COMMISSION OF THE EUROPEAN COMMUNITIES

studies

Integrated rural development projects carried out in Black Africa with EDF aid

Evaluation and outlook for the future

DEVELOPMENT SERIES — 1979

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Integrated rural development projects carried out in Black Africa with EDF aid

Evaluation and outlook for the future

General report prepared by
Mr Hughes Dupriez, agriculturalist and economist

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FOREWORD

Several sectoral evaluation studies have been carried out in recent years in the field of integrated rural development and development of small family farm holdings. The two main reports in this field were produced under the aegis of US/AID (Development Alternatives, Inc., 'Strategies for Small Farmer Development': an Empirical Study of Rural Development Projects May 1975) and the IBRD (Uma Lele, 'The Design of Rural Development', 1975). The former covers cases drawn from Africa and Latin America; the latter, African projects only.

On a smaller scale, the FAO, in its Programme Reviews, has provided a compendium of the information derived from the evaluation of a sample of different types of agricultural development projects. Four years ago the EDF produced its first report of this nature on the basis of a sample of projects in the same sector, including hydro-agricultural schemes and agro-industrial perennial plantations, in the former Associated African States and Madagascar. (1973 Report by the Commission to the Council on the conditions under which aid is implemented and used ... Part Two, doc. COM (75)13 final).

The evaluation reports pointed up a series of common factors making for success or delays in 'integrated' rural development projects, i.e. projects aimed at promoting modernization of small farms and improvement in the standard of living of peasant populations. Their conclusions concur in highlighting a number of particularly important factors determining the success of such action: price conditions and cash returns on labour; adaptation of project design to local conditions and potentials; the influence of sectoral and national policy, and also of the development institutions' policies, on the effectiveness of the use of resources; the human factor in supervision and management and psycho-sociological factors as a result of which local farmers associate with the aims pursued by the national authorities and technical assistance teams, or at least cooperate in their schemes.

This new evaluation study is concerned with the subsector of 'integrated rural development' projects, which was chosen as a field for detailed investigation for three main reasons: firstly the new emphasis in aid activities over recent years on improvement of conditions for the most disadvantaged populations and promotion of economic development from within the countries concerned makes the modernization of the vast numbers of small farms a priority task; secondly because of its profound psycho-sociological implications, this subsector generally raises more complex problems than other branches of agricultural development such as hydraulic schemes or agro-industrial complexes; and thirdly the concept of 'integration' in rural development is am-

biguous and not very operational; its various meanings should be defined and their implications analysed with a vieuw to possible improvements in sectoral development policy.

The very complexity of the subsector examined and the limited ressources available for the evaluation of a representative sample of projects in this subsector mean that the conclusions drawn can as yet only be considered as working hypotheses. These should be gradually checked and refined in the future by means of follow-up evaluations and more detailed research on specific aspects.

In its presentation, this general report avoids a comprehensive and merely descriptive inventory of factors of success and obstacles. It endeavours above all (in Parts 2 to 6) to analyse the problems of family farming in the traditional African environment. This is the type of farming which needs modernization so that it can provide greater well-being for the farmers concerned and contribute more fully to national economic growth. The social, technical and economic structure of small farming in Africa is complex and, moreover, it is fundamentally 'integrated', not only in itself but also within the village context.

It is primarily in the light of this analysis that the information and assessments regarding the objectives, planning and effects of the projects evaluated have been arranged. Where appropriate, this material has been compared with reports on comparable operations evaluated by other institutions or researchers.

C.J. VAN DER VAEREN
Head of Specialized Department Evaluation

Contents

Annexes

INTRODUCTION

This study is the result of the ex-post evaluation of ten rural development programmes carried out in nine countries in Black Africa over the past fifteen years. The projects evaluated are shown in the table overleaf.

These ten programmes provide a fairly varied and representative sample of operations to promote agricultural development in the Black African rural environment financed out of the first three EDF budgets. The farms concerned were small units characterized by low factor productivity, minimal integration into the pattern of trade, but a high degree of integration into the pattern of sociological, cultural and technical tradition in the rural societies concerned.

None of the projects evaluated involved major hydro-agricultural schemes or the establishment of large agro-industrial complexes.

The projects evaluated account for commitments and expenditure by the European Development Fund; totalling nearly 50 million units of account, or almost a quarter of the funds committed out of the first three EDF budgets for operations of this type. Most of the ten programmes were financed in several stages or in successive projects.

The evaluation was organized by the Specialized Department for the Evaluation of Aid Operations (VIII/A/2) of the Directorate-General for Development of the European Commission and carried out in three successive phases between July 1976 and December 1977.

PHASE 1: METHODOLOGICAL GROUNDWORK (JUNE-JULY 1976)

The purpose of this phase was to draw up a 'guide for the evaluation of integrated rural development projects', which was to be the basic tool of the evaluation team.

This guide was drawn up jointly by three people: C.J. Van der Vaeren (Head of the Specialized Evaluation Department, DG VIII), H. Dupriez (agronomist, consultant expert) and O. Snoy (assistant to the consultant).

The guide consists of three sections:

The projects evaluated

Country	Project	Period	Funding in u.a.	
			Expenditure completed	Sanctioned not completed
Niger	Development of the Badeguicheri Valley	1972-1976		1 134 000
Niger	Rural development in the Department of Zinder	1973-1977 (1973-1985)		1 876 000
Rwan	Integrated rural development: Bugesera-Mayaga farming communities	1961-1976	2 665 000	2 165 000
Togo	Agricultural development of the Central Region and the Plateaux Region (cotton)	1964-1975		3 795 000
Chad	Improvement of cotton-growing productivity and integrated rural development in the southern zone	1965-1976	3 150 000	14 759 000
Central African Republic	Agricultural development of the cotton-growing zone	1968-1976	2 625 000	6 651 000
Zaire	Agricultural development in the Eastern Kasai	1968-1976		6 368 974
Ivory Coast	Development of rice-growing	1972-1976		11 567 000
Bénin	Agricultural development of the Department of Atakora	1968-1977		1 084 766
Upper Volta	Agricultural development in the Comoé Ord	1972-1976		1 908 469

1. Check-list for evaluating projects and format for evaluation reports

This section provided guidelines for research and interpretation of findings of direct relevance to the initial objectives.

2. Background for the evaluation of project design and policy

This section provided background material on integrated rural development based on past experience and a reading of the general recommendations of the Commission[1] and international organizations on this subject.

3. Model for the survey on farmers' opinions and attitudes to the projects

Some difficulties were encountered during this first phase:

(i) In the Commission's archives, the documentation on projects and their implementation goes into considerable detail on the subject of the funds allocated, but contains little information about agricultural development itself. The Commission and its representatives in the field have supervised the use of funds allocated and monitored the more readily identifiable results of projects in hand, but have been unable to carry out any detailed assessment of the full range of their effects.

(ii) The nature of such information as is available on the results of projects is always strongly influenced by the structure of the projects concerned. For instance, the statistical data refer to the cash crop considered to provide the motive force behind the project, but little information is given about the progress of other types of farming or about peasant families' productive activities outside farming.

(iii) Detailed evaluation of operations on a continuing basis was not a regular practice; it was not until the time came to finance a new phase that the results of the previous phase were evaluated, generally in a fairly summary manner.

(iv) The only plausible statistical data are those on export crops. The estimates for food crops remain very speculative. Consequently, analyses of rural economies based on such statistics can easily become misleading since, in fact, the greater part of rural activity is in the subsistance sector, which is very inaccurately reflected in the statistics.

Moreover, a reading of the files shows that unquantifiable or unquantified criteria may determine whether or not a given project is justifiable. There are very many such unquantifiable or unquantified criteria. Some are not stated explicitly in the implementation reports, while

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[1] Earlier study and report:
- A. Combaz-Fauquez, Etude de synthèse des évaluations de projets de développement agricole financés par le FED, June 1974.
- EC Commission, 1973 Report on the conditions under which aid is implemented and used by the recipient Associated States, Countries and Territories, Part 2 (COM(75)13 final).

others are described in vague terms: 'mentalities', 'psychological factors', etc.

In view of these difficulties, it was decided to present the evaluation guide as a series of analytical propositions considered in the light of rural development. The purpose of this was to broaden the scope of the evaluation studies to embrace the general aims of economic and social development, towards which the projects were intended to contribute.

The third part of the guide consisted of a model for opinion surveys intended to assess the whole range of direct and indirect effects, including those not originally anticipated.

PHASE 2: IN SITU EVALUATION

The in situ evaluation work was carried out by specially commissioned experts between September 1976 and June 1977.

The following persons carried out the project evaluations:

Messrs G. Bertrand, H. Dupriez and P. Von Blanckenburg, agricultural economists; Mr P. Thenevin, Mr C. Van der Vaeren and Miss A. Hubert, economists; Messrs M. Bousquet. F. Lussagnet, R. Pugol and G. Tondeur, agronomists; Miss S. Jean and Miss P. Roberts, sociologists; Mr G. la Cognata, surveyor; Mr H. Peter, statistician. In addition, assistance in this work was received from three African sources: the BARA consultancy bureau in the Upper Volta, the Bureau Central des Projets in Bénin and Mr Mayo Malanga, economist, in Zaire.

Some of the experts' reports concentrated on the evaluation of the project as such, others on the opinion survey. Two requirements had to be reconciled: on the one hand, it was necessary to obtain an adequate number of evaluations of representative projects; on the other hand, the overall cost had to be contained within the very tight budget allocations. As a result, none of the case studies was as exhaustive and detailed as one would have hoped.

The many difficulties encountered during this phase can be summarized as follows:

(a) The statistical and economic data were incomplete. The statistics concentrated heavily on the types of farming which had been encouraged under the project. Only very limited macro-economic data were available on which to judge effects on the national economies. Such limited macro-economic data as were available were often based on mere hypotheses rather than observation in the field.

(b) In the localities concerned, it was often difficult to find informants who had followed the projects from beginning to end (because of the high turnover of staff, the lack of continuing evaluation reports and the absence of local institutions with proper information on the progress of operations).

(c) The effects of projects are felt at several levels (individual farms, training institutions, marketing institutions, price support funds, national economy, etc.) and it is not always possible to dissociate them. To evaluate these effects at each level it would be necessary for either the institutions carrying out the project or the planning staff to monitor them on a continuing basis.

(d) In the original projects, the presentation of the aims and objectives in many cases lacked a rational structure; moreover, the external conditions required to carry out the projects were not always fully examined; finally, the relationship between the objectives and the resources to be deployed (and financed) were not analysed in sufficient depth. It was therefore difficult to clearly identify the structures of objectives and resources which had been envisaged and to compare them with what had been achieved, particularly in the case of the general aims and objectives relating to standards of living, nutrition, employment, etc.

(e) It was also difficult to compare the situation at the end of a project with the situation at the outset, either as a result of specific circumstances (inflation, drought, changes of political regime, reorganization of institutions, changes of policy, etc.) or because of the lack of comparative data especially those indicating the trend in living standards: housing, health, nutrition, etc.

(f) In some instances, it was impossible to distinguish the results of a project from what would have happened without the project or could have been achieved by other types of action.

The use of the guide itself appears to have given rise to some difficulties, in some instances because the experts adhered rather too rigidly to the format provided with the result that they had problems in using it as a framework for their findings, in others because the problems to be examined were outside the scope of the information normally available from the reference sources at their disposal, and in others because the survey questionnaires which they had prepared concentrated too much on evaluation of the action carried out under the projects rather than on the general context of the dynamics of the rural community, despite the efforts made to avoid this danger.

For instance, far more weight was given to the questions on the dissemination of techniques introduced under the project than to those on the conservation of traditional methods. Another shortcoming was the assumption implicit in the framing of questions that there could be no doubt in the mind of the respondents that the institutions were the only source of technical progress. If it is to be genuinely objective, a survey carried out in a farming community should give as much weight to questions on traditional farming methods as to those on 'modern' methods. When the researchers are not well informed about traditional methods, there is a likelihood that the questions they ask will themselves contain value judgments. Thus the answers given may be slanted, as the farmers will be tempted to reply as they think they ought to reply to an emissary from officialdom.

PHASE 3

The object of Phase 3 was to draw conclusions from the in situ evaluation studies. A draft report was presented by H. Dupriez in June 1977 and discussed by the evaluators who worked on Phase 2 and representatives of the relevant departments of the Commission at a general meeting held in Brussels on 13 and 14 September 1977.

The report is a synthesis resulting from the cooperation of the experts and the representatives of the Commission at this meeting and the incorporation of proposals put forward in the many letters and notes received in this connection.

Several methodological difficulties were also encountered in the compilation of this report; some of them were attributable to the difficulties which arose during the first and second phases, while others were inherent in the process of bringing all the information together into a coherent whole.

(a) It was not easy to make comparisons between projects, as each was situated in its own context in space and time and different types of institution were involved in each case. What was an advantageous factor in one instance could be a disadvantage in another. Similarly, a given type of operation may be costly in one project and economical in another, making comparative judgments impossible. Rural development is conditioned by such a wide range of diverse factors that it is impossible to draw conclusions on approaches to be adopted which can be transplanted without modification from one project to another. Nevertheless, given the diversity of the projects evaluated, it was possible to entertain conclusions of a general nature, being less contingent on specific or purely local conditions.

(b) The data received in the evaluation reports were, as has been mentioned above, highly polarized. This was largely because when an expert raised a specific problem relating to the environment of the project he was evaluating, it was not easy for him to analyse it in depth. For instance, mention was made of the difficulty over early sowing of cotton, but the reasons for this difficulty were not clearly assessed because their origins lay outside cotton-growing as such; elsewhere, soil exhaustion was reported by the farmers, but no detailed information on its extent was found in the documents provided by the staff managing the project; to give another example, reference was made to the importance of the system of prices and remuneration, but it was difficult to describe how it operated because no homogeneous chronological series were available.

(c) A major difficulty arose in connection with the actual definition of rural development. Mere observation of the results of a project in relation to the objectives is not sufficient. What, for instance, is to be made of a situation in which an agricultural objective has virtually been attained, but the population is suffering from food deficiencies or shortages?

Moreover, it has to be concluded that aims established at the planning stage are not always carried over into project design in the form of concrete objectives.

The explanation for a failure may sometimes be traced back to the structure of the investment provided for initially, in which case evaluation of the specific results of the project in question will be a fruitless exercise. The evaluator may be unable to distinguish things which are not strictly speaking effects of the project.

(d) The results of some projects had to be interpreted on the basis of periods which were not long enough for the purpose. In present farming, only medium and long-term trends are significant; how, then, can one establish a trend on the basis of a period of three or four years over which a project has been in operation?

(e) By the same token, it should be noted that economic or political factors unconnected with the projects can often have a bearing on results. In the circumstances, there is a risk of drawing misguided conclusions by attributing success or failure to what has been done within the context of the project itself.

(f) The evaluation reports did not always cover, either explicitly or implicitly, the whole range of problems of rural development. This does not mean that these problems did not exist.

A number of decisions had therefore to be taken with a view to overcoming the methodological difficulties:

(i) A conscious effort was made to ensure that the scheme of the consolidated report followed the logic of peasant farming and rural development. This viewpoint provided a better context in which to identify the limiting and favourable factors which had an influence in the various regions.

(ii) The appraisal of the extent of development was based on the following order of priorities: effects on peasant farms, effects on national economies, effects on State finances. This was considered a logical choice since State resources are dependent on national economies which, in such essentially rural countries, consist largely of the mass of small farms. It also had to be borne in mind that rural development is currently the form of development by means of which the living standards of the great majority of the population can be improved in sociologically and culturally coherent contexts.

(iii) A conscious effort has been made to avoid the use of vague terms such as 'peasant mentalities' in the interpretation of effects or results. The view taken is that peasant farmers have normal behaviour patterns, are capable of acting on their own initiative and are able to weigh up new methods proposed to them in the light of conditions on their farms and adopt or reject them accordingly. With this methodological approach, it was possible to make a balanced analysis of the dynamisms and responsibilities of each of the parties involved. It was necessary to establish this balance, since it was found that the rural populations af-

fected by the projects had scarcely been represented during the intervention procedures - either during the planning phase, or during the implementation phase.

(iv) Analysis of the technical facilities (vehicles, equipment, buildings), the administrative and financial procedures and intervention methods has been considered less important than analysis of the fundamental problems. On the one hand, little purpose is served by comparing the resources utilized in two different types of region, and on the other the approach adopted in implementing a project is contingent upon the specific local conditions.

The policy adopted in the compilation of this synthetic report was to base it on the information derived from the project evaluation reports and the subsequent discussions. Consequently, it touches only very briefly on some aspects of rural development. Nevertheless, the conclusions drawn here fit into a wider context of thinking on rural development. The general context has been provided by a substantial body of literature produced under the auspices of institutions other than the Commission; a list of the main references is provided in Annex 2.[1]

Despite the volume and variety of the existing literature on rural development in Africa (to which this evaluation exercise makes some new contribution), analysis of this type of development is still marred by lack of information and approximations. It is not possible on the basis of evaluation of only ten projects to put forward definitive judgments on the conditions and factors which make for success or obstruct progress in development operations concerned with small farming. The conclusions contained in this general report should accordingly be regarded as being more in the nature of working hypotheses which have been carefully formulated on the basis of verified experience with a view to guiding future action and increasing the effectiveness of resources used to promote rural development.

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[1] A number of bibliographical references have been given in footnotes. These documents have been quoted because they provide general or detailed background to the analysis and conclusions in this report. However, the documents listed in Annex 3 were not used as material for this report, except for the works by d'Ancey and Pelissier on which Section 2.1. is partially based.

Part One

THE PROJECTS EVALUATED: PROJECT SUMMARIES

1.01. DEVELOPMENT OF THE BADEGUICHERI VALLEY (DEPARTMENT OF TAHOUA, NIGER)[1]

OBJECTIVES AND CONTENT

The Badeguicheri valley development project (1972-76)[2] was originally aimed at developing cotton-growing by making available alluvial land used to grow sorghum. To do this, it was necessary to develop land on the plateaux and the slopes of the valley for the cultivation of food crops; the objective here was to actually increase cereal production sufficiently to meet the needs of the inhabitants of the valley. The development of the valley slopes was also intended to combat soil erosion and silting of the valleys.

From the structural viewpoint, the aim of the project was to involve local farmers in the implementation of the project so that management of the facilities set up could be handed over to them during the final phase.

An organizational network was set up (6 zones in the valley and one zone outside the valley with responsibility for technical progress and cooperative progress respectively).

After two years, the programme was modified in the light of unfavourable weather conditions in 1972-74 to include reafforestation projects, drilling of wells for growing kitchen-garden crops during the dry season and the introduction of cowpeas. Educational and social activities were also included at this stage: training for women, literacy and health.

MANAGEMENT

Management of the project enrusted to the UNCC[3] under the auspices of the Ministère de l'Economie Rurale. The difficulties encountered were manifold.

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[1] Evaluated by Miss P.Roberts, sociologist.

[2] ± 30 700 inhabitants in 1969, 60 villages, 83 inhabitants per square kilometre, average annual rainfall: 425 to 475 mm.

[3] Union Nigérienne de Crédit et de Coopération.

From the administrative point of view, the zone was divided into two sub-prefectures. It was lacking in infrastructure and represented only a small part of the sphere of competence of the prefectorial authorities. Decisions, however remained centralized at UNCC headquarters in Niamey; at local level, the extent of cooperation tended to fluctuate.

From the point of view of technical management, there were several changes in the staff in charge of the project; an expatriate agronomist who joined the project a year late was the only source of continuity.

ATTAINMENT OF OBJECTIVES

Analysis of the projections and results (see Table 1.01.a) shows the following:

- Soil rehabilitation: the revised objective for soil rehabilitation by means of terracing was 1 900 hectares. The actual figure was 95% of this as 1 799 hectares were terraced and 1 232 (65%) under cultivation by 1976, the average cost was CFAF 33 000 per hectare for terracing and CFAF 6 000 for soil preparation.

  On the basis of comparison with neighbouring valleys, it is estimated that this work has had a positive effect on erosion and silting of the valleys. The peasant farmers appreciated this programme which was compatible with traditional practice in the region and enabled them to earn wages during the dry season (40% of the cost of construction).[1]

- Tracks: tracks were built and completed in 1973. They were needed to make the project physically feasible, but they also served the purposes of providing routes for the evacuation of cotton and disenclaving the valley. Little traffic has developed as yet, since there are very few vehicles in the region, and most of it is still carried by donkey or camel. Nevertheless, an onion market has now been set up in the valley, thanks to the better conditions of access.

- Cooperatives: the cooperative organization was set up, but failed to bring the really significant structural changes hoped for. The cooperatives were proposed to the farmers without sufficient preparation and the advantages were not obvious: the concentrated too heavily on cotton, there were delays in payment of refunds, it was impossible to set up a savings fund with which to establish purchasing or storage services, credit for equipment was lacking and cooperative officials were not elected. The haste on the part of the bureaucracy to set up cooperatives and the heavy concentration on cotton allowed no scope for development of the peasant farmers' bargaining power, although this is among the declared policy objectives of the Government of Niger.

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[1] Wages to a value of ± CFAF 22 million were distributed.

- Instruction: the themes of the instruction programme, which was originally planned according to traditional CFDT methods, were as follows: instruction in technical subjects (intensive sowing, insecticide spraying, hoeing, etc.); formation of GMPs (Groupements Mutualistes de Production - Producers' Mutual Groups) with a view to creating homogeneous blocks of crops; intensive and repetitive demonstration.

  This instruction programme was carried out in an area which had already experienced ten years of CFDT action.

  The effectiveness of the instruction programme was limited by the qualitative shortcomings of the training (most of the instructors were young and inexperienced). The instructors tended to reiterate technical subjects which the farmers already knew and were unfamiliar with the practical constraints prevailing on the farms themselves.

  The field staff were also put in charge of literacy instruction, but the method employed was slow and arduous.

- Training for women: this programme covered small livestock rearing, kitchen gardens, obstetrics and health; it was heavily dependent on the presence of a foreigner, on whose departure it fell off.

- Animal-drawn tillage: the sale on credit of teams of oxen and equipment was appreciated by the farmers of several reasons: transport, possibility of hiring out, usefulness for work in kitchen gardens, but also commercial speculation.[1] The programme was hampered temporarily by the short supply of oxen and the mediocre quality of some of the equipment. Nevertheless, 136 units were sold on credit between 1973 and 1975. The cost of a team and all the equipment ranged from CFAF 77 220 to 93 600 and was repayable over four years. Ownership of oxen was only viable in so far as there were opportunities to use them for non-agricultural work.

- Dry season crops: in 1974 it was decided to build 50 wells. 34 were sunk for kitchen garden irrigation and 9 for water supplies. The total area of irrigated kitchen gardens doubled as a result.

  The species grown in kitchen gardens were diversified. They brought an improvement in the quantity and quality of food available in the valley, but the problems of marketing the surplus were not solved.

- Reafforestation: some trees were planted in villages and a number of gao (acacia albida) plantations were established.

The structure of the EDF expenditure was approximately as follows:

- tracks	40%
- soil rehabilitation	20%
- expatriate adviser	11%

[1] A farmer buying a team on credit at the official price was able to sell it immediately at a good profit.

- local field workers 9%
- miscellaneous (reafforestation, bridges, inputs, etc.) 20%

RESULTS

Production statistics

The production statistics must be regarded with great caution. The progress and fluctuations of the main crops do not seem to be directly connected with the action carried out under the project. These farmers react in a very direct way to prevailing weather conditions: sorghum/cotton substitution, extension of land under cultivation, travelling away from the area to find work when harvests are in doubt, etc. Moreover, outputs before the period covered by the project were probably underestimated.

In absolute figures, the objectives of self-sufficiency in cereals was achieved, despite the handicap of the drought years. Average production from 1973 to 1976 was 12% above the requirement, estimated at 8 750 tonnes or 250 kg per inhabitant per year.

A considerable effect of the project can be recorded in the case of cowpeas, however. Drought-resistant seeds were introduced in the zone in 1974; the official price of this crop was high and production increased considerably in competition with cotton. The OPVN [1] was unable to buy the output, however, and the official price was reduced by 25% the following year, with the result that production fell.

Marketing results

The project organizers anticipated that the rise in food crops would not exceed the villagers' subsistence needs and accordingly made no provision for marketing food crops. The policy pursued by the cooperatives in this sphere was aimed at stabilizing prices in the towns, so that cooperative stores were not set up locally. The producers did not always have adequate stocks of cereals, nor the necessary storage facilities. They were therefore obliged to sell at low prices and buy back subsequently at high prices.

Farmers' cash incomes

Farmers' cash incomes rose slightly, thanks mainly to sales of cowpeas and the increase in cotton production.

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[1] Office des Produits Vivriers du Niger.

Table 1.01.a

Comparison of objectives and actual production in the Badeguicheri valley

	1972-73	1973-74	1974-75	1975-76	1976-77
Period covered by the project	0 ----------			----------0	
Cotton					
Area:					
Objectives (ha)				2 450	
Actual (ha)	1 919	872	1 395	1 435	919*
Intensive (ha)	134	89	133	229	91*
Production:					
Objectives (t)				3 700	
Actual (t)	(?) 915[c]	456	713	1 651[a]	
Yield:					
Objectives (kg/ha)				1 500	
Actual (kg/ha)	476	529	513	(?) 850[b]	
Cereals					
Area:					
Objective (ha)				±10 000	
Actual:					
- sorghum	3 350	5 441	5 669	3 866	3 331
- millet	6 350	8 083	10 558	4 732	
Production (t):					
Objectives				±5 100	
Actual:					
- sorghum		3 440	5 550	1 828	
- millet		945	8 770	3 075	
Yield (kg/ha):					
Objectives				510	
Actual:					
- sorghum		632	975	800-225	
- millet		117	825	650	

Table 1.01.a (continued)

	1972-73	1973-74	1974-75	1975-76	1976-77
Cowpeas					
Area (ha)					
Objectives				-	
Actual:					
- single crop			79	230	100
- mixed crops			2 860	2 240	870
Production (t):					
Objectives					
Actual			1 480	3 900	
Yield (kg/ha):					
Objectives				-	
Actual:					
- single crop			1 100	1 200	
Dry season crops (kitchen gardens)					
Area (ha):					
Objectives				-	
Actual		306	420	669	

* In August 1976.

[a] On alluvial soils (fadoma) in the valley.

[b] 1 100 according to the SDRAT, a figure disputed by the CFDT; 850 kg/ha according to the Ministère du Développement rural, UNCC, Production Cotonnière, Tahoua, annual report 1975/76.

[c] Eléments d'évaluation, projet de Badeguicheri, SDRAT, Tahoua, 1975. The project implementation report of December 1974 quotes 1 208 t.

CONCLUSIONS

The people of the Badeguicherie valley had been living in precarious conditions for very many years, not only as a result of the climate conditions, but also because of specific problems and constraints: not enough land for self-sufficiency in food, competition between cotton and sorghum for the richest alluvial soil, soil erosion and silting of valleys as a result of deforestation, lack of fire wood, conflicts between farmers and graziers in

Table 1.01.b

Finance for the Badeguicheri valley project

CFAF	Convention	Expenditure[a]
Technical Assistance	43 200 000 37 800 000 (1974)[b]	31 371 830
Sahel special aid	5 000 000	5 000 000
Supervisors/local personnel	39 510 000	24 561 692
Soil rehabilitation	62 300 000	56 597 708
Infrastructure, equipment and production aid	44 959 336	29 642 065
Roads	95 000 000 121 000 000 (1974)[b]	114 981 813
Buildings	6 000 000	7 130 564
Vehicles	17 500 000 23 000 000 (1974)[b]	15 439 875
Equipment	5 500 000 1 500 000 (1974)[b]	749 492
TOTAL	318 969 330 315 069 000 (1974)[b]	285 405 010

[a] End of 1976
[b] 1974 revision.

need of grazing during the dry season, migration of workers, lack of organization of food markets, poor health facilities.

It its original form, the project was virtually limited to an attempt to solve the problem of the extension of cotton growing. Subsequently, in the light of the tragic events of the drought, the aims were diversified and brought more into line with the real needs and constraints in the area. However, the resources deployed during the second phase seem to have been spread too thinly between various schemes, which were genuinely effective in some instances but, overall, did not have any fundamental impact.

The staff's low level of training and the authoritarianism of the cotton-growing advisory programme have meant that a process of autonomous development has not yet started in the valley, despite the interest shown by the lo-

cal population in a number of the schemes, which are highly dependent on aid from the government and abroad. A certain lack of coherence between the national policy of self-development and cooperation and the methods used by the staff in charge of the project has to be reported.

The chief merit of this first project at Badeguicheri has been to provide invaluable information on the possibilities and difficulties of carrying through the integrated development of an area by tackling the problem of protection and rehabilitation of soil under heavy attack from erosion.

1.02. INTEGRATED RURAL DEVELOPMENT IN THE DEPARTMENT OF ZINDER (3M PROJECT), NIGER[1]

This is a long-term project (1973-85) and only the first phase (1973-76) has been evaluated.

Three arrondissements[2] and some 50 000 family farms producing nearly 60% of Niger's groundnut crops are affected by the project.

SPECIAL PROBLEMS IN THE REGION

Rural development in this area posed several problems:

(i) the increase in the production of groundnuts had been achieved up to that point by extension of land area, but the lack of land made it necessary to adopt more intensive techniques;

(ii) groundnuts were in competition with food crops and the trend in groundnut prices was not advantageous to the producer;

(iii) abandonment of the practice of fallowing was gradually causing a decline in soil fertility;

(iv) land shortages, drought and the absence of a real programme for the intensification of agricultural production and for employment were leading to migration of young people during the dry season and decay of the rural environment;

(v) the difficulties confronting the population included malnutrition, disease, inadequate roads, the shortcomings of the commercial, health and educational systems and a level of taxation which obliged farmers to sell their essential produce at disadvantageous prices.

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[1] Evaluated by Miss P. Roberts, sociologist.

[2] Mirriah, Matameye, Magaria.

AIMS OF THE PROJECT

The aim of this project was to give effect, in the area concerned, to the Government's policy of setting up cooperative self-development structures and raising standards of training among village instructors and farmers in order to increase productivity levels in the rural environment.

The intensification of agricultural production was principally concerned with groundnuts, as the production and marketing of food crops was considered a problem of lesser importance since it was believed that they would follow the rise in the population's requirements.

Another aim of the project was to combat soil exhaustion.

RESOURCES AND ACTION UNDERTAKEN

Four Departmental Services were to cooperate in the implementation of a joint programme: the UNCC[1] and the agriculture, 'animation' and literacy services. The UNCC was the executive agency and it was decided to strengthen its resources so that a new cooperative effort could be undertaken, the training and organization of farmers 'auto-encadrement' could be set up, large scale testing of fertilizers for soil rehabilitation could be organized and a cereal seed selection and multiplication programme could be carried out.

The EDF financed part of this strengthening process, but the bulk of its commitments were to be used to finance the regional infrastructure (road building, buildings for cooperatives), operation of the project, supply of vehicles and construction of 50 wells.[2]

Technical assistance was limited to a few support missions. A feature of the project is therefore that it was implemented by the existing institutions and did not take the form of a specific operation; this method offered the advantage of better integration of the funding with the national structure and the disadvantage of making it more difficult to evaluate the results of the aid component.

Various types of action were taken to achieve the aims of the project.

1. The 'auto-encadrement' structures

The provision of trained national staff for the cooperative system was organized through the establishment of 1 060 GMVs (groupements mutualistes villageois - village mutual groups) whose membership represents approximately 50% of the population. These groups elect PDAs (paysans démonstrateurs d'agricul-

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1 Union Nigérienne de Crédit et de Coopération.
2 The finance structure is shown in Table 1.02.b.

ture - peasant demonstrators of farming methods), of whom there are 1 075 currently;[1] the PDAs attend an annual training course at one of the CPTs (centres de perfectionnement technique - technical training centres) and then demonstrate selected techniques to GMV members. The GMV general meetings select certain PDAs to become AVs (auxiliaires de vulgarisation - training auxiliaries), of whom there are approximately one to every five villages; the AVs follow longer courses and are put in charge of organizing the activities of the PDAs. AVs receive payment.

In addition, the technical training centres train JAs (jeunes agriculteurs - young farmers, of whom there are 306) and ARs (artisans ruraux - rural artisans, of whom there are 49) on seven-month courses, having first checked after an initial trial that they enjoy sufficient autonomy of action in their milieu. Originally, the young farmers sent to the CPTs were family aids who were not entitled to work a plot of land of their own, so that they had virtually no opportunity to put what they had learned into practice. From 1976, however, the project organizers pressed for young couples to be sent to the CPTs, so that now a trained farmer, being married, has the right to his own farm where they can apply the techniques learned. The training given to the wives enables them to play a full role on the farm.

The training for JAs, ARs and their wives is a comprehensive course encompassing farming techniques, literacy, agricultural machinery, etc. On completing the course, some are granted a loan by the Centre to buy a team of oxen; the equipment produced by the rural artisans is supplied to the farmers.

Each year the programme for the season is discussed among the PADs, AVs and JAs, together with the DVs (délégués villageois - village delegates, of whom there are two to each village) and the staff ot the cooperatives, who are trained by the UNCC. Literacy training is given by paid monitors in the CPTs and in 301 centres set up in the region covered by the project.

A women's training programme, covering subjects connected with farming and health, was also carried out.

It became apparent after two years that the content of the training courses was too narrow; starting from 1975/76 it was enlarged by the incorporation of the new technical themes and animal-drawn tillage.

In order to increase the efficiency of the 'auto-encadrement' system, 'aides-encadreurs' were trained to monitor the work of the PDAs and AVs. However, these young school leavers who are paid by the administration still lack authority.

By the end of the first phase of the project it was too early to assess the results of the work done in the field of 'auto-encadrement'. Some techniques are familiar to the farmers but are not always put into practice because of organizational difficulties; there have been delays in deliveries of equipment, fertilizers and insecticides.

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[1] The figures correspond to the period from the beginning of the project until 1976.

Literacy training has not yet taken on the desired functional characteristics and practical use of the written word has not been developed. Only very limited progress has been achieved with self-managed cooperatives.

The dialogue which has been set up between the farmers and the project authorities is a positive feature, although it is as yet difficult to evaluate all its consequences on the basis of the limited experience to date.

2. Other action

The results of an aerial photography survey to determine the priority regions for soil regeneration were not available until 1976, too late to be acted upon during the first phase.

Large-scale fertilizer tests were carried out in 1975 and 1976 in the Yaouri and Sawaya zones. Few results are yet available after this short period of experimentation. During this period the first phosphate fertilizers from Tahoua appeared on the market.

The seed programme met with many difficulties. The groundnut varieties proposed were unsuccessful, initially because of the drought, then because of serious outbreaks of rosettes in 1975 and finally because the farmers were apprehensive about slow-maturing varieties. The cereal seed multiplication programme was postponed.

The Matameye-Kafin Baka road linking two oil-mills in the area was built at a higher cost than that estimated in the project. As a result the Droum track, which serves to disenclave one of the production areas covered by the project, had to be financed out of Sahel special aid.

Finally, the scheduled construction of fifty village wells was completed on time thanks to the work of the OFEDES.[1]

ATTAINMENT OF OBJECTIVES

Table 1.02.a summarizes the technical objectives and achievements of the project. In 1975/76, the last year of the first phase, the cereal crops were well above the objective, but groundnuts fell short of the target. The difference between the objectives and actual production is shown following, expressed as growth rates for production.

It would however be difficult to attribute any increase in overall production to action carried out under the project, since the extent to which techniques have been adopted and the technical results achieved are not known. Actual groundnut production has been quite different from the project forecasts, a

[1] Office d'étude et de développement des eaux du sol.

	Forecast	Actual
Millet and sorghum	+ 6%	+ 20%
Groundnuts	+ 20%	+ 2%
Cowpeas	+ 62%	+ 205%

fact explained to a large extent by the difficult conditions under which the project has to operate during the four years, but also by the radical revision of production priorities. The rainfall was low and the groundnut harvest was affected not only by the drought but also by attack from insects, rodents and rosettes. Farmers adopted alternative strategies, with more emphasis on cereal production (by giving over more land to cereals) and on production of cowpeas. An increase in the cowpea crop had therefore been expected. However, the official estimates fell far short of the quantity coming onto the market in 1975 and the OPVN was unable to cope with the level of supply.

Although the project clearly cannot be held responsible for the extremely unfavourable natural conditions, there is reason to doubt whether its objectives had been formulated in a realistic manner, taking account of the possible reactions of the farmers to changes in their environment.

A second cause of divergence between objectives and results lies in the relationship between the strategy adopted and the final objective. A strategy aiming to use 'auto-encadrement' by trained peasants should have included a period of trial and adaptation, even under ideal conditions with optimum results being obtained from the techniques and guaranteed availability of inputs. Moreover, the demographic approach to the problem of land shortage did not necessarily correspond to the peasants' own analysis of their problems and constraints. The peasants attached far more importance to the control of resources and access to inputs than to learning new techniques. They also took a more general view of their circumstances, in which demographic pressures were of little importance in relation to earnings and keeping cash incomes, the key factor determining migration.

As regards organization of the present farming environment and assumption by the local population of responsibility for their own development, an effective structure for dialogue, both between the farmers and the authorities and among the authorities themselves, has been set up in the project committee. From the viewpoint of long-term progress, it is essential for the officials to adopt a positive approach to present attitudes and 'mentalities' and to be able to modify technical objectives in response to the villagers' requests, since only under these conditions can a continuing joint effort be made to bring the technical services offered into line with the farmers' preoccupations.

Nevertheless, the extent of continuing evaluation and systematic analysis of the operating constraints affecting the farmers and their advisers is still

Table 1.02.a

3M Project: Comparison of objectives and actual production

	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76
Groundnuts										
Area (ha):										
Objectives										(-)
Actual								129 000	177 260	57 500
Production (t):										
Objectives										(98 755)
Actual	84 000	98 000	63 420	75 914	107 555			65 950	13 920	42 250
Yield (kg/ha):										
Objectives										(1 395)
Actual			713	599	892			533	90	733
Marketed production (t):				99 777	78 893	90 505	73 947	16 022	62 408	24 104
Cereals										
Area (ha):										
Objectives										(-)
Actual										
- millet								277 000	243 800	
- sorghum								32 000	185 855	

Table 1.03.a

Mayaga-Bugesera farming communities: objectives and actual figures

	Objectives	Actual figures
Establishment of farming communities		
Agricultural land - Establishment of farmers (2 ha plots)[a]	15 517 plots	14 192[a]
Grazing land (hectares)	21 250 ha	±18 250 ha[b]
Land for afforestation (ha)	4 878	785
Production figures (t)[c]		
Coffee	2 517	1 359
Beans	7 663	8 774
Maize	7 663	unknown
Sorghum	13 794	7 066
Bananas	53 217	24 980
Manioc	14 475	51 185
Sweet potatoes	34 060	34 123
Potatoes	6 811	unknown
Groundnuts	508	182
State revenue (1975) Rwandese francs (million)		
Budget resources for the State	95.8	49.8
Additional contribution to the coffee equalization fund	23.4	12.2
Indirect revenue (tax)	16.0	8.0

[a] Establishment of 14 192 families on 2 ha plots; the documents on which the projects had been formulated had been based on the allocation of one plot to an average rural family of 4.7 persons. In 1976, the evaluation report survey indicated averages of 6.45 persons to a family and 6.82 persons to a plot.

[b] 1 685 families are currently established on the grazing land, occupying about 14% of this land.

[c] In the absence of reliable figures for food crop areas and yields, the tonnages quoted are approximations only.

Production (t):								
Objectives								(210 293)
Actual								
- millet	143 604	122 226	154 010			122 775	93 350	183 850
- sorghum	48 354	45 888	59 460			26 800	72 080	72 500
Yield (kg/ha):								
Objectives								(750)
Actual								
- millet		568	490	608		483	433	616
- sorghum		531	435	585		426	416	608
Cowpeas								
Area (ha):								
Objectives								(-)
Actual						199 000	229 030	
Production (t):								
Objectives								(35 800)
Actual		24 418	17 814	24 065		31 840	77 910	73 500

insufficient. The viability of the project depends on these activities, and also on the development of training at all levels (literacy instructors, farmers etc.). As for the cooperative system, the scale of self-management is still very limited; the role of the UNCC advisers includes control of deposited funds, and the cooperatives have no influence on pricing and marketing policy in the State companies.

Studies on cooperative structures and credit in the region before the project started stress the importance of the hierarchical structure of rural Hausa society and control of access to resources by the traditional elite. It does indeed appear that support and management of the cooperatives are still to some extent limited to the better-off and politically more influential farmers.

During the first phase of the project, the cooperative system, despite the limitations found, was already playing a useful role, particularly in the self-managed organization of a strategic stock of cereals, an operation which was very popular with the farmers concerned.

Table 1.02.b

3M Project: Finance

- Budgeted for in the convention	:	CFAF 521 000 000
- According to 1976 review	:	CFAF 551 000 000

Distribution of expenditure to end 1976

Technical assistance	16 588 000
(Buildings, repairs, wells and equipment)	107 132 692
Roads	180 909 131
Vehicles	28 459 174
Research	12 071 250
Supervision, training	34 066 885
Operating/office costs	8 370 000
TOTAL	387 567 132

1.03. INTEGRATED RURAL DEVELOPMENT IN MAYAGA-BUGESERA (RWANDA)[1]

The Mayaga-Bugesera region straidles the boundaries of the Prefectures of Kigali, Butare and Gitarama, on the eastern and western banks of the River Akanyaru.

The EDF has been active in this region since 1959, but the first projects began in 1953 under Belgian auspices.

The pressure of population growth in the other regions of Rwanda was such that it was necessary for the people and the administrative authorities to open up new land for agriculture. The Mayaga-Bugesera region had remained relatively underpopulated; (95 inhabitants per km^2 in Mayaga, 21 in Bugesera); little is known about the reasons for this.

In 1952, the colonial administration intensified research with a view to establishing the first settlers, along the lines of the 'farming communities' already being tried at the time in the Belgian Congo. Settlement was started, then slowed down on account of difficulties with graziers seeking to establish access to the grazing land in the region. It resumed and continued at a rapid rate from 1961, following the abolition of the feudal system.

The history of past EDF aid may be summarized as follows:

1960: Study on the development of Mayaga-Bugesera: hydrological survey, tsetse fly eradication and pilot farming communities. The OBM (Office de Bugesera-Mayaga) was set up at this time.

1961-1962: Establishment of four coffee-growing farming communities, funded by EDF 1.

1962: Presentation by the national authorities of a programme for 15 additional perimeters of four separate types, none of them growing coffee, in the Bugesera ecological zone.

1965: Establishment of a non-coffee farming community combining stock-farming and agriculture at N'Kanga (Bugesera), financed by EDF1.

1966: Financing of four further perimeters in Mayaga out of EDF 2.

1968-1976: Financing out of EDF 2 and 3, of welfare and technical assistance infrastructures for the 16 completed perimeters, 10 of which had been financed by the EDF.

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[1] Evaluated by Mr. G.Tondeur, agronomist.

Altogether, 11 perimeters were established with EDF funds and 6 with other (mainly Belgian) sources of finance, out of the 29 perimeters studied in the area as a whole.

Total actual expenditure on all these schemes was Rwandese francs 382 400 000, compared with 438 600 000 budgeted for.[1]

The total number of farmers involved in these developments was 21 195, of whom 20 817 were coffee planters. The number benefiting from EDF financing is estimated to be approximately 14 192, including 13 814 coffee planters. (See Table 1.03.a.)

The imbalances and constraints prevailing in the area concerned may be described as follows:

(i) demographic imbalance (natural growth of 2.5% before 1960 and total growth of 5% per annum including immigration). These demographic imbalances inevitably led to imbalance of the subsistence farming systems;

(ii) traditional imbalance of the feudal land tenure system which - according to the promoters of the formula - needed to be superseded by the establishment of land tenure structures of the farming community type;[2]

(iii) health and food shortage problems, sometimes famine.

The projects were planned to contribute to the attainment of the following national objectives:

(i) a better geographical distribution of the population and a more satisfactory balance between population and soil resources;

(ii) removal of constraints deriving from the land tenure system;

(iii) development from a subsistence economy to a market economy in order to forestall a growing imbalance between the situation in the 'traditional' milieu and national trends towards socio-economic progress.

The general objectives of the projects were expressed as follows:

(i) to increase the average money income of rural households to enable them to buy more and better food;

(ii) to increase exports and the country's foreign currency revenue by developing coffee production;

(iii) to increase the State's budget resources;

(iv) to increase production of food crops in order to improve supplies to the local market.[3]

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1 Equivalent to 4 601 500 and 5 488 300 u.a. Calculated in 1975 units of account, the expenditure in constant terms becomes 6 573 215 u.a.

2 The traditional land tenure system was dismantled by the abolition of the feudal system in 1959.

3 This objective was assumed but not pursued as such.

In parallel with these economic objectives various socio-economic objectives were envisaged; limitation of emigration in order to safeguard the country's manpower potential, grouping of scattered populations, development of unoccupied areas to accommodate population surpluses from other regions, improvement of health and nutrition, training of peasants, organization of cooperatives, establishment of a new land tenure system, literacy training.

Given these objectives, the projects set themselves the tasks of:

(i) establishing 'farming communities' designed in a manner systematically distributing and laying out plots of land in the light of contour-lines and the potential of the land for agriculture, stock-farming or forestry. The farming communities were designed on the basis of allocation of crop-farming plots with dispersed housing - the grazing and forest land remaining in collective ownership;

(ii) organizing the campaign against erosion;

(iii) increasing coffee production and yields (in Mayaga), integrating agriculture and stock-farming, developing animal-drawn tillage, promoting cooperative equipment, education, health, etc.;

(iv) establishing the infrastructure for communications and marketing.

EFFECTS AND RESULTS[1]

Effects on household incomes

In view of the rate of population growth, the rise in incomes is of extremely hypothetical value. Bearing in mind the difficulties of obtaining accurate figures in this sphere, there appears to be a parallel trend in incomes on either side of perimeters,[2] except that incomes from coffee-growing are larger (about 40% higher) in the farming communities.

Increase in State revenues

The increase in foreign currency revenue was in the region of 50% of the forecasts.

State budget resources (export taxes, equalization funds), increased by some 50% of the forecasts. Fiscal revenue did not increase, given the low level of cash incomes.

It should nevertheless be noted that the increase in coffee production, which generates State resources and revenues, is not entirely attributable to the project. In the neighbouring areas, production has also increased - although

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1 The results are shown in Table 1.03.a, page 40.

2 This trend represents a parallel stagnation in terms of constant prices.

not quite as much as in Mayaga-Bugesera - as a result of the combined effects of population growth and general promotion of agricultural techniques.

The reinvestment fund which was to have drawn its finance from repayments by farmers of capital investments was never set up.

Increase in marketed food production

No plausible comparative assessment of aims and achievements can be made, given the absence of data and clearly defined aims. Although food supplies did not present crucial problems, there was nevertheless a deficit. On the frequent occasions when first-season crops fail, farmers may be obliged to spend a considerable proportion of their income from coffee on buying food and the quality of their diet gradually declines and reliance on manioc in particular increases.

It has been found that food reserves were larger in the farming communities than elsewhere and action by the OBM has made it possible to foil speculation on foodstuffs during periods of shortage. There has been no clear-cut improvement in nutritional standards in the area, however; the highest number of cases of kwashiorkor was recorded in the very heart of the area covered by the project.

The socio-economic field

In the socio-economic field, a number of positive results can be recorded: effective establishment of a new tenure system, a higher level of school attendance in farming communities (46%) than elsewhere (36%), virtually complete eradication of sleeping sickness in humans and animals, water supplies reaching roughly 50% of families.

It nevertheless has to be recorded that the objective of maintaining balance between natural resources and the population has not been achieved. The population living on the farming units in 1976 was substantially higher than the norms adopted at the beginning of the project (6.8 persons in 1976 compared with 4.7 anticipated initially). There is no possibility of the initial norms being established, given the high population growth throughout the country. There has been a parallel increase in the livestock population.

OVERALL ASSESSMENT AND EFFECTIVENESS OF PROJECTS

The project was successful over a period in channelling settlement within the perimeters by farmers in need of land, by offering them plots. The settlers integrated into the systemized structure, but had no alternative other than to carry on using traditional farming methods as far as food crops were concerned. Income from coffee growing has helped to improve housing standards but, as indicated above, the families are often obliged to use part of it to buy food.

Twenty years' work with farming communities has been undermined by the extraneous factor of the population explosion. With the passage of time, the population density has risen and the farming land has been broken down into smaller units within the organized structure.

Regarding the effect on the Mayaga land of coffee-growing, the minerals taken out of the land have not been matched by corresponding inputs of fertilizers. The high cost of mineral fertilizers meant that they could not be used profitably, given the average prices paid to the farmers for their coffee.

The model 'fermettes' aimed at combining livestock and crop-farming have not progressed beyond the experimental stage. The supervisors have not succeeded in demonstrating to the farmers how to effect the transition from traditional methods to those of the model proposed.

The cooperative organization is still linked to the structures of the OBM. In the farming environment, whose own structure has been completely dismantled by the two-fold effects of the elimination of the feudal system and the individualism of the migrant population, it has not really been able to play its part as a unifying force or, more specifically, to attract farmers to participate.

The technical design of the projects is now nearly 20 years old and has become unsuited to requirements, particularly in view of the manpower constraints.

Continuing information and evaluation at operational level have been very inadequate; hence the difficulty experienced in the past and currently of proposing improvements to the established system.

The essential point, however, seems to be that economic considerations and concern with profitability have caused programmes to be oriented too exclusively towards coffee-growing, at the expense of objectives which are closer to the immediate interests of the Rwandese rural population, a population which is very unapproachable, given the individualization and absence of social organization resulting from socio-political events.

The infrastructures which have been set up (roads, dispensaries, social centres, water supply etc.) would seem to be viable. As long as the agronomists, veterinarians, medical staff etc. are paid by the State, the OBM will be able to retain financial autonomy as far as its cooperative activities are concerned. It would nevertheless be necessary for the OCIR[1] to allow the OBM an additional mark-up so that it would not need to balance its coffee budget with resources from other activities.

On the other hand, the situation regarding production and balances between population and resources is not viable and unlikely to become so for a long time, given the general rural development situation in Rwanda. Reducing the

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[1] Office de commercialisation des produits industriels du Rwanda.

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[b] 1 685 families are currently established on the grazing land, occupying about 14% of this land.

[c] In the absence of reliable figures for food crop areas and yields, the tonnages quoted are approximations only.

Table 1.03.a (continued)

Yields

(kg/ha)

	1957	1962	1967	1972	1974
Sorghum[a]	2 441	2 945	1 916	1 852	2 030
Beans[b]	1 505	956	946	881	1 116
Groundnuts	1 706	1 049	907	709	917

[a] Sown in March.
[b] Sown in October.

population density in the project area to the level at which it would be in balance with resources would be tantamount to overpopulating other regions; allowing the situation to develop in line with its present dynamics would mean the overpopulation of the farming communities themselves. Apart from action to affect the population pattern (limitation of the growth rate or a policy of emigration to other African regions), only drastic action to increase the productivity of the factors of food production would have beneficial effects. Such action, in order to be reliable and efficient, would entail a thorough revision of the methods currently employed.

