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Report No. 7397-BUR

STAFF APPRAISAL REPORT

BURKINA FASO

AGRICULTURAL SUPPORT SERVICES PROJECT

DECEMBER 16, 1988

Africa Region
Sahelian Department
Agriculture Division

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CURRENCY EQUIVALENTS

Currency unit: CFA Franc (CFAF)
US$ = 281.25 CFAF (as of April 1, 1988)

SYSTEM OF WEIGHTS AND MEASURES

Metric system

GOVERNMENT FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

CFJA	Centre de Formation des Jeunes Agriculteurs (Young Farmers Training Center)
CNCA	Caisse Nationale du Crédit Agricole (National Bank for Agricultural Credit)
CNRST	Centre National de la Recherche Scientifique et Technologique (National Center for Scientific and Technological Research)
CRPA	Centre Régional de Promotion Agro-Pastorale (Regional Center for Agricultural and Livestock Development)
DAAF	Direction des Affaires Administratives et Financières (Directorate for Administrative and Financial Affairs)
DEFOC	Direction de l'Alphabétisation Fonctionnelle des Paysans (Directorate for Functional Literacy Training)
DEP	Direction des Etudes et de la Planification (Directorate for Studies and Planning)
INERA	Institut National d'Etudes et de Recherches Agricoles (National Agricultural Research Institute)
IRBET	Institut de Recherche en Biologie et Ecologie Tropicale (Research Institute for Tropical Biology and Ecology)
MAE	Ministère de l'Agriculture et de l'Elevage (Ministry of Agriculture and Livestock)
MACP	Ministère de la Question Paysanne (Ministry of Rural Affairs)
ORD	Organisme Régional de Développement (Regional Development Authority)
OTRVA	Opération Test de Renforcement de la Vulgarisation Agricole (Pilot Program for the Strengthening of Extension Services)
PAPEM	Point d'Appui de Prévulgarisation et d'Expérimentation (Adaptive Research Station)
ONAVET	Pharmacie Natinale Vétérinaire (National Veterinary Pharmacy)
SAF	Service Administratif et Financier (Administrative and Financial Service)

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This report is based on the findings of two Bank missions: a main appraisal from November 23-December 15, 1987 conducted by Mr. D.H. van der Sluijs (mission leader), Mesdames J. Murphy and T. Genta Fons and Messrs. M.B. Rambocus, D.D. Dawit (IDA); J.F. Poulain (CIRAD, Abidjan); B. Esteulle and E. Leroy (consultants); and a post-appraisal from April 18-27, 1988, after the reorganization of the two major participating ministries. The latter mission was composed of Messrs. D.H. van der Sluijs, M.B. Rambocus, J.Y. Maillat, and R. Le Breton (IDA), and Mr. B. Esteulle (consultant). This report was processed by Florence Le, AFTAG, and Sylvie Danant and JoAnne Nickerson, AF5AG.

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MAPS

IBRD No. 21004 and 21005

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PROJECT FILE

A. Selected Background and Preparation Documents

1. "Gestion Financière et Comptable", Alain Waddell. 15 juillet, 1987.

2. "Réactualisation du Volet Vulgarisation Agricole et Synthèse du Projet", J.F. Coatanlem, 15 juillet, 1987.

3. (a) Principales conclusions et recommandations de la mission effectuée par Guy Belloncle du 1er au 17 mai 1987 dans le cadre de la préparation du Projet National de Renforcement des Services d'Appui aux Producteurs (août 1987).

   (b) Projet de Renforcement des Services d'Appui. Volet Ministère de la Question Paysanne: Alphabétisation-Vulgarisation (juillet 1987).

   (c) Projet de Renforcement des Services d'Appui aux Producteurs. Volet Ministère de la Question Paysanne: Alphabétisation, Coopérativation, Vulgarisation (octobre 1987).

4. "L'encadrement agricole des paysannes", aide-mémoire (février 1987), Constantina Safiliou.

5. "Projet National de Vulgarisation Agricole. Rapport intérimaire de préparation", 3 octobre 1985. FAO/CP (1985), Burkina Faso.

6. (a) Atelier d'Evaluation de l'Opération-Test de Renforcement de la Vulgarisation Agricole (OTRVA), Rapport de Synthèse. Bobo-Dioulasso, 18 au 21 novembre 1986.

   (b) Annexes: Rapports des ORD concernés et de l'Equipe d'animation.

B. Staff Working Papers (prepared by appraisal/post-appraisal missions) of December 1987 and April 1988.

1. Composante Vulgarisation Agricole, B. Esteulle (IBRD/IDA, Ouagadougou).

2. Composante Communication-Moyens Audio-visuels, B. Esteulle (IBRD/IDA, Ouagadougou).

3. (a) Le Renforcement des Points d'Appui, de Prévulgarisation et d'Expérimentation multilocales (PAPEM), T.F. Poulain (CIRAD).

   (b) Updated Costs Research-Development/PAPEM, April 1988.

4. Services de l'Elevage, Dr. E. Leroy/(Consultant), janvier 1988.

5. Suivi et Evaluation, J. Murphy (IDA).

6. Functional Literacy and Staff Training, D. Deguefu Dawit, IDA.

C. Project Cost Tables (COSTAB), December 1988.

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CREDIT AND PROJECT SUMMARY

Borrower: Burkina Faso

Beneficiary: Ministry of Agriculture and Livestock (MAE) and Ministry of Rural Cooperative Action (MACP)

Amount: SDR 31.2 million

Terms: Standard IDA terms, with 40 years maturity.

Description: This project is the first five-year phase of a long-term program aimed at improving support services to farmers and herders. The project has three components: (i) extension services, incorporating lessons learned during a two-year pilot operation, to make such services more responsive and more effective nationwide; (ii) livestock services, including the strengthening and reorientation of preventive and curative animal health services, to owners and herders of cattle and smallstock nationwide; and (iii) functional literacy services which will provide representatives of farmers' groups nationwide with functional literacy skills.

The project would provide funding for vehicles, equipment and infrastructure; manpower development and training costs; and operating costs.

Economic Rate of Return: n.a.

Benefits and Risks: The main benefits would be: (a) increased crop and livestock output, arising from improved land and animal productivity in the more densely populated areas, and from improved labor productivity in less densely settled areas; (b) more sustainable farming systems as recently-introduced practices become more widely adopted; (c) training of a large number of farmers, herders and staff in management and communications skills as well as technical matters, whereby new techniques will be more effectively identified, tested and transmitted. The risks are: (a) the possible inability of extension and research services to produce workable solutions to farmers' and herders' problems; (b) problems of inter-agency coordination; and (c) the possible failure of Government and/or donors to sustain the long-term commitment required to achieve durable improvements in the

effectiveness of agricultural support services. To minimize these risks, a two-year pilot operation was undertaken and the lessons have been built into project design; inter-agency coordination has been simplified between the departments of MAE and MACP, where financial and management capabilities will be strengthened; and annual reviews of work plans and budgets, as well as the mid-term implementation review, will provide good opportunities for program review and long-term commitment building. In addition, a Bank staff member has been assigned to the Resident Mission for the first three years of the project specifically to advise on its implementation.

Estimated Costs (net of identifiable taxes and duties)

	Local	Foreign	Total	% of Base Cost
	(US$ 000)			
A. Agricultural Extension	15.4	9.3	24.7	64
B. Livestock Services	3.3	3.4	6.7	17
C. Functional Literacy Program	3.0	1.3	4.3	11
D. Studies and Pilot Operations	2.0	0.1	2.1	5
E. Project Management and Administration	0.5	0.5	1.0	3
TOTAL BASE COSTS	24.2	14.6	38.8	100
of which				
A. Civil Works	3.7	2.4	6.1	16
B. Equipment	0.9	2.0	2.9	8
C. Vehicles	0.6	5.0	5.6	14
D. Technical Assistance	-	0.4	0.4	1
E. Training	2.2	0.7	2.9	8
F. Studies/Pilot Operations	0.4	0.1	0.5	1
G. PPF	1.6	-	1.6	4
H. Salaries (local)	5.2	-	5.2	13
I. Operating Costs	9.6	4.0	13.6	35
Physical Contingencies	0.9	0.7	1.6	4
Price Contingencies	3.0	1.5	4.5	11
Total Project Costs	28.1	16.8	44.9	115

FINANCING PLAN

	US$ Million
Government	2.9
IDA	42.0
	44.9

Estimated IDA Disbursements

	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97
Annual	0	3	5	7	8	7	6	4	2
Cumulative	0	3.0	8.0	15.0	23.0	30.0	36.0	40.0	42.0

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I. BACKGROUND

A. Introduction

1.1 With its per capita GNP of $200 in 1986 and a population of 8.1 million, Burkina Faso is one of the poorest countries in the world and one of the most densely populated in Western Africa. The country's population growth rate of 3.5% per annum is barely matched by the economic growth rate (5.0% for 1983-1988). A population growth rate of 2.9% is projected for the rest of the century. Of the approximately 60 ethnic groups, the sedentary Mossi make up 51%; the pastoral and nomadic Peuhl, the second largest group, account for 10%. The three major languages -- Moore, Jula and Ful/Fulde -- are together spoken by 96% of the country's population, and Moore alone is spoken by 60%.

1.2 Improving the performance of the agricultural sector will be of crucial importance for future growth in Burkina Faso, since the sector accounts for about 40% of GDP and almost all exports. Agriculture employs 80-90% of the population. Soils are generally poor and rainfall is both scarce and erratic with frequent droughts. The lack of permanent water flow in most of the country's river systems severely limits the potential for irrigation. Burkina's landlocked position and the poor road network further constrain development in all sectors.

1.3 Agricultural growth is severely limited by several of those factors. The degradation of ecological conditions, particularly in the Central Plateau where over half the population is concentrated, is becoming acute. The reorientation of traditional agricultural technology and animal husbandry practices in the direction of increased productivity and greater protection of soils and grazing resources is a structural problem to be addressed on a priority basis.

B. The Agricultural Sector

1.4 Land is becoming increasingly scarce, notably in the Central Plateau, and fallows are fast disappearing. The many signs of degradation are indications that the population already exceeds the carrying capacity of the land with traditional production techniques. Techniques are changing, however, and there are today, partly as a result of a pilot program in improved extension, many encouraging instances of improved water harvesting and soil conservation techniques. As land becomes scarcer still, the returns to such techniques, and the farmer training required to teach them, will be further improved. Land has also been the subject of recent legislation, in August 1984 and August 1985, whereby all lands became the exclusive property of the state. Titles of usufruct ("titres de jouissance") may, however, be conferred to groups of farmers or to individuals, and such titles convey most of the property characteristics,

including, for example, the land's ability to serve as collateral for loans.

1.5 Based on climate, soils and socio-economic factors, the country can be divided into five agro-ecological zones: the Sahel, the Central Plateau, the West, the Southwest and the Southeast (Map IBRD No. (1)). The Sahel, in the North, is the driest region. It receives less than 600 mm of erratic rainfall per annum. Extensive grazing (transhumance) is the main economic activity and human population is sparse: fewer than ten inhabitants per km2. The Central Plateau is the most populous region with 30 to 40 inhabitants per km2. The area, which falls within the Sahelo-Sudanian climatic zone, is mainly devoted to cereal cropping and average rainfall ranges from less than 600 mm in the North to 900 mm in the South. Due to population pressure and the breakdown of the traditional system of shifting cultivation, the area is suffering severe environmental degradation. The West receives from 600 mm to 800 mm of rainfall, and its main activity is also livestock production. The degree of environmental degradation ranges from moderate to severe. The Southwest, which falls within the Sudano-Guinean climatic zone, enjoys more regular rainfall ranging from 900 mm to 1200 mm, has good water resources, and environmental degradation is, as yet, limited. However, following the successful eradication of riverblindness, it has become the major receiving area for immigrants from the Central Plateau and the Sahel regions. Finally, the East is the least developed, least populous and also the least degraded part of the country. Rainfall ranges from 600 to 900 mm per annum.

1.6 Most agricultural production is carried out on small (two to seven ha), fragmented farms, whereby a family's holding consists of several different plots, including a mix of more and less favorable sites according to slope and soil. While production conditions are quite diverse, cereals are predominant in cropping patterns: sorghum, millet and maize account for nearly 90% of the land cultivated and for approximately 80% of the gross value of agricultural output.

1.7 Cotton acreage has expanded markedly since 1968 due to a shift to more fertile areas in the Southwest, increased use of fertilizers and insecticides, and improved extension. Cotton's share in total exports increased from 2% in 1960, to 33% in 1978, and 54% in 1985. Total output has been steadily increasing to 170,000 T of seed cotton for the 1986/1987 crop season. Whereas cotton was taxed in the early 1980s, large subsidies have been paid by Government in the last two years, to shield producers from the sharp decline in world prices aggravated by the appreciation of the CFA franc against the dollar. Recent improvements in world market prices have brought partial relief, however, and plans to expand the country's ginning capacity are in an advanced stage.

1.8 Livestock production is one of the most important activities in the economy, and crop and livestock production greatly depend upon one another. The livestock sector is estimated to contribute about 25% of the agricultural GDP and 20% of all exports. The national herd is estimated at

nearly three million head of cattle, nearly two million sheep and 2.5 million goats. In addition, there are between 20 and 30 million head of poultry. Cattle are managed in extensive pastoral or agro-pastoral systems, which are characterized by low calving and high mortality rates, year-round low nutritional levels, and deteriorating grazing resources. A recent study 1/ reports that more than two-thirds of the nation's cattle are managed in about 30,000 separate pastoral herds, i.e., an average of 70 cattle per herd.

1.9 Grazing and soil resources are degrading due to inappropriate agricultural and grazing practices, while natural grazing lands are shrinking due to the expansion of cultivated areas. Public livestock services are inadequate as they are oriented mainly towards animal health interventions rather than animal husbandry; in addition, the livestock service has suffered from particularly low funding for infrastructure, transport and operating costs.

