of 1 meter of a mass of 1 kg by the action of a force giving it an acceleration of 1 m/sec². It has been recommended by many national and international bodies, that all forms of energy should henceforth be expressed quantitatively, both in joules and in calories.

One kilocalory (kcal) is equal to 4.184 kilojoules (kj)

On the average

1 g of glucids supplies 4.1 kcal (17.2 kj)

1 g of proteins supplies 4.1 kcal (17.2 kj)

1 g of fat supplies 9.3 kcal (34.0 kj).

In dietary energy calculations the alcohol intake is often omitted. The quantity of energy supplied by a gram of ethyl alcohol is 7.1 kcal, so that a litre of 12 % wine provides 700 kcal, or about a quarter of the daily energy requirement. Nowadays it is recommended that the alcohol be included in calculating the energy value of the food intake, provided the quantity consumed does not go beyond the physiological limits.

The energy requirement is the consumption of energy regarded as adequate for an average individual in good health. The average individual is given a precise definition depending on age, sex, weight and type of activity.

It should be noted that these energy requirements are only averages, but they can be used as such in calculating the total quantity of energy required for whole populations. At the individual level, there are considerable differences, and the averages are too high for some and too low for others. Energy requirements also vary with the climate; and they are increased, sometimes quite considerably, by physical exercise, pregnancy and lactation.

For a long time the estimates allowed for increases of between 3 and 5 % in energy requirements for every 10° below a mean annual temperature of 10°C, and decreases of 3 % for every 10° above this level. It is now recognised that there are not sufficient data for quantified estimates of climatic influences on energy expenditure in repose and at work.

For individuals of the same physical mass, the same sex and the same age, the most important factor determining differences in energy expenditure is the physical exercise taken. Table I shows the energy expenditure per minute in various mens' jobs in a tropical, rural milieu.

Table I

Energy expenditure per minute by a man in certain mens' jobs in a tropical rural milieu (data supplied by F.A.O. and W.H.O.)

Type of activity	kcal per minute	kJ per minute
Farm work in a tropical country		
Mowing of grass	4.5	18.8
Clearing undergrowth	6.2	25.9
Planting	3.6	15.1
Weeding	3.8-7.8	15.9-32.6
Digging, earthing-up	5.5-15.2	23.0-63.6
Tree felling	8.4	35.1
Carrying (loads from 20 to 35 kg)	3.2-5.6	13.4-23.4
Reaping	5.1-7.9	21.3-33.0
Irrigation	4.1-7.5	17.1-31.4

It can be seen at once that there is no sense in expecting people to undertake public works programmes on the basis of food distribution if they are already suffering from food shortage or famine. Since physical work increases the energy requirement, this has to be taken into consideration in assistance programmes for populations affected by famine. **The man who has not enough to eat counts as a sick man and the food provided him as a medicine.**

The total increase in the requirement due to a pregnancy is about 80 000 kcal, corresponding to a daily average increase of 150 kcal during the first 3 months and 350 kcal from the 4th to the 9th month.

The energy requirement for lactation is known with some precision, depending on the daily production of mothers' milk (850 cc), the average daily content of this milk (720 kcal per litre) and the calory yield from the lactation (about 80%). On the average the nursing mother should receive an extra 750 kcal per day in her food, or 135 000 kcal for a nursing period of 6 months.

It can thus be seen that the energy requirements of a given population can be calculated with reasonable precision and the food aid can be organised accordingly. There must, however, be reliable estimates to cover a number of factors, such as the age structure of the population, the biometric parameters, birth-rate and the prevalence of nursing mothers.

Proteins

The organism has a constant need of nitrogen to offset the losses through urine, faeces and skin tissue. The nitrogen is supplied in assimilable form by proteins. The process of growth also requires an intake of nitrogen for the formation of new tissue.

There is a different method for estimating the protein requirement. It is not a matter of arriving at an average for the whole population, as was the case with energy, but rather of estimating a security protein intake which will cover the needs of almost all individuals in a given sex or age group. In 97.5% of adults the

daily nitrogen requirement is covered by an intake of a gram of proteins for each kg of the individual's weight.

It is thus clear that no good purpose is served in increasing the input of proteins beyond the quantity needed to replace the losses of nitrogen. Once the specific requirements are covered, any extra quantity of proteins—which are scarce and expensive—is burnt up to supply energy in the same way as are sugars, cereals and fats. Thus, an input of proteins beyond the requirement is not only a waste but, which is even more serious, is liable to give rise to illusions. Still more serious is the fact that when the energy supply is insufficient, as in time of shortage or famine, the production of energy is the first use to which the proteins are put.

Thus, if the nitrogen requirements are to be satisfied, the energy requirement must be covered first. Proteins are indispensable; but a protein deficit cannot be dealt with unless the calory deficit is tackled at the same time.

The nitrogen requirements are of course considerably increased in periods of growth, pregnancy and lactation. An infant normally doubles its weight during the first 6 months of its life and trebles it during its first year. During its first year its protein requirement per kg of its weight is 3 times as great as that of an adult. It is also very important to recognise that the protein requirements are considerably increased during acute infection and for sufferers from diarrhoea.

There are still further complications. Food proteins are not absorbed as such, but are broken down into amino-acids in the course of the digestive process, and it is in this form that the nitrogen is assimilated. In the world of living organisms, mammal bacteria and plant plankton, there are 23 different amino-acids. These are, as it were, the bricks from which living matter is built. In the human being some of these have to be supplied as such, because the organism lacks the capacity to form them by synthesis.

A deficit of one or more amino-acids in the food may therefore be a limiting factor, even if the supply of nitrogen is adequate. Detailed information is still lacking regarding the minimum requirements of specific amino-acids, and preference is therefore given to protein foods containing a wide range of these acids.

The sources of protein are varied, and they may be of animal or vegetable origin. The best source is milk, which is easily administered to children and is easily assimilated. The milk which is best balanced in amino-acids is mothers' milk. Fish, meat and eggs are the main sources of animal proteins. Vegetable foodstuffs with a high protein content are cereals, leguminous plants and green-leaf vegetables.

In tropical regions where the supply of animal proteins is insufficient, the best possible use must be made of all sources of vegetable protein available locally.

Minerals and vitamins

The human organism also needs many mineral salts which have to be supplied through the diet. A familiar instance is the importance of calcium for bone formation; and among the sources of it are milk and cheese. The absence of fluorine in drinking water is apt to result in dental decay. In places where drinking water and the soil are poor in iodine, there is apt to be

(see page 33)

The negotiations: Decisive progress at the Kingston meeting

At the invitation of the government of Jamaica, a ministerial conference was held at Kingston on July 25-26, 1974. It was attended by representatives of 44 countries in Africa, the Caribbean and the Pacific and by the European Economic Community.

After a prolonged night session, the conference ended with the **unanimous approval of a press communiqué and three resolutions** laying down the main lines of the Association to be created. Many aspects of this Association, some of them important, are still under discussion; but the political compromises which have been reached are fundamental. In circles close to the conference, it is believed that the **final act of the Kingston Conference marks the point of no return in the negotiation**. It now seems certain that the Association will come into existence and that all the countries participating in the conference will become members.

The final press conference was held jointly by representatives of the E.E.C. (Mr. Sauvagnargues, President of the Council of Ministers, and Mr. Cheysson, a member of the European Commission), and by representatives of the A.C.P. (Mr. Babacar Ba, President of the African group and Mr. Patterson and Mr. Ramphall for the Caribbean countries). Both parties expressed their satisfaction at the compromises secured and the hope that the **negotiations can be brought to a conclusion** in Brussels before the end of the year.

The general line of the discussions and the essential results are summarised in a final communiqué which ranks as a political document. The text is as follows:

"The aim of this Conference was to summarise and give new impulse to negotiations between the A.C.P. countries and the E.E.C. which have been in progress for the past year.

Mr. Manley, the Prime Minister of

Jamaica, was kind enough to inaugurate the work of the conference which, he said, was an opportunity for setting up a first milestone on the road to a new world economic order. It sought to define the principles for a new form of relationship between industrial countries and developing countries, based on the principle of international social justice.

The ministers accordingly concentrated their discussion on the main subjects which have to be dealt with in the negotiations, and were able to work out joint lines of approach.

One of the outstanding items in this new approach is the agreement reached by all the parties to set up a **system for stabilising the export receipts** derived from basic products exported by the A.C.P. countries to the Community. This system is designed to mitigate the damaging effects, for the economies of the countries concerned, of falls in the prices of the principal products exported, or in the quantities sold. The practical arrangements for applying this agreement will now be negotiated between the A.C.P. and the Community; and the Commission will now begin discussions with the producing countries concerned on the various types of produce, with special reference to sugar, which was recognised as having always been a matter of special concern.

The other new item for which common approaches were secured relates to **industrial cooperation** between the A.C.P. countries and the Community.

The A.C.P. countries and the European Economic Community recognised the primary importance of the part industrial cooperation must play in the forthcoming

agreement, and agreed that it be dealt with under a separate heading.

The European Economic Community has considered the memorandum on industrial cooperation put forward by the A.C.P. countries, and agrees with its general line of approach.

As regards the **trading system**, the participants recognise that this must be of a stable character and include the recognition of the lack of symmetry marking the position between developing countries and their partners. The essential feature of the system will be free access for the A.C.P. countries to the Community market, while the A.C.P. countries will not be required to accept a corresponding obligation. Following observations put forward by the A.C.P. countries and examined by the conference, however, various factors which may impede certain aspects of the trade will still have to be examined during the negotiations. These include the rules of origin and non-tariff obstacles, with particular reference to products coming under the Common Agriculture Policy.

The conference noted with satisfaction the progress which has been made in the Brussels negotiations regarding **financial cooperation**. There was a first exchange of views on the volume of the aid to be granted by the Community to the A.C.P. countries, and this discussion will have to be continued in the course of the negotiations.

It was agreed that the institutions, which will be the framework of the whole cooperation agreement, should be considered at the end of the negotiations.

In laying down these new principles, the ministers consider that the negotiations should now be resumed at an accelerated pace at the level of deputies, with a view to their completion in good time. The work at deputies' level should be completed by the end of next November at latest".

Though the conference achieved decisive progress in the negotiations, it is to be noted that two important subjects are still in suspense:

— **The amount of the future E.D.F.:** the Nine are prepared to treble the credits for the European Development Fund, which would result in financial aid of U.A. 2,700 million. The A.C.P. put forward a figure of U.A. 8 000 million.

— **The sugar problem:** the Nine did not enter into any definite commitment regarding the régime for imports of sugar produced in the A.C.P. countries. It was, however, agreed that sugar "has always been a subject of special reference". The problem will therefore be reexamined; and it seems unlikely that import commitments will be undertaken before the Community has defined its own internal sugar policy.

A new model for relationships between industrial and developing countries?

by Charles SCHIFFMANN (*)

For poor countries depending on only one or two lines of production, sold in world markets at widely fluctuating prices, it has never been an easy task to draw up national development plans or to protect farmers against slump prices or ruin through crop failures. Nothing could be more discomfoting than to sow the seed today without the least knowledge of the price at which the crop will be sold tomorrow. For some 40 underdeveloped countries in Africa, the Caribbean and the Pacific, the menace will soon have been taken out of the constant price threat which overhangs their labour. These are the countries which will be associated with the European Community when the present Eurafrican Convention of Yaoundé expires on January 31, 1975; for the Community intends to organise for their benefit a system of insurance against the bad years. It is fully recognised among the Europeans that this can be no more than a palliative, as it is not within the power of a small group of industrial countries to resolve the fundamental problem of what prices ought to be paid for basic products from underdeveloped countries in general. A manufacturing country which ventured to buy its imported materials from the underdeveloped world at higher prices than are paid by its competitors would soon find itself on the road to ruin; but it is possible, nevertheless, to iron out the year-by-year fluctuations in export receipts, and this is in fact done for individual products by some of the producing countries.

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Stabilisation on these lines was offered by the European Community to 44 countries in Africa, the Caribbean and the Pacific. The offer was made at the Conference of Ministers who had been called together at Kingston, Jamaica, to activate the negotiations for cooperation agreements between these countries and the E.E.C., to take over when the present Yaoundé Convention expires.

Slowness and uncertainty

For some months these negotiations had been hanging fire. On the one side the Nine countries of the E.E.C. hesitated about agreeing to cooperation formulae which some considered unduly adventurous and others unduly restrictive. In the Common Market, the countries do not all share the same conception of the economic order. Some of them consider that the volume of production and the level of prices should be settled by the law of the market. Others regard this as a backward and barbarous and often excessively painful way of regulating the work of the producers, and call for organisation of the market. The Associated and "associable" countries of Africa, the Caribbean and the Pacific (the A.C.P.) did not find it at all easy to draw up an exact prescription for the medicine the Common Market could administer to cure the sicknesses by which their own economies were afflicted.

The negotiations began in October, 1973, and from the outset the general objective was clear to everybody—a new form of association of the Yaoundé type, revised in the light of more than 10 years practical experience. The European Community, however, was not able to launch into an unduly large number of formal commitments, and

the negotiators had to keep things going with technicalities. They were bogged down in interminable discussions about the nationality of the crews of fishing vessels, the catch of which might be sold in the Common Market free of customs duty as having "originated" from the Associated countries. There was not the least indication of the total amount of finance aid the E.E.C. would be willing to provide for its partners; but attempts continued at defining, with all the precision of a notarial act, through whose hands the money should pass before it reached its destination, and how the various operations should be kept under control.

The negotiations languishing in Brussels were costing the A.C.P. delegations a lot of money. They had to send and maintain their experts, they had to use the time of their ambassadors, they had to call international coordination conferences to determine their collective attitude. It was finally the A.C.P. which took the initiative, by inviting the Nine E.E.C. countries to a negotiating session at ministerial level at Kingston, Jamaica, aimed to give a "political impulse" to these interminable palavers. The Europeans could but feel bound to make up for lost time, and they could not go to Kingston empty-handed; but they still did not know what they could take with them.

This uncertainty dominated the picture until the very eve of the Kingston Conference, for which preparations were made first in Brussels and then in the jamaican capital itself, in feverish meetings of the E.E.C. Council of Ministers. In the end the Nine succeeded in agreeing on an offer; and in the confrontation with the 44 A.C.P. countries this offer was to be substantially improved.

"Climbing a moving staircase going down"

At the start of the conference there was a considerable difference between the way the A.C.P. countries expressed their worries and the conformist manner in which the E.E.C. announced its intentions. Most of the european participants were deeply impressed by the inaugural speech of Mr. Michael Manley, the jamaican prime minister. "The accepted concept of trade freedom", he said, "in virtue of which prices and the movements of goods are regulated by free market forces, is no longer appropriate in a world which has endorsed the political idea of equality and international justice". The vigour with which he challenged the economic system based on the law of the market reminded many people that Cuba is only a few cable lengths away from Jamaica.

of a man attempting to climb up a moving staircase while it is going down.

There was no sign in the speech of Mr. Manley, or for that matter in those of the A.C.P. speakers who followed him, of any appeal for charity. What we want, he said in substance, are real chances to do our own work for our own development, and these must include genuine and total access for our products to the european market.

On this last point the Europeans present might well feel self-righteous, for everybody knows the European Community is offering to eliminate all customs barriers and quota restrictions on imports of practically all the products sold by their partners. What then were the obstacles Mr. Manley attacked? In the first instance, the european agriculture policy, which is organised to protect farmers in the Common Market for the very same reason that they cannot be abandoned to the caprices of

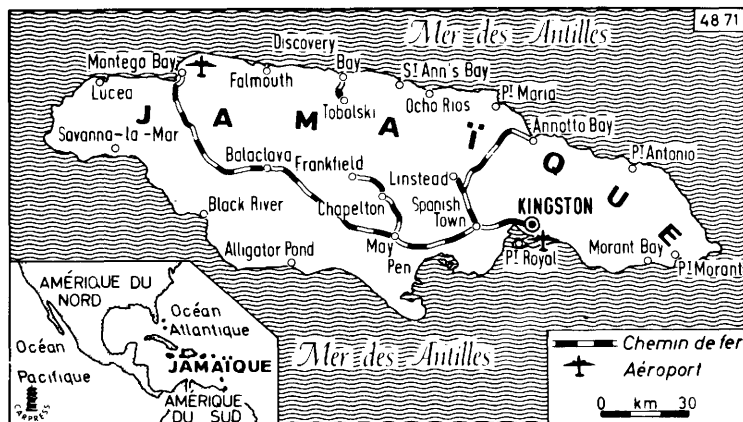
of the E.E.C. countries rum imported from some of the oversea departments is protected on the ground that the territories in question are required to apply an expensive system of social legislation, through in actual fact the labour cost of rum is no more than 2% of the total cost, or so it is stated by professional experts from the Caribbean. The European is the biggest rum drinker on earth; and it is easy to understand the bitterness of the jamaican distillers at their exclusion from the biggest market in the world.

Getting rid of political blocking

The Europeans thus listened to an inaugural speech of some vehemence; and they had many lobby contacts with delegations, among which each had problems of its own. They had, nevertheless, the satisfaction of seeing so large a number of underdeveloped countries assembled from across the four seas for the sake of cooperation with Europe. All this must have encouraged among the Nine the conviction that "they must do something" to meet the expectations of their counterparts.

The negotiations were very long. The last session lasted over 15 hours, dragging on until 4 a.m. In many cases this was because the same words and expressions did not mean the same thing on both sides of the negotiation table, and explanations had to be given. Sometimes, too, the A.C.P. brought into the talks what they considered to be their "due", deliberately ignoring the fact that the E.E.C. is not the sole dispenser of rain and sunshine when it is a question of organising the economic relationships between rich countries and poor. The A.C.P. demanded, for example, that the prices of their export products should not be merely stabilised; according to one of the african delegates, what they fear is the stabilisation of poverty. The prices, they said, should be on a sliding scale, depending on an index of the prices of manufactured products; but this was a hope, or perhaps a dream, for which they could obtain no satisfaction.

The fact remains that the A.C.P. negotiators, after passing through a phase of discouragement, were determined to achieve concrete results, and finally



The jamaican prime minister has his reasons for using such language. His country is doing all in its power to promote its natural resources, beginning with bauxite, and Mr. Manley had laid himself open to the accusation of setting up a cartel. The neighbours of Jamaica, on the other hand, have to rely for their survival on produce such as bananas and sugar, never knowing the price at which the fruit of their labour will be sold. On the other hand, they know well enough that world inflation does not pass them by when it comes to purchasing machinery and other manufactured goods. We have the feeling, said Mr. Manley, that we are in the painful position

nature and the commercial markets. The E.E.C. undertook—and this is another point to the credit of the Kingston Conference—to lower this protection for the benefit of the A.C.P. countries.

The case of rum

There are also various non-tariff barriers on which discussion sinks easily into technicalities. They are, nevertheless, a formidable obstacle. An example is that of jamaican rum; for in one of the E.E.C. countries it is not classified as true rum, and the legislation keeps it out of the market for the benefit of european alcohol, which calls itself rum. In another

obtained from the Community the political unblocking for which they had hoped. The E.E.C., in fact, entered into quite formal commitments on a number of important points in the negotiation. These were:

1. **Free access to the European market.** The obstacles which still exist will be re-negotiated. In addition, the E.E.C. no longer requires reciprocity for the advantages it grants in this field. In other words, it will be open to the A.C.P. to eliminate or maintain customs duties on E.E.C. products as they wish. One of the old and more cumbersome of the controversies is thus removed from the negotiation table.

2. **A system of stabilisation for export receipts** for basic products exported from the A.C.P. countries will assist those of them in which the economy is apt to suffer from price slumps in the European market.

3. The E.E.C. stated its agreement with the general approach of an A.C.P. memorandum providing for **industrial cooperation** aimed at a better organisation of the international division of labour between European and A.C.P. countries. This is a very wide question, and the effort it will require on the European side will be the greater for the fact that it goes against the grain for them to require private firms to give up part of their industrial activities to other firms in developing countries. The Nine, with their traditional attachment to economic liberalism, usually go no further than to offer inducements, such as financial aid and fiscal concessions, when they want to channel private firms into any specific region or any special type of activity. Inside the Common Market it is difficult enough to attract job-creating activities into the more backward regions, such as southern Italy, Ireland or northern England. The A.C.P. were thinking in terms of going into action with a whole set of inducements, including infrastructure investments (sea ports, in particular, have a way of attracting industries) and technological research programmes suitable for underdeveloped countries.

Mr. Manley emphasised in his inaugural speech that industrial firms, coming from Europe and setting up in underdeveloped countries, are apt to cost a great deal of money before they bring any return. Payment must be found for the material,

the skilled personnel, the patents and manufacturing licences and the invested capital. In the last analysis the advantage to the host country is often the less for the fact that the modern firm is apt to rely more on expensive imported equipment than on local manpower. Moreover, when such firms reach the point of selling for export, they run into many obstacles in external markets, often including keen competition from their parent company.

This whole collection of problems will have to be sorted out in the future agreements with the A.C.P. The results must include better payment for basic products, aids for the production of more highly processed goods, and preventing the goods running into the brick walls of the commercial system. If the Kingston experiment succeeds it will, in the words of the final communiqué, be "a new model of relationship, based on the international principle of social justice, between industrial and developing countries". Among the latter, the 44 countries of Africa, the Caribbean and the Pacific, about half of them French-speaking and half from the Commonwealth, have pinned their faith on the European Community. Between now and the end of November, the negotiations will be the more vital for the fact that they will give form and substance to the Kingston approach. ■ **Ch. SCHIFFMAN**

Council

298th meeting "development cooperation" (Brussels, July 16, 1974)

Cooperation ministers of the Nine E.E.C. countries met on July 16 and made further progress towards defining a coherent Community attitude to development policy. Agreement was reached on two resolutions, one of which relates to the principle of financial and technical aid to non-associated countries, the other to the harmonisation and coordination of the cooperation policies of member countries. This raises to seven the number of resolutions adopted by the Council since the initial session in November 1973.

Up to the present these have been only declarations of intent; but this is a necessary first step towards the target fixed by the Paris Summit in 1972 to "introduce progressively an overall policy of development cooperation on the world scale".

RESULTS OF THE DISCUSSIONS

1. Financial and technical aid to non-associated developing countries

The Council resolution confirms the principle of financial and technical aid to non-associated developing countries, though it does not determine the amount of the aid, nor how the question shall be handled. It also contains a declaration that the Council wishes to give priority to fulfilling commitments made to Associated countries and those which are candidates for association. The accent is thus increasingly on the undertakings already given, rather than on those to be given in the future.

2. Harmonisation and coordination of the cooperation policies of member countries

This resolution is aimed at greater coherence of cooperation policies and so greater effectiveness. Various methods are listed for securing a gradual adjustment which will make the aid proportionate to the contribution capacities of the member countries. It will be recalled that the Council has already agreed in principle that the provision for public aid to development by member countries should be 0.7% of the G.N.P.

3. Memorandum on the different forms of Community development aid

In virtue of the Commission memorandum, the question actually raised is the distribution and character which the Community intends to give to the different forms of aid. What does the Community regard as the purpose of each?

According to the Council communiqué, the discussion produced a useful comparison of the various concepts. The Commission was finally invited to put forward, in the light of this discussion, "further considerations regarding the place, the arrangements and the criteria to be adopted for the different forms of aid, as part of the general policy of the Community".

4. Food aid

The Council continued its discussion of food aid on the basis of the Commission memorandum proposing diversification of the aid, and programme undertakings on a 3-year basis. An important point in the discussion was the part food aid plays in cooperation policy.