Table 1.03.b

Rwanda: Finance

(RWF '000)

Finance	Forecast	Actual
Preparation and organization of work	11 550	13 727
Tsetse fly campaign	19 965	21 450
Staff and equipment	201 857.7	141 396
Establishment of farming communities	77 476	84 693
Social and economic infrastructure	127 767.5	121 093
TOTAL	438 616.2	382 359

1.04. AGRICULTURAL DEVELOPMENT OF THE CENTRAL REGION AND THE PLATEAUX REGION IN TOGO[1]

The EDF has been active in the Central and Plateaux regions since 1964 and its work has taken four forms: price support, 'aid to production' (supply of equipment and inputs), integrated agricultural development (second EDF), development of cotton-growing (third EDF).

In addition to price support and aid to production, the first phase enabled the State to establish the five SORADs (regional planning and development companies), two of which are concerned with evaluation and allocation of installation, equipment and supervision expenditure. Its essential aims were improvement of the structure of farm units in order to make them more competitive through the dissemination of techniques, the distribution of inputs, small-scale mechanization (animal-drawn tillage) and the combination of livestock and crop-farming.

However, no analysis was made of the needs, potentiality and constraints of rural development in the regions concerned before the broad-based structures were set up and equipped, so that they lacked a coherent regional development policy.

The second phase was planned on the basis of the same regional structures as the first, except that it aimed at significant intensification of effort on all perennial and annual crops grown in the two regions (coffee, cocoa, cotton, groundnuts), including animal-drawn tillage and combined livestock and crop-farming. The development of irrigated agriculture recommended by the Togolese Government was not implemented.

It was planned that the technical assistance teams assigned to the various SORADs would prepare proposals for an overall development programme for each region as a matter of priority.

The third phase was also planned on the basis of structural aid, but no longer included measures for the development of animal-drawn tillage or the combination of livestock and crop-farming. The aid initially intended for the SORADs - expatriate personnel and technical and financial resources - was partly transferred to a new company, SOTOCO, which was set up in 1974 to promote cotton-growing. Another company, SRCC, took over the coffee and cocoa

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[1] Evaluated by C. Van der Vaeren, economist, and G. Bertrand, agricultural economist.

activities, while others took over fruit, cereals, etc.[1] Regionally integrated planning was thus superseded by sectoral planning.

The planning pattern evolved in line with the course of the programmes (first programme oriented towards regional planning, second programme oriented towards sectoral planning), but not enough provision was made to ensure that the institutional reforms were accompanied by improvement of the rural infrastructures and structures ('animation', education and health facilities, roads, cooperative and mutual organizations, etc.) which could have supplemented and reinforced the economic work of the sectoral companies.

During this period, moreover, pricing policy was hampered by very disruptive market situations: the policy of developing cotton as a 'motive' crop was thwarted by a sudden and spontaneous increase in staple food prices. In parallel with this, rice-growing in the lowlands was developed and attracted increasing interest on the part of producers.

THE RESOURCES DEPLOYED AND ACTION CARRIED OUT

A variety of technical resources were deployed and these should be assessed individually in the light of the results achieved.

The technical assistance programme opened in chaotic fashion and, over three years, only that part of it which was connected with the spending of the EDF funds was completed. Apart from a few exceptions the staff were of mediocre calibre. They concentrated heavily on development of the cotton economy and this meant that the tasks of regional planning, environmental structuring and training of middle and junior staff were not carried out. The technical assistance staff, having in 1970 joined the national structures which had been in existence since 1965, virtually took over the management of the companies. The takeover of duties from them caused no problems, but the SORADs were partially dismantled shortly afterwards.

The Togolese staff performed their role relatively satisfactorily when operating on a broad front advising farmers on all aspects of farming problems - in so far, that is, as the technical innovations were attractive. Their training and discipline at work left something to be desired in some cases, however, because they were left to themselves too much.

From the point of view of infrastructure, it would appear that the SORADs were either overequipped or inefficient in planning their investments, whether on multi-service centres, garage-workshops or storehouses. These were generally underutilized; a larger number of small local investments would have been more effective.

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[1] SOTOCO = Société togolaise du coton; SRCC = Société pour la Regénération de la Caféière et de la Cacaoyère.

The building of roads, tracks and bridges was not coordinated. Equipment remained unused in the absence of an after-sales service; bridges were built without any corresponding roads; contracts for a few dozen kilometres of road used up funds allocated for a hundred kilometres, etc.

The effectiveness of the resources deployed was therefore very uneven. The highest degree of efficiency was found in structural aid, supervision and improvement of communications and the SORADs' operational resources.

On the other hand, the multi-service centres, workshops and animal-drawn tillage equipment served no purpose; the storehouses and civil engineering equipment were under-used.

The research programmes financed by the EDF over a number of years produced results, thanks to additional finance which enabled them to be extended. However, these programmes suffered from two defects: lack of coordination arising out of the division of work between specialized institutes[1] and a lack of liaison with the advisory programme.

THE EVOLUTION OF STRATEGIES

From the strategic viewpoint, two important considerations were contained in the initial guidelines. It was necessary on the one hand simultaneously to modify and intensify farming methods and on the other hand to establish dynamic and versatile development structures at regional level (SORADs) and local level (cooperatives) which could implement integrated rural development policies.

From the technical viewpoint, the instruction in intensification of agricultural techniques covered early sowing, densities, fertilizers, insecticides, the adoption of selected seeds and the adoption of animal-drawn tillage.

Although it proved relatively easy to introduce new techniques and cotton varieties, the efforts to introduce animal-drawn tillage failed. There were several reasons for this: lack of conviction and negative preconceptions among SORAD and livestock service staff; failure to carry out preliminary research prior to promotion and selection of breeds (local breeds were unsuitable); absence of a structure to promote integration of agriculture and livestock-breeding); unsuitability of some of the equipment supplied with EDF finance and lack of coherent purchasing policy (in the first phase: 'aid to production'). The introduction of improved cereal varieties is still at an early stage. The selection of seed varieties is a relatively long-term process and the action in this field was not long enough for results to be expected before the end of the period of the project.

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[1] The Togolese Government has consequently decided to set up a single research establishment combining agronomy departments and a rural economics institute.

Finally supporting research and educational programmes were organized separately for cotton, coffee and cocoa, and food crops. The research has only recently been concerned with establishing the most suitable rotations, studying interactions between various crops, the farmers' agricultural calendars and overall factor productivity.

As regards structures, considerable progress has been made over the years. Before the first EDF action, the intervention structures were within the general administration which was made up of pyramid-shaped departments operating in parallel with one another (agriculture, water and forests, livestock, fisheries, etc.). The SORADs were set up from 1965 to coordinate all development activities at regional level. Their resources were increased in 1971 by the establishment of a technical assistance team (second EDF) and in 1973 the Government asked the UNDP to carry out regional studies to enable the two SORADs to establish their operations on a more coherent basis. The results of these studies only became available in 1976. Meanwhile, in a change of policy, the Togolese State set up companies for the main products (SOTOCO, SRCC, SONAPH,[1] etc.), because the SORADs lacked effectiveness. The latter had spread their range of activities too widely and lacked a coherent programme; in addition, they became instruments of political as well as economic and technical policy. In the production sphere, the SORADs had nevertheless concentrated most of their efforts on cotton in the hope of achieving self-financing, an objective assigned to them in 1971. In the same hope, some of them ventured into profit-making activities outside the scope of their role in rural development.

After the formation of the product companies, the SORADs were free to concentrate on food crops, but they had little impact, for lack of resources and organization.

It was still planned during the 2nd and 3rd phases to promote structures for rural self-development at an intermediate level between the farmers and the regional organizations. Nothing has been done in this respect by the SORADs. There have been tensions between these companies and the existing cooperatives, while the emerging cooperatives have not yet acquired the influence which their dynamism could bring them.

ATTAINMENT OF OBJECTIVES

Taken overall, the production objectives were not fully achieved, with either cotton or food crops (cf. Tables 1.04.a and b). Over recent years, the effect of competition from cotton has made itself felt on food-crop farming. Whereas it may be true that there has been a slight improvement in farmers' standards of living, there has been no increase in the State!s financial revenue.

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[1] Société nationale du palmier à huile.

However, comparison of objectives and actual figures is not a sufficient basis for an assessment of the effects of successive schemes.

Production of Hirsutum cotton has progressed well for ten years. However, this increase has been offset by the decline in production of Mono cotton. The extension of areas under cultivation has created a strong demand for labour, particularly during the ploughing season, and the failure to meet this demand has been all the greater in that the efforts to promote animal-drawn tillage have failed completely.

The improvement of food crop productivity has tended to be neglected by comparison with cotton-growing. A variety of factors accounts for this: modification of traditional agricultural methods is more complicated than the adoption of new techniques; cotton-growing intensification methods were well known, whereas the SORADs had no valid technical proposals for food-crop growing. The first results of research did not materialize until 1975; unlike food crops, cotton had been subject to a controllable purchase monopoly. This meant that trade in this crop could be a lucrative activity for the public bodies involved (SORADs, SOTOCO, OPAT and the Treasury).[1]

From the viewpoint of the economics of farming, the competition between the food-crop and cotton options has become more clear-cut over the past few years. In addition, the producer price for cotton was kept fairly low until 1973/74. Cotton has consequently not played the 'motive role' which had been assigned to it with a view to increasing incomes and capacity for investment in inputs.

From the State's viewpoint, revenue has not increased. The revenues of the OPAT and the State have been just enough to reach break-even point on the balance-sheet of the cotton operation.

The same has not been true of coffee which, despite some difficulties, has proved highly profitable both for producers and for the Togolese State.

CONCLUSION

In general terms, the farmers in the Central and Plateaux regions have shown themselves to be alert and keen to progress. However, as yet it cannot be said that confident relationships have been established between broad-fronted supervisory staff able to give general advice and farmers who are able to assume only a relatively small share of the technical and financial risks. Moreover, social pressures prevent individuals from progressing to the extent that they leave the group behind them. For this reason it is essential that the supervisors' efforts be directed towards communities rather than towards individuals. The communal approach to supervision would have been the strate-

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[1] OPAT = Office des Produits Agricoles du Togo.

Table 1.04.a

Objectives and actual figures for cotton production in the Central and Plateaux regions (Togo)

(tonnes seed-cotton)

Year	Actual Production		Objectives			
			1st Operation	2nd Plan (1970-75)	2nd Operation	3rd Operation
		b	(whole country)	(2 regions)	(2 regions)	(2 regions)
1964/65		6 300	e			
1968/69		5 300[c]	20 000[a]			
1969/70	Mono	2 600		e		
	Hirs.	2 350				
	Total	4 950				
1970/71	Mono	1 650			e	
	Hirs.	4 000				
	Total	5 650				
1971/72	Mono	1 200				e
	Hirs.	5 800				
	Total	7 000				
1974/75	Mono	1 300		Mono 6 600		Mono 5 200
	Hirs.	9 550		Hirs. 21 350		Hirs. 17 500
	Total	10 850		Total[d] 27 950		Total 22 700
1979/80					Mono 5 600	
					Hirs. 14 200	
					Total 19 800	

a Objective announced: 22 000 t, but against a base (overestimated) of 8 500 t in 1964/65.
b The whole country.
c Two regions (Plateaux and Central).
d Total objective announced: 31 500 t, but against a base (overestimated) of 8 300 t in 1969/70.
e Year from which the objective was launched.

Table 1.04.a

Objectives and actual figures for cotton production in the Central and Plateaux regions (Togo)

(tonnes seed-cotton)

Year	Actual Production		Objectives			
			1st Operation	2nd Plan (1970-75)	2nd Operation	3rd Operation
		[b]	(whole country)	(2 regions)	(2 regions)	(2 regions)
1964/65		6 300	[e]			
1968/69		5 300[c]	20 000[a]			
1969/70	Mono	2 600		[e]		
	Hirs.	2 350				
	Total	4 950				
1970/71	Mono	1 650			[e]	
	Hirs.	4 000				
	Total	5 650				
1971/72	Mono	1 200				[e]
	Hirs.	5 800				
	Total	7 000				
1974/75	Mono	1 300		Mono 6 600		Mono 5 200
	Hirs.	9 550		Hirs. 21 350		Hirs. 17 500
	Total	10 850		Total[d] 27 950		Total 22 700
1979/80					Mono 5 600	
					Hirs. 14 200	
					Total 19 800	

[a] Objective announced: 22 000 t, but against a base (overestimated) of 8 500 t in 1964/65.
[b] The whole country.
[c] Two regions (Plateaux and Central).
[d] Total objective announced: 31 500 t, but against a base (overestimated) of 8 300 t in 1969/70.
[e] Year from which the objective was launched.

Table 1.04.b

Togo: Groundnuts (both regions)

Year	Surface (ha)		Production (t)		Yield (kg/ha)	
	Objective	Actual	Objective	Actual	Objective	Actual
1970					700	
1971		4 021		1 752		
1972		4 250		1 735		
1973						
1974						
1975			6 000[a]	6 200		
1976						
	Food crops: Millet and sorghum in both regions and (maize)					
1971		5 636 (31 489)		3 679[b] (25 813)		
1972		6 600 (34 800)		4 280[b] (23 515)		
1973						
1974						
1975			6 292	37 000 (9 100)		
	Rice (rain-fed and irrigated) in both regions					
1971/72		2 380[d]		1 834		
1972/73		2 950[d]		2 280		
1973/74	1 340[c]		1 600[c]			
1974/75	2 500 - 3 000	2 520	7 600[c]	8 700[d]		

[a] Objective for the Central region only.
[b] Panicle.
[c] According to technical assistance contract No AT/927.
[d] According to SEDES survey.

Table 1.04.c

Nature and financing of project activities and investments in the Central and Plateaux SORADs

(1 000 CFAF)

	Forecast	Actual
Supervision	517 332	586 707
- Togolese staff	232 752	333 640
1st operation	136 452	196 993
- cotton	50 172	73 045
- groundnuts	43 532	62 604
- coffee	41 100	61 343
2nd operation	14 000	15 181
3rd operation	82 300	121 466
- Technical assistance	284 580	253 067
2nd operation	102 180	94 429
3rd operation	182 400	158 638
Investment and equipment	1 044 061	991 861
- connected with research	7 582	3 300
- connected with production	239 748	206 413
- connected with operations by the staff	357 721	328 807
- connected with marketing	437 156	462 171
- programme/wells	15 000	8 000
Applied research	90 895	86 516
- cotton research	62 295	56 347
- food crop research	28 600	30 169
TOTAL	1 652 288	1 665 084

gy whereby funds, collective infrastructures, commercial structures (cooperatives), etc. could have been set up. Although this strategy had been planned, it was not put into effect.

In the context of the successive projects, it would have been necessary to have access to regular information on conditions and developments on farm holdings; without it, there was no overall development strategy, but only specific, uncoordinated activities.

In addition, greater flexibility in the operational agencies would have been required, particularly more autonomy over resources and decisions on supplies, but also greater adaptibility to new problems as they arose in the rural environment.

Finally, the influence of political factors should have been favourable to such a socio-economic programme, instead of disrupting its initiation and execution.

1.05. IMPROVEMENT OF COTTON PRODUCTIVITY IN THE SOUTHERN ZONE OF CHAD[1]

Cotton production began in Chad in 1928 and the area under cultivation reached its maximum (± 300 000 ha) by about 1960. At that time, the Chad Government had put action in hand to make structural improvements with a view to increasing productivity. The FAC, and then the EDF from 1965, supported this action until 1977. The operational area, which was initially limited, spread rapidly until 1968, by which time it covered the entire cotton-growing region. The population affected currently is approximately 1.8 million, occupying 292 000 farm holdings.

AIMS AND CONTENT OF PROJECTS

The choice of agro-economic policy which had prevailed during the early 1960s was for a substantial increase in cotton growing, since cotton was regarded as a 'motive' crop whose development would bring an improvement in other activities, notably food-crop cultivation.

Following the phase of extension of areas under cultivation, which was organized in an uncompromising way, it became necessary to improve the production costs structure in order to remain competitive on international textile markets. The purpose of this structural improvement was to increase cotton production without modifying the land tenure structure (small peasant holdings), by trebling yields and reducing the hazards of disease and climate.

The EDF's operations should be seen in two phases.

From 1965 to 1972, the EDF's aid took the form of support for cotton prices (four instalments plus a loan which was not repaid) on the one hand and support for fertilizers and insecticides (structural aid) on the other.

From 1972, the structural aid became part of an integrated range of interlinked complementary operations known as the 'cotton plan'.

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[1] Evaluated by P. Thenevin, economist, and H. Dupriez, agro-economist. This way a joint EDF-FAC study, since the programme evaluated had been financed jointly by these two funds.

In addition to this structural aid, which was increased and developed (fertilizers, insecticides, sprayers, disinfectants, transport of these, etc.), the cotton plan called for the provision of animal-drawn equipment for planters, the development of breeding of draught animals, intensification of food crops, supervision of farming operations, training and technical assistance for supervision staff, supporting research and production of selected seed.

The cost of the technical and financial programme to be put into effect during the period covered by the cotton plan was CFAF 11 600 million (40 000 000 u.a.), or five times as much (in nominal terms) as the expenditure between 1965 and 1971.

The finance came from various sources:

	Finance in CFAF million	%
Chad		
Farmers	3 100	26.8
State	2 682	23.2
Aid		
EDF	4 207	36.3
FAC	1 584	13.7
TOTAL	11 572	100

When account is taken of expenditure on purchase of draught oxen, not included in the above table, 55% of the costs were met by Chad and 45% by foreign aid (cf. Table 1.05.c).

THE RESOURCES DEPLOYED AND ACTION CARRIED OUT

The structural aid as such had a very positive impact, on the one hand because it gave farmers access to cheap inputs, on the other hand because it has enabled the State to stabilize operating expenditure. From this point of view, the ONDR's supply operations were essential.[1] It is possible that more flexibility in supplies and more expeditious purchasing procedures could have given a more even pattern over recent years.

[1] ONDR = Office national de développement rural.

The introduction of animal-drawn tillage and means of transport was a success which the aid programme encouraged with a subsidy of approximately 15% on the total cost of teams and equipment.[1] The number of draught oxen increased at an annual average of 20%, despite the ground lost during the drought period. The number of carts, however, rose more slowly. Development of the use of animal-drawn equipment depended on the scope for extending areas under cultivation, which was not always possible for a variety of reasons. The market in jobbing work developed considerably and, for some farmers, this was probably a major factor making ownership of the equipment viable.

Very little real effort was put into food crops. The supervisory work was concentrated on cotton growing.

The agricultural supervisory staff, set up by the ONDR and assisted by the administrative authorities, has proved efficient in dealing with supplies of inputs and dissemination of the main guidelines. However, the farmers still regard the staff as the promoters of cotton and distributors of inputs rather than as their agricultural advisers. Because of their specialized and authoritarian nature, the supervisory services have had little effect on the restructuring of the rural environment and are not yet able to deal with the whole range of problems on which farmers need assistance. Economic incentives appreciated by the producers, effective marketing and regular, reliable supplies are now seen as more efficient ways of stimulating the farming community than the dissemination of information, which has reached the limits of its usefulness.

In this connection, it may be said that the FAC-financed TIKEM centre is operating satisfactorily in training rank-and-file advisers and supervisors. However, the conditions of service of this personnel (pay, promotion etc.) are leading to waste of the training. The Bailli school is no longer managing to provide adequate training for the middle level of agricultural supervisors who would be necessary to raise the overall efficiency of supervision. This school should be reformed and recruitment should be more closely related to the real outlook for work in the rural environment. The staff trained at Bailli are currently preventing experienced advisers from gaining promotion, which is already difficult for them.

The supporting agronomical research was financed by French aid and funds from the Chad Government.

Cotton research was carried out reliably by the IRCT with remarkably successful results: very high experimental yields, high quality seeds, identification of protective treatments, etc. During recent years, the IRCT has made efforts to develop its experimental network in the farming environment. However, its work is still primarily concerned with fibres, despite attempts to integrate cotton in rotations. Economic analysis and analysis of peasant farming systems are still at an elementary level.

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[1] Including oxen, the equipment and in some cases the cart. Half of the equipment was financed by the EDF.

Food-crop research did not achieve any significant results. The programmes lacked resources, coordination and continuity, despite the personal efforts of some staff. The agricultural stations were not able to provide the reliable seeds which would have been needed for generalized adoption.

In general terms, the research effort has not yet found satisfactory solutions to the crucial problems of replacing fallowing, soil exhaustion and the adaptation of agricultural techniques to complete farming systems rather than to cotton-growing alone.

The livestock-breeding part of the cotton plan was formulated primarily in the light of the prospects for the development of animal-drawn tillage. It was itself divided into several parts: infrastructure investment (transit markets, veterinary stations, vaccination centres, etc.); veterinary products for health and parasite control campaigns; local staff and technical assistance staff; equipment and operating costs; incentives for the building of barns.

This part of the cotton plan was ill conceived and this detracted from its effectiveness in practice: it was not an integral part of the general context of a policy on livestock breeding; too much importance was attributed to unnecessary investment (transit markets); there was dissension between the livestock-breeding services and the ONDR; some aspects, such as manure barns and silage pits, were of only marginal interest; there was no working capital for the purchase of veterinary products, etc.

The objectives for the supply of draught oxen proved irrelevant, since supplies were obtained without help from the project. The veterinary campaigns were carried out spasmodically as the Government changed the conditions of payment for drugs from time to time. The most positive action, which had not been included in the initial plans, was the establishment of 143 GDSs (groupements de défense sanitaire), associations of owners of draught oxen which maintain regular contact with the veterinary services. However, lack of working capital means that it is not certain that this scheme will be able to continue operating autonomously.

EFFECTS AND RESULTS

The effects of the operation are to be judged on two separate planes: that of the cotton economy itself, and that of the agrarian economy as a whole.

Chad's cotton production has risen from some 100 000 tonnes of seed cotton to approximately 150 000 tonnes (cf. Table 1.05.a, p. 60. Average yields have progressed since 1965 from roughly 335 kg/ha to about 490 kg/ha, an increase of 46%. The rise in production has been achieved exclusively through improvement of productivity, since the total area under cultivation has remained in the region of 300 000 hectares.

In economic terms, the cotton productivity improvement programme proved advantageous for all parties involved.

The farmers have seen an increase in incomes and been able to spend some of their resources on equipment for their holdings (teams and equipment for animal-drawn tillage, carts, etc.).

The sharp improvement in prices since 1973/74, particularly in 1974/75, after twelve years of stagnation has had a decisive effect over recent years. It is estimated that farmers' resources doubled in nominal terms between 1972 and 1976. However, there has not been a similar development in their purchasing power, given the widespread inflation affecting imported consumer goods and domestic prices.

The State benefited from substantial increases in resources through export taxes and income from its holding in COTONTCHAD. Account being taken of the EDF subsidy, the State's annual revenue from the cotton economy has been in the region of CFAF 1 500 to 2 000 million (subsidy, side effects, CSSPC[1] revenues, proceeds from the 'productivity' exercise).

COTONTCHAD, the mixed-economy company responsible for marketing and packaging, has operated very satisfactorily and been able to reinvigorate the industrial capacity which had been allowed to decline somewhat by its predecessor, COTONFRAN. Its fixed assets rose by CFAF 800 million between 1972 and 1976.

In terms of the development of new economic and socio-economic structures, there were other effects, some of which may be seen as positive, others as insufficient or negative.

The positive effects, apart from the improvement in resources mentioned above, are as follows: the farmers' investment capacity has increased (some 15% of annual incomes is invested each year in intensification of cotton-growing); the traditional bottleneck of lack of cartage equipment is being eased; the establishment of a large stock of draught animals in the farming environment is creating good prospects for real development of combined stock-farming and agriculture and of meat production by farmers; the farming world has shown genuine dynamism and mastered increasingly intensive cotton-growing techniques.

The following table highlight the structural characteristics which seem to have accounted for the development of intensification by cotton planters in Chad.

They show:

(i) how the return on labour per kg of cotton produced held steady and then rose, without any fall over a period of several years;

(ii) how the State achieved relative stabilization of fluctuations in operating costs;

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[1] Caisse de soutien et de stabilisation des prix du coton.

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76
1. Price of seed cotton to the producer F/kg	26	28	29	31	43	45
2. Producer's costs (share of levies) F/kg	5.9	5.85	5.7	5.68	6.8	8.5
3. Return on producer's labour F/kg	20.1	22.14	23.3	25.3	36.2	36.5
4. Structural aid F/kg	(4.5)	5.8	6.2	4.9	8.1	18.9
5. Structural aid as % of net return $(\frac{4}{3} \times 100)$	(22.3)	26.2	26.7	19.3	22.3	51.8
6. Price of seed cotton to the producer, balancing the return on labour at the same level (1 + 4) F/kg	(30.5)	33.8	35.2	35.9	51.1	63.9
7. 6. as % of 1.	117.1	120.7	121.4	115.8	118	142

(iii) how the level of return on labour remained stable in 1975-76, despite a sharp rise in production costs.

The following table illustrates an additional point of importance in relation to the efficiency of structural aid: if the State had required the producer to assume all the costs of intensive production (in 1975/76: CFAF 27.4 per kg) while at the same time increasing the price per kilo of cotton by an amount equivalent to the structural aid (CFAF 45 plus 18.9 = 63.9 per kilo of seed cotton), the advantage of switching to intensive production would have been less clear-cut to the grower, since the return on labour in the traditional system would have been 87%, as opposed to 61%, of the return on labour using intensive methods in 1975/76.

This table shows that structural aid has had very positive effects where it has been provided in the context of coherent, stable economic policies supported by well-established organization.

The stability of the farming economy and its polarization towards intensification were probably the main factors accounting for the successful results

	Return on labour intensive (161 days/ha)		Return on labour, traditional			
			Compensated prices (line 1 of table a)		Adjusted prices (line 6 of table a)	
	CFAF/day	%	CFAF/day	%	CFAF/day	%
1	2	3	4	5	6	7
1971-1972	129.3	100	73.4	56.8	89.0	68.8
1972-1973	138.2	100	72.5	52.5	88.0	63.7
1973-1974	152.1	100	89.2	58.6	103.0	67.7
1974-1975	214.3	100	153.1	71.4	181.9	84.9
1975-1976	200.4	100	122.0	60.9	173.4	86.7

in Chad. It would have been highly desirable for similar efforts to have been made with a view to improving the food economy.

Stability necessitates long-term planning extending beyond the normal scope of projects (3 to 5 years). The State must have the necessary resources at its disposal to stabilize producer prices and sufficiently flexible stocks of inputs to adjust supply to demand quickly.

There are no grounds for assuming that it is necessary to monopolize trade in order to stabilize the ratio between input and output prices, or that structural aid is only efficient when applied to export crops.

Some effects have been insufficient in relation to the objective of making cotton the 'motive' crop. The cotton economy has not had a major impact on production and upstream and downstream trade in the country as a whole; there has been little development of complementarity between farmers and graziers and little attempt has been made at diversification of economic activities; there has been very little improvement in purchasing power and the effects on living standards (improvement in housing, development of trade, etc.) are barely noticeable.

Some negative aspects of the project also have to be recognized. No solution has been found to the fundamental problem of long-term soil exhaustion; regarding food supplies, the situation has improved in the region and the frequent shortages between seasons have ended, but cotton-growing is preventing food-crop production from developing sufficiently in the southern zone to reduce the country's serious food deficit; the conflicts between graziers and farmers are being exacerbated by economic policies which concentrate exclusively on the development of export trade rather than the potential for local, regional and inter-State trade.

In the case of livestock products in particular, Nigeria offers very attractive markets. Customs regulations can do nothing to restrict this trade, nor

Table 1.05.a

	1964/65	1965/66	1966/67	1967/68	1968/69
Total cotton-growing area, ha					
- Objective					
- Actual	287 080	297 250	300 412	299 600	295 960
Intensive cotton-growing area, ha					
- Objective					
- Actual	6 308	13 216	19 666	25 016	34 443
Total production seed cotton, t					
- Objective					
- Actual	99 105	86 830	122 836	102 033	148 770
Cotton price paid to the producer (CFAF/kg seed cotton)	26	26	26	26	26
Net return on producer's labour, intensive (CFAF/day)[1]	-	-	-	-	-

[1] For an estimated total of 148 days.

are they a substitute for a policy on livestock breeding to encourage local people to make the most of their stocks. The commercial interests of the breeders, given the attraction of foreign markets, are opposed to the interests of the farmers, who try to appropriate draught animals. There has accordingly been an increase in the prices of draught animals and a decline in the quality of those available for purchase.

Finally, a number of trades are losing their skilled craftsmen (blacksmiths, carpenters) as a result of competition from subsidized supplies from the ONDR.

Development of cotton production in Chad

1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77
		298 000	300 230	301 030	302 140	302 920	303 000
299 020	302 880	301 910	275 620	269 026	272 156	331 960	310 174
		43 000	59 550	72 150	85 875	99 000	109 625
44 115	40 602	41 957	44 723	54 852	74 976	126 192	-
		108 000	141 000	156 580	170 535	182 885	190 000
107 035	94 890	108 500	104 200	104 400	143 640	171 986	-
26	26	28	29	31	43	45	-
-	-	111.9	120.4	133.7	223.7	192.3	-

CONCLUSIONS

The cotton-growing improvement programme during the 11 years of the EDF's intervention was a major economic programme which will continue to have long-term effects for all concerned. The stability of the structural aid and the maintenance or steady improvement of the outputs/inputs ratio with its consequences on the maintenance and improvement of returns on labour are the main factors accounting for the very satisfactory economic results achieved. However, the project did not produce structural results in the field of food crops similar to those achieved for cotton growing. The fundamental problems of Chad's economy will only be solved if the work of structural improvement is consciously extended to all farming activities and not restricted to those offering prospects of exports; this more fully integrated strategy will be pursued in a further project to be financed out of the fourth EDF budget.

Table 1.05.b

Chad: Results of the cotton plan

	Objective 1976	Actual		
		Average 1971/72 to 1973/74 start of cotton plan	Average 1974/75 to 1976/77 end of cotton plan	1976
Total cotton-growing area (ha)	302 920	282 185	304 763	331 960
Production (t)	182 885	105 700	148 542	171 986
Average yields (kg/ha)	627.35	375.13	488.23	419
Intensive cotton-growing area (ha)	99 000	47 177	100 584[a]	126 192
Estimated yield intensive (kg/ha)	929	954.3	918.5[a]	884

[a] Average for 1974/75 and 1975/76 only.

Table 1.05.c

Summary table of agreed funding of the programme for the improvement of cotton productivity and integrated rural development in the southern zone of Chad[a]

(millions CFAF)

Period	Chad (farmers)	Chad (State)	EDF	FAC
1965-68	306.0	[b]	374.0	
1965-68	-	[b]	4 125.2[c]	
1964	-	[b]	436.0[d]	
1969-70	255.1	[b]	178.5	
1970-71	230.0	[b]	223.6	
1971-72	353.5	[b]	263.9	
1972-73[e]	228.9	[b]	235.4	
1972-76	3 099.8	2 682.1	3 126.8	1 589.9[g]
1972-76[f]	-	-	450.0	
1972-76	-	-	630.3	
	4 473.3	[b]	10 044	-

[a] Excluding finance for the disinfection of cotton seeds by COTONFRAN.
[b] Provision of staff and facilities.
[c] Support for cotton prices (four instalments).
[d] Advance to the CSSPC. This advance was not reimbursed and may be regarded as a fifth instalment of support for cotton prices.
[e] Interim agreement.
[f] Supplementary agreement TC 306b/71.
[g] Agreements by annual instalments - 1972:310; 1973:359.1; 1974:272.0; 1975:313.8; 1976:335.

1.06. AGRICULTURAL DEVELOPMENT IN THE CENTRAL AFRICAN COTTON ZONE[1]

Since 1967, the EDF has financed two programmes in the Central African Republic. The first of these (1968-69 to 1971-72), called the 'regional programme in OUAKA', covered 24 000 holdings[2] in the regions of Grimari, Bambari and Kouango. It was aimed at increasing cotton production through intensification and mechanization.

The second, called the 'cotton zone integrated development programme' (1973-74 to 1975-76), covered the whole of this zone,[3] in which the smaller zone of Ouaka was included. 166 000 farm holdings in the centre and north-east were involved.[4] The aim was to boost the cotton economy (+ 40%) and the coffee economy (+ 150%).

The total amount of funds committed by the EDF was CFAF 2 524.5 million (9 384 000 u.a.) to which must be added the 'aid to production' during the years running from 1967 to 1971 (support for the stabilization fund).

The problems experienced by the regions concerned were many and various: weakness of monetary incomes and trade, dispersal of the population over large areas, diversity and heterogeneity of peoples and land-types, economic dependency.[5] insufficiency of food production (the town of Bangui has always had sporadic supply problems). As regards the agricultural environment, the following deficiencies were noted: lack of organization of the road network and trade infrastructure, inadequate training of supervisory staff, disruption of agricultural services as a result of the land reform in 1970, non-existence of reliable economic and statistical data, a very low general level of education, the absence of supplies of consumer, manufactured and capital goods (housing, timber, cement, etc.).

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1 Evaluated by Miss S. Jean, sociologist, Mr. P. Von Blanckenburg, agricultural economist, and Miss A. Hubert, economist, through the Association Internationale pour le Développement Rural (AIDR).

2 ± 102 000 persons including 3 800 Bororo graziers.

3 Kemo-Gribingui, Bamingi-Bangoran, Ouaka, Basse-Kotto, M'Boumou and Nana-Mambere, Ouakam, Ouakam-Pende.

4 998 000 persons, or 66% of the total population of CAR.

5 Economic dependency resulting from the extroverted nature of the Central African economy.

AIMS AND CONTENT OF THE PROJECTS

The Ouaka programme and the integrated development programme shared the same aims: to improve farmers' cash incomes by increasing the marketed output of cotton and coffee. This increase was to be derived mainly from higher productivity rather than the extension of surfaces. Table 1.06.a shows the objectives and actual figures for production and yields.

The Ouaka programme comprised substantial structural aid (subsidies for fertilizers, insecticides and spraying equipment), aid for animal-drawn tillage equipment, a technical training programme, renovation of the regional road system and reorganization of the commercial system.

The integrated programme covered a wider range of operations: structural aid for cotton production, technical training, improvement of seed varieties; reclamation of coffee plantations, training of planters and a subsidy on coffee inputs; the establishment of storage infrastructures and the clearing of 505 km of rural tracks.

The planning and progress of the programme were strongly influenced by the political situation in this country and its financial and economic difficulties.

Apart from a few coffee-growing areas, the bulk of the resources was devoted to cotton, which is of decisive importance to the country's economy. In the zones concerned, it was the only crop on which taxes could be raised and was consequently subject to authoritarian measures.

The staff working on the two successive programmes inherited the methods which had prevailed in the Republic before the establishment of the ORDs.[1] Because of their lack of training and the inappropriate institutional environment, the staff generally relied more on the traditional methods of monitoring and supervision than on the provision of an agricultural advisory service.

In addition, the vast geographical coverage of the integrated programme meant that the numbers and training of the supervisory staff were insufficient. The land reform launched from 1970 abolished the ORDs and recentralized the services responsible for rural development. At this stage, direct responsibility for supervision was assumed by the European development company financed by the EDF. Although paid by this company, the supervisory staff remained under the authority of the Government's agricultural agencies, a situation which gave rise to several difficulties, which were exacerbated by disagreements on the types of action to be carried out (for instance, animal-drawn tillage, which was abandoned under the integrated programme). When the financing agreement came to an end, the Central African staff were returned to the Ministry of Agriculture. Since their wages were not paid, the supervisory staff then lived as the guests of the villagers with the job of persuading them, with the help of the local authorities, to grow cotton.

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[1] Offices régionaux de développement.

Generally speaking, it may be said that although the number of jobs in the supervisory services was as planned, the quality of staff left something to be desired, with a low standard of training and rapid turnover of technical assistance[1] and administrative staff. A feature of the recruitment of technical assistance staff and Central African staff was its heterogeneity, as regards the sources from which they were drawn and the contracts of employment offered. Advisory activities were reduced to the most elementary level: overseeing, distribution of fertilizers and collection of loan repayments; the supervisory services concentrated entirely on cotton to the exclusion of food crops.

Initially, the ORDOHK[2] was in charge of execution of the Ouaka programme. It was made responsible for the marketing of oil-seed crops, rice and maize in conjunction with the subprefecture cooperatives and private traders. The marketing of cotton was the responsibility of the UCCA.[3]

After the land reform in 1970, the ONCPA[4] was set up to handle the marketing of foodstuffs; it was abolished in 1974 and its activities were taken over by authorized purchasers. The cooperatives were also abolished, except in the coffee zone where they assisted private planters. The development company was given the task of carrying out the work called for under the project, completely autonomously, in cooperation with the UCCA and the Ministry of Agriculture's cotton price stabilization fund.

On the commercial side, the UCCA organized the marketing of cotton smoothly. By contrast, the coffee crops were not fully marketed in 1974 and 1975 and no action was taken under the project to assist cooperatives in difficulties.

EFFECTS AND RESULTS

The evaluation study gave an indication of the effectiveness of the main action undertaken.

The preliminary studies were carried out with EDF finance by a European company between 1963 and 1965. They included extensive pedological surveys, aspects connected with mechanized agricultural methods, sociological data, regional and sectoral studies. Limited financial resources and staff made available were far from sufficient to make full use of the data gathered or the recommendations derived from them.

The results of the advisory activities cannot be assessed accurately. It appears that some success was achieved with the introduction of new coffee-growing techniques, given the profitability of this crop at the time. In the

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1 Average length of stay: between 17 and 19 months, except for project leaders (2 in 7 1/2 years).

2 Office régional de développement de la Ouaka et de la Haute-Kotto.

3 Union cotonnière centrafricaine.

4 Office national de commercialisation des produits agricoles.

case of cotton, however, methods known to the farmers are not being applied properly, because they are not economically attractive and because of bottlenecks in the farmwork calendar, although some of them, such as early sowing, have made some progress. This accounts for the decline in production. The introduction of animal-drawn tillage, which was launched under the Ouaka regional programme, should have helped to ease some bottlenecks and bring an increase in the areas worked by the more progressive farmers. It was thwarted by technical, financial and sociological difficulties which the project failed to bring under control and was abandoned under the integrated programme. The advisory services were accompanied by authoritarian measures, free food supplies and arbitrary selection. With such measures, the only possible result was to increase the constraints on crop-farming. The responsible authorities failed to provide supplies of inputs for their 1975/1976 season and this led to a fall in production of some 30% against the average for the previous three years.

The action carried out did not lead to any appreciable improvement in food crops. A noticeable feature was the competition from cotton affecting cereals (millet and sorghum) during the sowing season. This competition encouraged by the cotton advisory services, led to a decline in cereal crops in favour of manioc. In the regions where coffee was grown, however, rice appeared to enjoy more favour than any other food crops.

The marketing of cotton was carried out efficiently by the UCCA, which has a purchasing monopoly. Prices rose from 28 to 32 francs per kilo of seed cotton between 1968 and 1974 and then increased to 45 francs.

The marketing of coffee was more problematical. Prices per kilo ranged from 116 francs (1968/1969) to 177 francs (1970), but fell back to 137 francs in 1974. The 1974/1975 crop year was interrupted by the official authorities, with the banks refusing to grant credit. Only private traders were able to continue with limited purchases.

The land reform measures reduced the role of the cooperatives (of which there were five in 1975) to the marketing of coffee. They were dependent for credit on arrangements between private traders and exporters, a situation which prevented them from really functioning as cooperatives.

The cooperative approach was indeed a failure during the period. Each cooperative drew its members from the whole of a Department. They had been set up under an earlier project. Under the integrated project, cooperative members enjoyed some advantages (sale of small tools, fertilizers, pueraria seed, etc.), but no rebate was ever paid and the cooperatives, whose role was already severely limited, were obliged to discontinue coffee purchases in 1975. No management assistance was provided under the integrated programme.

Applied research did not start until 1973. No results were available until the last year. The nurseries supplied the equipment needed for the establishment of 3 000 hectares of coffee plantations. The IRCT, for its part, established a network for testing cotton varieties, but this work was interrupted at the end of the project.

As regards infrastructure improvements, 20 wells and 200 km of roads were built in Ouaka, with bridges and drains during the first project. During the second, 150 km of tracks and roads, against the 505 planned, were built with funds allocated for the purpose. However, it is not certain that the recurrent costs of maintaining roads and equipment will be covered in the future.

Regarding the results of this action, the production and yield objectives for cotton were never achieved. Moreover, the manner in which they were arrived at is open to question. Comparison of the average figures for the last three years (1973/74 to 1975/76) with the three years from 1968/69 to 1970/71 shows a 25% fall in cotton production. Average actual production at the end of the period was 49% of the objective fixed three years earlier. What is certain, however, is that the project made it possible to maintain farming activity which would otherwise have disappeared as a result of the extensive disruption of services in the country at that time.

The breakdown of production figures in each sub-prefecture does not show any marked differences in productivity from one region to another, apart from a relatively high and stable level of yield in Ouaka, which could be an achievement of the regional programme.

In view of the favourable conditions for coffee, the results achieved in this field were better than forecast. However, the effects on production cannot be measured, since with coffee the period required for judging results is considerably longer than the period of the project. This said, measures concerned with coffee growing affected only a small area of the zone covered by the integrated project.

The projects did not bring any increase in public revenues or any improvement in the foreign trade balance since the increase in coffee exports was partly offset by the fall in cotton exports. Nor did they lead to any substantial improvement in social conditions for the rural population. It should nevertheless be stressed that the two projects made an effective contribution to the avoidance of a more serious decline in the cotton economy which would have occurred without the assistance work which was carried out.

In evaluating the effectiveness of the action taken, it should not be forgotten that the projects were carried out during a particularly difficult period for the national economy. The budget situation was extremely bad; as a result of the land reform, several development institutions had been abolished and the administration was undergoing radical reorganization; the transport and marketing systems had been disrupted by this process of reorganization. Under such circumstances, it was undoubtedly a positive achievement to maintain relatively stable supplies of fertilizers and insecticides, to put a brake on the steady fall in cotton production and to enable the agricultural supervisory staff to continue doing their job.

Table 1.06.a

	1968/69	1969/70	
Ouaka regional programme Cotton			
Area (ha)			
- Objective			
- Actual:			
- Total area	21 850	19 915	
- Area productivity A		5 478	
- Area productivity B		3 113	
- Productivity area (A + B)		43.1%	
Production (t)			
- Objective			
- Actual	10 800	10 058	
Yield (kg/ha)			
- Objective			
- Actual	493	505	
Average cash income per family (CFAF)			
- Objective			
- Actual			
Interim programme (1972/73) and integrated programme (1973/74 - 1975/76)			
Cotton			
- Area (ha):			
- Objective			
- Actual		134 000	
- Area, productivity A:			
- Objective			
- Actual			
- Area, productivity B:			
- Objective			
- Actual			

Comparison: Objectives and actual figures, Central African Republic programmes

1970/71	1971/72	1972/73	1973/74	1974/75	1975/76
	20 000				
21 425	20 614	19 432	20 265		
4 486	7 604	7 606	5 506	6 136	
3 950	4 184	4 972	4 384	4 120	
39.3%	57.0%	64.6%	48.4%		
	14 000				
9 554	9 986	11 528	8 471[a]	8 804	
	700				
446	484	593	415[a]		
	12 500				
	?				
		137 000	142 000	147 000	152 000
	133 499	136 278	135 948	135 000	134 818
		45 000	58 000	71 000	85 000
		31 000	27 194	15 160	15 968
		17 000	19 000	21 000	23 000
		21 200	22 724 (?)	53 490	

Table 1.06.a (continuation)

	1968/69	1969/70	
Production (t)			
- Objective			
- Actual	57 824	58 743[c]	
Yield (kg/ha)			
- Objective			
- Actual			
Coffee			
Total area (ha)			
- New coffee plantations			
- Objective			
- Actual			
- Restoration of existing coffee plantations			
- Objective			
- Actual			
Production (t)			
- Objective			
- Actual[f]		3 655	
Yield (kg/ha)			
- Objective			
- Actual			
Food crop production (t)[a]			
Groundnuts			
Sorghum, millet			
Maize			
Rice			

[a] Estimated.
[b] Revised objective: the project had anticipated 97 200 t in 1975/76 on the basis of 65 000 t in 1971/72, the base year, but the figure was reduced pro rata to the actual production return for the base year.
[c] Taken from 'Situation agricole de Centrafrique', March 1976.

1970/71	1971/72	1972/73	1973/74	1974/75	1975/76
		72 450			68 500[b]
53 898[c]	46 260[c]	51 800[d]	45 700	47 500	33 496
		530			640
		380	336	352	248
			300	600	900
			1 279	2 229	3 349
		925	1 850	2 775	3 700
					3 700
					4 245[e]
		3 670	4 487	5 000	
					300-400[g]
		327	367	370	
68 000	71 000	72 500	74 000	75 000	
42 600	45 000	49 000	47 800	42 695	
42 188	43 327	44 400	47 000	45 754	
7 000	7 080	6 500	6 700	12 608	

[d] Source: UCCA.
[e] Including + 470 t on improved plantations and 120 t from new plantations coming into production.
[f] In the areas covered by the project: Basse-Kotto, M'Bomou and South Ouaka.
[g] 350 kg/ha on improved plantations and 400 kg/ha on new plantations coming into production.

Table 1.06.b

Financing of projects in Central African Republic

(in CFAF)

	Estimates	Expenditure
Ouaka regional programme (1968/69 - 1973/74)	625 000 000	699 417 360
Supervision and technical assistance	299 623 000	330 427 300
Supplies and equipment	199 298 000	166 125 524
Buildings and tracks	153 079 000	202 864 546
Aid to production 1970/71	23 400 000	23 400 000
Year 1972/73 (Intermediate programme)	251 020 000	225 471 000
Supervisory and technical assistance staff	69 345 000	66 313 173
Supplies	181 675 000	159 157 897
Integrated Programmes (Years 1973/74 - 1974/75)	1 621 507 000	1 470 241 000
Means of production	426 883 000	653 648 000
Supervision	487 360 000	355 104 000
Logistical facilities	95 314 000	103 399 000
Infrastructures	322 950 000	338 158 000
Supplementary finance	289 000 000	
Advances	(repayment)	20 000 000
TOTAL	2 547 927 000	2 650 129 000

CONCLUSIONS

It is fairly characteristic that the resistance was greater in the case of cotton growing and more easily broken down in the case of coffee. Hence the main obstacle is lack of interest in cotton growing. The projects, which were integrated with existing structures, did not help to make it a more attractive crop in the areas where it was still the only potential sources of cash income.

The low incomes of cotton producers and the downward trend in their purchasing power, despite the increase in the purchase price of cotton during the

period covered by the project, was the main factor accounting for the inconclusive results of the projects as regards cotton production.

Moreover, apart from the question of paying taxes, levies and administrative dues in general, farmers are not greatly interested in working much harder in order to increase their money incomes in view of the lack of supplies of consumer goods in the villages; this is particularly true of the older growers. As for the younger men, who would be motivated by cash earnings, they are by and large inclined to prefer the higher and above all more reliable earnings to be derived from paid employment.

1.07. AGRICULTURAL REDEVELOPMENT IN EASTERN KASAI, ZAIRE[1]

The project evaluated covered a total period of eight years, with two phases of EDF financing, the first lasting five years (1968/73), the second three years (1973/76).

14 000 families were settled in farming communities during the first phase and 6 000 more during the second phase. The farming community system had been introduced in the area as long ago as 1947, but had largely broken down during the 1960s as a result of deterioration in the supervisory structures. In 1967 the State reintroduced compulsory crops (cotton and maize). The second phase saw the takeover of responsibility from the technical assistance agency and a gradual reduction in financial support from the EDF, which was offset by funds from the national budget and revenues generated by the project itself.

The recipient of the EDF finance is the Commission Agricole du Kasai Oriental (CAKO), a public body enjoying complete financial autonomy and control over organization of its work and administration of its resources.

The EDF finance amounted to 57% of the total cost of the project (10 767 347 u.a.) and was used to cover the costs of technical assistance and local staff (49%), supply of agricultural inputs (20%) and capital expenditure (19.5%).

The area covered by the project included the entire administrative zone of Gandajika and part of two other zones: Mwene-Ditu (to the south) and Tshilenge (to the northwest).

The population in the region covered by CAKO was estimated in 1975 to be 36 754 families with an average of 5.39 persons per family. The relatively individualistic character of the Luba people was well suited to the farming community system, which is based on individual plots gathered together in blocks growing the same crops.

OBJECTIVES AND PLANNING OF THE PROJECT

The objectives aimed at by the project were: (a) to produce a surplus of marketable food crops, thereby saving foreign currency by reducing imports of

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[1] Summary evaluation carried out by C. Van der Vaeren and M. Mayo, economists.

maize; (b) to increase cotton production to provide raw materials for the local textile industry (reduction in imports of fibre-cotton); (c) to improve nutritional conditions for village populations and increase peasants cash incomes.

The project was organized around two central principles: the farming community as a format for agricultural development and the regional development agency (CAKO) as the centre for coordination of the various operational resources and methods used.

The farming community system facilitates supervision of farmers, monitoring of compliance with requirements to grow specified crops and access to fields; it also encourages lively competition between farmers. Compliance with rotations and methods can be enforced. The tasks of the regional agency were to advise farmers on technical matters, provide supplies on credit, market and in some cases process products. It was intended that it would be entirely self-financing by the time the foreign aid came to an end.

During the course of the project, CAKO was entrusted with an additional function: mechanical ploughing of fallow land about to be turned over to crops.

RESOURCES AND ACTION TAKEN

Initially, the technical assistance agency was responsible for general organization of the project, management of technical services and administration of the various agricultural sectors. On completion of the first stage, the positions of responsibility held by technical assistance personnel were transferred to nationals, with the expatriates becoming advisers to the Zairean officials.

The quality of the supervisory staff, who performed their task by means of verbal contacts and demonstrations in the fields, is satisfactory, but their position is ambiguous because their duties include enforcement of compulsory crops as well as instruction. This supervisory system is not the most efficient way of ensuring that information about the problems encountered by the peasant farmers is passed up the line to senior officials.

The investments included purchase of vehicles for senior officials and mopeds and bicycles for field staff, regular availability of means of transport being essential to the efficiency of supervision.

The planned training centre was not built, because it was decided at an early stage that on-the-job training would be preferable.

As regards other buildings, in addition to those for the nursery centre built during the first phase (offices and storehouses), the construction of a vast storehouse for selected seeds has been started.

Transport equipment was purchased so that CAKO could market cotton in its area of activity, taking over from ONAFITEX (Office National des Fibres Textiles), which is experiencing great difficulty in carrying out this task.

In addition to what was planned under the project, a stock of tractors and agricultural machinery was acquired with finance from the national budget.

The fairly comprehensive equipment for maintenance of cotton tracks purchased with EDF finance and handed over to CAKO is rarely used for lack of fuel and finance to cover running costs.[1] The garage-workshop, also financed by the EDF is finding plenty of work and is helping to make up to some extent for the shortage of spare parts.