1.10 The six major cattle diseases in Burkina Faso are: rinderpest, trypanosomiasis, pleuropneumonia, anthrax, pasteurellosis and helminthosis. Vaccination coverage varies widely, with rinderpest and pleuropneumonia relatively well under control. Anthrax, a potential threat to humans through infected meat, was recorded in several localities in 1985 and 1986. Pasteurellosis was recorded in 1985, and to a lesser extent in 1986. Internal parasitism is believed to be a serious problem in Burkina, but limited data is available on its extent. Other diseases such as brucellosis, tuberculosis, sheep pox, salmonellosis, Newcastle disease and trichomoniasis (poultry) are known to exist, but their epidemiology is difficult to assess due to limited data.

1.11 One of the aims of the 1984-1985 land reform was to make livestock herders/owners responsible for the long-term preservation of the nation's grazing resources. A medium to long-term Government objective is to help pastoral livestock producers manage "their" resources by encouraging the creation of pastoral associations as an organizational instrument. The livestock services of MAE are responsible for seeking to attain the objectives embodied in the reform laws and for assisting pastoral associations.

1.12 The pilot program for the strengthening of extension services (OTRVA) (paras 1.23 - 1.26) has shown the importance of, and scope for, appropriate technology and technical knowledge to Burkina's agricultural development. The new land legislation is now providing a starting point for finding answers to the increasingly important issues of resource management through, e.g., the Environmental Management Project, now under preparation by Government with IDA assistance.

1/ Clanet, J. et Meyer, J.F. (1986): Mouvements Pastoraux au Burkina Faso. Synthèse des Enquêtes 1984-1985.

C. Government Sector Strategy

1.13 The Government has three main objectives for the agriculture sector: (1) to stop the degradation of the environment and improve resource management and the sustainability of production systems; (2) to raise rural productivity, production and incomes; (3) to improve food security and diversify the sources of food and incomes. To attain these objectives, Government's strategy is to provide sound incentives to rural producers, having flirted with, but abandoned, the idea of state farms. After phasing out the subsidy on chemical fertilizers, Government resisted the pressure to re-introduce the input subsidy as world cotton prices fell; instead, a plan to deal with the output price was successfully worked out, including a reduction in the producer price of cotton. In addition, in order to increase consistency and effectiveness in agricultural development strategy, the Government's orientation has shifted from an area-specific development approach with individual financing to a more sectoral approach emphasizing nationwide projects with global financing.

1.14 Part of the Government strategy is also to decentralize responsibilities and to encourage and prepare villagers to manage and use their land, water, grazing and forest resources on a sustained basis. The recent agrarian reform and the Government's stated policy of strongly encouraging local participation in decision making through village groups, such as the "Groupement Villageois" (GV), are the foundation of this approach.

D. The Institutional Environment.

1. Ministry of Agriculture and Livestock (MAE)

1.15 Until 1986, the Ministry of Agriculture and Livestock (MAE) had sole responsibility for sectoral policy and the overall development of the agricultural and rural sectors. Two new ministries were created in 1986, to deal with rural issues: the Ministry of Water, responsible for hydraulic resources and infrastructure, and the Ministry of Rural Affairs, responsible for rural institutions, such as village groups and cooperatives, as well as for such national programs as the functional literacy program (paras 2.14 - 2.18).

1.16 MAE continues to be the main institution for: planning agricultural and livestock production; providing extension services to crop farmers and livestock producers; training agricultural and livestock technicians; adaptive research in the PAPEM (Points d'Appui de Prévulgarisation et d'Expérimentation Multi-locale) planned by and implemented in collaboration with researchers of the Institut d'Etudes et de Recherches Agricoles (INERA); input distribution (including improved seed, veterinary drugs and supplies, and agricultural chemicals); and the distribution of credit. Until early 1987, those support services were provided by MAE's eleven decentralized structures (Organismes Régionaux de Développement, ORD). Their directors, nominated by the Cabinet, reported

to the Secretary General of MAE. The ORDs were dissolved in May 1987, and in April 1988, a new decree was issued defining the Ministry's new organizational structure (Annex 1). The main features of this new structure are: (a) the creation of four types of services under the Secretary General; (b) the reintroduction of a similar institutional framework as the ORDs called Centres Régionaux de Promotion Agro-Pastorale (CRPA); and (c) the reorganization of the livestock services, involving the creation of a post of Secretary of State for Livestock (Secrétaire d'Etat à l'Elevage), and the integration of the livestock services' field personnel into the CRPA structure.

1.17 The Secretary General of MAE is responsible for the administrative and technical coordination of all central, external and "adjunct" services ("services rattachés"). He is also responsible for the technical liaison between MAE and other ministries, and with the Cabinet. He has a small technical staff of two agronomists and two livestock specialists. Over 30 directors - including the 12 CRPA directors - report to him as follows:

(a) the four "common services" directorates:

- Directorate for Administrative and Financial Affairs (DAAF) in charge of the Ministry's human, financial and material resources. It has three services: Administration, Finance, and Supply.

- Directorate of Studies and Planning (DEP), in charge of studies and planning; monitoring and evaluation of projects; and agricultural statistics. It has five services: Administration and Finance; Studies and Programming; Monitoring and Evaluation; Agricultural Statistics; Management Support to Institutions and Projects. The latter service used to be a separate directorate under the Secretary General;

- Directorate for Professional Training and Scholarships (DFPS);

- the Directorate of Agricultural Extension (DVA) responsible for extension dealing with crops, livestock and the transformation of agricultural products. It has five services: Administration and Finance, Training and Extension; Monitoring and Evaluation; Food Technology; Communication Methods and Audio-Visual Aids;

(b) the three "special services" livestock directorates:

- Directorate for Reorganizing the Traditional Livestock Industry (DRET), responsible for the identification and planning of pastoral zones in the context of the agrarian reform; and assisting traditional livestock owners in organizing themselves. It has services dealing with the planning of pastoral zones; with animal feeds; and with support to the extension services;

- Directorate for Animal Health (DSA), with an animal health service and a service dealing with public health aspects of veterinary services;

- Directorate of Livestock Production and Industries (DPIA) whose main responsibility is the planning, coordination, monitoring and technical control of the nation's livestock industry. It has a service dealing with livestock development in general; with poultry and small livestock; and with the processing and marketing of animal products;

(c) the three "special services" agricultural directorates:

- Directorate for Plant Protection and Product Conservation (DPVC) with three services;

- Directorate for Agricultural Inputs and Mechanization (DIMA), dealing with the planning, production and promotion of inputs (fertilizer, improved seed); and agricultural equipment. It has three services, one dealing with inputs, one with agricultural mechanization and one, which, in collaboration with DVA, is responsible for the training of users of improved equipment;

- Directorate of Plant Production (DPV) responsible for the elaboration of sub-sectoral programs, with four services dealing with cereal crops; horticultural crops; fiber, oilseed and rootcrops; and with irrigated crop production.

(d) The 12 "external service" directorates, which are the CRPA. Each CRPA consists of four services: extension; monitoring and evaluation; support services; and rural works. The CRPA Directors, like their predecessors the ORD Directors, are nominated by the Cabinet and report to the Secretary General of MAE. The CRPAs are public enterprises that handle activities directly linked to the promotion of agricultural and livestock development, as described in para. 1.16.

2. Ministry of Rural Cooperative Action (Ministère de l'Action Coopérative Paysanne (MACP)

1.18 The Ministry of Rural Cooperative Action was formed in August 1988, to succeed the former Ministry of Rural Affairs. It has twelve regional antennae based on the same geographic boundaries as the CRPA of the MAE. Its principal executive service, responsible for supervising adult literacy lies the Directorate for Education and Cooperative Training, which is responsible for adult and young farmer functional literacy training, literacy training research and evaluation, and supervision of the Training of Trainers Centers (CFFA) and other functional literacy training facilities attached to the Directorate.

3. Ministry of Basic Education and Mass Literacy (Ministère de l'Enseignement de Base et de l'Alphabétisation des Masses (MEBAM)

1.19 This ministry was also created in August 1988 when the former Ministry of National Education was restructured, and assumed responsibility for all primary education and basic literacy programs. The National Literacy Institute, which comes under the charge of this Ministry, is responsible for developing training materials in local languages.

1.20 Farmers' organizations have been very active in Burkina at the village level and they enjoy the support of the Government. The approximately 4,500 "Groupements Villageois" (GV) are voluntary farmer organizations which are active in input supply, credit, and marketing activities at the village level. The most successful of them are getting gradually involved in local civil works (such as small irrigation schemes). Experiences in the Hauts Bassins and Boucle du Mouhoun areas indicate that they should be able progressively to take over some of the functions currently performed by extension workers (such as agricultural data gathering or input demand estimation), thus allowing the latter to concentrate more fully on their extension function.

1.21 Other agencies concerned with agricultural production are: the Office National des Céréales (OFNACER), responsible for cereal marketing; the Société des Fibres et des Textiles (SOFITEX) for cotton; the Caisse Nationale du Crédit Agricole (CNCA), for medium-term credit; the Caisse de Stabilisation des Prix des Produits Agricoles (CSPPA) for price stabilization of export crops other than cotton; the Office National de l'Exploitation des Ressources Animales (ONERA), for meat and dairy products; and the Société de Financement et de Vulgarisation de l'Arachide (SOFVA), for the financing of groundnut production and for extension.

E. Bank Strategy

1.22 Agriculture, the predominant sector of Burkina's economy, has received considerable Bank support. Lending for agriculture represents more than 40% of total Bank lending to the country. As of November 30, 1988, 16 IDA credits, amounting to US$ 140 million, had been approved for the agricultural sector, and eleven have been successfully completed. Projects under execution include three area-specific projects, which are nearing completion, a sectoral adjustment operation, the Fertilizer Project (Cr.1550-BUR), under which the subsidy on chemical fertilizers was phased out as scheduled, and a nationwide operation, the Agricultural Research Project (Cr. 1896-BUR).

1.23 In contrast to experience in many other countries, the area-specific projects in Burkina have been quite successful. These projects concentrated on cotton production and were located in the cotton area in the Southwest; the earlier projects have been analyzed by OED in

two cross-country studies. 2/ Notwithstanding these successes, the Bank's strategy has evolved towards nationwide operations, as exemplified by the recently-approved Research Project. The proposed project, with its long-term perspective, is a key part of this strategy. Based on preparation, thorough collaborative planning, and two years of experience with OTRVA, the project has generated enthusiastic support among Burkinabè officials. A key to the success of the project will be maintaining this commitment.

F. OTRVA (Pilot Program for the Strengthening of Extension Services)

1.24 In September 1985, following a three-day national seminar on the improvement of Burkina's extension services, the Government, with the financial and technical support of the Bank, initiated the "Opération Test de Renforcement de la Vulgarisation Agricole" (OTRVA) for the 1986 cropping season. Five ORDs in different ecological zones (Hauts-Bassins, Mouhoun, Bougouriba, Yatenga and part of the ORD de l'Est) were selected to conduct the pilot operation (MAP IBRD No (2)).

1.25 The objectives of this pilot operation were: (i) to reorganize and improve the agricultural extension services; (ii) to form a multi-disciplinary team of subject matter specialists (Techniciens Spécialisés) within the extension structure; (iii) to establish direct links with agricultural research; (iv) to intensify staff training at all levels; and (v) to improve farmer/extension worker contacts. The Service de Vulgarisation Agricole et de l'Animation Rurale (SVAR) -- now the Direction de la Vulgarisation Agricole (DVA) -- of the MAE, was charged with the overall implementation of the operation. Within the SVAR, a multi-disciplinary team was set up to back-stop field staff and strengthen the links with research at the central level.

1.26 Results of the OTRVA, reviewed during a seminar in November 1986, were generally judged positive. The organization of work programs and motivation of the extension staff were much improved, as were relations with research. During the first season of pilot operations, farmers set up 11.700 test plots and found that substantial yield increases could be obtained through the introduction of simple techniques. On the other hand, the seminar also identified a number of problems. For example, backstopping of the extension agents by the subject matter specialists and other supervisors was judged insufficient, as were field visits by research teams, largely due to lack of operational budgets and means of transport. Also, livestock production themes should have received more attention. The

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2/ "Agricultural Sector Operations Review : Burkina and Malawi", Report No. 5387, December 28, 1984; and "Cotton Development Programs in Burkina Faso, Côte d'Ivoire and Togo", published as a Bank Operations Evaluation Study in March, 1988.

technical themes were not always adapted to farmers' priorities and the training of extension agents was too theoretical. Finally, all the participants stressed the need for better feedback from producers to research.

1.27 Based on the overall satisfactory results, however, the Government decided to continue the operation during the 1987 season and to extend it to the ex-ORDs of Centre-Ouest and Centre-Est, and to all the ex-ORDs of the East, plus some sectors of the Sahel and the Centre. Results obtained in the 1987 season were reviewed in a seminar in January 1988, at which good progress was recorded. Continuing problems were observed in the effectiveness of subject matter specialists, although there was a consensus that the problems were much less acute than in 1986. Similarly, backstopping of field extension agents by other supervisors was still judged imperfect, although much improved. Livestock production themes, too, were still judged to warrant more attention, but good progress was reported in promotion of manuring. Overall, the seminar found sound progress on many fronts, but also several areas in which improvements could be made by further refinements in what is now proclaimed to be the Burkinabè system of extension. The objective of the Government under the proposed project is to refine further the Burkinabè system of extension and to extend the coverage nationwide.

II. AGRICULTURAL EXTENSION AND OTHER SUPPORT SERVICES

A. Introduction

2.1 Agricultural extension and other support services began in the 1950s, mostly with the help of international agencies. A national program of extension services was eventually launched in the 1970s by the Government through parastatal agencies such as the ORDs (para. 1.16) and the Volta Valleys Management Authority.