Agreement was reached on the need for the food aid measures to be continued on the basis of a greater variety of the populations concerned.

The Council also took the view that food aid should be regarded as a regular part of Community policy for development cooperation. The Commission was invited to take this into account in the report it is to submit on the different forms of Community development aid.

E. D. F.

Following the assent given by the E.D.F. Committee at its 91st meeting, the Commission has made eight further financing decisions for non-repayable aid, from the 3rd E.D.F., amounting to U.A. 29 533 000. (*)

1. **Surinam** — *Construction of a retention dam at Stondansie*: Fl. Su. 17 million, equivalent to about U.A. 7 878 million.

The purpose of this dam is to retain 1 000 million cu. m. of water for the regularisation of the flow of the river Nickerie, to provide irrigation for 10 000 ha of existing ricefields and a further 16 000 ha still to be laid out.

2. **Republic of Mali** — *Development of marshland rice cultivation in the Sikasso region*: F.M. 1 416 000 million, or about U.A. 2 549 million.

This project follows an experimental intervention for rain-based and marshland rice cultivation. It is aimed to add about 10 000 tons to the rice production in this region.

3. **Islamic Republic of Mauritania** — *laying out of a pilot cultivation area in the Gorgol*: 188 million Ouguiayas, or about U.A. 3.385 million.

This is for laying out the first section of a pilot irrigated area, which will make it possible to assess the potential for further improvement schemes in the valley of Gorgol for producing a double crop of rice for internal consumption.

4. **Somali Democratic Republic** — *Construction of the University of Mogadiscio*: Sh. So. 80.5 million, equivalent to U.A. 10.707 m.

This finance is for building a new university complex near Mogadiscio, the Somali capital. It will be able to take 2 000 students, with boarding accommodation for 750. It will re-house the existing faculties and have room for the university departments still to be formed.

United Republic of Cameroon — *Construction of primary school buildings in northern Cameroon*: F-CFA 855 million, equivalent to about U.A. 3.079 million.

The project consists of building and equipping 250 classrooms for primary education, with housing for 30 teachers in various parts of northern Cameroon. The aim is to raise the very low school attendance rate.

Republic of Chad — *Equipment of national parks and nature reserves*: F-CFA 112 million, or about U.A.403 000

This is for supplying mechanical and technical equipment for use in the national parks and nature reserves for the protection, preservation and effective use of the animal species.

Republic of Burundi — *Extension of the tea plant at Rwegura*: F. Bu 125 million, or about U.A. 1.316 million.

This extension is needed because of the expanding production of existing tea plantations, and the laying out of new ones. The capacity of the plant will be raised from 450 to 1 200 tons.

Republic of Upper Volta — *Technical surveys for the Ouagadougou-Yako section of the trunk road Ouagadougou-*

Mopti (106 km) F-CFA 60 million, or about U.A. 216 000.

This is to provide for carrying out full technical surveys for the modernisation work to be put in hand on the 106 km road section Ouagadougou-Yako, known as "the fish highway" which links the capital of Volta with Mopti in Mali via Ouahigouya.

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Following the finance decisions which have now been made, the total commitments from the 3rd E.D.F. amount to U.A. 755 960 000, covering 275 decisions, since this Fund began operations on January 1, 1971.

1975 plan for generalised preferences

The operation by the Community of a system of generalised tariff preferences for developing countries is a basic part of Community development cooperation policy. The Commission proposals for the 1975 renewal of this operation must therefore be judged from this angle and not as an instrument of commercial policy.

Though general economic conditions and the pessimistic forecasts about the balance of payments might lead to import limitation, the Commission has nevertheless preferred to propose a substantial improvement compared with the existing system. In doing this it is guided by the following considerations:

- the serious difficulties to which some of the developing countries will be specially subject make it all the more necessary to maintain and improve the system of preferences;
- it is necessary to avoid any prejudice to the requirements of the policy of association which is currently the subject of important negotiations;
- implementation of the joint declaration of intent regarding the development of trade relations with independent Commonwealth countries in Asia;
- safeguards for the interests of developing countries in the prospective multilateral trade negotiations in G.A.T.T.;
- the need for securing a fair sharing of costs and advantages among all countries—i.e. the industrial countries which grant the preferences (the Community is the only one so far) and the countries which benefit from these preferences.

Essential features of the 1975 plan

1. **Processed agricultural products** (C.C.T. chapters 1-24)

The enlargement of the preferential margins for most of the products already brought into the scheme, together with the inclusion of further products, and

the raising or amendment of the tariff quotas, should lead to an increase in the potential volume of trade, which rises from U.A. 450 to U.A. 650 million.

2. **Industrial products** (C.C.T. chapters 25-99)

The principal proposals are the following:

- a rise of about 15% in the ceilings for imports of products to which the franchise applies. The volume of trade affected will thus rise from U.A. 2 000 to U.A. 2 300 million;
- reduction from 51 to 7 in the number of "sensitive" products subject to quota;
- introduction of a Community reserve for products subject to quota (which makes it possible to avoid rigid fixation of the share of each member country);
- raising of the "buffers" which limit the exports from individual beneficiary countries;
- more flexible rules of origin, in line with the formula used for the agreements with E.F.T.A.

3. **Other products**

- Increase in the preferential margins (40 to 60%) in respect of products of jute and coco-fibre, in conformity with the E.E.C. agreements with India and Bangladesh;
- the status quo to be maintained for textile goods pending the negotiations connected with the "multi-fibres" agreement;
- the same to apply for cocoa-butter and soluble coffee.

4. **Additional measures**

The achievement of the end desired calls for a material improvement in the use made by beneficiary countries of the opportunities arising from the system. Out of 104 countries, only 40 took advantage of duty-free imports, and four of these alone supplied 50% of the imports of industrial goods.

Information and promotion campaigns are to be put in hand, aimed at Community importers and the exporting countries. ■

(*) 1 UA = approx \$1.20 USA (new parity).

E. I. B. Operations in Associated countries in 1973

The European Investment Bank (E.I.B.) submitted its report for 1973 to the E.E.C. finance ministers on July 15, 1974. It will be recalled that it was in 1964 that the E.I.B. initiated its interventions in the A.A.S.M. and the O.C.T.D. (1). Since then the lendings in the form of ordinary loans from the resources of the Bank have amounted to U.A. 97.4 million, of which industry accounted for 69.3%. The special operations involving the resources of the E.D.F. have amounted to a further U.A. 87.3 million, and of this total industry accounted for 40.9%.

In 1973, 11 finance contracts were made in the A.A.S.M. and the O.C.T.D. This comprised three ordinary loans from the resources of the Bank, amounting to U.A. 10.9 million; and eight operations from the resources of the E.D.F., comprising six loans on special terms, amounting to U.A. 30.4 million, and two subscriptions of equity capital amounting to U.A. 1.5 million.

The three ordinary loans made by the Bank concerned Ivory Coast, Gabon and Cameroon, financing projects designed to contribute to the economic development and strengthening of the balances of payments of these countries.

A loan of U.A. 7.9 million (F-CFA 2 200 m) was made to the Ivory Coast for the improvement and servicing of 215 km of the San Pedro-Issia road, which provides access for most of the western part of the country to the new port of San-Pedro.

In Gabon a loan of U.A. 1.2 million (F-CFA 332 m) for a hotel of 120 rooms will contribute to the increase in reception capacity in the capital (Libreville).

For Cameroon a loan of U.A. 1.8 million (F-CFA 500 m) was arranged for the sugarmaking and refining plant and sugar cane plantations of SOSUCAM, for which a loan of U.A. 2 million had already been made by the Bank in 1966. The project is expected to double the annual production capacity, raising it to 30 000 tons, so as to deal with the requirements of the Cameroon market.

The two latter items were subject to rebates of interest at the full flat-rate of 3% permitted in the relevant texts, granted by the E.E.C. Commission on the proposal of the Bank from the funds of the European Development Fund.

The eight operations using E.D.F. funds administered by the special section of the bank provided U.A. 21.4 m for agro-industrial projects in Cameroon, Ivory Coast and Upper Volta and a further U.A. 10.5 million for infrastructure projects—principally road works—in Ivory Coast and the overseas departments of Martinique and Réunion.

Apart from the normal loan for the sugar project in Cameroon, the bank subscribed a shareholding of U.A. 0.5 million (F-CFA 150 m) in SOSUCAM, by order and for account of the European Economic Community.

The bank also entered into a contract under similar conditions with Senegal and the Dakarmarine Company, providing for a contribution of U.A. 1.0 million (F-CFA 270 million) to the equity capital of the latter company, to be applied towards the financing of a supplementary survey programme and certain other investments to facilitate assessment of the practicability of setting up at Dakar a ship-repairing facility for vessels of high tonnage. The financing is being provided in the form of a direct shareholding in the company of F-CFA 30 million and subscription of a quasi-capital character of F-CFA 240 million.

As a mandatory of the Community, the bank also signed, jointly with the Commission, six contracts for loans on special terms to a total amount of U.A. 30.4 million from the resources of the E.D.F.

These include a loan of U.A. 5.0 million (F-CFA 1,400 m) to Upper Volta, which will contribute towards setting up sugar-cane plantations and a sugar-making and refining facility at Banfora with a capacity of 21 000 tons of raw sugar, to cover the expected requirements of the country in 1980. The irrigation work for this project was also financed by non-repayable aid from E.D.F. resources granted by the E.E.C. Commission.

In Cameroon a loan of U.A. 8.8 million (F-CFA 2 457 m) was made to the Cameroon Palm Company (SOCAPALM) which will make it possible to set up 6 000 ha of oil palm plantations and an extraction plant with a capacity of 20 000 tons per annum. The project is part of a programme designed primarily to cover the needs of the internal market and subsequently for export.

A loan of U.A. 6.9 million (F-CFA 1 924 m) was made to the Ivory Coast Rubber Company (SOCATCI) for the setting up of 13 500 ha of rubber plantations some 60 km from the port of San-Pedro. As from 1985 the plantations

will produce 27 000 tons of latex, and thus contribute to the development of the south-western region.

Also in the Ivory Coast, in addition to the loan from the bank's resources mentioned above, a loan of U.A. 6.8 million (F-CFA 1 900 m) was granted for financing the surfacing work on the San-Pedro-Issia road.

The two other loans on special terms amounted respectively to U.A. 0.6 million and U.A. 2.1 million. They are for financing roadworks in the overseas departments of Martinique and Réunion. ■

European Parliament

The Development Cooperation Committee opened an initial debate on the parliamentary relations which will have to be established in the enlarged Association with the A.C.P.

Members agreed unanimously to maintain a Parliamentary Conference with its work prepared by a closed committee. The composition and meetings of these two parliamentary organs would be defined after discussions between representatives of the European Parliament and their A.C.P. counterparts.

The Committee also adopted an opinion by Lord Reay (conservative, British) concerning multinational firms in the context of Community regulations. Basically, the Committee wants to be informed as far as possible about the activities of these firms in developing countries and calls for Community policy in this field to be compatible with its development policy.

Finally Mr. Renato Sandri (communist, Italian) was appointed to follow relations between the E.E.C. and Latin America. ■

F. A. O.

Joint fertilizer fund set up

The United Nations Food and Agriculture Organisation (F.A.O.) held a special session at Geneva on July 15-19 to deal with the fertilizer shortage. The organisation decided to create a joint fertilizer fund to which governments and other "potential donors" would offer contributions in fertilizers and in cash.

A number of developing countries are badly hit by the current world fertilizer shortage (see "Dossier" this issue).

The F.A.O. further decided to establish an information system covering trends in demand and supply, developing countries' investment

(1) Oversea countries, territories and departments.

requirements, prices and the fertilizer industry's investment plans. The organisation will also help raise the necessary financial resources for emergency deliveries of fertilizers.

Help for Sahel countries

More contributions to the rescue operations fund for the Sahel zone countries came in during July. The United States has made a new contribution of one million dollars, Australia has added \$100 000, Britain's "Christian Aid" organisation \$25 000 and Oman has given \$10 000.

Nutrition Research

In the Ivory Coast: Action taken by a private foundation

The Nestlé Foundation's pilot study in West Africa is now in its sixth year. It started under good auspices in 1969, following a conference at its Lausanne headquarters on protein-calory malnutrition. It was attended by some 20 specialists of international note, and has grown progressively broader through the experience acquired and observation in many places on matters of nutrition.

The original plan was to give 3 or 4 years to this project, and then communicate the results to the government concerned and to the world of science, and begin work on another study adapted to other conditions. The first part of this programme has been carried out. At the end of 1972 a detailed report on the work done, and the recommendations to which it led, was handed to the authorities in the Ivory Coast. While the Nestlé Foundation is continuing the further study of the children previously selected, it has decided to rely on its own centre of Adipodomic study for extending and broadening the research directly connected with one of the central problems of malnutrition. This research will be concerned largely with immunology (in cooperation with the World Health Organisation), psychology (in cooperation with the Psychology and Education Sciences School in the University of Geneva) and the lipides in mothers' milk in relation to the health of the child and its cerebral development.

Theoretical study, however, promising though it be, cannot in itself satisfy the urgent needs of developing countries. The Foundation has accordingly maintained its specific action in regard to rural stimulation, guiding

and supporting the efforts of villagers towards a better organisation of their production. This action has a two-fold effect; for on the one hand, it improves the choice and quality of the foodstuffs consumed locally; and it increases the profit derived from soil products which, in this rural context, is the only way of raising the standard of living.

For the same purpose, further work has been done on the question of a weaning food, which will provide the child with a suitable intake of proteins. The pilot study experiments of 1971 and 72 have aroused interest in various quarters. Such a food product must: a) be made from local resources; b) be well balanced; c) be accepted by the population, be economically within reach of the poorest classes. This study requires cooperation by specialists in various branches.

As in the past, the greater part of the resources used has been laid out on multiple research projects in the bush in the Ivory Coast, which is treated as a pilot region. It is from here that the best founded recommendations can go out—and are indeed going out—for general nutritional improvement.

Unions

On the initiative of the Information Bureau of the Friedrich-Ebert Foundation in Brussels, a meeting was organised between representatives of the workers' unions in developing countries. The main theme was the relationship between the European Communities and developing countries and the part to be played by the unions during the development period. The seminar was attended by 24 participants from 19 countries, most of them the presidents and secretaries-general of national and supra-national union confederations in the A.C.P. countries.

On this occasion lecturers from the Directorate General for Development and Cooperation of the E.E.C. Commission were able to provide information about the European Communities, and more especially about their cooperation with developing countries. Representatives from Third World countries had the opportunity of stating their problems and putting forward their ideas about effective cooperation. A good deal of the discussion was concerned with questions of social structure and education in the context of the future European Development Fund.

A number of speakers emphasised the need for discussions of this kind. Both the participants from developing countries and the European speakers said they would like the discussions to be continued and carried to greater depth. It is the intention of the Friedrich-Ebert Foundation to organise further meetings of this type in the early future. ■

Timber Promotion at the trieste fair

A very successful event was the holding of three timber days (June 19-21, 1974) at the International Trieste Fair, attended by many people in the timber industry and the timber trade and delegations from african countries (Cameroon, Congo, Ivory Coast, Gabon, Ghana). The E.E.C. Commission was represented.

First day: Development and prospects of the timber market after a year.

The representative of the Italian National Federation of Timber Traders called attention to the fact that current economic conditions in general, and the timber trade in particular, are having something of a setback compared with earlier years. Demand is smaller and prices lower.

In the course of the discussion, it was noted that the market is no longer developing freely, but that its tendencies result from political and economic measures taken by different European governments to deal with the inflation, and deficits in their trade balances caused by the oil crisis.

The prevailing opinion was that the future of the timber trade does not depend solely on the natural growth of markets, but is also affected by economic manipulation in various European countries, including Italy.

Second day: The current promotion campaign for tropical forest species, which are little known or exploited, obtainable from countries associated with the E.E.C.

The session was opened by Mr. J.E. David, a principal administrator in the E.E.C. Commission.

He spoke of the difficulties encountered both in Africa and in Europe in organising an effective industrial market, mentioning difficulties connected with administrations, trade unions and the freight market. This had led to some delays, but these were now being overtaken.

Mr. Guiscafre, representing the Tropical Forestry Technical Centre at Nogent-sur-Marne (France), contributed information about the campaign to promote tropical species ordered by industrialists in Europe.

A total of 47 species were listed and orders for them varied between 30 and 3 per species. Industrialists experimenting in their use are to be guided by the specialised research organisations in each of the E.E.C. member countries.

After some discussion Mr. David put forward the proposal that a standing consultative committee should be set up under the aegis of the E.E.C., consisting of a limited number of qualified experts

from the Associated african countries and from european countries. He also mentioned the possibility of a price agreement for timber among the forestry countries of Africa which are associated with the E.E.C., on the same lines as for oil. Such problems could best be tackled by regular consultations between professionals of the timber trade from Africa and Europe.

The reaction of the african delegates was favourable. They stated that they were extremely interested and their countries were very willing to see the formation of the consultative standing committee on the lines proposed.

Third day: Timber industries which could be set up in african countries associated with the E.E.C.

The discussion was opened by Professor Giordano, Director of the Timber Institute of Florence, and was attended by the Director-General of the Italian Timber Industry Federation and others professionally concerned in the timber industry and the timber trade.

After introductory remarks from the chair, Mr. Huybrechts, a Principal Administrator of the E.E.C. Commission, described the aims and activities of the European Development Fund and the European Investment Bank, and the Community's long-standing campaign to promote industrialisation in the Associated african countries, so as to increase the local production of finished and semi-finished products of the tropical timber industry and others. ■

Two new special loans

Ivory Coast

The Commission of the European Communities and the European Investment Bank concluded a contract with the Republic of the Ivory Coast on 18 July 1974 for a loan on special conditions equivalent to

2 390 000 units of account (about 660 million CFA francs at the official parity). The E.I.B., entrusted with managing the loan, is acting as agent of the European Economic Community.

This loan will help to finance a programme of village-centred cocoa plantations, covering about 9 600 hectares in the South-West Region of the Ivory Coast.

The project, which is part of the general programme to develop the South-West Region, will provide planters with substantial revenue and boost the production of cocoa which is one of the Ivory Coast's main export commodities. The estimated total cost is CFA francs 2 162 million.

This soft loan is granted from the Third European Development Fund for a term of 15 years, including a 7-year grace period, at a rate of 3% per annum.

The project will also be financed by the Republic of the Ivory Coast, by contributions from government budgetary funds, the Banque Nationale de Développement Agricole by loans to the planters, and the planters themselves by their own contributions in kind and in cash.

Congo

The Commission of the European Communities and the European Investment Bank concluded a contract on 18 July 1974 with the Agence Transcongolaise des Communications (A.T.C.), a public agency operating on an industrial basis in the People's Republic of the Congo, for the granting of a loan on special conditions equivalent to 1 008 000 units of account (about 280 million CFA francs at the official parity). The European Investment Bank, entrusted with managing the loan, is acting as agent for the European Economic Community.

The loan will be used for financing the extension of port installations at Pointe-Noire.

The project is an integral part of the A.T.C.'s overall investment programme and should, when completed, both eliminate the danger of a bottleneck developing in the port of Pointe-Noire, where installations for handling mixed cargo traffic are nearing

saturation point, and make it possible to cope with the expected increase in traffic flow. The project's total cost is estimated at 1 057 000 units of account.

This soft loan is granted from the Third European Development Fund for a term of 25 years, including a 4-year grace period, at a rate of 1% per annum.

The A.T.C. has already been subsidised by the European Development Fund; in October 1972 it received the equivalent of 4 681 000 units of account to part-finance the infrastructure side of this same project.

Poorest countries

UN: average annual income per head less than \$200 in 24 countries.

United Nations Secretary General Kurt Waldheim has listed the world's poorest countries for all U.N.O. member states.

UN experts counted 24 countries where the gross national income per head was less than \$200 in 1971. They were:

(Africa) Cameroon, Central African Republic, Chad, Ethiopia, Kenya, Lesotho, Madagascar, Mali, Mauritania, Niger, Sierra Leone, Somalia, Sudan, Tanzania, Upper Volta; (Asia and Middle East) Bangladesh, India, Khmer Republic, Laos, Pakistan, Sri Lanka, Yemen Arab Republic, Yemen Democratic Republic; (Latin America) Haiti.

A further count gave four countries where average annual income was between \$201-400: Senegal, Guyana, Honduras, Salvador.

Mr. Waldheim emphasised that the situation in these countries had seriously deteriorated because of the economic crisis following price rises in oil, fertilisers and food products. ■

Latest report by Geneva-based world aid group

Catholic Relief Services

Catholic Relief Services (C.R.S.), has prepared a 338 page compendium entitled "Narrowing the Gap" which delineates 1,362 relief and development projects active as of June 30th, 1973 and sponsored by the organization in 80 countries around the world.

The total value of these projects is placed at \$ 117 718 754; funding for the

projects detailed in the report was supplied by 145 different foundations, agencies and organizations. The projects are divided into the following major categories: relief, developmental, agricultural, health, vocational and educational, but all C.R.S. projects are considered developmental in the sense that they contribute to the material, social and welfare of those they are intended to serve.

In project activation, C.R.S. continues to give top priority to prompt and effective response in times of disastrous emergencies overseas. This is particularly in evidence today in the drought-stricken areas of the African Sahel

where C.R.S. is carrying on extensive relief and development programs. Another striking example of emergency aid is the current refugee relief program conducted by C.R.S. in Cambodia where more than 235 000 homeless victims of the war are benefitting from C.R.S. mass feeding programs, clothing distribution, medical assistance and housing construction.

Next in the order of current C.R.S. priorities are maternal/child health programs (with emphasis on the pre-school child), nutrition programs, food-for-work projects based on food aid, and rural agricultural, educational and vocational activities. ■

a prevalence of goitre, which is a major public health problem in many parts of the world.

Another element which is indispensable to the organism is iron, which has a part to play in forming the haemoglobin of the blood and in many other biochemical reactions. Without iron the oxygen cannot be carried to the tissues of the body and the cells are not able to breathe. The daily requirement of iron is about 15 mg for a woman and rather less for a man. Iron is found in assimilable form in meat, potatoes and most vegetables. Milk, on the other hand, has only a low iron content.

For the most part, the human body builds up and renews its tissues with the comparatively simple molecules arising from the digestion of glucids, lipids, proteins and mineral elements. There are, however, a number of more complicated molecules which have to be supplied as such, since the organism cannot produce them itself. These are the vitamins, of which there is a whole series known as vitamins A, B1, B2, B6, B12, C, D etc... They have their part to play in specific biochemical mechanisms and the daily requirement of vitamins varies between a 1000th part of 1 mg and 1 mg. The vitamins are indispensable to the normal functioning of the human organism and thus they are not substitutes for the intakes of energy and nitrogen.

For example, vitamin C (ascorbic acid) exists in material quantities in fresh fruit, such as orange and lemon. Lack of it in the diet is a cause of scurvy, which used in olden days to be the scourge of seamen.

Vitamin D, or rather some of the earlier products in its formation, are present in skin tissue, but are only brought into activity by ultra violet rays. Rickets, which is the result of vitamin D deficiency, occurs mainly in winter and among children who lack exposure to the sun. The symptoms of avitaminosis D can be forestalled by the administration of cod liver oil.

Avitaminosis PP, or a deficiency in vitamic acid, was very widespread at the beginning of the present century among rural populations whose diet was based on maize.