Regarding factors of production, the EDF financed supplies to CAKO of fertilizers, insecticides and fungicides for all growers with plots in farming communities during the first phase. During the second phase, it financed fertilizers only and the cost of insecticides was met out of the national budget.

Analysis shows a satisfactory cost/benefit ratio (2.6) for fertilizers used on cotton, but the ratio would have been better had fertilizers been supplied for maize, given the prices realized by food crops in recent years. Analysis also shows that average areas under cultivation were apparently influenced more by the relative profitability of cotton compared with food crops than by mechanization of tillage. CAKO provides a large subsidy (40% of the total cost price) on the price which peasants have to pay for mechanized tillage and the peasants would appear to prefer manual tillage in the event of withdrawal of the subsidy.

CAKO is the main economic structure involved in the organization of the project and was actually set up for this purpose. It has taken over completely from the State structure for agricultural supervision in the area covered. Decentralization of decision-making to regional level makes for flexible and rapid allocation of available resources.

However, CAKO is dependent on other structures and also on the national economic situation in certain areas which have a very strong bearing on the effectiveness of action taken: upkeep of tractors; supplies of fertilizers, insecticides and fuel;, collection of seed-cotton from farmers and payments to farmers; delivery of cotton seed; agronomical research.

ONAFITEX is responsible for purchasing and processing seed-cotton and delivery of seed throughout the country; although it had been intended initially that CAKO would take over these responsibilities in its area of activity, this was not in fact done.

In some years, performance of these functions was severely disrupted by a number of factors:

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[1] The shortage of fuel, which had been affecting the country for several months at the time when the evaluators made their visit, was not confined to the project area.

(i) purchasing was delayed or suspended because of lack of vehicles or funds, leading to loss or deterioration of seed-cotton stocks which were not stored under adequate conditions and causing growers' incomes to fall short of forecasts;

(ii) there were frequent lengthy breakdowns in ginning plants, due to obsolescent equipment and lack of parts;

(iii) there were delays in deliveries of seed, which had a serious effect on yields, given the shortness of the optimum sowing period.

In the case of food crops, produce is bought by traders on local markets or in the villages. Prices vary considerably according to difficulty of access, which is a serious problem because the network of tracks receives very little maintenance. In this connection, peasant farmers are aware that that a joint marketing effort would enable them to sell on more favourable terms, but this would entail overcoming their individualism.

Finally, analysis of prices for food crops shows sharp regional variations and a very steep rise between the beginning and end of the period covered by the project (particularly in the case of maize and manioc), which made cotton growing considerably less profitable, so that several farmers lost interest in this crop.

EFFECTS OF THE PROJECT

Although the production objectives were not fully met, considerable improvements were achieved in relation to the situation prior to the project and to comparable areas which did not benefit from this type of action (cf. Table 1.07.a). The increases were achieved by extension of areas under cultivation (which was helped by settlement of peasants in farming communities and introduction of mechanized tillage) and by improvement of yields (by the introduction of new methods and distribution of appropriate inputs on the farming community blocks).

The records show that cotton fared least well in relation to the objectives which have been adopted (75% as against 81% and 133% in the case of maize and groundnuts respectively). The fact remains that the supervisory staff concentrated virtually exclusively on cotton and it was the only crop for which subsidies were provided on fertilizers and insecticides. Nevertheless, the course taken by relative producer prices had a more decisive influence than the technical programmes.

The objectives for increasing incomes and improving the standard of living seem to have been reached, although there were no detailed statistics. It is estimated that producers' average overall returns doubled, with their cash incomes three times higher and their consumption of their own produce up by 25%. In real terms, however, these apparent results were severely undermined by sharp increases in the prices of consumer goods and school costs.

As regards the food situation, the distinct improvement achieved early on as a result of the increase in maize crops which was a side-effect of the supervisory efforts directed primarily at cotton seems to be in jeopardy, partly because of the delays in the purchasing of cotton, which means that farmers have to sell part of their maize crops intended for their own consumption, and partly by losses due to inadequate storage conditions.

Another success of the project is the improved use of land resources. Settlement in farming communities has checked soil deterioration caused by itinerant farming and mechanized tillage has led to an extension of good land suitable for crops.

In terms of the effects of the project on the trade balance, the objectives were largely achieved. A net saving of foreign currency estimated at Z 1 450 000 was made possible by (a) the ginning of an extra 1 200 t of cotton from the project area and (b) the reduction in maize imports. The potential saving of foreign currency would be still greater if all the additional cotton output from the project area was processed locally; in this case, it would be Z 2 150 000 a year with mechanized tillage and Z 1 880 000 without mechanized tillage. Estimating the average annual operating costs of the project at 1 350 000 u.a. and the potential annual saving of foreign currency at 1 800 000 u.a., the foreign currency saving ratio is 1.3.

CONCLUSIONS

The very positive effects of the project are attributable in part to the fact that it was concerned with the resumption and expansion of a development format and techniques which had already been tried and tested over several years before independence in the same area. However, the durability of these effects is threatened by serious problems affecting the viability of the project.

Its technical viability is being placed in grave danger by the steady deterioration of the road network and a persistent shortage of essential factors of production. On the other hand, it could be enhanced by expansion of the activities of CAKO to include the introduction of new developments in farming community agriculture (new crops, fertilizers for food crops, improvement of storage conditions) and urgent non-farming problems in the villages (health, training, water supplies etc.).

As regards the economic aspect, cotton was chosen as a motive crop with a view to obtaining a return from CAKO's substantial investments. In the eyes of farmers, this crop is subject to competition from food crops, the prices for which are more advantageous; only the compulsory requirement to grow cotton is keeping production up to a certain level while maintaining appropriate rotation. It would therefore be essential to raise the producer price for seed cotton in line with the prices of food crops and everyday consumer goods. Moreover, the increase should be sufficient to enable producers to meet the full cost of factors of production currently receiving subsidies.

Table 1.07.a

Attainment of objectives in 1975/76

	Objectives	Results	Results as % of objectives
Production			
Maize	30 800 t	± 25 000 t[a]	± 81%
Groundnuts	2 250 t	3 300 t[a]	±133%
Manioc	50 000 t	?	?
Cotton	9 900 t by 20 000 growers	8 500 t (estimated) by 23 200 growers	± 75%
Food			
Maize	600 kg/family/year	?	?
Groundnuts	100 kg/family/year	?	?
Manioc	1 200 kg/family/year	?	?
Cash incomes	Z 93.22 (1972) per family, i.e. purchasing power of Z 120 (1975) in 1976	Estimated at Z 150 (1975) per family per year[a]	125%

[a] Estimated in the absence of available statistics on consumption by producers and family budgets in the area.

In its present form, the project cannot finance itself. CAKO is subsidizing all or part of the inputs supplied to farmers and carrying out public utility work which is the responsibility of other institutions without receiving any compensation. In addition, the failure to build a ginning plant which had been planned as part of the project upset all the forecasts of CAKO revenues and meant that a State subsidy had to be provided.

Table 1.07.b

Sources of finance (in u.a.)[a]

	Forecast				Actual			
	EDF	Zaire budget	ONAFITEX	CAKO resources[b]	EDF	Zaire budget	ONAFITEX	CAKO resources[b]
1968/1969					525 382			
1969/1970					603 980	(1 000 000)		
1970/1971					1 108 322	16 000	14 736	12 310
1971/1972					837 776	19 341		70 060
1972/1973					549 748	19 341		157 334
Total 1st phase	3 750 000			505 000	3 625 208	(1 054 682)	14 736	239 704
1973/1974					943 837	162 031		251 744
1974/1975					650 600	336 509		400 014
1975/1976					960 707	(1 400 553)		727 023
Total 2nd phase	2 619 500	772 900	470 800	1 407 200	2 555 144	(1 899 098)	0	1 378 781
PROJECT TOTAL	6 369 500	772 900	470 800	1 912 200	6 180 352	(2 953 774) + available: 216 230	14 736	1 618 485

[a] Amounts in Zaires have been converted at the exchange rate for the year of commitment in the case of commitments and the year of expenditure in the case of expenditure.

[b] Counterpart funds and own resources.

1.08. DEVELOPMENT OF RICE GROWING IN THE IVORY COAST[1]

The EDF contributed 11 469 177 u.a. towards the financing of the Ivory Coast rice-growing programme between 1972 and 1977.

The project was aimed at two central objectives:

- to place rice growing on a firm footing on a national basis;
- to improve and itensify production in clearly defined areas located in the disadvantaged regions of the Centre and the North.

The overall objectives of the rice-growing programme were to increase national production from 200 000 t to 295 000 t and to reduce disparties between regions.

The project was aimed primarily at increasing the incomes of farmers in the North, thus making a start to solving the major problems of regional imbalance and rural depopulation; a secondary aim was to reduce imports.

This operation represented a relatively large cost to public finances, involving substantial annual recurrent costs (CFAF 230 million in 1977; CFAF 80 million in 1980-82) and a reduction in equalization fund levies.

CONTENT OF THE PROJECT

The Société pour le Développement de la Riziculture (SODERIZ) was given overall responsibility for carrying out the rice-growing programme by the Government.

Prior to 1970, this company's industrial processing programme had been hampered on the one hand by the price structure which encouraged local traders to process rice themselves and on the other hand by the inadequate quality of the paddy. At the same time, imports of substantial quantities were necessary to meet the constantly rising demand. The price structure was favourable to

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[1] Evaluated by G. La Cognata, surveyor, and M. Bousquet, agronomist, in the context of the CPDCET training programme (Ministère de la Coopération, Paris).

consumers, producers and traders simultaneously by virtue of the equalization between imported and locally produced rice, but it placed the company responsible for developing rice growing in a difficult position since it had no control over buying and selling networks.

The project consisted of various specific operations:

(1) Dams in the North: This operation involved building four irrigation water reservoirs laying out rice-fields offering two annual crop cycles and training farmers in the perimeters.

(2) Northern Bouaké: The action in this area was aimed at developing irrigated rice growing in the Bouaké area by means of simple development work not involving construction of dams and provision of supervisory services for the farmers.

(3) Improvement of wet-land rice growing at Odiéné, by increasing motorized tillage, extending cultivated areas and raising yields.

This operation involves training tractor drivers, setting up repair facilities, organizing work to increase motorized tillage, promoting new techniques and optimizing selection of land with a view to increasing yields.

(4) The rice/cotton operation, aimed at combining the growing of rice and cotton and increasing agricultural productivity by introducing motorized and animal-drawn equipment.

This action is aimed at encouraging block cultivation and selection of good land.

(5) The activities concerned with the general aspects of rice growing in the Ivory Coast divide into two groups. The first group includes the establishment of a nursery for elite seeds, production of these seeds by farmers under contract and distribution of selected seeds and inputs to growers at the appropriate times. An accompanying research programme was also planned.

In the second group, there was a training programme with provision for systematic refresher training for all staff, recruitment and training of supervisory staff needed for new projects and a continuing programme of technical training; in addition, the project provided direct financial aid to SODERIZ.

The local farmers were to meet the costs of construction of secondary hydro-agricultural installations and contribute by way of a levy to the maintenance of the primary works. They had to meet the full amount of operating costs, for which purpose they could obtain annual loans. To help deal with problems, the farmers were encouraged to form village groups with a view to setting up cooperatives.

EFFECTS AND RESULTS

Examination of the effects and results of the project up to mid-1977 revealed the following:

A. Activities on the national scale

(1) SODERIZ, as a national structure, received substantial support through the project, in terms of both finance and technical assistance. Its efforts were concentrated primarily on the development of land for rice growing and processing of crops; it was less involved in the production of rice and the collection of crops, nor did it take a very great hand in the development of rain-fed rice which, given the Ivory Coast climate, still accounts for the bulk of production of this crop. The relatively large measure of autonomy enjoyed by the various regional agencies facilitated experimentation with plot layout and cultivation systems at local level, but to a certain extent hampered inter-regional exchanges of information about the lessons to be learnt from experiments carried out.

(2) As regards the technical operations, the results of the nursery were satisfactory, although the physical environment proved unfavourable to production of rain-fed rice.

The work of the nursery was supplemented by farmers producing seed under contract. The main result achieved is that selected seeds have been distributed widely since 1974, with very positive effects on production and processing. However, production of seed has not always matched demand, since growers' demand for rain-fed rice seed has been greater than anticipated and that for irrigated rice seed has been lower.

With sales of fertilizers, the results are still meagre, apparently because they are being directed exclusively towards farmers under contract. As for the accompanying research, it has not yet produced usable results. The reasons for this are insufficient definition of objectives, lack of staff, clashing with research carried out elsewhere and lack of contact between the research unit and instructors in the field.

(3) Regarding the manpower resources needed for the success of the programme, technical assistance personnel took over several positions of responsibility. This offered the advantage of bringing in a wealth of experience. However, by assuming direct responsibilities, the expatriate personnel were closely involved in the practical implementation of the project, with the result that the approach did not always take sufficient account of the socio-political environment.

The takeover of responsibilities from the technical assistance personnel passed off smoothly, thanks to Ivory Coast efforts to train staff and good cooperation between technical assistance and local personnel. However, some difficulties, such as a supply crisis at the beginning of 1977, seem to have been caused by the somewhat hurried transfer of responsibility, coupled with the precarious financial position of SODERIZ.

It had been planned originally to provide conventional further training for SODERIZ supervisory personnel in a purpose-built centre, but because of the shortage of such personnel, the method was changed in 1974 by including direct training for rice growers and setting up a system of temporary supervisors; it was hoped by these means to gear the strength of the supervisory staff to the level of production and, as far as possible, to avoid the danger of an 'elitist' mentality growing up among the supervisors. This programme aimed to strengthen cohesion among trainee rice growers, thereby encouraging the formation of cooperative groups among them so that the supervisory system could eventually be abolished. The training is given in three stages, the first of which - basic training - is the same for future supervisors and trainee rice growers. The second is concerned with settlement on a farm holding and the third is designed to build on the basic training and provide a grounding in management problems. The temporary supervisors sign a three-year contract, after which they too are settled on farms.

The level of training on the supervisory staff is higher than had been anticipated. However, despite the high ratio of supervisors to growers, the introduction of new methods was not as successful as expected. Moreover, the 'elitist' mentality is prevalent among the supervisors. These difficulties are due mainly to the fact that too many older supervisors have carried on in the job and their attitude has spread although their training has not been improved sufficiently. Once settled, the temporary supervisors are delaying the renewal of staff, because it is still more lucrative to be a supervisory than a rice grower. Finally, little supervisory time has been devoted to traditional rice growing.

(4) The development policy adopted by SODERIZ is based on a contractual relationship between it and the group of growers receiving assistance.

This policy has produced satisfactory results regarding payment of levies and repayment of loans, but not in the case of improvement of agricultural methods. The attitude of the farmers to the contractual system is in fact guarded; they often consider the stipulations of the contract to be excessive since they grow rice on only a small proportion of their land.

Moreover, only the 'young rice growers' who have been settled on farms really operate effective collective associations; elsewhere, these associations scarcely function.

(5) As regards the economic conditions under which the project was carried out, the increase in the price paid for paddy from 23 to 65 francs in 1974 led to a spectacular rise in production. Nevertheless, this policy on prices was based on political rather than economic considerations and it has to be recorded that it had a detrimental effect on the capacity of SODERIZ to finance its activities from retained earnings. The company's financial difficulties led to an unexpected switch by producers (the theoretical recipients of the aid) to private traders.

The incomes of the producers themselves increased slightly, however, although the evaluation report shows that intermediaries took a very substantial proportion (about a quarter) of the value added corresponding to the additional production. Another important beneficial effect of the

project is that the rice processing plants have been used to full capacity and under more satisfactory technical conditions. The inadequate storage capacities nevertheless still pose a problem.

Finally, because it had fixed a low price to the consumer, the State was obliged to subsidize the rice-mills heavily in 1976.

B. The production activities (see Table 1.08.a)

(1) The dams in the North

Because of the high population density in the North and the shortage of farming land which is not already overworked, it is not possible to meet demand from growers for suitable plots. The peasants have actually parcelled out additional land on the flanks of the irrigation canals. The areas actually under cultivation behind some dams are greater than initially parcelled out under the project.

Unfortunately, the success of this operation has been limited by technical difficulties:

(a) in what was to be the largest perimeter (75% of the total), the rice-growing areas downstream of the dam had to be reduced significantly because the soil was too permeable and had to be turned over to mixed crops;

(b) the water levels in some small dams are insufficient.

It appears that these difficulties are the result of shortcomings in the preliminary studies.

(2) Northern Bouaké

The objectives for laying out plots were exceeded by 35% and the areas where rice growing was actually started were in line with the forecasts. Given the irregular rainfall pattern in this region, it was possible to obtain 0.7 of a crop cycle per year on these perimeters as water became available. On the human level, despite the substantial cash incomes to be earned from paddy, there are some reservations about the contracts; the basis of these reservations is the risk to which farmers are exposed because of the climate conditions in the region. Finally, this scheme gave rise to a development which had socially damaging effects and became a source of conflict, namely the gradual occupation of the lowlands by people from the towns and other regions who employed local peasants as farm labourers.

(3) Wet-land rice growing at Odiéné

This experiment involved great risks; it was discontinued after two years.

The hope that efficient rice growing could be promoted by the presence of jobbing tractor drivers proved unfounded. Following a switch to lowland rice growing on a contractual basis, the poor results achieved were insufficient to arouse growers' interest.

(4) Rice/cotton operation

The results of this operation were distinctly better in the case of cotton production (168% of the objective) than in that of rice production (52%). As regards farm modernization, the introduction of animal-drawn tillage was highly successful (263% of the objective).

This programme includes a motorization pilot scheme on which the bulk of investment and manpower resources were concentrated. The work ist not fully motorized, however, and weeding and harvesting are still done by hand. The farmers are inclined to concentrate on tending their 'traditional' fields to the detriment of those tilled by tractor, which they regard as being in official ownership.

A block cultivation policy was applied in this operation, but the farmers do not regard the blocks as integral parts of their own holdings; moreover, only a privileged minority has had access to the reclaimed land, so that there have been no changes in village life likely to induce the young people to stay; finally, the need for close supervision associated with the introduction of mechanization and fairly stringent discipline eliminates scope for initiative on the part of local farmers and is unfavourable to any takeover of responsibilities by their associations.

Despite these difficulties, this scheme has already produced positive results, such as the increase in areas suitable for farming, the improvement of yields in dry years and a greater awareness among peasant farmers of the problems of mechanization. Moreover, satisfactory solutions to the problems mentioned above have been found and a larger-scale motorization project has been put in hand on the basis of the lessons learnt from the pilot scheme.

CONCLUSION

To sum up, the rice-growing programme, with its various technical facets and geographical components, has already succeeded in meeting some of the objectives laid down, this despite the institutional, technical and economic difficulties with which it has had to contend. Between 1970/1971 and 1975/1976 rice imports were reduced by 25% despite a 23% increase in consumption. The specific projects financed by the EDF provided 11.3% of the additional production achieved over this period (against 26% anticipated initially); the general operations financed in the same context, and the policy of high prices, encouraged or created the conditions for this overall increase in production.

Table 1.08.a

Attainment of Objectives - the Ivory Coast

	Objectives	Results	%
1. Dams in the North	For 1976	In 1976	
Areas under cultivation	1 270 ha	340 ha	27
Production of paddy	10 604 t	2 191 t	21
2. Northern Bouaké	For 1975	In 1975	
Parcelling	1 000 ha	1 365 ha	137
Area under cultivation	1 000 ha	1 021 ha	102
Production	4 400 t	3 750 t	81
3. Rice growing at Odiéné	Discontinued after 2 years		
4. Rice/cotton operation	For 1975	In 1975/1976	
Area under rice	13 275 ha	6 901 ha	51
Area under cotton	2 550 ha	6 406 ha	251
Cotton production	3 825 t	6 406 t	168

The farmers affected by the project made considerable progress with new methods, particularly animal-drawn tillage in the rice/cotton operation. However the contract and block cultivation systems accentuated social division in the rural world, which was exacerbated by the increase in the numbers of peasants taking employment as farm labourers.

Regarding the institutional aspects, SODERIZ is prevented by its structure from adapting its approach sufficiently quickly in the light of results obtained and reactions from the rural world, but has concentrated heavily on hydro-agricultural schemes and the development of rice growing has sometimes been obstructed by factors connected with other activities on farm holdings.

Several of the activities were experimental and some of them were adversely affected by insufficient preliminary study, not only of the human environment, but also of the physical environment and the methods to be applied. Except at Odiéné, these experiments were productive, provided useful information helping to adapt activities in line with the general objectives aimed at and marked the beginnings of serious efforts to establish a policy on water re-

sources. Finally, the programme has suffered recently as a result of an ill-conceived policy on prices which has given a strong fillip to production and consumption, but at a cost beyond the resources of the public finances.

1.09. AGRICULTURAL DEVELOPMENT OF THE DEPARTMENT OF ATACORA, BENIN[1]

The two main operations supported by EDF finance in the Department of Atacora are:

(i) 'Soil rehabilitation and agricultural development in the Boukombe region' (1963-69) - EDF subsidy: 1 094 000 u.a.

(ii) 'Agricultural development of the Department of Atacora' (1969-73) - EDF subsidy: 1 084 000 u.a.

'SOIL REHABILITATION AND AGRICULTURAL DEVELOPMENT IN THE BOUKOMBE REGION'

This first project was concerned with the development of an area of 10 000 ha by means of anti-erosion works and modernization of agricultural methods. Studies were also to be carried out in preparation for extension of the project to a further area of 30 000 ha.

Severe rain erosion, excessive exploitation of arable land and annual destruction of brush by fire had created the need for a campaign to combat erosion and improve farming methods.

The results anticipated were a 70% increase in gross production and a consequent increase in gross annual revenue of CFAF 50 000 000.

The method adopted as a means of combating erosion was to build transverse terracing, with ditches and drainage channels. Other methods proposed included walled terraces built along contour lines, stabilizing reafforestation, isohypsal ditches, legislation banning running fires and trespassing by cattle, and improvement of soil structure.

Regarding rural modernization, the agronomical trials were to be aimed at improvement of yields from existing crops by means of a system of intensive cultivation reducing areas under crops and extending fallowing, and at estab-

[1] Summary by C. Ermgodts based on evaluation reports supplied by the Bureau Central des Projets du Bénin and by H. Peter, statistician, and R. Pujol, agronomist, through the company Marcomer.

lishing improved varieties offering high productivity. A large team of instructors was employed to help in the campaign against erosion and introduce modern farming methods: selected seed, water storage, compost, clearing brush, planting citrus fruits, use of insecticides in barns and on crops, animal-drawn tillage.

This first project was extended by two years and merged in 1969 with the second project, 'Agricultural Development of the Department of Atacora'.

A project of this type involves various inherent dangers, such as dispersal of effort on too many schemes and the risk that, after the inevitably limited period during which fertilizers are supplied free of charge, the exercise will become uneconomic for the producer when he has to buy them at their true price. This explains some setbacks. By contrast, those activities which met with success were those which involved no radical changes in producers' habits and corresponded to their fundamental aspirations: to be freed from food shortages and to earn cash incomes. These included the technical improvements in sorghum and groundnut growing, use of fertilizers, use of insecticides in barns and the building of walled terraces along contour lines. The efforts to encourage use of animal manure failed because of the arduous nature of the work involved and the prestige surrounding the results achieved with mineral fertilizers. The success achieved with introduction of mineral fertilizers owes much to the relative autonomy which the EDF allowed the organizers of the Boukombe operation regarding annual loans.

The agricultural section of the project was therefore reasonably successful because the methods introduced were simple, efficient and consistent with local farmers' aspirations. The concrete results were: a reduction in food shortages, a substantial increase in production of groundnuts and rice, and smooth operation of credit facilities. In particular, by the end of the project, the outlook for rice growing on reclaimed lowlands was looking very promising.

On the soil preservation side (work was completed on 6 000 ha), considerable progress was made in reducing rain erosion. The local farmers appreciated the advantages, but problems arose over maintenance of the terraces after the end of the project. Because of the destruction by cattle of plantations on the embankments, the terraces were not sufficiently stabilized and, nine years after completion of the project, they have virtually disappeared.

'AGRICULTURAL DEVELOPMENT OF THE DEPARTMENT OF ATACORA'

In this second project, which covered a wider area than the first, three specific objectives were envisaged:

(1) To improve and increase agricultural production. With this in view, three main types of action were envisaged: introduction of simple, reliable methods, to be facilitated by the block cultivation system, marketing of produce inside the Department and beyond, and a livestock health campaign;

(2) To set up new structures for the organization of rural development;

(3) To train local staff, not only giving them technical training but also preparing them to assume responsibilities from the technical assistance personnel in anticipation of a takeover of the operation and financing from national resources.

The sectoral activities were directed at two food crops (sorghum and rice) and two industrial crops (groundnuts and cotton). The main subjects of instruction were: sowing at the correct dates and the correct density; treatment of seed; proctection of harvests; introduction of sorghum in rotations (to take advantage of the after-effects of fertilizers used for cotton and groundnuts); weeding; correct use of fertilizers; protective treatments for crops; pulling cotton plants after harvesting. In addition, rustic hydro-agricultural works were to be built for rice growing over a 50 ha area.

On the marketing side, an expert was seconded to the operation to set up a system for collection of produce and a credit system. The project also included plans for the gradual establishment of village associations whose role would be to market local produce en bloc and to supply local farmers with essential goods.

As regards infrastructure, there was a limited programme to improve road communications and the construction of storehouses was planned.

Finally, the project included plans to improve stock-breeding. The Department offered great potential (with a quarter of the country's cattle population), but little could be done to develop this potential because of the poor state of health of the cattle. It was planned under the project to make improvements in this area so that it would become possible to export livestock outside the Department.

Considered as a whole, the production results fell far short of the objectives, particularly in the case of cotton.[1] Nevertheless, real progress was achieved in terms of the local farmers' receptiveness.

The main aims of the project were to bring about a change in peasant farmers' attitudes and practices and to adapt the development and trade structures; however, in practice, the accent was placed on production and profitability norms, so that the underlying effects were not observed while the project was in progress.

The large area covered by the project with its wide variations in population density, the advanced state of soil erosion, the poor condition of the road network and the remoteness of the central administration were all aspects of the project's environment which militated against its success. It would not doubt have been more successful if there had been more decentralization and the project organizers had had exclusive control of the operational staff.

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[1] See Table 1.09.a.

The efficiency of the organizational structure set up was impaired by another set of factors: the very uneven quality of the supervisory staff, their insufficient training, the inadequate provision for monitoring their work and the fact that they were not paid regularly.

The technical assistance personnel, who were faced with the double task of carrying out the regional production and marketing programme while at the same time training local staff to take over their own duties, did not have all the technical and human qualities required. In addition, the team was not sufficiently integrated into the structure for management and implementation of the project.

Finally, the effectiveness of some members of this personnel was restricted by the fact that they did not spend long enough in the field; it was found that movements of personnel were too frequent.

The programme was also seriously delayed by unfavourable climate conditions and political upheavals.

EFFECTS AND RESULTS

What has been the impact of the two projects on rural conditions in the Department of Atacora and the problems of its development, as they stood in 1977?

The major problem in the Department is the lack of infrastructure. The shortcomings of the road system is a cause of continuing enclavement; welfare centres, wells and schools are among the priority needs as seen by the local population.

On the farming level, the supervisory staff have a good image with the peasant population, but their efficiency leaves much to be desired because of the limitations of their training, the content of which is not differentiated according to the sectors in which they work, although the various sectors differ widely in their characteristics and problems. The planning of training programmes and coherent agricultural schemes is being held back by the lack of much-needed detailed study of the characteristics of agriculture in Atacora. At the same time, the crucial problem of soil erosion is still conditioning rural development, particularly in view of the insistent demand from peasant farmers for new land suitable for cultivation.

The techniques introduced under the project are still being applied to a very large extent, thanks to the efforts of local supervisory staff. Correct use is being made of fertilizers in the case of cotton only. On the other hand, little is being done in the area of protecting seed and crops, because of difficulty in obtaining supplies of the necessary products. No progress has been made in efforts to stop brush fires.

Table 1.09.a

Agricultural development of the Department of Atacora
Attainment of objectives

	1969	1970	1971	1972	Result as % of obj. in 1972
Sorghum					
Areas (ha)					
- Objective	41 000	-	-	44 000	91
- Result	50 000	-	-	40 000	
Rice					
Areas (ha)					
- Objective	400	600	-	1 200	135
- Result	350	700	-	1 621	
Production (t)					
- Objective	-	-	-	-	
- Result	280	-	1 867	1 320	
Groundnuts					
Areas (ha)					
- Objective	9 500	-	11 000	12 000	93
- Result	8 849	11 393	10 480	11 111	
Production (t)					
- Objective	7 600	-	9 900	10 800	74
- Result	5 700	6 413	7 600	8 000	
Marketing (t)					
- Objective	4 600	-	6 000	6 500	75
- Result	3 548	3 018	3 805	4 875	
Yields (kg/ha)					
- Objective	800	-	900	900	80
- Result	644	562	721	720	

Table 1.09.a (continuation)

	1969	1970	1971	1972	Result as % of obj. in 1972
Cotton					
Areas (ha)					
- Objective	2 500	-	2 500	4 000[b]	33 (88)
- Result	980	400	721	1 313	
Production (t)					
- Objective	990	-	1 825	3 360	40
- Result	354	513	470	1 328	
Yield[a]					
- Objective	700	-	850	900	120[b]
- Result	374	531	681	1 080	

[a] In the priority zone.
[b] This objective was reduced to 1 500 ha in view of the slow rate of progress.

The development of stock-breeding and animal-drawn tillage, in which the local population is keenly interested, is meeting with various obstacles, the most serious of which are the poor state of health of cattle (because of the failure of the second project in this field), the limited staff and resources available to Atacora's Centre d'Action Régionale pour le Développement Rural (CARDER) and the high cost of equipment. As for the village associations, they are continuing to supply their members with means of production and essential consumer goods; they represent a foundation for a structure of self-supervision by peasant communities.

In general terms, the effectiveness of these projects suffered from excessive dispersal of manpower and technical resources, which were totally inadequate in relation to the scale of the objectives adopted, given the wide variety of problems impeding rural development in Atacora.

1.10. AGRICULTURAL DEVELOPMENT OF THE DEPARTMENT OF COMOE, UPPER VOLTA[1]

The EDF financed two successive projects between 1967 and 1976 aimed at developing agriculture in the Department of Comoé; the total amount of the EDF subsidies was 3 145 000 u.a.

Under both projects, technical, material and financial assistance was provided to the Office Régional de Développement (ORD) for the South-West.

In view of the particularly favourable conditions in the area covered by the ORD (compared with other regions in Upper Volta) from the viewpoint of natural resources, geography and population, the first project adopted two objectives: first, to mobilize all productive resources in the area through modernization of agricultural methods; second, to organize effective marketing of produce by setting up appropriate structures and facilities. The project envisaged gradual Africanization of staff coupled with gradual reduction of rank-and-file staff and operating costs, so that it could be taken over by the ORD and financed out of its budget when the aid came to an end.

The programme was based on two fundamental courses of action: instruction in reliable and simple methods in order to increase yields, and rationalization of trade networks to improve marketing of agricultural produce, thereby encouraging peasants to produce and sell more.

The instruction activities were aimed at the crops most commonly grown in the region: the traditional cereals (millet, sorghum, maize), groundnuts and rice. It dealt with aspects concerned with the quality and protection of seed, the correct dates for sowing and the correct densities, proper care of crops, use of organic and mineral fertilizers, animal-drawn tillage. The instruction was given by supervisors on the ORD staff supplemented by schoolteachers and former pupils of rural schools giving their services voluntarily.

The commercial activities were to be carried out at two levels:

(1) among producers, who would be encouraged to organize themselves by the supervisory staff, and

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[1] Summary by C. Ermgodts, based on evaluation reports supplied by H. Peter, statistician, and F. Lussagnet, agronomist, through the company Marcomer, and the study by the Ivory Coast bureau, Bara.

(2) in the ORD itself, which was to begin to operate as a marketing organization, collecting produce from even the most modest producers and handling storage and sales.

These activities necessitated substantial working capital - to pay producers cash for their crops - and this was to be financed by short-term loans from the Banque Nationale de Développement (BND).

Finally, the project included a limited programme of road works.

By the end of the first project, a number of results had been achieved in the various fields tackled:

(i) establishment of the regional structure;

(ii) success with instruction and an increase in production;

(iii) some increase in production and marketing;

(iv) an improvement in producers' standards of living.

However, the effectiveness of the project was impaired to some extent by various internal or external factors:

- the training of local staff was not up to standard, partly because of shortcomings in the technical assistance personnel and partly because of the insufficient numbers or high turnover of local staff;
- the management of the ORD did not go beyond correct bookkeeping; it paid little attention to cost prices, depreciation, forecasts etc.;
- the marketing of produce was handled efficiently by the ORD when it had an official purchasing monopoly, but the results became rather mediocre when the monopoly was withdrawn; moreover, the prices fixed for produce were too low compared with those ruling in the neighbouring country, the Ivory Coast.

The positive results already achieved and the considerable potential of the South-West justified continuation of aid so that a more intensive phase could be carried out. This second project, which lasted three years, was again aimed at simultaneously developing rural production and marketed volumes.

The project concentrated primarily on intensified development of rice as a motive crop, although at the same time continuing the programme of instruction in simple, profitable methods throughout the area covered by the ORD.

Two schemes concerned with rice growing were planned. The first was the development of 200 ha for irrigated rice growing, to be carried out by the State with the help of the local population. The second was concerned with rain-fed rice, with a target of 1 300 ha under cultivation by the end of the project. The latter scheme, which depended on progress with animal-drawn tillage, also included trials with semi-mechanized working on grouped plots.

In the case of groundnuts, the project planned to extend the instruction programme to a larger number of growers in parallel with a slight increase in the areas growing this crop in order to reach the estimated production ceil-

ing for the region. The project also called for intensified instruction in connection with cereals and sesame - a relatively new crop.

The marketing of produce was to be developed by supplying the ORD with rolling stock and building store-houses.

There were also plans for various improvements to the basic infrastructure: building of aqueducts, setting up of a road maintenance brigade, sinking of wells (1 500 linear metres).

Although the technical assistance teams was strengthened during this second phase, the project called for a small additional contribution from the State and adhered to the principle of phased reduction of aid.

In 1977, it was found that the supervisory and marketing activities of the ORD (cf.Table 1.10) had been relatively successful. In particular, considerable progress had been made with animal-drawn tillage, except in those areas where it was in competition with semi-mechanized tractor-drawn tillage.

The farmers are convinced that they are better off as a result of the initial phases of the ORD's development programme and many of them are prepared to buy agricultural machinery and fertilizers as long as favourable credit facilities can be arranged for them. Despite these real successes, the potential of the South-West region (availability of large areas of land, varied cover vegetation of good quality, advantageous location for access to external markets etc.) is still not being used to the full because of the limiting constraints which have not been removed: the inadequate socio-economic and health infrastructure, the lack of manpower, the survival of traditional agricultural and stock-farming methods and the low level of producer prices.

Set against the objectives laid down, production in 1974/1975 was satisfactory in the case of cereals, except for rice, but excellent in the case of groundnuts. On the marketing side, the results were very meagre in the case of groundnuts and rice, but excellent as far as the other cereals were concerned.

For the objectives laid down under these projects to have been met in full, it would have been necessary to take timely action to modify those activities which proved non-viable, such as semi-mechanization of rain-fed rice growing, and switch more resources to activities which promised to meet the most urgent needs of the local population, especially in the fields of health, transport and water supplies, and also to those which corresponded to their most deeply-felt aspirations, particularly action aimed at development of irrigated rice, intensification of other food crops and improvement of stock-farming.[1]

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[1] Two further programmes were started in 1975 to supplement the integrated agricultural projects: the first was aimed at improving traditional stock-farming with a view to developing animal-drawn tillage and the second was a programme for the training and organization of young farmers.

Table 1.10.a

Agricultural development in the Comoé ORD, Upper Volta
Attainment of objectives

	Objectives[a] 1974/1975 (tonnes)	Results[b] 1974/1975 (tonnes)	Results as % of objectives
Production			
Millet, sorghum	33 400	23 580	70.6
Maize	19 500	18 720	96
Groundnuts (in the shell)	7 500	10 000	133
Paddy	6 590	3 760	57
Sesame	1 500	(1 400 in 1972/1973)	?
Marketing			
Maize, millet, sorghum	800	946.5	118.3
Paddy	2 000	240.1	12
Groundnuts (in the shell)	5 000	693.4	13.8
Sesame	24.5	26.4	107.7
Cotton	9.2	1.3	14.1

[a] Source: Annex to proposal for finance: project 3100.333.09.14.

[b] Source: South-West ORD.

To carry out such action, the supervisory services would need to be strengthened and this would require an improvement in the numerical strength and calibre of the staff.

However, it has to be acknowledged that the ORD is powerless, because of lack of resources, to meet the objectives assigned to it. The modernization programme conducted under the two successive projects has not yet reached the threshold of viability, another objective which was set initially.

The main factors which are still having a direct adverse effect on production are: the insufficient volume and late arrival of short-term credit provided by the BND to finance the purchase of produce, the lack of coordination between the BND and the Office National des Céréales (OFNACER), the vulnerability of food and livestock markets to speculation and the low level of producer prices.

As for the actual structure of the ORD, it lacks efficiency in four of its fields of activity: planning and evaluation of action; instruction, training and cooperation; accounting and management; stock-farming.

Part Two

DEVELOPMENT ACTION: THE PARTICIPANTS

Rural development is the result of changes brought about by the collective will of all the social groups and economic agents involved in the social and economic organization of nations. Participants of four types contribute to this process: peasant populations whose degree of organization varies according to their particular way of life; public or quasi-public institutions, whose technical and economic contributions are often influenced by political factors; foreign aid institutions, and in particular the EDF and European technical assistance organizations; local or foreign commercial or industrial firms. In the projects evaluated, the last-named group often played an important role; they were able to exert pressure - notably on certain governments - to influence the directions taken by the projects. However, the available information on their role in some of the projects is insufficient to allow an overall assessment.

Each group of participants acts according to its own objectives and constraints, a knowledge of which is essential when implementing or evaluating rural development operations. The interests of one or other group are not always compatible and this can sometimes lead to open or latent conflict which hampers the progress of projects.

In most cases, the State relies on the rural sector to generate the resources needed for the development of manufacturing and service industries in the national economy; however, there is evidence that certain populations - especially the young - do not consider the quality of rural development sufficiently attractive to remain in rural areas or to increase production of a given crop.

A clear distinction must be made from the outset between the 'national economy' and 'State accounts'. The former embraces all internal and external economic flows involving the economic agents in a given country; it includes subsistence production and consumption as well as trade flows. The State is one of the agents participating in the national economy; its role is sometimes preponderant, particularly in the less developed countries, but it is far from being all-embracing; its accounts reflect only those economic flows which are under its control. A project benefiting the State's accounts may or may not benefit the other constituent members of the national economy - and agricultural producers in particular.

An important consideration in aid to rural development is to establish the most effective strategy by which to reach the social group aimed at: men, women and young people living in the rural environment.

2.1. PEASANT PARTICIPANTS

All the projects evaluated had the objective of promoting the development of rural populations living on peasant holdings: small farms with little equipment, organized primarily with a view to meeting food subsistence requirements, as a rule not integrated to any great extent with trade flows (especially trade in factors of production) and highly characterized by traditional social patterns and empiricisms.

In addition to the priority activity of subsistence, there were other economic activities on a scale which varied according to circumstances: activities connected with export crops (cotton, coffee, groundnuts) or commercial food crops (groundnuts, rice, maize, yams, manioc, etc.); livestock breeding; craft activities, often in decline; trade, a particular case of which was the sale by women of foodstuffs in the towns; hunting, fishing etc.

A distinction is made between the products generated by subsistence activity to meet fundamental needs (food, housing, health etc.) and the trade products. Food crops may be grown for consumption by the producer or for trade. The term 'cash crop' is applied to all products traded against money on domestic or foreign markets.

2.1.1. The rural world is often seen by 'developers' in oversimplified terms

It is clear that the local socio-economic contexts in which development schemes are carried out are difficult to understand for those with no experience of living in them, and consequently that 'developers' do not know enough about them.

Some 'developers', whether of local or foreign nationality, tend to regard the rural world as an amorphous world which needs to be 'structured' in line with development objectives. Others - and this is particularly true of technical assistance personnel - have a tendency to ignore the social structures and economic or political hierarchies forming part of the context of a project. The rural world is then seen by the 'developer' purely in the light of his particular interest; it is viewed as a mass of coffee or cotton growers, or in terms of an 'average farmer' controlling all the people and resources on his land. Others have a tendency to idealize traditional structures and impose their egalitarian theories on them, although analysis would show them the importance of the various hierarchical patterns, some of which are time-honoured (gerontocracy, submission of women as a class) and others recent (landless peasant classes).

In their efforts at organization of the rural environment, 'developers' often graft new structures on to the existing context. The efficiency, not to say survival, of such structures appears to depend on the continued presence of those who set them up and on the temporary and limited interest of farmers in their operation (for instance, when they are obliged to join groups of one sort or another set up by a development company in order to obtain credit). Consequently, these superimposed structures do not bring lasting changes to the environment.

Moreover, because of lack of a thorough understanding of the environment on the part of institutional officials, lack of more than superficial coordination between socio-economic researchers and project institutions, and lack of appropriate teaching of specifically rural African economics, sociology and technology, the people who deal with the farming world often fail to give it proper recognition as a full partner in its own right; it is regarded as a minor partner, even though the success or failure of rural development activities is entirely in the hands of its members.

In the following pages, an attempt is made to identify the main characteristics of the rural world affected by the projects which have a significant influence on their effectiveness.

2.1.2. Multiplicity of decision-making levels in the rural world and diversity of objectives

The rural world was for a long time considered - and still is considered by some - purely in terms of its capacity to produce exportable agricultural commodities. It was believed that subsistence activity left spare capacity which could be put to work on cash crops. Development resources were allocated to these new crops and it was assumed that subsistence activity would look after itself; in theory it would evolve in line with the population. The term used in projects to identify the peasant partners was 'planteur': an adult male growing coffee, cocoa, cotton or groundnuts, while the women looked after the food crops.

It was subsequently realized that it was not possible to characterize farmers purely in terms of their commodity production activity. It was acknowledged that farming could be affected by a variety of constraints and that food-crop activities (for subsistence purposes or for trade) could overlap with the production of commodities. The term 'planteur' was gradually superseded by 'exploitant agricole' which, although more appropriate, still does not adequately reflect the complexity of the rural environment. The 'exploitant agricole' appears in the guise of a man in control of all the material and human resources on his land. Subsistence activity is regarded as a secondary activity destined to disappear eventually when agriculture finally becomes modernized.

The project files generally consider that a level of overall decision-making and coordinated control of resources and their use correspond to the status of 'farm-head'. However, experience with the projects and a number of other specialized analyses demonstrate that decision-making on a farm is a highly complex process. Each individual in African rural society has his place in differentiated networks according to his personal status (one of the young, an elder, a woman), the type of work he does, the nature of the decisions to be taken etc. The structures of these networks are determined by traditional and time-honoured methods of social organization based on descent (rather than family) and age groups.

Similarly, there are collective levels of decision-making and action: producer groups, consumer groups, groups consisting of those living on the same

concession, lineage groups, age groups etc. and each may be represented by one of its members, who may or may not be accorded special status.[1]

The multiplicity of collective decision-making levels is a reflection of the social structure which must be analysed individually for each ethnic group; some develop community functions to a high degree (community fields for the establishment of stocks, 'machete' associations,[2] community organization of land, collective housing in 'squares' or villages, etc.), whereas others give freer rein to individualism (scattered holdings and housing, fewer village communities and more sporadic 'machete' associations, greater freedom for the young and women etc.).

It is important to note that each decision-making level (individual or collective) functions in the economy autonomously according to its own status. The resources available in the farm unit, land and labour in particular, are not necessarily fluid from one decision-making level to another; the resources of one level are not easily transferred to another level and constraints imposed on one side may determine positive or negative behaviour patterns on another.

None of these levels is therefore a really suitable basis on which to draw up an overall assessment of resources and employment of resources by all the people living together on a given concession.

The evaluation reports shows that the action carried out took little account of these differentiations and that the objectives were generally expressed in terms which did not concern all the decision-making levels involved.

Young people, for instance, generally enjoy very great personal freedom of action, but remain in heavily dependent on their elders when seeking to acquire land. Similarly, women are entitled to own property in their own right, but are obliged to acquiesce to their husbands' authority in order to obtain arable land and, in some cases, to let it to their husbands if they use it to grow cash crops. Similarly, in Niger, women meet with stern resistance from their husbands when they take up raising beef cattle, a highly profitable business.

This can lead, in the case of one-man holdings, to relatively low fluidity of the means of production, especially of labour, within the 'farm holding' entity.

It also means that the production objectives aimed at under projects can vary extremely widely in their effect on the different groups concerned, to the extent that they may be advantageous for some and disadvantageous for others.

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[1] Ancey G., Niveau de décision et fonctions objectif en milieu rural africain, Amira, No 3 (April-November 1975).

[2] Brush clearance teams.

Each micro-economic decision-making level pursues its own objectives. Pecuniary gain, personal security and prestige or the need to secure food supplies may be the motive behind the action of individuals who are at the same time involved in the attainment of community objectives, such as group prestige, medium-term security, generation of cash resources to pay for a collective project etc. Thus an individual's behaviour will vary according to whether he is pursuing a personal objective or a community objective.

In this type of structure there are many conflicts of interest: some 'elders' monopolize land, using their status to personal rather than collective ends; women come into conflict with their menfolk when they wish to develop their cash trade activities; traditional activities aimed at building up long-term community stores are superseded by activities offering an immediate return, and so on.

The simplification of basing projects on consideration of part of a community and its activities - adult males and the farming under their control - can lead to serious difficulties in development operations. It ignores the circumstances of other social groups and covers up the gradual disruption which can arise in the societies concerned.

In the absence of preliminary sociological analysis and especially continuous evaluation of their effects, development operations can actually strengthen the very social and economic hierarchies which they seek to combat. For instance, where the credit structure and supervision methods constantly favour the most prosperous farmers as far as acquisition of animal-drawn tillage equipment is concerned, it becomes harder and harder for the other men - young men in particular - to get land, means of production or wives, so that a class of landless peasants grows up in a rural world traditionally accustomed to the concept of collective ownership.

Similarly, when development institutions deal exclusively with heads of farms and allocate resources to them, women's activities suffer.

In conclusion, emphasis must be placed on the need, when planning development operations, for clear identification of the social groups aimed at and definition of their respective positions in relation to the various objectives: in what ways will the elders, the young men and the women be involved?

Which objective and which particular method will enable each of these groups to solve their farming problems and settle tension between them?

Projects should also be planned in relation to the functional objectives at each level of activity: an increase in cash income for young men; greater economic independence for women; generation of the resources needed to improve housing for the group of people living together on a concession making up a 'residents' group'; development of crops for long-term storage by 'consumer groups' etc. Although such complex planning is clearly impracticable, it is possible, during the shaping and continuing evaluation of a project, to consider the resources employed in the light of the complex conditions in the environment concerned and ask whether they are appropriate means of securing its development.

2.1.3. Farmers' representation and negotiating powers

Apart from all political and legal considerations, the reports place the accent on relations between the farmers and populations affected by the projects and the agricultural development authorities.

In general terms, it has been found that only rarely in the projects evaluated had institutionalized dialogue been set up between the authorities and the farming communities. The most advanced example of dialogue seems to be that of the cooperative organization in Niger, for all the reservations expressed in the evaluation report regarding the genuinely participatory nature of decision-making in the cooperatives and the UNNC. No mention is made anywhere of farmers' representative structures with real powers of negotiation over the management of resources made available by the State and external sources of finance.[1] On the other hand, all the reports refer to widespread imposition of constraints of varying scope, ranging from mandatory cotton growing in Zaire and Chad[2] (the rules were relaxed two years ago in the latter country) to technical constraints, such as refusal to deliver inputs or to grant credit unless certain technical conditions are fulfilled.

None of the reports refers to any direct powers of negotiation in the area of the pricing and marketing of export products, nor even in that of the fixing of cooperative discounts, where they are available. It may be said that, at the institutional level, farmers are either virtually unrepresented or cast in a very minor role.

Many plans and projects express the intention of securing greater participation in development by the local people. It is not always stated clearly whether such participation is an objective, a strategy or a condition of success of the operations proposed. In some cases 'participation' is obtained by coercive means (compulsory crops) while, in others, promotional methods are used.

In the latter type of case, an objective often expressed by operational officials is the 'structuring of the peasant farming environment'. This objective and the measures adopted to attain it appear extremely ambiguous, as is shown by the Ivory Coast evaluation report in particular.

Rather than deal direct with the local farmers as they are actually organized, some projects create their own interlocutors in the image of the action which they intend to carry out. For instance, village groups are set up at the instigation of a development company on the basis of a contract which it has drawn up following a detailed analysis of the techniques which it intends to promote. As long as the proposed 'contract' is economically attractive, the farmers agree to play the role assigned to them in the new 'structures',

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[1] Cf. Vanhaeverbeke A., p. 215 et seq. (Doc. 34).

[2] Under which each active person is obliged to grow cotton on at least half a hectare.

since this gives them access to supplies; however, the structures disappear if the advantages of this arrangement wear off.

The establishment of new structures by projects does not therefore seem to be the way to ensure participation by the population affected. Such participation will follow in the first place from the interest taken by local farmers in the attainment of national development objectives. It is a sign that such interest exists and, if this is so, it does indeed become a development strategy.

Although the peasant masses are poorly represented and lack bargaining power in the processes of development, several examples clearly demonstrate their determination to remain masters of their own activities. This determination is expressed through the regulatory mechanisms at their command.

Reference is made, in fact, to their ability to react quickly to economic incentives made available by the national authorities. Conversely, when the incentives are insufficient, they can scale down their activities to the level of subsistence farming activities to the level of subsistence farming or switch away from official markets to 'traditional' markets. They may underconsume, freeze cash resources, or allow stocks to deteriorate when their purchasing power on the organized commercial market becomes unsatisfactory or trade conditions are not to their liking. If they are interested, they also have considerable ability to appropriate 'modern' structures while still using their own traditional methods of organization.

This latter point is particularly well illustrated by the Zinder and Mayaga-Bugesera-projects. The evaluation report on the Niger project recounts how the cooperative structures were appropriated by the traditional holders of authority in Hausa society while that on the Rwanda project reports that the farmers have penetrated the 'rationalized' framework of 'farming communities' although continuing to use traditional agricultural methods.

Generally speaking, the 'peasant mentalities' sometimes accused of being a cause of delay in agricultural development are in fact, to some extent at least, a reflection of such regulatory mechanisms. The reports provide several examples of shortcomings in the organization and operation of rural services: rapid turnover of supervisory staff, modification of technical standards or changes in prices without clear explanation, lack of information and research on traditional production methods etc. In such cases, it often occurs that the regulatory mechanisms operate in favour of the relative security offered by traditional methods of production which have stood the test of time and, above all, are well-known to the farmers themselves, although more hazardous in some respects.