2.2 The initial focus of agricultural extension in Burkina was the promotion of basic agricultural techniques, including animal traction, and the judicious and more sustained use of inputs, with emphasis on cash crops, i.e., cotton and groundnuts. Then, from 1975 onwards, extension messages shifted towards the protection of productive resources and the environment. However, despite heavy commitments of manpower and funds, the earlier efforts to improve support services to farmers failed to produce significant results, except in the cotton areas.

2.3 Since the late 1970s, three Bank-funded area-specific projects have introduced to Burkina some of the basic principles of the training and visit (T & V) system of extension. The main idea of the T & V system is to have competent, well-informed agricultural extension workers visit farmers regularly to provide them with relevant technical messages and advice, and at the same time convey farmers' problems back to technical specialists and, through them, to researchers.

2.4 Major weaknesses of the existing extension services in Burkina include: inadequate training of extension agents; failure to translate existing technological information into recommendations to be promoted among farmers; weak linkages with research; the demands on the extension workers' time for other duties; and lack of coordination among extension authorities, even within the same agricultural area.

B. Agricultural Extension

2.5 Agricultural extension is the responsibility of the Directorate for Agricultural Extension (DVA) of MAE. As of April 1988, its field staff, distributed over the 11 ex-ORDs, numbered about 1,300, composed of 949 extension workers (818 male and 131 female); 226 subsector chiefs and "chefs de Service Départemental Agricole"; 53 sector chiefs; 32 coordinators and 37 regional headquarters extension staff. However, agent/farmer ratios vary widely from one region to another, from 350:1 in Bougouriba to well over 1,000:1 in Yatenga and with an average of 627:1 for the country. The sector and subsector chiefs are usually civil servants, whereas the field extension workers until recently were contractual employees without any formal training. Since late 1986, a process of certification of extension agents has been initiated by which the latter become civil servants after training and satisfactory completion of an entrance examination. As of early 1988, some 350 field extension workers remained to be certified. Training for these people will be included in the proposed project.

2.6 The PAPEM (Points d'appui et de prévulgarisation et d'expérimentation multilocales) are small, adaptive research sites managed by the CRPAs. Their role is three-fold: (i) they are part of the adaptive research program for a specific area; (ii) they serve as training ground for extension staff and farmers; and (iii) they participate in whatever seed multiplication cannot be done on seed multiplication farms.

2.7 Of the 20 PAPEMs, which are unevenly distributed over eight of the CRPAs (MAP IBRD No (2)), only 13 (including six PAPEMs of Centre-Est) are considered to have the minimal infrastructure. The training of most PAPEM personnel is considered inadequate. In addition, links with research are still inefficient, except in those CRPAs where the OTRVA operation was implemented.

2.8 Formal training for extension personnel is provided at three levels. The highest level is provided by the Institut de Développement Rural (IDR) of the University of Ouagadougou. IDR graduates (about 20 per year) fill positions at central ministerial level and at CRPA headquarters. For mid-level training, the Centre Agricole Polyvalent at Matourkou offers two degrees, one for "Conducteur de Travaux Agricoles Spécialisé" (about 30 graduates per year, they may also fill positions at the ministry level and typically act as extension service sector chiefs in the CRPAs), and the other for "Agent Technique Agricole" (with about 35 graduates per year, they generally fill the position of subsector chief). The Matourkou center is under-equipped, under-funded and short-staffed. Finally, field extension workers have mostly been trained by the ex-ORDs themselves, but only the few ex-ORDs receiving donor assistance have been able to do this effectively.

2.9 One of the features of an efficient extension system is a strong linkage with research, allowing farmers to convey their problems to research and receive adequate answers, but present links between research and extension services are poor. Extension agents are often poorly informed about the latest research findings, and the return flow of information also needs to be improved. Many extension agents do not properly understand farmers' thinking, and many farmers have benefitted little from contact with extension workers. Ensuring better communication between extension and the farming community is a formidable challenge, which is formally the responsibility of the Communications and Audio-visual Service. This service does good work, but the challenge will have to be addressed by many other agencies too.

2.10 At the national level, the DVA has played only a limited role in the monitoring and evaluation of extension, and the ex-ORDs had M&E units with diverse levels of resources and different understandings of their role and functions. The DEP of the MAE is responsible for monitoring (in broad terms) the implementation progress of all donor-funded projects, and for compiling agricultural production statistics. The DEP has no field staff for this latter task and relied on the ex-ORDs to collect the data. This has sometimes been done by the extension agents, at the detriment of their extension duties; often, the collection of production data has been done by

staff of the M&E units, a task which can severely constrain the rest of their work program.

C. Livestock Services

2.11 The various livestock directorates, which until the recent reorganization of the Ministry in April 1988 were headed by a Director General reporting to the Secretary General of MAE, now all come directly under the Secretary General. Under the new structure, the "Services Spécifiques de l'Elevage" are composed of three directorates as described in para. 1.17. The National Veterinary Laboratory (Laboratoire National Vétérinaire) is one of several adjunct services (services rattachés) of the Ministry. The National Veterinary Office (ONAVET), established in 1988, to succeed the former PHANAVET, is in charge of the import, storage and resale of veterinary drugs and animal feeds. The DPIA, established in 1960, is responsible for overall planning, monitoring, coordination and technical control of nationwide veterinary programs and services. The central laboratory is presently supplemented by two regional laboratories, one in Ouahigouya and one in Tenkodogo. The latter, recently established under an FAO project, is well equipped though not yet fully operational. The Ouahigouya laboratory (funded by the European Development Fund) is under-staffed and sparsely equipped. There is a need for additional basic diagnostic units in the major livestock production areas.

2.12 Disease transmission among livestock in Burkina is favored by the extensive, transhumant husbandry practices which bring cattle from different areas into contact at common grazing areas and watering points. The veterinary department and diagnostic laboratory have for years tried to limit outbreaks of rinderpest and pleuropneumonia through obligatory vaccinations. Most of the vaccines used in Burkina Faso are purchased in the region, specifically at the Dakar Hann laboratories in Senegal. Other vaccines, e.g., for rabies and Newcastle disease, are purchased in Europe. Local vaccine production would not be economically viable.

2.13 Livestock extension services suffer from a lack of professional staff and from the logistical problems involved in providing regular services to mobile pastoralists. Livestock services provided thus far have mainly dealt with the provision of vaccination and mobile veterinary services to farmers and herdsmen. A very modest extension unit consisting of two extension agents and two vehicles equipped with projectors was set up in 1979, but it provided only animal health services without advice on herd management, animal husbandry, or crop-livestock management. The mobility of the pastoralists poses special problems for the design of effective livestock extension, since frequent, regular visits - a key

feature of crop extension - cannot be readily organized. There are nonetheless several promising possibilities for organizing regular schedules of visits, even though they may not be, nor need be, as frequent as in crop extension; such schedules can be organized around livestock markets and veterinary product distribution centers and, above all, post-harvest and dry-season grazing areas when the cattle are much more spatially concentrated than in the rainy season.

D. Literacy Programs

2.14 Burkina's literacy rate of less than 15% is a major obstacle to economic development and to effective communication among extension staff, researchers and farmers. The National Institute for Adult Literacy Training (INAFA) estimates that there are at present about 15,000 fully literate farmers. The Government's long-term objective is to have farmers manage their own resources. This means, for example, that farmers would progressively take over the accounting and management of the GVs, and that they would also progressively relieve extension workers of such non-extension duties as statistical data gathering and administration. The strategy for achieving this objective strongly emphasizes functional literacy training. Two steps are involved: the first, basic literacy training, aims at teaching a core group of farmers in every village to read and write in their own vernacular; the second will see this core group use its literacy skills for the benefit of the remaining villagers.

2.15 MACP is in charge of farmers' functional literacy through the Directorate for Education and Cooperative Training (DEFOC). This directorate is responsible for elaborating a national strategy for functional literacy training; for training trainers and supervisory staff; and for supporting local initiatives aimed at establishing functional literacy training centers, strengthening existing CFJAs (Centres de Formation des Jeunes Agriculteurs) as rural centers for farmer training and the development of literacy skills.

2.16 Two literacy operations were conducted in 1986/1987 under the names "Operation Alpha-Commando" and "Operation Post-Alpha". The results were encouraging; evaluation showed that targets had largely been met, mainly due to farmers' eagerness to learn, but stressed the inadequacy of programs for women's literacy.

2.17 A major weakness in the program is the lack of monitoring of the performance and progress of new literates. This deprives GVs and farmers of the institutional support they need to assume their new responsibilities. The monitoring of these newly trained farmers is therefore of crucial importance and should be a priority.

2.18 The Young Farmers' Training Centers (CFJA) come under the DEFOC. Their original purpose was to provide rural youth with training in basic agricultural skills and teach them to read and write in their local

language and in French. Since mid-1986, however, the Government has been studying ways to reorient the CFJAs towards rural adult literacy training. Three groups of farmers would use the CFJAs' most: the secretaries of GVs and farmers' associations who need training in management and administration; women personnel of these GVs; and young adults and adolescents who would follow a literacy program "à la carte". These "à la carte" programs would respond to the variety of needs found among the GVs. CFJAs would eventually become CFAPs: Centres de Formation et d'Alphabétisation des Paysans (para. 2.15).

E. Agricultural Research

2.19 The Ministry of Higher Education and Scientific Research (Ministère de l'Education Supérieure et de la Recherche Scientifique, MESRS) is the overseeing Ministry for the National Center for Scientific and Technical Research (Centre National de la Recherche Scientifique et Technologique, CNRST). INERA (para 1.16) and IRBET (Institut de Recherche en Biologie et Ecologie Tropicale) are specialized institutes of CNRST. INERA's responsibilities include the planning, implementation and coordination of on-going national agricultural research programs and activities (including livestock), and the coordination of research programs undertaken or funded by international institutions and other donors. Forestry and environmental research are the responsibility of IRBET, which was created in 1985.

2.20 In April 1988, the Bank approved a US$17.9 million equivalent IDA Credit (Credit 1896-BUR) for an Agricultural Research Project as the first phase of a long-term program to develop and strengthen the country's agricultural research organization and programs. One of the high priority research programs to be funded, the Farming Systems Research Program (RSP), will be a major link between research and extension. Its researchers will play a leading role in the training of subject matter specialists for extension work and in the dissemination of research results to extension.

F. Credit, Input Supply and Marketing

2.21 Until 1979, practically all official seasonal credit for inputs was provided to farmers through the ORDs, and repayment on short- and medium-term credit was reportedly good. Unfortunately, many of the ORDs utilized the repayment money to overcome their own liquidity problems and, by 1979, official credit had become almost unavailable. In 1980, the Caisse Nationale du Crédit Agricole (CNCA) was set up to finance ORD credit operations. CNCA has 54% of its equity held by the Government and allied institutions and 46% by international development banks. With repayment rates having deteriorated progressively from about 90% in 1980/81 to about 55% for medium-term credit and to about 70% for short-term credit in 1985/86, improving credit recovery rates is one of the main challenges in promoting technologies involving inputs purchased by farmers.

2.22 Almost all fertilizers and insecticides used in Burkina are imported. SOFITEX (para 1.22) is the main importer, especially of cotton

fertilizer which accounts for about 75% of all fertilizer used in the country. Input distribution was theoretically financed and effected by the ex-ORDs, but in actual practice SOFITEX delivered them to farmer groups under various financial arrangements with the ex-ORDs. While current arrangements are satisfactory with regard to the availability of fertilizers and pesticides to the farmer, extension work should serve to increase and rationalize their use.

2.23 The importation at wholesale distribution of veterinary drugs and supplies is the responsibility of the Office National Véterinaire (ONAVET, para. 2.11). The CRPAs are responsible for the retail distribution and sale of veterinary drugs, and have the right to collect revenues on products sold and services offered. They also handle the distribution of animal feeds derived from agricultural production, i.e. molasses, cotton press cake, bran.

2.24 A national seed service was set up with USAID assistance in 1974. Research stations supply foundation seed which is multiplied by the ex-ORDs on publicly-owned farms to produce certified seed. In 1985, an average of about 325 tons of certified (F2) and foundation (F1) seed were produced. However, it is estimated that only about 2-3% of all cereals planted are of improved varieties and it is said that seed multiplication has been of unsatisfactory quality.

2.25 It is estimated that only 10% of the annual cereal production reaches the official market through the state-sponsored OFNACER (para 1.20). Private trade, largely controlled by some two dozen families, is said to be fairly competitive and is responsible for the commercialization of most of the production. OFNACER tends to disrupt markets by prematurely announcing official grain prices without adequate information or purchasing ability. As a result, farmers tend to hold back surpluses and are frequently left with substantial stocks, resulting in production cuts the following season. Cereals marketing in general, and the role of OFNACER in particular, are presently being studied by a Government-led working group which includes the main foreign financiers of agriculture, including the Bank.

2.26 Cotton marketing is handled efficiently by SOFITEX. Groundnuts are also efficiently marketed by both the private trade and the CSSPA, but low world prices have nearly eliminated groundnuts as a major cashcrop. Fruits and vegetables are marketed informally or through the National Cooperation Union, UBOCAM. There is a need for further studies in support of producers of new crops (such as soybeans or sesame) who face difficulties in finding satisfactory markets for such commodities.

2.27 As indicated in the above six paragraphs, performance of the credit, input supply and marketing support services is mixed. The priorities for public funding, however, have clearly to be in those types of services where the public sector incontestably has a large role to play, i.e., research and extension. In other services, the operational role that

the public sector might play has to be assessed in light of the capabilities of the private sector; often, the role of the public sector should be regulatory rather than operational. Thus the proposed project will concentrate on extension and training services. Increased effectiveness of these services will certainly generate further demands for other support services such as credit, input supply and marketing, to which the responsiveness of the public and private actors will be monitored; but the proposed project does not include any provision for further public investment in such services, other than funds for monitoring and pilot operations. At the same time, pilot operations in improved public credit are being undertaken. Financed by France, and drawing on the experience of the Grameen Bank in Bangladesh, these pilot operations could, if successfully evaluated after a few years, warrant significant new public investment in credit.