Vitamin B1 (aneurin) is abundant in the husks of rice. A diet based on polished rice, which is often associated with improved social and economic conditions, has led to shocking epidemics of avitaminosis B1 (beriberi) among the populations of South-East Asia. It leads to oedema, heart trouble and polyneuritis. Similar troubles are often met with among alcoholics.

Vitamin A is called for in the retina of the eye. Without it the cornea becomes soft and opaque, and there is a tendency to blindness, which becomes irreversible. Vitamin A is to be found in the form of one of its predecessor products in palm oil and also in various red fruits, such as tomatoes and carrots. There are material quantities, too, both in mothers' milk and in the milk of animals. It is, however, completely lacking in powdered skim milk.

Protein-calory malnutrition

Our next enquiry must be what the organism does to secure its survival when the food intake is insufficient and what reserves it is able to call into play.

The substances which can be used most quickly and easily are the glucids or carbohydrates. The reserves of these, however, are limited; and when the food shortage is prolonged the organism turns to its stocks of lipides or fats, more especially to its adipose tissue. When the fats are exhausted the organism sets about consuming its own substance, in other words its proteins.

The troubles arising from food deficiency are known under the general name of protein-calory malnutrition.

In children a distinction is drawn between kwashiorkor and nutritional tabes, and all the intermediary forms between these two concurrent maladies, to which must be added the long-term effects of malnutrition on development. The symptom of

Drying manioc, Central African Republic. Quantity is not the only problem: malnutrition is also due to low food quality.



kwashiorkor is oedema, the oedema of famine which may mask a wasting of the muscles. Protein deficiency plays a determinant part in the occurrence of kwashiorkor. It is a particularly serious form of malnutrition and the child which is affected usually dies if it is not cared for and its feeding taken in hand. The frequency of kwashiorkor is often underestimated, because it often acts quickly and the number of children suffering from it at any given time is therefore quite small. An estimate of the total number affected in a year requires the number in question to be multiplied by 6 or 8. Tabes takes the form of a slow decline, mainly due to a diminution in the total intake of food and therefore of calories. It is particularly frequent among nurslings. The organism seeks its survival by burning up its reserves and then turning to its own tissue. The result is a fall in weight and a muscular wastage which may take an extreme form. In some cases the losses of weight recorded have been as much as 25 or even 50 % of the child's initial weight.

There are of course many degrees of malnutrition. At the moderate state, it can be dealt with by additional food to supplement the intake; but there are extreme cases which can only be saved by complicated therapy, such as the stomach tube and perfusion to restore the electrolytic balance, and these can only be treated in hospital.

Protein malnutrition is most frequent in children at the age of weaning. In the african countries the diet is mainly based on cereals and those used differ from region to region including maize, beans, sorgo, millet, potatoes, manioc, bananas and other products. There are hardly any animal proteins, so that the child passes at weaning from a milk diet to a glucidic diet which is difficult to assimilate.

The long-term effects of malnutrition are largely connected with physical growth. Deficits which have occurred at the very young ages are never made good, even though the rate of growth may revert to normal after the difficulties of the weaning period.

The brain, too, needs nourishment for its development during the first 24 months of life. It has been proved that even a slight denutrition in this critical period is apt to influence the structure of the brain and may result in a retarded intellect.

In a famine period the adult is affected when he begins burning up his reserves to secure his survival. The minimal level is about 1900 calories for a man (sedentary), 1600 for a woman and 1500 for a seven year old child.

The vitamin deficiency may arise quite apart from any shortage, as a result of an ill-balanced diet. Conditions of shortage and famine are often associated with an inadequate intake of one or more vitamins.

Vitamin deficiencies in Africa

Vitamin C deficiency seems to be rare in Africa, because of the abundance of fresh fruit and a varied diet of vegetables with a high content of ascorbic acid. It occurs frequently, however, in refugee camps.

An insufficient intake of vitamin A or the predecessors in its formation, leads to lesions of the eye which are quickly followed by opaqueness of the cornea and blindness. Though precise information is lacking, it seems that the intake of vitamin A is

often barely sufficient in many parts of the world. In periods of shortage, in time of drought or in refugee camps, serious eye lesions appear suddenly in children.

A shortage of vitamin PP, which leads to occurrences of pellagra, seems to be found more especially in regions where the diet is based largely on maize. A lack of vitamin D causes rickets among children during their years of growth. It is frequent in Africa through lack of exposure to the sun and on account of an exclusively glucidic diet. A lack of vitamin B1 leads to outbreaks of beriberi. It is not of frequent occurrence in Black Africa, because there is abundance of thiamine in all the cereal grain, but it may occur in periods of natural disaster, such as drought. Cases of multiple vitamin deficiencies may also arise.

Among minerals, special mention must be made of iron. There are regions in which even in normal periods a large part of the population, especially the women, suffer from anaemia through lack of iron. This is added to the many forms of anaemia associated with other causes, including intestinal parasites, such as the ankylostomosis. This situation becomes materially worse in times of food shortage and has to be corrected by additional iron in the food ration.

CONCLUSIONS

It is not possible in this article to review all the many malnutrition factors which operate in Africa. It should be pointed out, nevertheless, that even in the absence of famine and other tragedies, the diet, and especially that of the african infant, is often deficient.

Infections, and especially those of gastro -intestinal origin, lead to a faulty absorption alike of energy substances and of proteins, vitamins and minerals. Moreover a child which is ill-nourished is particularly exposed to infection. This sets up a vicious circle of malnutrition and infection, each of which aggravates the other. No better example of this can be given than that of the child born from a poor family in Latin America, picked out more or less by chance and the story told by the W.H.O. He was aged 2 years and had, since his birth "suffered from six infections of the eyes, five attacks of diarrhoea, ten infections of the upper respiratory organs, four attacks of bronchitis, measles complicated by bronchial pneumonia and stomatitis. He had thus fallen ill 30 times in a life of 24 months, and over third of his existence he had been suffering from one infection or the other. Since his diet was insufficient, each attack of every malady led to a loss of weight from which he has never been fully cured".

There are some regions where the position is made worse by food habits, superstition and taboo. There are peoples among which a child suffering from infectious maladies is deprived of food proteins. Animal proteins are often forbidden during the weaning period. Only diet education can make it possible to overcome food habits which, disastrous though they be, are deeply rooted among these populations.

The fight against malnutrition, therefore, requires not only economic development, but also the promotion of better education in food matters and the extension of the fundamental health services. ■

M.F. LECHAT
I. BORLEE

Women's role in African food

by Annette CORREZE

The head of the kitchen does not need to be a scientist, all the same. When it comes to preparing meals, women play the essential role, and Annette Corrèze of I.R.A.M. (Paris) here outlines some of the problems facing African women. The main problem is time: when the women are expected to work in the fields and forests, prepare and sell produce in the markets and fetch water and firewood, they are sometimes unable to prepare a family meal as well.

There is no mistaking the important part played by the African woman in Africa's food and feeding. She helps in its growing, its processing and its marketing; and she is the queen bee in the life of the family. On the production side, there are differences between the forest dwellers and those of the savannah country; but everywhere in the rural areas it is she who prepares the meals. This part of the job, too, includes fetching the water.

She is thus the first person concerned in all the food problems, but never, as we shall see, independently of the community in which she lives.

ECONOMIC LIFE

1. Production

The women work in the family field and in fields of their own, under a traditional arrangement for the division of tasks which differs somewhat between the forest and the savannah country, and also between the different tribes.

Space does not allow an account of all these differences, but there are broad lines of distinction between the two types of country.

In the forest country the agriculture used to be exclusively a woman's job, but it has been shared between the sexes since the beginning of the colonial system and the introduction of cash crops. This does not make the woman's job any the lighter, but rather the opposite. Production of the subsistence crops is still her work, and besides this, she must help in the family fields which are put down to commercial crops. Her working day is thus the longer; and the growing of the subsistence crops is all the more difficult, because the land close to the village is given over to commercial production, so that the subsistence crops are some way away, and the women have a long walk to get to them.

The cultivation varies from region to region, including maize, manioc, sorgho, rice, tubers and various kinds of beans. The women also grow, often in frames, the plants and condiments



Vincent

Women's traditional work is eased by songs, but a reconsideration of their tasks would help more.

for the sauces needed in the food, which are the source of much of the intake in vitamins and mineral salts and thus a nutritional element not to be overlooked. In some cases vegetable growing is also included, though usually market gardening is a matter for the men.

In the savannah country the basis for subsistence cultivation is millet and sorgho, and the work is shared between the men and the woman. The basis for the sharing differs from place to place. An illustration is a haoussa area in Niger, where the women "owe" four days' work to the family field and can give the rest of their time to their own fields if they have any. They also help with the commercial crops grown by the family, among which groundnuts, cotton and rice play a big part.

Sometimes they grow cash crops for their own account and thus have an income of their own.

Here, too, the position is changing for the worse, though in this case it is not through the work becoming harder, but on the economic side. Available land is becoming increasingly scarce, owing to the imperatives of production, the pressure of taxes and the expansion in the population. Thus land is becoming increasingly hard to find and is apt to be further and further away from the village. In these regions, as in the forest areas, it is the women who grow the condiments and sauce plants.

In both these areas the women, like the men, look after the small livestock, goats, sheep and poultry which are used for family consumption, for exchanges between friends and may also be sent to market. In the forest country this side of the work often leads to conflict between men and women, for the animals are not penned and often damage the crops. Some women keep cows. Among the pastoral peoples the milking is almost always the woman's job.

In parts of the country where there is fishing, the actual production of fish is a matter for the men. Cases have arisen, in Senegal for example, in which women become owners of the fishing boats and play an important part in the production process.

2. Processing

It is the women who do all the non-industrial processing of the produce. In the modern sector they are often an important part of the labour used.

For feeding their families it is they who grind the millet, the fonio, the manioc or the wheat into flour. Anybody who has watched this work knows the scale of it, both in effort and in the time taken. We shall come back to this later.

The women draw the main part of their own incomes from the processing of the produce and its marketing. It should be noted that they often devote an appreciable part of this income to improving the family diet, for which purpose they buy meat, condiments and fruit when such requirements are not wholly satisfied by the men.

An idea of the importance of the part the women play is furnished by Mali, where they do all the husking and drying of the rice, which is grown under peasant control and accounted in 1968-69 for 73.7 % of the total production.

In the fishing districts it is the women who take charge of the drying, the salting and the smoking of the fish. Theirs, too, is the task of making the dairy products, the butter and cheese and drinks, such as millet beer, not to mention the cooked products, such as fritters and salads. To this must be added the making of various oils and fats, such as the groundnut and palm oil and the karité butter.

3. Marketing

Women in the market are a familiar spectacle in Africa. Here we have the girls with their baskets of fritters, the fish sellers and all the other colourful pictures of this aspect of the women's life. This has always existed, for even when the women produced for their own consumption, they would take the surplus to market so as to raise an income from their production activity.

In practice the women often play an important part in price formation for the subsistence crops. In the Ivory Coast, for example, the diula women, to whom no special task is assigned, become specialists in bulk buying and re-selling some of this produce from which they secure substantial profits.

In the field which concerns us and leaving aside the economic aspect, important though it is, there are two elements to be specially noted:

— the **time taken** for this activity is considerable, for of course a market which is 10 or 20 km away requires a whole day away from home. We thus see that the call on the time of the women is a serious handicap to any attempt to improve the food level for children;

— this marketing by the woman of food products ready for consumption contributes a **far from negligible addition** (though it has never so far as we know been measured) to the family diet. We are thinking specially of the sale of fruit and other gathered produce; and in some cases, especially in periods of agricultural work, it enables the children and the men to buy produce to improve their diet at a time when the women are not able to prepare the daily meal.

We have emphasised the economic aspect of the part the women play in the food patterns because it has a big influence on the way they carry out their task. The whole picture of social-economic change—the bigger area under industrial crops, the departure of men to the towns from some of the regions, the growth in population and the resulting scarcity of land—coupled with the co-existence of modern and traditional economic systems, has considerably complicated the part the woman has to play. The number of her tasks has increased and often she finds it difficult to deal as she should with the food requirements of her family.

DAILY LIFE

No simple listing of the woman's daily tasks can convey a true picture of the reality. For the abstract list which follows, we shall proceed to describe the conditions which differ between the forest areas and the savannah. The tasks include: cleaning the dwelling and utensils—child-care, preparation of the meal and of the products to be put on sale if the question arises—bringing in the wood—fetching the water—taking part in the agricultural work. These are the basic daily tasks of the women, and often they tackle the work with a child on their backs.

1. In the **forest country** the essential part of the woman's activity is food production. It is estimated that this takes two-thirds of their time, though there are differences between one region and another and in the various social groups.

As we have seen, the task is made the heavier by the land used for these crops being so far away. In one region in western Cameroon, for example, the women have to walk 10 km to get to their fields. Moreover, it has to be remembered that the school deprives the women of the help they traditionally have from their children.

Though there is no difficulty in finding the wood for their firing, they often have to cut it themselves, for the men do not undertake this.

Because of the damp and the rudimentary techniques of keeping the food, the woman is obliged to go down to the

plantation every day, even in the dead season, to bring back the produce needed for her family's meals.

Water may indeed be abundant; but the sources to which the women must go to find it are comparatively far away from their dwellings, because of the risk of pollution of the nearer sources by free-range cattle.

The time taken in preparing the meals varies according to the dishes served. It is often quite considerable, because of the way the food is cooked and the rudimentary equipment used.

2. In the savannah country, and here again there are differences between the areas and the tribes, the three big calls on a woman's time are getting the meals, fetching the water and bringing in the wood.

The basis of the diet in this savannah country is millet and sorgho, and both require considerable work from the women. The process of pounding the flour calls for a series of tedious and tiring operations—the hulling, the winnowing, the pounding, another winnowing and another pounding and the final sifting. The sound of the women at work is closely associated with village life and the pace at which it is lived; and one may well believe that it sets up a feeling of familiarity and security for the men and children who are thus sure of their food.

Nevertheless, it is here that the woman would ask for help as she holds out a pair of hands chafed by the pounder. Physically this work is extremely hard.

Next comes the water. The time spent on fetching the water for the family naturally depends on the distance from the well. In villages which have local wells near at hand it is almost a relaxation for the women to go and fetch it, for they find their friends there and can have a good gossip. Things are very different when the wells are some distance away. It is not only a question of distance, but also of the fact that the wells are used both for the villagers and for the herds; and the women must spend long hours waiting their turn. In the dry season, too, they may have to wait still longer while the well fills up.

Conditions are so diverse that it is not possible to estimate how much time it takes to fetch the water. It may, nevertheless, be considerable, as is shown in the case of a village in the west of Niger, where an enquiry showed that the women spent about seven hours daily on this problem. Health and hygiene promotion campaigns are often opposed by men and women because of the impossibility of giving up more time for getting the water.

Timber is scarce in the savannah country and this is another big worry for the women. They are obliged to go long distances to seek it; and if they have not enough, feeding the fire with millet stalks means that they must always be standing by it, and here again they feel the lack of help from their children who have gone to school. Here is another objection which is raised against attempts to improve the feeding of children, especially at weaning time. There is not enough time for the purpose, and there is not enough fuel for preparing the special dishes for children and boiling the drinking water.

It is difficult to give an estimate of the time really taken on these three essential tasks, but it is obviously very great; and when to this is added the time spent working in the fields, the family can clearly have no more than one meal a day. Any extra task added to the routine can only be at the expense of the time taken on feeding the family. This was seen in the Sahel before the drought, where the children during the rainy season were under-fed, badly cared for and prone to illnesses.

To all this must be added the frequency of pregnancy and childbirth. Hence the noticeable physical exhaustion of the women and their premature ageing.

CONCLUSIONS

The part the women play in food and feeding in Africa is essential, and often, as we have seen, the whole task falls upon them. From observation of the part the women play, we should like to add a number of comments.

African women have not closed their minds to improvements in the quality of the food. Anybody who has worked with them will be aware of this. They are well able to adapt themselves rapidly to the idea of additional foodstuffs; and with sauces and uncooked fruit and vegetables they can and do produce balanced diets for their families. In some regions they are swamped by tribal tradition and perpetuate the food prohibitions of old, but they are capable of finding alternative foodstuffs.

If they are to be asked to improve the part they play in this domain, they must be given the chance of doing so by attacking the whole problem from the social and economic angle.

Suitable means must be found for relieving the women of part of their task. We have seen the enormous part they play in production, whether for subsistence or for marketing, in which they provide more than 50 % of the labour. Yet they have so far been kept out of touch with all the attempts at popularising agricultural improvements and economic organisation. Very little has been done to improve the approach to their everyday tasks, by equipping the villages with flour mills, carts for the timber and water or simple apparatus for raising water from the well.

Though there is a shortage of firewood in the savannah country, there has been no applied research on the question of energy. We are thinking here, for example, of solar energy, remembering an impressive demonstration of its effectiveness in a village, including even a sunshine cooker. We can think back to the hopes this raised and the concrete questions as to what it would cost, whether credit would be available and all the rest. The department concerned could do nothing in answer to such questions, though it was stated these cookers could be made by local artisans for no more than F CFA 7 000.

The children are the chief sufferers from the increases in the tasks of women, and the growing impossibility for them to provide suitable meals for their families. Enough has been said about the damage to the child's development through malnutrition and we do not need to enlarge on this.

In the face of these problems it is vain to hope that the part the women play in the feeding can be improved by mere nutritional education. In the last resort, we always come up against lack of water, lack of wood, the lack of money to buy meat, milk, sugar and above all, the lack of time to prepare special meals for the children or raise the quality of those made ready for the family.

It is clear enough that the task of solving these problems is not one for the women alone. **They must be taken in hand by the group as a whole.** Their solution presupposes the reorganisation of the tasks inside the group and looking for a type of development which does not upset so many of the established balances. ■

A. CORREZE

Food growing in Africa's tropical rain belt

by Vladimir DRACHOUSOFF

African agriculture could benefit from all the latest techniques, if such an intensive modernisation programme were limited to a few expensive centres. A more realistic approach would seem to be to improve existing agricultural methods in the field, as widely as possible and on a much less ambitious scale technically. Vladimir Drachousoff analyses Central African agriculture and the difficulties of bringing it up to date.

INTRODUCTION

Between the Sahel and the Zambezi there stretches an enormous rain belt, approximately defined by the line of 1 000 mm rainfall. It covers an area of 7.5 million sq. km, and feeds a population of 140 million, most of whom are rural. The population density varies from less than a single inhabitant per sq. km in the marshy regions of the equatorial basin, to several hundred in some of the mountain areas.

Within this area there are big differences in the annual rainfall, in the topography, soil fertility and accessibility; but this rain belt of tropical Africa has one general characteristic. This is that the climate generally allows at least one crop per year without irrigation and the limiting factors are the area available and the fertility of the soil.

CURRENT TRENDS IN WORLD FOOD PRODUCTION

The agricultural prophets have always been in two camps. There are those who put their trust in technological progress and the adaptability of human society; and there are others who point rather to the fragility of the environment and the inertia of men and conditions, fearing the destructive capacity of greed with technique as its weapon.

The facts seem to have confirmed their prophecies time and time again.

A few years ago came the introduction of "miracle wheat" and "miracle rice", coupled with the massive use of fertilizers and insecticides. The optimists rejoiced in this as the beginning of a green revolution; but later the fears of the pessimists seemed to come to the fore, with the social consequences of unbalanced gains and, more recently, with the energy crisis

and the quickening tempo of inflation. Today the question may be asked whether technical progress does not favour the power to destroy rather than the capacity to build.

The present threats to the world's food balance result as much from the development of demand and requirements as from the factors and conditions of production.

Development of demand

For some decades we have been living with two exponential changes—the growth in population and rising standards of demand.

World population is increasing on the average by nearly 2% per annum. With consumption standards remaining unchanged, this means that food requirements will double in little more than a single generation. The growth, however, is the resultant of two very different classes of growth curves. In the industrial countries the growth-rate does not exceed 1.2% (U.S.A. and U.S.S.R.) and in Europe it is less than 1%; and in the non-industrial countries it ranges from 1.8% in China to over 3% for a large part of Africa, Latin-America, the Near and Middle East (1). In the latter countries the non-agricultural population is increasing faster than the agricultural population, the ratio of producers to consumers is growing smaller and in many cases it is shrinking faster than productivity is increasing.

It is in the Third World, too, that the demand for food is, in theory, at its most elastic, because even a very small increase in individual incomes is apt to be spent primarily on food (2).

Changes in the factors and conditions of production

The change in food requirements and in the factors and conditions of food production are far from the same.

In the first place, despite the very rapid growth in urban population, there is a continued growth in the country popula-

(1) Average for 1960-71 from the World Bank Atlas, 1973.

(2) In 1973 the poor countries had at their disposal about 180 kg of cereals per person per year, and a large part of this went directly into consumption to cover their minimum subsistence requirements. In comparison with this, the consumption of cereals in the U.S.A. in the same year was nearly a ton per head, of which only 65 kg was consumed in the form of bread and other bakery products, the rest being transformed into meat, eggs and dairy produce, with considerable wastage of the calory content. (Figures quoted by Lester R. Brown, in a paper read in London in February 1974).

tion, which accelerates the deterioration of the soil in regions which are heavily populated or ecologically fragile. Every year, as the result of erosion and desert or marine encroachment, tens or hundreds of thousands of hectares are lost to agriculture, either temporarily or, more frequently, for good.

Secondly, though it is true that increased industrial cultivation may increase food production in a balanced agricultural system, it is damaging to it in regions which are ecologically marginal, or in an economy unduly relying on exports or industrialisation.

Thirdly, food production is subject to natural limiting factors in terms of distance, climate and the type of soil. The product is apt to be perishable and bulky, and will not stand up to long transport delays, nor bear the high cost of storage. Only areas which are easily and cheaply accessible can become granary areas; and these are not necessarily the most fertile or the easiest to operate and protect. There is thus a conflict between the ecology and the economic geography which may become a serious inconvenience.

Fourthly, the "poor" cultivation, consisting of food crops grown for consumers of low purchasing power, support the cost of equipment and fertilizers much less easily than do industrial crops. Intensified cultivation quickly runs up against the barrier of profitability.

Fifthly, the results of agronomic research can only be effectively applied when agriculture is organised, well staffed and has a big investment potential. For subsistence crops this is not always the case.

Moreover, the progress which has been secured has been rather uneven. In cereals it has been considerable, but for leguminous crops and animal products it has been appreciably slower (1).

Sixthly, the food crisis in the Third World has been made worse by the increased consumption of meat, dairy products and eggs in industrial countries. It has resulted in some proportion of the cereals, leguminous products and the byproducts of their processing being exported instead of being consumed locally. The sale of calories to get currency is not always good business.

Finally, the gathering pace of inflation is affecting not only the finances of the poorer countries, but also their production capacity. The higher prices for energy, fertilizers (2), equipment and insecticides are striking at the very roots of the "green revolution", more especially for the poorer and less organised peasantry.

The imbalance between insufficient production and growing demand grew worse in 1972, through the sudden increase in Soviet imports. Between 1972 and 1973, in a single year, the world's stock of grain fell from 209 to 125 m. tons, where it

had been as much as 222 m. tons in 1961 for an appreciably smaller population. In 1961, there were reserves to cover 94 day's consumption, but in 1973 only 37 days (3).