2.1.4. References systems; differentiation and dualism of mentalities

There is often a gulf of mutual incomprehension between 'developers' and peasant farmers, the result of such factors as conflicts of interests, communication difficulties (language codes), differences in the hierarchy of fundamental values and so on.

Several experts have pointed out that the use of foreign language codes, technical codes, legal concepts and so on can lead to major difficulties in the assimilation of technical and economic progress. They refer for instance to measurement units or concepts relating to communal ownership of land, rights to use land conferred by way of incorporation of labour, organization of consumption etc.

Attention was already drawn in the first evaluation report on the agricultural sector to the ethnocentricity of conceptions of development operations in the rural environment: 'An ethnocentric approach inspired most of the projects examined and it is the root cause of many omissions. It takes the form of attributing motivations and reactions conforming with those of 'homo economicus' (interest in personal profit and ever-increasing personal advantages) to the social group for whose benefit and use the project is intended. It places the emphasis on farming as a job oriented towards the market and profit, and ignores or underestimates farming as a way of life, with its allegiances, its social obligations and its unifying role within the traditional social group.

Hence, projects underestimate a number of associations which 'the peasant farmer is neither willing or able to abandon, although the projects as devised make the assumption that he will give them up without difficulty'.[1]

The lack of dialogue between the real rural world and the technical and economic structures benefiting from scientific knowledge is clearly a crucial factor which must be overcome.

A feature emerging from the reports is the influence of social or human factors on project results; these factors are frequently lumped together under the heading of 'mentalities', the general supposition being that these mentalities are the expression of a collective rejection of social change. On analysis it is found that these 'mentalities' are often the reflection of behavour patterns determined by a series of ecological, technical or economic constraints as much as of psycho-sociological factors.

Substantial differences can be observed according to the regions in which projects have been organized and the constraints obtaining in each environment. Some groups are highly individualistic in character, with the people preferring to live in isolation, each family in the middle of its own land (Rwanda); others have a more highly developed community spirit and prefer to live together in hamlets or villages. Socio-demographic conditions, history, ecological factors, social structures and factors connected with the management of farming inputs are all constraints of decisive influence on the way peasant communities are organized and on 'mentalities'. The 'peasant cults'[2]

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[1] A. Combaz-Fauquel, Etude de synthèse des évaluations de projets de développement agricole financés par le FED (June 1974).

[2] The complex of religious concepts associating rural communities with their land, referred to by the generic term of 'animism'.

associated with community hierarchies are frequently a traditional component of agro-ecological balances in subsistence farming, whereas export-oriented activity is actuated by modernistic approaches.

Pelissier, with the example of the Sérène people, has provided a very clear demonstration of the close links which can exist between 'peasant cults', collective management of their farmlands and long-term agricultural equilibria. He draws a contrast between the ecologically balanced farming practised by those with 'traditional mentalities' and the 'extractive', sterilizing farming of the Mourides which is restricted to groundnut settlement alone.[1]

The same type of dualism can also be found frequently in legal structures and numerous problems connected with land tenure systems and grazing rights are mentioned in the evaluation reports as not inconsiderable sources of difficulties: increase in disputes between graziers and crop farmers, difficulties over allocation of land, monopolization of property rights by headmen, absence of land on which to set up young farmers, etc. This is an area in which confusion reigns in many countries, even where land reform has been introduced.

Economic constraints can also affect activities with which the 'developers' are not concerned. In such cases, their proposals are resisted by the farmers. For instance, in Rwanda 'it was economic considerations which, for reasons of profitability, directed programmes exclusively towards coffee-growing to the detriment of other objectives which were more modest but much closer to the preoccupations of the Rwandese rural community for whom coffee's place in the scale of values was well below those of the beer banana and foodstuffs essential to the family's survival'. Moreover, this same report finds on the one hand that foodstuffs and especially beer provide the best cash returns and on the other hand that the subsistence economy in Rwanda is remarkably stable. Its stability is closely bound up with the ecological role of the banana plantation, an essential factor of long-term food security, despite the fact that a high proportion of banana output is consumed in the form of beer. The introduction of coffee in areas traditionally given over to banana-growing is clearly a cause of de-stabilization of the agricultural ecosystem, since the mineral substances exported by way of coffee production cannot be restored to the land for economic reasons. In these circumstances the farmers have to reconcile their own interest in maintaining subsistence equilibria with the advantages of increasing coffee production. However, they have fallen far short of what the agricultural promotion services would like to see.

Too many project administrators forget that their own inherent shortcomings can create characteristic bottlenecks which, when perceived objectively by peasant 'mentalities', lead to a low level of association with the actions suggested on the part of the local farmers. For instance, as will be seen in section 4.6, uncertainty surrounding the resources placed at farmers' disposal by the development institutions can be a major factor. The peasant farming community cannot afford to make mistakes, because they can place its very

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[1] Pelissier: Les paysans du Sénégal, CNRS, 1966 (Doc. 35).

survival in jeopardy; its primary concern is to secure continuity of the resources which it needs to carry on farming.

When institutions attribute difficulties or failures experienced with projects exclusively to 'peasant mentalities', it usually means that they lack the ability to analyse the environment of peasant farming and in particular the ability to analyse obstacles which they may create by their own actions.

2.1.5. Priority given to activities connected with subsistence: rural communities' aspirations to control their technical and economic future in food-crop farming

In a peasant country, subsistence farming activities have priority: food requirements cannot be covered satisfactorily by purchases from traders, on the one hand for reasons of security of supplies (unreliability or absence of local trade in foodstuffs) and on the other hand because of cost considerations (high prices of foodstuffs bought from traders in relation to the logic of producing one's own food).

In the past, regular supplies of subsistence foods were maintained by the balanced working of local ecosystems, in contexts where external contributions of inputs were non-existent, hypothetical or unreliable because of non-integration with trading economies, lack of finance to pay for them and the non-existence of organized distributive structures.

Each type of crop has its own 'status' and this determines priorities in farmwork.

For instance, some rural activities are seen as 'pivots' around which others revolve. Establishing a prosperous banana plantation is an absolute priority in Rwanda; it provides basic subsistence products (bananas and beer), it safeguards the owner against the risk of famine, it performs a fundamental psychological role and provides a regular income. Elsewhere the pivotal activities may be efficient management of a large herd, or alternatively rice growing, Well-run banana plantations or rice-paddies, large herds or barns well stocked with maize or millet are reflected very directly in the social status of their owners.

On the other hand, industrial crops (cotton, coffee, etc.) were frequently seen as 'tax-raising crops' rather than as the means of developing trade.

It is clear that considerations of gaining prestige and wealth in the community context provide stronger motivations than the prospect of paying tax, the latter being the peasant's translation of such objectives as 'increasing the State's budget resources', 'improvement of the trade balance', 'increasing foreign currency revenue', etc.

Several of the reports refer to the difficulties, some of which lead to serious consequences, arising out of the technical planning of programmes to introduce new methods where such programmes concentrate exclusively on export crops (especially as regards fertilizers, which are currently among the most

decisive factors in the improvement of agricultural productivity). These difficulties arise specifically out of the differences in approach to priorities of the various participants in agricultural development and out of the fact that the introduction of new methods on a farm holding necessarily entails disruption which does not automatically bring appreciable improvements in all aspects of productivity.

Analysis of the status of each crop in the agricultural system which it is intended to modernize can be seen as the prerequisite of successful advisory work. The farmer, unlike the promoter of agricultural methods, cannot afford to content himself with incomplete working of his holding.

In the case of subsistence food-crop agriculture, there is a tendency to assume that the farmers are capable of meeting their own needs, given their empirical knowledge. In many projects, it was quite simply supposed that food-crop production would increase prorata to population growth. However, population pressure has disrupted the traditional pattern of crops and fallowing, access to land and storage of reserves of foodstuffs. In many cases, therefore, there are shortages or endemic famines which are not being combated by efficient redistribution systems. Although acute problems (such as the Sahel famines) do not break out frequently, it does seem that most subsistence farming is in decline, whether qualitatively (trend towards less demanding crops such as tubers or bananas rather than cereals or vegetables) or quantitavely (fall in yields, reduction in strategic stocks sold by individual farms, etc.).

Whenever it occurs, disruption of subsistence activities will sooner or later have repercussions on commercial crops, whether intended for export or urban consumers. The development of commercial crops is therefore directly linked to improvement of productivity in the subsistence sector; however, the latter receives very little support in the form of official development resources.

As indicated by the evaluation reports on the Zinder and Togo projects in particular, the technical agencies have little idea how to tackle this sector because they lack detailed information about it. Confronted with the need to 'do something', they opt for crops which are more familiar to them (groundnuts, cotton etc.), thus departing from the initial aim which was to adopt an integrated approach. This explains why the 3M (Zinder) project took the course of organizing 'pilot zones', whose activity became highly sectoral.

Self-sufficiency in food in the countries concerned is another problem very directly linked to State economic policy. In fact, in most of the cases examined, it was found that it was necessary to import in order to supply the towns and that the needs of regions with food deficits were often inadequately met by trade with those having surpluses.

The agro-economic policies pursued by State basically revolved round export crops, the only type of production offering the possibility of substantial revenue for the public coffers, in view of the tax systems currently enforced. In the case of food crops, they are generally geared to the needs of urban consumers and unfavourable to producers (very low official prices, obligation to sell within a given geographical area etc.), so that they themselves tend

to make for shortages. Governments have not always been successful in establishing policies which promote the diversification and development of domestic trade while at the same time securing budget revenues.

The commercial infrastructures, particularly those for storage, are rarely organized with food-crop trade in mind and if they are, they are inefficient. Where there are such infrastructures, it is often difficult for the rural population to buy in the quantities they need if they run out of supplies between seasons or in the event of a shortage. In fact, the projects evaluated in Rwanda tackled this problem with some efficiency.

Several of the reports (Niger, Chad, Ivory Coast) explain that, when price levels are satisfactory, the traditional sector rapidly becomes able to meet demand. For instance, the substantial increase in paddy prices in the Ivory Coast led to a sharp rise in rice production and caused difficulties for SODERIZ, which did not have sufficient funds to pay for the quantities offered for sale.

The absence of outlets for food crops is often advanced as an explanation for the lack of structured policies in the field of food-crop agriculture. There is much evidence against this argument, however.

The evaluation reports record a relative increase in food crop prices compared with export crop prices.[1] In relative terms, the share of export crops in economies is falling, a situation which raises serious budgetary risks for some States which still rely on customs revenue (export duties on cotton, coffee and groundnuts can be as much as 30% of the FOB price) or profits made by stabilization funds.

It now appears that farmers have already reacted to the structural changes in domestic agricultural markets and that, coercive measures apart, only the normal operation of market forces will persuade farmers to opt for export crops.

Other evidence points to a sharp increase in outlets for food crops: the scale of food imports, whether purely commercial or channelled through international food aid; the growth of urban and industrial centres; the bidding-up of prices at certain inter-State frontiers etc.

2.1.6. Conclusion

Analysis of the projects evaluated brings home the complexity of the mechanisms governing the farming activities of the populations affected by development schemes. This complexity can by no means be defined purely in terms of reactionary mental attitudes; on the contrary, all the reports point to profound and fast-moving dynamism among the producers. The complexity derives from the empirical but determined attitudes of peasant farmers operating

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[1] With the exception of the case studied in Chad: cf. 2.2.3 and 3.3.2.3.

within the constraints of technical and economic factors perceived in terms of conditions on their farms and in the light of their interest in social change. It can often be misunderstood in the rigid and often simplified frameworks of regulations or projects designed by officials from outside the rural community often unfamiliar with the country itself.

To be truly 'integrated', rural development must give very flexible encouragement to the progress of the complex of limiting factors and incentives. The age when it was thought that rural development and progress for the most disadvantaged populations would follow as the result of accelerating industrial growth has come to an end. Improvement of the circumstances of disadvantaged populations can only be achieved if rural development operations are aimed very directly at the 'target groups' whose wellbeing it is intended to enhance from the points of view of economic conditions, health, education etc. Moreover, experience has confirmed that lasting results cannot be expected unless development schemes are taken over completely by the groups concerned. Any number of projects have attempted to achieve rural development 'in spite of the local farmer', without his cooperation, irrespective of the context of his skills, imagination, priorities and even his methods of working the land.

In order to increase the effectiveness of resources given over to rural development, it is necessary to enquire into the fundamental thought processes underlying peasant mentalities and the technical, economic, social and cultural behaviour patterns which they determine.[1]

2.2. PUBLIC PARTICIPANTS

In all negotiations on the use of EDF funds, the Commission deals with the State concerned, which entrusts overall supervision, support or execution of projects to specially set-up bodies with responsibility for either a region or a sector.

The table 2.2.a shows the public, parapublic and private bodies, apart from Government departments, which have been involved in the projects; these bodies have been classified according to function.

2.2.1. Problems of integration of rural development at institutional level[2]

Table 2.2.a contains many examples of dispersal of responsibilities between national institutions, which is in evidence in the logic of both vertical in-

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[1] On this subject, see: P. Thenevin, Planification et comportements des centres de décision en milieu rural (Doc. 20) and Réflexions nouvelles sur le développement rural, quatrième partie (Doc. 15).

[2] In connection with 2.2.1, see The Design of Rural Development, pp. 196-199 (Doc. 19).

Table 2.2.a.

	Supervision	Marketing		Credit
		Industrial	Food	
Chad	ONDR	(COTONFRAN) COTONTCHAD CFDT	Département Céréalier/ FDAR	BDT
Togo	SORAD Centr. SORAD des Plateaux SOTOCO SRCC (SONAPH)	SOTOCO OPAT	TOGOGRAIN	CNCA
Rwanda	OBM	OCIR Coopérative/ OBM RWANDEX	OBM	Banque populaire
Niger	UNCC CODETEP	SONARA UNCC	OPVN	CNCA UNCC
Central African Republic	ORDOHK AGROPROGRESS[2]	UCCA ENPROCAF	ONCPA SICPAD Buyers	
Zaire	CAKO	ONAFITEX	ONACER	CAKO
Benin	CARDER	CARDER SONAGRI SONACEB SONAFOR	CARDER SONAFEL RGA	BBD CNCA CARDER
Ivory Coast	SODERIZ		SODERIZ	BNDA
Upper Volta	ORD	ORD CFDT	OFNACER	BND

[1] In the interests of readability, the meanings of the acronyms have not been given in full in the text; they can be found in Annex 1.
[2] Since 1974.

Institutional participants in the execution of the projects evaluated, apart from national Government agencies[1]

Price support	Research	Studies/ Technical assistance	Technical services/ parapublic bodies
CSSPC	IRCT DEA	CFDT	DEFPA
OPAT	IRCT IRAT	INSTRUPA	SONACOM
	ISAR	SOCINCO SEDES AESED ITC AIDR	
CSSPN	IRHO IRCT	CFDT SOGETHA GRONTMIJ	SDRAT[3] OFEDES CES/DRS
CSPC	INRTV IRCT	EUROPREDE AGROPROGRESS	
	INERA	INDACOM SORCA P. FYOT CFDT	CAKO
IRAT		BDPA CFDT GRONDMIJ AGROTEC IRAT BEI-AGRER LOTI SEDES CFDT	

[3] COTEDEP embracing agriculture, livestock farming, education, health, water resources and forestry, 'animation', the SDRAT.

tegration of operations (supervision, credit, marketing, research etc.) and horizontal integration (agricultural problems connected with cash crops and food crops, health problems, water supply etc.) (cf. 5.1.2).

While one cannot presume what would be the conclusions of more detailed analyses than those which could be made in the reports, the impression was gained in a number of cases that competition between specialized institutions or between special interests within a single institution was quite common.

In Chad, for instance, there is a notable contrast between the prosperous COTONTCHAD and the relatively impecunious ONDR. The CFDT acts not only as technical adviser (ONDR, COTONTCHAD), but also as commercial agent on behalf of COTONTCHAD, in which it is a shareholder. The IRCT is largely financed by the GERDAT, whereas the DEA, an administrative department, is responsible for food research, but has only scant means for this task. As for the FDAR, it appears to be active in the field without cooperating in any way with COTONTCHAD or the ONDR. It has to negotiate its annual credits with the BDT, which is bankrupt, whereas COTONTCHAD enjoys all the necessary bank support, as the N'Djamena banks are shareholders in the company.

In Togo, there has been a movement away from structures of the broad-based regional type (SORADs) towards structures of the specific sectoral type (product companies: STOTOCO, SONAPH, SRCC): this trend was motivated by hopes of greater technical and economic efficiency. However, it was difficult to judge the efficiency of broad-based intervention structures since their activities had not been based on overall approaches to rural projects. The SORADs had concentrated their activities on export crops rather than on bottlenecks affecting farmwork and the hierarchy of crops as perceived by farmers (cf. table 5.1.3).

Apart from concepts which hold true in relation to action designed to affect 'agricultural systems', how could regional structures be more efficient than sectoral structures, particularly where the only criterion of development is the criterion of increased production?

The SORADs were also inefficient because of their inability to achieve genuine decentralization of their strategy and resources to the rural community. This shortcoming was evident in their relations with the cooperatives, for instance, with the latter being looked upon rather as agencies for the implementation of SORAD directives than as partners with whom it was necessary to cooperate effectively. Such an attitude could not fail to foster tension between rural communities and the institutions and seriously undermine the impact of projects.

In this particular case, however, it must be added that the intervention structures were changed as much as a result of strong political influences as on the grounds of technical considerations.

In Rwanda, Zaire and Niger, on the other hand, the institutions seem to have been more successful in integrating the various functions required for the execution of projects.

The Bugesera-Mayaga Office was given responsibility simultaneously for organizing the division of land into plots, receiving migrants, technical instruction and marketing through its cooperatives. The Office has thus played a broad-based role. However, it has not really taken an interest in all farming activities, particularly instruction, since its agricultural propaganda has been virtually restricted to coffee-growing.

The Commission agricole du Kasai oriental (CAKO) in Zaire was also planned as a broad-based organization with a fair degree of autonomy which would be capable of sustraining overall agricultural development in the region entrusted to it. However, the integration of resources left much to be desired: purchasing of seed-cotton, supplies of cotton seed, ordering of fertilizers, insecticides etc., applied agronomical research and industrial development of maize were all left in the hands of other public institutions or private operators. What is more, the CAKO virtually restricted its activities to farming community fields growing cotton and maize as the first crop. The peasant farmers' other crops and activities were left to fend for themselves.

The 3M project in Niger is the most clear-cut example of an integrated approach to intervention by institutions. The cooperatives have had a role to play in both agricultural training ('auto-encadrement') and marketing. They have been able to operate within a powerful association with a strong national structure. The horizontal coordination required for the execution of multi-sector programmes has been carried out under the auspices of the Prefect by a Departmental Committee (COTEDEP), with the UNCC as the executive agency.

Even though the great ascendency of the central UNCC agencies over the local cooperatives is open to criticism, it may be said in the case of the 3M project that there has been an effective blend of three factors: vertical integration of operations through the UNCC (training, credit, marketing); horizontal integration through the COTEDEP (in which the four services most concerned with regional development are brought together); at least partial decentralization of decision-making and the 'auto-encadrement', marketing and credit functions to the cooperatives, with decision-making at Departmental rather than central level.

This institutional structure makes it difficult to separate out the effects of the external aid, but it ensures that the institutions are viable without aid and that the decisions on operations planned have remained entirely independent of all foreign assistance.

2.2.2. Governments and their institutions depend to a large extent on agricultural production

The profusion of public institutions in some countries, the burden of direct and indirect taxes on the most important trade products, the polarization of resources towards a limited field of very specific types of farming, the monopolistic tendencies etc. sometimes give the impression that the capacity of the institutions to promote economic development is taken for granted.

Broadly speaking, it would seem that the fundamental characteristics of these institutions can be described as follows:

(i) their activities are specific and centralized, whereas the agrarian systems are complex and decentralized;

(ii) they are dependent in character compared with the relative independence of farm holdings, which have the option to concentrate exclusively on subsistence farming, which affords them the necessities of life. The development institutions, on the other hand, depend on the resources which they are able to derive from farming, either through taxation or through levies at intermediate levels (referred to as 'self-financing');

(iii) lack of continuity of the institutions and their representatives as compared with the structural stability of farming communities.

By concentrating excessively on the State's objectives, such as 'increasing the State's budget resources', 'improving the trade balance and increasing foreign currency earnings' or 'achieving self-financing in the farming supervision structure', institutions can sometimes actually hold back the spontaneous development of certain types of production and trade from which they would benefit indirectly themselves as much as the farmers. The rural populations have different objectives. Under these circumstances, there is real incompatibility when institutions lose sight of the differences between their role in the national economy and their role vis-à-vis their farming community.

For instance, in the context of the growing food crisis in Africa and elsewhere in the world, the Togolese SORADs were obliged from 1971 to pursue the objective of financial self-sufficiency. This led them to concentrate more specifically on cotton which, because of the monopoly, enabled them to be self-financing. This obligation increased competition against food crops and indirectly accentuated the crisis. It therefore seems that the objective of making the SORADs, and later SOTOCO, finance themselves actually worked against the interests of development and diversification of trade in the Togolese national economy.

The institutions in Central African Republic have not concerned themselves with food crop development to any appreciable extent. The town of Bangui suffered from sporadic shortages during the period of the project. In the rural areas cotton was competing with cereals and favouring manioc, whose nutritional value is lower. What chance was there of building a prosperous cotton-growing industry on a foundation of food shortages?

In many cases the institutions' interventionism, or indeed authoritarism, vis-à-vis the farming community seems to be inversely proportional to their success in establishing confidence, offering appropriate economic incentives and performing their own role satisfactorily in the fields of marketing, provisioning, credit, research and training.

Mutual confidence and institutional stability emerge as two important factors determining the success of the public participants in the process of development. It is essential to establish such confidence and stability so that farmers can evaluate the positive benefits to be derived from the institu-

tions. This twofold conclusion is particularly well illustrated by the evaluation studies of the Niger and Chad projects, in the case of the former because relations between farmers and officials were established through contacts at various levels in which the officials gave no hint of looking down on the peasant communities; in the case of the latter because stability of economic incentives and reliable marketing of cotton meant that the farmer enjoyed relative security of income.

2.2.3. Economic policies expressed through development programmes wilt when coming into contact with the realities of projects in the rural environment

Each country defines its agrarian policies in the light of specific circumstances. However, some common aspects can be identified, although it is not always possible to draw generalized conclusions; indeed not all the evaluation reports discuss the economic policies underlying the projects in explicit terms. Moreover, only in few cases was the relationship between economic policies and the aims and objectives of projects established at the outset. Evidence is also provided of inconsistency between the general aims of national plans and the way projects were handled in practice. In some cases, ill-conceived economic measures led to dislocation of incentives essential to the successful development of farming.

The clearest examples of dislocation are to be found in farm price policies, which often militate against the achievement of the general aims and objectives of diversification of agricultural production.

Niger, for example, wished to 'diversify production' and 'raise nutritional standards for its people'. When production of cowpeas increased in response to favourable regional and inter-State market conditions, the official price was reduced by 25%, resulting in an immediate fall in the production and the marketing of the crop.

Food crop prices rise at the expense of traditional export crops: it is impossible to aim simultaneously at improving nutritional standards for the population and maintaining the level of fiscal revenue from cotton unless there is a significant overall improvement in productivity.

In more general terms, much evidence was brought to light of lack of coordination between the ideals of policies aimed at agricultural diversification and nutritional improvement and actual practice in the field of market regulation which, almost without exception, appears to exert a depressive influence on food crop production for various reasons:

(i) prices are regulated according to the interests of the urban consumer rather than those of the producer;

(ii) action in the field of food marketing is frequently accompanied by monopoly powers, but the monopoly institutions often lack the flexibility and resources of private traders;

(iii) the working capital for food price regulation operations is always inadequate, which is very serious when there is a commercial monopoly;

(iv) regulations do not take account of the context of inter-State trade;

(v) action to exclude intermediaries is sometimes taken inopportunely at local level.

If the State lacks the resources to replace private intermediaries by more efficient organizations, ill-judged measures can lead to shortages or economic difficulties which are worse than those caused by the intermediaries whose excesses they are designed to combat.

In Chad, for instance, there is every reason to believe that the food price policies pursued are largely responsible for domestic shortages and the frequent 'frauds' with Nigeria. Urban consumers buy FDAR cereals at speculative prices a few yards away from FDAR shops; the populations affected by the drought, on the other hand, are entitled to receive their meagre diet of cereals free of charge. Sub-prefects prevent traders from taking foodstuffs outside their areas; cooperative farmers dispose of stocks in their local villages because they are prevented from selling them at the market price by authorities insisting on compliance with FDAR rules; world food aid agencies import foreign foodstuffs instead of buying cereals produced locally, etc.

In view of their precarious food supply situation and demographic pressures, several countries are anxious to re-establish the balance between population and soil resources. This can only be achieved on a national scale if there is balance at local level in the many farming areas. However, it has been found that these agronomical balances are not being maintained where cash crops are being grown, whether cotton, groundnuts or coffee, and that they cannot be restored on the basis of the present input/output price structure.

If the agronomical balance is to be maintained, all the minerals taken out of the soil by cultivation must be returned. In the case of land farmed in a closed cycle (subsistence crops), the minerals are retained in the ecosystem, even if they are redistributed from one field to another. On the other hand, where export crops are grown, the balance of the ecosystem is broken down unless what has been taken out of the land is at least matched by equivalent external inputs.

None of the projects has managed to solve this problem. It may therefore be said without too much exaggeration that the demographic pressure on land which is already underproductive and overpopulated is being increased by the demands of a foreign population (cotton users, coffee drinkers etc.).

It is impossible to disregard the risks which such uncompensated excess pressures represent to the future of African farming. Land whose productivity is low and which is still being cultivated extensively is having to support:

(i) the demands of the local population (subsistence crops),

(ii) the additional demands of the domestic urban population,

(iii) the additional demands of foreign consumers.

In addition, the holdings on this land are required to operate profitably and to generate the funds required to finance the supervisory services. Many of

the project agreements contain stipulations on financial self-sufficiency, for instance the reinvestment fund planned in Rwanda, the SORADs in Togo, CAKO in Zaire.

Most developed nations subsidize their highly productive farming with resources drawn from non-agricultural sectors. In the countries benefiting under the projects evaluated, the situation is reversed: despite its low productivity, the farming sector is required, not only to feed the national population, but also to support the institutions and finance national development, and this in contexts where there is little or no organization of input-output trade.

2.2.4. Constraints accepted by States

The wilting of economic policies expressed in development plans when they come into contact with the realities of operating in the rural environments can be explained in terms of the various constraints within which context the national and public institutions have to operate, particularly in the case of the poorest States and those least able to rely on industry or mining for the budget resources they need in order to survive.

There are many cases in which political constraints or ethical constraints condition the activities of institutions. States are frequently confronted with problems of nation-building which foreigners are not in a position to understand. It is nevertheless wrong to blind oneself to these realities, particularly in the way that some technical assistance personnel do, pretending that they can carry on as if they did not exist.[1]

Several of the projects evaluated were very directly affected during the course of operations by politics in the technical institutions themselves. This factor is generally more influential in institutions with a relatively centralized structure of responsibilities than it would be if the organization were more decentralized and more fully integrated with the population directly concerned.

The influence of such political factors appears to be inversely proportional to the number of economic factors generating the cash resources and foreign currency needed for the survival of public institutions.

In essentially agricultural economies, 'tax bases' are highly specific and related to monopolizable trade: cotton, coffee, cocoa and groundnuts in the cases studied. As mentioned above, a relative reduction in export crop agriculture must inevitably lead to a relative fall in budget revenues and foreign currency earnings.

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[1] See for instance certain types of assistance to the SODERIZ in the Ivory Coast.

It has to be noted that this is a 'structural' situation, because there has been very little investment by States in the organization of domestic or inter-regional trade, which is another potential source of tax revenues for national economies and would be more broadly based and more varied.

Helping States to create the conditions for this type of environment (aid to policies on strategic stocks, provision of working capital, intensification of research etc.) is a desirable objective for future aid operations in so far as States gradually come to expect less from export crops and exert less pressure on farmers, while at the same time action is taken to improve coverage of local food requirements and diversify domestic trade - action which would accord with the present priorities and interests of the farming communities concerned.

States also have to deal with a permanent problem of urban population growth. Urban populations, an appreciable proportion of whom rely directly on public funds for their subsistence, generally carry political weight which makes it difficult to apply economic measures which favour rural producers.

Many attempts have been made to bring markets, infrastructures and organizational structures under control through the establishment of more or less monopolistic institutions, but these do not produce lasting improvements benefiting trade between producers and consumers.

One finds - in the case of Chad and Zaire, for instance - that the State finds itself in the position of having to assume increasing proportions of production costs, with or without foreign aid. Sometimes payment of these costs is made through the intermediary of stabilization funds. However, the growth rate for expenditure on inputs needed for agricultural intensification is faster than the growth in revenues derived from the activities to which stabilization measures are applied. Consequently, public institutions are only able to balance their accounts by exerting increasing pressure on producers or by recourse to foreign aid. If they adopt the former course, their efforts are hampered by indifference on the part of producers; with the latter course, they place themselves in a position of dependency on foreign aid which is by definition temporary.

The Stabex system set up in 1976 deals with only one aspect of the problem: the revenue side; the other aspect, expenditure, could only be solved if there were also a stabilization fund for imports of essential inputs especially fertilizers and insecticides.

2.3. FINANCIAL PARTNER: THE EDF

Farming families are the ultimate beneficiaries of EDF rural development aid. This aid is always channelled through public institutions whose priorities are determined by the recipient States, either through the promulgation of their development plans or during the planning of individual projects.

Aid for the rural populations of the African countries under consideration here may be compared up to a point with the aid granted by the Community to its own farmers. However, the farmers' associations in the Common Market have real powers of negotiation enabling them to defend the economic interests of their members. Nothing similar exists in the countries mentioned in this report. Direct evaluation of effects of aid on farm holdings is therefore difficult, since it is carried out by outside officials.

In this connection, there may be some ambiguity in interpretation of the economic results of aid. The fact that aid is beneficial in terms of income generated by the 'projects' or of the State's budget revenues does not necessarily mean that it is beneficial in terms of the wellbeing of rural populations. If the people affected by projects are not involved in evaluation of their results, there is always the risk that the evaluation will be biased.

2.3.1. Influence of the Community on projects financed with EDF aid

The influence of the Commission, and of the EDF in particular, on the planning and execution of projects is seen as variable, circumstantial and always limited in duration.

On a more general level, by virtue of its existence and the general policies which it applies within and beyond the frontiers of the Common Market, the EEC influences agricultural development in the countries where the projects evaluated were carried out. In the discussions which have taken place in the North-South dialogue, much attention has been given to the overall pattern of beneficial or detrimental influences on conditions in the poor countries exerted by policies applied by the rich countries. The topics of discussion have included the organization of international markets, the deterioration in the terms of trade between commodities and manufactures (including factors of production essential to farming), the transfer of technology and competition between agricultural commodities and synthetic products.

To a certain extent, the effect of temporary subsidies channelled through projects are marginal in relation to those which could be produced by more fundamental policies such as those for which the Third World countries have been pressing in the North-South dialogue. For instance, it would be useful to make a comparative analysis of the effects which would be produced by index-linking agricultural commodity prices to the prices of manufactured goods needed for their production, in relation to the effects of structural aid as organized currently through projects which are limited to specified sectors and geographical areas and also limited in duration.

If the consumer countries paid more for agricultural commodities, there would be an appreciable structural improvement. However, this would still leave the need to work towards the improvement of productivity in African agriculture.

As has been mentioned in connection with Chad (cf. 1.05), an increase in purchase prices leads to a greater relative improvement in returns on extensive farming than in those from intensive farming. This holds true only at the lowest levels of productivity. However, as the evaluation of the Ivory Coast

project suggests, it seems that an increase in the price of a product can have an impact on production or incomes leading to such interest amongst farmers that there is a substantial increase in their demand for intensive farming technology. Higher prices for agricultural commodities and stabilization of the terms of trade between inputs and outputs are included among the demands of the Third World countries. In so far as there were real improvements in the prices and price ratios benefiting the national economies of these countries, it is probable that structural aid would have to take on new forms. Although of crucial importance, these themes cannot be developed further on the basis of the information available in the evaluation reports. A specific study is called for.

This said, it is necessary to examine the influence which the EDF can bring to bear in the more immediate future on the direction taken by rural development operations.

A first type of incluence is that exerted through the image of the Funds' aid as seen through the eyes of African States. Hitherto, this aid has been granted more on the basis of the economic profitability and financial viability of projects than on the basis of more structural objectives connected with land utilization schemes, encouragement of domestic economic flows between diversified regions and social categories, organization of the rural environment by local populations etc.; moreover, this basis of judgment has been compatible with the most direct interests of the African States.

Although the basic design of projects always comes from the government of the recipient countries, sometimes with inspiration from technical assistance sources, the history of some of the projects evaluated shows the decisive influence which the EDF had on the definition of objectives, on decisions about resources to be employed or even on the definition of institutional responsibilities. For instance, it is reported that advice from the EDF had a strong influence on the decisions on integration of an 'animal-drawn tillage' section in Ivory Coast and 'livestock' and 'food-crop' sections in Chad.

This EDF influence is nevertheless of limited duration: once an application has been examined and the finance agreement has been signed, the EDF plays a supervisory role only. The limited resources for evaluation, which is the means of monitoring the real impact of projects on the rural environment, contrast with the scale of the tasks involved in preliminary negotiations, in the supervision of expenditure programmes and trade regulations, the drawing up of contracts, etc.

The EDF also exerts influence through its standards for planning of the contents of projects.[1] Projects are always planned over a period not exceeding five years. With such short and demanding periods, there is little hope that schemes started with aid will be taken over by the recipient States, which

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[1] Not indicative planning of aid for an entire country, but detailed schedules of expenditure and operations to be carried out, with the corresponding timetable, making up the content of each approved project.

can never be certain that it will be possible to add a further phase to the work completed through another project following a few years later. Planning rural development over an insufficient number of years makes it necessary to telescope objectives.[1] Simultaneous efforts are made to 'increase production significantly', 'revolutionize peasant farming', 'Set up institutional facilities', 'train the necessary staff', 'make farms and projects profitable in order to generate the resources needed to cover running costs' when the external finance is discontinued. The desire to operate to such time-scales for so many substantial objectives does not always seem to be compatible with the time-scales possible in farming, in the organization of rural societies or in the lengthy processes of education and training. The peasant farming world does not react favourably or unfavourably to innovations proposed from outside until at least two crop-years have passed; the time needed to train experienced staff is proportional to the complexity of their responsibilities; setting up and running in institutions necessitate political and technical gestation periods which are also very long. The same applies to the establishment of marketing and supply infrastructures, which have to have been seen to operate efficiently over a considerable period before they are accepted by farmers.

In some cases, technical assistance can be a decisive factor making for such telescoping; either the organization responsible for technical assistance lays down unduly short time-scales from the outset or technical assistance becomes essential if the time-scales laid down by the authorities are to be kept; however, the results achieved are often short-lived.

The situation would be different if aid could be implemented over longer time-scales and according to general economic policies rather than according to very detailed timetables and conditions.

However, it should not be denied that relatively inflexible scheduling of projects can offer advantages in particularly difficult cases. In the Central African Republic, there can be no doubt that, without this type of scheduling of EDF aid, it would have been very much more difficult to sustain cotton growing in view of all the disruption caused by the land reforms.

When time-scales are too short and objectives are telescoped, States are obliged to apply for further aid at the end of each period, either to the EDF itself or to other sources. Some programmes date back ten or fifteen years, having been renegotiated from phase to phase, sometimes for several years, but other times for only one year. Under these circumstances, government officials and the farmers themselves are kept in a permanent state of uncertainty. Sometimes the transition from one 'phase' to the next is accompanied by abrupt changes in conditions for farmers, who are then obliged to work out their accounts afresh. Because the farming community is not regarded as a full partner, it is not kept informed of plans laid down for the execution of projects which affect it.

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[1] On this subject, see FAO. Examen des programmes de terrain; 1974/1975 (pp. 120-123) (Doc. 24).

The lengthening of time-scales of economic and financial aid (for instance, periods of ten years or successive phases lasting four or five years) would give institutions more motivation to aim for action which is well structured in time and space, since they would have longer guarantees. Moreover, there is no reason why time-scales should not be longer for some types of aid (structural aid or aid for infrastructure) than for others (aid for organization of the rural environment) (cf. 6.1).

2.3.2. Problems connected with the formulation of project objectives[1]

The main factors taken into account by the Commission in deciding whether or not to finance a project are the levels and realism of the objectives proposed. An important consideration is that these factors must ensure coherence between the project to be financed and other development activities completed or contemplated by the State concerned.

Examination of the projects evaluated nevertheless showed that the objectives laid down were not attained in the majority of cases, although there were others in which they were exceeded by a very wide margin; in a number of instances, they were modified during the course of the project in order to maintain contact with real developments where peasant outputs are concerned.

Several questions arise regarding the manner in which these objectives are fixed. It does seem that they are being pitched higher and higher in order to justify applications for aid; by being deliberately optimistic - and unrealistic - in forecasts of yields and areas actually under cultivation, it is possible to hold out fine prospects of the production figures and profitability which projects could offer. Political decisions can also lead to the proposal of objectives which are manifestly unattainable. It also occurs that technically realistic objectives are laid down in the knowledge that very uncertain economic parameters outside the control of the project itself could modify its feasibility radically.

In actual fact, the realism of objectives is frequently made unreliable by the economic environment. A given objective is valid in a given price context; if there are changes in the price system, the objective can lose its realism, not only for the peasant producer, but also in terms of optimum allocation of the resources of the national economy as a whole.

For instance, it was found that, in the Ivory Coast, the rice-growing schemes planned in 1972 by SODERIZ were necessary mainly because the producer price for paddy had been fixed too low. When the price was doubled, paddy was produced the following year in such large quantities that SODERIZ was unable to buy it all, for lack of working capital. The main factor accounting for the low level of rice growing in the Ivory Coast in 1972 was the price offered to producers, which was low because of competition from imported rice; the pro-

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[1] Cf. Part Six on the methodology of project-based operations.

ducers' limited ability to master rain-fed or irrigated rice growing methods was only a secondary factor.

The decision to take action to modify either the first or the second factor is a strategic choice which the States concerned take explicitly or implicitly. For this reason the arguments submitted in support of project files would always have gained in clarity and relevance if they had been presented more systematically in terms of 'constraints - incentives - objectives' for each economic agent - the farmer, the institution responsible for the project and the State - and for the national economy as a whole. This approach would ensure a better understanding at the beginning and end of projects of the real impact of subsidies on the rural population aimed at and it would make for better use of available resources in combating the causes of agricultural underdevelopment rather than the pursuit of objectives inevitably based on hypothetical projections.

Moreover, it is not unimportant that the EDF, when appraising proposed projects, should be able to base its decisions on a presentation of production objectives set against the corresponding areas under cultivation, yields etc. or a presentation of structural aims based on analysis of the economic and technical constraints and incentives influencing the pattern of farming. States, as the public partners, prefer formulations expressed in terms of production objectives because they enable them to calculate the revenues which they would derive from their attainment; peasant farmers, on the other hand, are more responsive to planning of fundamental economic incentives and measures to ease the various constraints affecting their farming activities (for instance, constraints in the areas of supplies of inputs, the cost of inputs etc.).

Part Three

ECONOMIC POLICIES AND INTEGRATED RURAL DEVELOPMENT STRATEGIES

3.1. RURAL DEVELOPMENT: THE INFLUENCE OF LIMITING FACTORS AND INCENTIVES

Agriculture is the 'art of the possible' as practised by the farmer within the constraints of available resources, the general environment, ambient technical knowledge and uncertainty. These constraints or factors function according to the principle of the 'law of minima' or law of limiting factors, the effect of which is that the most limiting factor determines the level of activity. Agricultural development consists in gradually unblocking each of the bottlenecks restricting improvement in production and well-being in the farming world.

In agriculture, each factor (cf. Part Four) or constraint is to some extent conditioned by the laws of uncertainty. This means that the minima change from one period to another and the farmer has to take decisions about the technical and economic options which will bring him optimum results in his uncertain universe; as has been seen above, more considerations are involved than mere maximization of cash profits.

Any change in one or more constraints which is more or less random and potentially only temporary may lead to opportunistic behaviour (taking advantage of a situation) without necessarily leading to any fundamental change in technical behaviour. The random nature of the influence of constraints and factors accounts for the slowness of farmers' reactions to the technical innovations proposed to them; their efficiency always has to be demonstrated in the various different sets of circumstances which can arise. An innovation will not be accepted by peasant farmers as 'reliable' and 'viable' until it has been put to the test of climate variations, economic fluctuations and the various risks to which supplies of inputs are subject.[1]

The factors limiting rural development are manifold and specific to each rural context. In so far as development consists in the gradual elimination of bottlenecks, it is essential to identify bottlenecks as and when they occur. Hence, continuing evaluation needs to go beyond the mere collection and processing of statistical, economic or technical data (areas, yields, numbers of growers, volume of credit etc.); it must also involve analysis in the light

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[1] In this connection, see P. Thenevin, Planification et comportement des centres de décision en milieu rural (Doc. 20).

of a wide range of criteria embracing rural economics and sociology, ecology, agronomy, law etc. on a broader basis than that offered by the 'operational' logic of projects, which often imposes simplications which fail to take into account, for the farmers involved, the interplay of limiting factors and incentives in relation to the requirements of development.

Although the level of farming activity is determined according to the principle of the law of minima, peasant farmers' willingness to participate in development is aroused by the attractions and incentives which it offers.

Although is known about them by the development institutions, the incentives which have encouraged efforts on the part of peasant farmers are numerous and diverse: meeting food needs; increase in cash resources (often in connection with specific objectives; social obligations, medical care, education costs, housing etc.); improvement in purchasing power; reduction in work load; social prestige; control over economic resources (land and manpower in particular). These incentives differ according to the social categories and decision-making levels described above (2.1.2). Increasing effort is needed to formulate rural development strategies founded on research into policies offering real incentives which can be appreciated at the level of the economy of the individual farm holding.

The 'project-based' approach involves simplifications which fail to take full account of the real complexities of the interplay between incentives and constraints in rural development. Although no attempt has been made to draw up an exhaustive inventory, a list has been made of factors directly affecting practical choices made by farmers in the light of economic or technical constraints during the course of the projects evaluated. This list is largely confined to technical and economic factors; it should be supplemented by the series of social and cultural factors entering into the way of life of the populations concerned, which should not be dismissed as leisure activities, wastes of time or folklore (this tends to be the attitude of 'developers').

The factors underlined in this fairly long list warrant more systematic analysis by the organizers and evaluators of projects.

(i) Prices and incomes. The level of incomes is a dominant consideration: The desire to obtain more satisfactory prices was expressed everywhere. The problems raised in the context of the projects were considered at various levels: the absolute level of prices of trade products, the relative level of prices of export products and food products, the relative development of prices of inputs and outputs, the terms of trade and purchasing power etc.

In addition, the reports stress the role of subsidies on prices and on the geographical distribution of subsidies.

Stability of prices for export products is no longer a fundamental problem for farmers insofar as there are stabilization funds for these products. However, a degree of uncertainty regarding producer prices for groundnuts and coffee was reported by the evaluators of the projects in Niger, Central African Republic and Togo.

(ii) The level of production-related expenditure is also cited as a constraint in relation to either the level of incomes or the level of credit available.

(iii) Where supplies of consumer goods cannot be relied upon, purchasing power is insufficient, given the level of disposable incomes. There is a tendency to hoard money or tie up resources in various ways: buying cattle, increasing dowries, prestige spending to develop business etc. What is sometimes called 'tying up assets' is in fact often saving and investment in the particular context of the agrarian system.

(iv) The return on labour is quoted as a decisive factor in farming. It is a major criterion in the evaluation of the projects financed out of Third EDF. The average productivity of labour over the year is the criterion most commonly used.

One report stresses the importance of the marginal return on labour at peak periods, measured on the basis of average productivity of one day's work in the various periods of the farming calendar (ten-day periods, for example). This latter criterion may explain the poor results obtained by advisory services introducing new methods in connection with early sowing, weeding or the protection of cotton crops (cf. 3.3.1).

(v) Many important constraints arise in connection with the management of farm labour: low labour productivity in sowing, hoeing, harvesting, preparation for market and carting. The underemployment observed is generally seasonal and inherent in all farming activity. The references to seasonal migration found in the evaluation report on the 3M project, for instance, are evidence of the efforts made to find other paid employment.

Frequent references are made to specialization of work: division between men and women, community jobs, individual jobs, jobs for children etc. This is accompanied by a degree of rigidity in the organization of work, with each individual having his own priorities (see 2.1.2). There is evidence, however, of gradual change in the pattern of specialization as a result of the increasing conversion into cash of food products which, by tradition, used to be the exclusive perserve of the womenfolk, but now seem to be attracting increasing interest from men.

Another decisive factor in farming activity is the availability of casual labour for peak periods. In this connection, a degree of complementarity between regions within a country or in neighbouring countries has been noted.

Mention should also be made of the benefits to the farmer of diversifying his crops as much as possible and diversifying varieties according to growth cycles in order to spread the workload more evenly over the year.

Mention is also made of the savings of time which can be achieved in some cases by growing companion crops, particularly as regards hoeing.

The complexity of factors relating to the organization of work is probably not fully reflected in the above enumeration based on the evaluation reports. Specific detailed analyses should be carried out on the determinants of farm labour and on farmers' attitudes in this sphere, including the legal aspects (rights attaching to work). They would offer the advantage of allowing 'developers' to concentrate and specialize their activities in the light of the specific circumstances of the various categories of members of the rural community defined above (2.1.2).

(vi) Regarding land use, the first observation called for is that population pressure has created fundamental imbalances everywhere, although these are more acute in some project areas than others, with a particularly worrying situation in Rwanda, given the small area of land available for each family and the low productivity of this land, a relative abundance of available land in southern Chad, etc. However, nearly all the reports mention the breakdown of traditional rotations of crops and fallowing. This situation in fact indicates local land shortages. Under these conditions, it is common for farmers, who are no longer able to move their homes from place to place as in the past, to farm fields further and further away from their villages, thus increasing cartage times within their holdings. Many farmers react to this problem by building their homes in the middle of their land rather than in villages.

Similarly, the scarcity of land is giving rise increasingly to monopolization and harrassment. Examples are quoted of young men who are unable to find land to farm and of women who, in some regions, are obliged to lease land to their husbands because of the monopolization of land rights. There are also frequent reports of harrassment of graziers, as farmers encroach on grazing land, sometimes resulting in violent disputes.

The quality of soil is an extremely disturbing problem raised by farmers as well as by researchers and advisory staff. It is nevertheless clear that the level of investment in this area is far from sufficient since most of the reports refer to the problem of the continued progress of gradual exhaustion caused by the removal of minerals from the soil without replacing them with fertilizers and by the acceleration of erosion phenomena. Efforts to improve the quality of soil with organic inputs are often hampered by the problems of carting within the holding, while the purposes for which mineral fertilizers can be used are generally defined very restrictively and they are not usually available for crops whose immediate profitability is not guaranteed whithin the commercial circuits controlled by the State.

(vii) Risk factors. Risk is an essential factor in agriculture and has a decisive influence on farmers' behaviour patterns. Uncertainty comes into play at various levels, the main factors being climate, crop diseases and finance. Efforts to reduce risks are made within the constraints imposed by the environment and many traditional methods are used to this end, often based on combinations of species and varieties.

Clearly the technical improvements proposed through the projects (intensive methods) lead to significant reductions in climate and health risks. However, these intensive methods are applied primarily to commercial crops and they involve considerable financial risks.

The reduction of uncertainty is in fact a generalized concern on the part of farmers, who do not dissociate risks affecting their cash crops from those affecting their subsistence crops. This generalized concern explains many aspects of farmers' attitudes to advisory services (cf. 4.6).

(viii) The management of supplies of factors of production is an important part of agricultural development. The constraints influencing farmers' options include: volume not always satisfactory; quality not always up to standard (especially in the case of agricultural machinery and seed); inflexibility of the pattern of supply; ill-defined instructions for use; the timing of supplies.

Other serious constraints for farmers derive from their dependence on external trade factors and budgetary or financial procedures. In some cases the organization of supplies and the price structure are so conditioned by official subsidization that they make it difficult, if not impossible, to obtain supplementary supplies from the private sector or after-sales service (cf. 3.3.4).

(ix) The volume of credit available and the methods by which it is provided, the profitability of jobbing work and opportunities to control more land are other considerations which may act as either constraints or incentives, as is demonstrated in Part Four.

This lengthy enumeration illustrates the complexity of the interplay of incentives and disincentives which can influence peasant farming. It contrasts with the apparent simplicity and high degree of specialization of most of the agricultural development projects evaluated. It throws light on the real content which should be embodied in objectives, whereas they are often expressed in very vague terms such as 'combating rural depopulation', 'improving rural life', 'diversifying production', 'combining farming and livestock breeding' etc. It demonstrates that agro-economic development is achieved through fundamental incentives offered in the context of clearly formulated economic policies rather than through more or less successfully organized action designed to persuade or force farmers to take part in schemes which do not take account first and foremost of their priorities and the many constraints within which they have to operate.

Analysis in terms of limiting factors and incentives - a necessary part of the process of formulating rural development strategies - generally involves more than purely agricultural considerations, as several projects demonstrate: the psychological attitude of the SORAD staff was partly responsible for the failure of efforts to introduce animal-drawn tillage in Togo; women's dependence on their husbands is holding back the development of stock-fattening in Niger, because the men tend to monopolize cash-earning resources; the lack of supplies of consumer goods in the villages is limiting purchasing power, thus reducing the incentive to produce for the market.

The conclusion which follows from this section is not that the EDF should have financed everything. Overall responsibility for rural development lies with the State concerned. In order to give them the best possible help, the EDF should be able to supply the means with which to take a very flexible approach to tackling bottlenecks when and where they occur. The internal planning of projects according to production objectives should be accompanied by provision for less specific trouble-shooting to ease the main constraints affecting farming and provide appropriate incentives to encourage latent dynamism. Structural aid and organizational aid should be complemented by the provision of facilities to support the efforts of rural groups in the light of their problems and in response to requests from them, as described above (2.1).

3.2. RURAL DEVELOPMENT STRATEGY IN THE LIGHT OF THE SOCIO-ECONOMIC CONTEXT

The African rural world, as has been seen above, is a highly differentiated world which economic, social and cultural change is dividing more than before into broad groups: men, women, young people, children, elderly people, migrants, non-migrants etc. Each of these groups has its own specific problems, some inherent in its own status and others concerned with its relations with the other groups. Rural development often gives rise to conflicts which, if they are not settled by the establishment of a 'modus vivendi' or legal rules, develop to the extent of blocking social relations and production relations or even leading to open hostilities (between elders and young men, who leave the villages, between farmers and graziers etc.).

The projects evaluated concentrated on non-migrant adult male farmers growing commercial crops regarded as 'heads of farm holdings' and holders of rights to use land. Although other projects in other geographical areas have been concerned with nomad graziers or training for young people in rural areas, none of the projects evaluated had any overall strategy aimed at dealing with the specific problems of each of the groups, based on analysis of their specific constraints and incentives likely to encourage them to participate in national economic development.