G. Accounting and Financial Management

2.28 Financial management in MAE is structured around national and local services. The Directorate of Administrative and Financial Affairs (DAAF) and the Administrative and Financial Service (SAF) of all other directorates of MAE (Annex 1) are responsible for financial management and accounting. The DAAF is responsible for the management of MAE's human, material and financial resources. A "Service Administratif" is in charge of personnel, and a "Service Financier" is in charge of financial resources. The Service Financier can only engage expenses, whereas actual disbursements are made by the Treasury. The SAFs handle accounting and financial management within the various directorates.

2.29 Equipment and structures of the DAAFs and SAFs are inadequate and most tasks are handled manually. The MAE is in charge of more than 80 agricultural development projects. In addition, the system is too centralized to ensure efficient financial management and accounting. For example, livestock services around the country used to be almost totally dependent on what is now the DPIA (para 1.17), and each expense incurred by these services required a time-consuming authorization. With the April 1988 restructuring of MAE, the livestock services directorates lost any accounting capacity they had previously had. The improvement of financial management and accounting should therefore aim at the progressive strengthening of accounting capability at the field level.

2.30 MACP is organized along the same lines as MAE. At the national level, the DAAF and the SAFs are in charge of financial matters and accounting. However, the DAAF of MACP is strongly reinforced by its Bureau des Projets d'Appui Général. This bureau is under the supervision of the Secretary General, and supervises all administrative and technical aspects of projects assigned to it. It has two main divisions: a Management and Accounting division, which keeps the individual project accounts, prepares budgets and issues payment orders; and a division in charge of contracts, civil works and bidding procedures. Projects under the Bureau's supervision (the Bank's third education project and the "Projet d'appui du 5ème FED à la fonction et à l'organisation du monde rural") have been well managed.

III. THE PROJECT

A. Objectives and Rationale

3.1 The project constitutes the first tranche of a long-term national program aimed at strengthening agricultural services. It has three main objectives:

(a) to improve the effectiveness and impact of agricultural and livestock extension services, in transferring technology to farmers;

(b) to strengthen animal health services and adaptive research programs;

(c) to provide functional literacy training to farmers, thereby enhancing their ability to participate more directly in technology generation and dissemination.

3.2 The project is part of an overall development strategy supported by both the Government and IDA. It complements other IDA-assisted projects in Burkina Faso: the nationwide Agricultural Research Project (Credit 1896-BUR), and the nationwide Environmental Management Project (under preparation). The proposed project also reflects design principles agreed on by the Government and IDA, namely that (i) technical assistance in general, and resident expatriates in particular, should be minimized; and (ii) upgrading the skills of staff at all levels should have high priority.

B. Summary Description

3.3 The project nas three main components: (a) agricultural extension; (b) livestock services; and (c) functional literacy. These main components will be complemented by (d) a small studies and pilot operations component; (e) strengthened monitoring units; and (f) a national accounting and procurement unit to be established under the project.

3.4 Agricultural extension. The agricultural extension component includes four elements: (i) reorganization and strengthening of national and regional extension structures; (ii) training for staff at all levels; (iii) improvement of research/extension links by strengthening the adaptive research units, including the PAPEM; and (iv) improving mass communication and audio-visual systems in support of extension.

3.5 The project would finance: additional personnel; renovation and/or creation of 17 PAPEMs; the construction of offices and field staff housing; the purchase of office equipment, vehicles, motorcycles and mobylettes; incremental operating costs; training and specialized technical assistance.

3.6 Livestock services. This component includes: (i) strengthening of livestock services at the national and regional levels; (ii) improving

the distribution of veterinary supplies and drugs and animal feeds (by ONAVET) ; and (iii) training of staff at all levels.

3.7 The project would provide funds for additional staff; the addition of a virology unit to the National Veterinary Laboratory; the construction of housing, offices, warehouses, cold rooms, vaccination posts, field laboratories and the repair and maintenance of existing structures; the purchase of motor vehicles, office and laboratory equipment and supplies; staff training; specialized technical assistance and incremental operating costs.

3.8 Functional literacy. The project would provide support to MACP's Directorate for Education and Cooperative Training (DEFOC, para. 1.18) in its young farmer training and adult functional literacy programs. Existing training centers would be rehabilitated and equipped, and some material and training support would be provided also to the ministry.

3.9 Complementary Components. Funding would be provided to (a) study the responsiveness of existing public and private actors in credit, input supply and marketing to new demands expected to be generated by more effective extension, and to undertake pilot operations in the provision of such other support services, (b) strengthen monitoring and evaluation, primarily of extension services, and (c) strengthen the DAAF by establishing a Central Accounting and Procurement Unit.

C. Detailed Features

1. Agricultural Extension Services

3.10 The project would reinforce and reorganize the agricultural and livestock extension services by applying nationwide the experience gained during the past two years through the OTRVA pilot operation (paras. 1.24-1.27). The three basic principles underlying the system of extension adopted by Burkina are that: (i) each extension worker will follow a clearly defined work schedule; (ii) staff at all levels will receive continuous training; (iii) links between extension and research will be strengthened.

3.11 The project will make rational use of the existing structures and personnel. This includes the 950 extension workers already available in the CRPAs: an additional 30 will be recruited to replace those who will be leaving field service for long-term training. Each extension worker would be responsible for four to eight villages (about 620 farms). Extension workers will be under the authority of local supervisors. Each supervisor would, on average, support and monitor the work of five extension workers. The number of supervisors would therefore total 190. Thirty provincial coordinators and 15 assistants will monitor the system. At the regional (CRPA) level, 12 regional staff will coordinate and prepare the work program of the field staff. These "Chefs de service" will also be in charge of the research-development and audio-visual units that support the extension services of each CRPA.

3.12 For every province, one subject-matter specialist will be recruited. This specialist will have three main duties: to help train extension workers and supervisors; to make regular field visits and provide technical support to extension workers; and finally, to be responsible for the contact between research and extension. The equivalent of 80 part-time subject-matter specialists will also be needed. The specialists will provide training for extension workers every two weeks. The themes then discussed will be passed on to farmers over the next two weeks. Female extension workers will be fully integrated in all extension activities. They will receive six months of special basic training in crop and livestock production.

3.13 Each of the eight extension areas will be visited bi-weekly and on the same day by the extension worker. The typical program of an extension worker would entail:

(a) discussions with farmer groups and demonstration of new techniques. Themes would deal with crop and livestock production, as well as with village resource management in general. Those themes are chosen to coincide with the major operations the farmers are involved in at any given time. If a farmer group is too large, or the level of agricultural knowledge too varied, the extension worker would split the group into homogeneous sub-groups. Cultural constraints may also make it desirable for the extension agent to conduct separate meetings for men and women; and

(b) follow-up visits by the extension worker during which he or she would monitor and discuss individually with male and female farmers the implementation of recommended techniques in their own fields and any problems encountered.

3.14 During each two-week period, the extension worker will have eight days of work in the field, plus two days for office work, training and seminars. Staff at all levels will receive specific and regular in-service training. A short-term consultant (three man-months) would provide technical assistance to the DVA in determining specific training needs and programs.

3.15 The research/extension linkages would be enhanced through the creation of adaptive research units in each regional (CRPA) extension service and the establishment or rehabilitation of a total of 17 PAPEMs. The heads of those 12 units would maintain regular contact with researchers at INERA. Their main tasks would be to:

- elaborate, together with research staff, the yearly adaptive research program to be conducted on the PAPEM;

- monitor the implementation of the program;

- decide, together with research staff, on the technical messages to be conveyed to farmers and help prepare the technical materials for extension workers and farmers; and

- participate, together with researchers and subject-matter specialists, in the training of extension field staff.

3.16 Overall coordination of the nationwide adaptive research program would be assured by the central unit of the DVA, which will also be strengthened under the project. Within each CRPA, a committee will meet twice a year under the chairmanship of the CRPA director to coordinate the program. Research staff, the heads of the regional extension service and of the R & D unit would be members of the committee.

3.17 To enhance the capacities of the extension services, the project will:

(a) strengthen the capacity of DVA's Communications and Audio-visual Service to produce didactic and technical extension material; to provide assistance and training to regional staff; and to improve the flow of information among the various services;

(b) strengthen and/or establish a total of 12 regional mass communication and audio-visual units (as part of the regional extension services) enabling them to produce their own audio-visual aids and programs, in collaboration with, for example, the adaptive research units and specialists of the Rural Radio network;

(c) provide some basic equipment and materials to be used by subject-matter specialists in the training of extension workers and farmers.

3.18 At the provincial level, the project will finance the purchase of 30 motor vehicles, including six four-wheel drive vehicles for the Northern and Eastern provinces. About 150 motorcycles will be provided for subject-matter specialists, supervisors and provincial coordinators and assistants. About 750 mobylettes will be purchased for those extension workers who do not already have them. Motorcycles and mobylettes are provided to staff under the project on a 50% loan, 50% grant basis, repayable over 3 years. The project will assume the cost of replacement, operation and maintenance of these vehicles. Four hundred extension workers' houses would be built with villagers' participation in those provinces which have received no previous funding or donor support. The project will also provide for incremental office supplies and equipment.

3.19 At the regional and national levels, the project will finance the purchase of 14 four-wheel drive vehicles (one for each of the CRPAs, and two for the DVA), and office supplies and equipment.

3.20 Staff Training. The project will also finance:

(a) the up-grading of the training of 300 extension agents (former contractual employees, both male and female, who are to become civil servants) and minor re-equipping of the Matourkou training center;

(b) retraining of extension agents and supervisors (14 days per year);

(c) bi-monthly training for extension agents and their supervisors;

(d) retraining of subject-matter specialists, provincial extension service heads and assistants at research stations (two weeks per year);

(e) visits by GV representatives to research stations, PAPEM and other GVs, and

(f) seminars and study sessions, plus study abroad for senior staff (11 man-months).

3.21 Adaptive Research. In order to strengthen the adaptive research program, the project will provide funds for the rehabilitation of the PAPEM network as follows:

(a) topographic and reconnaissance soil surveys (for new sites);

(b) civil works construction and the preparation of 20 ha of land at nine PAPEM;

(c) draft animals for 12 PAPEM;

(d) agricultural equipment; 17 motorcycles, and 34 mobylettes;

(e) incremental and general (PAPEM) vehicle operating costs; and incremental staff salaries.

3.22 The project would provide for the purchase of one four-wheel drive vehicle for the national adaptive research unit, and materials and office furniture and supplies for the central and regional units. Staff training for PAPEM staff would be funded under the project as well as exchange visits to other PAPEM and elsewhere, and three man-months of staff training abroad.

3.23 Mass Communication and Audio-Visual Program. The project would provide for funding at the national level for:

(a) four additional technicians and one four-wheel drive vehicle;

(b) additional equipment;

(c) vehicle and equipment operation and maintenance costs;

(d) a total of six man-months of short-term consultancies to train DVA's headquarters and regional specialist staff, to help initiate new programs and to install new equipment;

(e) three months training abroad for the head of the unit and one month of local training for each of six technicians.

3.24 Funding at the regional level would be for:

(a) 12 four-wheel drive vehicles;

(b) materials and equipment for the 12 regional audio-visual units, including some basic materials and equipment for each of the 30 provinces. Eight existing regional units will made fully operational during the first three years of the project, followed by the establishment of the remaining four units during years four and five;

(c) incremental operating and maintenance costs for vehicles and equipment; and

(d) training of regional and provincial staff.

2. Livestock Services

3.25 At the national level, the project would strengthen services by recruiting an agro-economist to serve as coordinator of the Livestock Services component, an accountant and two livestock production officers. The project would pay for salaries and incremental operating costs of these four incremental staff and for a short-term consultancy in year 2 to help the Government review the regulatory framework of the veterinary services, in order to produce guidelines that would encourage the establishment of private veterinary practices. Three months of short-term technical assistance would determine specific training needs and programs for livestock services staff at the headquarters and field levels. One station wagon and three pick-ups will be provided (one for each livestock directorate). A small library and documentation center will be created within the DPIA. The project will cover staff training expenses as well as incremental operating costs and equipment for the three central directorates.

3.26 At the field level, the project would undertake the construction of 42 livestock posts (80 m2 each) and 42 staff houses (50 m^2 each); 100 vaccination pens; 20 stores (of 100 m2 each) for drugs, agricultural inputs and animal feed; and the rehabilitation of 100 existing livestock posts and other infrastructure. Funding will be provided for equipment, furniture and incremental operating and maintenance costs for the livestock posts and the recurrent costs for the 200 veterinary field staff. Twelve

vehicles and 200 motorcycles (including replacements) will be purchased, and the project would cover their operating and maintenance costs.

3.27 Services provided by the national veterinary laboratory at Ouagadougou would be expanded by adding a virology unit (195 m2). Small field diagnostic units would be built, in Bobo-Dioulasso in Year 3 and Fada Ngourma, in addition to those already existing at Ouahigouya and Tenkodogo. Equipment and a vehicle would be provided to each.

3.28 The Livestock Production and Industries Directorate (DPIA) is responsible for the distribution of animal feeds. It would operate on a commercial basis in a market open to private sector participation. The distribution system of veterinary products, which is the responsibility of ONAVET, would be expanded under the project by the creation of a local branch of ONAVET at Bobo-Dioulasso through the rehabilitation of the existing installations of the completed Volta West-Livestock Project; and by expansion of cold storage facilities in Ouagadougou and Bobo-Dioulasso. Four support staff will be recruited for the above-mentioned ONAVET branch, and equipment and one pick-up vehicle would be provided. Funds are provided for training of staff at all levels within the various directorates and services: a total of six man-years of training abroad for higher-level staff and about 6,500 man-days of local training for field staff. Staff in charge of the regional diagnostic units would have received in-service training at the Central laboratory.