This fall in stocks reflects fundamental changes in the world grain market, which have been in progress for the past 40 years. In 1934-38, North America exported only 5 m. tons of grain, which was about the same as Eastern Europe in the same period and less than Latin America. In 1973, the north-



Rain-belt rice in Upper Volta. Taking agricultural techniques into the rural areas.

american exports were no less than 88 m. tons. In Western Europe there had been little change, with a net import of 21 m. tons (against 24 m. tons); but Eastern Europe, formerly an exporter of 5 m. tons, had become the world's second largest importer, with a net import of 27 m. tons; and Asia, which formerly had an export surplus of 2 m. tons, had become by some way the largest importer, taking 39 m. tons. Africa, less populous and less urban, had changed from the export of a million to the import of 4 m. tons; and even Latin America had become a net importer of 4 m. tons. In supplying these requirements Australia contributed a net export of only 7 m.

(3) Lester R. Brown op. cit.

(1) In the U.S.A. the average yield of soya increased by only 1% between 1950 and 1970 compared with 4% for maize (Lester R. Brown).

(2) In 1971, a ton of urea sold for \$40 and in 1974 for \$260. The price of phosphate from Morocco was trebled at the beginning of 1974. (*The Economist*, April 20-26, 1974).

tons in 1973; and the virtual monopoly held by North America is an illuminating factor for any observer of recent changes in the economic balance of power.

Moreover, the imports into the non-industrial countries would probably be appreciably bigger if they had adequate finance resources and if surplus supplies were available.

The precarious food position of the Third World is an adverse influence in the processes of change, and makes planning difficult. It submits governments to successive crises, which disorganise their economic machinery and undermine their authority. It necessitates their getting into debt and sets up a state of economic dependence which is but imperfectly masked by their political enfranchisement. It drains off into consumption expenditure the resources which should be made available for investment.

SUBSISTENCE AGRICULTURE IN AFRICA'S TROPICAL RAIN BELT

The tropical rain belt of Africa covers regions of very different types, and therefore with a variety of problems. From the sandy steppes of the Kwango in Zaïre to the deep equatorial forests, from the Niger delta to the highlands of Kenya, there is considerable variety in the crops grown, the varieties used, the yields, the swing of the seasons and the crop rotation.

A classification could be based on criteria of a very general kind, such as the amount and regularity of rainfall, the quality of the soil, the topography, population density, offtake distances and the size of the markets, the state of the infrastructure and administration. With only a 3-fold appreciation—bad, indifferent and good—there would thus be 700 different possibilities, each of which could be considered as a diagnosis. This would provide a method of approach and a standard of economic judgement in each case.

Food production is apt to suffer in different cases from the overworking of the soil, from lack of manpower, or from the absence of infrastructure. Soil is apt to deteriorate in areas which are very populous and others which are supply sources on a massive scale to the urban centres. There is a tendency for production in the hinterland to be limited to local consumption needs. In this way the supplies to the towns may grow increasingly sensitive to changes in climate or transport conditions and producers in the distant villages will lack markets.

Most of the problems mentioned as applying on the world scale are to be found in the African tropical rain belt, but they are mitigated by the fact that the over-population is less pronounced and the rainfall is less erratic. Substantial progress can still be secured by comparatively simple means; but the fact that local conditions are less challenging results in the need for change being less keenly felt. Moreover, the population is more dispersed and insufficiently organised, which raises the cost of collection and transport, so that the purchase prices for equipment and consumption goods are higher and the sale prices for the production are lower. In the absence of an industrial rural infrastructure, the greater part of the added value eludes the producer.

Joint action by the governments, cooperation between producers and transporters and regular foods imports into certain specific countries have so far made it possible to avoid serious shortages, except in regions where there are political troubles or which are particularly badly located. Nevertheless, the position is still unstable and there is a tendency for it to grow more so; and the persistent weakness in subsistence agriculture has serious social, financial and monetary consequences. It is an obstacle to industrialisation; it halts the cumulative processes of development; and it prevents the economic system from getting off the ground.

To deal with this, the African governments, supported by multilateral and bilateral cooperation organisations, have applied considerable sums to laying out new rice-growing areas, improving existing arrangements, rationalising groundnut and cereal cultivation and to integrated regional projects and equipment for mechanisation centres.

In addition, the lines of production specially designed for the export trade, such as palm oil, palm kernel oil and cotton, have an impact on the food position, either because part of the product is consumed in the country, or because of the rotation between cotton and food crops. Extensions in the use of animal haulage have also led to better yields and extended sowings. On the other hand, animal products have in general remained insufficient in quantity and too high in price for small incomes.

There have, too, been many projects covering the construction, improvement and maintenance of roads of economic importance, the organisation of markets, the setting up of processing facilities and others of a social or cooperative character. The food problem, however, is still far from solution.

ELEMENTS OF A FOOD POLICY

No country can continue indefinitely with deficiency in its food production. This would result in a wastage of foreign currency, in lack of profit and in dependence on the outside world. Food production must therefore be raised quickly and **substantially**. There are two different policies which can be considered for this purpose.

— either the setting up of centres of intensive cultivation using up-to-date methods and a great deal of complex equipment. This would involve neglect for the time being of the large number of poorer cultivators;

— or, attempting to improve the agriculture which is already there, bringing progress on more modest lines to a larger number of producers.

Industrial agriculture

The industrialisation of subsistence agriculture is a short cut which, if it succeeds, will quickly make supplies possible to towns and industrial areas. It accelerates the training of administrators, technicians, skilled artificers and introduces the younger rural generation to a taste and aptitude for machinery, thus sparking off a psychological change in favour of modern techniques. On the other hand, it calls for big

investments and a substantial outlay of foreign currency. It is expensive in operation and its production costs are often high. It calls for the clearing of a whole series of bottlenecks, both before the production stage—purchase, supply and maintenance of material and products, the use of highly selected seed varieties, personnel training, effective logistic support and a considerable infrastructure—and also after production—storage, processing and marketing. It would, by its nature, be the preserve of the privileged minority, and there is the risk of its creating isolated enclaves of artificial prosperity in the midst of a traditional system which had been left to itself.

In addition, both from the agronomic and from the mechanical standpoint, the use of complicated techniques in the ecological conditions of the african rain belt has not yet been adequately worked out. There have indeed been cases, especially in rice-growing, in which high yields can be secured regularly at cost prices which are quite manageable; but there have already been disagreeable surprises in some forms of rain-based agriculture.

Improving traditional agriculture

A widespread improvement in agriculture is less spectacular than transforming it altogether; but at the present time it seems better adapted to the inflationary conditions to which we are subject. It is for this reason that the objectives in seed selection have been broadened. Exacting and highly productive varieties of maize, wheat and rice are still being brought forward; but work is also being done on increasing the lysin content of the seed and finding varieties of a more frugal and adaptable character putting up a better resistance to the enemies of the crop. Most maize growers are less anxious to have phenomenal hybrid varieties, yielding up to 15 tons of grain per hectare, than varieties which multiply easily and produce 5 tons per hectare in good village conditions and 2 tons when conditions are only medium.

In the same way, it is often more advantageous to breed robust varieties of sorgho, which are suitable for growing in difficult conditions, rather than to look for high-performance varieties which are costly to cultivate and produce uncertain results. In the case of rice, the I.R.R.I. 8 and I.R.R.I. 20 varieties are more and more often being replaced by Philippines or local selections which may be somewhat less brilliant in performance, but put up a better resistance to crop maladies and to the weevil. Early cropping varieties are much sought in areas where the rainfall is irregular and less than 1300 mm per annum. On the other hand late varieties are often preferred in places where the flowering comes in a season of heavy rainfall.

Similar tendencies can be seen in the development of cultivation methods. With fertilizers becoming more and more expensive the soil is coming back into its own as an essential element of productivity, which has to be conserved, regenerated and improved by planned crops, the maintenance of a vegetable covering and natural and improved fallows. The soil structure and the humus are returning to an importance which has been somewhat neglected in industrial countries; and fire control

and fire fighting are again part of the system. A logical extension would be a more general association of arable farming with stock-raising, which is still only slightly practised in this part of Africa.

But there are a number of serious obstacles to the improvement of traditional agriculture. The first of these is the cost.

The policy has to be applied to large populations over very wide areas, and calls for a considerable infrastructure, high operational costs and strict co-ordination between central and local administrations. It involves setting up many processing installations of small capacity and the beginnings of industrialisation. The great mass of the rural population must participate of its own free will and on a considered basis, and there must be links of confidence between it and the administration. The villages must bring forth leaders of a new type with a management mentality. All this requires big investments to secure the desired results which, in themselves, are scarcely spectacular and their short-term productivity is low. Such investments are often more than a non-industrial country can manage and do not satisfy the profitability criteria required by the financing organisations.

The second obstacle is the psychological reaction of those concerned.

Though the aggregate increase in production through improving traditional forms of agriculture may be very substantial, it is nevertheless small enough when seen from the village itself, or by the individual farmer. The more dynamic elements in a rural population are apt to react better to complete metamorphosis than to mere evolution; and it is often easier to teach a farmer to drive a tractor than to get him to change the way he sows his seed. It is question of breaking down habits based on long tradition and a way of life which has slowly adapted itself to its surroundings; and improvements which are themselves progressive and slow are not always looked upon as important forms of progress.

Moreover, some of those responsible for development in the new countries accuse the extensive agriculture, even in an improved form, of keeping the rural populations away from their access to modern techniques and thus of perpetuating the gap between their agriculture and that of the richer countries, setting obstacles to rural industrialisation and sacrificing the future to a realism which is essentially short-sighted.

Moreover, it will not always be easy to find qualified agricultural personnel for sending and retaining in surroundings where life is rough and the work far less spectacular than in research stations and mechanised centres. The working conditions and the career potentialities for this personnel, with its motivation and its reemployment potential, will have to be reconsidered and materially improved.

* * *

Agriculture does not by its nature yield to perfect or single solutions. The policies of intensification, or of more diffuse action, both contain too many inconveniences for either to be regarded as the exclusive line of action. A coherent development policy should combine the two. Intervention on the spot should be carried out over wide areas where the potential is

only medium, and should be aimed, depending on the case, at local food sufficiency or at the production of an inter-regional surplus. Concentrated intervention should apply the techniques of intensification, where the soil is suitable and the land laid out afresh, but without systematically substituting the machine for the man, and carefully providing for african personnel to take over quickly at every level. The current economic context tends somewhat against this type of intervention, unless it be in conditions providing for very high productivity.

The concentrated action policy and the diffuse action policy should, in principle, help one another. The former would make farmers familiar with the advantages and constraints of modern agriculture and provide them with permanent technical support. The latter would bring the installed equipment across the profit threshold, providing it with a bigger throughput and with additional customers.

A special effort should be made for the extension of stock-raising, which has been hindered by the climate and by epidemic and endemic maladies.

THE ROLE OF EXTERNAL COOPERATION

It has become a commonplace to say that there is now a crisis in development cooperation. Maybe too many promises were made and hopes raised too high; or perhaps the inertia of poverty was underestimated and with it, the constraints arising from environment. Perhaps, too, it was wrong to claim that aid was disinterested, which is a thing which seldom happens in international relations. Perhaps it was a mistake to offer the Third World growth patterns which were essentially foreign to it.

Nevertheless there is no denying that important work has been accomplished and that dramatic situations have been avoided, or at least moderated. From now on the countries which are in process of industrialisation, confirming the April 1974 resolution of the UN General Assembly, want to take over control of all the levers of their development machine, bring their nationals into the posts of leadership and create a type of society consistent with their past, their culture and the authenticity of their historic background. To achieve this, they are accepting the risk of making mistakes, of wastefulness, of temporary injustice, which are less serious in their eyes than the debilitating effect of permanent economic and technical dependence. To many people it seems that China, which is now better known, offers a good alternative to the private capitalism of the West or the State capitalism of the Soviet Union. Chinese aid, modest enough in its total amount, but locally important and effective, is scoring outstanding successes.

This change of approach can already be seen in the new attitudes of the World Bank, the course of the negotiations for renewal of the Yaoundé Convention, the procedures now being applied in the planning and execution of projects, the growing part played by technicians and the national organisations.

Nevertheless, neither the countries which are industrialising nor the countries which are industrial are questioning the prin-



Groundnut store in Tanzania.

ciple of cooperation, and the need for it to be extended and improved. It is still necessary to secure that the resources applied to it are sufficient, and that what one side asks should be compatible with what the other side proposes.

In the uncertain period through which we are passing, it is difficult to define the future arrangements for cooperation in the development of subsistence agriculture. In any case the important choices will be made by the african countries themselves. It is to be expected, however, that these countries will no longer accept among their foreign cooperators any but the most highly competent and experienced technicians whom it will be more and more difficult to find; and that the functions of authority, the responsibility for staffing, administration and animation will in future be in the hands of their own nationals.

To a greater extent, external cooperation will be concentrated on the more intensive transfer of techniques, the introduction of methods for quicker training and information and support for the new local managers. Industrialisation of the countryside will call for important execution surveys; basic research and applied research will need specialists to support the native research workers; skilled planners with multinational experience will be needed to secure the coexistence and cooperation between techniques of very different origin and method; installations delivered on a ready-low-use basis will speed up the extension of the areas planted and irrigated.

This new form of development cooperation will raise difficult problems, often of a new kind, for it will have to be aimed at a new type of relationship between States, organisations and people, without rupture of function or decrease of productivity, against a background of cost inflation and increasing requirements.

Such a prospect may be alarming if we allow ourselves to be dismayed by the difficulties ahead; but if we rise to the challenge it is exciting indeed ■ V. DRACHOUSOFF

Crisis in fertilisers

by Prof. G.R. ALLEN*

Fertilisers are an essential factor in crop production. For some high-yield cereals, one ton of fertiliser can grow more than 10 tons of grain; the current world-wide fertiliser shortage can correspondingly be multiplied tenfold in terms of lost grain. One measure suggested by Professor George Allen of Aberdeen University is to use less fertiliser for private and non-agricultural uses.

There is a desperate shortage of plant nutrients in the world. A general run-down in fertiliser production in the late 1960s and up to 1971 resulted from the industry's sinking profitability, and was matched by a relative slow-down in world fertiliser demand, largely due to restrictions on cereal production in the over-stocked U.S.A. The cut-back then coincided with world-wide bad climatic conditions in 1972. The lack of foresight in fertiliser production became evident, and prices soared.

I estimate that the shortages of nitrogen and phosphates below the levels necessary to maintain current world food production are as follows:

	World Fertilizer Shortage (million short tons)	
	Phosphate	Nitrogen
1973	0.5	—
1974	1.5	2.0
1975	0.5	2.0
1976	0.7	4.0
1977	—	5.0
1978	—	—

The impact on the less developed countries can already be seen. In 1973/74, India will probably consume about 2.8 million tons of fertilizer, the same as in 1972/73 or somewhat less. The American government has taken steps to ensure that its manufacturers divert supplies from export markets for use within the U.S.A., and it seems that Russia, Eastern Europe and Western Europe are adopting a similar strategy of preferential treatment to their own agricultures irrespective of the consequences for the less developed countries.

There is some argument over the actual relationship between increases in fertilizer use and in crop production. The Indicative World Plan projected that one ton of fertilizer would yield approximately 10/11 tons of grain in areas where the Green Revolution was successful. In one international agency at least current judgement is that a 1:7 ratio is more appropriate. By either reckoning, the implications for the world food situation of the current and prospective fertilizer shortage are appallingly serious and, unless we are extremely fortunate with climatic conditions, will produce grain deficiencies on a level which most people had thought was a thing of the past—rising to as much as 42 million tons in 1976 and 50 million tons in 1977.

If we find that the world grain harvest in 1974 is such that we can rebuild stocks substantially, a breathing space will have been gained, but no more.

In the short term there is not much that can be done. But three proposals deserve consideration.

(1) **Fertiliser should be diverted from developed countries to less developed countries** in such cases where a net increase in grain production will result. In some of the more intensively fertilized agricultures of the developed countries (such as parts of the American Corn Belt or East Anglia in the United Kingdom) the fertilizer/grain ratio maybe as low as 1:3 at the margin. Moreover, some fertilizer is used for non-agricultural uses such as lawns, golf courses, and roadsides—in smallish quantities in Western Europe but as much as 10-15 per cent of total plant nutrient consumption in the United States. A simple diversion of this non-agricultural fertilizer to the developing countries would not be practical, even in the present situation, because much of it is low analysis compounds which would be too costly to transport and distribute. But, in theory, it should be possible to release 250-300 thousand tons of plant nutrient if there is the political will.

(2) **The development of phosphates, particularly phosphate rock mining, and nitrogen should be treated as a matter of extreme urgency.** This implies that policy at the regional or national levels will often need to be reviewed. For example, special steps are necessary to ensure that the U.S. phosphate rock mining industry gets some priority in the construction of drag lines, notwithstanding the claims of open-cast coal mining. Or again, the proposed nitrogen complex in North East Scotland should be started immediately and timed to come into operation immediately North Sea Gas becomes available.

(3) **Measures should be taken to improve the operating rates of fertilizer plants in the less developed countries** which are typically much lower than those attained elsewhere. Vulnerability to power and water supply breakdowns could be reduced by allowing fertilizer complexes to provide their own facilities instead of being hooked to public services which experience shows to be somewhat unreliable. Again, the less developed countries should be willing to make more use of advisory management experts in the running of their plants.

* * *

Minor easements in the present crisis can be obtained along the foregoing lines. But, the most critical issue is to ensure that adequate fertilizer facilities are built for the long run, which brings us back to the single most fundamental issue in the current state of our analysis of world fertilizer needs, namely that widely-accepted projections of future demand are dangerously conservative. If we cannot devise agricultural policies to ensure a more rapid increase in plant nutrient use **there will be starvation on a scale by 1980 which will make the present tragedy in Sahelian Africa seem insignificant.** ■

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E.D.F. contribution to subsistence farming

Subsistence farming comes into most E.D.F. schemes

The development of food crops to meet the vital needs of the population in Associated countries is a matter of constant concern to the Commission and plays its part in most of the agricultural schemes financed by the E.D.F.

The chief instruments for increasing productivity and finding a way to agricultural self-sufficiency are the improvement of farming techniques, seed selection, fertilizers, insecticides, instrumentation, an abundant and well-trained administration, the setting up of cooperatives and marketing. The nature and scale of each intervention varies on account of local conditions and regional aspirations.

popularisation, and each differs materially from the others. In the Ivory Coast, for example, the U.A. 3.3 m. provided to finance agriculture development in the Koussou-Bandama region is part of a large-scale territorial development scheme. In this more than 3000 ha are given over to subsistence crops, 60 ha to pilot market garden cultivation, 1500 ha to coffee, and 21 livestock farming units were set up. In Zaïre the E.D.F. is still financing agricultural improvement operations through intensive staffing of schemes for associated crops.

Specific action is also taken to improve productivity in the growing of food crops. In Senegal, for example, the Community is financing a seed service and improvements in the varieties of millet. In Upper Volta and Mali projects are being carried out for seed preservation and crop storage.

E.D.F. Interventions in agriculture Up to 31.12.73 (th. U.C.)

	1st E.D.F.		2nd E.D.F.		3rd E.D.F.		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
Industrial cultivation	21 124	24	110 360	64.7	138 949	60.3	270 533	55.3
Regional development	9 646	11	11 413	6.7	15 230	6.6	36 289	7.5
Hydro-agricultural schemes	37 480	42.5	31 746	18.6	44.244	19.2	113 470	23.2
Stock-raising	8 118	9.2	10 838	6.3	12 867	5.6	31 823	6.5
Aids to production	11 260	12.8	6 186	3.7	—	—	17 446	3.6
Sundry	405	0.5	—	—	19 010	8.3	19 415	3.9
	88 033	100	170 643	100	230 300	100	488 976	100

The action taken to promote industrial cultivation usually includes quite an important section on food production, especially through integrated programmes, in which food crops are associated with export crops, such as cotton, coffee or pyrethrum.

The **agro-industrial projects** are linked with local farming potentialities and lead to the replacement of imports by agricultural produce processed on the spot, such as sugar or oil-bearing materials.

The **regional development programmes** consist for the most part of administration appointments, training and

Some of the E.D.F. schemes for subsistence farming

1. Imbo (Burundi) — a hydro-agricultural scheme

The development project for Imbo originally amounted to U.A. 7 240 000 and was later raised to U.A. 7 660 000. This made it possible between 1968 and 1974 to set up an infrastructure of dams, canals and roads, facilitating the intensive cultivation of 2 240 ha, which are to be farmed by 2 240 families settled in villages around the area in which the

Treatment and conservation of crops in Mali

Over the whole territory of Mali, the seed and cereals in stock are attacked by insects and vegetable parasites resulting in a considerable loss of income to farmers.

The community has made a contribution of U.A. 1 048 000 towards a campaign to stimulate and popularise processes for treating the seed and preserving the crops. Over a 3-year period mobile teams are covering the country twice a year, providing training for farmers in treatment methods and distributing the pesticides.

The treatment is applied to the millet, sorgho, groundnut and maize crops. It is expected to stave off potential losses on seed occurring through a loss yield, amounting

to 179 000 tons, and effective losses on crops while in store of 51 000 tons.

In terms of money Mali will thus be avoiding a total annual loss of 4 851 m. mali francs, or U.A. 8 700 000, which represents 4% of the country's gross internal product and 8% of the gross production in agriculture.

A similar project in Upper Volta was financed by the Community between February 1968 and February 1972. It led to an increase in the production of cereals of 58 000 tons and avoided a loss of 38 000 tons on the stored crops. The increase in the added value thus secured was F-CFA 1 392 m., compared with the F-CFA 385 m. expected at the outset.

community facilities (schools, dispensaries, drinking water etc.) were also financed as part of the project. Of this area:

- 1 120 ha are set aside for rice cultivation and are expected to produce 3 360 tons per season;
- 1 120 ha are given over to mixed cultivation of cotton
- 1 120 ha are given over to mixed cultivation cotton (560 ha - 560 tons) in rotation with maize (1 120 ha - 800 tons) and beans (1 120 ha - 784 tons).

Between 1970, when the first crop was gathered, and 1973 the total productions have been as follows:

- cotton 714 tons (grain);
- rice 4,070 tons (paddy);
- maize 2,075 tons.

(the beans were not brought into the rotation until 1973-74).

The project has also made it possible to set up a rice processing unit, an experimental station and a pilot area for stock-raising.

Financing proposals will shortly be made to the Community for continuing this operation for the period 1975-79. The aim will be:

- to consolidate the progress made with additional infrastructure, improved techniques and yields and the introduction of a second rice crop;
- to bring in an additional 585 ha, of which, 175 ha will be for rice, 175 ha for mixed cultivation and 585 ha for robusta coffee.

The ultimate targets are the following

- rice 7 800 tons;
- maize 3 300 tons;
- beans 900 tons;
- cotton 980 tons.

2. Recent rice development schemes

During the last few years rice has been the chief food crop, the development of which has been financed by the E.D.F. It is, in fact, an increasingly popular element of diet for the

rural populations, and in recent years the accent has been put on the development of rice cultivation on low ground and relying on airfall.

Rice cultivation schemes (m. U.A.)

	1st E.D.F.	2nd E.D.F.	3rd E.D.F.	Total
Ivory Coast	—	—	10 950	10 950
Madagascar	—	—	9 352	9 352
Mali	1 929	86	542	2 557
Niger	—	—	1 260	1 260
Senegal	363	3 138	1 131	4 632

Four projects, each of which has required Community commitments of U.A. 6 m or more, are of particular importance.

These are:

- the rice development programme by controlled submersion in the Ségou region of Mali (U.A. 11.8 m);
- part-financing of the rice development programme in the Ivory Coast for 1972-76 (U.A. 10.3 m);
- the hydro-agricultural scheme around Nianga in Senegal (U.A. 6 m);
- completion of "operation rice productivity" in the Madagascar highlands (U.A. 6.1 m).