When they are planned with a view to attaining very specific objectives (promotion of a single farming activity), without any overall analysis of the factors representing constraints or incentives for farmers and in the absence of any consultation with the farmers concerned, projects are powerless to eliminate obstacles such as: monopolization of land and means of production by elders, flight from the country by young people, partly as a result of this monopolization, ageing of rural populations as a result of abandonment by the young with all its consequences on farming, productivity and disruption of the equilibria which in the past enabled communities to survive; excessive workload on women remaining in the village, increasing conflicts between farmers and graziers, disappearance of non-farming rural occupations in the absence of clear regulations on land use.

When, because of lack of detailed analysis of the rural societies aimed at, aid channelled through national institutions reaches too limited a socio-eco-

nomic group, it exacerbates socio-economic imbalances and militates against the settlement of disputes, thereby preventing the rural populations concerned from taking over the work which has been given financial support.

The integration of the various socio-economic groups with one another is not a matter of social needs only. It is an economic need as fundamental as the integration of regions of different types and diversification of economic flows in the countries concerned. It is in fact impossible to place any hope in agro-economic development planned on a basis which excludes real participation by important groups, particularly the young who could be expected to be the most dynamic and best disposed to accept change.

Experience outside the cases evaluated shows that it is possible and desirable in rural projects to plan specific strategies to suit the particular problems of each socio-economic group.[1]

In most of the cases studied, the States are heavily dependent for their existence on exportable produce from peasant farming; farms on the other hand are completely unaffected by the constraints which come into play at State level.

At the present stage, moreover, it may be said that, in most cases, the share of agricultural activity taken by industrial crops is as large as it could be, given the available resources and the level of productivity (of land and labour in particular). In order to concentrate more heavily on industrial crops, it would be necessary to divert resources from other types of work, especially subsistence activities, which still have priority in peasant farmers' eyes. It is therefore not possible under practical farming conditions to dissociate improvement of cash crop productivity from improvement of subsistence crop productivity.

To put this another way, as long as overall productivity remains at a low level while States generally depend exclusively on levies on farming incomes for their revenues, 'improving the people's nutritional conditions' (which entails developing activities connected with subsistence) conflicts with increasing the State's budget revenues and foreign currency earnings' (which involves developing export agriculture, which is already very heavily taxed) (3.3.2.2).

Given this situation, it would be advisable for States to adopt agricultural development strategies consistent with their rural populations' systems of priorities, which may be summarized as follows.

The most fundamental priority is to meet the subsistence requirements of the family group. It can be seen at work at the most micro-economic level, with farmers allocating inputs to this priority first and to cash-earning activi-

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[1] See, for instance: 'Central Region Lakeshore Development Project" (Salima), Malawi.

ties afterwards.[1] Only when the necessary has been done (sometimes several times over) are inputs allotted to commercial crops according to the best expectations of earnings. A few years ago, farming for cash income was more or less limited to export crops and, among annual species, to the 'motive' crops (cotton, groundnuts etc.). Today several alternatives to export crops are proving more profitable; the world food crisis, the various regional crises and famines, the development of demand from major centres, world inflation affecting the prices of inputs in particular, thus depressing income obtained from the traditional export crops, and finally the heavy insistence of official farming agencies on export crops accounts for the general rise in the relative prices of agricultural produce other than the traditional cash crops and farmers' incomes from this type of activity, with the logical consequence for farmers of more clear-cut competition between crops and wider opportunities. This means that the rural world enjoys greater independence vis-à-vis the supervisory structures.

This point can be illustrated by one of several examples: The following figures from the Togo evaluation report are estimates of the daily return on labour with various crops in 1975 or thereabouts:

- Sorghum CFAF 343
- Maize CFAF 417 to 495
- Groundnuts CFAF 367
- Beans CFAF 289 to 494
- Irrigated rice CFAF 280 to 470
- Cotton CFAF 239 to 293

Planning agricultural development on the basis of strategies built around the priorities and micro-economic interests of the rural world is a way of securing the identification of the local people with the attainment of national objectives and, in the longer term, reducing the dependence of States on export crops. Intensification of complete agricultural systems can therefore be seen as a necessary alternative to intensification of limited components of these systems.

A fact to emerge from the evaluation reports is that a rural development institution and technical assistance agencies are sadly lacking in the capacity to formulate and implement such strategies, because they do not know enough about peasant farming systems and have not carried out sufficient research and investigation into them. Serious effort should be made to bridge these gaps, not with a view to telling the peasant farmer how to do his job, but rather to find out why he does what he does.

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[1] Some cases were noted of excessive development of cash crops, with farmers reducing subsistence activities below the strict minimum to allow stocks to be stored and provide security for future years.

3.3. MAJOR IMPORTANCE TO THE SUCCESS OF DEVELOPMENT ACTIVITIES OF STRUCTURED ECONOMIC POLICIES

The evaluation reports show that the success of agricultural development as conceived by the planners and organizers of projects is conditioned to a very large extent by the economic policies pursued by States. Where these policies meet with growers' approval, the difficulties of supervisory services seem to be reduced to keeping abreast of and coping with the technical requirements of the farmers. On the other hand, where economic policies are indecisive and unstimulating, the supervisory services' greatest problem is to persuade farmers to do things which they have no wish to do.

In very many cases, projects have underestimated the importance of economic policies and directed their efforts at the effects rather than the causes of agricultural underdevelopment.

They have failed to appreciate that the peasant farming world is capable of assessing its economic interests and understanding the workings of the trade systems of which they form the base, in which they have only three options: to do what they are asked to do efficiently, inefficiently or not at all.

3.3.1. Productivity of farm labour

The criterion of improvement of returns on labour was generally applied when the subjects evaluated were first considered for aid. In some cases this criterion was the main justification for the project judged at the level of the individual farm holding. In retrospect, this criterion needs to be both broadened and defined in greater detail.

(i) The return on labour should be evaluated on an overall basis in terms of the agricultural system',[1] which includes both subsistence and cash-earning activities, and not in terms of only one of these activities.

(ii) Farmers organize their work options in the light of various opportunities and constraints. The return on labour is always relative and cannot be assessed in absolute terms.

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[1] This 'agricultural system' consists of all the material and human resources and ways of production involved in farming a given area of land, together with the prevailing constraints and the interrelationships between them. The agricultural system exists in a context of social relationships and production relationships between human beings, the modalities of which may be simple or complex. The agricultural system is not to be confused with the 'exploitation agricole' (farm holding) which is a part of the system controlled by an individual farmer, but is in turn part of a rural system which also includes other activities not concerned with farming.

(iii) The return on labour criterion comes into play 'on the margin' during the few peak periods for farm work as well as in terms of the average over the whole crop cycle.

These three aspects are worth examining in detail.

Labour productivity and the return on labour are the essential criteria on which farmers assess the price system. They are assessed in different ways in relation to subsistence crops, the marketing of which is contemplated as a possibility or as a necessity,[1] and products destined exclusively for sale. Productivity is evaluated in the former case in terms of domestic food stocks and in the second case in monetary terms. When labour productivity is assessed in terms of food, it may be in some cases that it is in farmers' interests to concentrate exclusively on commercial crops and buy their food. This is the case, for instance, of some rice growers in Chad who prefer to grow rice for sale and then buy millet for their own consumption. More frequently, however, the passage via a commercial crop to secure the means of paying for food supplies involves the producer in a substantial loss of productivity in food terms, as the table on the next page shows. This table compares the quantities of food which Togolese farmers could earn in 1975 or thereabouts either by growing food crops themselves or by growing cotton.[2]

Food crops	CFAF/kg	Food productivity of one day's work in subsistence farming		Food productivity of one day's work in cotton-growing	
		kg per day	%	kg per day	%
Rice	30	11.5 to 16.6	100	8.8 to 10.8	53 to 108
Beans	60	9.2	100	4.4 to 5.4	48 to 59
Groundnuts	50	8.7	100	5.3 to 6.5	61 to 74
Sorghum	30	17.1	100	8.8 to 10.8	51 to 63
Maize	25	20.8	100	10.6 to 13.0	51 to 62

As this table shows, the farmer who grows cotton and buys his food with the proceeds needs to work approximately 50% longer for a unit of foodstuffs. This loss of productivity in terms of food purchasing power increases sharply if the food has to be bought between seasons or during a shortage.

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[1] Need to sell as a result of a deterioration in stored crops; need to sell in order to obtain money for unforeseen requirements, etc.

[2] 1 000 kg/ha at CFAF 39.3 net/kg for 148 or 121 days' work, or 265 to 324 per working day.

It stands to reason that as long as the farmer is faced with a risk of shortages or difficulties in bridging the gap between seasons, economic logic dictates that he will give priority in his farming calendar to the growing of food crops. Development operations which limit their objectives to generation of cash-earning activities must be regarded as unbalanced, since they view productivity exclusively in monetary terms and disregard productivity seen in terms of food purchasing power.

This also means that projects aimed wholly at encouraging farmers to produce commercial crops can lend impetus to the development, sooner or later, of shortages and the concomitant economic dependence.

The return on labour has to be considered, on the one hand, in relation to the diversity of regional farming options and the work opportunities available (casual labour, migration, leisure etc.) and, on the other hand, in relation to market structures and prevailing true prices.

The farming community, and its younger, less settled members in particular, reacts rapidly to economic opportunities as they arise, either simultaneously or in turn.

In the Badeguicheri Valley, for instance, the young men work to a pattern which follows the crop pattern: if the season storts well, cotton sowing follows upon sorghum sowing and the work involved in tending the fields is enough to keep growers in their villages. In a bad season, however, if the first cereal sowing fails, it has to be repeated, with detrimental effects on cotton growing. If the second sowing is also unsuccessful, there remains the last resort of seeking work elsewhere, hence migration.

Where subsistence conditions are less precarious, the response times for switches from one type of work to another are longer. For instance, farmers in Chad appear to base their decisions on the extent to which they will grow cotton on the technical and economic results of the previous two years.

With annual crops, a change in the price system can lead to a rapid switch from one type of crop to another. This is borne out by the sharp rise in paddy production in the Ivory Coast in 1976 following upon an appreciable increase in the price.

Similarly, cultivation of cowpeas increased substantially in Niger in response to exceptionally favourable trade conditions with Nigeria, but this increase was curtailed by a 25% reduction in the officially fixed price.

These examples give an indication of the importance to be attributed to farmers' capacity to react quickly to market conditions affecting the return on their labour either favourably or unfavourably.

The criterion generally used in analysis of the projects is the average return on labour. However, in many cases, a more refined analysis is necessary in order to understand peasant farmers' behaviour patterns. The labour bottlenecks occur at certain specific periods in the farming calendar. During

these periods, the marginal return on labour is the decisive factor in the choice of farming activity, since the farmer's main concern is to establish which crop will offer the best return on the manpower resources at his disposal when there is most work. The law of limiting factors dictates that it is at these particular times that the farmer can obtain the greatest advantage from improving his techniques, since this is when his working hours yield the highest returns.

The Chad evaluation report provides a good illustration of the fact that reasoning in terms of marginal return is the key to the dynamics of the spread of animal-drawn tillage, not reasoning in terms of average productivity.

As an initial conclusion, it must be emphasized that the return on labour is the criterion according to which farmers assess economic policies and action conducted by development institutions. Evaluation of projects calls for detailed assessment of:

(i) overall labour productivity in the peasant system, considered on the basis of food productivity as well as cash productivity;

(ii) the relative productivity of various possible types of work: farming work or employment on construction sites, work on one crop or another crop, work rewarded by cash income or in the form of prestige, etc.;

(iii) average and marginal labour productivity, the former governing the overall advantageousness of a given kind of work, the latter the specific attractiveness of a particular type of activity at a certain time of the year.

Nor must the importance of decisions about the use of land be underestimated, however. Where land is becoming scarce, it imposes constraints which weigh more heavily than manpower constraints, as may be seen in the case of Rwanda in particular.

The second conclusion is more directly concerned with the need for close coordination between development projects and economic policies. Linking planning aimed at incomes from peasant farming to traditional planning concerned with areas under cultivation, yields and output seems to be a fruitful policy.

3.3.2. Domestic price systems and policies

In all the countries visited by the evaluators, the price systems are to a greater or lesser extent artificial:

Export products are generally subject to commercial monopolies, strict regulations and stabilization measures;

Local products are sold on free markets which the States attempt - without great success - to regulate by edicts on prices, rules restricting transport and measures to restrict the activities of intermediaries or monopolies. In most cases there is little or no infrastructure for evacuation, preparation for market, storage and distribution (cf. section 3.3.2.2).

Because of lack of investment in research on food and subsidence crop systems, the technical coefficients of production have become unbalanced within farm holdings (cf. section 3.3.2.3).

Subsidization policies, and structural aid in particular, are contributing to the artificiality of price systems. Subsidies can lead to structural problems at the stage when the aid comes to an end if the 'natural' price system does not allow farming to finance itself (cf. section 3.3.2.4).

Further explanation of these various aspects is called for.

3.3.2.1. Export products

In the case of export products marketed through public or mixed companies,[1] the States determine the level of producer prices, the intermediary's margin and the taxes applicable. The difference between the selling price and cost represents the profit of the equalization fund, part of which goes to cover production costs (subsidies on inputs).

The following table shows the average structure of prices calculated on the basis of producer prices in three countries.[2]

in %

	Producer	Interme-diary	Direct Taxes	Profit on export[a]
Togo				
Cocoa 1970/1971 to 1972/1973	100	16.7	25.8	n.d.
Coffee 1970/1971 to 1972/1973	100	26.3	46.5	n.d.
Cotton 1971/1972	100	38.2	17.6	n.d.
Central African Republic				
Coffee 1974	100	22.9	28.9	n.d.
Chad[b]				
Cotton 1971/1972 to 1973/1974	100	84.4	22.9	70.5
Cotton 1974/1975 and 1975/1976	100	72.2	16.7	47.5

[a] Profit on export: this is the profit of the stabilization fund, part of which is used to pay production costs (insecticides, fertilizers etc.).
[b] Including COTONTCHAD estimates for 1975-76.

[1] Except in Central African Republic, where the ONCPA has been replaced by a consortium of four private buyers (ENPROCAF).
[2] The other reports contain no data on this subject.

The calculation in relation to the CIF selling price has been made over a relatively long period in the case of Chadian cotton:

in %

Percentages	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976
FOB selling price (fibre)	100	100	100	100	100
Producers' share	38.4	38.3	28.0	48.1	38.3
Direct taxes	8.9	8.7	6.3	8.0	6.4
Intermediate costs	36.1	38.3	29.3	39.9	36.1
Profit[a]	16.9	14.7	36.2	4.0	19.2

[a] Profits distributed, after provision for reserves, to the shareholders of COTONTCHAD (20%) and to CSSPC (80%). A part of these profits goes towards production costs not met by farmers.

Several comments need to be made regarding the structure of prices:

The fiscal pressure, whether direct (taxes) or indirect (revenues of intermediary institutions or stabilization funds), is always heavy. In view of the dependence of these activities on international markets, States wishing to improve farming incomes in the export sector have no alternative but to alleviate the tax burden on them, thereby reducing their own budget revenues. This situation is all the more critical in cases where the agricultural trade economy is lacking in diversity and farming productivity is improving only very slowly.

It should be noted that the situation is not comparable to that found in the industrial countries, where it is common for the institutions to intervene to support farming income; in the cases evaluated, it is the farmers who finance the institutions and aid is only provided over limited periods to ease the pressure on farming incomes.

In the case of export crops, the long-term growth rates in production costs were consistently higher than the growth rates in prices of commodities. The oil crisis in 1974 led to a substantial increase in the prices of fertilizers, insecticides and their transport.[1]

Only stabilization of the input/output terms of trade on international markets can create the structural conditions allowing savings to be made and invested in new activities.

[1] Some prices inclusive of local delivery increased fourfold.

3.3.2.2. Products for domestic markets

In the case of products for domestic markets, the problems are very different. The governments' concern is to strike a balance between consumer prices and producer prices. With this intention they issue orders laying down certain producer and/or consumer prices.

These orders enable official purchasers to buy on local markets without needing to negotiate. Private intermediaries pay little attention to them and operate freely or virtually freely on the markets, paying more than the official price (so that official purchasers are only able to buy products of lower quality at the official price) or below the official price (when supply exceeds demand, or in remote areas without easy access to markets).

Governments tend to let local trade find its own level and to control regional, national and international markets. These policies seem to be guided by objectives or two types:

(i) to provide cheap food for urban populations (a high proportion of whom are dependent on the budget resources of the administration and public services;

(ii) to prevent the development of food crop farming from jeopardizing cash crop production, which is the only form of production which produces fiscal revenue.

These two types of objectives work against each other when they are pursued in the short term through the application of regulations and sanctions. They would be complementary if they were pursued in the medium term through the introduction of incentives to production which would themselves lead to an improvement in productivity in both subsistence farming and cash-crop farming.

Regarding the second type of objective mentioned above (not to jeopardize taxable export production), attention should be drawn to an implicit economic policy option, which may be summed up as follows: 'Agricultural development is achieved according to the commercially most favourable trade structure. In so far as it is commercially more advantageous to import foodstuffs and export agricultural raw materials, this option is the most advantageous to the national economy. To the same extent, improvement of subsistence agriculture is not an objective in itself. This type of agriculture is regarded as being "residual", since it only concerns that part of the population which is outside trade circuits and therefore requires no special effort, the assumption being that this section of the population will decline gradually.'

This is definitely an implicit economic policy option, since in most of the countries visited neither national production nor imports of foodstuffs are managing to achieve genuine improvement in the level of food supplies or nutritional conditions of the rural populations, some of which are entirely dependent on international food aid. Other options were possible, as witness conditions in other countries not covered here, where economic policies based on food self-sufficiency have been given priority.

The data provided in the evaluation reports give the impression that, in practice, the economic policies pursued as regards subsistence farming have had a depressive effect on production. The institutions generally aim at monopolization of trade in food products rather than the establishment and management of buffer stocks in competition with private traders. Where they enjoy monopolies, they lack the organization and working capital needed to make purchases to the extent warranted by their monopoly position. Under these conditions, they encourage the creation of black markets in opposition with themselves and the speculative nature of these black markets is heightened in relation to the free markets whose structure they were set up to improve. When the institutions do not enjoy a monopoly, they have to cope with strong competition from local markets and the application of the official prices becomes illusory.

It would appear that the institutions are disinclined to take action to encourage production: they would seem to consider the encouragement of abundant supply and free movement of goods between regions as no more than a secondary method of bringing about a real reduction in consumer prices.

Except in the case of the OBM in Bugesera-Mayaga, the reports contain no evidence of encouragement of local stockpiling which would have offered the threefold benefit of helping to regularize prices on local and national markets, developing complementary activities in the cooperatives and giving real support to food crop schemes set up under the projects.

Regarding the problem of outlets for food crops, it has to be admitted that some of the policies pursued are far from suited to circumstances. For instance, urban consumers are sometimes encouraged to consume foodstuffs which are not produced by the farmers in their own country or to demand standards of quality which home producers cannot meet. An example of this is provided by the Ivory Coast. This country's rice policy was evolved on the basis of an analysis of urban consumption patterns and the structure of the relative costs[1] of 'rice calories' and other sources of calories which could be produced locally. The cost of transport within the country was such that local produce was inevitably more expensive than rice delivered direct to the port of Abidjan. This situation clearly changed drastically when, following sharp increases in rice prices on international markets, rice was produced in Ivory Coast and had to be transported at the same cost as other crops. Rice calories then became more expensive than other calories, but the policy pursued had left its mark on consumer habits.

Mention is also made of lack of coordination between food aid and aid to rural development. Over the past decade, countries with shortages in some areas and surpluses in others have received substantial imports of food under food aid programmes. At the same time, these countries have complained of the lack of outlets for their food-crop output. Clearly, the respite provided by food

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[1] Relative costs of rice calories bought on international markets (distorted by dumping around 1970/1972) and other sources of calories produced in the Ivory Coast, inclusive of transport and distribution costs.

aid should be used to take action to improve the infrastructures for the storage and preparation of food crops.

Short of any clear perception of the economic policies needed to interest peasant farmers in producing food for the towns and to encourage urban populations to consume more local products, one school of thought believes that the solution to the problem of meeting national food requirements lies in the development of vast agro-industrial complexes. Solutions of this type are open to criticism on the grounds that they are soft options, of marginal effect in relation to the food problem needing to be tackled and entirely dependent on foreign technology, and that they divert national resources or foreign aid from solutions better suited to the maintenance of rural employment.

These agro-industrial solutions cannot compare with the advantages and efficiency offered to the national economies by those which consist in promoting the development of the capacity for work and resources of the rural world, where the potential for increases in productivity and value added is high, the maintenance of employment is easier and development of trade among peasant communities makes a greater contribution to the expansion of domestic markets, thereby benefiting non-agricultural sectors of national economies. The failure of the large-scale rice-growing project at Richard-Toll (Senegal), the mechanized maize-growing project in Shaba (Zaire) and many others confirm that solutions of this type are not effective in dealing with the rising problems of hunger.[1]

3.3.2.3. Inconsistency between levels of productivity in export agriculture and subsistence agriculture

Another feature which has to be recorded is the frequent inconsistency between the respective levels of productivity and prices in the two major types of agriculture: export crops and domestic food crops.

This inconsistency has its origins in dualistic conceptions of domestic price systems and is being exacerbated by the uneven development in technical improvements achieved with the two types of crop.

A brief analysis based on information supplied by the GCDAC[2] and the technical data from the Chad evaluation report provides evidence of this type of inconsistency. It considers the recorded average yield for cotton and sorghum under extensive ('traditional') cultivation and intensive ('high productivity') cultivation. Taking the officially fixed cotton price as the benchmark, the analysis calculates the sorghum price which would enable the farmer to grow either crop on his land and earn the same net income per hectare. This

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[1] In connection with the whole of 3.3.3.2, also see: Ouma Lele, 'Design of Rural Development', pp. 181-182 (Doc. 19).

[2] Groupe de Conseillers en Développement d'Afrique Centrale: 'Production et commercialisation des céréales au Tchad', July 1974, Yaoundé.

'break-even price' is then compared to the actual price at which sorghum is sold on the free market. These figures, although only estimated, demonstrate how the fact that sorghum has lost ground technologically means that cotton growing offers a distinct advantage to the farmer opting for intensive cultivation.

	Intensive cultivation, without fertilizers or insecticides		Intensive cultivation (fertilizers and insecticides on cotton, urea on sorghum, suitable varieties)	
	Cotton	Sorghum	Cotton	Sorghum
Yield per hectare[a]	349 kg	700 kg	953 kg	1 000 kg
Price of cotton seed	43 F/kg		43 F/kg	
Average price of sorghum[b]		30 F/kg		30 F/kg
Gross income per hectare[c]	15 000 F	21 000 F	40 979 F	30 000 F
Break-even price of sorghum per kg		21.4 F/kg		41.0 F/kg

[a] For cotton: average for 1974/75; for sorghum, average as estimated by Chad officials for the same period.
[b] Average price for 1974: 30 francs. Minimum price: 21 F/kg.
[c] This is gross income per hectare, supposing that the cost of intensive cultivation is the same for the two crops.

So long as cultivation is extensive, the farmer is better off growing sorghum at least enough to cover his own needs and to meet demand. However, where cultivation is intensive, cotton-growing is much more profitable because sorghum yields vary very little, no matter which production system is used.

The reason for this is that there was much greater improvement in the technical coefficients in the case of cotton than with sorghum, as can be seen from the following table, which compares average yields achieved in peasant farming using extensive and intensive methods.

The slower technical improvement with sorghum is attributable in particular to the fact that investment in research on rain-fed cereals was on a much smaller scale and started much more recently than investment in cotton research.

	Yields per hectare		Coefficient of improvement %
	extensive	intensive	
Cotton	349	953	+173
Sorghum	700	1 000	+ 43

The consequence of this imbalance in the technical coefficients of production was that cotton became structurally over-profitable in relation to food crops as well as already being privileged by the institutional environment (price stabilization, subsidies, commercial organization, supervision, credit, research, etc.) (5.2). Imbalance in these technical coefficients at farm holding level, like lack of organization in the institutional environment and in food-crop markets (3.3.2.2.), is a factor explaining the increase in this country's national food deficit: the farmers' economic intuition led them to turn away from the food crops most needed by urban consumer.

In this particular case, although it is desirable to continue the structural improvements benefiting cotton, the most important requirement is to bring the technical conditions in agricultural systems back into balance by providing structural and institutional support for other crops on the same scale as for cotton.

This observation also holds true, with differences of degree, in the other countries considered in this evaluation exercise.[1]

New strategies are called for in tackling the problems involved in achieving balanced overall development of peasant farming. Disrupting agricultural systems to encourage food crops is no less risky than similar actions in favour of export crops. The objective must be to work towards overall improvement of the technical coefficients of production which will eventually create the conditions for genuinely integrated farming providing scope for a wide range of possibilities in the pattern of rotations, fallowing and companion crops (cf. 5.1.3 on the 'motive crops' strategy).

3.3.2.4. Policies on subsidization and structural aid

Subsidization policies modify certain components of domestic price systems.

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[1] In the case of Eastern Kasai (Zaire), the project evaluated could have met a higher proportion of maize requirements if efforts at least on the same scale as with cotton had been made to increase yields (through the use of specific fertilizers in particular). There could have been a larger fall in imports of maize.

Depending on the circumstances, Community aid has made it possible to:

(i) support prices (period 1965-1968) (aid to production);

(ii) subsidize annual inputs (such as fertilizers, insecticides and fungicides) (section 4.5) and spraying equipment (section 4.4);

(iii) subsidize equipment such as animal-drawn tillage equipment, carts, etc. (section 4.4).

These various forms of subsidy provided direct benefits to the farm holdings concerned.

At the same time Community aid has provided means for the support of agricultural supervisory services, especially the strengthening and stabilization of technical advisory services and input supplies. This type of subsidy was applied direct to public budgets and brought indirect advantages to farm holdings by promoting a favourable environment for them.

Little information could be gathered on the subject of the aid to production policies pursued under the first Yaoundé Convention. It is already some time since these operations were carried out and few traces of them remain; they did not form a coherent whole, but were merely parts of national programmes, so that it was difficult to pinpoint their effects.

Mention is made of the fact that, in Chad, such subsidies helped to prevent a fall in nominal producer prices of cotton, with the result that a relatively high but greatly fluctuating level of cotton production was sustained. It is clear that stability created the conditions for the steady development of intensive farming und use of animal-drawn equipment, whose progress was interrupted only by the adverse climate conditions during the early 1970s.

During the Second and Third EDFs, the Community's aid was aimed specifically at structural improvement of farm holdings.

The objective was to improve the competitive position of the main export crops, those whose role was to provide the motive force to stimulate agriculture in general (cf. 5.1.3 and 6.1). This was to be achieved by improving the productivity of agricultural factors of production (land, varieties cultivated, fertilizers, health factors, random factors etc.) so that incomes from these crops would be at least stable, if not on the increase. This modernization was to be achieved through the introduction of new farming methods combined with the use of inputs and small machinery in the case of annual crops.

It was intended to continue this structural aid until it had produced irreversible technical and economic results. In view of its limited effects, it was strengthened, with the Third EDF funds, by a wider range of aid to the agricultural environment: supervision, technical assistance, storage infrastructure, accompanying research, zootechnical projects, village water supplies, roads etc.

In the cases evaluated, four crops were regarded as having a 'motive' role (cf. 5.1.3), depending on the circumstances of the country concerned: coffee (Central African Republic, Togo, Rwanda), cocoa (Togo), cotton (Chad, Central

African Republic, Niger, Zaire, Upper Volta), groundnuts (Upper Volta, Niger, Togo); these crops played a 'motive' role in terms of either economic or technical development, or both. On the economic plane, it was hoped that the high productivity of the 'motive crop' would enable the rural environment to generate the resources it needed for its own development and more especially for productive investment. By marketing the whole of their output,[1] farmers would be able to buy some of the inputs needed for structural improvement, the prohibitive initial costs of which were heavily subsidized (free issue in some cases, subsidies of 20%, 50% or 70% in others), while further help was available through credit policies.

In view of the 'motive' role of the crops mentioned above, it was considered rational to maximize investment in their development on the premise that, in the long term, their profitability would generate finance for technical improvements in food-crop farming. However, there is a difference between perennial and annual crops; competition with food crops for labour is very much less of a consideration with the former than with the latter.

It is very difficult to make any overall assessment of the effects of this work because of the major changes in the economic, political and ecological environment which occurred during the period evaluated:

(i) the oil crisis and its effects on the prices of chemicals (fertilizers and insecticides), transport costs and, indirectly, international textile commodity prices;

(ii) the world economic crisis, the resultant inflation which had a particularly marked effect on all imported goods and its consequences on purchasing power in the rural environment;

(iii) the world food crisis and, more specifically, the African food crisis caused by drought (Sahel countries), by population explosion in areas where the land was still relatively unproductive (Rwanda), or by rapid urban growth;

(iv) political changes in a number of countries, which led to shifts in socio-economic policies and institutional reorganization.

The most clear-cut negative effects of these changes were in the most dependent countries (Niger, Chad, Rwanda, Upper Volta).

The profitability of structural aid needed to be demonstrable at two levels: in individual farm holdings and in the project itself. It was naturally necessary to convince the farmers that it was profitable to ensure their continued cooperation. As for the State, it was obliged to think in terms of breaking even in the medium and long term, since the aid was being provided for a finite period.

At the level of the individual farm holding, structural aid has produced positive results insofar as conditions have allowed it to be effective. It has

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[1] Except for groundnut crops, a proportion of which is consumed locally.

not given results where institutional shortcomings have prevented it from being implemented at the appropriate time, as was the case in a number of countries (shortages of supplies in Central African Republic and Zaire, blockage of fertilizers for Niger projects in Nigerian ports), or caused it to be inappropriate to requirements (e.g. equipment in Togo).

Maximum benefits have not necessarily been obtained, partly because of such shortcomings and partly because farmers do not always use inputs according to the recommended instructions.

According to the principle of the 'law of minima', continuing efforts should have been made to adjust operations to the most limiting factors affecting farming conditions. In most of the projects, however, the most limiting factors were to be found in the areas of subsistence farming, health and education, so that, for the effectiveness of the projects to have been maximized, micro-economic objectives (subsistence, profitability of peasant farm holdings) should have been given due importance in relation to macro-economic objectives (budget revenues, balance of payments, foreign currency earnings etc.). The backlog suffered by the former has been a serious obstacle to attainment of the latter.

Although directed at selected farming activities ('motive' crops), structural aid is a general form of aid designed to influence a range of factors determining the productivity and profitability of the crops concerned. To make this type of aid effective, it is necessary to apply a series of efficient techniques (technical package) and to determine output/input ratios which are favourable to farmers.[1]

It was found that the technical packages were generally presented coherently in the case of 'motive' crops, but the same cannot be said of output/input ratios.

In Central African Republic, there were frequent changes in producer price/operating cost ratios and in credit conditions. In Niger, major fluctuations in groundnut prices meant that the effectiveness of structural aid was determined by events occurring outside the environment (notably market conditions in Nigeria). In Togo and Zaire, the absence of a regular pattern in coffee purchasing had the effect of undermining the efficiency of the structural aid programme. By contrast, in Chad, the producer price/operating cost ratio was particularly stable and improved sharply to the grower's advantage in 1974.

It would seem that stability of the producer price/operating cost ratio, which is to be achieved through long-term control of structural aid, is a decisive factor determining efficiency of these operations.

Certain minimum reaction times obtain in the farming environment. The first effects of a stable structural aid programme will not be felt before the

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[1] A 'technical package' is defined as a group of farming methods which are promoted jointly, as none of them would be fully effective if not accompanied by the others.

third year in the case of annual crops and it takes considerably longer for a pattern to emerge. These reaction times would perhaps be shorter if price structures were planned in a way which enabled farmers to make a rough estimate of their prospective incomes when deciding which crops to grow. This is generally not the case; at best, prices are announced at the start of the buying period.

A number of instances are noted in which subsidies have led to the decline of some types of rural employment, whether in trade or craft work. For example, the 50% subsidy on industrially produced carts from Cameroon killed off artisan production in Chad. The sale of axles at 50% of their real cost made it more attractive for farmers to buy a new axle than to have worn hubs or broken spokes repaired. Similarly, the subsidy on animal-drawn equipment supplied to farmers by the ONDR reduced the prices of this type of equipment to such levels that it put all possibility of supplies from the private sector out of the question. In fact, set against the overall cost of the team and equipment (oxen, plough, weeder), the subsidy is not very significant ($\pm$10% in the case of Chad). At some stages, the tendency of farmers in Chad to obtain equipment was probably discouraged because the overall volume of the subsidy automatically determined the number of parts made available to farmers. The opposite occurred in Togo, where the subsidy provided led to purchases of equipment far in excess of the farmers' real scope to use it, resulting in great waste of resources which could have been used elsewhere if appropriate strategies had been applied.

Structural aid and subsidies on equipment were therefore a very appreciable encouragement at farm level, but more thorough research into methods of implementing subsidies could have given more stimulus to secondary effects, such as development of rural skills, improvement of distributive trade networks, use of local materials, etc. (cf. 3.3.3).

In conclusion it may be said that the effects of structural aid at farm level have always been positive.

It has made for distribution of cheap inputs, which are now well known and appreciated by farmers, as is borne out by the surveys.

Where national economic policies allow, it has enabled the levels of production and cash incomes to be maintained or increased.

A variety of factors limited its effectiveness.

Its excessive concentration on export crops (in all the cases evaluated), and lack of interest on the part of farmers in the crops towards which structural aid was directed, on account of the worsening food supply situation and the rise in food prices.

Difficulties in getting inputs to the locations (Central African Republic, Niger, Togo, Zaire), connected with the economic environment or with incoherent policies on subsidies (e.g. relative subsidies on fertilizers and insecticides in Togo).

A fundamental problem at present in all cases is the transfer of financial responsibilities. Indeed, it is clear that the farm economy has nowhere attained the kind of balanced position which would simultaneously meet subsistence needs, enable net incomes to be maintained or increased (without which there can be no socio-economic development), provide a level of profitability allowing the full operating costs to be assumed in the long term by the farmers and recipient States.

Only substantial increases in agricultural commodity prices - not followed by rises in the cost of imported inputs - would enable producers to meet their full production costs themselves, but such increases, if affecting export products only, would create competitive pressure on subsistence crops, with the result that there would be added price increases on these crops as well. Moreover, they would favour extensive farming, which requires less labour and often pays better wages.

Regarding the effect on State budgets and balances of payments, one can do no better than to summarize the assessments of the various evaluators.

In the 3M project (Zinder Department - Niger) the development in groundnut production cannot be measured. At all events, the balance of payments has not been affected. The only attributable result is a reduction in the country's dependence on food aid.

The Badeguicheri valley development project (Tahoua Department - Niger) had a beneficial although only marginal effect, through the marked improvement in cotton production, on State revenues and the balance of payments. However, the action taken led to the beginnings of trade with the neighbouring country, Nigeria, notably through trade in cowpeas.

The improvement of cotton-growing productivity in the southern zone of Chad has produced positive results for the State, with exports producing regular direct revenue (duties) and satisfactory indirect revenues which have been growing (CSSPC revenues and indirect taxes). The 'cotton plan' has achieved a balance between State revenue and expenditure, without taking into account the external subsidy which has thus played an important role as a catalyst and stabilizing influence.

In parallel with this, COTONTCHAD, through steady management, has refurbished the industrial installations which had been allowed by COTONFRAN to run down somewhat during the 1960s.

In the agricultural development of the Central and Plateaux regions in Togo, the objective on the cotton-growing side had been to make a marginal profit. However, since production did not rise as anticipated while costs increased sharply, the cotton development operation represented a loss to the State from 1973/1974 and the deficit increased when the EDF subsidy towards the operating costs of the SORADs came to an end.

However, the accounts of the OPAT showed substantial profit margins during the period 1965-73. In general terms, margins were substantial in the case of

coffee and cocoa,[1] while annual crops (cotton, groundnuts) showed slight losses between 1965 and 1970 and marginal profits in 1970/1971 and 1971/1972.

The relevant data on which to make a complete assessment are not yet available, however.

In the case of the communities in Bugesera-Mayaga (Rwanda) it has not been possible to calculate the Rwandese State's foreign currency earnings for the whole of the period. It is estimated that in 1971 and 1976 they increased by one-third and one-half respectively of the amounts anticipated when the projects began.

The increases in the State's budget revenues and the equalization fund's revenues were also about half as much as forecast.

The coffee plantations established within farming communities produced a greater rise in State revenue than outside the communities, but as there were virtually no imports of inputs to counterbalance coffee exports, the increase in State revenues was achieved partly at the expense of already precarious soil resources.

The establishment of a reinvestment fund as originally planned was not proceeded with, as the project could not be self-financing.

The continued low level of cash incomes meant that no increase was possible in direct income tax revenue.

The projects aimed at agricultural development of the Central African cotton zone (OUAKA and the integrated project) did bring an increase in public revenues and foreign trade, through coffee, but they did not bring about any substantial improvement in the social circumstances of the rural masses. Nevertheless, the two projects made it possible to avoid the decline in the cotton-growing economy which would have happened without help from the EDF.

Given the extremely unhealthy state of public finances, it is a positive achievement for aid to have maintained the level of supplies and inputs and arrested the steady fall in cotton production, which is virtually the only source of cash incomes for a large proportion of the rural population.

3.3.3. Diversification of rural activity and promotion of employment

All the projects make more or less explicit reference - by way of demonstration of their usefulness - to aims concerned with diversification of rural activities and/or action to combat rural depopulation. However, the inclusion of such aims in national development plans smacks of 'catch-all' justification as long as they are not given substance in the former operational objectives and detailed means of attaining them, this either for methodological

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[1] A small deficit was recorded on cocoa in one year only.

reasons (for example the 'motive crop' approach) or simply for want of a sufficiently firm political will for rural development.

The diversification of activity and the promotion of rural employment are two closely linked problems, given the need to combat rural depopulation. Little information is available on this subject, because of a lack of detailed analysis before and during projects.

The problem of rural depopulation is common to all the countries under consideration, but it is more acute in some than in others. Of the many factors which cause migration, the most fundamental are as follows:

(i) the poverty in rural areas, in particular the lack of money to pay taxes and meet other needs;

(ii) the inadequacy of economic, social and cultural infrastructures;

(iii) the low level of productivity in farming and of the corresponding purchasing power;

(iv) the unfavourable effect of production relationships and social relationships on young people when the means of production are monopolized by traditional or modern social hierarchies;

(v) the almost complete unsuitability of education systems to conditions and requirements in the rural world;

(vi) young people's great lack of means with which to invest in acquisition of skills or new activities;

(vii) the attraction of an apparently easier life in the towns.

When viewed from within the contexts in which they are carried out, rural projects such as those evaluated for this report can be seen to have a potential for encouraging trends towards rural depopulation. Examples of how this can happen are given below:

(a) when projects make it easier for those peasants who are most prosperous and best placed in traditional or modern hierarchies to monopolize factors of production, as for example in the case of the introduction of animal-drawn tillage (cf. Part 4);

(b) when the technical methods proposed in projects are too sophisticated and cannot be assimilated in the peasant context;

(c) when projects do not encourage the emergence of para-agricultural rural occupations outside the official institutions;

(d) when, as described above, price manipulation or subsidies create conditions which cause the decline of craft occupations rather than stimulating them (3.3.2.4);

(e) when general or vocational training is too theoretical, so that it gives young people hopes of going into the public service rather than encouraging and equipping them to set up in the local context of production and trade in goods and services;

(f) when projects fail to take account of the complexities of prevailing conditions and offer solutions of only marginal interest in relation to the

socio-economic problems to be tackled (examples of this are provided by projects which disregard land tenure conditions or relations between farmers and graziers, or again by those which are directed exclusively at a small proportion of an area and disregard the rest, as was the case in the Ivory Coast, where SODERIZ attempted to find solutions to the land tenure problems in the lowlands recently laid out for growing rice, whereas the land tenure problems of the villages concerned related to the land for rain-fed crops);

(g) when the criteria of immediate economic and financial profitability are given such overwhelming priority that they exclude other criteria such as secondary effects in the short and medium term, the amount of employment, the consequences on the institutional environment, the ability of the groups concerned to cope with the social and cultural implications of change.

It may be thought that the projects evaluated could have adopted a more constructive approach to the problems of employment and diversification. It has to be recorded that, formal declarations apart, they took little positive action to encourage diversification of rural activities, which would have been particularly useful in the area of craft occupations which are complementary to agriculture and livestock-breeding.[1] The main diversification attributable to the projects was in the commercial sector, taking the form of regional trade in food crops: rice, groundnuts, cowpeas, maize etc., but it was not always sufficient to eliminate the need for recourse to imports (cf. 2.1.5).

Within agriculture itself, action along the following lines could help towards economic diversification and job creation:

(a) Relating the planning of technical measures to local agricultural systems as a whole rather than to a limited number of commercial crops and investing in food crops, an approach which calls for depolarization of the institutional environment and supervisory structures, which are by and large still heavily committed to cash crops.

(b) Diversification of action taken according to zonal potentialities and socio-economic categories so that a trade network can be built up gradually.

(c) Investment on a far greater scale than during the periods completed in agronomical research directly related to local agricultural systems, subsistence activities and food crops suitable for sale to urban markets.

(d) Organization of activities around the idea of land use distribution, this is conjunction with the peasant communities concerned, especially where problems regarding farming and grazing rights are concerned.

In the case of the various types of work which are connected with agriculture or complementary to it, the following types of action could help to develop diversification:

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[1] An exception is the southern Zinder project in Niger, in which village blacksmiths and other craftsmen were trained.

(i) investment in local infrastructures (tracks, springs, store-houses, etc.) and carting equipment;

(ii) investment in facilities for preparation and storage of produce in the villages;

(iii) upgrading of rural occupations by means of appropriate training with a view to the development of 'integrated' occupations in the villages: land managers, craftsmen, well-sinkers, first-aiders etc. (cf. 4.2);

(iv) encouragement of occupations connected with the distribution of goods, a natural concomitant of which would be the development of ethical standards in private small trade and improvement of its efficiency.

There would also be scope at national policy level for encouraging diversification by various means:

(i) action in the field of storage and market regulation which would be integrated with rather than in opposition to the existing structures of intermediaries;

(ii) action to encourage inter-regional and inter-State trade, since all trade within a given country or between neighbouring countries strengthens economic independence and creates its own secondary effects;

(iii) restructuring fiscal systems to reduce the dependence of public budgets on export crops;

(iv) encouraging urban populations to consume local produce rather than imports.

Clearly, other suggestions could be added to this brief list of possible ways of encouraging diversification. The purpose here was to make the point that due consideration should be given to these aspects in conjunction with those concerned with areas under cultivation, yields, outputs and returns on labour.

Part Four

DEVELOPMENT STRATEGIES LINKED TO THE MANAGEMENT OF AGRICULTURAL FACTORS OF PRODUCTION

The various projects evaluated were presented in turn in Part One. The format of their presentation followed the logic according to which the projects were carried out; the results achieved were described in relation to the objectives which had been set and assessments were made of the effectiveness of the resources used.

The evaluator cannot restrict himself to observing a project in terms of its own internal logic. He must seek to establish how well the project fits into its environment and ask whether alternatives are not possible. Adoption of an analytical grid on the basis of which to consider in turn the various factors of production in agriculture and the various functions of organization of the rural environment helps the observer to take a broader view.

This fourth part of the report considers the economics of each of the essential factors of production[1] in the cases studied: land, labour, biological capital (plant and animal life), fixed assets (equipment, tools, store houses), floating assets (fertilizers, insecticides) and uncertainty factors.

In addition, Part Five will consider the various functions appertaining to the economic and institutional environment of farm holdings: training, organization of the rural environment, marketing of produce, supplies and distribution, credit. It is important to understand the extent to which action taken led to improvements in these various functions and how structural improvements themselves contributed to rural development.

4.1. LAND

Land tenure problems are assuming increasing importance in all the countries visited and in some cases they are becoming a crucial factor. They take various forms:

(i) disappearance or modification of traditional systems of land management and soil preservation, especially systems including restoration by means of fallowing;

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[1] The term is used here in the broadest sense, without any attempt to place the various factors in hierarchical order.

(ii) soil exhaustion caused by erosion, by excessive farming or grazing or by lack of compensation for minerals taken out of the land;

(iii) monopolization of land by some headmen, who assert private property rights over common land or use it for commercial gain, with the result that young people are experiencing increasing difficulty in finding land to work.

The belief that 'there are no land problems' in Black Africa is very largely out of date. On the contrary, land tenure problems are becoming increasingly acute. In most cases, however, very little information on this subject is available.

In two projects (Rwanda and Badeguicheri), resources were concentrated on objectives directly linked to the maintenance or restoration of soil fertility: combating erosion, construction of terraces, development of flood areas, organization of kitchen gardens around wells. The only examples of these objectives being pursued in conjunction with land tenure reform were the cases where 'farming communities' were established, a reform which did not interfere with traditional concepts. The evaluation reports state that these schemes achieved only limited results. They were concentrated on local areas and heavily dependent on external finance. Moreover, there was no specific effort to promote them through group instruction or advisory work, which would have encouraged the farmers to organize themselves so that they could take over responsibility. No mention of them is made in connection with the training and advisory services provided by the supervisors.

Apart from the two projects in Niger and the 'farming communities' (Rwanda and Zaire), no mention is made of specific objectives relating to soil exhaustion, except for the use of fertilizers. The Chad report points out that fertilizer inputs are not yet sufficient to re-establish the pedological balances and also mentions that there may be a certain itinerancy of cotton-growing plots and the application of intensive methods, the effect of which would be to obscure the real situation regarding soil exhaustion.

When the soil is exhausted after some years of cotton-growing, the cotton-plots move on to new land. So, two factors should be studied more carefully. First, it seems that the cotton-plots move to less and less fertile soil, because the best land is used at the outset. Second, when the plots are abandoned, they are not followed up by any government service. Yet, agricultural research (IRCT) shows that even prolonged fallow does not restore initial fertility when cotton has been grown for too long on the same land.

The evaluation reports highlight the importance of thorough analysis of land tenure problems arising in connection with projects and it is clear that this is an area where much planning work is needed.

In the Bugesera-Mayaga 'farming communities', plots were allocated on the basis of clearly defined population norms and technical standards. Although these arrangements held good for the first generation, population growth is causing the norms to be exceeded. Not all members of the second generation are finding other plots on which to set up, or employment outside farming.

Some farmers are being obliged by lack of space to put some of their children off their farms; this does not solve the problems of achieving a balance between population and resources, but merely shifts them to other overpopulated areas.

Another type of problem is the contradiction between the system of collective ownership proclaimed by the Rwandese State ('the land belongs to the State') and the individualistic approach of the information and advisory services, which have not raised the problems of soil preservation and restoration with the groups of farmers living on neighbouring plots. Action to combat erosion (in the same way as the regrouping of farm land in Europe, for instance) cannot be organized on farms of two hectares or less in size; it is necessary to tackle entire hill slopes at a time.

In Chad, the policy on block cultivation of cotton interferes very directly with the traditional land tenure system, although without bringing about any progress in these systems in the longer term. When a cultivation block is abandoned, it will probably revert to the traditional system, but the quality of the land will undoubtedly have changed considerably and the value of customary farming rights will not be the same at the end of the period as at the beginning. The policy of block cultivation is therefore likely to give rise to inextricable land tenure problems with the passage of time.

In Ivory Coast, SODERIZ has endeavoured to solve certain land tenure problems in the lowlands being developed for rice. The plan was to distribute land among villagers intending to grow rice. However, as in the two cases quoted above, the land tenure problems which this involved were of marginal interest to the villagers (since the lowlands have never been the subject of farming rights), whereas far more serious problems arose in connection with the rainfed farming land and were impeding progress in the area. Again, SODERIZ met with no land tenure problems when carrying out major clearance of land for cultivation, but many such problems arose two or three years later when it came to expand the areas under cultivation. Thus, the development of land for cultivation quickly led to claims to farming rights over neighbouring land from those with the opportunity or responsibility to lay such claims. In some cases, neighbouring farmers prevented lowland 'beneficiaries' from growing any highland crops if they happened to be strangers.

Because of lack of information on this subject, there is very general underestimation of the disputes which can arise in the medium or long term as a result of land policies formulated on the basis of objectives which are too narrow (cultivation of cotton or rice, stabilization of peasant families etc.) in the absence of overall negotiation or anticipation of the long-term effects on the communities concerned. The advisory staff do not have sufficient knowledge to analyse the problems involved, nor do they have authority to propose solutions. The world does not offer many examples of land tenure systems in which there is no clear-cut responsibility regarding the management of land; in some cases, however, the responsibility of the 'chefs de terre' in the community context is no longer recognized or has been misapplied in pursuit of personal interest. There is growing confusion in the rural and institutional world on this subject: on the one hand, peasants have no understanding of what private ownership of land means; on the other hand, the in-

stitutions are applying - none too discriminatingly - the principle whereby land belongs to the State and can be distributed to private individuals. The interprenetation of customary and modern concepts may be necessary, but it would seem to entail grave risks for the future insofar as there is no arbitration authority at local level.

The evaluation reports also raise a number of more specific problems.

For instance, they show that the problems of access to land for certain social groups (young people and women) are becoming increasingly acute. Because of increasing population pressure, some headmen are asserting their farming rights. Another factor is the development of export crops, which is encouraging farmers to expand their holdings; this is an option which is generally only available to the richer farmers who are able to purchase animal-drawn equipment. Under such circumstances, young people are finding it increasingly difficult to set up on their own land and have to choose between moving elsewhere or taking employment as farm labourers working for the new owners.

Is it not anachronistic today for collectively owned land to be passing into private hands when, by common consent in national and international organizations, it is necessary to find collective solutions to the major problems of abandonment of rural areas by the young, soil preservation and restoration, organization of land use according to the needs of each socio-economic group, increasing famine and so on?

Soil exhaustion is another very disturbing problem; its consequences are reflected in falling yields[1] and gradual reduction in the number of species cultivated, with a trend towards those species which are least demanding in agronomical terms, which are also often the least beneficial in nutritional terms.[2]

Soil exhaustion is the result of excessive working of the land without compensation. Fallow periods, which with traditional methods allowed the soil to recover after crops had been grown on it, have been shortened and in some cases eliminated from rotations. They have not been replaced by other efficient methods. Pure crops, sown in high densities and weeded, have superseded more sparsely sown, 'dirty' mixed crops, which made for fuller and more varied cultivation of the land. Despite the intensification of growing methods, improvement of protection of crops, in some cases mechanization of tillage and so on, 'motive' agriculture has not adhered to the principle whereby what has been exported from the land[3] by a crop must be compensated for by corresponding imports. Programmes to promote the use of fertilizers have achieved excellent results on a local scale where climate and crop protection condi-

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[1] Falls in yields should be assessed in relation to the agricultural systems in use. For instance, yields from the cotton fields under intensive cultivation in southern Chad have been falling for several years.