3. Functional Literacy

3.29 The project would provide funding for the following activities:

(a) the rehabilitation of 70 training centers for young farmers (CFJAs) and equipping a total of 177 CFJAs;

(b) the rehabilitation of and library materials for the three national Training of Trainers Centers (CFFA) at Kamboinsé and Farako-Bâ;

(c) two vehicles (for MACP headquarters staff), ten motorcycles and ten mobylettes and their replacement (plus operating costs) for the provincial services;

(d) costs involved in providing functional literacy training for 38,000 newly literate people; and for 22,500 members of young farmers' associations, and in the training of 12 regional MACP coordinators, 480 village development workers and support staff;

(e) salary and allowances for an additional secretary and accounts clerk for MACP headquarters; three months of technical assistance (to DEFOC) for determining specific training needs and programs, and a total of eight man-months of technical assistance (to the Directorate for Functional Literacy Training); four months of

training for the director and a total of 54 man-weeks of local training for middle-level field staff.

4. Studies and Pilot Operations

3.30 The project would provide funds for studies of other services that would support or complement the agricultural and livestock extension services, such as input supply, credit, or marketing, and for the implementation of pilot operations identified by these studies that could eventually lead to their inclusion in a second phase project. Funds are also included for the preparation of a second phase project.

5. Monitoring and Evaluation

3.31 The project will provide the funds needed to make DVA's Monitoring & Evaluation Service operational, staff and equip a regional monitoring team for each CRPA and strengthen the Agricultural Statistics Service of MAE/DEP. The regional teams will focus primarily on agricultural extension activities, but they will also conduct surveys related to livestock services and literacy programs as needed. A Coordinating Committee for Monitoring Systems will meet periodically to ensure the standardization of methodology and a regular exchange of views among M & E staff. Limited funding, including 14 man-months of technical assistance, will be provided to complement the support already provided by other donors to MAE/DEP, for strengthening the DEP statistics service and to cover the extra costs of the project's mid-term evaluation (Year 3) and Completion Report preparation. Specifically, the project will fund the following additional staff: one statistician and one computer technician (for MAE/DEP); one socio-economist, a computer technician, secretary and a driver for the Monitoring and Evaluation Service. Also included are the costs of two vehicles (one each for DEP and DVA), equipment, training and incremental operating costs. At the regional (CRPA) level, the project would finance salaries for a total of 40 additional full-time enumerators, 10 additional controllers plus funds for hiring part-time staff, and salaries for an additional four unit chiefs to complement ex-ORD staff already in place. The project would, moreover, provide for one vehicle per regional monitoring unit, 80 additional mobylettes and basic equipment for up to 120 enumerators (ten per CRPA), and motorcycles for each of 24 controllers (two per CRPA) and operating costs. Those CRPAs not already so equipped would be provided with a computer.

6. Accounting and Financial Management

3.32 A computerized central management and accounting system would be installed. Funds under the IDA-funded Fertilizer Project (Cr. 1550) are being used to ensure that the system would be in place, and the local staff hired and trained, by project effectiveness. Short-term technical assistance would be engaged for installing the system and training of personnel.

3.33 The project would finance the additional personnel for the Central Accounting and Procurement Unit (para 4.3) within the DAAF/MAE (one Head; one Chief Accountant; two senior accounting officers, one assistant accountant; one data processor; two internal auditors; one procurement officer; one secretary and two drivers), and one accountant each for the DVA, livestock services and the DAAF of the MACP. One vehicle for use by the control unit would be purchased and the project would provide funds for the incremental operating costs. Staff training would be funded under IDA Cr. 1550.

3.34 A Special Account would be established in foreign exchange and held in a commercial bank. The Special Account would be maintained and managed by the Central Accounting and Procurement Unit. Each of the implementing agencies at the central level, i.e., DVA, Livestock Services and MACP, and each of the 12 CRPA's would have a sub-account. Funds from the Special Account would be transferred to the Directorate concerned, e.g., for agricultural extension, mass communication, and PAPEMs to the Administrative and Financial Service of the DVA. Each directorate or service would then distribute the funds based on approved work programs and budgets. The advance would represent about three months of eligible expenditures. Replenishment of the sub-accounts from the Special Account would only be made by the Central Accounting and Procurement Unit upon receipt of all documented expenses as approved by the Director and accountant of the Directorate or service concerned. The Head of the Central Accounting and Procurement Unit may seek further explanations or call for an audit if he deems this necessary before replenishing the sub-account. Internal auditors of CAPU would carry out periodic checks to ensure that the sub-accounts are being properly managed.

D. Project Costs and Financing

3.35 Total project costs, net of taxes and import duties, but including contingencies, are estimated at CFAF 11.3 billion (or US$40.3 million equivalent), with a foreign exchange component of 37%. On the basis of the standard disbursement profile for agricultural projects in West Africa, it is projected that it would take 8-1/4 years to disburse the proceeds of the credit. Through the increase in price contingencies, this would increase total project costs to CFAF 12.6 billion (or US$44.9 million). Project costs by components are summarized below. More detailed cost tables by component and type of expenditure are in Tables 1-4 of Annex 4 and in the Project File.

PROJECT COST SUMMARY

	.....in CFAF millions....			....inUS$ million....			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
A. Ag. Extension	4,345	2,617	6,962	15.4	9.3	24.8	38	64
B. Livestock Services	936	945	1,881	3.3	3.4	6.7	50	17
C. Functional Lit. Prog.	836	365	1,201	3.0	1.3	4.3	30	11
D. Studies (incl. PPF and Pilot Operations)	554	31	585	1.9	0.1	2.0	5	5
E. Project Management and Admin.	159	136	295	0.6	0.5	1.1	46	3
Total Baseline Costs	6,830	4,094	10,924	24.2	14.6	38.8	37	100
Physical Contingencies	243	199	443	0.8	0.7	1.6	45	4
Price Contingencies	836	442	1,278	3.0	1.5	4.5	35	12
Total Project Costs	7,909	4,736	12,645	28.1	16.8	44.9	37	116

3.36 Project costs have been estimated on the basis of April 1988 prices, adjusted to November 1988, the date of negotiations. They include physical contingencies equal to 10% of base costs for civil works, and 4% for all equipment, vehicles, training and operating to reflect uncertainties regarding detailed quantities and possible design changes during implementation. Price escalation factors follow forecasts of international inflation for foreign goods and services and estimated annual inflation in Burkina Faso for local costs. Total contingencies amount to approximately 15% of base costs and 13% of total project costs. Annual inflation rates were estimated as follows:

	1988	1989	1990	1991	1992	1993
Local	5.0	5.0	5.0	5.0	5.0	5.0
International	3.0	5.3	5.3	4.1	4.1	4.1

3.37 The project represents a major part of the Government's overall strategy and investment program to strengthen support services to farmers and livestock producers. The strengthening of extension services and human resource development programs are clearly long-term endeavors requiring continuous commitment and assured funding. The proposed project is, therefore, considered as the first five-year phase of a long-term program. This will require substantial and sustained donor support particularly for the funding of operating costs, since a key element of the program is to make and keep mobile all the existing staff. During the first five-year phase, therefore, no attempt will be made to decrease donor funding of operating costs progressively, whereby Government would take on the whole burden in Year 6. Instead, increased cost-sharing by Government would be sought in the second and subsequent phases of the long-term program. In

the first phase, Government would continue to fund all costs of basic remuneration of existing staff, i.e., maintain in real terms the 1988 budget of CFAF 3.1 billion (US$ 11 million) for agricultural and livestock services. In addition, Government would fund the continuing costs of the four IDA-funded area-specific projects due for completion in 1988 or early 1989 (CFAF 150 million per year or US$ 0.6 million). Furthermore, Government would contribute 5% to project costs defined in the strictly incremental sense. This participation would be made to salaries only. In addition, 50% of the capital costs of motorcycles and mobylettes would be recovered from staff through repayment of loans. This brings Government's total contribution to CFAF 0.8 billion (US$ 2.9 million) over the project life. The Government cash flow at Annex 7 shows an average deficit of CFAF 220 million per year in the first five years, corresponding to Government's contribution to project costs defined in a strictly incremental sense, plus the commissions and charges on the loans. The cash flow also indicates what would happen in the absence of a second-phase project, i.e., an average deficit of about CFAF 1.7 billion (US$ 6 million) per year in years 6 to 10. Project-generated recurrent expenditures would be CFAF 1.6 billion (US$ 5.7 million) per year, or about a 60% increase over Government's 1988 budget for agricultural and livestock services. Clearly, a second and subsequent phases with substantial donor support will be required.

3.38 The project would generate only limited Government revenue, since farmers' output is not taxed. However, some indirect public revenue generation can be expected through increased spending by project beneficiaries on consumer goods, services and imports subject to tax, although quantification is virtually impossible. Bilateral donors and other institutions have indicated their interest in parallel cofinancing on a grant basis. However, specific financing plans have not yet been agreed upon. Accordingly, the financing plan is as follows:

FINANCING PLAN

	CFAF Billion	US$ million	(%)
Government	0.8	2.9	6
IDA	11.8	42.0	94
	12.6	44.9	100

The proposed credit of US$ 42.0 million would be on standard IDA terms, with 40 years maturity.

E. Procurement

3.39 All goods and services financed under the project would be procured in accordance with Bank guidelines. Procurement would be handled

by the Central Accounting and Procurement Unit (para. 4.5) except for small purchases under US$1,000. Procedures are summarized below:

PROCUREMENT ARRANGEMENTS

Category	Procurement Method				Total Cost
	ICB	LCB	Other	N.A.	
	US$ million				
Civil Works	-	5.4	-	-	5.4
Vehicles	6.4	-	-	-	6.4
Other Equipment and Furniture	1.0	1.7	0.5	-	3.2
Construction Materials	-	-	2.0	-	2.0
Training and Consultants	-	-	3.8	-	3.8
Studies & Pilot Operations	-	-	0.6	-	0.6
Other operating costs	-	-	-	16.0	16.0
Incremental staff salaries	-	-	-	5.9	5.9
PPF	-	-	1.6	-	1.6
Total	7.6	7.8	7.6	21.9	44.9

Note: IDA finances 100% of all categories except salaries of which 50% would be financed.

3.40 Contract review. Bidding documents for contracts estimated to cost US$100,000 equivalent or more would be cleared with IDA before tendering and recommendations for contract awards would be submitted to IDA for comments prior to award. This would cover about 75% of the total estimated value of civil works and goods contracts to be awarded for funding by IDA. Vehicles and equipment would be bulked to the extent possible and procured following international competitive bidding (ICB) procedures in accordance with IDA guidelines. Local suppliers would be allowed a 15% margin of preference or the applicable customs duty, whichever is lower. Contracts of between US$50,000 and US$100,000 would be procured through local competitive bidding (LCB), up to a total limit of US$ 500,000. For this, (i) invitations to bid would be advertised locally, (ii) all bids would be opened in public and the presence of bidders' representatives permitted, (iii) criteria for evaluating bids would be

clearly set out and communicated to all bidders, and (iv) no preference margin would be granted to domestic manufacturers and reliable suppliers. Equipment which cannot be suitably bulked and other small items such as materials and supplies costing less than US$50,000 equivalent each, up to a total limit of US$300,000, would be procured through competitive quotations from at least three domestic suppliers whenever practicable. Foreign firms would be allowed to participate in LCB.

3.41 Civil works would be procured on the basis of LCB procedures, up to the total limit of US$7.4 million. The relatively small size (no contract is expected to be over US$0.3 million equivalent) and dispersed nature of civil works funded under the project make it unlikely that they would attract foreign bids except from firms already represented in Burkina. Bidding documents would provide alternative tendering for lots or for general contracts to attract participation by large local contractors. Interested foreign firms represented in Burkina would be allowed to participate in the bidding. Construction materials, consisting mainly of galvanized iron roofing sheets, cement and other small items, would be purchased in small quantities at the places and times required. Operating costs would consist chiefly of fuel, maintenance and spare parts of vehicles, spread out over the project period. Consultants with qualifications and experience acceptable to IDA would be recruited for the various technical assistance positions under the project in accordance with the Bank's "Guidelines for the Use of Consultants".

F. Disbursements

3.42 IDA would finance 100% of costs of civil works, vehicles, equipment, consultants, and studies and pilot operations, training costs (including overseas training), and operating costs. The IDA Credit would also re-finance the Project Preparation Facility (PPF) of US$ 1.5 million.

3.43 Disbursements against recurrent costs and purchase orders, contracts and training programs of less than US$25,000 equivalent would be submitted against statements of expenditures (SOE) and certified by the Project coordinator and chief accountant. Full documentation would be retained for inspection in the course of normal project supervision and by independent auditors. The Central Accounting and Procurement Unit would be responsible for the preparation and presentation to IDA and cofinanciers of withdrawal applications for all categories of expenditures incurred under the project. The withdrawal applications would be signed jointly by the Project coordinator and chief accountant of the Central Accounting and Procurement Unit for all expenditures relating to the Ministry of Agriculture and Livestock Services and by the Project coordinator and Accountant of MACP for all expenditures relating to the functional literacy programs. An estimated schedule of disbursements is given in Annex 5. Consistent with the disbursement profile for projects in Burkina Faso, an 8-1/4 year disbursement period is projected.

3.44 The IDA credit and cofinanced funds would be disbursed as follows:

(a) 100% (IDA) of the costs of rehabilitation and civil works (SDR 3.5 million or US$4.7 million);

(b) 100% (IDA) of the costs of vehicles, and equipment including trucks, cars, motorcycles and mobylettes (SDR 7.4 million or US$10.2 million);

(c) 100% (IDA) of building materials for works executed by village groups (SDR1.9 million or US$2.6 million);

(d) 100% (IDA) of expenditures on staff training (including overseas training), consultant and specialist services including audits (SDR 2.8 million or US$3.7 million);

(e) 100% (IDA) of expenditures on studies and pilot operations (SDR 0.4 million or US$0.5 million);

(f) 50% (IDA) of incremental local salaries (SDR 2.1 million or US$2.8 million);

(g) 100% (IDA) of operating costs (SDR million 10.6 or US$ 14.4 million);

(h) 100% (IDA) of expenditures out of the Project Preparation Facility (SDR 0.6 million or US$0.7 million); and

(i) an unallocated amount representing physical and price contingencies on the above (IDA SDR 1.8 million or US$2.4 million.