Improving trade balances and expanding the internal market

The aim of all these rice-growing projects has been to satisfy the growing rice requirements of the populations. These are at present covered by national production, plus substantial imports which call for a big outlay in foreign currency. It was only through ambitious schemes for bigger production, using up-to-date techniques, that it could be made possible to reduce the imbalance between production and consumption and relieve the trade balances of the Associated countries of the excessive expenditure on food imports.

In terms of economic development, this policy is well justified, even if the cost price of the local produce is not always fully competitive with international markets. It is a matter of introducing the techniques of rice growing among the peasants and providing a certainty of economic activity for a population which is at present marginal and under-employed. This will make it possible to enlarge the domestic market with all the secondary effects and multipliers resulting from it, and the national economic structure can thus be more closely integrated.

* * *

The execution of the **Mali** project, for which Community finance is being provided, is timed to take six years. Combined with a similar project financed by the World Bank and other rice schemes already undertaken with E.D.F. finance of U.A. 6.3 m., it should result in the expected requirements of the population being covered until about 1980.

The new project covers an area of 45 455 hectares divided into 16 sections which are to be laid out for controlled submersion. The area is located on plains lying close to the towns of Ségou and San, which can be flooded when the river Niger is in spate. With an average yield of nearly 2 tons per ha, it will make it possible to increase the paddy production in this zone by 65 000 tons.

Other sources of finance are associated with the E.D.F. in this project, the total cost of which is to be U.A. 13.3 m. Studies are already scheduled for the subsequent extension of the area covered.

Four further schemes are linked with this project and complementary to it, both technically and for the training and stimulation of producers. These relate to:

- enlargement of the rice specialisation centre at Dioro;
- construction of five community development centres in the Ségou region to enable women to be associated with the modernisation movement the project is expected to stimulate;

- a functional anti-illiteracy campaign for 20 000 rural rice producers;

- the setting up at Dioro of a centre for applied research and production of selected seed, financed jointly by the U.N. development programme and the Mali government.

The project is of direct concern to a population of 182 000, and the Mali government expects is to raise their money income almost four-fold.

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In the **Ivory Coast** the Commission has agreed to finance part of a general programme of rice development, covering the years 1972-76. It aims at a considerable increase in the national production, which amounted to 200 000 tons in 1970 and should rise to 295 000 tons in 1977. The volume of rice imports should thus be reduced to 25 000 or 30 000 tons per annum. The operations concerned include the intensification of irrigated rice growing in the Korhogo area; the introduction of rice cultivation in the Bouaké-Nord area; the improvement of rice cultivation by flooding in the Odiénne region; and the association of rice growing with cotton in the Centre-Nord.

The project has another important objective. This is to diminish the regional disparities by promoting a new agricultural activity in the least prosperous regions of the Ivory Coast, and provide money incomes for the population living there.

Community finance has already been provided for a first section of this programme. This amounted to U.A. 522 000, approved in September 1971, for the hydro-agricultural dam at Sologo.

The project is under the management of Soderiz, a financially autonomous State undertaking which is also to be the intermediary between rice growers and the National Bank for Agricultural Development (B.N.D.A.) in matters of credit. The peasants are to be grouped in cooperatives on a village

E.D.F. improved rice-growing project on the high plateaux of Madagascar.



Pierre Jamet

basis, to facilitate the best use of collectively owned material and the collection and transport of the paddy. They will be helped in this by a specialist State organisation—the National Centre for the promotion of Cooperative undertakings.

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The present imbalance between the production and consumption of rice in **Senegal** is around 175 000 tons of white rice annually, and this has to be covered by imports. The rice imports are in fact the second largest (in value) in the country's trade, and result in an outgoing of about F-CFA 4 500 m. annually. This is a heavy financial charge, which the senegalese government has been doing its best to reduce over the past 10 years. In support of this policy the Commission decided in 1972 to finance a fourth Community intervention to the extent of U.A. 6 m. The E.D.F. aid to the development of rice production in Senegal will thus have been raised to a total of nearly U.A. 11 m., corresponding to the exploitation of 16 000 ha.

The project in the form adopted covers a hydro-agricultural scheme for 9 000 acres in the Nianga basin, which lies in the middle valley of the Senegal river, near the town of Podor. It concerns the development of a first section of 2 000 ha of ricefields. The additional production of white, or husked, rice for marketing should be 3 200 tons, when the scheme is fully operating. This project is a first step. It should make it possible to define the cultivation techniques and the operating and management methods for much bigger areas in the valley of the Senegal. At the request of the senegalese and mauritanian governments, surveys have been made for large-scale works to regularise the flow of the river. When these have been carried out in a reasonably early future, it should be possible to carry on intensive rice cultivation in the valley with two crops each year. As with the Ivory Coast project, the region concerned is a particularly poor one. It is of direct concern to a population of 11 000.

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In **Madagascar** the Commission has decided to finance the completion of "operation productivity rice" in the highlands to the south of the capital and at Ambiolobé in the north-east during the period 1972-75. The scheme was set on foot in 1966, with production-aid credits from the second E.D.F., amounting to U.A. 12.3 m.; and it was continued up to July 1972 by credits from the 3rd E.D.F. to the extent of U.A. 3.2 m. The present financing should enable it to be carried through. Its main objective is to increase the production of rice for internal consumption by improving the means of production, and especially the irrigation. Madagascar should thus be able

progressively to dispense with her imports of rice. These represent only a small proportion of Madagascar's total consumption of 1.7 m. tons, but they amount, nevertheless, to 30 000 tons (1970).

The total cost of the scheme is put at U.A. 18.6 m. There are 106 000 peasants concerned in it, and they and the malagasy government will be contributing to its financing.

Another rice-growing scheme in Madagascar was approved by the Community in 1972. This was for the production of high-quality rice for export. The aim is to lay out part of the wide rice-growing plains of Marovoay on the east coast, on the bank of the river Betsiboka. There is provision for bringing 2 700 ha into cultivation and this could be extended to 3 200 ha. The E.D.F. intervention is aimed to raise the average yield from the present 2.4 tons of paddy to 4.3 tons per ha by the 15th year.

The production and marketing organisation is to be handled by COMEMA, a regional organisation for rural matters, which is also the owner of the land with which the project is concerned. When the land improvements are completed, the land will be handed back to tenant farmers who will hold undertakings to sell issued by COMEMA; and or about the year 1974 they should be able to become full owners. The population concerned consists of 7 200 people, including about 1 100 cultivators. The scheme is for the production of rice of high quality for the export trade, and for which Madagascar has an assured market. It should therefore serve to improve the incomes of the producers. After eight years the government expects the peasant incomes will have been increased by about 50 %.

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In **Mauritania** the Commission has decided to defray the cost of administrative staffing for 10 small rice-growing areas already in existence or being formed, which have been financed by aid from the Community, bilateral french aid and by the mauritanian government. They cover a total area of 480 ha, and are irrigated by pumping. The location is on the banks of the Senegal river between Kaédi and Rosso in the extremely small area of Mauritania in which agriculture is possible.

The project will take 4 years to carry out. It is aimed to help the peasants adapt themselves to a new and highly technical form of cultivation, which includes irrigation by pumping and two crops a year. They have already shown considerable interest in the scheme. With a yield of about 7 tons per ha, the production, when the scheme is fully in operation, should be around 3 400 tons of paddy annually, which will go mainly into local consumption. This is the first experiment in the Senegal valley in rice cultivation on the basis of two crops a year. ■

A weapon to fight hunger

E.D.F. project for improving millet

In 1973 the eyes of the world were turned on West Africa, where six countries—Mauritania, Senegal, Mali, Upper Volta, Niger and Chad—were suddenly faced with the serious problem of hunger. Unhappily this same problem will again be with them in 1974.

The immediate cause of the tragic shortage of food in the Sahel in 1973 can of course be traced to the lack of rainfall and its bad distribution. This was the worst in 60 years, since an almost identical drought which occurred in 1913. Moreover, on this occasion it came after several years of insufficient rainfall.

In 1973, the rainfall was better than in the previous year, but even so its distribution was disastrous for the production of food crops, especially the late cereals.

This, however, does not wholly explain the scale of the catastrophe, which has affected Africa's Sahel region for two years. Much has lately been written about this, and many contributory factors have been brought to notice as fore-warnings of what has happened.

There is no need to review this in this article; the fact remains that one of the root causes of the trouble is the persistent poorness of the yield of the food crops, the production of which, even in a normal year, is scarcely enough to bridge the gap between successive harvests. This has been the difficulty in setting up food reserves to carry over the supply and mitigate the notoriously irregular climatic conditions of the Sahel.

This was quite clear to the heads of State and ministers of the Sahel countries when they met at Ouagadougou from August 31 to September 12 last year, in the attempt to decide lines of medium-term and long-term action to avoid the recurrence of similar disasters.

Among the priority plans on the long-term, agreed by the Africans themselves, is the strengthening of agronomic research programmes, aimed at providing the peasantry with short-cycle varieties of millet, sorgho and maize, which would be better adapted to the annual climatic changes of their region and give a better yield than the varieties used in current sowings.

For most of the Sahel population, the every-day diet basis consists of the "little" or penicillate varieties of millet, and sorgho. In relation to these the E.D.F. has, since 1970, been financing a programme directly in line with the long-term action specified at Ouagadougou last September. The particulars of this programme are described below. It is now attracting more attention and provides an example of the diversified character of the aid which E.D.F. gives to developing countries, even though it is, as things stand, the only real research programme receiving E.D.F. finance.

Aims and operating conditions for the E.D.F. millet improvement project

The project is in fact one of applied agronomic research. It is aimed at finding new varieties of millet which will:

- be more productive than the usual varieties;
- have a morphological structure and a length of cycle which will enable them to be used in future as a principal cereal and part of the **necessary** rotation in an **intensive** agriculture;
- have nutritional and body-building qualities at least as good as those of the usual varieties.

The project was scheduled to last four years and cost F-CFA 297 m. It became operational in November 1970.

Its execution was placed by the Senegal government in the hands of the O.R.S.T.O.M.-I.R.A.T. group (1) which set up a research team for the purpose, under the direction of Mr. Bilquez, Research Director of O.R.S.T.O.M. and a specialist in plant genetics and improvement.

The main part of the research is being carried out in Senegal in the Centre National de la Recherche Agronomique at Bambey and the rest in France at the Services Scientifiques Centraux of O.R.S.T.O.M. at Bondy.

The government of Senegal has a priority right to the benefit of the work, but it has undertaken to give favourable consideration to any request from Associated countries or others for the use of the new varieties obtained.

State of the work

At the end of the third year the results obtained indicated that the programme was well conceived, and there is no longer any doubt of the possibility of securing the results specified.

IMPROVEMENT IN YIELD is the primary objective. The varieties usually grown in Senegal and other Sahel countries yield an average of 480 kg of grain per ha. This may vary between 120 kg and even lower in regions of poor soil and inadequate rainfall, and as much as 2 500 kg in a good year in regions of advanced peasant cultivation with hoeing and the use of fertilizers.

Making a grass into a cereal

Yet even the very best yields are less than is needed if millet is to become a principal cereal in an intensive agricultural system, which is the only way of securing progress for the peasant population. None of the attempts which have yet been made in Africa with the usual types of millet, whether by seed selection or by improving cultivation techniques, have yielded satisfactory results. This is because the customary varieties of millet have a very high capacity for making stalk and leaf rather than grain. In other words, it is because millet in its present state of development in a grass rather than a cereal. The first objective assigned to the research group was to

(1) O.R.S.T.O.M. Office de la Recherche Scientifique et Technique Outre-Mer; I.R.A.T. Institut de Recherches Agronomiques Tropicales et des Plantes Vivrières.

make this grass into a cereal with a bigger yield of grain than in normal varieties, whatever be the conditions of cultivation.

The genetic research workers started from the results of work which had been done already, partly on the physiology of grain formation and partly on natural variability between millets and the genetic determination of the principal characteristics of agronomic interest. From this they have worked on recombination of characteristics and produced several plant samples. Two of these, which differ substantially from one another, have been found capable in the best cultivation conditions of producing **yields of the order of 7 000 kg of grain per ha**, or three times the most that can be expected from ordinary millet in the same conditions of cultivation.

The two new types of millet look very unlike the ordinary types. The first thing that strikes the uninitiated eye is that they stand much less high. Because of differences in stalk thickness, leaf development and the relationship between the two, they take up much less space than does ordinary millet. In consequence the number of plants per ha and the number of "candles" gathered per ha are far more numerous than for ordinary millet. It is this which makes it possible to expect a much bigger yield of grain per ha than from the present varieties, even though the quantity of grain per plant is smaller.

A parasite fungus

One particular difficulty has arisen in making new varieties of millet from these strains. This is their great sensibility to a parasite fungus, which is very often encountered in Africa. This is known as **Sclerospora graminicola** and the difficulty it raises is the greater for the fact that the genetic composition of the parasite populations does not seem to be the same in different millet cultivation areas. This means that the possibility of the new varieties being acceptable over a wide area will depend on the degree of similarity between the composition of the parasite populations in any area and those used as sensibility samples by the genetic experts in their selection work.

Despite the difficulty raised by this very high sensitivity to *Sclerospora*, the research workers have succeeded in creating a first population of millet with the required morphological structure and a very high resistance to the *Sclerospora* existing in the locality of Bambey where the selection work was done and where less than 2% of the plants were diseased.

In the third year of the project, it has been possible for this millet population to be tested out in supervised conditions of peasant cultivation of different types. The principal aim has been to enable the research workers and agronomists to assess the scale of some of the studies needing to be quickly carried out, and if necessary, to correct some of the present lines of research.

A new vegetable

The peasantry has been much surprised at, and very interested in, this new type of millet which looks so different from the millets they have grown hitherto. It is already clear that they will willingly take part in spreading the knowledge and use of this new crop. Some of the characteristics—especially the early ripening—have made a great impression.

Though the tests which have been carried out were not specifically for yield comparison purposes, there are a number of lessons which can be drawn from the regarding the yield potential in peasant cultivation conditions.

It must be owned at the outset that some of these tests suffered from the *Sclerospora*. This means that the parasite in the regions of these plantings was differently constituted genetically from that which had been used for sensitivity tests by the genetic experts.

It will only be possible to obtain high yields of the new types of millet in these regions if the resistance to *Sclerospora* is increased by the introduction into the material of new resistance genes. It is expected other varieties will be selected which will be better adapted to the specific characteristics of the local parasite.

Millet stores in Senegal. The raised piles keep rodents out.



In other tests the peasants were somewhat disappointed in the crop, by comparison with the hopes which had been raised at the time of flowering. This was on the ground that the "candles" were not well filled with grain. The reasons were:

— partly that the present material, which is only the first development of the strain the research team are seeking to reproduce, still has a number of genetic imperfections which are more apt to appear in some conditions than others, but which the research team should be able to master;

— partly that, as ill-luck would have it, a long dry period set in during the flowering period in several of the tests, and its effect was to dry up the grain. It was the more marked for the fact that the seed used was of one of the late-ripening types.

Highly promising results

The fact remains that in other tests extremely promising results were recorded.

In the first place, the observed yields were higher than had ever been attained for ordinary millet in the **same conditions of cultivation**. In fields tilled in accordance with the best principles developed by the agronomists, more than 30 quintals of grain was obtained per ha. Such a yield is regarded as a maximum for ordinary millet.

Secondly, the new type of millet is found to be capable of producing higher yields than the normal types. This applies not only when it is cultivated in conditions which are beyond the reach of many farmers; but also in peasant cultivation where the farming practice is still backward. Yields between 1000 and 1200 kg of grain per ha were observed for peasants using rudimentary cultivation practices and who normally regard a yield of 800 kg as exceptional from ordinary varieties.

USE AS A PRINCIPAL CEREAL IN AN INTENSIVE AGRICULTURE

Millet can only be used as a principal cereal in an intensive agriculture if the varieties cultivated have the following characteristics:

— possible yields between 5000 and 7000 kg of grain per ha in good farming conditions. The new plant strains undoubtedly have such a productivity potential;

— the growth cycle of the plant must be such that it can fit into the crop calendar of the farm without interfering with the industrial crops put down before or after it.

It is established that the varieties tested in 1973 had a precocity of about 75 days (half-crop interval), representing a gain of some 15 days compared with ordinary millet of the quick-ripening types at present grown in Senegal.

The peasants were particularly struck by the early ripening,



Millet grown the traditional way...



Milled improved by radiation.

which enables them to have food available two weeks earlier than with ordinary millet.

— The morphological structure of the plant must be such that the stalks can be easily dug in and will decompose easily underground.

It is easy to see from the photographs that the plants satisfy these requirements. The new types are short in the stem, which is much thinner than that of the ordinary varieties.

NUTRITIONAL AND BODY-BUILDING QUALITIES OF THE GRAIN

Analyses made by the Dakar Institute of Food Technology (I.T.A.) on the first millet population to be tested, show that the total protein content is somewhat higher than that of ordinary varieties grown in Senegal (14% against 12.3%). We should add that the research team has identified in its analyses two varieties which will be used as parents in future crossings. One of these comes from Mali and the other from Upper Volta; and in the same cultivation conditions and with the same nitrate fertilization their protein content is 19%, representing an increase of about 60% over the content of ordinary millet as currently grown in Senegal.

I.T.A. analyses show that the fatty content of the new millet is around 8.2%, which is higher than that of the ordinary local millet (5.5%). If there should develop an industry using millet for bread making, this may raise a problem regarding the storage of the flour; but for ordinary current consumption, in which the grain is used as soon as it is ground, the added fatty content in the flour represents a dietary improvement.

In addition, organoleptic tests by I.T.A. "tasters" have shown that couscous and bread made from the new millet will be at least as acceptable as those made from existing varieties.

What has still to be done

The first three years of the research have brought into existence a first type of millet, undoubtedly corresponding to the three initial objectives regarding yield, growing time and morphology and nutritional and body-building qualities.

The path followed by the research workers was clearly the right one. The results obtained, however, encouraging though they be, do not imply that the work is finished. They are, nevertheless, an inducement to continue the research to completion in three main directions:

1. Develop the resistances to other races of *Sclerospora*, besides those taken into account in the selection hitherto, so as to be able to extend the cultivation of the new types of millet beyond the regional limits currently possible.

2. Also for purposes of regional extension, create a diversity of types of the new varieties of millet, conforming to the variety of water conditions prevailing. This is the problem of resistance to drought conditions, which is one of the most important problems now arising for improving food cultivation throughout the Sahel. It is a problem with two aspects:

- adaptation of the growing time of the plant to the full possibilities of water intake available to it in the different rainfall conditions prevailing in the millet-growing areas;

- adaptation of the plant to the climatic stresses which may arise during growth, especially to the prolonged or intense drought conditions which may arise in the early stages of growth and during the flowering, as part of any specific rainfall conditions.

3. Increase the variability of type so far available, by undertaking further crosses, and use this variability for establishing commercial hybrids capable of producing even higher yields than those which can be hoped for from synthetic plant populations which are easier to create and manipulate in the early stages.

In parallel with this work the results of the research should be put into practice. This would be concerned particularly with:

- definition of the basic requirements for cultivation of the new selected varieties;

- development of the farming techniques appropriate to each variety;

- study of the social and economic consequences in family farming, arising through the introduction of the new varieties, taking into account the different systems of cultivation used;

- undertaking such corrections as may seem necessary in the light of the above results to prevent the popularisation of the new varieties from becoming and remaining permanently a source of benefit confined to a small fraction of the peasantry.

The work which remains to be done is far from negligible. Its importance should not be underestimated and it should be put in hand with a minimum of delay.

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The success of the research programme should not be allowed to become merely a source of self-satisfaction for the research team. The new millets which have been, or are to be brought into existence, should greatly reduce the ill effects of climatic disaster, reduce the threat of famine and bring the peasantry a better way of life. If this result is to be achieved, maximum use must be made of the weapons for the purpose now available.

Public opinion has been made aware of the dramatic consequences of the Sahel drought, and it has appreciated the various causes of desert encroachment. This is to the good; but it has still to recognise that an important part of the cause has been the apathy and passivity which has been shown in the past. ■

Millet harvest, Mauritania.



Respon- sability of universities in developing countries

by Giovanni LIVI

"The universities of Africa should set up a system through which they can exchange their programmes and coordinate their activities, so that our institutions may enjoy the benefit of academic advantages in conformity with the organising spirit of african unity", said General Yakubu Gowon, Head of State of the Republic of Nigeria, in a message to the Conference of directors of English-speaking universities, held recently in the University of Ibadan (Nigeria) on the theme: The responsibility of universities in developing countries.

The Ibadan meeting was held on the initiative of the Inter-University Council for Higher Education Overseas and the permanent Conference of Rectors in Nigeria. It was attended by university professors, experts, representatives of international organisations and other observers. Its aim was to examine the development of universities, especially those in Africa, and the various aspects of international activity connected with inter-university cooperation and education in general.

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Sir Arthur Lewis, an indian national, and Commonwealth expert to the Inter-university Council for Higher Education, put forward an introductory report in which he discussed four main aspects:

Cooperating with Latin America

by Carlo SCARASCIA MUGNOZZA (1)

The countries of Latin America met the Commission of the European Communities at Punta del Este (Uruguay) at the beginning of March 1964, on the initiative of the Istituto Italo-Latino-Americano.

The I.I.L.A. was formed in 1966, on the initiative of Senator Fanfani (Italy). It has contributed to the improvement of relations between Italy and Latin America; and through italian action in the E.E.C. institutions, it has since 1971 been helping in the procedure of contact making and concrete proposals now going on in Brussels between the European Communities and the various countries of Latin America.

The meeting at Punta del Este was put to good use for a frank and critical exchange of views, discussion and further suggestions. There was no question of negotiating, as was mistakenly suggested by some observers, nor yet was there any attempt to lay out the basis for a new agreement. The object, purely and simply, was to take advantage of I.I.L.A. hospitality to survey the ground and take stock of the present world situation.

In substance, the meeting also served to confirm the belief that it is in the interest of everybody to strengthen existing agreements and thus to hasten the measures which will make it possible to conclude agreements of a more important kind.

In addition to the delegation from the E.E.C. Commission, over which I had the honour of presiding, at least 20 latin-american countries were

represented, including (after 12 years absence) Cuba. Apart from the meetings of the three working parties, there were five plenary sessions, which were attended by the ambassadors of the E.E.C. countries accredited in Montevideo and at which speeches were made by the heads of more than half the delegations. This is a brief abstract of the meeting, which was of a practical and significant character and never got lost in the meanderings of rhetoric and verbosity.

The main themes of discussion were generalised preferences, the E.E.C. Association agreements, the Common Agriculture Policy and meat exports. These themes are the basis for any subsequent and more solid agreement between Latin America and the European Community; and when the initial report had been put forward, I thought it opportune to state my conclusions by way of reply and explanation. Central features in the discussions were the problems arising from the energy crisis, the shortage of food products, the cost of raw materials and industrial goods in the prospect of new world trade agreements, a new monetary system and the forthcoming U.N. conference on raw materials.

Arising from all this, it seemed clear that it would be opportune to take action on two interdependent lines.

On the one hand, the complementary interests of the Community and Latin America could be more effectively secured by close and non-discriminatory cooperation. On the other, the Community and Latin America should play an active and indispensable part in the various international organisations, to the end that, when the existing crisis has been overcome, the world situation shall graduate towards stability, progress and solidarity with the poorer and less advanced nations.