[2] For instance, extension of manioc at the expense of cereals, extension of bananas at the expense of beans, etc.

[3] From the stratum which feeds the roots of the species cultivated.

tions have been satisfactory, but nowhere have they led to balanced long-term patterns of use of agricultural land. Such balanced patterns can only be achieved by overall management of the factors of production which have the most direct influence on the quality of land, with rotation and fallowing which takes account of ecological effects as well as immediate productivity; in this connection, no accounts are given in the reports of research on biomass management aimed at increasing volume (for instance, by growing appropriate companion crops) and taking advantage of special ecological properties of companion crops for the most directly productive species. Except in Rwanda, where the ISAR is concerned with all peasant farming activities, the research institutes have not given enough attention to integrated research on agricultural systems, concentrating on easing farming constraints and establishing long-term balances rather than on increasing productivity with a limited number of specific crops (cotton, groundnuts, rice etc.). There is no reason why one of these lines of research should have excluded the other.

Soil exhaustion is also caused by erosion, which can be combated by mechanical means (terracing, anti-erosion ridges, ditches, laying out plots along contour lines etc.) or by biological means (a particular covering of vegetation). In peasant farming (micro-plots), individual efforts are not very effective; a collective campaign must be waged over a fairly large area if any significant improvement in water economics is to be achieved. Action to combat erosion therefore calls for instruction in appropriate techniques combined with a collective effort on the task of restructuring rural space. For this type of work, as well as the necessary political will, there must be supervisory staff trained to instruct groups of peasant farmers and able to organize operations in conjunction with them.

None of the projects evaluated included plans to promote elementary soil protection and restoration methods traditionally used by local farmers: companion crops with different cycles, introduction of perennial species in fields under annual crops, as is done with bananas in Rwanda or acacia albida - whose presence improves soil quality - in West Africa, arrangements between graziers and farmers etc. Such practices, however rudimentary, could in some cases have provided a background for integrated action to combat erosion, which might possibly have been more efficient than mechanical methods.

Problems concerned with the structure of rural space also arise in areas where farmers and graziers come into contact. Complementarity between agriculture and livestock-breeding, is recognized among the general objectives of development plans. In practice, some of the projects evaluated included among their aims the integration of livestock into individual agricultural holdings (animal-drawn tillage in Chad, the 'fermette' system in Rwanda). The results achieved have been encouraging insofar as the breeding of draught animals is gradually leading on to breeding for slaughter and mixed breeding. Nevertheless, there are still very many areas where farming land is crossed by nomadic graziers with their flocks or herds. The organization of land to take account of the movements of nomadic graziers has become essential, partly in view of the growing risks of conflicts arising out of the extension of areas under cultivation, but mainly because of the advantages to be derived from the development of fruitful interchange between farmers and graziers.

Two important aspects of soil management need to be developed, given the realities of practical conditions in tropical climates: biomass management and agricultural water management.

The biomass produced is an essential factor[1] in agricultural production under tropical climate and soil conditions. This is the mass of substance of vegetable or animal origin produced on an area of land which is either exported from that land in the form of consumable products or restored to the soil in the form of organic wastes.

Production of a substantial biomass is the objective pursued by fallowing in rotative agricultural systems. The purposes of fallowing are to improve soil texture through the incorporation of organic constituents into the sand-clay mineral complex and to improve soil structure (physical and chemical) through the redistribution of minerals among the various strata of the soil and modification of ionic complexes.

The traditional balance of subsistence agriculture has been preserved as a result of the maintenance of production/reconstitution rotations by communities and the maintenance of the corresponding population balances (migration and high mortality rates).

In some cases, the combination of livestock-breeding and various forms of 'fertilizer management'[2] has enabled farmers to keep land permanently under cultivation while at the same time improving the soil.

However, population pressure, in some cases coupled with the demands on the land made by the livestock population, has definitively broken down the balance of agricultural systems in most of the regions under consideration and this process has been accelerated by the development of commercial crops.

The 'farming community' system set up in Zaire and Rwanda organized land use so that the crop/fallowing cycles could be maintained on each farm. As the Bugesera-Mayaga evaluation demonstrates, however, for these cycles to be maintained, it would be necessary for the population to be kept steady by migration to other areas, which is no longer possible in Rwanda.

Under such conditions, a fundamental problem in farming is the need to replace the traditional system of soil rehabilitation by other techniques which are more efficient than fallowing in regard to both soil texture and structure.

It be may be that, as suggested by analyses carried out by the IRCT in Chad, the use of mineral fertilizers is accelerating the deterioration of the organic complex in that they are being applied selectively and not enough is

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[1] A 'sub-factor', since the biomass is the product of the land and biological constituent.

[2] Tethering of cattle on plots to be cultivated, return of cattle to central plots in the area after grazing on fallow land, spreading of organic wastes.

yet known about the limiting factors of the ionic complex in relation to each species.

The use of mineral fertilizers is not to be regarded as a substitution for fallowing, but as an essential complement to techniques for the maintenance of the soil's organic balances; modern farming practice in Africa has not yet perfected these techniques.

Only two references to biomass production are to be found in the evaluation reports:

(i) introduction of manure barns under the cotton plan in Chad and in the Rwandese 'fermettes' system;

(ii) research at the IRCT stations in Chad on 'dolique' and the role of fallowing.

In both Rwanda and Chad the advantages of building manure barns are restricted by carting limitations. In Rwanda, it is pointed out, the problem of carting organic wastes - a traditional task for the local farmers - has been accentuated in the farming communities by the construction of anti-erosion ridges; this is quoted as an example of the failure in the planning of agricultural development methods to take account of real obstacles.[1] Zootechnical schemes connected with the production of manure have therefore enjoyed limited success only.

As for the research on 'dolique', it is as yet not sufficiently advanced and probably not sufficiently well understood for promotion to be put in hand for the time being. However, it represents a potential development of traditional methods applied in the African environment, where there is no reluctance to grow ecologically useful species as companions for productive species.

In the area of the biomass factor, the evidence points to an absence of fundamental knowledge and rational objectives going beyond general affirmations along the lines of 'livestock breeding must be combined with crop farming'. The lack of knowledge in this field suggests that there is scope for major efforts and a fundamental revision of agricultural thinking in relation to this factor of production.

Control of water resources was not a major feature of the projects evaluated, apart from a few specific instances: development for agriculture of land subject to flooding, laying-out of kitchen gardens around wells, under the projects in Niger. (We deliberately excluded predominantly hydro-agricultural projects in order to concentrate on the subsector under consideration.)

It seems regrettable that more schemes connected with water economy in raidfed crops were not pursued through research or advisory services under any of

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[1] According to the evaluation report, this problem of carting and the ploughing problem would have been eased if plots had been laid out along contour lines rather than perpendicularly.

the projects. In fact, only schemes connected with action to combat erosion, either by the construction of terraces or the planting of hedges, have been tackled. These are far from being the only methods of promoting water economy; there are other methods which have proved effective and an examination could be made of the possibility of introducing them alongside measures to prevent erosion: methods based on the ecological role of certain species such as the banana trees, acacia and 'dolique';[1] introduction of techniques to avoid stripping the land of protection; protecting crops with shrubs; combinations of long and short-cycle crops; selection of deep-rooted species etc.

Water is a major limiting factor in rain-fed agriculture. Training schemes connected with water resources could be developed with as much emphasis as those connected with mineral fertilizers or animal-drawn tillage.

This evaluation exercise has demonstrated that land tenure is a subject about which too little is known and that its importance was underestimated in most of the projects. Several conclusions follow from what was found:

Identification and study of land tenure problems is a necessity both during the planning of projects and during their execution. It is necessary in particular to appreciate how action carried out will effect the distribution of land between the various socio-economic groups.

It is extremely desirable for projects to adopt a strategy of overall planning of village land, in close association with the various groups of occupants and the members of the community responsible for land management.

Similarly, it is necessary for advisory services to aim for collective solutions to land management problems, to facilitate not only the detection of soil exhaustion and erosion, but also remedial action.

Research and advisory services should also broaden their horizons to include soil protection, maintenance and restoration techniques or combinations of techniques which can be assimilated readily into local technical and economic contexts; biological methods of combating erosion could be as promising as methods based on mechanical means.

More attention should be paid to biomass management. The production of the plant and animal organic matter needed to maintain soil fertility and the protection of soil against erosion by means of the densest possible covering of plants are both essential in tropical climates, but the conversion to 'pure' crops has too often caused these practices to fall into disuse.

Similarly, water management in rain-fed agriculture deserves the closest attention, not only in agricultural research, but also in the presentation of techniques proposed to farmers.

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[1] A very deep-rooted slow-maturing species which may be a suitable companion for cash crops. The results of the IRCT in Chad point to the desirability of pursuing research both on quick-maturing varieties and on some slow-maturing species.

A possible suggestion is that all agricultural projects submitted to the EDF could be subjected to a preliminary assessment of the land tenure problems in the areas concerned and that the application file should be required to give details of the fundamental balances which the project intends to establish - ecological and agricultural balances, socio-economic balances and balanced structures in the organization of rural space.

4.2. LABOUR

There are many problems concerned with farm labour. Several of these were analysed in Part Three (3.3.2 and 3.3.3): labour productivity in food terms and in cash terms, average productivity and marginal productivity at peak periods in the farming calendar, work options in relation to the market, diversification of rural activities, promotion of rural occupations etc.

Seasonal unemployment (inherent in all seasonal farming), low labour productivity (especially at peak periods) and the combined effects of both these factors are structural causes of the poor level of annual incomes in the rural areas concerned. The value of these incomes is further deflated by the meagre purchasing power they command.

It was seen how, in this type of situation, much can be achieved by well planned economic policies aimed at stabilizing and gradually improving returns on labour. The importance of coupling employment objectives with production objectives was also illustrated. Only aspects not discussed earlier are analysed here: technical improvements, initiation and financing of rural employment, technologies which create employment, vocational training and health problems associated with agricultural work.

In the projects evaluated, three types of action had direct effects on labour productivity: introduction of new techniques (raising peasant skills); encouragement of animal-drawn tillage (improving productivity of work in the fields and reducting carting times); mechanized ground clearance, tilling and weeding carried out for farmers on a jobbing basis in Zaire, the Ivory Coast and more recently Togo. Vocational training is analysed in Part Five. Other technical measures, such as the use of fertilizers, protection of crops against disease, protection of land against erosion and so on also helped to improve labour productivity, but in indirect ways. They are accordingly considered in connection with the factors which they influenced directly.

In half of the cases evaluated, efforts were made to encourage animal-drawn tillage on a wider scale. The results achieved varied considerably: failure in Togo, considerable success in Chad and the Ivory Coast, less than satisfactory results in the other countries: Benin, Niger, Upper Volta (cf. 4.4).

The dynamics of the introduction of animal-drawn tillage are complex and not enough is yet known about them. What is known with certainty is that improvement of farm labour productivity is not a farmer's main motive in acquiring the necessary equipment. The investment in an animal-drawn tillage and cart-

ing unit is always very large in relation to farmers' incomes (4 to 6 times the average annual income in the areas under consideration). This investment must therefore be highly profitable for the farmer, who can make it pay in several ways:

(i) by extending areas under commercial crops (the scope for this is in general limited according to the availability of labour for harvesting and weeding, or indeed there may be no scope for extending farming rights);

(ii) by hiring out the equipment for doing jobbing work or carting for others;

(iii) through the substantial increase in weight of draught oxen which can be achieved if they are looked after properly.

Other more minor factors also enter into the dynamics of this process: security, prestige, manure production, hope of eventually building up a herd including breeding stock or even, as was found in Niger, the purely financial advantage available to farmers buying oxen on credit and immediately selling them off to traders at a profit.

Not only is the purchase of animal-drawn equipment a substantial investment, it is also highly risky. It is only really within the pockets of those who are already fairly well established both economically and in terms of land.

Where agricultural credit arrangements are available, poorer farmers also manage to obtain equipment. However, their position is particularly precarious since, if they have no resources other than their small farms, they will be left with debts for the rest of their lives in the event of a setback. Hence the suggestion from some of the evaluators about setting up animal-drawn equipment hire companies or insurance schemes covering the risks involved (death of the oxen in particular).

Even where successful results have been achieved, the supervisory staff cannot be said to have really understood the logic leading to the spread of animal-drawn tillage or to have shown an ability to encourage it other than in the limiting context of the crop which it is their job to promote.

Another aspect of the spread of animal-drawn tillage which has a bearing on the problems of rural employment is tool-making and tool maintenance. This is a field which offers many opportunities for para-agricultural employment and varied scoped for technical training. This aspect was not given due importance during the periods now completed. The equipment distributed was always bought in large quantities by way of invitation to tender; it was always industrially produced and was sometimes of good quality, but in other cases it was of substandard or unsuitable quality. The organization of vast farming equipment programmes could have been taken as an opportunity to attempt to develop rural woodworking and metalworking crafts. If only part of the requirements for ploughs, carts, weeders etc. had been met by local craftsmen, even if unit costs had been higher, the secondary effects on employment and vocational training, as well as on local trade, would have been appreciable. It has to be recorded that what happened in practice was different: in some

cases, the subsidy on equipment actually killed off all possibility of production by craftsmen (cf. 3.3.2.4) and it was not until a very late stage that some projects turned to training rural blacksmiths to maintain equipment in the village.

In the rural world, the creation of any new agricultural or para-agricultural job entails appropriate vocational training, but it also presupposes an investment, an economic environment and recurrent costs. For the job to be sustained, these three factors must be sufficiently under the control of the village economy. If the investment cost is too high, the amount at risk will be disproportionate to the potential gain. If there are shortcomings in the economic environment, especially in the supply of raw materials, the job cannot be done. Finally, if the local community itself is not in a position to meet production costs and pay for labour, the job cannot be kept in existence.

When a job is created with artificial resources in an artificial environment, it has very little chance of surviving, since the resources and environment will eventually disappear. This is what would happen to a blacksmith who was set up in a forge, provided with long-term supplies by the organizers of a project and trained by an expert who also attended to sales of his products and other such matters. He would be so dependent on such an environment that its disappearance would mean the disappearance of his job.

Hence the need to integrate efforts to create employment into the rural context, paying particular attention to:

(i) sustaining economic initiative in the village context,

(ii) sustaining initiative in close liaison with the groups concerned, who alone will be able to finance the recurrent costs of the job created;

(iii) avoiding the danger of corrupting initiative by making too many resources available or by providing tools which are too sophisticated for the ambiant economic and technical context.

The creation of rural employment presupposes complete mastery - in cultural, social and economic terms - of working conditions by the communities concerned. Upgrading technical skills already present in the local environment, training skilled men without holding out any hope of their being financed by the public institutions, remuneration of work in its natural context rather than in the artificial context of projects of short duration - these are among the conditions needed to ensure that newly created employment can be mastered by the groups which it is designed to serve.

Whereas concern to diversify production and trade in the rural environment is often expressed by planners, the choice of technologies in the primary processing factor is not always compatible with this concern. Mention has been made above, in connection with the distribution of animal-drawn equipment, of the opportunity missed to establish an artisan craft sector to produce and maintain some such equipment which, apart from a few components, does not involve very complex technology.

In another example taken from the Ivory Coast, SODERIZ has invested in a series of large rice-husking plants (capacity: 160 000 t). In parallel with this, the authorities placed a ban in 1972 on trade in low-capacity husking machines used by small operators. This dual development inevitably led to tension among the very large numbers of small operators who were cut off from all but very local customers for rice processing because of theoretical reasoning dividing trade into three types of network (local, regional, national) and laying down clearly defined quality requirements for each of these networks.

Apart form the conflicts of interest which arose in this connection and continued until the crisis in 1976, it is necessary to ask the relevant questions in order to assess the political option which consists in encouraging units of large rather than small capacity. The following questions should be asked when projects are considered initially:

(a) How many jobs will each solution maintain? Which of these jobs will promote vocational training and responsibilities in the rural world itself?

(b) To what extent is each job at risk because of dependence on industry, foreign technical assistance and working capital which may or may not be available?

(c) What is the advantage in terms of production costs, taking account in particular of the opportunity cost of labour and capital?

(d) What are the advantages from the viewpoint of overall organization of domestic trade: secondary effects on technical occupations, trade networks etc.?

The SODERIZ example and other cases[1] have demonstrated that the production costs of 'modern' food-crop marketing and processing sectors, in their present form, are rarely and then only marginally lower than those in the 'traditional' systems. This being the case, it is not clear what economic reasoning lies behind the establishment of industrial primary processing units which eliminate large numbers of existing jobs and provide employment for only a few. Centralization of economic power in this primary processing sector generally militates against the officially expressed objectives of economic diversification when it goes further than the level required for the purposes of price regulation.

Whether one considers the first of these cases (animal-drawn tillage and carting equipment) or the second (primary processing), it has to be found that the development of the most elementary rural occupations has been obstructed by the adoption of policies favouring centralized units.

The evaluation exercise points to a number of conclusions. Although the projects were generally aimed at improvement of returns on labour in the peasant world, they were based on insufficient knowledge of the conditions influenc-

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[1] See for example the reports from the MIDEVIV (Mission de développement des produits vivriers) in Cameroon.

ing the pattern of work in this environment: the justification for certain types of work, the social basis of work-sharing, the farming calendar, constraints of various types etc. It is clear that more needs to be done in the field of analysis of work in relation to the context of rural systems, taking in food crops as well as cash crops and para-agricultural activities also. Analysis along these lines is the only basis for a sound understanding of the factors which encourage peasant farmers to modernize.

Given the problems of migration which arise in the areas concerned and having regard to the hopes of diversifying domestic trade, it is necessary to adopt an approach leading to specific objectives for the activation of rural employment. Project strategies should aim at encouraging technical solutions which are highly labour-intensive, promote vocational training and entrepreneurial responsibilities, and solutions which are most readily mastered by the local communities concerned, particularly in regard to their ability to cover recurring costs and their cultural capacity for taking over projects.

In this connection, support for the development of rural occupations, which should be as numerous and varied as possible, is as necessary as support for agriculture. There are very many occupations which are essential to rural life and appropriate training can be provided for all of them as long as the need for them is recognized; they include woodworking and metalworking craftsmen, millers, mechanics, traditional healers, first aiders, 'chefs de terre', well-sinkers, small traders, carriers, farmers, nursery farmers, barn builders, brick and tile makers and so on.

The rural occupations which have developed under the stimulus of the projects evaluated are administrative in character: supervisors, demonstrators, cooperative book-keepers, marketing company officials and so on. Little or none of the money needed to pay them is being provided by the local population and the secondary effects of their activities are confined to limited areas of agriculture.

Another feature is the distrust felt by the development institutions for any initiative not inspired by administrative concepts, as witness the disconcerting ease with which traders, craftsmen etc. are equated with defrauders and thieves; however, in replacing them, the public authorities have failed to acquire the resources which would be necessary, even given the monopolies which they have established for themselves.

4.3. BIOLOGICAL CAPITAL[1]

Very satisfactory results have been achieved in the improvement of cotton, groundnut, rice (Ivory Coast) and coffee varieties. The distribution of se-

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[1] The term 'biological capital' is used here to cover all living elements (basically plant and animal life) entering into agricultural production, having regard in particular to their genetic properties.

lected cowpea seed seems to have gone smoothly in Niger. On the other hand, less reliable or unsatisfactory results have been achieved in the case of cereals (maize, millet and sorghum), tubers, such as yams and manioc, and beans (Rwanda and Togo).

The seed varieties selected on the basis of agronomical research on food crops are finding it difficult to prove their worth in peasant farming. The reasons for this are complex.

In the case of industrial crops - and cotton in particular - selected seed varieties are distributed through marketing companies which obtain their supplies from sources heavily supported by foreign finance and controlled by the research stations (notably the IRCT).

Moreover, these seed varieties are not subject to competition from local varieties which have been tried and tested by farmers.

In the case of food crops, the problems are much more complex and little research effort has been devoted to them.

The most conventional selection criteria (high yields, short stalks, quick maturing etc.) do not seem to convince the local people in the present state of agricultural development. Other criteria must also be taken into consideration: qualities for brewing, long stalks to meet building requirements, hardiness for use as companion crops, tender maize to avoid lengthy grinding or cooking, groundnuts for family consumption rather than the oil-mill etc.

Selection on the basis of marketability of products has been given preference over criteria based on the productivity of subsistence farming, the low level of which is holding back the development of trade activities.[1]

The comments on the difficulties experienced in gaining acceptance for the food-crop varieties proposed under the projects generally tend to attribute the blame to 'peasant mentalities'. Such explanations do not reflect any thorough knowledge of the constraints involved in production activities, packaging methods and consumption habits. No detailed study of this subject is mentioned.

Further explanations for the difficulties encountered are to be found in the insufficient reliability of the food-crop seeds offered by the selection services and the unreliability of supplies. The agricultural services have not always shown interest, selection programmes have sometimes lacked continuity[2] and have often been hampered by rapid turnover of research staff.

Improvement of livestock resources was not a specific subject of study in the projects evaluated, except in relation to requirements for draught animals.

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[1] See also: Uma Lele: The Design of Rural Development, p. 180 (Doc. 19).

[2] Only Rwanda has an integrated agronomical research structure in the ISAR, to which the OBM was able to refer on a regular basis.

The only specific action referred to in the reports is the livestock section of the cotton plan in Chad, which led to a distinct improvement in the stock of draught animals through the efforts of the GDSs (groupements de défense sanitaire - animal health protection groups), coupled with more widespread action to improve breeding livestock through vaccination and parasite control campaigns. According to the evaluators, the formation of the stocks of (male) draught animals will gradually lead to expansion into stock-breeding activivities associated with agriculture. This, then, would be a distinct improvement in the 'livestock capital' within the agricultural context, opening up prospects for forage development. However, draught animals have not thus far been regarded by farmers as 'capital' for meat or dairy production, despite the fact that they have witnessed the rapid growth of draught animals receiving proper veterinary treatment and feeding.

There are no reports of improvement of livestock associated with agricultural development in the other project regions.

The dissociation of agricultural, grazing and livestock-breeding activities is virtually universal. It implies a failure by the projects to give due weight to the fundamental interrelationships between edible agricultural species, forage species and animal species, and to manure production which is of such importance in tropical agriculture.[1]

4.4. FIXED CAPITAL

In the area of improvement of equipment in farming, the main emphasis has been placed on animal-drawn equipment (ploughs, hoes, ridger-weeders), transport equipment (carts) and hand-held sprayers.

The success of efforts to improve equipment for animal-drawn tillage and carting varied from region to region (see section 4.2).

The causes of success or failure varied widely and cannot be generalized: different degrees of interest in the distribution of these techniques on the part of the official agencies; hopes of motorization, and their psychological effects (the farmers preferred work in the fields to be done by motorized units); local customs in livestock breeding; the level of the cost of maintaining a team and availability of credit; organization of supplies of equipment; existence or non-existence of a cattle market; scope for hiring out teams for profit; scope for increasing areas under cultivation etc.

Drought seems to have been a factor restricting the scope for development of animal-drawn tillage: on the one hand, prices for oxen have risen sharply following the death of large numbers of animals and as a result of increasing

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[1] In this connection see Hochet (Doc. 25).

demand from consumer markets such as Nigeria; on the other hand, surviving animals have been too weak to work.

The quality of animal-drawn equipment seems to have been relatively satisfactory, despite some local difficulties (very bad selection in Togo). On the other hand, maintenance of this equipment seems less satisfactory, if not entirely unsatisfactory.

The essential advantage of animal-drawn tillage lies in the improvement of labour productivity at certain times of the year and the scope which this affords for expansion of areas under cultivation (cf. section 4.1). It is not readily accepted by farmers who have no scope for expansion, either because land is not available or simply because some of their land is given over to perennial crops (coffee, cocoa, etc.) or other activities, except in cases where they are in a position to hire out their equipment and other local farmers have the means of payment.

The use of hand-held sprayers has been adopted very widely as a result of promotion by supervisory staff in the various cotton-growing areas. The reports record a number of criticisms regarding the quality and maintenance of this type of equipment.

The most important comments are concerned with the design of the equipment and modifications made on the basis of practical experience: fragility of some parts, adjustment of nozzles to reduce inhalation of insecticides by the user.

The most fundamental development mentioned in connection with the use of this type of equipment is the introduction of ULV[1] spraying, which relieves the farmer of the need to carry large quantities of water to his cotton fields. The speed with which this type of equipment was adopted in Togo and Chad (in the vicinity of Bebedja) demonstrates the keen interest among farmers, who will probably be much less reluctant to carry out the fourth and fifth treatments recommended by the supervisors. This equipment should be successful as long as reliable supplies of batteries are maintained and the sprays do not prove harmful to health.

None of the projects made any major effort to introduce other types of equipment suitable for adoption on peasant farms: threshers, shellers, pulpers,[2] presses, mills, motorized ploughs etc. The importance of promoting such machinery is perhaps underestimated, given the many hours of manual labour that go into the work it can do. In a farming system, easing the workload in one area automatically provides new scope for improvements in others.

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[1] Ultra-low volume: this type of sprayer has a miniaturized electric motor which runs off a battery and uses very low quantities of liquids (1.5 to 2.5 litres per hectare). With conventional hand-held sprayers, the farmer needs to use 100 to 150 litres of water per hectare which he has to carry to his fields. This innovation thus makes for substantial savings of carting time on farms.

[2] Except in Rwanda.

4.5. FLOATING CAPITAL (or current purchases by farms)

Major efforts were made in all the projects evaluated to encourage farmers to use bought inputs such as fertilizers, insecticides and fungicides. The distribution of these products attracted substantial subsidies, since it is very difficult for farmers operating at a low level of productivity to meet the costs of intensive farming without a transitional period. The evaluation reports and surveys show that the advantages of these inputs have been appreciated by the farmers. However, the reports mention major difficulties which fall into two groups, one connected with the characteristics and quality of the products supplied, the other with the problem of supplies itself.

As a general rule, the evaluation reports found that the inputs offered to farmers were virtually exclusively formulated with export crops in mind, whether composite fertilizers or protective treatments, since they all had very specific properties. Suitable inputs for food crops were not available from the official agencies. Only urea (a fertilizer which provides crops with nitrogen only) was promoted by some of the projects as a homeopathic treatment. Elsewhere, food crops benefited only through side-effects, the extent of which has yet to be assessed, and received no specific protective treatment.[1]

The difficulties encountered in the distribution of insecticides were mainly in the areas of toxicity (headaches at spraying times), and dosage problems. The effectiveness of these products was not always sufficiently thoroughly tested in experimental stations before they were introduced and promoted among peasant farmers. In some cases, formulations or solvents were modified and the farmers were not given the necessary information about the new dosages,[2] with the result that yields fell sharply.

Disinfectants for seeds (such as Thioral) were distributed without difficulty, apart from some instances of incorrect dosages. They have acquired a reputation for efficacy far in excess of the uses anticipated by their promoters; some cases of poisoning of humans and livestock have been recorded.

Dosage problems also arose in the livestock section of the cotton plan in Chad. The dosages required for treatment were not always indivisible, nor was it easy for stock-breeders to check them, so that some veterinary assistants would use only part of their supplies and sell the remainder for personal profit.

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[1] The limited scope of programmes did not prevent farmers from using some of the fertilizers provided for their export crops on their food crops; however, this did not give particularly satisfactory results and was generally discouraged by supervisory staff.

[2] For instance, Wally, following treatment with Prepothion, was to be sprayed in double dose using ten-litre sprayers. Because they were insufficiently informed, the farmers used only half of the quantity required and attributed their disappointing results to the shortcomings of the insecticide.

There were many difficulties connected with supplies. They derived from the slowness of invitation to tender procedures, the length of delivery periods, transport difficulties in Africa (congestion of ports and railways), delays in local deliveries, inflexibility of arrangements for distribution to farmers and lack of stocks. In some cases (Niger, Central African Republic, Zaire), the evaluators report that there were years when inputs did not reach their destinations in time, causing losses of yields and discouraging farmers.

In the cases evaluated, most of the supply difficulties were unrelated to the projects themselves, but derived from the dependence of the countries concerned on foreign markets.

Nevertheless, some of the evaluators commented that greater flexibility could be achieved if formulation and storage facilities were set up locally in the countries themselves. Storable supplies would be more readily available locally, while those with a short life could be imported as and when required. It would be desirable to link local formulation more directly to promotional programmes and to avoid changes in foreign suppliers' instructions for use, since they tend to cause falls in yields. As matters stand, projects lack facilities for carrying out the necessary quality control procedures.

It should also be noted, particularly in relation to Chad, that the specifications accompanying invitations to tender can be so detailed that they severely restrict the numbers of potential suppliers, thus increasing dependence on a limited number of suppliers and limiting the influence of price competition.

The viability of inputs is clearly conditioned by their prices. There was relative stability until 1973, but production and transport costs shot up in the wake of the oil crisis. In 1975/1976, the prices of some insecticides were four times as high as in 1970.

The rise in the prices of inputs has never been passed on as such to the individual farmer; using Community aid, States have met a substantial proportion - and in some cases the greater part - of the costs of inputs for cotton and groundnut crops. Although the selling prices of these commodities have also risen as the production costs of textiles and oils in the industrialized countries have risen, they have not increased to the same extent. This being the case, the aim of structural aid for export crops, which was to bring farms up to levels of productivity and profitability which made them competitive with farms in other regions of the world, was not readily attainable within the period specified in the projects. Hence it is not surprising that the assumption of production costs cannot be relied upon in the future when external aid comes to an end. Although peasant farmers have appreciated the value of inputs they will not necessarily be prepared to meet the costs of intensification if they do not find that it offers a reasonable return on their labour (cf. 3.3). When aid comes to an end, it is the farmers who have to meet production costs, either directly or indirectly, since the State is only able to redistribute resources drawn from the national economy, in other words from farmers in countries where agriculture is the only major productive industry.

4.6. UNCERTAINTY FACTOR AND RISK

Uncertainty is the factor which weighs most heavily in the farming economy. It obliges farmers to organize their working lives around constraints or limiting factors which prevail or may arise in random fashion (cf. 3.1). In many cases uncertainty accounts for the inflexibility and halting development of agricultural systems. It is influential at various levels which interact in the short, medium and long term. In some cases it can affect matters of life and death, in others it may be purely financial.

Uncertainty can be the result of unpredictable climate conditions or outbreaks of disease. It is also inherent in technical innovations (new farming methods, new varieties, new inputs) inasmuch as they have not been tested over a sufficiently long period and tried under various farming conditions and their direct and indirect effects are not fully known.[1] From the farmer's viewpoint other factors of uncertainty are the duration of the aid provided (it may depend on EDF calendars, for instance) and the reliability or otherwise of supplies of inputs for which he has paid. The prices of export crops and inputs can also be uncertain for farmers, either because they are entirely dependent on international markets or because they are manipulated in line with stabilization or subsidization policies.

This uncertainty about the prices of inputs derives from the policy of artificially low introductory prices followed by gradual reduction of subsidies. The farmers know nothing of the subsidy covering part of the cost of inputs, but they are very alive to the prices which they have to pay themselves. This system of a declining scale of subsidization means that farmers have to face considerable increases from one year to the next (up to 30% in a single year).

Uncertainty is materialized quantitatively or qualitatively by a more or less immediate risk which the farmer perceives and decides his course of action accordingly. Introducing an ad hoc innovation over a limited period (a pesticide, a fertilizer, a new variety) may be a relatively easy matter, but innovations often fail to stand the test of time. Farmers' response times are always at least two to three years, since they need this long to experiment, compare and evaluate results under actual conditions (risks associated with climate and disease). This is a long time in relation to the three to five years of a project's life.[2] Even in a case where the technical innovation is intrinsically interesting to the farmers, there still remains the possibility that conditions in the economic environment (supplies, prices etc.) may become so uncertain that it is preferable for the farmers to continue using less modern methods over which they have greater control.

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[1] P. Thenevin calculates that the cash advantage of an innovation needs to be three times greater than its cost to induce the farmer to accept the risk involved (cf. Doc. 20, p. 53).

[2] Even if it is extended by one or several other phases of the operations (or projects) already under way.

When capital and operating expenditure is increased (for instance when a farmer buys a team and accepts a 'progress contract' offered by a development company), the risks associated with climate and disease are mitigated and yields increase, but the farmer's risks switch to the financial level, to his return on labour, which is no more than the balance left out of his selling price having met his production costs. A farmer who borrows large sums to buy equipment and then suffers two or three years of bad harvests can find himself in debt for the rest of his life, especially when, if he does not repay his loan, the development company cuts off the supplies he needs to carry on with the adoption of intensive methods.[1] Under such circumstances, it is not surprising that farmers generally do not go beyond taking advantage of opportunities as they arise through the implementation of a project while at the same time being reluctant to abandon tried and tested methods before being convinced that the conditions under which innovations are introduced will be maintained on a lasting basis.[2] The impression given by the evaluation reports is that efforts were directed at remedying the effects rather than the causes of uncertainty. Action was taken against farmers who did not repay their loans, but the risk of their running into debt as a result of being offered credit had been underestimated (cf. 5.2.5). Efforts were made to reduce the risk of disease through the distribution of effective protective treatments whose short-term effects are universally acknowledged, but efforts to establish distribution systems guaranteeing regular supplies were not always successful. Farmers were put under pressure to experiment with new techniques, but the end of the experimental periods, when the financial support was discontinued, brought abrupt changes in the ambient conditions under which experiments were carried out.

Several types of intervention designed to have a direct effect on factors making for uncertainty have been carried out under the projects under consideration.

In the first place, there is action to improve agricultural productivity, based on the introduction of technical packages: early sowing and sowing in rows, weeding, protection from disease and use of mineral fertilizers. Application of this range of techniques increases yields. The influence of climate and disease hazards is greatly reduced and they weigh less heavily in comparison with the risks involved in extensive farming.

These methods are only applied to cash crops. Their effects are therefore only limited, since the package is not designed for complete farming systems. For instance, if the farmer sows cotton early, he increases the risk of bad harvests of sorghum and millet whereas, if he sows the cereals first and they fail, he may well be able to start again in time for the seed to mature.

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[1] Because of this, SODERIZ decided to cover the risk of crop failures itself. However, SODERIZ was not in a position to act as an insurance company, since any deficit it incurred could only be made good from budget sources.

[2] Cf. Doc. 37, p.9, on how difficult it is for small farmers to join a Ujamaa village in Tanzania, because of the subsistence risks involved.

A number of instances of action aimed at saving water: irrigation of kitchen gardens in Niger, construction of terraces in Niger and Rwanda.

This type of action is important in relation to the uncertainty factor; control of water resources is a very important aspect of agricultural development in arid zones.

We should also mention action aimed at producer prices: stabilization funds to maintain the level of prices to the producer are an important means of reducing the uncertainty factor. These funds are concerned with export crops only, however, and there is nothing comparable for food crops, as the cereal offices generally lack power and pursue policies which tend to have a depressive effect on production (section 3.3.2.2).

Finally, there is action aimed at the prices of inputs: structural aid from the EDF has led to an appreciable improvement in the conditions on which insecticides and fertilizers for cotton-growing are supplied to farm holdings. Subsidization of these inputs has enabled farmers to obtain them cheaply. However, this does not make any direct impression on the farmer, who is concerned only with the subsidized price which he has to pay.

The main benefit of EDF aid is that it has made for stability of supplies - in terms of both quantity and prices - over periods of varying length and that this, coupled with stability of producer prices, has reduced the unpredictability of farmers' incomes.

The degree of stability or instability in these areas may well account for the differences between the increase of cotton production in Chad, its decline in Central African Republic and its stagnation in other countries.

Part Five

STRATEGIES CONCERNED WITH ORGANIZATION OF THE INSTITUTIONAL ENVIRONMENT OF RURAL DEVELOPMENT

The efficiency of the structures forming the environment of farm holdings should be assessed in relation to each of the functions on whose satisfactory operation development of farming depends. There are many such functions and they are generally blocked together under the heading of 'supervision': information, training, support for the organization of the rural environment, marketing, supplies, distribution, credit.

This part of the report is concerned with strategies for the organization of the institutional environment, which it considers first from a general viewpoint and then in relation to a number of specific aspects.

The first section (5.1) is concerned with general considerations:

(i) centralized or decentralized management of operational facilities;

(ii) type of supervision: sectoral or broad-fronted; type of institutional structure: a public service, a product development company, regional or national offices;

(iii) promotion of a 'motive crop' or overall improvement of peasant farming production systems;

(iv) involvement of local communities in rural development;

(v) technical assistance strategy.

The second section considers the organization of each of these various functions in turn.

5.1. STRATEGIES FOR ORGANIZATION OF THE INSTITUTIONAL ENVIRONMENT: GENERAL

5.1.1. Centralized or decentralized management of operational environment

The first question of fundamental strategy which has to be asked in each case is: what is the appropriate balance to be established between centralized and decentralized management of operational services?

The manner in which this question is answered involves serious political implications since, where a decentralized structure is adopted, the peasant participants acquire increasing influence over rural development and greater control over institutions. For instance, where villagers manage their own

cotton market, the cotton company is relieved of some of its functions and the farmers enjoy greater bargaining power. To give another example, a veterinary assistant sponsored by a GDS[1] will risk administrative sanctions if he is negligent. Similarly, an instructor paid by his own community cannot afford to show the kind of lack of interest or incompetence often seen in officials paid by the institutions.

The choice between centralized and decentralized management of the institutional environment also has a direct influence on the assumption of responsibility for rural development. Centralized management involves the State in budgetary contributions at all levels, although it will not always have the necessary resources to monitor the effectiveness of its expenditure; on the other hand, centralization helps to ensure that efforts are directed at the State's priority objectives. It is unrealistic to expect that operations originally planned in a centralized manner will subsequently be taken over in a decentralized manner; this would only happen where the respective priorities and interests of the State and its rural partners coincided, which is rarely the case, and then only to a limited extent (cf. 2.1 and 2.2).

With decentralized management of the institutional environment, a share of functional responsibilities (markets, cooperatives, mutual credit, supervision etc.) has to be assumed by village communities or groups of farmers up to a certain level (local, zonal, regional). At the same time, however, development support activities have to be geared to the objectives and priorities of the groups concerned. With this approach, the role of the institutional partners (at regional or national level) is to cater to demand from the rural world, which may be concerned with technical matters (farming methods, selected varieties etc.), commercial matters, health etc. By opting for decentralized management, the State is not necessarily relieved of responsibility for the costs of rural development, but simply delegates part of its management responsibilities and the corresponding resources to local communities (for instance, by organizing price differentials on a different basis, by topping up the wages of development officials employed by villagers under farming programmes, or by setting up village development funds to lend support to the efforts made by peasant communities themselves etc.).[2]

It follows therefore that the choice between centralized and decentralized management - like that between sectoral or broad-fronted supervision (cf. 5.1.2) - is not merely a matter of the location of decision-making functions in institutions. Another important factor is the manner in which the various participants in a project can influence the decision-making process. An institution may be called 'decentralized' because certain decisions can be taken locally or regionally while at the same time, the representatives of the farmers concerned have no say in proceedings.

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[1] Groupement de défense sanitaire (animal health protection group) (Chad).

[2] On the field covered by 5.1.1, see Uma Lele, Design of Rural Development, pp. 186-189 (Doc. 19).

Can it be said, for instance, that the SORADs in Togo were more decentralized, being established at regional level, than SOTOCO, a national company subdivided into sectors and zones for operational purposes? The rural participants had no more influence on decision-making in one case than in the other.

COTODEP, a Departmental committee made up of representatives of four services, which was given responsibility for coordinating the 3M project in Zinder, provides an example of a more thoroughly decentralized structure (in this case, decentralization of the public services only). In COTODEP, decisions genuinely flowed from consultation between several participants. Decentralization could have been taken further by allowing the farmers themselves to take part in decision-making affecting the project. If the SORADs (regional agencies) in Togo or the ONDR (national office) in Chad had adopted this approach, they could have been considered decentralized in the proper sense.

This was not the case. There is not a single instance in any of the projects evaluated of decentralization allowing farmers an opportunity to participate in decision-making affecting projects.

5.1.2. Sectoral or broad-fronted supervision? Administrative structure? Product development agencies or broad-fronted regional or national offices?

A second strategic option is the choice between sectoral supervision (product by product) or broad-fronted supervision (all agricultural products and non-agricultural activity, i.e. an administrative structure (public services) consisting of product development agencies (such as SODERIZ, SOTOCO and COTONTCHAD) or broad-fronted regional or national offices (like the OBM, ONDR, UNCC and the SORADs).

Theories on the integration of rural development[1] have abounded since the 1960s, when intervention companies or quasi-public companies began to take over from the colonial agricultural administrations. With variations from country to country and depending on circumstances, two schools of thought on rural development emerged: the 'sectoral' and the 'integrated' approaches. The former aimed primarily at the development of specific crops which it was hoped would stimulate the rest of the economy and bring social change; the latter sought to achieve balanced progress on a range of problems of vital importance to the populations concerned.

The 'sectoral' approach[2] consisted fundamentally in making all the arrangements to increase production of a given crop: supplying growers with inputs, supervision, marketing, packaging, exports. With this approach the only course was to maximize resources given over to promoting the crop in question

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[1] On the subject of integration in rural development, see G. Belloncle: 'Développement intégré et pédagogie de l'innovation en Afrique noire' (Ecole Pratique des Hautes Etudes, 1974), particularly pp 314 to 321.

[2] Sometimes called 'vertical integration'.

on the principle that the increase in revenues generated by this crop would subsequently finance the attainment of non-economic objectives.

By contrast, the 'integrated' approach[1] consisted in seeking to establish solutions to a range of interconnected or complementary problems through the promotion of regional or zonal multi-sector projects: supervision of agricultural production, village water supplies, cooperatives, rural 'animation', literacy, health projects, transport etc.

In fact, the strategies adopted were very specifically related to local situations. They were either stable (Chad, Upper Volta, Zaire, Ivory Coast, Rwanda, Niger) or changeable (Togo, Central African Republic); in some cases they were very heavily influenced by technical assistance from abroad: CFDT, INSTRUPA, AGROPROGRESS, SODERIZ technical staff etc.

None of the projects evaluated can therefore be regarded as a typical and reproducible exemplar of any of the possible strategies. For instance, the SORADs in Togo had been set up to promote regional development (the integrated approach), but in fact, until 1973, they concentrated on promoting cotton. SOTOCO, on the other hand, is a sectoral body, but OPAT, SONACOM and the IRCT are also concerned with cotton.

The UNCC in Niger is an 'integrated' body, having overall responsibility for cooperative and agricultural promotion and credit, but it also has a sectoral role, being responsible for marketing and packaging cotton and groundnuts for delivery to the export organizations.

In fact, discussions about integration of rural development appear to lack relevance when they fail to go beyond the institutional aspects of the subject. It is necessary to find the essential components of integrated rural development outside the logical institutional structures as such, this in the light of analysis of the participants (Part 2), their constraints (3.1), the prevailing economic policies (Part 3) and the problems involved in the methodology of project-based aid (Part 6).

With rural development which, as in all the cases studied, is based on deliberate modification of various individual and collective behaviour patterns on farm holdings,[2] it may be said that the most fundamental strategic problem confronting institutions is appreciation of conditions, responsibilities (personal and social), competences (technical and economic) and aspirations for change in rural communities. If institutions are successful in coping with the problems presented by the rural environment and in coordinating their solutions, it seems to matter little whether institutions are sectoral or broad-fronted, regional or national.

In the projects evaluated, such conceptions of the role of the institutional environment were rare.

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[1] Sometimes called 'horizontal integration'.

[2] As opposed to agriculture in plantations or collectivized farming, which operate according to different systems of management.

The absence of structures for consultation between the communities affected by development and the institutions implementing it is common to all the projects for which EDF finance was requested and which are discussed in this report. This lack should probably be considered a serious obstacle to progress in so far as - in the absence of such structures - rural communities and institutions exist in two very different logical worlds which meet only rarely, but are often in opposition.

Cooperatives have been set up in most of the countries covered by this report, but the evaluation reports find these cooperatives to be remote-controlled and limited in scope. Their functions are generally restricted to basic marketing tasks and their negotiating powers are limited (2.1.3).

The reports on the projects in Niger and Rwanda describe the activities of local debating assemblies: an assembly of cooperatives in Niger, rural discussion groups in local communities in Rwanda. These assemblies operate independently of the projects financed by the EDF, but discuss them. In Chad, the formation of animal health protection groups under the livestock section of the cotton plan has given farmers some control over the work of veterinary staff.

It cannot be claimed that farmers' decision-making powers over the planning, development and management of projects are really commensurate with the responsibilities as contributors to national production, or with the responsibilities (takeover of development) which the developers would like to see them assume for the success of projects.

The reports provide evidence of the ignorance of researchers, advisory and supervisory staff regarding traditional farming methods, this despite the fact that the majority of farming decisions are taken on the basis of such methods which are at present the only methods which enable farmers to provide for their subsistence with a minimum degree of security.

Traditional farming systems, unlike 'modern' systems, are fully integrated with the cultural, economic and social contexts of their local communities; as has already been mentioned, these contexts are extremely complex and are often changed only marginally by projects.

The application of integrated development concepts is unlikely to be successful if the organizers are not familiar with these contexts. The decision to integrate an innovation into a rural system can only come from those in control of the system in question. In this connection, it has to be reported that the planning of projects generally involves authoritarian measures leaving little scope for experimentation or initiative on the part of skilled farmers. Under such circumstances a 'progressive attitude' is ascribed to the farmer who slavishly follows the instructions of the advisory staff, rather than to the farmer who controls the constraints affecting his farm and makes improvements in relation to his overall needs (subsistence and cash needs) and the technical, economic or commercial opportunities which arise.

This type of approach can barely be described as consistent with the principles of integrated development.

Similarly, in many cases the technical planning of projects was defined by organizations without direct experience of the rural environment and dictated by State objectives rather than farming objectives.

The importance of technical or regional studies and surveys such as those carried out during the various projects (regional studies in Togo, EUROPREDE studies in Central African Republic, aerial surveys in the Badeguicheri Valley, surveys for the settlement of Bugesera-Mayaga etc.) should not be underrated. However, this work has not been as useful as it could have been in so far as farmers have been obliged to take decisions not according with the technical framework or time scale called for in such studies. To quote some examples:

The aerial survey of the Badeguicheri Valley was carried out to provide a basis for allocating land according to potentialities as determined by the CFDT: cotton on the alluvial land, cereals on the plateau land after development for agriculture. The farmers, however, preferred to grow cereals on the alluvial land, since they attached priority to these crops. As a result of this conflict of interests, the CFDT requested the application of sanctions.

The SORADs were set up in 1965. The studies intended to form the basis of their action were not available until 1975, by which time their role had been very much reduced. It is therefore certain that these studies had no influence on the programmes of action.

There are even cases, as for the project in Zaire, where the preparatory studies only took account of the technical and financial aspects of the environment to be developed and the projects to be carried out there, while virtually ignoring the people affected, their villages, their existing farms, their systems of values and their aspirations.

Projects reflect the methods applied in planning them. Studies carried out on a given rural environment, but without regard to the reference system of that environment, without any participation on the part of the local community and in some cases without regard to the requirements to which it attaches the greatest priority, cannot be expected to meet with a willing response.

'The projects set up an interplay between the national authorities, foreign sources of finance, technical assistance offices and the farmers. The national authorities, the EDF and the research office have ample scope for expressing themselves, they can submit reports, carry out fact-finding missions, negotiate modifications etc. They have at their disposal records containing all their partners' documentation. By contrast, the farmers have no opportunity to make their voice heard despite the fact that there are some things which only they can know and say.'[1]

While it is true that it is the local communities who 'integrate' development according to their economic, social and cultural contexts and their responsi-

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[1] Extract from the Togo evaluation report (Bertrand report).

bilities in the national economy, it is equally true that such integration also calls for measures on the part of the State: not only economic measures such as those described above (Part Three), but also social or cultural measures.

The projects evaluated offer virtually no examples of social action (apart from the women's programme in Niger), although this is a field where action is called for in many areas: water supplies, welfare centres, perinatal care etc. Without suggesting that Community aid should be used to finance everything, it is necessary to point out that projects could deal with such matters according to a strategy aimed at motivating productive effort with this type of objective in view. The socio-economic structures described in section 2.1 seem particularly well suited to this type of approach.

In the cultural field, attention must be drawn to the influence of educaticial policies. At present general education is exacerbating rural depopulation. It is therefore a factor in the disintegration of the rural environment, militating against integrated development strategies. In parallel with this, agricultural vocational training is giving little instruction which is of relevance to the peasant farming world; it generally refuses to acknowledge that peasant farmers have any technical competence and gives students little opportunity to acquire an understanding of peasant farming before they set out to modernize it.

The integration of agricultural development action also calls for education policies consistent with 'integrated' conceptions. This is an important subject which warrants special study in greater detail.

5.1.3. Promotion of a 'motive crop' or of peasant productive systems?

A third strategical consideration lies in the choice between organizing development action around a 'motive crop' (cf. 3.3.2.4) or aiming at overall improvement of peasant productive systems.

Most of the projects evaluated were based on the motive crop strategy, although this observation should be qualified in regard to the projects in Niger and Rwanda, which adopted a more general approach and also in relation to rice growing in Ivory Coast, since SODERIZ was only one agency among others operating in the rural environment.

This type of objective is characteristic of the projects carried out in Chad, Niger (Badeguicheri), Zaire, Central African Republic, Togo and Upper Volta. The expressed objectives and the planning of operations are fundamentally bound up with the development of marketable production which is expected to lead to an increase in economic flows in the zones concerned. The annual cash crops (cotton, groundnuts) are considered to be the 'motive' forces behind the rural economy. It is hoped that their high profitability and the high yields which can be expected from them will provide the necessary finance for improvements in the productivity of other crops and for general development.

The organization of trade in export products, the distribution of specialized factors of production (fertilizers, insecticides, spraying equipment etc. for cotton) or non-specialized factors of production (ploughs, carts, hoes etc.), the stabilization of producer prices for these products through compensation or subsidy and agricultural credit are generally highly developed, despite practical difficulties recorded in many cases.

This type of organization is associated with the monopolistic concept of farming activity and trade in its products making for the maintenance of a stable level of producer prices, fiscal returns (revenues from exports, taxes on the profits of intermediary companies, capitation tax) or parafiscal returns (revenues from State holdings, revenues from stabilization funds) and regular supplies of inputs related to the 'motive' activity, including agricultural credit.

Two cases are good examples of a strategy based on a motive crop: the 'cotton plan' in Chad and the development of the Central and Plateaux regions in Togo.

The 'cotton plan' in Chad, despite failing to attain its quantitative objectives, has led to the establishment of technically coherent and financially balanced activities,[1] through the introduction of a number of constraints:

(a) the compulsory requirement to grow cotton on 1/2 ha per worker until 1975. This had an indirect effect on improvement of productivity, since it led to a substantial build-up in cotton production before the structural improvements were put in hand;

(b) the marketing monopoly of COTONFRAN, and later COTONTCHAD, allowing prices to be stabilized and budget revenues to be collected;

(c) the block cultivation system, a land allocation system which farmers have to join in order to receive intensive farming facilities;

(d) the ONDR's de facto monopoly of supplies of inputs and agricultural equipment resulting from COTONTCHAD's heavy seed subsidies;

(e) the agricultural credit system based on levies automatically recovered by ONDR officials assisted by the local authorities on markets organized exclusively by COTONTCHAD.[2]

The cotton plan has had an appreciable effect on cotton production and the standard of farm equipment. The EDF subsidy produced an increase in monetary flows and additional budget revenues for the Chadian State which were roughly equivalent to the subsidy.