3.45 IDA would deposit US$3.0 million in a Special Account (para 3.34), for which operating terms and conditions were agreed at negotiations.

IV. PROJECT IMPLEMENTATION

A. Overall Project Management and Financial Monitoring

4.1 The project will be implemented in two ministries: (a) the extension and livestock services components in the Ministry of Agriculture and Livestock (MAE); and (b) the functional literacy component and the studies and pilot operations in the Ministry of Rural Cooperative Action (MACP). The involvement of many entities requires good central coordination combined with good monitoring and evaluation systems, and financial autonomy for the major implementation entities. In MAE, the responsibility for both extension and livestock components will rest mainly with the 12 regional CRPAs; however, the Ministry's DVA will handle the planning and monitoring of the extension component and a coordinator in the DPIA will do the same for the livestock component. In MACP, the responsibility for the implementation of the literacy component will rest with the 12 regional directors, with the DEFOC responsible for planning and follow-up and the DEP for monitoring and evaluation. The DEP of the MAE will be responsible for the project evaluation and will chair the Coordination Committee for Monitoring Systems (para 4.12). Overall responsibility for financial management and accounting of the project (including auditing, reporting and project-related major procurement) will rest with the Central Accounting and Procurement Unit attached to the DAAF of the MAE. The overall coordination of the project is the responsibility the Secretary General of MAE.

4.2 Project Coordinator. Given the project's complexity and its three important components, and despite the provisions made within each component for planning, monitoring, evaluation and coordination, there is a need for good overall coordination and financial monitoring. In the interest of both the Government and the lending agencies, the Government has nominated the Secretary General of Agriculture as the Project Coordinator. The day-to-day management of the Project would be the responsibility of the heads of the executing departments, notably the Director of the DVA, and the Project Coordinator would as far as possible delegate his supervising responsibilities to these managers. The Project Coordinator would therefore in general only intervene when some action beyond the competence of the service heads is necessary.

4.3 Central Accounting and Procurement Unit (CAPU). The Project Coordinator will not be able to ensure the financial monitoring of the project by himself. Nor will the existing staff of the DAAF be able to handle the accounting and procurement load that the project will generate (much of this load has hitherto been handled by management units of area-specific projects). The CAPU will therefore provide the necessary specialized support to the Project Coordinator, with the staffing indicated at para. 3.33 and under the terms of reference at Annex 2-2. Legal establishment of the CAPU within DAAF/MAE and appointment of its key staff

(Head, Chief Accountant and Procurement Officer) would be a condition of effectiveness.

4.4 Training of CRPA Directors. The success of the project will largely depend on how well the CRPA are managed and how they function. The CRPA directors are generally technicians promoted to managerial level, who will need some management training. The program would start with a short seminar on the principles and practice of management, followed by regular one-day sessions held at the same time as regular coordination meetings between the Project Coordinator and CRPA directors (once every two to three months). These sessions should concentrate on real problems commonly experienced by the CRPA directors and should be led by a professional management trainer/facilitator. One of the early priorities of the Project Coordinator will be to supervise the preparation of such a management training program by MAE's DFPS (para 1.17) or by the Service d'Appui à la Gestion and/or by a specialized management training firm or institute.

B. Organization and Management of Extension Services

4.5 The DVA will have sole responsibility for coordinating and monitoring day-to-day operation of extension services, including extension-related training programs, the coordination of the adaptive research (PAPEM) program, and the audio-visual services. Staff training will be the responsibility of the Training and Extension Service of DVA. Responsibility for implementation of the field extension and the adaptive research program, including planning and execution of the program of construction of up to 400 field staff houses and reorganization of the PAPEM network, would be the responsibility of the regional training and extension services. Similarly, the regional monitoring/evaluation services would be responsible for the monitoring of the field extension programs, under overall coordination of DVA (para. 4.13). Agreements ("protocoles d'accord") would be drawn up between the CRPAs and village groups concerned, spelling out in detail their respective responsibilities and contribution in terms of skilled and unskilled labor and materials that would be required to implement the staff housing construction program discussed with and agreed in advance by the village group. This practice has been successfully used in recent Bank-financed and other projects, and an assurance was obtained at negotiations that this practice would be continued under the proposed project.

4.6 Linkages between Extension and Research would be strengthened in order to ensure a sound technical content in the extension program, and a more precise orientation of research. Technical problems, noted by extension agents during the course of their contacts with farmers would be brought to the attention of research workers by the subject matter specialists (SMS). In the periodic training sessions, the research workers would give the SMS the appropriate responses to the problems, which the SMS would pass on to the extension agents to transmit to the farmer. Additional points of contact would be the adaptive research farms (PAPEMs, where research and SMS, and SMS and extension agents, would meet periodically), and at biannual workshops at regional and local levels

during which annual work programs would be formulated and reviewed. An assurance was obtained at negotiations that the DVA would, as a condition of effectiveness, enter into agreements with INERA and IRBET, respectively, to assure the participation of these Institutes in the SMS training program. An additional condition of effectiveness would be that the Government would have attributed to MAE legal tenancy ("titre de jouissance") of the land required for the implementation of the adaptive research program (PAPEM).

C. Organization and Management of Livestock Services

4.7 Implementation of the livestock-related activities will be coordinated at the national level by an agro-economist in the Directorate of Animal Production and Industries. At the regional level, the CRPA directors would be responsible for the planning and coordination of livestock services programs. The project would also fund the position of an accountant. Rehabilitation and operation of the national veterinary diagnostic laboratory and field diagnostic units will be the joint responsibility of the head of the laboratory and the DPIA. The distribution of animal feeds, of veterinary drugs and vaccines, is the responsibility of ONAVET and the CRPA. Agreements of understanding (protocoles d'accord) would be signed between ONAVET and the respective CRPAs defining conditions under which the CRPAs would distribute, on behalf of ONAVET, those products to livestock owners. The agreements would provide for payment by ONAVET to the CRPAs of a commission equivalent to at least 50% of the difference between ONAVET's wholesale price and the CRPA's retail price for veterinary products distributed to livestock producers, on ONAVET's behalf, by livestock services' field staff under an agreement to be approved by IDA. Assurances were obtained during negotiations that Government would: (i) not later than September 30, 1989, exchange views with IDA on the cost structure applicable to the distribution of veterinary products to livestock owners by the CRPAs; (ii) not later than December 31, 1989, prepare and furnish to IDA, for its review and comments, a draft Protocole d'Accord to be entered into between ONAVET and the CRPAs, spelling out their respective obligations to carry out the distribution of veterinary products, including, inter alia, the payment by ONAVET to the CRPAs, of at least 50% of the retail price margin on veterinary products effectively distributed; and (iii) not later than March 31, 1990, take all measures necessary to finalize said Protocole d'Accord, including the recommendations made by IDA.

4.8 Planning execution of the construction of livestock services infrastructure (vaccination yards, livestock posts) will also be the responsibility of the individual CRPAs. In recognition of the principle that the end users would be involved in the decision making process and in the execution of the program, agreements (Cahier des Charges) between the CRPAs and formal village groups (GV) or producers' associations would be drawn up, spelling out in detail the responsibilities and contributions of all parties in terms of materials, skilled and unskilled labor. These agreements would be similar to those presently used in respect of staff

housing for extension agents (para 4.5); an assurance to this effect was obtained during negotiations.

4.9 The DPIA, in consultation with the DFPS/MAE, will recruit a short-term consultant to help the Government (i) to update the existing regulatory framework for veterinary and related public health sservices, and (ii) to prepare guidelines for the establishment of private veterinary practices.

D. Organization and Management of Literacy Programs

4.10 The MACP will be responsible for the implementation of the functional literacy component. DEFOC will be in charge at the central level, while the heads of the Services de l'Alphabétisation Fonctionnelle des Paysans of each regional directorate will be responsible at the field level. DEFOC would enter into agreement, by mean of a protocole d'accord, with INA to secure INA's participation where appropriate. Coordination of monitoring and evaluation of all project-related functional literacy activities and programs will be the responsibility of the Direction d'Etudes et de la Planification (DEP) of MACP. This directorate will represent MACP in the Comité de Coordination des Enquêtes (para. 4.14). Routine monitoring of the impact of the literacy programs at the village level will be the responsibility of the regional services of DEFOC. Regional monitoring teams of the CRPAs would be available also to would carry out any additional, ad-hoc surveys, as needed.

E. Monitoring and Evaluation

4.11 The monitoring and evaluation system established under the project will enable the managers of each regional and central entity involved in implementation to monitor the organization and effectiveness of the services it is to provide, and to conduct diagnostic studies as needed. Emphasis will be on rapid feedback from the producers to the managers of each implementing agency, supplemented by periodic centralized syntheses of findings for all project components. As part of its normal duties, the MAE/DEP would be the overall coordinator for project reporting. However, actual monitoring of project implementation activities, including data collection, immediate analysis and internal reporting, will be the responsibility of each implementing Directorate.

4.12 The recently-created Comité de Coordination des Enquêtes (Coordination Committee for Monitoring Systems) will be established to facilitate cooperation and coordination among the central directorates and the CRPAs. This committee will be composed of managers in charge of monitoring functions in each of the concerned services, i.e., DVA, DPIA and DEP of MAE, and DFA, DEFOC and DEP of MACP, as well as those in the CRPAs in charge of monitoring and evaluation. The MAE/DEP will chair the committee, ensuring that data are collected and analyzed in a similar fashion in all components. On the basis of analytical reports provided by each of the services, the MAE/DEP will prepare periodic project progress reports.

4.13 The Project will provide for the establishment of a small central monitoring unit in the DVA to be responsible for organizing, coordinating and providing support to regional monitoring services to be established in each CRPA. Each regional team will include one supervisor, 10 enumerators and two controllers. The DVA central unit will include one "chef de service", one senior staff, two technical staff to assist with the data processing and tabulation, one secretary and one driver. The regional teams will focus their data collection on monitoring agricultural extension, but staff will also be available to carry out specific surveys or studies related to the livestock and literacy components, as required. Given the interdependence of crop and livestock extension, and of functional literacy training, the findings of the DVA monitoring unit will be directly relevant to all three components.

F. Accounting and Financial Management

4.14 Overall responsibility for the project's financial management and accounting will rest with the Central Accounting and Procurement Unit. This will not only keep capital and recurrent costs down, but is also in line with the views of the Government and the Bank concerning the need for centralized information as well as centralized disbursement and loan repayment operations.

4.15 In order to enhance the managerial capability of each directorate, all Administrative and Financial Services involved in the Project will be reinforced. Consultants financed under Credit Cr. 1550 and acceptable to IDA have been recruited to set up the project's accounting, budgeting and internal control systems and to provide training and follow-up support as necessary (a total of six man-months). Manuals are being prepared to help the project's accounting staff to apply the systems. The consultants will also set up a standardized bookkeeping system for all the CRPAs (including livestock and functional literacy activities) in order that all activities to be carried out and financed through the Project are properly recorded.

G. Audits and Reporting Requirements

4.16 The Central Accounting and Procurement Unit would consolidate and maintain all project-related records and accounts, including the special account and statements of expenditures, and would have these audited annually by independent external auditors acceptable to IDA. These audited accounts and the auditor's report would be submitted to IDA no later than six months after the close of the financial year. Assurances to this effect were obtained during negotiations.

4.17 Each directorate with responsibility for project implementation would ensure adequate overall technical and financial supervision of project works. Implementing agencies would prepare semi-annual progress reports, annual work programs, and budgets with details on individual programs, training, procurement and civil works construction planned for the coming year. An assurance was obtained during negotiations that IDA

approval of model construction plans for staff houses, vaccination yards, livestock posts and storage sheds would be a condition of disbursement for those items.

4.18 The Project Coordinator would be responsible for conducting, with IDA, and no later than May 31 of each year, Project implementation reviews to: (i) monitor progress made in achieving project objectives, in particular: design of training programs for MAE and MACP staff, preparation of work programs and budgets, including details on planned activities and targets, services to be rendered to clients, staff deployment, training plans, civil works construction and procurement planned for the year, and design and approval of pilot operations; (ii) exchange information among staff responsible for project implementation and propose solutions to any current problems; and (iii) update project timetables and cost estimates. The recommendation arising out of these reviews, as agreed between Government and IDA, would be implemented promptly thereafter. Because of the institution-building nature of the project, the implementing agencies, the Bank and other donors involved in financing agricultural services would carry out a joint mid-term review of the project no later than December 31, 1991 (end Year 3). The review would cover physical implementation and the extent to which institutional objectives have been achieved. The findings and recommendations of this mid-term review would be implemented promptly thereafter. The Project Coordinator and MAE/DEP would be responsible for organizing this review. Within one year of the credit closing date, MAE/DEP would be responsible for preparing a project completion report that would summarize the project's performance and evaluate lessons learned by each of the implementing agencies (DVA, Livestock Services and DEFOC). Assurances on all the above were obtained during negotiations.