All goodwill in attempting to resolve the first group of problems would come up against serious obstacles, or would be wholly annulled, if a new and valid solution of universal application should not be found for the second group.

These are the results of the comparison of views and tendencies which will have to be taken into account in the future.

C. SCARASCIA MUGNOZZA

(1) This is an extract from an article by M. Carlo Scarascia Mugnozza, to be published in full in the next issue of PANORAMA DEMOCRATE-CHRETIEN. He is a Vice-President of the E.E.C. Commission, and specially in charge of relations with the European Parliament, ecological policy, consumer interests, transport and information. He became a member of the Italian Parliament in 1953 and was twice an under-secretary (to the Education Ministry in 1962 and the Ministry of Justice in 1963). He was Vice-Chairman of the Christian Democrat group in the Italian Chamber, and in 1961 he was appointed to be a member of the European Parliament. When Mr. Scelba was elected President of the European Parliament, Mr. Scarascia Mugnozza replaced him as Chairman of the Political Standing Committee, in which capacity he was four times re-elected. In March 1972 he was appointed a member of the Commission of the European Communities.

a) The university as a vehicle of culture and knowledge

This function of the university is more complex in developing countries than it is in industrial countries. This is because the universities open their doors only to a very limited proportion of the school population, seldom or never transmit the local culture, but are a factor of erosion for traditional society. The role of the university must therefore be reconsidered. They should seek to preserve part of the traditions, culture and art of the developing countries which are often part and parcel of their racial structures, and be content with following the imported forms of technical or theoretical progress.

b) The university as a factor in vocational training

The eternal problem of whether the university should prepare its alumni for professional careers must be brought to a practical solution, by remembering that in developing countries the university is often assigned the task, not only of study and research, but also of the diffusion of practical teaching. In developing countries, more especially, the university is increasingly asked to take on the task of vocational post-secondary training, in order to meet the development requirements of the country.

c) The university as a seat of learning

If it is true that the first function of a university is the furtherance of learning, it is important that the teaching staff should give only part of their time to teaching work and pursue the work of research and creativity.

d) The university in the service of the community

The university must be regarded as being in the service of the community as a whole. The fact that it is in the service of the people, and is financed from public funds, must imply some degree of political neutrality, especially in developing countries which have only one university per country or per province.

"The professors of official or State universities in developing countries must not identify themselves with political parties", said Sir Arthur. Society as a

whole is in a process of transformation; and it is expected of the universities that they play their part in this development by intervening with governments in line with the economic and social development the country desires. If this task is to be fulfilled, however, the university must not be committed in political or tribal questions. Academic freedom must not be confused with freedom to use university structures for political ends. It has two aspects, of which the first and most important is the right—or indeed the duty—for any university member to publish the results of his research, his studies or his reflections without having to worry about the repercussions on existing interests or opinions. The second and comparatively minor aspect, is his right to play an active part in a political party, but without using the structure and organisation of the university for the defence of his own ideology.

In conclusion, Sir Arthur emphasised the obligations of society to the universities. These are important, on the one hand, if it is desired that the universities do what is expected of them; and on the other, they are important if there is to be close cooperation between the academic and government authorities and committees set up by governments and the activities of which may affect the university. He added that:

— the governments of developing countries must keep their promises regarding the programmes accepted (and the financial consequences of such programmes) for development in the universities;

— the universities in developing countries need the support of governments and society in channelling their students into the paths which will be useful to the country.

* * *

The Conference gave those who took part a wide view of the more important problems arising in the various English-speaking universities in Africa and other Commonwealth countries. In addition to the universities of Nigeria itself—Ibadan, Ifé, Benin, Amadhu Bello-Zaira and the National University of Nigeria—some 20 other universities were represented.

Professor J. Butterworth, Vice Chancellor of the University of Warwick (U.K.) and President of the Inter-University

Council, recalled that one of the basic tasks of the Council was to secure increasing cooperation between Commonwealth universities, and more especially, those in Africa; and that with this in view, the Ibadan Conference was an important contribution because of the concepts of cooperation which it had suggested.

Representatives of the Commonwealth Fund, the World Bank, various bilateral aid organisations and a number of private foundations gave illustrations of their programmes in the university field and in education in the developing countries. The representative of the E.D.F. gave a summary of the education and training activities which the Community has carried out, especially under the Yaoundé Convention with the 19 Associated countries of Africa, Madagascar and Mauritius. He referred, in particular, to the training of young people at staff level through bursaries at the academic and other levels, and the sending out of instructors, linking the educational programmes so far as possible with the economic and social investments carried out by the E.D.F. in the various countries.

A few weeks before the meeting, the University of Ibadan had celebrated the 25th anniversary of its formation, and of the beginnings of higher education in Nigeria. The university was founded in 1948 with a professorial body of 50 and about 100 students. In its early stages it was a University College, dependent upon the University of London. The academic authorities set about developing the institution, and demonstrating that it had reached a level of higher education in conformity with international requirements. Moreover, the first university in Nigeria could not limit its action to copying an existing model, but had to find its own way of responding to the needs and aspirations of the african society of which it was a part.

These preoccupations reflect those of a number of african universities. They were founded on european patterns, but are seeking to pursue a course towards a cultural identity of their own, laying down teaching and research programmes adapted to development requirements and the growing demand for education. ■

G. LIVI

Technical and financial cooperation: Routine action or a living force?

by Hellmut EGGERS

The trouble about technical and financial cooperation with the Third World, and more especially with Africa, is that those who administer it are unduly expert. How far we have come from the early days of curiosity, uncertainty and the mistakes of beginners! Those in charge, be their function

national or international, seldom suffer the pangs of professional conscience, but are bogged down in the routine of an unrelieved administrative monotony. So expert are they that they cannot see what is before their noses—the fact that we cannot go on as we have done in the past.

Start with the facts (1)

The theory of development projects came into resounding conflict with the technical, economic and human realities it met in the field — yet it is still accepted. It holds that development aid should finance infrastructures, operational arrangements and training schemes for a specific period; and that after this the project is considered ripe, ready for normal operation and must be absorbed by the economy of the beneficiary country. These are pious hopes with figures to back them, but the facts, unfortunately, do not fit the theory. There have indeed been a few fortunate exceptions; but as a general rule, a project which reaches its theoretical end and is not then taken over by some external source of finance, progressively ceases to operate aright. It is apt to disappear, or at best to become a group of fixed assets and activities, the importance of which bears no relation to the financial effort which went into its creation.

Worsening terms of trade have made productive projects unprofitable

The first, and doubtless the most important reason for this state of things is economic. The terms of trade have changed very unfavourably for the products of the Associated countries; and

this has resulted purely and simply in the economic non-viability of development projects. The earnings which come from them are seen progressively to be less than enough to cover the cost of operation, maintenance and depreciation. The disturbance in price structures, which has resulted from the energy crisis, is too recent for us yet to be able to assess all its repercussions, most of all the final effect on the relative values of primary products.

A few examples will suffice. A ton of Thailand rice f.o.b. Bangkok was valued in 1950 at \$144, in 1960 at \$125 and in 1970 at \$144. In 1950, a kilogram of cotton fibre c.i.f. Liverpool was worth 33 pence, in 1960 21 pence, in 1970 25 pence. Only recently has it risen as far as 42 pence. Much the same story is told for palm kernels, a ton of which c.i.f. European port was quoted £68 in 1950, £52 in 1960 and £71 in 1970. For a ton of groundnut oil c.i.f. London, the quotation noted was £74 in 1950, £72 in 1960 and £97 in 1970, with a remarkable jump which may be only temporary, to £145 in 1973. Similar figures for natural rubber, coffee, cocoa and other primary materials only go to confirm the general impression which emerges from the study of the statistics.

Over the period of 20 years, the world value of agricultural produce of most importance to Africa has shown practically no change. In other words, the purchasing power of these products has fallen considerably, for it must be

measured by comparison with the prices for the instruments of production for the products mentioned.

A Caterpillar D4 tractor with bulldozer, at the beginning of the fifties, cost BF. 825 000 delivered to Kinshasa. At the end of 1973 it cost almost twice as much—BF. 1 220 000. For a D7 with angledozer, the price rose more than 3-fold, from BF. 1 250 000 to BF. 3 940 000.

For fertilizers the rise was less marked, but impressive nevertheless. At the beginning of the fifties a ton of ammonium sulphate cost about BF. 3 200 delivered to Kinshasa; but in 1973 it was BF. 5 600. For urea, the rise was from BF. 4 300 to BF. 6 400; and for superphosphates from BF. 3 500 to BF. 6 000. In the months of 1974 these same prices have been going ahead at the gallop. When it comes to technical assistance, the cost of an engineer for a month at the beginning of the fifties was about F-CFA 320 000. Twenty years later it was about F-CFA 800 000 and today it is above a million.

In 1950 a km of asphalt road cost about F-CFA 3 million. By 1960 the cost was F-CFA 6 million, and today about F-CFA 15 million.

People sometimes talk about the "terms of trade" as of theoretical abstraction; but here we see their indisputable reality and significance, when it comes to development projects. It means that a large number of the projects classified as productive are non-profitable.

(1) Editor's subtitles.

One cannot of course exclude the possibility that the trend in the terms of trade will cease working against the primary products, or even that it will be reversed. It is worth repeating that the present crisis in a number of raw materials, especially oil, cannot fail to have its effects on these changes. The present prices for cotton, palm oil, groundnut oil and other products are very good. This may continue—or it may not.

If it does continue the economic prospects for agricultural products would be far more favourable than they are at the present time.

But, even if the relationship between the prices should become more advantageous, the fact remains that the technical and economic forecasts almost all suffer from the same chronic malady. They were unduly optimistic.

Technical and sociological viability is also in question

This economic aspect is heavy with consequences; but apart from this there is the social-technical aspect. Many development projects can be seen to be ill-adapted to the human and sociological reality which was their basic purpose. European technical assistance is usually a basic factor, both in the conception and in the execution of projects; and the theory is that it will train equivalent staff in the beneficiary country, who will progressively take over from the imported experts. Experience shows, however, that ethnic, tribal or political considerations to which these staff and technical workers in the beneficiary countries are subject, are apt to make it impossible for them to play the part assigned them, even if they have successfully mastered the techniques needed for their new functions. It is worth noting parenthetically, that in some cases the technical assistance itself is less successful in securing the mastery of these very techniques than are the equivalent workers it is appointed to train.

The result is that there are not only doubts about the economic viability of the project from the very outset, but there are doubts also about its technical and sociological value.

It isn't easy to abandon preconceived notions

We may well ask why agriculture and livestock projects are allowed to drag along from breakdown to breakdown instead of being abandoned pure and simple without any nonsense about economic and technical maturity. Are people still clinging to the old project theory which, as we have seen, does not fit the facts? The truth is that the finance cooperation bodies are so constructed that they can hardly escape from the preconceived notions which hang around the theory.

The people who make the decisions are too far from the realities in the field to be able to consider rejecting concepts which are unrealistic, even though they have tradition behind them. For example, it is a well known fact that the Managing Committee of the World Bank will not accept projects unless they show an internal profitability rate of 10% or over. The sponsors who submit the proposal for financing are well aware that the 10% rate is indeed a criterion, and the technical parameters will have to be tinkered with for the purpose. Of course the Bank has to "demonstrate" to its principals that what is being financed is indeed profitable.

Another example comes from the experience of the European Development Fund (E.D.F.). The decision-makers in this organisation tend to refuse interventions which extend or have the appearance of "production aids"—a form of assistance which had been authorised in the second E.D.F. (1964-69) but was later abandoned, largely for reasons of general finance cooperation policy. This form of aid was in fact mainly intended for giving degressive subsidies on specific instruments of production, such as fertilizers and insecticides, so that farmers could have time to adapt themselves gradually to world market conditions. Both the underlying idea and its rejection can be traced to the same basic concept which still prevails, and which insists that a project must by its very nature consist of an investment strictly limited in space and time.

With the experience of the last 15 or 20 years behind us, the time has come to call in question this unduly limited invest-

ment concept. We should have the courage to **think out afresh the ideas and procedures** which have prevailed hitherto in matters of technical and financial cooperation.

Suggestions for a revised policy

It is easier to pull down than to build up; and though it is quite clear we cannot continue as we have done in the past, it is much less easy to replace the sources of error by lines of action better adapted to reality.

It should also be said at the outset, in the face of ill-informed or ill-disposed public opinion to the contrary, that an impressive number of the projects financed by the World Bank, the European Development Fund, the French Aid and Cooperation Fund and other such organisations, have been outstandingly successful despite the many difficulties which have lain in their path. The European Commission is fully aware of these problems and is seeking to introduce solutions through the current negotiations for the renewal and enlargement of the Association agreement which will replace the Yaoundé II Convention.

In these conditions it is worthwhile trying to define some of the elements for a revised cooperation policy.

1. If we are to abandon the unduly limited idea of what is meant by a development project or an investment project, it follows that we accept the possibility, or even the necessity, that the finance organisations will have to **intervene further to cover the cost of operation of the projects** (in the limited sense) after they have been carried out. In other words, we must work to a longer focus. The "normal operation" of an agricultural or stock-raising project, should no longer be **laid down in advance** (e.g. to be attained by the end of five years) but **noted afterwards** as having been duly attained, so that the project can then be considered as terminated. This would make it a complete investment and no longer a partial one. This can be illustrated by an example. In 1968, work was put in hand with E.D.F. finance to improve and develop the Imbo Plain in Burundi. It was a question of

laying out a cultivation area of some 5 000 ha, most of which would be irrigated for rice and cotton cultivation. In addition, a Community industrial infrastructure was to be set up, including a rice processing unit and a seed multiplication and experimental station. This was to be rounded off by setting up six villages, a pilot stock-raising area and an afforestation programme. Around the area 2 240 families were to be settled, and their work supervised by specialist administrators.

The project was scheduled for completion by the middle of 1974. It should have been easy to see from the outset that such a project could not be brought to the point of normal operations in so short a time. The result is, that the burundi authorities have had to ask the E.D.F. to continue the financing until such time as it can reasonably be hoped that the operation will have reached the threshold of economic and technical viability.

2. In addition the abandonment of the old project theory implies that those in political authority in the wealthier countries will stop proceeding by the method of setting up limited investment funds, even if these are periodically renewed. Instead, they would agree on the **need for a regular and increasing (or at least price-adjusted) transfer** of part of the incomes of the rich countries to help the poorer populations of the Third World. This might be described as a system of "specific" budget contributions made for a definite purpose. The application of the funds concerned would be handled perfectly well under rules which have already been found satisfactory, such as the procedures which govern intervention by the E.D.F.

3. Willingness to subsidise the operation of a project as long as is necessary does not imply any abatement of the effort to see that the projects are economically and technically viable. This would be the opposite of the truth. On the one hand, therefore, preference should be given to projects using a **minimum of imported goods and services**, and therefore less subject to the changes in the terms of trade; and on the other, the interventions should be for projects best adapted to the social and political position in the countries in question, thus

raising **fewer problems for the eventual takeover by national staff** when the project reaches its normal operational stage. It would in fact be even better to restrict the interventions to projects which can be manned satisfactorily with national personnel from the outset.

The main objection to this policy is of course that there are few valid projects which would conform to a strict application of the criteria in question. It is accordingly desirable to seek out what operations seem to be most conformable to the standards developed above.

4. There is one fact which dominates the picture. There can be no development factor which is more national, more internal or more authentic than the human factor. The education, training and advancement of the population concerned thus emerges, in the new way of thinking, as the first necessity of the development process. To bring the mass of the people to successively higher cultural levels is an enormous undertaking which would necessarily be expensive.

The important thing is, that this education campaign should be in line with the social and economic realities in the countries concerned, which is at present far from being the case. The schooling systems in French-speaking Africa, for example, are mainly based on the patterns of metropolitan France and completely unsuitable for the needs of Africa. Among them are school primers telling the youngsters of tropical Africa about the presents european children find beneath the Christmas tree, and how they look out through the windows of a well-warmed room to see snowflakes falling silently on a white and icy landscape. They include an accumulation of knowledge which is sterile and useless in the real context of their lives; and upside-down sets of values which lead the budding intellectuals into the towns where they swell the ranks of the frustrated unemployed.

The spirit which defends the accepted education pattern, spurning short cuts and "bargain basements", is the same which will consider a project for cotton cultivation solely in terms of its economic results, whereas this same scheme could as well be appraised as a plan for educating the rural population, leaving production and profitability to take

second place. In fact, when discussions turn upon the modernisation of rural life and its administration, which are really acts of vocational education on the mass scale, the educational content of the scheme is often not even stated, and is apt to be left out of the valuation. In actual fact, these objectives would by themselves be justification enough for the whole operation.

5. A second series of operations, of considerable importance to local production efforts, consists of **mass-media introduction of simple technical lessons which are fool-proof and will not cost the peasant much**. It has been found perfectly possible to persuade the majority of a rural population to give effect to lessons thus provided, while still continuing with their farming on traditional lines.

It was on these lines that the E.D.F. financed an operation in the Upper Volta Republic, which is one of the poorest countries in Africa. It consisted mainly of a large-scale propaganda campaign by radio and educational films distributed in the bush, and all the administrative and supervisory personnel. The aim was to tell the peasant population of an innovation which was both easy on the technical side and profitable on the economic, consisting of the disinfection of seed. All that was needed was the mixing of a chemical powder into the cereal before sowing, as a result of which the seed in the soil would be protected from fungus and insects. The increase in crops following the correct use of this simple technique is about 15%. The "red powder" was sold in packets of 25 grams, and in 1968 about 200 000 of them were sold to the peasantry. In the following year this figure had doubled and in 1970 it doubled again, and went well beyond the million mark in 1971. By this time the practice of seed treatment was so well anchored among the habits of the peasantry, that the current rate of sales of around 2 m. packets a year is not far short of the calculated saturation point of 2.5 m. Another operation on the same lines and again involving mass media was the use of selected seed. The first concrete examples of results are now becoming available.

Experience shows, too, that it is perfectly possible to secure the adoption

of animal traction in agriculture over whole regions, provided the popularisation campaign and the organisation are persistent enough and continued long enough. This was shown in the Ségou region in Mali. The educative effect of campaigns of this kind is very marked, and the means of production involved are very largely of internal origin. To the latter there is one outstanding exception—fertilizers, insecticides and pesticides. For purposes such as this, the external finance sources must be prepared to supplement the financial outlay of the producers themselves, by subsidies continuing for some time and until the economies of the beneficiary countries have undergone the necessary structural changes. This is another case in which the current concept of the nature of an investment needs a thorough overhaul.

6. Though it seems clear that the promotion of the individual by mass approach is one of the priorities of development policy, it has nevertheless to be admitted that **projects on these lines are among those which have encountered an impressive number of total or partial checks.** They are projects which call not only for infrastructure and an outlay for supplies, but also a considerable deployment of supervisory administration. A wide experience has been accumulated in this field and the time seems ripe for a thorough examination of the operations, and especially of their many failures and difficulties. This should lead to methods and ideas better suited to the realities of each case.

Why, for example, was the introduction of cotton-growing in Senegal an indisputable success, whereas the same campaign in Togo ran into obstacles which were almost impossible to overcome? Why is it that the groundnut, cotton, rice and millet operations in Mali are making such impressive progress, whereas the rural modernisation schemes in Upper Volta, organised on a regional basis, have encountered all sorts of difficulties? The preliminary surveys, of course—"art for art's sake"—are suspect, and perhaps rightly. But for intervention aimed at promotion of the mass of the rural population, comparative studies compiled from close to the territory seem to be indispensable for throwing as much as light as possible on the complex

problems which have to be solved in advance if any substantial progress is to be made in a field which is apparently one of the first development priorities.

7. The need for **giving up the idea of profitability as the only, or even the principal justification**, was illustrated recently—if further illustration was really needed—by the dramatic effects of the drought in the Sahel, where the health and even the survival of hundreds of thousands of people is still under the threat of famine.

It is undisputed and indisputable that measures to **ensure the food supply** of the population are a top priority. It is for this reason that the government of the Ivory Coast has opted for irrigated rice cultivation and not for rice growing dependent on the rainfall; and for the same reason the senegal government plans to lay out for rice cultivation all the land which can be irrigated by the Senegal river. A 3-fold plan seems to have to provide:

— strategy for emergency and short-term measures. It is lamentable indeed to see in the Sahel, after so many disappointing experiments and such appalling human suffering, how the action is always reduced to ill-coordinated improvisation, usually too late and always hampered with all the millstones of administration, so that it is invariably of small effect;

— a medium and long-term strategy to get rid, so far as possible, of the causes of the insecurity of food supplies. This implies an imaginative campaign and considerable finance resources;

— abandonment—and this seems indeed to have begun—of preference for the so-called industrial and export crops, which have been developed to the detriment of those for feeding the population. Research and popularisation campaigns should present the two categories as part of the same problem, which is that of modernising the traditional farm unit.

8. The final need is for a **thorough overhaul of our idea of technical assistance.** The cost of this assistance is one of the many elements associated with changes in the terms of trade, and is therefore a necessity for economic

reasons. It will, however, soon become indispensable for political reasons. Even now scarcely any of the young countries in Africa (for example) is prepared to fill a responsible job with an imported candidate. A wave of "africanisation" even though its justification may be disputable on technical grounds, is apt to envelop the projects while they are being carried out. This may be a matter for regret or for commendation; but in any case it is a fact with which we have got to live. It calls upon us to agree to finance the operating cost of the national departments competent to carry out the surveys, supervise the works and provide the administrative supervision, and to plan our intervention from the outset in such a way as to require a strict minimum of external technical assistance. Provided less and less technical assistance is used in the conception, preparation and execution of projects, it seems that it might well keep its importance from three aspects:

— young african technical staff, provided their attitude is not unduly political, will be glad to have the advantage of constructive criticism and advice from senior european counterparts who may be undertaking support missions to their countries;

— african consulting engineering offices and similar establishments could be set up provided their activities do not overlap with those of the administration. Such offices might recruit Europeans for part of their staff;

— research, which is vital for any continued development, will doubtless necessitate european research workers for some time to come. If the countries which are to have the benefits of this research find it difficult to finance the work, there might be a regular financial contribution from external finance sources as part of the readjustment of their aims on the lines described above.

* * *

It is clear from the foregoing that the methods of development aid as practised hitherto will be very considerably changed in the years ahead, and it would be as well to prepare for this rather than have to submit to it. The very survival of financial and technical cooperation for development purposes is in question. The

following are among the lines which should be followed:

— abandonment of the limited concept of the part to be played by finance sources in the form of "investment funds". The realities of the situation, as we now know them, could be dealt with much better by periodic transfers (price-adjusted) from the rich countries to the poor of part of the incomes of the former. The operation and control of the system, subject to some further degree of centralisation, could remain much as it is, since this system has worked well in the past.

— there must be changes in the criteria for choosing the interventions to be financed. Less weight must be given to profitability, which should only be one criterion among others. Objectives receiving greater prominence than hitherto should be based on considerations such as security of food supplies, the effect of projects on education and training and their effect on local health conditions.

— in choosing the projects financed, preference should be given to those using local capacities and resources.

— the technical design of the projects should allow for the necessity of employing local nationals at staff level from the outset, and should take account of the social and political background which conditions their action.

— the part assigned to european technical assistance would have to be revised accordingly.

These are among the points which could be considered in an exchange of views between the representatives of finance departments. Recommendations could then be worked out in agreement with the countries which are to receive technical and financial assistance, and sent forward to the governments of industrial countries.