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[1] The evaluation report shows that a financial balance could have been achieved on the cotton productivity improvement operation without the external subsidy, but that the State probably could not have assumed the risk of this operation on its own.

[2] Matters of detail apart, this description could also be applied to the project evaluated in Eastern Kasai (Zaire) (see § 1.07).

However, the evaluation report points to the limited extent of the effects produced in the rural environment by the increase in production: domestic trade in a state of lethargy, craft industries in decline, virtually no effect on housing, food shortages etc. Farmers' purchasing power, which had been slipping until 1972, improved following substantial increases in cotton prices in 1974/75, only to deteriorate again as a result of steep increases in the prices of imported goods. The Chadian State is being obliged to assume an increasing proportion of cotton production costs in order to maintain the level of growers' incomes. The fact that the State rather than the farmers is meeting these costs is unhelpful to efforts to reverse the unfavourable trend in the nation's terms of trade.

The 'motive' crop, cotton, is therefore producing only very slender results in a national economy whose primary agricultural problems are food development and self-sufficiency, development of exchanges between livestock breeders, graziers and crop farmers, development of productive employment in para-agricultural activities, movement of goods between regions, regional integration, establishment of food reserves, and so on.

This example highlights the restrictive nature of agricultural policies based almost exclusively on the hope of inducing rural development through the effect of efforts limited to 'motive' crops alone.

The Zaire evaluation shows virtually the same thing. Cotton, regarded as the motive crop has held back production of maize, for which there were excellent outlets.

The second example shows how schemes which concentrate too exclusively on a limited number of crops which are considered to be the 'motive' crops can easily become remote from the farmers' main priorities. This creates a fundamental difference of outlook between the supervisor and the supervised. The farmer recognizes the value of the supervisor's advice[1] in the field with which the latter is concerned, but his own priorities differ from those which the supervisor seeks to impress upon him. Hence the supervisors' many disappointments in activities which hamper the farmers' priority tasks: early sowing of groundnuts or cotton, weeding, latest protective treatments for cotton plants, care of coffee plants etc.

The evaluation of the work done in two SORADs in Togo shows that all resources and supervisory facilities were directed at cotton and coffee. The broad-fronted supervisory staff allocated to the SORADs were disbanded following the setting-up of SOTOCO and the SRCC, which were put in charge of cotton and coffee respectively and were entrusted with most of the resources available, including the best supervisory personnel from the SORADs.

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[1] All the surveys report that relations between farmers and supervisory staff were good and point out that the farmers' failure to adopt new methods demonstrated to them was attributable to factors unrelated to the supervisory services.

The survey carried out among farmers shows that, although coffee and cocoa still provide growers with very satisfactory incomes where conditions are favourable, cotton and groundnuts are not giving such good results.

The table below shows how the various crops rank in the eyes of producers, according to a survey in which 1 075 producers were interviewed.

	Central Region	Plateaux Region
Ranking of crops according to income produced, in the past	Sorghum Yams Rice Manioc Cotton Groundnuts	Coffee Cocoa Maize Yams Beans Cotton Groundnuts Sorghum Manioc Rice Palm-oil
Ranking of crops according to income produced, today	Sorghum Yams Manioc Groundnuts Cotton Maize Rice	Cocoa Coffee Maize Manioc Yams Beans Sorghum Rice Cotton Groundnuts Palm-oil

If this is a true reflection of the situation, it is easy to understand the farmers' covert opposition or mere indifference to sectoral supervision which is planned, not with a view to development of domestic trade within the country (diversification of crops, internalization of economic flows), but with a view to increasing trade outside the country or region (monoculture, externalization).

This same conclusion may be drawn from the fact that the sectoral programmes put into effect under policies to promote 'motive' industrial crops are implemented uniformly over vast regions without regard to local potential and the corresponding capacities for diversification.

Several of the reports point out, for instance, that cotton-growing or groundnut-growing areas should, according to the local officials, have been confined within limits corresponding to the potentialities offered by the soil and climate. Such measures appear rational from the agricultural point of view, but why then should those unlucky enough to find themselves outside the areas with a high potential for growing cotton or groundnuts be left to their own devices? In practice, supervision policies concentrating exclusively on export crops are far from conducive to flexible development of local agricultural potentialities and diversification of production.

To consider the technical aspects, it has to be observed that the effectiveness of the 'motive' crop in boosting farming activities is only very limited. The projects made the assumption that the techniques used for intensive production of cotton or groundnuts (single crops in rows, high densities, animal-drawn tillage etc.) were equally applicable to the 'motivated' crops (cereals, tubers etc.). However, in the absence of data from tests, it is not certain that intrinsic improvements in traditional farming systems can be achieved prior to the introduction of methods to improve the efficiency of labour (selection of varieties, manure, densities of companion crops, plant protection, biomass and water economy etc.). For example, the techniques of growing companion crops (with each other or with arborescent species) do not seem to have been studied in sufficient depth for it to be possible to claim with certainty that intensification methods which have been tried and tested with cotton are intrinsically more efficient than traditional methods when applied to food crops.[1]

The effect of motive crops as a stimulus for other farming activities is not clear; investment and the propensity to technical change result from a variety of incentives, which are found as much outside as within the sectoral context of these crops.

We have seen, for instance, that in Chad the spread of animal-drawn equipment has been encouraged by profitability at several levels (cotton + hiring out + carting + fattening + cereals); we have also seen that investment in this equipment has been made possible by reasonable returns on factors of production (land and labour) and that, as in Zaire, Rwanda, Togo and other regions, returns on factors were often better with food crops (bananas, maize, sorghum, yams etc.) than with those considered to be motive crops.

From the technical viewpoint the logic of healthy farm management dictates that one activity should not exclude another and that all the technical coefficients should evolve simultaneously (cf. 3.3.2.3). It is difficult to see how, in an agricultural system affected by constraints and limiting factors of various types (cf. 3.1), an essential crop (sorghum, yams etc.) can be relegated to an insignificant status. This nevertheless is what has been done

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[1] This can be illustrated by the example of striga, a weed which causes great damage to sorghum grown as a single crop in Chad, but which can be severely curtailed by growing sorghum and millet as companion crops.

in several intensification schemes aimed exclusively at motive crops, with food crops benefiting - at best - from 'fall-out'.

The Gandajika and Bugesera-Mayaga farming communities and the Badeguicheri Valley and Zinder Department projects were aimed at wider objectives, in particular achievement of better balances between population and available resources in the areas concerned.

These projects contain elements of land utilization and development policy: establishment of a rational structure for land occupancy (in farming communities), campaign against soil erosion (Rwanda and Niger), terracing etc.

Projects carried out in pursuance of such policies are subjected in a very direct way to the test of traditional behaviour patterns, since they are closely bound up with the subsistence of the populations concerned. They have to meet such major difficulties as the lack - sometimes total - of resources to pay for factors of production, the limited availability of manpower for investment in human resources,[1] the lack of organization or disruption of trade in foodstuffs, the lack of information on traditional farming methods, the poor quality of agronomical research findings, particularly in relation to the practical scope for their implementation.

In Rwanda, considerable work has been done in research, but the small farm model proposed does not seem to satisfy local farmers, who prefer to carry on using their traditional methods within the systematized land tenure structure.

This model was based on researchers' observations and not on an analysis of the needs, aims, potentials and limitations of the farmers in which they were consulted.

Detailed analysis of the action carried out shows that it often lacked the general vision of a comprehensive policy aimed at satisfying national food requirements and establishing a balance between the population and resources.

By way of example, the evaluation report on the Badeguicheri project draws attention to a number of fundamental constraints, such as overpopulation in relation to resources, competition between cotton and sorghum on alluvial soils, competition between grazing and cotton growing, shortages of cash to pay taxes, deforestation and abandonment of fallowing resulting in erosion of slopes and silting of valleys, abandonment of traditional terracing systems, decline in animal feed resources, lack of firewood, a high level of seasonal migration caused by lack of paid work and the consequent lack of manpower for investment in human resources during the dry season, shortcomings of the communications network and health infrastructure.

Set against this series of problems and constraints, the action put in hand aimed at: an increase in cereal production coupled with its gradual transfer

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[1] Especially in Niger, where the population is obliged to emigrate during the dry season to work in regions where conditions are more favourable.

from alluvial soil to terraces, an increase in cotton production on alluvial soil, an increase in kitchen-garden crops helped by construction of 50 wells, distribution of seed, improvement in small livestock breeding, a campaign against soil erosion (1 500 ha) and extension of arable surfaces, organization of participation by farmers through the setting-up of cotton growers' cooperatives, development of the cotton storage infrastructure, roads, village pharmacies etc.

No mention was made of objectives concerned with balancing crop distribution, reafforestation, replacement of fallowing by other methods of soil regeneration, relations between graziers and crop-farmers, reduction of migration, marketing and storage of foodstuffs.

It appears that projects aimed at meeting food requirements are apt to be distorted by the 'strategic' option according to which the development of cash crops is considered the only way to achieve an increase in subsistence crop production. This is very advantageous for those who live from the cash crop in question, but it is not necessarily the best way of modernizing agricultural systems. By way of comparison, one may ask what would become of a European farmer with a mixed farm (livestock, wheat, rye, forage, beet, peas etc.) if a 'project' imposed on him limited technical investment, use of fertilizers, protection of crops and so on to beet only, this because of the special attractions of the sugar market from the viewpoint of the public institutions and certain powerful industrial interests.

5.1.4. Participation strategy

A fourth strategic option is concerned with the approach to involvement of local communities in rural development. Their participation can be visualized either as an obligation (compulsory work) or as interest shown by them in changes proposed by the 'developers'.

Rank-and file involvement in development is not an end in itself, but is aimed at as a means of attaining specific objectives. However, it is clear that it can have completely different meanings depending on the priority attached to the objectives by the communities concerned. The extent of this type of involvement can also be considered a barometer of the interest taken by peasant farmers in a particular project.

Of all the projects evaluated, only the 3M project (Zinder) set itself the task of pursuing a strategy of voluntary participation by the local community in the development process. It was deliberately set up as part of the pre-existing cooperative context. The cooperative aspect does not appear to be the decisive factor in this intervention policy. There are cooperatives in Togo, the Central African Republic, Rwanda and Upper Volta. In fact, the essential feature seems to be the combination of several factors:

(i) the deliberate affirmation of the competence of local farmers and officials to take decisions on action to be carried out and methods to be used;

(ii) the constant emphasis on dialogue between farming communities and officialdom;

(iii) the cooperative policy.

In contrast with the other evaluation reports, which frequently stress the shortcomings of the operational agencies (supply delays, poor quality of equipment provided, insufficient supply of seed etc.) or the refractory character of peasant mentalities, the 3M project evaluation report attributes its success to the assumption of certain activities by the local population: the takeover of cooperatives by the traditional Hausa hierarchies, the major scale of traditional trade, the development of cowpea production when market conditions are favourable, the fact that complete responsibility for the project was in the hands of indigenous officials etc.

Similar examples are also to be found in the evaluation report on the Badeguicheri project: the relative success with the construction of terraces because this work corresponded to traditional skills, the workers employed to build the walls were able to negotiate their rates of pay etc.

Consequently, in project evaluation in relation to this fourth policy objective, the criteria for takeover of responsibilities by the local population may be regarded as decisive contributory factors of success or failure. The criterion for takeover is linked to the 'social control' or 'cultural control' enjoyed by the local population over agricultural development. The most important requirement seems to be for the farmers to master new techniques and to integrate them into their farming system, without having to go against the concepts and economic and social relationships characterizing their group.[1] The most important factors in the takeover of new methods are as follows:

(i) maintenance of existing levels of economic responsibility on farm holdings (2.1.2),[2]

(ii) compatibility between innovatory concepts and traditional concepts; more specifically, scope for employing peasant skills in the schemes envisaged,

(iii) adherence to the cultural machinery for assimilation of change, especially through community teaching methods (commonly referred to as 'palabres' - parleys),

(iv) assurance of the durability of reliable supplies of the resources needed to put changes into effect.

The takeover of a scheme by a community indicates that it has every chance of remaining viable since, in so far as the changes introduced have been assimi-

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[1] Outside the context of the projects evaluated, mention can be made of the case of the traditional groups of young farmers (Nâm) in Yatenga (Upper Volta) which have evolved towards collective modernization of farming.

[2] In this connection, see for example the case of the 'Farmers' Councils' of Ingalaland (Nigeria), a private project evaluated by G. Bertrand (Doc. 29).

lated and mastered, there is no reason why they should fall back on their old methods, unless some of the resources required are so dependent on outside sources of supply that they suddenly cease to be available.

This type of takeover may concern some social categories more than others. In some cases, only one category (generally adult males) will be involved. Under such circumstances, a participation strategy will probably lead to disruption of social relationships within communities.

The choice of a strategy of voluntary participation has implications going beyond social philosophy alone. It is a matter of efficiency, some aspects of which have been analysed above (centralized or decentralized management) (cf. 5.5.1).[1] In communities which are so complex and varied when it comes to economic decisions (2.1.2) and capable of cutting down their work to the minimum level needed for their own subsistence (2.1.3), it is difficult to see how any scheme or innovation can make a significant and lasting contribution without the willing participation of the farmers concerned. Conversely, clear advantages are to be derived when local communities contribute their material and financial resources and their work to supplement the material and financial contributions of institutions. Where there is no such response, action undertaken with foreign aid cannot be taken over at national economy level; peasant farmers back out when they are asked to pay running costs and jib at tasks imposed upon them unless they are offered substantial advantages in terms of remuneration.[2]

5.1.5. Technical assistance strategy

All the projects evaluated have recourse to European technical assistance. Except in the 'aid to production' programmes under Second EDF and the 3M (Zinder) project, technical assistance played an important part in the various phases of planning and execution (as may be seen from the table given in 2.2). In a few cases, the development company supplying technical assistance

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[1] The extent to which considerable improvements can be made in efficiency through participation is illustrated by another project financed by the EDF, currently in hand in Niger: the hydro-agricultural development of Toula. The Groupements Mutualistes de Producteurs (producers' mutual groups) were entrusted with the management of such equipment as they were qualified to manage and with the planning of their working and production schedules. In relation to comparable developments in neighbouring areas, it has already been found that
(a) the level of levies for maintenance of infrastructures has fallen by 50%,
(b) much less difficulty has been encountered in collecting levies and
(c) there has been as considerable reduction in the administrative facilities needed.

[2] Regarding this section, see the following references: Docs. 15, 17, 19, 28, 30, 31, 32 and 33, and more specifically: E. Morss, Strategies for Small Farmer Development (Doc. 26).

had a financial interest in the marketing institutions (e.g. the CFDT holding in COTONTCHAD).

Technical assistance played an important role in the projects as determined by a variety of factors:

(i) the desire of States to achieve rapid results in agricultural production;

(ii) the lack of local technical staff and the hope of training replacements for them so that they could be assigned to medium-term work.

Some projects resorted massively to technical assistance (Ivory Coast, Chad, Central African Republic, Togo).[1] In Central African Republic, it may be said that AGROPROGRESS has been a substitute for an agricultural administration since 1974. Other projects had less massive recourse to technical assistance, which was more specifically limited to certain technical aspects of planning or studies. The 3M (Zinder) project was alone in restricting technical assistance to a supporting role, without direct operational responsibilities.

The dynamics of technical assistance should be studied in relation to the objectives assigned to it on the one hand and the possible alternative solutions on the other. As the evaluation reports show, technical assistance personnel are constantly confronted with various dilemmas.

Technical assistance personnel are frequently placed in the position of having to assume executive responsibilities. Under these conditions, since they are judged on immediate quantifiable results (agricultural output), they do not find enough time for training staff to take over from theselves or for planning and setting up methods and organizational structures suited to the level of competence of the staff due to take over from them. By doing this, they are working efficiently in the short term, but can sometimes compromise the medium and long term future of projects.

Some evaluation reports (Ivory Coast, Togo) state that the changeover took place without major difficulties, with expatriate staff being replaced gradually or hastily by nationals. However, replacement of foreign staff by local staff is only a limited aspect of the takeover process. Once the takeover has been completed, it is necessary to observe the progress of activities over the next few years before drawing conclusions. Changes in management, the volume of operational resources, investment capacity, political commitment of staff and the 'system' of technical relationships can often lead to a reduction in the level of activity. The level of activity after national staff have been in charge for two or three years should be compared with the level which would have been achieved by the same stage if the technical assistance role had been less pervasive and concentrated on training, research and advisory services rather than performance of operational tasks.

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[1] In 1973, SODERIZ had 119 technical assistants, 22 from the West and 97 Chinese; 8 consultancy bureaux were involved in the preparatory phase.

SODERIZ provides a good example of project organization which relies heavily on technical assistance personnel in positions of responsibility at head office and in the field, themselves assisted by several consultancy bureaux. The evaluation report sets out the advantages and disadvantages of such massive recourse to technical assistance.

The advantages listed included competence and efficiency - monitored by Ivory Coast officials[1] - thanks to which much successful technical work was achieved. SODERIZ was able to call on the experience of a large number of rice specialists who had worked in other regions of the world.

Among the disadvantages, the report notes that expatriates occupied all the key positions of responsibility right up to the end of the period.Under these circumstances, the technical assistance personnel were unable to perform their advisory and training functions with the necessary objectivity. In particular, they did not always display a clear understanding of the socio-political context in which SODERIZ had to operate. They did not realize how dangerous it was for the company's future for it to become too 'technically minded' or 'redevelopment oriented', having regard to the need for economic analysis. It did not appreciate that, quite apart from the company's own capacity to invest (construction of dams, hydro-agricultural developments), there was also the practical question of whether the local staff due to take over from them and the rural world were willing and able to assume control of the schemes they had developed. The excessive polarization of the technical assistance personnel at SODERIZ and their short-comings in the field of economic analysis emerged as major factors leading up to the difficulties experienced by the company in 1976.

The 3M (Zinder) project provides an example of a different type of technical assistance strategy. In this case, the technical assistance personnel never assumed executive responsibilities. All project activities were therefore determinded in the light of the regional staff's appreciation of the rural world and their ability to carry out the tasks assigned to them. It is difficult to make useful comparisons between these types of strategy, since the 3M project did not involve major investments on a scale comparable with those carried out by SODERIZ.

When they exercise executive responsibilities in projects, technical assistance personnel can be placed in a second dilemma: they may find themselves taking over from the local staff rather than supporting them. Acting according to their commercial logic, consultancy bureaux will accept the assistance contracts offered to them, whatever the effects on future development work.

In Central African Republic, the State put AGROPROGRESS in charge of all aspects of the project. This arrangement compromised the role of the public institutions, so much so that, when the project came to an end, the local supervisory staff were not absorbed by any national institution. In this case,

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[1] Several expatriates who were considered incompetent were dismissed and replaced by others. This cannot be done so easily with local staff.

the consultancy bureaux had been called upon to work in a way which offered no prospect of continuity through the training of nationals to take over responsibilities. It had to operate in a context which very directly determined the difficulties of the project (difficulties of transport, land reform, deployment of rural workers etc.) and it had no means of incluencing this context. On the other hand, there can be no doubt that without its contribution, there would have been a sharp fall in crop production. In this case, it would be necessary to make a detailed examination of the advantages for each of the participants involved in the field: the peasant community, the State and the technical assistance agency.

If the commercial logic of consultancy bureaux requires them to seek out contracts and prolong their life, the logic followed by staff recruited to work in the field is very different. The reports record very rapid turnover of expatriate personnel,[1] particularly when the organization and socio-political environment of a project are unstable (fine examples of this are provided by Central African Republic, Togo and the livestock section of the cotton plan in Chad). The consultancy bureaux, recruiting their personnel specifically for the purposes of these contracts, are not always able to provide satisfactory professional working conditions for their staff. Consequently, expatriate personnel recruited in this way often lack experience and motivation. They are ill-equipped to gain a thorough understanding of the peasant world and have very little time in which to evaluate the operations in their charge or to innovate.

Several of the projects engaged the services of CFDT (Zaire, Niger, Chad) or staff from this company (Central African Republic, Togo). As its name implies, the function of this company is the promotion of textile crops; its working methods and relations with research agencies are accordingly ordered around this object. It is therefore difficult for this company to avoid polarization towards cotton growing. Consequently, although technical assistance from this source proved efficient in the field of cotton growing, it lacked the experience as well as the physical and intellectual resources to promote the development of overall farming systems rather than that of cotton alone. Hence, the selection of CFDT implied in itself a shift in the intended balance of project objectives.

The evaluation report on the Badeguicheri Valley (Niger) notes, for instance, that the project placed particular emphasis on cotton whereas it was supposed to have been concerned with all peasant farming crops. The CFDT applied for penalties to be imposed on farmers using their richest alluvial land to grow sorghum rather than cotton.

In Chad, the supervisory staff of the Office National de Développement Rural have been given the nickname 'boy-coton'. The peasants associate them exclusively with the promotion of cotton, although the Office is supposed to be concerned with all crops.

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[1] In Togo, expatriate staff, excluding the head of the project, stayed for an average period of 17 months.

In Zaire, there were two separate agricultural programmes in neighbouring areas in the vicinity of Gandajika. One, financed by the UNDP, was concerned exclusively with promotion of maize while the other, financed by the EDF with technical assistance from CFDT, concentrated mainly on cotton.

The choice of a specialized technical assistance agency like CFDT amounts to an option such as those described in earlier sections, particularly those on the motive crop strategy and authoritarian supervision. It can lead to the consequences described in sections 5.1.3 and 3.3.2.3 on the dissociation of agricultural activities and the disruption of technical coefficients. It has the secondary effect of concentrating the strengthening of institutions on those parts concerned with cotton, to the exclusion of all else.

Other problems arose in connection with technical assistance.

Attention is drawn to the difficulties experienced by some national institutions in making use of reports on studies carried out by technical assistance agencies. It is probable that studies carried out at a lower level by national staff, involving the rural communities concerned and with support only from expatriate personnel, would be of more practical use. It was found that the results of major studies carried out in Niger, Togo and Central African Republic were either not used or became available too late.

Mention is also made of a tendency on the part of technical assistance agencies to oversophisticate technical proposals rather than adapting them to ambient economic and cultural conditions. The Ivory Coast rice-growing programme should be studied in greater detail from this viewpoint. The Ivory Coast authorities, influenced by Italian industrial interests, invested in several high-output technologically advanced rice-mills. In 1972, these were operating at between 10% and 20% of capacity because of competition from artisan rice-millers. The technical experts' response was to recommend vast hydro-agricultural developments to supply the paddy needed to get the rice-mills operating at full capacity. The decision to act on this recommendation, with enthusiastic encouragement from technical assistance quarters, caused the management of the company to lose interest in rain-fed rice, which had provided between 90% and 95% of the entire crop in 1972, and led to increased competition with traditional rice-millers, who found themselves faced with a ban on imports of artisan rice-husking equipment.

Another characteristic of technical assistance is a common tendency to insulate itself. It sets up its own network of technical and scientific facilities; it operates according to its own system of remuneration; it has its own operational resources. When recognizing the need for technical assistance in projects, it is necessary to take account of the conditions under which it will be provided; these conditions may be unfavourable from the viewpoint of psychological and social relations between expatriates and local staff. In this connection, there is reason to doubt the efficiency of the system of training by opposite numbers or peers. There is in fact very little parity between a technical assistant and his opposite number; they generally have little in common culturally, in terms of training and experience, in terms of responsibilities, pay and benefits, or in terms of socio-political constraints. As the expatriates are better placed in all these respects, their

opposite numbers are generally inclined to leave them to do the work. Moreover, when expatriates leave and their opposite numbers inherit some of their advantages, this often creates a gulf between senior local staff and their subordinates.

The 3M (Zinder) project succeeded in avoiding this difficulty. Although paid at the level of expatriate staff, the technical assistance personnel confined itself to an advisory role. No attempt was made to set up a structure of opposite numbers and the Comité Départemental de Développement, which was in charge of the project, was able to take decisions without reference to 'parallel' technical assistance systems.

In the Eastern Kasai project in Zaire, there were no local opposite numbers working alongside expatriate staff. The expatriates were generally replaced by their most competent subordinates, who had originally learnt their jobs at lower levels and shown outstanding industry, adaptability and competence. This method seems to have given better results than the 'opposite numbers' system.

Technical assistance strategy needs to be studied carefully at the outset of projects. It is not certain that all projects require substantial technical assistance from the outset. Efforts could be made to find more flexible arrangements under which nationals could be put in positions of responsibility immediately (allowing for prior training). The immediate objectives assigned to technical assistance must at all times be seen in relation to the longer-term objectives of autonomous development.

However, due weight must be given to the fact that States do not always provide the staff needed for projects in good time. Moreover, when local staff are transferred frequently, continuity of training and preparation for take-over of responsibilities become impossible.

The evaluation reports do not provide a basis for further discussion of technical assistance strategy. This is a difficult problem which should be analysed in greater detail in the light of several criteria: objectives in the short, medium and long term; institutions; cultural contexts; political contexts.

5.2. STRATEGY FOR ORGANIZATION OF THE INSTITUTIONAL ENVIRONMENT OF RURAL DEVELOPMENT: ASPECTS SPECIFICALLY CONNECTED WITH THE VARIOUS SERVICES AND FUNCTIONS

The term 'encadrement' (supervision) is generally used to describe the range of services provided for farmers by development agencies and companies. This term covers a wide variety of activities ranging from training of farmers to initial marketing of produce, from organization of producers' associations to collection of annual loan repayments, from organization of supplies of inputs to instruction in methods of combating soil erosion and so on. The 'encadreur' (supervisor) is generally seen by local farmers as the representative in

their village of technical and economic authorities about whose hierarchies and organization little is known except that they are subject to frequent changes. It is therefore necessary to study the various supervisory functions separately in order to assess the effectiveness of their contribution to rural development.

5.2.1. Information, instruction, training

All the projects evaluated employed rank-and-file staff at village or local area level known as supervisors, monitors or instructors, whose job was to familiarize farmers with methods proposed by the research agencies. Broadly speaking, credit is due to the industry of these workers, who are generally of a low educational level and have to work in unfamiliar environments, using languages of which they may not have a perfect command and often inadequate resources (particularly for travelling around their areas). Their status is at the lower end of hierarchies with little hope of promotion, they have no security for the future and sometimes compare their circumstances with those of school-friends who have found stable and better-paid work in the police, the army or the public service.

The evaluation reports indicate that village communities are generally well disposed towards supervisors, since they are all aware of their need for technical information.

It would seem, however, that the advisers' information role is generally restrictive and limited to a few techniques which farmers are asked to adopt without regard to overall conditions on their farms.

The reasons for this are:

(i) the very heavy emphasis on cash crops, and sometimes export crops only, in the planning of advisory programmes;

(ii) the advisers' level of training, which is not of a sufficient standard to enable them to master the whole range of agricultural problems raised by farmers;

(iii) failure to give due weight to the farmers' own skills and activities and a tendency on the part of advisers to address them 'as if they had nothing else to do but listen to what they had to say'.

Although the farmers' need for technical information is great, the official response is often weak. The restrictive nature of the advisory services has the following consequences:

(i) Farmers adopt an 'à la carte' approach to technical advice, picking what interests them and following the advice insofar as conditions on their farms permit. For instance, a farmer will apply the cotton-spraying programme up to the third treatment, but abandon the subsequent stages to attend to work falling due on his other crops.

(ii) The limitations of advisory work are quickly exposed when the whole range of constraints preventing farmers from adopting the techniques

proposed are not appreciated. For example, the Chad report states that, in 1974/75, there was no longer any correlation between the numbers of ONDR supervisory staff and the results obtained with cotton-growing intensification (areas under intensive cultivation and yields).[1] As a result of their own working experience, the farmers were in fact better informed in some areas than the supervisors. Under these circumstances, the advisers' role is limited to organizing certain activities (marking out plots, distributing sprayers etc.) in association with the village authorities.

The same situation is found in Eastern Kasai (Zaire), where the farmers have long experience of growing cotton.

The technical advisory services are generally unsuccessful at adapting to the new situations which they themselves create; this is attributable to a lack of overall investigation and basic training, which enable them to appreciate the realities of peasant farming and continually adjust their advice to take account of them.

It is clear that information about peasant farming conditions is generally inadequate, and in some instances rudimentary. The reports record the absence of direct tests in the field to determine the technical coefficients of production and the inadequate provisions for continuing evaluation of socio-economic conditions. They also note the supervisory agencies' difficulties in absorbing data gathered through studies or economic analyses when available and the resultant low level of support given to officials in the field.

It also emerges that the supervisory agencies generally have a tendency to authoritarianism. All the reports refer to the various degrees of pressure and sometimes coercion which they exert on farmers, as mentioned above. However, there is no suggestion of any relationship between the extent and intensity of pressure of this type of supervision and the productive results obtained.

Depending on circumstances, authoritarianism in its various degrees leads to:

(i) indifference if not opposition on the part of farmers to certain activities, especially the 'boss's crop' and techniques associated with it;

(ii) lack of interest among supervisory staff in their work, which becomes boring and repetitive in an environment which is sometimes progressing more rapidly than they are and where their responsibility for enforcing directives and applying sanctions puts them in a bad light;

(iii) frequent tension between institutions and communities or cooperatives which, when they are dynamic, strive to safeguard their technical and economic independence;

(iv) reaction against supervisory services when a project fails: when they are authoritarian, peasant communities readily hold them responsible

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[1] E. Morss reports the same thing in 'Strategies for Small Farmer Development', (Doc. 26).

for setbacks; when they give support and advice and encourage constructive thought, the farmers can accept failures and learn from them.[1]

Authoritarian tendencies are also prevalent within the supervisory agencies themselves, where they have the twofold effect of restricting capacity for innovation in the advisory services offered (technical fields and methods), especially in relation to the wide range of subjects of concern to farmers and hampering the internal training of staff.

The status of being 'alien to the environment' attached to supervisors by authoritarian approaches which are themselves concerned exclusively with the externally oriented activities of farms tends to guarantee that the development schemes proposed will not be taken over by peasant communities and will in many cases be ineffective.

Various other problems connected with the organization of technical supervision were mentioned by the evaluators.

As regards education, attention was drawn to the very low level of training among supervisory staff and to communication difficulties arising out of the use of French or some other lingua franca. When young supervisors are recruited from outside the peasant community or from outside the region where they are to work, they are unfamiliar with the local language and socio-economic and cultural context. It is difficult for them to gain acceptance from the community without going through the local authority and, when they do this, they shoulder local conflicts in the same way as the authorities do.

When they are drawn from the community itself, they are familiar with the language and social context, unless they have been culturally alienated by their schooling; however, if they are too young, their status (they are classed among the young men, as described in section 2.1) deprives them of the necessary authority.

The training which they receive is generally very narrowly based on the limited technical themes to be introduced through the projects to which they will be assigned. It does not equip supervisors to analyse the full range of constraints affecting a farm. Should they happen to be called upon for information outside their 'official' field, they have none to offer. Under these circumstances, the supervisor is out of his depth; farmers know more about his job than he does, regard him as no more than someone through whom they have to pass in order to obtain inputs and equipment and only adopt those of his proposals which they find interesting. This remoteness between the supervisor and the farmers whom he is supposed to train is increased further when he is entrusted with duties calling for the direct exercise of authority: demarcation of cultivation blocks, superintendence of village markets, collection of loan repayments etc.

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[1] In this connection, see 'Bilan de l'animation rurale masculine, juillet 1966 à juillet 1969' in the prefecture of Kibungo (Rwanda) AIDR, 1969, pp. 88-89.

Far from enough was done in the sphere of training in instruction techniques for supervisors. They worked individually with farmers; in most cases, and especially in Upper Volta, they concentrated their attention on those whom they thought to be progressive, or 'leaders'. The 'communal' approach was tried as a lever in some areas (credit for instance), but it could certainly not be said to have been a training strategy. This would have needed training for supervisors in the techniques of teaching individuals and groups and in the scope for applying them flexibly to suit the various categories which they need to reach (men, women, young people, headmen etc.).

However, it would be misguided to set too much store by teaching methods. They would have been powerless to influence the lack of economic interest in the technical proposals put forward by supervisors which was often displayed by farmers.

Quite apart from the need to train supervisors in instruction techniques, there is an urgent need to redesign the content of agricultural training.

In Zaire and Chad, for instance, the evaluators comment on the bookish, impractical and biassed nature of technical training. Agricultural subjects are studied in relation to specific crops and in the light of modern farming conditions. They are not placed in the context of the prevailing farming conditions familiar to peasant farmers. Very little attention is given to agrarian economics, rural sociology, teaching methods, land development techniques and so forth. The situation may be summarized by saying that agricultural college students are taught very much more about the modern agriculture which peasant farmers will be applying in the future than about what they are doing at present.

With the exception of the 3M project, the supervisors working on all the projects evaluated were paid out of public funds.

There are grounds for doubts about this arrangement, common to all French-speaking African countries, which requires centralized management of development personnel with all the risks of inefficiency which it involves: homogeneous application of technical methods throughout heterogeneous areas, unsatisfactory response to questions raised by local communities, absence of real control over work in the field etc. When he is not subject to any control by the community he serves, a supervisor finds it relatively easy to circumvent some of his responsibilities or interpret them in his own fashion, which he would clearly not be able to do if his career were subject to control by the groups for whose training he was responsible. A step in this direction has been taken in Chad, where the GDSs monitor the work of veterinary assistants. For its part, the 'auto-encadrement' (self-supervision) aimed at in the 3M project was planned with this sort of problem in mind. It is nevertheless highly demanding and requires a higher standard of training at levels of responsibility in the rural development institutions. Development staff need to be capable of coping with more varied requests from diverse socio-economic groups.

Constant references are made to the difficulties experienced by the agencies in meeting farmers' demands in certain areas which are of concern to them and

to the repetitive nature of advisory work limited exclusively to crops. Irrespective of the technical competence of the farmers, the same technical messages, the same instructions on the use of inputs, the same equipment and sometimes the same norms for areas under cultivation, the farming calendar, credit etc. seem to be proposed. If the advisory staff offered instruction at various levels, with rising scales of complexity, financial cost and workload, they would be providing a service more in keeping with the heterogeneous nature of the farming world and its various socio-economic subdivisions (cf. 3.2).

Another difficulty reported in connection with the projects evaluated is the fact that the staff structure and policy are unfavourable to the promotion of experienced rank-and-file staff. It always seems easier for a young boy recently out of school than for an experienced trainer from a rural background to obtain a position of responsibility (in charge of an area, a crop etc.). Unfortunately, trained supervisory staff at middle and senior levels are sometimes much more concerned with their administrative careers than with their responsibilities in the rural environment.

Finally, mention should be made of the limited capacity for initiative, innovation and investment of the supervisory agencies. The national institutions often find it easier to absorb operating aid than to deploy funds for capital investment. This means that they readily have recourse to foreign enterprise or technical assistance, not only at the preliminary study phase, but also during the course of projects. However, when exhaustive studies have been carried out by foreign consultants, the national institutions have not always been able to assimilate them, so that they have been of only doubtful usefulness. The same applies to other types of capital investment (roads, storehouses, housing, cattle-pens, small dams etc.) responsibility for which is often entrusted to foreign companies.[1] Limiting the extent of such recourse[2] and linking operating aid to the efforts made by agencies to invest in rural development on their own account could be a very instructive solution. This point is raised by the 3M report (Niger) in particular. The fullest possible takeover of decision-making and implementation of capital investment projects by the staff of the agencies concerned from the outset of projects offers an assurance of continuity. It is possible that, in order to do this, the projects should include preliminary phases of intensive training for staff and take steps to ensure their permanency. In the projects evaluated, there were no such phases of intensive training geared to the working environment. There is no doubt that the availability of aid funds at short notice under simple procedures would be very favourable to the development of capacities to invest.

Other training strategies can be adopted in the rural world, as witness the wide variety of schemes in operation in Black Africa, outside the context of major projects financed by the EDF. All are based on local communities' abil-

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[1] This is particularly true of Togo, where foreign contractors were brought in to build tracks and wells.

[2] If necessary, by modifying procedures for access to finance.

ity to assume responsibility for training of their members and pay the costs; the training must be of direct interest to them and they have to be able to find suitable instructors from the institutions.

The first priority is to establish clearly who is to be the recipient of training: an adult male grower who will unfailingly comply with technical directives in order to maximize production of clearly defined crops under optimum land and input productivity conditions, or a member of a rural community integrated with his own socio-economic context, earning his living by working the resources on his land according to their varied potential and his best interests, playing his part in the national economy's domestic or foreign trade and contributing to the best of his ability to the development of his local and national community as long as he benefits by such development?

In the interests of effective overall development operations, the choice must go to the second 'target' for reasons largely explained above, which may be summarized as follows:

(i) the multiplicity of economic decision-making, levels in the rural world and the need for a specific approach to each group to take account of its particular interests and aims;

(ii) the fact that it is impossible to develop a single agricultural activity in isolation without quickly running into the bottlenecks inherent in other equally important activities;

(iii) the increasing trade in local agricultural produce, resulting in a relative improvement in returns on labour available from food crops compared with cash crops;

(iv) the need for measures aimed at finding new ways of establishing the various social categories (young people in particular) in the rural environment, which can only be done by negotiations conducted within communities themselves and going beyond the scope of cash-crop production alone; in the absence of such measures, cash-crop farming is likely to be jeopardized in the same way as food-crop farming, in villages lacking manpower because of rural depopulation;

(v) the need to deploy maximum manpower, technical and financial resources in efforts to improve rural life, hence the need for as many different types of initiative as possible.

The socio-cultural and economic viability of projects undertaken with EDF aid necessarily depends on the choice of strategy aimed, not merely at the 'producer', but at the 'rural inhabitant' working the resources of his land and cooperating with the technical, economic and cultural authorities in a combined effort towards the achievement of development through optimum mobilization of all physical resources and manpower in the rural environment.

Moreover, the evaluation reports show that groups of farmers are increasingly assuming responsibility for their own training and paying for it themselves. Some nominate 'their' agronomist whose role is very similar to that of the traditional 'chef de culture'; others pay for the training they need to learn how to manage their own cotton markets; others hold discussions in associa-

tions of men and women on the training programme which they would like to see organized by the CFPA (centre de formation professionnelle agricole - agricultural training college); young people form farming study and work associations; local farmers and officials form associations working for improvement of living and farming conditions in the village etc. This wealth of local or regional initiatives which owe nothing to official aid provides ample evidence of the rural community's ability to organize training for its members and indeed to pay for it. This facility is not often matched by the development institutions; on the contrary, their technical officials, programmes, procedures and teaching methods are generally inflexible and restrictive.

The evaluation reports point up the need to review the supervisory role in terms of the calibre of men and women required. They should be experienced people recruited from the rural world itself on the basis of their knowledge of the geographical and human context and their overall technical competence in subsistence farming, cash crops and stock-farming. Their training would concentrate on analysis of farming systems and the conditions under which they have to operate and they would become members of teams of 'technicians' (technical auxiliaries) able to talk with the various categories of peasants and their womenfolk about their problems and to cooperate with them and the technical institutions in finding the most suitable solutions. Their work would concentrate on vocational training, which would be based primarily on programmes gradually evolved in the course of discussions among farmers on the particular requirements of their own groups. Their role would be confined to training and instruction only, while other officials would be responsible for overseeing duties. They would be subject to a considerable degree of control from the farmers' groups concerned, on the one hand through organization of their work and on the other hand by virtue of the fact that the villagers would be paying all or part of their wages. Since they would have to use different methods when dealing with different categories of the peasant community, they would need to be trained in instruction techniques suited to each of the main categories.

These trainers would be part of a local and regional institutional system capable of responding rapidly to requests for assistance from the peasant community or referring them to the regional or national institutions.

This profile presupposes fundamental reforms in technical training, in the institutions and in the attitudes of 'developers'; these would be long-term reforms and there may be some lessons to be learnt from several experiments already being conducted outside the context of the projects evaluated.

5.2.2. Support for organization of the rural environment

Rural development officials are all agreed on the need for action aimed at organization of the rural environment. They refer to 'organizing', 'structuring' or 'restructuring' the environment.

Referring back to Part one, we find the following activities along these lines in the various projects evaluated: the OBM cooperatives in Rwanda; 'auto-encadrement' and the UNCC cooperatives in Zinder (Niger); the village

groups and GMPs (producers' mutual groups) in the Badeguicheri Valley (Niger); the GDSs (animal health protection groups) in Chad. There were several instances of lack of coordination between projects and cooperative organizations which predated them: in Central African Republic the cooperatives were allowed to run down, in Zaire they were dismantled and in Togo they operated in competition with the project.

In addition, there were other structures which were unconnected with the projects but whose dynamism influenced the course they took: work associations based on lineage and age groups in Central African Republic; independent producers' groups in Togo (CETA, FERMAPRATO, DANYI-ATIGBA group); local development associations in Ivory Coast; village associations for the management of CFPAs (agricultural training centres) in Chad.

It is clear that the organizational projects set up by the more dynamic rural communities bear little resemblance to those established under the projects; this suggests that it would be fruitful to make a closer study of the spontaneous dynamics of rural organization. In many cases, moreover, when such organizations are genuinely set up and run by the rural community, they are not called cooperatives. Peasant farmers are suspicious of cooperatives, which have been imposed on them in the past by the State and they have unfavourable memories of them, including being cheated frequently by unscrupulous officials. A study of schemes organized by rural communities should provide answers to the important questions set out below in greater detail than in the earlier parts of this report:

Can independent farmers' structures be developed from projects whose objectives are defined outside the local environment and without adequate knowledge of its main priorities and preoccupations?

Can no role be played by traditional structures in the organization of rural development? If not, how can such structures develop to strengthen the process of rural development?

What economic and social advantages and disadvantages can arise from the independent development of local negotiating powers, which would enable farmers' groups to acquire a better understanding of the services provided by the technical agencies (after the example of 'auto-encadrement' in the 3M project or the GDSs in the stock-farming schemes in Chad)?

To what extent could the attribution to local structures of certain technical and financial resources and the corresponding decision-making powers improve the efficiency of projects? (remuneration of selected supervisors by villagers, optional investment programmes according to the needs of a cooperative or village, etc.).

In relation to these questions, the evaluation reports indicate first of all that, in the dirigistic framework of the projects and public or quasi-public schemes, it seems difficult to encourage the development of real powers of negotiation, since local initiatives rarely receive support from the public agencies, which are often ill-informed or unresponsive to evidence of dynamism coming to light outside the objectives planned by the national authorities.

In Rwanda, for instance, membership of the cooperatives run by the OBM is compulsory for all farmers in the farming communities. However, the conditions available to members are no different from those available to non-members, which means that members have no particular reason to take an interest in the development and management of their cooperatives.

The survey carried out among local farmers in the area covered by the COMOE (Upper Volta) ORD revealed that community development schemes are perceived as extensions of activities decided upon by 'those above'.

In Niger and Chad, when the cooperatives seek to organize themselves with a view to marketing their food-crop produce, they are forced to comply with the administrative regulations, which are primarily designed to protect consumers. Cooperatives are obliged to sell on the open market, but are not allowed to take advantage of market fluctuations working to their benefit (for instance, by stockpiling in order to sell between seasons).

At all events, the participation process is limited to the marketing of export products; as yet it is considered at the lowest level only and falls short of real economic negotiation. Given the heavy drain of taxation, the cooperatives (and indeed other types of intermediary) have only very limited scope for negotiating discounts, which therefore afford them only small savings. Under these circumstances, there seems no reason why farmers should be interested in establishing any more than the formalistic appearance of participation.

As a general rule, the African peasant world is not intimidated by a multiplicity of structures (cf. 2.1). Farmers are not worried about going along with rules and joining groups imposed upon them by development companies, as long as this gives them access to the technical and financial resources available through such companies. However, these rules only hold good for as long as the new structure is sustained by its promoter and the financial benefits still hold good, since the structure has no meaning to them otherwise. Unfortunately, the instability of the institutions' operational methods and resources contrasts with the stability of peasant life.

Farmers are called upon from time to time to take part in new projects or development policies involving membership in a succession of new types of group or association. Since they are never consulted and receive very little explanation of the reasons for these periodic changes, how could they have any confidence in them?

Attention was also drawn to a number of cases in which the local community's opinion of the relative importance of various crops was greatly at variance with that of the development company, which invested all its resources in a particular crop which, initially at least, was considered of only marginal importance by the farmers.

Two examples will serve to illustrate the points made in the preceding paragraphs. To facilitate management of the lowlands developed for rice, SODERIZ organized rice-growing groups which received aid under the terms of a 'progress contract' laying down conditions on operating methods, credit, repayment

of loans etc. With two crops a year, satisfactory yields per hectare could be achieved. From the SODERIZ viewpoint, the lowland crops were essential and necessitated the permanent presence of the farmers working in the rice fields. From the villagers' viewpoint, however, this was a marginal activity; the lowlands had never been farmed and their farming activity centred around the land for rain-fed crops. There may have been scope for lowland rice-growing, but in their view this was no justification for the complete revolution in their ways demanded by SODERIZ, which entailed working 300 days a year on rice-growing alone.

Similarly, CFDT, when formulating the technical programme which it intended to pursue in Chad, decided to set up producers' groups as part of the 'block cultivation'[1] policy in order to facilitate supervision and action against crop disease. Demarcation of blocks is the responsibility of local supervisors. It is done without reference to village land tenure rules, the only criterion being whether or not cotton is grown on the land. The procucers' groups therefore exist exclusively for the purposes of CFDT's field activities, and possibly also to facilitate enforcement of constraints imposed by it (compulsory cotton-growing). The local farmers, for their part, often jib at the block cultivation policy, since it leads to dual standards in the management of land. If they go along with it out of opportunism or because they have no option, they do not carry it on on their own account. Consequently, when the ambient conditions under which CFDT set up its organization disappear, the organization itself will disappear also.

In the Koumra region in Chad, the 'promotion humaine' ('operation Mandoul') programme run by BDPA organized farmers' groups which received substantial resources. Three years after the departure of BDPA, the evaluators tried in vain to find any trace of these groups. Memory of them had not lasted long, either among the local institutions or among the farmers.

This raises a fundamental issue of rural development strategy: why seek to support rural organizations set up from scratch in connection with a development project rather than promote and support the efforts of existing structures based on local communities' own conceptions? Although it is true that these communities should be preparing to assume responsibility for local and national development, they cannot be expected to do so in the context of a normative framework applied uniformly to all (men, women, young people, different regions) according to the specific objectives of one or more development agencies.

In order to ensure its efficiency in the medium and long term (assumption of responsibility for development by rural people), aid for rural projects must allocate an increasing proportion of its resources to support for local initiatives and organization which already have the necessary independence as soon as they are set up.[2]

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[1] Combining all a village's fields into a single 'cultivation block'.

[2] On the ground covered by 5.1.1 and 5.2.2, see E. Morss, Strategies for Small Farmer Development, (Doc. 26).

5.2.3. Marketing

Marketing problems differ according to whether the produce is to be exported, processed by local industry or traded for immediate consumption. Similarly, it is necessary to distinguish between the various stages: collection of crops, evacuation, preparation for market and storage.

In the case of export products, the specialized agencies and companies enjoy monopolies and handle all transactions from village markets to export ports, operating within the ranges of margins laid down by government regulation.

Depending on the individual case, these agencies either restrict themselves to marketing and processing (COTONTCHAD, ONAFITEX) or combine commercial functions with technical advisory services (UNCC, OBM, SOTOCO). As a general rule, there are cooperatives, which may or may not be connected with the projects,[1] to handle local operations (organization of local markets, weighing, book-keeping, loading and possibly transport to the place where the goods are to be processed). Only Niger has a cooperative structure which handles exports itself.

In most cases, the companies or agencies have retained responsibility for organization of market villages. In some cases, markets are organized by the villagers themselves, in which case they receive rebates. Examples are quoted from Chad where there are a few self-managed markets, Ivory Coast, where SODERIZ paid rebates for paddy offered in substantial quantities, Benin and Central African Republic.

In the projects under consideration, no major EDF finance has been provided to fund marketing operations, apart from a few supplies of rolling stock for Togo and Zaire. However, the EEC did intervene between 1965 and 1968 to support cotton and groundnut prices in the associated countries no longer enjoying French price subsidies. This support was an important factor in the maintenance of export production during that period.

Over the past ten years several of the countries under consideration have had export product price stabilization agencies, some of which have been set up during this period: OCIR in Rwanda, OPAT in Togo, CSSPC in Chad, ONAFITEX (which took over from COGERCO) in Zaire, CSSPPA in Ivory Coast.

Others have not had this essential tool at their disposal or have failed to make it work at times when international prices have fallen, with the result that producers have been distrustful during subsequent years.

STABEX was set up too recently to have influenced the results of the projects evaluated; in the future, it could facilitate the implementation of policies to offer producers economic incentives as long as Governments pass on the benefit of the corresponding subsidies to producers rather than channelling them into their budgets.

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[1] Cooperatives associated with projects: OBM and UNCC.

The regularity of dealings on village markets is a particularly sensitive subject in the eyes of farmers. Establishing cooperatives has been seen in several countries as the means of alleviating tension. However, the evaluators of all the projects where there has been action to promote cooperatives draw attention to either the cooperatives' lack of independence (OBM, Badeguicheri, UCCA), or the tensions arising out of the desire for independence expressed by cooperatives (Togo, Zinder).

The cooperatives' lack of independence is evidenced on the one hand by the fact that they are concerned with export crops only and on the other hand by their limited powers of negotiation.

Since governments are anxious to encourage farmers with the highest possible producer prices while at the same time maintaining the level of budget revenues, intermediaries' margins are kept very low, a fact which makes it difficult for organizations at this level (cooperatives, quasi-public and private intermediaries) to operate.

State levies in the form of taxes and price support fund revenues are increasing steadily in relative terms. States see the marketing of export products as the ideal channel through which to establish a solid tax base. Their anxiety to avoid any reduction in this tax base is in some cases the explanation underlying the pressures exerted on food-crop markets (price control, monopolistic rules) or, more directly, on farmers themselves. There is little suggestion of proposals to review traditional fiscal structures (cf. 3.3.2.1).

The marketing of food-crop produce poses entirely different problems from those which arise with export products. All the countries visited have set up agencies to handle the marketing of these products (OFNACER, OPVN, FDAR, ONCPA, ORDs, TOGOGRAIN).[1] However, none of these agencies has yet achieved convincing results, for reasons analysed above. Unlike the export product marketing agencies, they come into very direct competition or conflict with a whole range of types of intermediary whose economic efficiency is growing and whose speculative or fraudulent tendencies are fostered by certain economic policies: determination of prices on the basis of the level of urban wages rather than the objective of encouraging producers; monopolistic rather than regulatory prices; failure to provide the agencies with enough or any working capital with which to purchase and store produce; in the event of a crisis in one region, purchase of foodstuffs abroad rather than on the domestic market; policy of giving free supplies to certain categories of underprivileged consumers; compartmentalization of regions etc. (cf. 3.3.2.2).