H. Implementation Schedule

4.19 As a condition of credit effectiveness, the Head, Chief Accountant and Procurement Officer of the Central Accounting and Procurement Unit would have been recruited (para. 4.5). The Secretary General of Agriculture, as one of his first tasks as Project Coordinator, would supervise the organization of an implementation seminar to familiarize managers and heads of relevant services with project objectives, organization and management, accounting, procurement and reporting procedures, budgeting and work program planning, staff training and manpower development, etc. The result would be that key staff of DVA, livestock services, CRPA directors and heads of field services as well as local authorities concerned would meet to discuss programs, the success of which will to a large extent depend on their close collaboration. The next step would be for the executing agencies and regional directors, along guidelines provided by the Central Accounting and Procurement Unit, to prepare detailed work programs, including training and construction programs, budgets and procurement schedules. Workplans and budgets would be consolidated by the Central Accounting and Procurement Unit and sent to IDA and other donors for approval. Short-term consultants, whose terms of reference would have been approved by IDA, would assist MAE and MACP in

preparing manpower development and training programs. An assurance was obtained at negotiations that a draft detailed first year's staff training program would be made available to IDA not later than September 30, 1989 for review and comments, and that this program would be implemented shortly thereafter, taking into consideration IDA's recommendations. No later than May 31 of each year thereafter, detailed training programs would be prepared for the following year. A further assurance was obtained at negotiations that all necessary measures would be taken to ensure that all staff having received project-financed training abroad would remain in their assignments at least until a suitable replacement is appointed. Given the nature and scope of the project, joint planning, decentralized decision-making and coordinated, timely action during implementation will greatly contribute to its success. The extent of farmer involvement in the planning, implementation and monitoring of project activities will be important determinants of successes and failures during project implementation. A detailed implementation schedule is in Annex 6.

I. Environmental Impact

4.20 The main thrust of the work of the crop and livestock extension services to be supported under the project will be increasing land productivity. This will be realized, primarily, by improved cultural practices and improved herd management, i.e., low-cost (often zero-cash-cost) and low-risk measures, in which water harvesting, soil conservation, and manuring techniques will figure prominently. Adoption of these measures will both increase land productivity and arrest soil degradation.

4.21 Throughout the country, but most auspiciously in the pastoral areas in the North, livestock numbers can be expected to increase as a consequence of improved livestock services. The causality will not be straightforward, since steers will likely be culled for growing-out and eventual fattening or for animal traction. Heifers, by contrast, are unlikely to be culled in significant numbers. In the absence of droughts, total cattle numbers will certainly increase, although slowly. The particular problems associated with sustainable range management will not be directly addressed through this project, which concentrates on improving productivity of individually owned or managed assets, such as arable land or livestock. Approaches to the problems of communally owned or managed assets, such as rangelands, are being tested in eight ongoing pilot operations as part of the preparation of the Environmental Management Project. Lessons learned from these operations would be applied on a wider scale during implementation of that project. More effective livestock services will also increase sheep and goat populations, but the possible negative effects on the environment are not expected to be as important as with cattle. Smallstock are usually managed as a sedentary activity, even in the drier areas, and tethering is becoming a common practice.

4.22 In the better-watered Southwest, where chemical fertilizers and pesticides are already fairly widely adopted, the extension service will promote more efficient use of these inputs. Demand can be expected to

increase further, from new adopters as well as area expansion by current users. Bank guidelines concerning agricultural chemicals have been followed in the past - under Bank-financed area-specific projects in the Southwest - and supervision missions of the proposed project will ensure that the guidelines will continue to be followed. No other environmental protection measures need be provided.

V. BENEFITS AND RISKS

A. Project Benefits

5.1 The project, with its broad range of activities, should greatly contribute to the well-being of a large number of rural families and to the agricultural sector overall. More specifically, its benefits should manifest themselves in three main areas:

(a) production and productivity of both the crop and livestock sectors: reorganized and strengthened extension and livestock services should provide farmers and herders -- both men and women -- with new and effective ways to improve their standards of living;

(b) autonomy and self-reliance: with the help of literacy programs, farmers and herders will be better able to manage their resources and investments independently. Literacy programs will provide most villages with a core group of functional literates able to manage the affairs of the village; and

(c) human resources: the project strongly emphasizes training and continuing education programs, for farmers, herders and government staff. The project would greatly enhance the capabilities of staff at all levels, strengthen research/extension links, and promote a two-way flow of questions and answers between producers and technicians.

B. Project Risks

5.2 The risks are: (a) the possible inability of extension and research services to produce workable solutions to farmers' and herders' problems; (b) problems of inter-agency coordination; and (c) the possible failure of Government and/or donors to sustain the long-term commitment required to achieve durable improvements in the effectiveness of agricultural support services. To minimize these risks, a two-year pilot operation was undertaken and the lessons have been built into project design; inter-agency coordination has been simplified between the departments of MAE and MACP, where financial and management capabilities will be strengthened; and annual reviews of work plans and budgets, as well as the mid-term implementation review, will provide good opportunities for program review and long-term commitment building. In addition, a Bank staff member will be assigned to the Resident Mission for the first three years of the project specifically to advise on its implementation.

VI. ASSURANCES AND RECOMMENDATIONS

6.1. Assurances were obtained during negotiations that Government would:

(a) not later than September 30, 1989, exchange views with the Association on the cost structure applicable to the distribution of veterinary products to livestock owners by the CRPAs (para 4.9);

(b) not later than December 31, 1989, prepare and furnish to the Association, for its review and comments, a draft Protocole d'Accord to be entered into between ONAVET and the CRPAs, spelling out their respective obligations to carry out the distribution of veterinary products, including, inter alia, the payment by ONAVET to the CRPAs, of at least retail price management the veterinary products effectively sold (para. 4.9);

(c) not later than March 31, 1989, take all measures necessary to finalize the Protocole d'Accord, referred to in (b) above, including the recommendations made by the Association (para 4.9);

(d) cause the CRPAs to enter into Cahier des Charges with the village groups concerned to carry out the construction of staff housing and livestock posts and vaccination yards (paras. 4.5 and 4.8);

(e) submit to IDA, as soon as available, but in any case not later than six months after the close of each financial year, audited financial statements and reports of such scope and detail as the Association may reasonably request, prepared by independent auditors acceptable to IDA (para 4.16);

(f) not later than May 31 of each year, conduct with the Association annual Project implementation reviews (para 4.18) to:

(i) discuss annual Project evaluations carried out by the Project Coordinator;

(ii) monitor progress made in achieving project objectives, in particular: design of training programs for MAE and MACP staff; preparation of work programs and budgets (for DVA, DPTA and DEFOC) consolidated by DEP/MAE, and CAPU/MAE respectively; design and approval of pilot operations;

(iii) exchange information among staff responsible for Project implementation and propose solutions to any current problems; and

(iv) update project timetables and cost estimates;

(g) promptly thereafter, carry out those recommendations arising out of said reviews, as agreed between the Borrower and the Association (para 4.18);

(h) conduct jointly with IDA and other relevant co-financiers, no later than December 31, 1991 (end of PY 3), a mid-term review of project progress and implementation, and shortly thereafter, implement the findings and recommendations of that mid-term review (para. 4.18);

(i) prepare and furnish to IDA for its review and comments a draft detailed first-year staff training program for MAE and MACP staff by September 30, 1989, and, not later than May 31 of each year thereafter, a detailed training program for the following year (para. 4.19); and

(j) take all measures necessary to ensure that all staff having received project-financed training abroad remain in their assignments at least until a suitable replacement is appointed (para. 4.19).

6.2. The conditions of effectiveness would be that:

(a) a Central Accounting and Procurement Unit (CAPU) would have been legally established within DAAF/MAE and its key staff (Head, Chief Accountant and Procurement Officer) would have been appointed (para. 4.3);

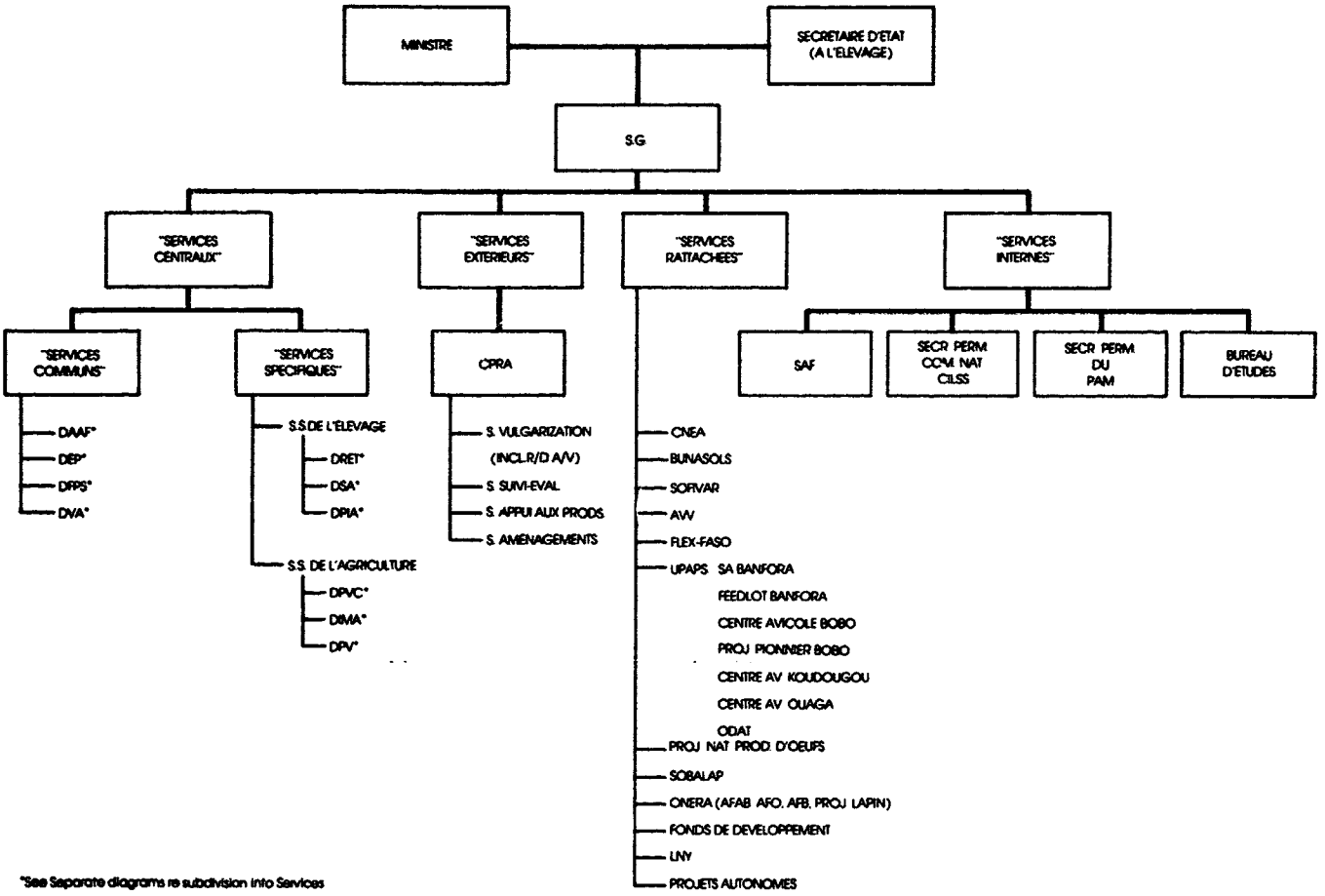
(b) the DVA would have entered into agreements ("Protocoles d'Accord") with INERA and IRBET, respectively, to assure the participation of these Institutes in the training of Subject Matter Specialists (para 4.6);

(c) the Government would have attributed to MAE legal tenancy ("titre de jouissance") of the land required for the implementation of the adaptive research program (PAPEM) (para. 4.6);

6.3. The condition of disbursement would be that IDA approval would have been obtained for model construction plans for staff housing, vaccination yards, livestock posts and stores, prior to disbursement of funds on these items (para 4.17).

6.4. Subject to the above assurances and conditions, the project is suitable for a credit of SDR 31.2 million to the Government of Burkina Faso on standard terms, with 40 years maturity.

BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT / PROJET DE RENFORCEMENT DES SERVICES D'APPUI AUX PRODUCTEURS
Organizational Structure of MAE / Organigramme du MAE



*See Separate diagrams re subdivision into Services

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BURKINA FASO
MAE
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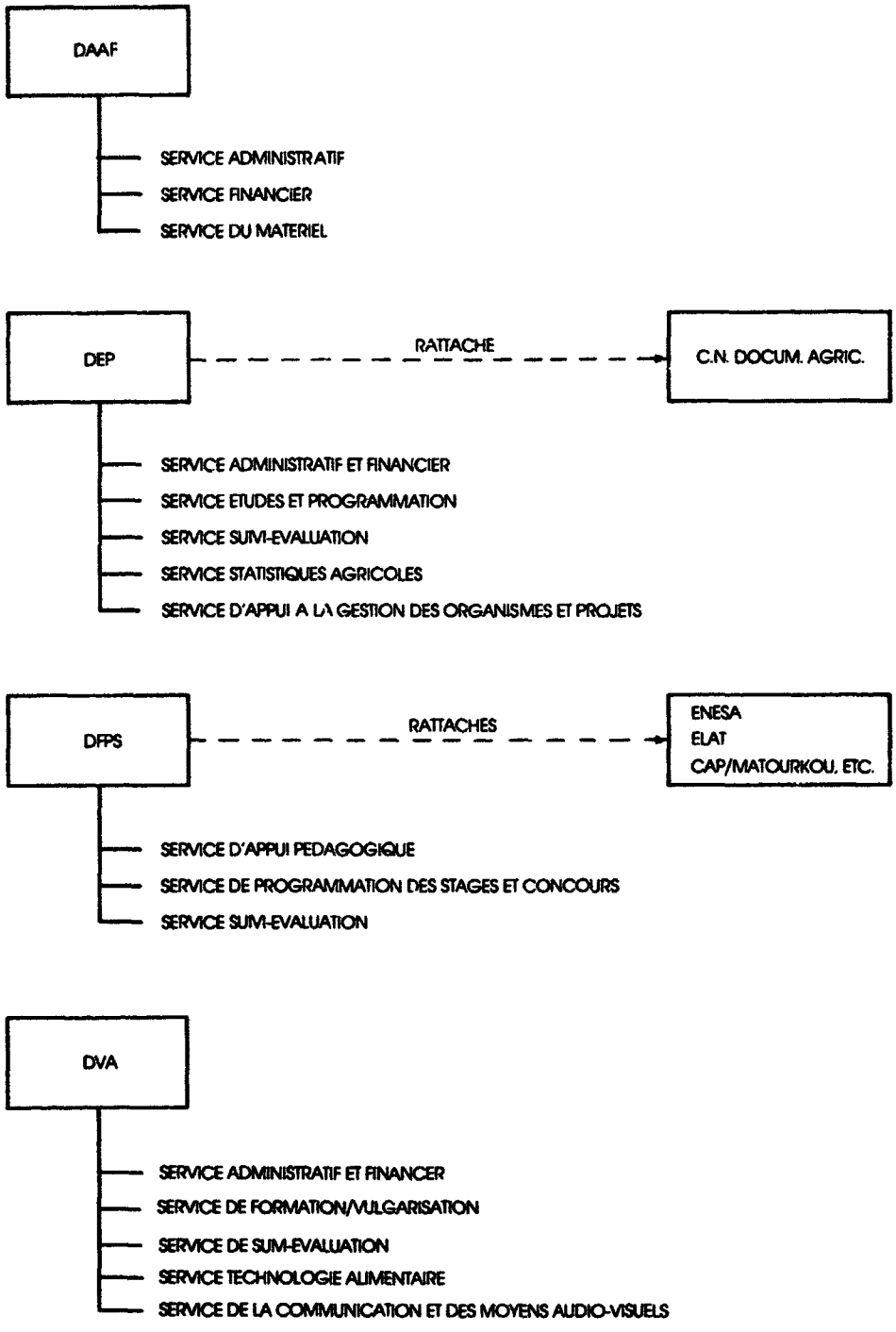