Even if such attempts at readjustment should produce concrete results, the effectiveness of technical and financial cooperation will still be very problematic unless it is found possible to adapt the prices of agricultural and other products in developing countries to those of the instruments of production which they have to import from industrial countries. The producers of non-renewable primary products, such as oil and minerals, have already enforced upon the world their

standpoint about this. The producers of agricultural—and therefore renewable—raw materials unfortunately have not the means to act in the same way. In regard to the exports of such produce, might it be possible that a common political will could produce effects similar to what has happened with oil, under the influence of what some people have described as blackmail? This is greatly to be hoped, for world peace may at stake. ■

H. EGGERS



Technical cooperation in action. E.D.F. okoumé plantation in Gabon.

The E.D.F. at work

Guadeloupe - Martinique - French Guyana

We have received from the E.D.F. Technical Supervisors's Office for Guadeloupe, Martinique and French Guyana a note compiled by Mr. Sandri and Mr. Ferrari of all the projects in these countries financed by the E.D.F. It covers those already completed, those in course of execution and others which are to be begun this year. The projects included are all those financed from the 1st, the 2nd and 3rd E.D.F., and the amounts are stated here in round figures. They are classified under five main headings: port infrastructure; roads and bridges; drinking water supplies; drainage; irrigation.

I. Port Improvements

GADELOUPE

1. Port extension at Pointe-a-Pitre

Construction of two berths (total length 300 m), open back-quay space, dredging of access channel and turning basin.

Amount financed by E.D.F.: U.A. 2 535 000, or FF. 12 515 000 as non-repayable aid.

Project completed at beginning of 1968.

2. Landing jetty in the Marigot Roads, St. Martin's Isle

The object here was to finance the works and supplies needed for building a

jetty 94 m long and 290 m of access road.

The project was on a small scale, but fully up to the requirements of the small island community.

Amount financed by E.D.F.: UA 374 717, or FF. 2 081 250 in the form of non-repayable aid.

Project completed September 1971.

3. General survey for Pointe-a-Pitre port development

General development survey covering a 25-30 year period analysing the situation at the Port of Pointe-a-Pitre and defining technical and economic criteria for its future development.

Amount financed UA 318 000, or

FF. 1 766 232.42 in the form of non-repayable aid.

Survey completed in the first quarter of 1973.

4. Extension of the Port of Point-a-Pitre to Pointe Jarry

Construction of a 160 metre deep-water quay, back-quay space and dredging access to the quay in the Port of Point-a-Pitre at Pointe Jarry.

In carrying out this extension, account was taken of the increasing demand for port facilities. It is of essential interest to the social and economic development of the administrative department of Guadeloupe, since operating conditions in the Port of Pointe-a-Pitre affect all activities in the department, especially industry, urban development and the tourist trade.

Amount financed by E.D.F.: UA 2 900 000, or about FF. 16 151 000, of which, UA 2 188 000 was in non-repayable aid and UA 920 000 in a loan on special terms (repayment in 25 years; 7-year period of grace; interest of 3%).

Tenders called for March 25, 1974.

Contract award scheduled for August 1974.

Completion of works scheduled for 1976.

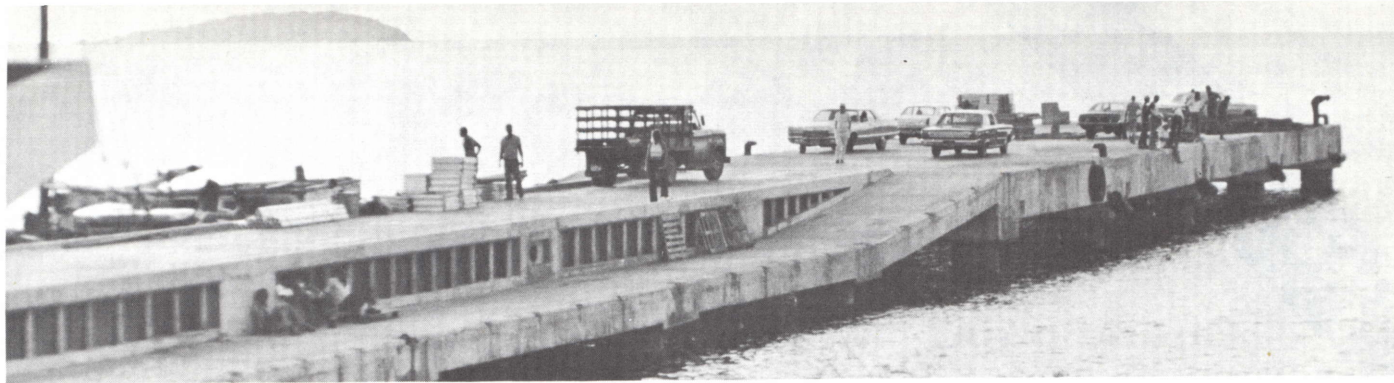
MARTINIQUE

1. Port extension at Fort-de-France

Construction of two berths (to a

Study for the Point-à-Pitre port development project, Guadeloupe. The port today.





The Marigot wharf. Waiting for a boat to come in (Guadeloupe).

length about 340 metres) and laying out of 27 000 sq. m of open space.

Amount financed by E.D.F. UA 2 307 500 (FF. 11 358 000).

Project completed October 1968.

FRENCH GUYANA

1. Survey of the port at Degrad des Cannes: (Cayenne).

About UA 244 000, or FF. 1 200 000 in non-repayable aid.

Survey completed.

2. **Construction of port at Degrad des Cannes**

The following are the main characteristics:

- Access channel of 14 km;
- 2 berths with total length of 270 m and depth of 9.60 m;
- 1 quay of 90 m for coasters;
- Administrative buildings;
- Shed for equipment;
- Internal roadways and access road;
- 30 000 sq. m of open space;
- Water drainage, electricity and fuel supply networks.

Total cost UA 7 210 770.20 (FF. 40 million) of which, UA 2 340 575.31 (FF. 13 million) financed by E.D.F. as non-repayable aid.

The work was completed in October 1973.

3. **Supply of 400 h.p. tug**

Ship movements and maintenance of access channel to Degrad des Cannes.

Amount: UA 153 037.62, or FF. 850 000 in non-repayable aid.

II. Roads and Bridges

GADELOUPE

1. **Northern exit road from Pointe-a-Pitre**

Improvement of a section of 1,854 metres of National Road No. 5 (northern exit road from the town of Pointe-a-Pitre) with enlargement of carriage-way to 12.50 m.

Amount financed by E.D.F. UA

275 000, or about FF. 1 357 000 in non-repayable aid.

Project completed November 1964.

2. **Point-a-Pitre by-pass road**

Construction of five bridges and a road of 5,045 metres on a 20 m table with two carriage-ways of 7 metres separated by a central dividing band of 2 metres. The road links the three main highways (RN. 1, RN. 5 and RN. 4) converging on the town of Pointe-a-Pitre.

E.D.F. finance: UA 2 228 000, or about FF. 12 375 000 as non-repayable aid.

Project completed June 1973.

3. **Survey for penetration roads to the leeward coast**

Carrying out of a study for penetration roads to the leeward coast (see No. 4) below.

E.D.F. finance: UA 95 423 or FF. 530 000 in non-repayable aid.

4. **Construction work for penetration roads to the leeward coast**

Construction of some 20 small roads between 400 m and 8 km in length for

agricultural offtake, with a total length of 40 km. These roads will come down to the existing road network along the leeward coast on one of the two main islands (Basse Terre) of the department of Guadeloupe in the Caribbean. The building of these sections of single-track concrete roads will provide communications for this agricultural region and serve a further 750 ha to be used for crops, market gardens and fruit growing.

E.D.F. finance: UA 1 643 000, or FF. 9 125 000 in non-repayable aid.

The project is in course of execution. Completion is scheduled for the first half of 1975.

MARTINIQUE

1. **The Lamentin-Robert-Trinité road**

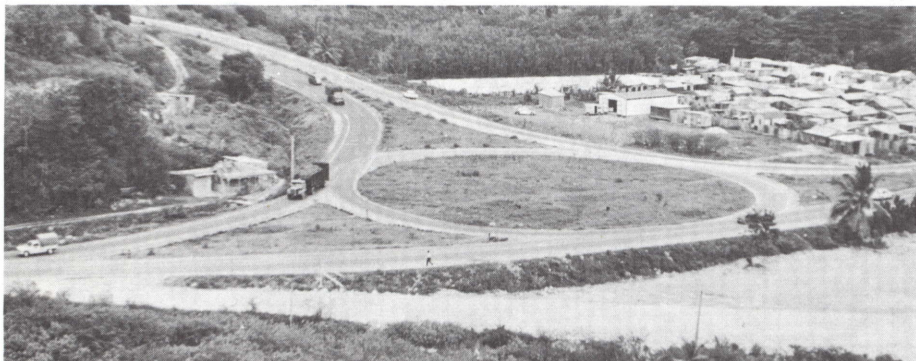
Construction of a new road link for quick passage of a heavy traffic over a distance of about 17 km.

On the three sections of road linking Lamentin with Trinité, the road characteristics are as follows:

- Table breadth between 14.50 m and 10.00 metres;

The Lamentin-Robert-Trinité road (Martinique).





Pointe-à-Pitre ring road.

— Foundation breadth between 11.00 m and 7.50 metres;

— Surface breadth between 10.50 m and 6.00 metres.

E.D.F. finance: UA 2 025 000, or FF. 9 400 000 in non-repayable aid.

Project completed August 1965.

2. Departmental road No. 15: Lamentin-St. Joseph-Marigot

Construction of two sections of road, of which the first will be 5.48 km long with a table of 9 m and carriage-way of 6 m breadth; and the second will be 20.8 km long, with a table of 8.50 m and carriage-way of 5.50 m.

E.D.F. finance: UA 2 431 000 or FF. 13 500 000 as non-repayable aid.

Probable completion date in the second quarter of 1975.

3. Improvement of Road RN. 2

Improvement of two sections of the R.N. 2 road.

Section A: from Fond river to Boucher Bellefontaine (2,207 m)

Section B: from Fond river to Capot Morne aux Bœufs (3 373 m).

The technical characteristics of the road are as follows:

— Table breadth 8-9 m;

— Breadth of carriage-way 6 m.

E.D.F. finance: UA 2 207 000 or FF. 14 996 500, of which, practically all is in the form of non-repayable aid and the balance as a loan on special terms (repayable in 25 years with 5 year's grace and 3% interest.)

Scheduled completion date end of 1976.

Saint-Laurent, of road R.N. 1 which links Cayenne with Saint Laurent du Maroni.

Total amount UA 1 782 438.12, or FF. 9.9 m in non-repayable aid.

Work completed in April 1966.

2. Crossing of the Cayenne river

Construction of a bridge over the Cayenne river, replacing the ferry which was acting as a serious traffic hold-up, especially for heavy vehicles. The characteristics are as follows:

— Length of bridge 1 225 m; breadth of carriage-way 7 m plus two sidewalks of 1.20 m;

— Access road of 3.4 km to National Highway.

This finance is a decisive contribution to providing communications for the Guyana coastal region, in which practically the whole population lives.

The port and the continuous road from

Cayenne to St-Laurent du Maroni are the basic infrastructure indispensable for securing positive and permanent results in the campaign to bring the country out of its stagnation.

Amount of contracts: UA 6.3 m. (FF. 5 m.) of which, financed by E.D.F., UA 2 583 635.05 (FF. 15.35 m.) in non-repayable aid.

Work began March 1972.

Duration of work 30 months.

III. Drinking Water Supplies

1. Drinking water conduits in Pointe-a-Pitre, Gosier and St. François

Enlargement of drinking-water supply system at Point-a-Pitre and its extension to the commune of Gosier and setting up of a drinking water system to serve the commune of St. François.

E.D.F. finance: UA 673 000, or about FF. 4.3 m. in non-repayable aid.

Project completed in April 1967.

2. Drinking water supplies to Port Louis and Petit Bourg

Drinking water access conduits and distribution network for the communes of Port Louis on Grande Terre island and Petit Bourg on Basse Terre.

The work consists of constructing 10 fully equipped reservoirs and the supply and laying of 68 200 ml of conduit pipes of diameters between 60 mm and 250 mm.

E.D.F. finance: UA 931 729, or FF. 5 174 000 in non-repayable aid.

Project nearing completion.

Building the access road on the Leeward Coast (Côte Sous-le-Vent), Guadeloupe.



FRENCH GUYANA

1. Iracoubo-Saint-Laurent road

Improvement and completion of 108 km section between Iracoubo and

3. Water supplies for Grands Fonds

The aim of this project is to provide a drinking water supply system for the Grands Fonds area on the island of Grande Terre department of Guadeloupe. The operation should improve living conditions and health levels for a population which has suffered from water shortage during the dry season (Jan.-June). The works cover the erection of two pumping stations, the construction of four reservoirs of 500 cu m and the laying of 90.20 km of pipe.

E.D.F. finance: about UA 1 620 000 or FF. 900 000 in non-repayable aid.

Work began January 1974.

Completion scheduled for second half of 1975.

MARTINIQUE

— Drinking water supply to Martinique

Construction of three water-supply systems in the northern part of the island, the first on the Caribbean coast and the other two on the Atlantic coast.

E.D.F. finance: UA 2 509 000 or FF. 12 386 000 in non-repayable aid.

Project completed in January 1968.

IV. Drainage

MARTINIQUE

— Drainage in West Fort de France and Schoelcher in the Department of Martinique

Laying out of a basic drainage network of about 20 000 ml, and consisting of a main sewer and primary sewage channels, connected for drainage of six flush tanks between Fort de France and Schoelcher. The works are supplemented by two discharge stations and a pre-treatment station with outflow pipe into the sea at 1 100 m from the coast at a depth of about 85 m.

E.D.F. finance: UA 1 269 000 or FF. 7 050 259.29 in non-repayable aid.

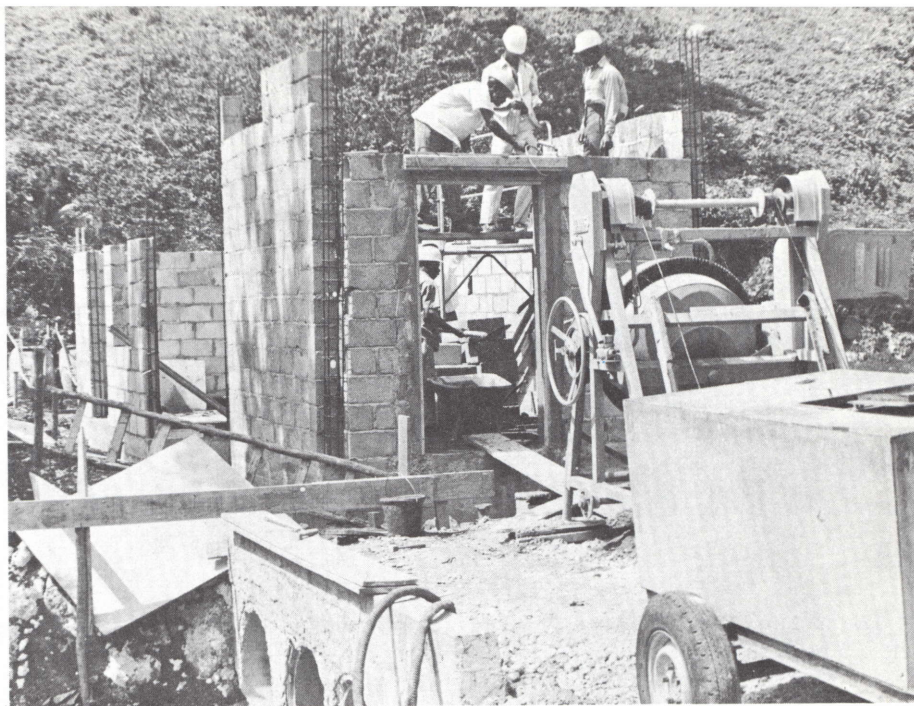
Completion scheduled for July 1974.

V. Irrigation

MARTINIQUE

— Irrigation of south-eastern Martinique.

Hydro-agricultural improvement project for the south-east of Martinique. It consists of aspersion-irrigation of a gross area of about 5 000 ha for large-scale market gardening, tobacco-



Supplying drinking water. Kancel pumping station, Guadeloupe.

growing and stock-raising, together with better conditions for cane sugar growing and bananas.

This section is concerned with an irrigable area of 1 000 ha, and the E.D.F. is participating in financing the main supply conduit with a length of about 12 000 ml (\varnothing 800 mm).

As part of the project the local

administration is financing this year the improvement of a first retention lake (construction of the La Manzo dam).

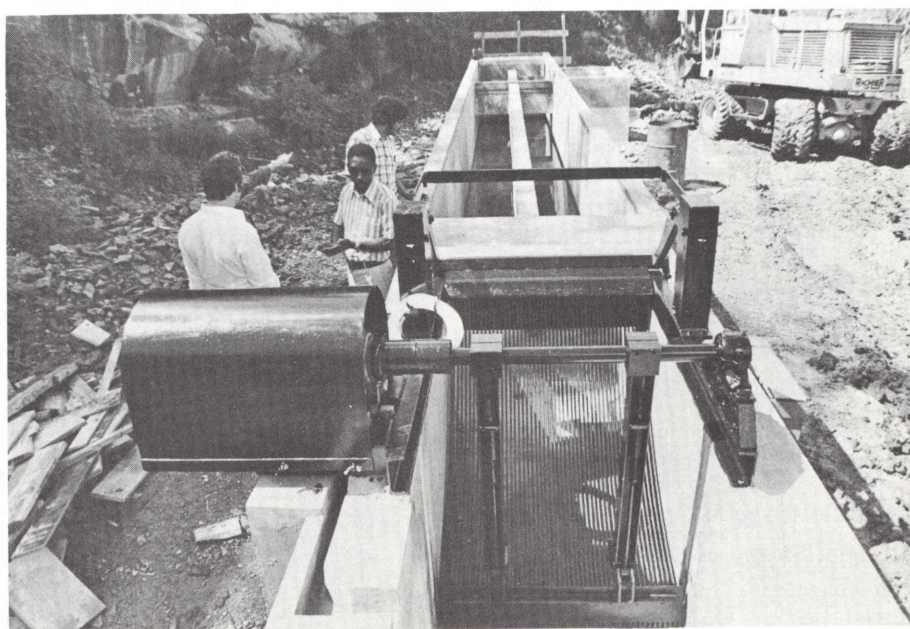
E.D.F. finance: UA 1 545 000 or FF. 8 585 000 in non-repayable aid.

Tenders called for April 2, 1974.

Completion of works scheduled for first half of 1976. ■

E. SANDRI FERRARI

Below: water purification, Port-de-France Ouest and Schoelcher, Martinique.



The material used under this heading is taken principally from the reports of E.D.F. general and technical supervisors in the A.A.S.M.

Reunion Island

In an overseas department such as Reunion Island, european aid operations take place in very different conditions from those usually encountered in the Associated african countries. This does not mean, of course, that the economic problems are any the less acute. The most important of them are connected with the cane industry, for sugar still accounts for 90% of the exports from the island, and added to this is the population development. Reunion, however, has an administration and administrative system fully comparable with the European, including many competent technical organisations and departments with organic equipment which is usually up-to-date and abundant, so that the maintenance of public investments is virtually perfect.

This naturally affects the choice of the E.D.F. interventions. The departmental authorities — the Prefect, the Secretary General in charge of Economic Affairs and the Council put forward their proposals on the basis of the very elaborate and fully documented development plans. The sixth 3-year plan 1971-73, covers approximately F-CFA 48 000 m. of programme authorisations. The plans are primarily angled on expansion, the modernisation and diversification of agriculture and the quicker development of industry and the tourist trade. The next priorities are for fisheries, training schemes and measures aimed at moderating the effects of over-population. The descriptions of the E.D.F. projects, of course, are only an imperfect reflection of this diversity and can only be properly appreciated in this context. This is the more true for the fact that the local authorities initially chose that their aid should be spread over a number of projects, but have more recently preferred to concentrate it on the very big engineering works, such as the port at Pointe des Galets and the coastal route, or hydro-agricultural schemes, such as that for the Bras de la Plaine area.

In such a context, of course, the problem of technical assistance does not arise. Moreover, the financial resources at Reunion's disposal and the profit rating of the projects put forward must have the effect of gradually replacing the non-repayable subsidies by loans on special terms.

1st E.D.F.

Five projects were financed through the 1st E.D.F. for a total amount of F-CFA 2 187 323 363. They comprised two road projects, one for urban drainage, a rural water supply scheme and the beginnings of the very big project for hydro-agricultural land improvements over 7 000 ha in the Bras de la Plaine area. In the last mentioned case the work was at the stage of surveys, tests and drillings, followed by the building of a dam on the Bras de la Plaine river, with sand and gravel removal, valve chamber and other technical equipment and a diversion tunnel 5.7 km in length.

The two road projects were designed to provide communications for the Sainte Rose highlands and the village of Grand Ilet. Both of them, and more particularly the second, were remarkable technical achievements, especially in view of the very broken ground and the undeniable tourist attraction. Their economic-agricultural impact was perhaps less satisfactory especially for the Sainte Rose highlands, though there has been considerable improvement through the clearing of land areas around the river.

The drainage project at Saint Denis, the island capital, called for F-CFA 196 m., which covered only one section of the drainage actually carried out. The other four sections, costing F-CFA 430 m. were financed from departmental funds.

Last of all the water supply scheme for the Saint Paul uplands was a piece of

dizzily steep mountain engineering, and a fine testimony to the courage and tenacity of the workers in the upland area. The main conduit pipe was sunk in a mountain traverse, won from the formidable escarpments of the les Galets river. The scheme, with its 40 km of canalisations and 8 storage reservoirs, has provided supplies in excellent conditions for a ring of villages at altitudes of between 300 and 600 m between Saint Paul and Pointe des Galets.

2nd E.D.F.

The 2nd E.D.F. was marked by the concentration of the european financing into the big engineering projects, in which it shared financing from local sources and those of metropolitan France.

At Pointe des Galets, which is the only port on the island, there was a steadily growing traffic of around 900 000 tons. The extension cost F-CFA 1 300 m., of which F-CFA 300 m. was borne from departmental funds. They included:

- the laying out of a commercial dock of 209 × 120 m and with a depth of 11 m. It has a western quay wall, a jetty on the eastern side and a southern quay wall with sloping breaker.

- laying out of a fishing dock of 210 × 80 m and a depth of 5 m. The eastern quay wall has a right-angle turn at the southern extremity;

- broadening and deepening of the ships' turning circle, which now has a 300 m diameter and depth of 11 m;

The line-head team in action, bringing water to St. Paul's Heights, Réunion Island.



— levelling of open spaces to make them normally useable.

The works were rounded off by a number of improvements, the cost of which was borne by the administration, including cold storage facilities, warehouses, slipway and a western quay wall for the fisheries dock. The contract was awarded to a french-dutch group and the work was satisfactorily carried out within the limits of the credit provided.

The execution of section 1 (zone 1) and section 2 (zones 3 and 4) of the **Bras de la Plaine** scheme is now nearing completion. It represents an investment of about F-CFA 1,300 m., of which F-CFA 187 m. is by way of loan on special terms.

For section 1 the work comprised:

- construction of a 10 000 cu. m. reservoir for flow-regulation;
- construction of a discharge canal of 850 m, half of which is below ground;
- supply and laying of a steel conduit of 5 200 m, and accessory work with construction of a working road with a width of 2.5 m. The conduit diameters are 1 100, 1 000 and 900 mm;
- supply and laying of secondary and tertiary conduits below ground with a total length of 96 000 m and accessory works. The conduits are of degressive diameters of between 500 and 80 mm, using malleable iron down to \varnothing 175 and asbestos cement for \varnothing 150 and \varnothing 80;
- supply and laying of about 300 irrigation terminals.