5.2.4. Supply and distribution of factors of production

The supplies organized under the projects evaluated were limited to factors directly required for the purposes of the agricultural production programmes.

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[1] In Upper Volta, Niger, Chad, Central African Republic until 1974 (approved purchasers thereafter), and Togo respectively.

Only the 3M and Bugesera-Mayaga projects included supplies of consumer goods: pharmaceutical products in the former case and essential products in the latter. Without suggesting that foreign aid should support projects aimed at supplies of consumer goods, it should be mentioned that rural areas in most of these countries are extremely poorly served by the consumer sector. It is very often impossible to obtain such basic supplies as oil, soap, sugar, matches and so on. In order to remedy this situation, the local Governments need to give more encouragement to the establishment of a network of intermediary structures which would enable peasant communities to purchase essential goods at reasonable cost: organization of local markets, encouragement for shopkeepers to set up in villages or for consumers' cooperatives, establishment of regional wholesalers to supply shopkeepers and consumers' cooperatives etc.

In most cases the plans for supplies of factors were narrowly defined: the aim was to provide farmers with the fertilizers, insecticides, equipment etc. which they needed to apply the techniques proposed to the crops with which the projects were concerned, while no provision was made for other factors which the farmers may have requested. In some cases there were great difficulties in ensuring that supplies actually kept pace with the introduction of new methods. For instance, delays prevented the distribution of fertilizers and insecticides for the 1975/1976 crop year in Central African Republic; the resultant loss of cotton production during that year may be estimated at 30%, in addition to which the supply agencies suffered a loss of credibility in the eyes of farmers.

In Zaire also, late arrival of fertilizers caused an estimated 35% drop in cotton yields in 1974/1975.

As a result of the congestion of Nigerian ports, supplies of fertilizers have failed to get through to the farmers in Zinder, etc.

5.2.5. Credit

Credit facilities were available under all the projects in one form or another, ranging from 'flexible' forms of conventional agricultural credit to 'rigid' forms of credit recovered through the system of levies charged on wholly controlled markets, the latter being the more common.

The difficulties referred to most often were as follows:

(i) the lack of security, causing the credit banks to ask supervisory agencies to take over the organization of credit from them;

(ii) the low profitability and in particular the unpredictability of yields which farmers are able to obtain from their holdings, leading to irregularity of repayment of credit (cf. 4.6).[1]

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[1] See also: US/AID, 'Small Farmer Credit', Vol. XX, June 1973 (No SR 120), pp. 9-10.

The success of credit policies seems to be very closely bound up with the more widespread application of stable, structured policies in the sphere of prices (inputs and outputs) and returns on labour.[1]

Given the low level of productivity at which the farmers work, the risks of non-profitability of operations financed by credit are high. Moreover, it cannot be expected that debts not repaid one year (as a result of unfavourable climate conditions, for instance) will be reimbursed the following year. This is a structural difficulty which cannot be resolved by any form of sanction. The solutions are to be found in the improvement of the input/output terms of trade and must be closely geared to the general system of prices.

In this connection, the overall policy pursued in the cotton region of Chad during the course of the cotton plan offers an interesting example of results obtained in terms of production (cotton production only, unfortunately):

(i) a strong rise in the producer price of cotton accompanied by relative stability of the levy (credit per hectare), resulting in a slower rate of increase in operating costs than in gross incomes, making for a satisfactory and improving return on labour;

(ii) credit for the adoption of intensive methods linked to a series of conditions and factors having a significant influence on yields (early sowing, insecticides, fertilizers, treated seed etc.);

(iii) encouragement for the acquisition of animal-drawn equipment, through purchase subsidies.

Such conditions are clearly favourable to the development of production since they reduce the likelihood of underproductivity considerably. Positive results are encouraging for the farmers, who have an incentive to repay their loans in order to have access to further credit the following year.

The organization of agricultural credit is still heavily committed to activities of interest to the State, to the exclusion of others. Consequently, credit policies are meeting with the same type of resistance from farmers as the new techniques introduced under advisory programmes. Few attempts seem to have been made to direct credit towards activities which the farmers themselves consider more essential[2] and to channel it through mutual organizations set up for their benefit.

The high level of unpaid debts (leading to difficulties and even bankruptcy for the agricultural credit organizations) appears to be attributable to the inadequate profitability of farming. Improvement of the return on labour to a

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[1] In this connection, see UMA LELE - Doc. 19), especially pp. 97 to 99.

[2] See for example: 'Farmers Councils of Ingalaland' in Nigeria, G. Bertrand (Doc. 28). The evaluation carried out by US/AID also concluded with this question: is it not preferable for the credit system to cover peasant farmers' consumer and other needs as well? If this were done, the peasant would not need to hoard his savings to protect himself against such risks, but could invest them in production (cf. Doc. 18, p. 24).

level at which the financial risk represents only a marginal proportion of income would increase the acceptability of credit in the eyes of farmers to a considerable extent. To illustrate this point: if the financial risks correspond to between 10 and 20% of the farmer's net income, he will still find credit attractive and take care to preserve his chances of obtaining further facilities the following year. However, if the financial risks amount to 50 or 80% of his net income, the benefits of credit become very hazardous and some farmers will only find it attractive as a means of making a quick profit without regard to long-term prospects.

Project organizers tend to use community structures as a lever for the allocation of agricultural credit: for instance, collective liability of an entire village where there are too many personal debts outstanding, the whole village being refused further credit; another example is the obligation to form a group in order to obtain loans for animal-drawn equipment.

There is a contradiction between this attitude and the man-to-man methods generally used by supervisors. Why should a farmer trained by the supervisory staff with the sole purpose of increasing his personal income suddenly be placed on the same footing as his neighbours when they do not repay their loans (or vice versa)? This approach would be more understandable if it were applied on a wider basis, in the overall planning of proposed operations: definition of action to be taken, demand for training, establishment of mutual savings and credit banks, discussions about layout of plots etc.

Several questions regarding agricultural credit remained unanswered after this evaluation exercise. They would need to be tackled by specific studies and experiments in the context of operations financed by the EDF and in the light of experience elsewhere.

Part Six

PROBLEMS CONNECTED WITH PROJECT-BASED METHODOLOGY

As mentioned in the evaluation reports, the EDF has provided aid in various forms: product price maintenance and STABEX aid,[1] structural aid production, aid for infrastructure, aid for organization of the rural environment. The three last-named forms of aid have been provided through the medium of 'projects'.[2]

The project-based method consists in seeking to control, within a given area and time-frame, the action and resources needed to achieve specified objectives of interest to certain participants.

The provision of aid within the context of a project-based methodology is a methodological option which has to be assessed in relation to the fundamental variables of changes in rural life: self-sufficiency, returns on labour, purchasing power, social relationships, health, housing, education, information, bargaining power vis-à-vis intermediaries etc. Virtually all the evaluation reports find that, on the one hand, initial objectives were hardly ever attained and, on the other hand, that the actual effects of projects other than those associated with quantified objectives could only be assessed by detailed analysis of the agro-ecological, economic and sociological conditions which it was intended to influence.

The project-based method involves risks of various types, which may be summarized as the risks of 'foreignness', enclavement and inflexibility. These risks stem primarily from the fact that the planning of operations takes place outside the peasant world which is supposed to be the main beneficiary.

National administrations experience difficulties - sometimes serious - in adjusting their action to changing conditions in the rural world. These difficulties can be heightened by the complexity of the cooperation reports passing between the recipient States and the Commission. Projects extend over several years and are planned according to precise schedules and organizational procedures. Major changes can occur during the course of these periods, such as the increase in prices of inputs following the oil crisis, rises in

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[1] These two forms of aid were not included in the scope of this evaluation.

[2] Some structural aid was also included, in conjunction with price maintenance, in the 'aid for production' programmes financed out of EDF 2; in the absence of data, they were only included in the evaluation reports in a subsidiary or incidental fashion (cf. Part One).

agricultural commodity prices in response to favourable market conditions, shifts in relative prices following changes in the pattern of domestic or foreign outlets, or erratic climate factors. Peasant farmers may react to such changes by changing their own behaviour in relation to projects, whereas it may be impossible to adjust project strategy and content quickly to meet new situations.

6.1. THE CONTENT OF RURAL DEVELOPMENT PROJECTS

The evaluation exercise was directly concerned with three forms of aid: structural aid, aid for infrastructure and aid for organization of the rural environment.

Structural aid intervenes at micro-economic level, meeting a greater or lesser proportion of running costs, notably inputs (fertilizers and insecticides) and equipment (spray guns, ploughs etc.). It accordingly improves returns on farm labour by providing the means for crop intensification and volume increases in production.

Structural aid is a fundamental incentive. It is an instrument of economic policy and can be provided direct to farmers without passing through the supervisory agencies as long as the farmers are properly informed of the uses to which subsidized factors can be put.

Hitherto, structural aid has been directed almost exclusively at industrial crops (groundnuts, cotton etc.) for which favourable economic and commercial environments have been created (marketing companies, monopolies, supervisory agencies, stabilization funds etc.). There is no reason why structural aid should not be planned for other crops which are of importance to national economies and designed to promote all aspects of farmers' agricultural activities.

Structural aid has been associated very directly with supervisory staff, who have been given responsibility for distributing subsidized factors and monitoring their correct use. The information about these factors provided by supervisors is generally assimilated quickly by farmers. Failure to follow the methods and practices recommended in connection with structural aid is not entirely a matter of insufficient information; it can also be determined by the mass of constraints affecting peasant farm holdings (cf. 3.1).

Aid for infrastructure is concerned with the provision of the infrastructures needed for the smooth functioning of technical or commercial operations: roads, tracks, storehouses, cattle pens, agricultural stations etc. It goes towards meeting regional or national requirements which necessarily fall within the responsibility of public institutions.

The planning of aid for infrastructure cannot be 'neutral'. For this reason, it must be tied in with structural aid and aid for organization of the rural environment (see below). Seen for instance from the viewpoint of side effects

on local industry and employment, it is not a matter of indifference whether a track is built using machinery or local manpower. Similarly, whether to plan a storage infrastructure according to a centralized or decentralized format (Rwanda), whether to build modern wells at CFAF 300 000 each or to sink traditional wells at CFAF 3 000 every year (Niger) are not neutral decisions from the point of view of regional employment. The construction of buildings in cement, steel frames and sheet metal does not have the same effects on the economy of a region as construction with bricks, timber and tiles.

It is necessary to involve local communities in decisions concerning capital investment schemes giving rise to running costs and maintenance which they will have to finance, whereas other types of capital investment (regional roads, central warehouses etc.) do not call for such consultation.

The heading of aid for organization of the rural environment covers a wide variety of forms of technical or financial support for the activities of rural populations and institutions outside the scope of structural aid and aid for infrastructure.

These include aid towards capital spending or operating costs of rural institutions, aid to cover technical assistance for these institutions, incentive premiums, support for rural education, research etc.

The efficiency of this aid in the medium and long term depends on the extent to which action is taken over by national or local communities. It would be inconceivable for a state to take over the running costs of a projects which it had not accepted; the same applies to rural communities where farmers are unlikely to take over projects on which they were not consulted or directly involved.

Where selected seeds are in heavy demand from farmers and the seed supply services are able to carry on supplies, it may be said that a seed project has been efficient. Similarly, if cooperatives are managed autonomously with the approval of their members, it may be said that a programme to promote cooperatives has been efficient. Again, if the practice of building terraces and combating erosion has been adopted, it may be said that a soil protection and preservation service has been efficient.

In the organization of the rural environment, there are many aspects of local conditions which are difficult for the administrative authorities to assess. In one form or another, consultation between participants is necessary; it is the only way of ensuring reasonable prospects of projects being taken over by local people in the medium or long term.

The project in Chad provides the most characteristic example of highly organized structural aid, benefiting cotton only and supported by a complete institutional environment: technical supervision, supply services, a monopoly of cotton marketing, price stabilization, very advanced agronomical research on this crop. By contrast, the Bugesera-Mayaga project received no structural aid; it is representative of aid for organization of the rural environment.

It is clearly desirable to combine these various forms of aid, since each operates at a different level: fundamental economic incentives (price maintenance and structural aid), infrastructure (aid for infrastructure), agricultural environment (organizational aid). However, the inter-relationship between these various forms of aid must be flexible, since it is impossible for the development institutions to maintain control over all the parameters and constraints affecting the development of the rural world.

6.2. THE FIXING OF OBJECTIVES AND THEIR SIGNIFICANCE

The project-based method as applied in the cases evaluated calls for the fixing of specific, clearly defined objectives expressed in terms of quantifiable indicators such as output volumes, areas under cultivation, yields, numbers of farmers to be catered for by supervisory services, numbers of migrants to be settled etc. These objectives are fixed according to macro-economic data.

Comparison of the results achieved by the end of projects with the objectives fixed initially shows substantial differences - usually on the wrong side - which call for some explanation. Some results achieved by the end of projects were not of a lasting nature. Moreover, the effects of action carried out were not always those which had been anticipated initially, although not necessarily to the disadvantage of rural development.

In fact, a clear distinction needs to be made between analysis of the effects of aid and comparison between objectives and results. The aid had beneficial effects in all cases, even where some objectives were abandoned during the course of projects or not achieved. In Central African Republic for instance, the output objectives were far from being reached, but it seems clear that cotton production would have collapsed without the aid from the EDF; in Chad, the transit cattle markets were allowed to run down, but this was because the farmers had bought cattle elsewhere; in Zinder, the objectives for groundnut production were not reached, but the project enabled the institutions to organize themselves to manage their development activities.

An objective is a projection into the future which serves the purposes of concentrating the mind and guiding action. As with all projections, such objectives have a substantial built-in margin of uncertainty, particularly in farming. Another factor which comes into play is unrealistic optimism: political considerations often prompt the technicians to overstep the limits of technical realism, and technicians frequently overestimate their own ability to modify peasant behaviour patterns. To justify a project, there is a tendency to 'make believe' that peasant agriculture with a low of level of productivity, most of which is given over to subsistence activities, can be made profitable. Standards which are difficult to uphold in Europe's highly integrated agriculture tend to be imposed on under-equipped farming systems which have to contend with unfavourable input/output terms of trade.

Three factors seem to account for the failure to attain project objectives.

The first factor, overestimation of objectives at the outset, may be regarded as a constant. This applies not only to overall production volumes, but also the technical coefficients anticipated. The yields which can be achieved by the introduction of new methods are estimated according to results obtained on research stations or experimental plots, rather than on the basis of averages achieved by ordinary farmers. Nor are coefficients of variation taken into account in averages.

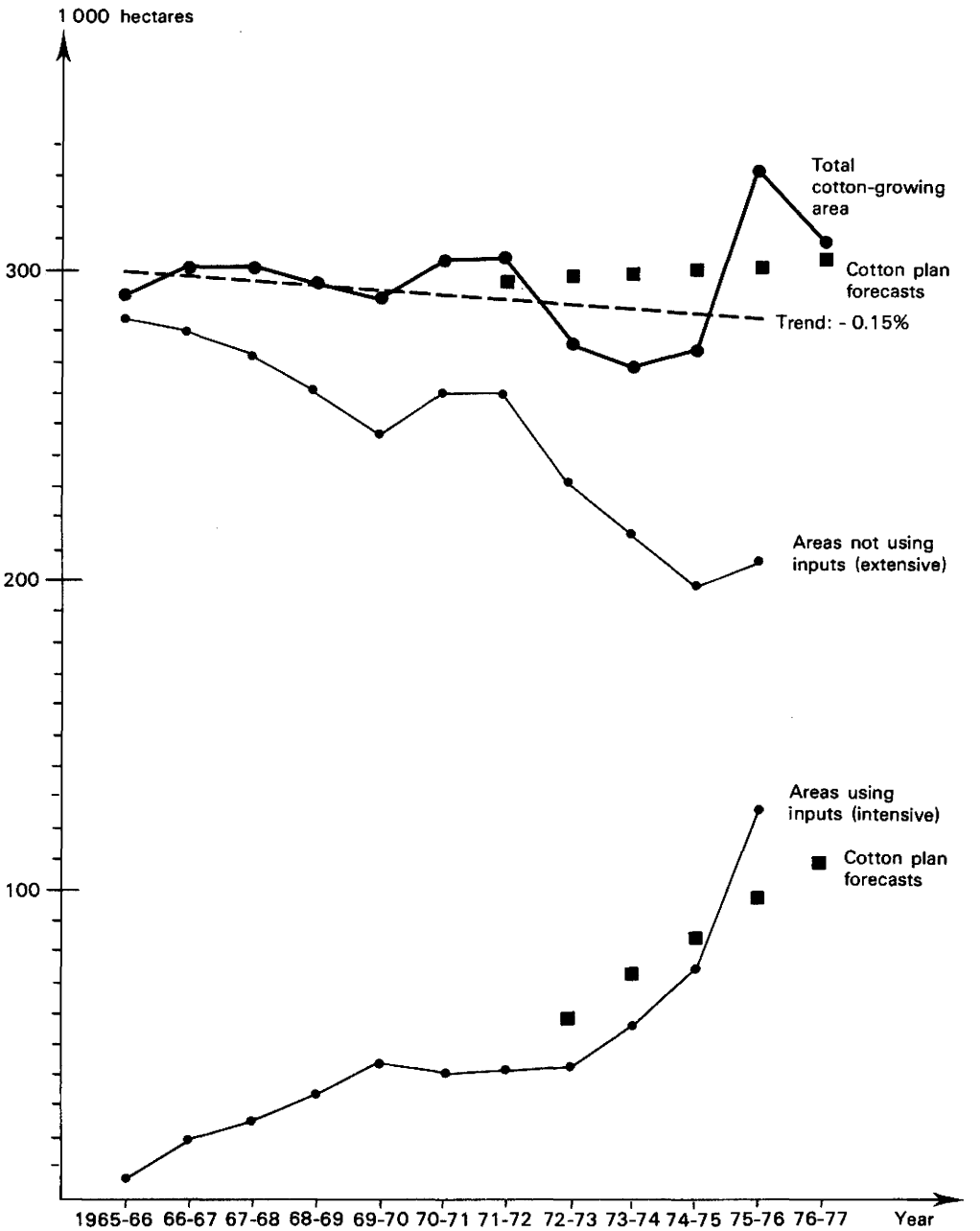
Overestimation of technical coefficients and overall production objectives is guaranteed to convince the financiers of the viability of projected schemes (cf. 2.3.3). However, the chronological series for areas under cultivation, yields, production, equipment etc. show that the progress of agriculture follows long-term trends which are barely influenced by the adoption of more or less ambitious objectives. In Chad, as may be seen from the figure, the forecasts for production in 1965 and 1972 took account of the highest production probabilities, rather than average possibilities bearing in mind climate and other risks. Figure b also shows that the forecasts of average yields were also overestimated. Finally, it can be seen from figures a and b showing areas under 'extensive' and 'intensive' cultivation the most serious possible climate conditions (drought) and the fixing of somewhat exaggerated objectives had short-term effects, but only very slight influence on long-term trends (+2.73% per annum).

Although overestimation of technical coefficients is a means of exaggerating the forecast profitability of projects to some extent, it in fact distorts the real prospects for results from farming. If they accept overestimated coefficients when scrutinizing projects initially, those responsible for financing them will have no alternative when it comes to ex-post evaluation but to conclude that the objectives fixed were not attained and that the projects will not be able to finance their own running costs.

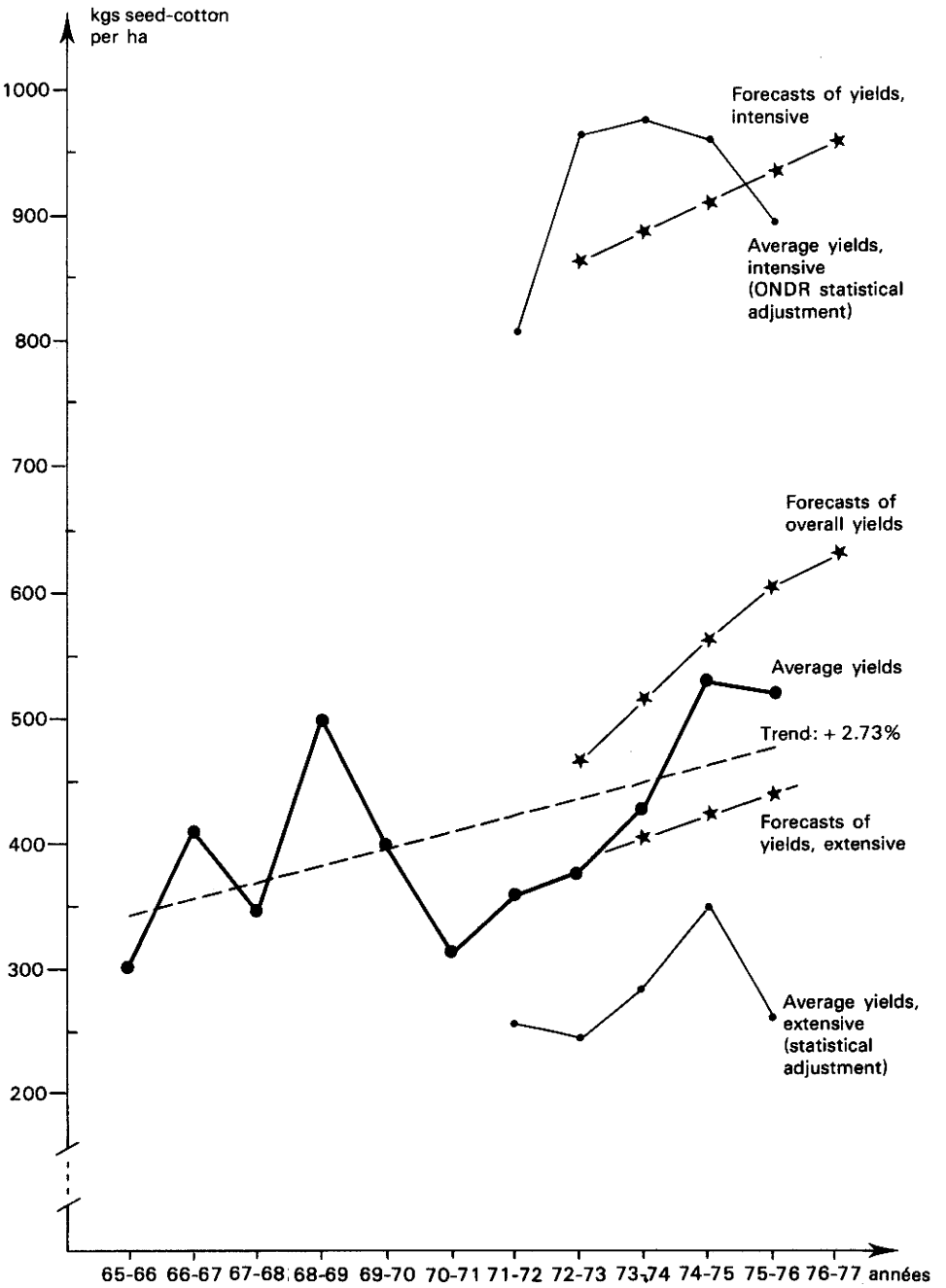
The principle of structural aid was established when it was found that productivity was too low in African agriculture compared with that achieved by agriculture in the developed world and on research stations in Africa. This being the case, why is it necessary to claim very similar levels of productivity (when projects do not last more than 5 years)? What purpose is served by attempting to prove viability from the individual farmer's viewpoint, when it is known that the whole price system is manipulated? Would it not be better to admit the real technical coefficients as borne out by tests in the rural environment and to admit that viability can only be achieved in the long-term once the necessary action has been taken to ease the various constraints limiting productivity? Would it not be better to place greater emphasis on price ratios (goods, factors) evolving over the long term in respect of each product than on technical coefficients over which the 'developers' have only very little control, since they depend largely on what is done by peasant farmers?

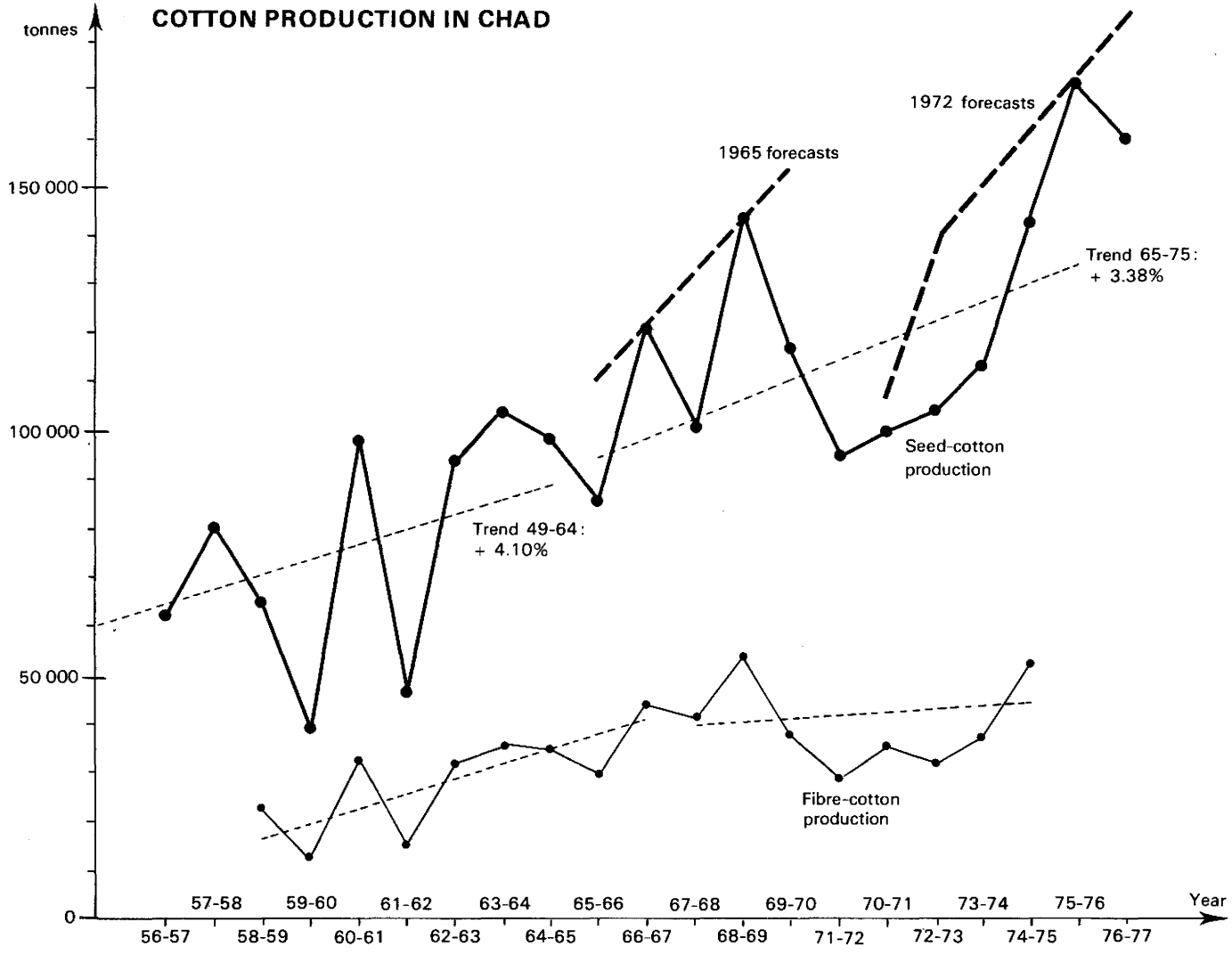
Unsatisfactory technical results are a second factor accounting for the failure of projects to reach their objectives. They stem from the fact that it is impossible for projects to control all the factors needed to achieve the re-

COTTON GROWING – AREAS UNDER CULTIVATION



COTTON YIELD




COTTON PRODUCTION IN CHAD
tonnes
150 000
100 000
50 000
0
1965 forecasts
1972 forecasts
Trend 65-75:
+ 3.38%
Trend 49-64:
+ 4.10%
Seed-cotton
production
Fibre-cotton
production
57-58
59-60
61-62
63-64
65-66
67-68
69-70
70-71
73-74
75-76
Year
56-57
58-59
60-61
62-63
64-65
66-67
68-69
71-72
72-73
74-75
76-77

sults anticipated: climate conditions, organization of supplies, psycho-sociological factors, compatibility of farming calendars etc.

A third explanation is to be found in the constant change in rural conditions, as a result of which objectives that appear feasible at a given time can become unrealistic shortly afterwards. Because of this, it is essential that project objectives be fixed not only on the basis of the time-frames of the projects concerned, but also in the light of desirable trends and long-term development potentialities in the region and on the farms concerned.[1]

The fixing and attainment of objectives polarizes activities of institutions responsible for planning and carrying out projects. However, it is clear that such objectives cannot be given the force of standards of behaviour for peasant farmers. The confusion of studies on standard models for peasant farms geared to whatever crop the 'developer' wishes to promote shows that the error of confusing objectives with the complex realities of farming conditions is widespread. It is less common practice to consider such objectives as plausible and revisable, but no mandatory, hypotheses.

6.3. THE RISKS ASSOCIATED WITH PROJECT-BASED METHODOLOGY

The project-based approach, when aimed at bringing about changes in peasant behaviour patterns and attitudes, involves risks of various types which require analysis so that they can be mitigated. These risks may be considered under three headings: 'foreignness', enclavement and inflexibility.

6.3.1. Foreignness

The 'foreignness' of projects in relation to the rural environment can stem from several factors: adoption of priorities which differ from those of the environment; technical approaches which are too alien to the environment, being based on insufficient assessment of the advantages and disadvantages of existing farming systems; excessive pressure from technical assistance personnel who do not know enough about the constraints of the environment and are given too much direct operational responsibility; inadequate provision for consultation between official agencies and rural communities, sometimes with its corollary of denigration of farmers by supervisory staff.

The risk of 'foreignness' is inversely proportional to the scope and desire for negotiation between partners. In some cases, it arises through the application of coercive measures which are a manifestation of the difficulties experienced by a State to evolve economic and social policies which are sufficiently attractive to the rural population.

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[1] On this subject, see the conclusions of the evaluation of a series of projects in Kenya, Doc. 42, especially pp. 21 and 22.

The main danger with projects marked by such 'foreignness' is that their future is likely to be jeopardized, since, under these circumstances, cultural, technical and economic takeover by the local community is rare.

6.3.2. Enclavement

The project-based method also involves a risk of enclavement:

Enclavement in relation to the surrounding environment

For example, in Rwanda, enforcement of the occupancy norms for 'farming communities' would necessitate the removal of excess numbers of farmers to neighbouring regions, themselves already overpopulated. This would create an enclave of relative well-being, but would not solve the crucial problem of overpopulation in this country.

Enclavement within the national economy

For example, the enclavement of a well-structured cotton economy in Chad in a context lacking integration: lack of investment in the northern part of the country for the benefit of cereal growers, lack of integration with nearby markets in neighbouring countries etc.

The same is true of Zaire, where the level of supervisory services and subsidies on inputs in the CAKO 'farming community' area is far in excess of what the Government could afford for all the other farming areas if they offered comparable potential.

Enclavement in relation to programmes financed through other sources

Aid projects have different characteristics according to the source and are readily referred to as EDF projects, UNDP projects, World Bank projects, private projects etc. The local institutions seem to be afraid to adapt certain aspects of projects according to their national policies because they think this would be running the risk of having the aid withdrawn.

In Chad, for example, a private Swiss project distributes free supplies of fertilizers and insecticides in a region where the ONDR is charging CFAF 7 500 per hectare for the same products. WFP aid imports cereals at a time when the EDF aid is trying to find ways of organizing diversification of crops and the office responsible for regulation of cereals lacks the necessary working capital.

Enclavement of financial resources

Substantial financial resources are deployed during the course of a project (3, 4 or 5 years). It is assumed that by the end of this time the recipient

country will have built up the resources necessary to carry on the project at the same level, or at least to take over the recurrent costs (e.g. replacement of vehicles, maintenance of vehicles, salaries and wages of additional supervisory staff employed under the project etc.). However, the effects of real rural development first become apparent in the prosperity of farm holdings. A project lasting 3 to 5 years cannot bring about a fundamental change in the capacity of the communities concerned to generate the finance needed to meet the capital costs and operating costs of their own supervisory structures. As has been mentioned above, farmers growing annual crops take at least two years to react, as it takes this length of time before results become apparent. With the perennial crops, it takes 4 to 5 years before the very first productive results become apparent.

Operating resources 'enclaved' over too short a period do not generally produce significant medium-term results, particularly when accompanied by the permanent presence of very influential technical assistance personnel who determine the pace of operations and impose their own responsibility structures.

In addition, the resources linked to projects are entered under specific headings in national budgets. These budgets are allocated according to precise rules regarding commitment formalities, procedures for invitations to tender, sites, types of equipment etc. which are sometimes different from the rules prevailing in the recipient country. The provision of these resources is conditional on a substantial contribution from the recipient country which is always difficult to evaluate since it usually takes the form of staff and administrative resources included in ordinary budgets. Finally, the financial institutions of recipient countries are apparently not always notified of the recurrent costs which they will have to cover once projects are completed.

For instance, the activities of the animal health protection groups in Chad are in jeopardy because no budgetary provision has been made for working capital to buy veterinary products.

When the EDF project in Central African Republic came to an end, the supervisory staff had to live at the expense of the villagers because they were not paid by the Ministry of Agriculture.

The vehicles of the ONDR in Chad are worn out, having been used under very difficult conditions during the project, and the external finance has also come to an end.

The roads and tracks in Niger cannot be maintained regularly because of the lack of fuel for public works vehicles.

Bridges built in Togo have not been linked by road as planned, for lack of finance from the Togolese budget.

Two ideas follow from this assessment of the risks of enclavement.

First, this process of rural development takes place at the level of local communities. Once these communities consider the need for a project as being their problem, the risk of enclavement disappears. A project should always be

presented as 'the project of community X supported by EDF aid' rather than the EDF project'. Second, a way of avoiding enclavement would be to arrange for aid to be provided to support action taken by communities themselves on the basis of their own decisions. For example: when a group of farmers decide to purchase a plough, the EDF automatically meets 50% of the cost; when an animal health protection group calls for veterinary services, they are automatically provided; farmers on the 3M project finance their own technical leaders who, in some cases, receive additional payment from the UNCC.

Applications of this principle can be visualized on the basis of other types of action. For example, support for 'à la carte' training requested by village associations: training for cooperative members, literacy training, vocational training advice on farming methods on request. This type of support differs from generalized advisory programmes in that it corresponds exactly to the wishes of the communities concerned and is provided at the time they consider most suitable. This type of training is clearly fully effective, its effects are immediate and spread quickly.

Another example is the support for savings and mutual credit operations. In Niger the cooperatives were unable to raise the savings which they would have needed to set up stores. In Rwanda, the popular banks are gradually drawing off the meagre savings of the local population. Support of local initiatives through such structures could have been more effective than premiums for various types of operation (for building manure barns, silage pits etc.).

Increasing the resources available to local communities in order to support their own initiatives rather than precise operations whose efficiency is appreciated by the technical agencies only, would be a way of releasing projects from enclavement. Such practices would be effective complements to the forms of aid already in use (6.1).

6.3.3. Inflexibility

Finally, the project-based method of operation involves a risk of inflexibility.

The internal planning of projects reflects the importance attached to detailed interim objectives, resources to be deployed, schedules, procedures etc. The profusion of detailed forecasts is generally an irrelevant exercise.

Resources are allocated according to objectives and procedures adopted in the context of the project, not in the light of prevailing farming constraints. If a farmer encounters a problem falling within the scope of the project, he will receive help from the project organizers. However, if the problem is outside the scope of the project, he must tackle it on his own. For instance, remedial action can be taken if a cotton crop is attacked by insects, but not if a millet crop is attacked by greenfly, for lack of resources. However, the attack of greenfly, by jeopardizing the cereal harvest, obliges the farmer to devote more time to sowing sorghum and cowpeas, which in turn jeopardizes the cotton crop.

Further examples of inflexibility can be found in the regulations applicable to individual projects. For example, under the rules for settlement of farming communities in Bugesera-Mayaga, plots are laid out perpendicular to the contour lines. This increases the difficulty of certain kinds of work considerably (carting, of compost or manure, coordination between plots on hedges to prevent erosion, etc.). Elsewhere the rules are such that the supervisors penalize farmers using fertilizers for crops other than those specified under the project or for growing mixtures of crops other than those recommended; in other cases, the rules for the grouping of holdings (e.g. cotton-growing blocks) are applied in such a way that farmers are obliged to work land on these blocks rather than the land on their own holdings where they could rotate their crops.

Further instances of inflexibility are to be found in the training of supervisory staff, which often gives little weight to overall appreciation of the limitations and potentialities of local farms, and little encouragement to the tailoring of advisory services to meet demand or the development of contact between farmers and scientific researchers.

Monopolization is another source of inflexibility, especially monopolization of supplies of factors of production, which occurs both nationally and locally. Examples have been quoted of cases in which the monopolization of supplies limits the quantities or quality of factors reaching the farmer: quantities are limited by the volume of financial resources allocated and the impossibility of supplies being topped up by private sector traders; losses of quality occur as a result of the specific rules according to which the supply organizations carry out their purchasing (international invitations to tender, compulsory requirement to purchase from factories in the home country, etc.) and also because these organizations are not always aware of experimentation and testing being carried out in the rural environment. Such rules are justified in terms of the importance of regularizing the prices of factors of production, but it is by no means certain that this necessarily entails depriving the user of all scope for choosing those which he considers best suited to his needs by allowing the supply services a de facto monopoly.

The procedures for invitations to tender which cover a whole crop year can also lead to inflexibility. In the case of essential factors of production (fertilizers, insecticides, machinery etc.), calls for tender have to be issued two years in advance. During the intervening period farming conditions can develop considerably, with corresponding changes in demand. States would be well advised to establish stocks so that they could respond flexibly to farmers' overall requirements. In some cases, demand needs to be met without delay. For instance, in order to save the millet corps in Magaria from attacks of greenfly, it would have been necessary to supply appropriate insecticide immediately. In these conditions, what is the use of a delivery period of one to two years?

The risks of inflexibility could be reduced if the practice of making available working capital or capital appropriations became more widespread: working capital for fertilizers with which stocks could be established in advance and regulated according to quantities distributed and forecast demand; working capital for cooperatives; non-annualized capital appropriations for the

development of animal-drawn equipment or infrastructure; price stabilization funds for factors of production, etc.

The rigidity of some project formats hampers the expression of local dynamism and initiative. It would seem desirable to adopt more flexible methods and to develop services provided in response to demand.

Annex 1

INSTITUTIONS INVOLVED IN THE PROJECTS

Improvement of cotton productivity in the cotton-growing region of Chad

ONDR: Office National de Développement Rural. Set up in 1967 with responsibility for carrying out the programme. Although supposed to cover the whole of the country, the ONDR devoted most of its efforts and resources to the southern region. Its primary role was to provide advisory services and supplies to producers. It derived its finance from the national budget, EDF and FAC subsidies and its own resources.

COTONTCHAD: Chadian cotton marketing company. This mixed investment company was formed in 1971 to succeed CONTONFRAN, whose facilities it took over. It is responsible for the marketing of cotton, having the monopoly right and obligation to purchase cotton crops from growers. In 1975, the Chadian Government acquired a 75% holding in the company through the purchase of shares from CONTONFRAN.

CFDT: Compagnie française de développement des textiles. This company's involvement took the following forms: organization of textile exports (office in Paris), technical assistance to the ONDR and COTONTCHAD, shareholding in COTONTCHAD.

FDAR: Fonds de développement et d'action régionale. This Fund took over from the welfare funds. The cereal department is responsible for promoting the distribution of cereals and regulating their prices, and for the distribution of food aid.

BTD: Banque Tchadienne de Développement. This bank went bankrupt in 1971, as a consequence of which agricultural credit was superseded by a more interventionist system of levies.

CSSPC: Caisse de soutien et de stabilisation des prix du coton.

IRCT: Institut de recherches des cotons et textiles, responsible for cotton research.

DEA: Direction des Etudes Agronomiques, responsible for food-crop research and management of agricultural stations.

Service de l'Elevage: Responsible for carrying out the livestock section of the cotton plan. This programme operated relatively independently.

DEFPA: Direction de l'Enseignement et de la Formation professionnelle. Responsible for vocational training at the training centres in Tikem and the college at Bailli.

Agricultural development in the Central and Plateaux Regions in Togo

SORAD: Sociétés Régionales d'Aménagement et de Développement. These are public agencies responsible for rural development in the widest sense of the term. They derive their finance from the national budget or from their own resources. The operations financed by the EDF involved the two SORADs covering the Central and Plateaux regions respectively. In 1974, sectoral responsibilities were taken away from the SORADs, which then concentrated more specifically on food crops. The scale of their activities was greatly reduced when the supply of EDF funds was discontinued.

SOTOCO: Société Togolaise du Coton. Responsible for the promotion and marketing of cotton since 1974.

SRCC: Société pour la Régénération de la Caféière et Cacaoyère; operated in the Plateaux region from 1974.

OPAT: Office des Produits Agricoles du Togo, responsible for preparation for marketing, export and price stabilization of agricultural products (cotton, groundnuts, coffee, cocoa, etc.).

TOGOGRAIN: responsible for cereal marketing and market organization.

CNCA: Caisse Nationale de Crédit Agricole. Provides annual loans for farmers and loans to enable them to buy equipment.

IRCT: Institut de Recherche du Coton et des Textiles.

IRAT: Institut de Recherche en Agronomie Tropicale.

INSTRUPA: A German firm of consultants, responsible for technical assistance.

SONACOM: A distribution and supply company responsible for delivering factors to the ORDs, and later SOTOCO.

Bugesera-Mayaga farming communities in Rwanda

OBM: Office de la mise en valeur du Bugesera-Mayaga, set up in 1959. It was in charge of the project throughout the period of the EDF intervention. In 1976 the staff of the OBM were placed under the competent administrative authorities. In its present role, the OBM is more of a central organization for cooperatives than a development organization.

OCIR: Office de commercialisation des produits industriels du Rwanda. Responsible for exports of agricultural produce and stabilization of prices of products.

RWANDEX: Prepares coffee for marketing.

Banque Populaire: Savings and credit bank currently being set up in Rwanda.

ISAR: Institut de recherche agricole au Rwanda (successor to the INEAC).

SOCINCO: A Dutch firm of consultants which carried out the preliminary hydraulic studies.

AESED: Association européenne des bureaux d'étude. Also involved in the preliminary studies.

ITC: International Training Center for Aerial Survey. Carried out the aerial photography for the initial plans for the layout of plots.

SEDES: Société d'étude pour le développement économique et social. Carried out the population surveys.

AIDR: Association internationale pour le développement rural. Carried out the village water supply programme.

Rural development in the Zinder region (3M project) and development of the Badeguicheri Valley

UNCC: Union Nigérienne de Crédit et de Coopération. Set up in 1962 to promote cooperative structures, the UNCC performs various functions: execution and supervision of projects, marketing of products through the cooperative system, organization of mutual credit, training of staff for cooperatives.

The UNCC was the executive agency for the Badeguicheri project. In Zinder, it had a seat on the Departmental technical committee and was its primary executive agency. The UNCC exports cotton and delivers other marketed products to either the SONARA or the OPVN.

COTEDEP: Comité technique départemental. In the 3M project (Zinder), the COTEDEP was responsible for coordinating the various activities involved: agriculture, livestock farming, forestry, education and training, health, planning (SDRAT). It operated under the auspices of the Préfet.

SONARA: Société nigérienne de commercialisation de l'arachide, a mixed investment export company, set up in 1962.

OPVN: Office des Produits vivriers au Niger. Set up in 1974, it buys food crops from cooperatives at the official prices and is responsible for promoting trade in food crops and stabilizing prices.

CNCA: Caisse nationale de crédit agricole.

CSPPN: Caisse de soutien des prix des produits du Niger.

IRHO: Institut de Recherche sur les huiles et oléagineux.

IRCT: Institut de Recherche des cotons et textiles.

CFDT: Compagnie française de développement des textiles. Provides technical assistance to the UNCC.

SOGETHA: Société générale d'Etude et de Travaux d'hydraulique agricole. A French firm of consultants involved in the preliminary studies.

GRONDMIJ: A Dutch firm of consultants which provided the technical assistance for the Badeguicheri Valley development project.

SDRAT: Service de Développement régional et d'Aménagement du Territoire (Ministry of Planning).

OFEDES: Office d'étude et de développement des eaux du sous-sol. Responsible for building the bridges in the Badeguicheri project.

CES/DRS: Service de la Conservation des Eaux du Sol et de la Défense et Restauration des Sols. Was responsible for the technical monitoring of the Badeguicheri Valley development works (building of terraces, control of erosion etc.).

Ouaka regional programme and integrated project in Central African Republic

ORDOHK: Office de Développement de la Ouaka et de la Haute-Kotto. Until it was closed in 1970, it had been in charge of the execution of the project, with responsibility for the marketing of oil crops, maize, rice and other local crops in conjunction with the cooperatives and private traders. From 1970 on, AGROPROGRESS took over its role, providing advisory services and supplies to producers.

AGROPROGRESS: A German firm of consultants providing research services, work in the field and technical assistance. Took over overall responsibility for the project after the 1970 agrarian reform under which the ORDs were abolished. AGROPROGRESS succeeded the CFDT, taking over some of its staff.

ENPROCAF: Entente professionnelle caféière. A consortium of five private traders marketing coffee in conjunction with the cooperatives.

SICPAD: Société industrielle centrafricaine de produits alimentaires divers.

CSPC: Caisse de stabilisation des prix du café et du coton. In addition to its support and stabilization role, it handled the financial management of the projects.

INRTV: Institut national de recherche textile et vivrière.

IRCT: Institut de recherche des cotons et textiles.

EUROPREDE: Groupement européen de programmation et d'études générales de développement. Carried out the preliminary regional and sectoral studies.

UCCA: Union Cotonnière Centrafricaine. Company holding the monopoly for the collection, processing and sale of cotton.

ONCPA: Office national de commercialisation des produits agricoles. Set up in 1970, this office was responsible for marketing food crops. It was closed down in 1974 and its functions were taken over by approved private buyers, who had already been engaging in marketing in parallel with the ONCPA since 1972.

Evaluation of the Atacora development project in Benin

CARDER: Centre d'action régionale pour le développement rural. A broad-based regional development agency, responsible for project implementation.

ODAA: Opération de développement agricole de l'Atacora. The CARDER's predecessor.

MDRAC: Ministère du développement rural et de l'action coopérative.

CNCA: Caisse nationale de crédit agricole. Financing of supply and marketing structures.

SONAGRI: Société nationale de développement agricole. Responsible for supplying all the regional CARDERs with factors of production, cotton-seed etc.

COBEMAG: Coopérative Béninoise de matériel agricole.

SONACO: Société nationale agricole pour le coton. Development of cotton growing.

SNAFOR: Société nationale de développement forestier.

ONATHO: Office national du tourisme et de l'hôtellerie. Administration of tourism.

SONIAH: Société nationale d'irrigation et d'aménagement hydro-agricole. Primarily concerned with rice growing.

SONIB: Société nationale d'importation du Bénin. Supply of imported provisions (flour, rice, milk, sugar, salt etc.).

SONAFEL: Société nationale des fruits et légumes. Responsible for managing State orchards (oranges, lemons, grapefruit, mangoes). Marketing of tomatoes and potatoes.

SOFITEX: Société des fibres textiles. Concerned exclusively with cultivation and purchase of Kéna fibres.

SONACEB: Société nationale de commercialisation et d'exportation du Bénin. Monopoly in groundnuts, cotton, cashew nuts, karité and tobacco.

RGA: Régie des grains de l'Atacora. Marketing of food crops (sorghum, maize, millet, beans, sesame, yams and manioc).

RTA: Régie des transports de l'Atacora. Transport of goods.

RADA: Régie d'approvisionnement et de distribution de l'Atacora. Supplies of essential provisions (salt, sugar, preserves, building materials, cement, sheet-metal, steel).

CPBMI: Coopérative provinciale de bâtiment et de menuiserie industrielle. Siting, construction and fitting out of all buildings for the purposes of accomodation, tourism, administration, industry etc.

SOCAD: Société de commercialisation et de crédit agricole.

BBD: Banque Béninoise de développement. Finance for supply and marketing of structures.

Rice-growing development operation in the Ivory Coast

SODERIZ: Société pour le développement de la riziculture. A State company responsible for carrying out the rice-growing programme: promotion of the crop, hydraulic and other works, purchase and processing of paddy, importing and wholesale marketing of rice.

SATMACI: Société d'assistance technique pour la modernisation de la Côte d'Ivoire. Responsible for supervision of production, collection of marketed paddy, management of rice-fields.

CPR: Caisse de péréquation du riz.

SEDES: Société d'études pour le développement économique et social. Consultancy bureau (Paris).

BEI-AGRER: Bureau d'études Fernand Courtois (Brussels).

BDPA: Bureau pour le développement de la production agricole (Paris). Technical assistance.

CFDT: Compagnie française de développement des textiles. Technical assistance.

GVC: Groupement à vocation coopérative.

BNDA: Banque nationale de développement agricole.

CIDT: Compagnie Ivoirienne de développement des textiles.

GERDAT: Groupement d'études et de recherche pour le développement de l'agronomie tropicale (Montpellier).

CSSPPA: Caisse de stabilisation et de soutien des prix des produits agricoles.

GRONTMIJ: A firm of consultants responsible for technical assistance (Netherlands).

AGROTEC: A firm of consultants responsible for technical assistance (Federal Republic of Germany).

LOTI: A firm of consultants responsible for technical assistance (Italy).

CENAPEC: Centre national de promotion des entreprises coopératives.

CFCI: Compagnie française de la Côte d'Ivoire.

Agricultural development in the Department of Comoé in Upper Volta

ORD: Office régional de développement. Responsible for coordinated development of the agricultural economy:

(i) improvement of productivity through the distribution of inputs (insecticides, seed, fertilizers etc.);

(ii) organization of marketing.

BND: Banque nationale de développement.

OFNACER: Office national des céréales.

CFDT: Compagnie française de développement des textiles.

OFCOM: Office de commercialisation. Agricultural produce.

CCCHV: Coopérative centrale de consommation de Haute-Volta.

SOVOLCOM: Société voltaïque pour la commercialisation (formed by the merger of OFCOM and CCCHV).

IRHO: Institut de recherches des huiles et oléagineux. Specializes in research on groundnuts and sesame.

Agricultural redevelopment project in Eastern Kasai, Zaire

CAKO: Commission agricole du Kasaï Oriental. An independent, broad-based body set up for the purposes of the project. Responsible for establishing farming communities, instructing peasant farmers and providing technical support for cotton marketing (this role was in fact performed by ONAFITEX) and developing other crops.

ONAFITEX: Office national des fibres textiles. Responsible for supplying cotton seed, purchasing and processing seed-cotton, marketing the fibre and the by-products.

CFDT: Compagnie française de développement des textiles. Technical assistance.

ONACER: Office national des Céréales. Handles the marketing of cereales where there are no private traders performing this function.

INDACOM: A firm of consultants responsible for technical assistance.

SORCA: Consultancy bureau.

Annex 2

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