For section 2 the works were:

- supply and laying of a steel pipe of

\varnothing 900 with accessory works, as a continuation of the principal conduit in section 1 and 3 600 m in length;

- supply and laying of 3 845 m of main low-level conduit of \varnothing 600 and \varnothing 350 using steel for \varnothing 600 and malleable iron with flexible joints for the remainder;

- supply and laying of secondary and tertiary underground conduits over a distance of 34 400 m, using degressive diameters from \varnothing 300 to \varnothing 60, in malleable iron down to \varnothing 175 and P.V.C. for the remainder;

- supply and laying of 200 irrigation terminals.

Sections 1 and 2 represent an irrigated area of about 2 600 ha.

3rd E.D.F.

The following works have been approved for finance from the 3rd E.D.F. and are currently in progress:

- sections 3 and 4 of the Bras de la Plaine scheme, representing 3 200 ha of irrigated area and including the supply and laying of conduits, accessory works and irrigation terminals to an approximate amount of F-CFA 1 400 m.;

- improvements to provide four traffic lanes over 11.6 km of the coast road between Saint Denis and the Port of Pointe des Galets. This is a vital road artery for the island and its present traffic is 10 000 vehicles per day.

In practice the 4 lanes (2 x 2 lanes of 3.50 m, separated by a central strip) will be won from the seaward side, leaving the

present road as part of a 14 m band as protection against falling rock. A wall of reinforced earth, with foundations 2 m above sea-level, will support the overburden, with a layer of rock and tetrapod slabs to absorb the movement of the sea. The present tunnels will again be used.

The total cost of this considerable operation will be about F-CFA 7 000 m. The E.D.F. will provide F-CFA 1 000 m. towards this, including F-CFA 590 m. in the form of a loan on special terms.

* * *

The aid from the European Development Fund on Reunion island, has covered only a minor part of the public investments made here since 1960. It has amounted nevertheless, to some F-CFA 7 000 m., and has been an important contribution to the considerable work of renovation and modernisation undertaken during the past decade and the effects of which are very noticeable.

The special way in which the work is handled, as described at the beginning of this article, helps to give a spectacular look to some of the work done. This applies particularly to the coast road, in which very advanced technology has been used.

All the work undertaken has not yet shown its fruit. For example, the agricultural diversification, which was the root motive of the Bras de la Plaine project, is slow in taking effect for a number of reasons, alike on the psychological and on the technical and economic sides. Already, however, there has been an interesting advance in cattle-farming and tobacco growing in places where the size of the properties has made this possible.

The ultimate objective does not lie in using the low local wage-rates as a basis for artificial economic development, as so often happens in island schemes. It is, rather, to use the very up-to-date infrastructure which Reunion will soon have at its disposal as a means of training highly technical manpower, which is the only instrument for offsetting the disadvantages of distance in promoting the establishment of industries of an advanced character. This is an objective with which the E.D.F. cannot fail to desire association, since it is exactly in line with its own development principles. ■

P. HUGOT

Laying the main pipe, Bras de la Plaine.



Football: after the 1974 World Cup

How good is Africa?

On the first Sunday in July 1974, John Taylor, a butcher from Wolverhampton (England), blew the final whistle in the World Cup. The crowd in the magnificent Olympic stadium in Munich went delirious, and the electronic scoreboard coldly flashed up the result millions of Germans and television viewers had been expecting for three weeks: West Germany 2, Netherlands 1.

If I were a betting man I would have won ten to one. As they did under Sepp Herberger in 1954, the West Germans won the 1974 World Cup by an exhibition of their almost legendary Bavarian-style physical and mental strength. They crushed a Dutch team which, like the Hungarians 20 years ago, was technically excellent but made a big mistake and was too self-satisfied. Cruyff and his men went from strength to strength during this World Cup, and they were too ready to believe the press reports which gave them the game even before it had been played. One swallow does not make a summer, nor one player a team. Cruyff could not win the biggest match of his life on his own. The West Germans just failed to get through to the 1970 final in Mexico; and with Beckenbauer and Bayern Munich, the backbone of the national side, having just won the European Cup-winners Cup, they were in no mood to delay clinching the World Cup.

Among the other big sides, the East Germans based their game on a stonewall defence and counter-attack. They could not hope to go any further than other defensive teams. Brazil, all too clearly, was not the Brazil of the 1970 World



Pelé the "king

The man of a thousand goals was absent from Munich, but his name was there wherever a word about football was said or written. He may play at the beginning of next year, against Anderlecht.

Cup, lacking the panache and swagger of Mexico. The great names were missing—"king" Pele, Carlos Alberto, Gerson, Tostao—and Zagalo's new line-up suffered without any doubt from their most discouraging press reports ever. The 1974 Brazilians played none of the "Samba" football that gives their game its power and distinction.

This quick glance at the 1974 World Cup teams roughly corresponds to their international standing. Some big names such as Italy and Poland were knocked out; the Soviet giants did not qualify any more than the Belgians; and outsiders such as Haiti and Zaire got to Munich.

Haiti and Zaire only played supporting roles in the end, though Zaire's performance in their first match against Scotland raised a wave of enthusiasm. The same as with Morocco in Mexico in 1970. Some observers rightly wonder how valid is the final phase of selection for the World Cup. The Zaire players, "representatives of Africa", produced mediocre football and were annihilated by Yugoslavia 9-0 in one of the most crushing defeats in the history of the World Cup. Even Bulgaria, beaten since 1962, has never suffered such a defeat. The Zaire effort is characteristic of the level of african football. Faced with this alarming situation, which raises some anxiety about african sport in general and football in particular, it is a good moment to ask frankly: how good is Africa?

In general, african teams are short of:

1) **Organisation.** African countries have few enough good sports facilities and



West German goalkeeper Sepp Maier holds up the World Cup to the crowd. His style and calmness have made his reputation.

Franz Beckenbauer, "kaiser Franz", shares a fully-earned moment of delight with Helmut Schon, trainer of the national squad.



above all they lack a good basic organisation—for instance, for discovering and interesting young talent. Football is popular enough in Africa, but still not really a big game. Most players who should be more involved only play occasionally. In Holland, if I am not mistaken, there are 800 000 club players in a population of 13 million, or 22 players to the square kilometer—the highest density in the world.

2) **Training and team spirit.** Both are lacking, especially on the international scale. The Africans need the Brazilians' technique and the West Germans' fitness and determination. Then they might find the technical still essential for the creative imagination necessary to turn a footballer into a real artist. African players have short careers because of their poor condition and low morale. It might be beneficial, for instance, if they became all-rounders—able to run the marathon as well as sprint. A further idea would be to organise an African games and an African Football Cup, including youth and junior teams, which would be held respectively a month or two before the Olympic Games and the World Cup.

Now that the new chairman of the International Amateur Football Federation, Mr. Havelange, already talks of the 1978 World Cup in Argentina, makes no secret of his clearly justified wish to see China brought into the contest, and goes so far as to consider that "the I.A.F.F. has no right to reject a country"—South Africa!—"without making every effort to keep it in", african sports leaders should open up a bit.

These leaders should sound the alarm. They should bring together the top figures in african football, rethink the role of the Higher African Sports Council (C.S.S.A.) and give sports institutions much more substantial means, as that is unquestionably the other Achilles' heel of african sport in general and football in particular. The present place of sport in african national and international life must be reconsidered. The standard of sport, as with the press or social security, is also part of a continent's or a country's level of development; it is not only the per capita income that counts. ■

Lucien PAGNI



Johan Cruyff of Holland

A great player—but he would rather forget July 7 at Munich.

Germany's 1990 hopes boosted by £1 contribution

The odds on West Germany, the new football champions, winning the World Cup in 1990 increased slightly after a small but determined demonstration in the town of Heilbronn.

Two boys, both aged nine, marched unannounced into the office of the Chief Burgomaster of the south German city, put six marks (£1) on his desk—and demanded a football pitch for their neighbourhood.

After feasting their eyes for three weeks on the skill of Messrs Beckenbauer and Müller, they decided that playing football in the street was no longer good enough.

They collected the small heap of coins from their own and their friends' pocket money so that, they said, "the city Treasury won't be too badly hit".

The Chief Burgomaster, Herr Hans Hoffman, showed his sense of humour by immediately lifting his telephone and raising the matter with the parks department.

He told the boys that they would have their pitch by the end of the year. The cost is not yet known, but is reliably expected to be rather more than six marks.

The Times

The African cinema: returning to traditional values?

Barney Trench asks Patrick Robson, one of the organisers of the first african film festival in Brussels, what are the successes and failures of the african cinema.

► *Patrick Robson, you are vice-chairman of the New Cinema Group in Brussels. Could you tell us what the group does?*

The cinema group was founded with the intention of distributing, in Belgium, films by young directors in the established cinema, italian, american, english or even french, which had not had a chance of being distributed for financial reasons, and films from the new cinemas, such as the african, canadian or south-american — and also belgian films, abroad as well as in Belgium, though there the job is more complicated.

► *So you must be closely in touch with the problems of the african cinema...*

Yes, we are aware of the very complicated problems of the african cinemas, particularly since organising the first african film festival in Brussels in March. That put us closely in touch with the cinematographic problem of the arab as well as the black african countries.

► *I imagine a distinction should first be drawn between the maghreb (Algeria, Morocco, Tunisia) cinema and the black african?*

The economic conditions certainly are very different. There is one big problem first of all, namely that in Europe we only know the cinema of the former french or belgian colonies; we have absolutely no contact with the English-speaking countries, who have no film distribution network in Europe. We know the maghreb cinema, i.e. the arab culture of the former french colonies where french is a common language— that corresponds to a cultural policy run from Paris, i.e. Paris itself distributes practically all equatorial african

production, leaving very little independence in the end to the african countries.

► *The arab cinema has led the way, then, but are there any connections between the maghreb and the black african cinemas?*

There probably are as far as content is concerned. The present cinema in Africa is looking for a compromise between the european influences held over from colonial times and a return to traditional values. Nearly all the films which come to us from Africa have this opposition, this duality, between a white european cultural influence and a return to the sources or a combat against various sequels of the true african tradition such as magic and the ancestral religions.

► *Does the black african cinema have its own african character, or is it still really based on the european cinema?*

I think the big problem is that cinema is a white men's technique, that is to say it was invented by them and the whole cinematographic technique—the written side, scenario, cutting, photography—is based on essentially european literary, cultural or aesthetic concepts. Besides, the african cinema has come out of practically one school, the I.D.H.E.C. (Institute of Higher Cinematographic Studies) in Paris, which has trained practically all the cinema technicians in Africa and could not help but give them a sense of european techniques. All the handbooks and classes are designed for Europeans, and the problem for the Africans is to be able to use these means and techniques, to adapt them to their own mentality and culture. That is very difficult.

I was talking recently to someone from Zaïre who was well informed about the cinema in his country, and he said the problem as far as scriptwriting was concerned was the Zairian's well-known tendency to ramble on and use real time to develop a plot, instead of the ellipse. The whole european cinema is based on using the ellipse, which gives the film rapid action. The american film is the prototype. Black Africans are trying vainly to use the ellipse. There is an opposition between how they know films should be written and what they really feel, which is altogether different.

► *They are trying to project an african sensibility through european techniques, and the two are not easily reconciled?*

They have great difficulties. Either they come up with some sort of hybrid, such as we get from Cameroon; or they try to make a gangster film where the whites are replaced by blacks, which provides some pretty dismal results. Or they try the other approach, namely to rediscover a perfectly african authenticity, and that tends to provide endless and boring films with rather cliché-ridden imagery and inadequate cutting which are practically undistributable in Europe. There's a parallel with the japanese cinema—while the No theatre keeps closely to the essence of japanese culture, the japanese cinema has reached a compromise between western thinking and the traditional values of Japan.

► *The result is that the african cinema in Europe or the U.S.A. is largely limited to private showings?*

To cultural sessions, which are unfortunately rather a kind of trip to Africa, i.e. people tend to look for folklore or

something exotic. And there is plenty of it. What is, I suppose, altogether normal, daily and unremarkable to the Africans is exotic to us—except for young people, who are beginning to understand through their contacts at university, or even among workers, that the african cinema is a true reflection of a different culture with its own values and riches.

► *The african cinema is reckoned to have been going for 10 years or so. Has it not developed since the 1960s?*

Yes, in that it has become increasingly independent of direct european influence in its production methods. The cinema in Africa is very little known for economic reasons; most of the distribution networks are still held by the big american cinema consortia, and by french circuits which distribute either french or american films. Many young african directors make a film with the help of the government, the ministry of culture or the national broadcasting company, and these films are not distributed.

Then there is the language problem—a film made in the senegalese dialect cannot be distributed in Dahomey or Zaire, and dubbing or subtitling is very expensive. All in all, the economic circumstances are entirely different. It is a similar situation to what the Russians faced in the '20s; to show a film you have to load a screen and a projector on a lorry, the villages are 200 miles away... it really is very different from Europe.

There are two cinemas in Africa: the urban, which is usually a big consumer cinema, and the rural. This is reflected in what is produced. There are films which deal with the problems of the town, problems we know well, and others dealing with the introduction of the mechanical civilisation, the consumer civilisation, into the remotest villages, where this civilisation still conflicts with religious prejudices.

► *African film-makers must still mostly be young, however.*

That is, there is already a second generation on the way. In its best work the first generation denounced either imperialism or the sequels of colonisation directly after independence. We have already reached a second stage, into

which some of the recognised first-wave authors have moved, which marks an awareness of the socio-economic difficulties of independent Africa, and of the efforts made for this independent Africa.

► *And what does the general african public expect from the local cinema down the road?*

They expect the latest Alain Delon or Frank Sinatra. They expect the cinema they are used to, i.e. a european cinema. For years there have been only american and french, and sometimes italian films in Africa. African films have not been seen. The Africans go and see films where there is this charm of the unknown, that is to say french films where you see Paris, the Eiffel Tower—that still represents the exotic, a summit of western culture.

It is very complex. There are an enormous number of problems in Africa, and above all the problem of languages and the disparity of the productions. Distribution in the United States or Europe is very complicated. Apart from Paris and the french foreign ministry, there are no organised bodies that make it possible to distribute african films.

I think a cross-distribution should first be carried out in Africa before networking films in Europe. It will be very difficult in the United States because there not even european films get in easily. It is possible in Europe, the more so because the economic structures of film distribution are currently changing. Take Belgium, for instance: until recently Belgium only counted on a commercial cinema, i.e. large cinemas for a paying public who saw a film, left, and that was it. Now films are increasingly being distributed outside these circuits, either through youth movements or autonomous union, workers, women's liberation or other movements. This is where the african cinema has a chance, even if these circuits are "alternative", i.e. they have totally different economic conditions and a different audience, and the film goes to be seen by the public instead of their going to the cinema, and not just passively seen but followed up by discussion and an awareness of the problems raised by the film. It is in those circuits that the african film can expand, while the financial conditions for the big networks make it impossible for cinema managers or other distributors to take the risk of showing a film that does not make money.

From "The Passer-by" (La Passante), a study of society in industrial countries by african sociologist Safi Faye.



BOOKS

Denis MARTIN and Tatiana YANNO-POULOS. — *L'Afrique noire : guide de recherches (Black Africa - Research guide)*. — Fondation nationale des sciences politiques. — Armand Colin, 1974.

This guide is designed to help the student, or research worker, setting about a study of the problems of contemporary Black Africa. The first part deals with methods and problems, including population. The second lists the available documentary sources covering works of reference (bibliographies, collections, memoirs and biographies), specialist periodicals and specialised institutions (research and documentation organisations, archives, applied research, photo and record libraries). The third part consists of separate chapters devoted to various aspects from which the realities of Africa are studied. These include "man and his milieu", "man and what he does" (sociological, ethnographic, ethnological, the sociology of religions and ethnomusical), "man and his production", "man and his institutions", and "man and his speech". Each of these chapters is compiled by a specialist, who recapitulates recent publications and gives an indication of the chief lines of current research. It is a small book of high quality, original in design and treatment, easy to handle and extremely clear. This gives it a great interest, and since it is well produced and makes easy reading, it provides material which is accessible to everybody.

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C. COQUERY-VIDROVITCH and H. MONIOT. — *L'Afrique noire de 1800 à nos jours (Black Africa from 1800*

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to the present day). — Collection Nouvelle Cléo. — Editions P.U.F., 1974.

The period from 1800 to the present day is here studied as a hinge-period between pre-colonial days and our own times. It is important at the outset to discard all preconceived notions about the pre-colonial period, such as the belief that african history cannot be got at because there is no written matter, or the conception of static societies which have been regarded as lying outside history. The development of "africanism" around 1950 put an end to these ideas and set in motion a series of works of research which are listed in a very important bibliography at the beginning of the book.

While african pre-colonial history is broken up into the story of a number of societies of unusual type, the story of the colonial period has as its tie-rod the coming of the african continent as a whole into the world economic system. The history of the independences can only be understood in the light of the contradictions and bewilderment forced on peoples who are now confronted with the drama of underdevelopment and carry in themselves the double heritage of the pre-colonial and the colonial periods. The general subjugation of Africa artificially falsified and unified the development of tribal society, manipulating it from outside, in accordance with beliefs radically foreign to it, which did not abolish the features of african life, but froze them and drove them out of sight. It is essential to be aware of what survived, what was extended and what was broken, through all the periods. The quest for these dominant traits is the warp-thread of this work, which is written in accordance with the three dictates of the Nouvelle Cléo collection — historical method, knowledge and research.

The work is panoramic and stands at the point where the disciplines of history converge with those of politics, economics and social studies. It is of undoubted interest to anybody studying the dark continent.

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Pierre KALCK. — *Histoire de la République Centrafricaine des origines préhistoriques à nos jours (History of the Central African Republic from prehistoric times to the present day)*. — Collection Mondes d'Outre-Mer. — Editions Berger-Levrault, 1974.

Less than a century ago, Central Africa was an enormous blank space on the map. It has been into this region—the most continental in all Africa—and among its populations that Pierre Kalck has directed his exploration.

His master card is his deep knowledge of the country. He is impregnated with its present, through which he has lived as an eye witness, or indeed as a participant, side-by-side with President Barthélémy Boganda, founder of the Central African Republic. This has enabled him to dig continuously into the country's past in order to find explanations of the present. He discusses the prehistoric remains, the process of formation of the various peoples, the existence of the political entities of olden times. He gives an account of the various conquests and phases of foreign exploitation. He does not gloss over the ravages of the slave-trade, nor of the subsequent colonial occupation, both of which are described with the same objective treatment as is to be found in the account of the period which has followed the second world war.

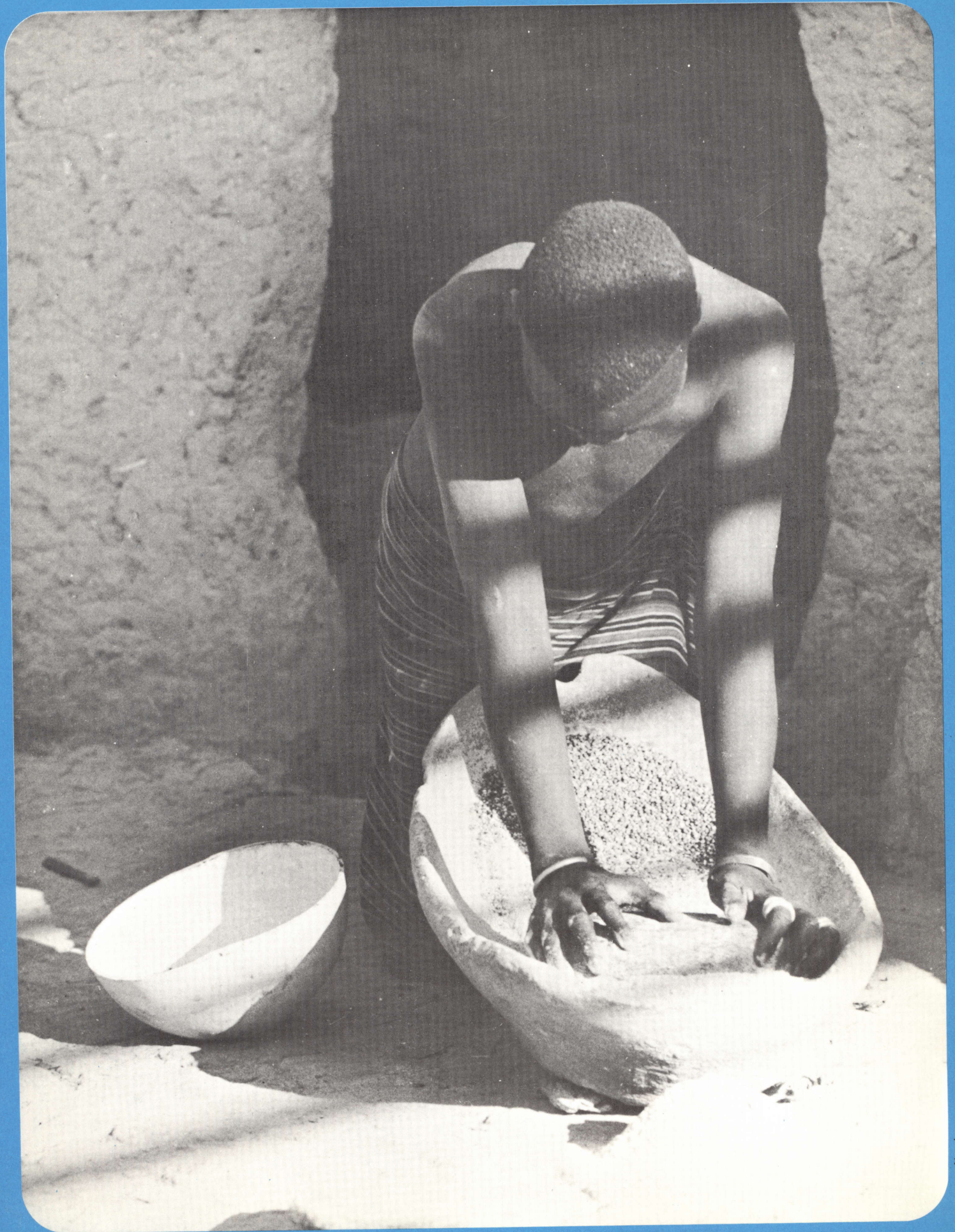
The book will be extremely useful not only to the africanists, but also to students and the wider public anxious to find clear and sincere writing about the various african countries. It will give the people of Central Africa, to whom it is dedicated, an opportunity of passing in review the much valued roots of history from which they developed.

The author has been in the Central African Republic through the greater part of his career. In this book he contributes a remarkable token of friendship to a country he has taken deeply to his heart.

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L.J. BRUCE CHWATT. — *Health and Hygiene for the Tropical Traveller*. — Ross Tropical Hygiene Institute, French adaptation by M. Payet. — Editions Masson et Cie., 1974.

This handbook explains in simple and practical fashion everything it is necessary to know about climatic conditions in the tropics, the main contagious diseases and protection against them, and individual and group hygiene: clothes, living conditions, vaccinations, etc. Children's health in the tropics is covered and there is a chapter of useful information for the household. Besides general advice, the book includes easy-to-follow medical care to be carried out while waiting for a doctor.



Naud