BURKINA FASO
MAE
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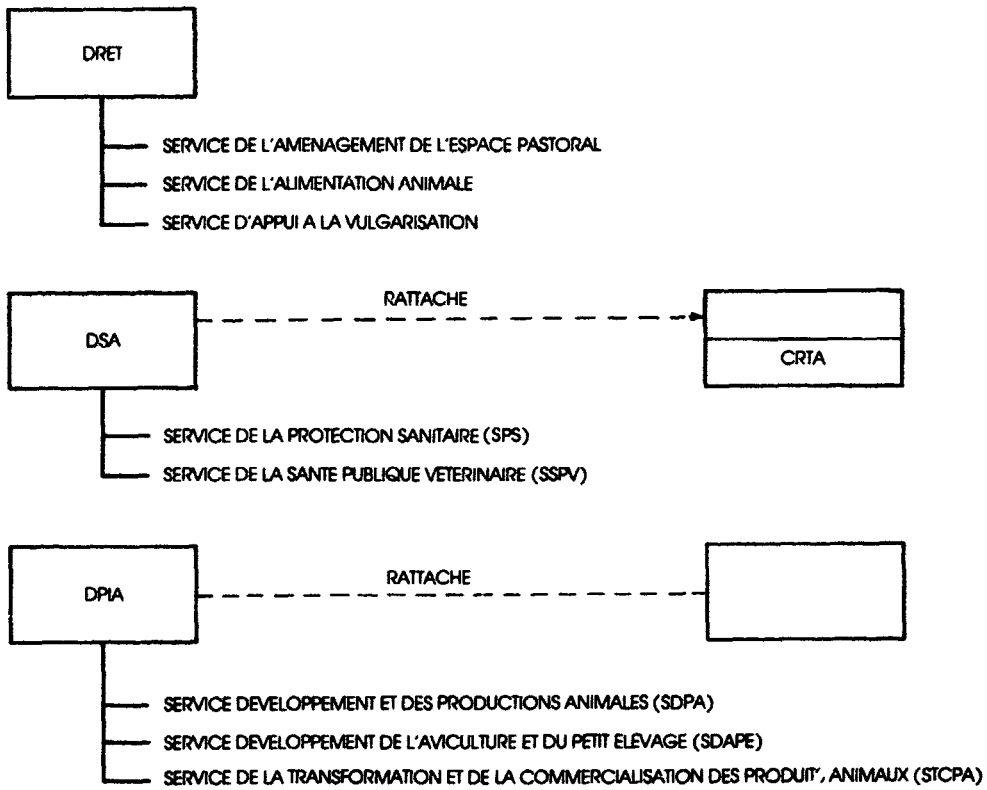

BURKINA FASO
MAE
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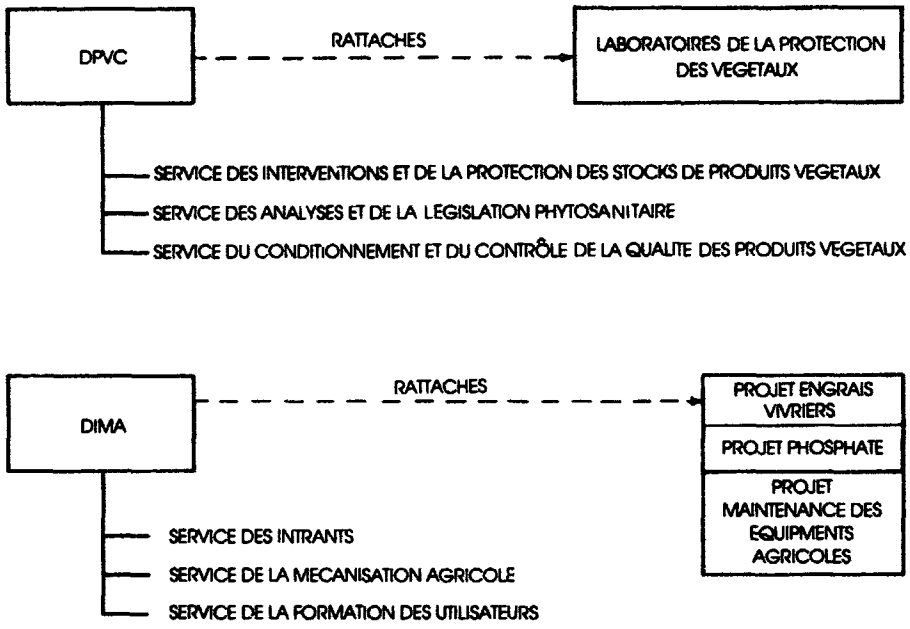


ANNEX 2-1

BURKINA FASO
AGRICULTURAL SERVICES PROJECT

Project Coordinator
Terms of Reference

The coordinator, or his delegate, would be responsible for the following:

(a) liaise with the managers of the units in charge of project implementation in the MAE and MACP and with the coordinators of the components where such a position exists;

(b) liaise as necessary with Ministries and other organizations to ensure the smooth implementation of the project;

(c) liaise with the Burkinabe authorities and with the lending agencies;

(d) supervise and monitor the use of project funds;

(e) chair an interministerial committee to review and approve budgets, work programs and periodic or annual reports prepared by the Central Accounting and Procurement Unit or by the implementation agencies;

(f) ensure the correct preparation by the CAPU of the tenders for the procurement of goods or services;

(g) supervise and monitor the "agreements" signed between parties involved in the project, and mediate in case of disagreement;

(h) cause annual reviews of the Project to be carried out to examine the performance of the executing agencies and to identify the problems of project implementation;

(i) organize regular meetings between CRPA directors and to ensure the preparation by CAPU and DEP/MAE of the management training program for those directors;

(j) organize, together with MAE/DEP, a project start-up seminar for all managers and accountants involved with the project in order to inform them of the objectives of the project and of the accounting, procurement and monitoring procedures;

ANNEX 2-2

BURKINA FASO
AGRICULTURAL SERVICES PROJECT

Central Accounting and Procurement Unit
Terms of Reference

(a) Centralize and consolidate project-related accounts and financial documents, and more precisely:

  (i) coordinate the preparation by the implementing agencies of budgets and other accounting and financial statements, and consolidate them;

  (ii) prepare the end-of-year project balance sheet;

  (iii) administer the project's central bank account;

  (iv) monitor the implementing agencies' project accounts and replenish them as needed;

  (v) audit the implementing agencies' project accounts;

  (vi) centralize the disbursement requests for the lending agencies and maintain the respective accounts;

(b) program the procurement of goods and services to ensure that lots can be grouped to the maximum extent, centralize all tenders to ensure that financiers' procurement procedures are followed, issue all bidding documents, liaise with the Direction Nationale des Marchés de l'Etat (DINAME), and other organizations concerned, and represent MAE on the Commission Nationale des Marchés (CNM);

(c) give support and advice, in its area of competence, to the administrative, purchasing, accounting and financial units of the entities responsible for project implementation;

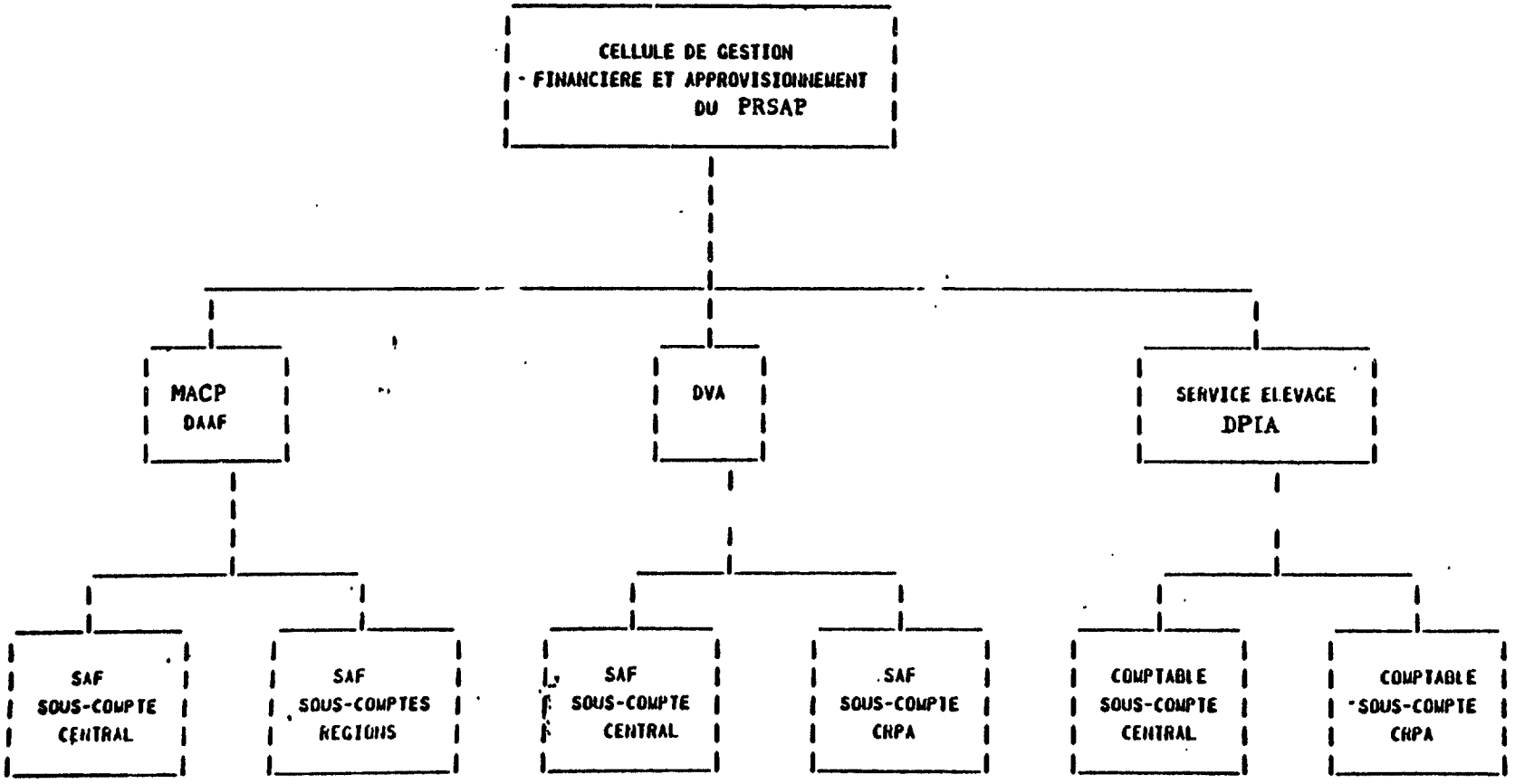
(d) design and implement, with the Service d'Appui à la Gestion des Organismes et Projets of the MAE/DEP, a specific training program for the accounting and purchasing staff concerned with the project at central and regional level.

BURKINA FASO

AGRICULTURAL SUPPORT SERVICES PROJECT

Special Accounts and Flow of Funds

Comptes spéciaux et Flux Financier



BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT
Summary Account by Project Component
(CFA FRANC '000)

	EXTENSION EXTENSION SERVICES CENTRAL AND REGIONAL (INVESTMENT)	TRAINING - CENTRAL AND REGIONAL (INVESTMENT)	EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (INVESTMENT)	EXTENSION - COMMUNICATION AND AUDIO-VISUAL - CENTRAL AND REGIONAL (INVESTMENT)	RESEARCH RESEARCH AND DEVELOPMENT (INVESTMENT)	EXTENSION EXTENSION SERVICES - CENTRAL AND REGIONAL (RECURRENT)	EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (RECURRENT)	EXTENSION COMMUNICATION AND AUDIOVISUAL - CENTRAL AND REGIONAL (RECURRENT)	EXTENSION - RESEARCH AND DEVELOPMENT (RECURRENT)	LIVESTOCK - CENTRAL (INVESTMENT)
I INVESTMENT COSTS										
A CIVIL WORKS	480,000.0	-	10,000.0		238,400.0	-	-	-	-	-
B EQUIPEMENT	90,600.0	7,400.0	77,400.0	86,300.0	39,500.0		-	-		28,350.0
C VEHICLES	770,300.0	-	214,180.0	123,530.0	46,760.0	-	-	-	-	34,700.0
D TECHNICAL ASSISTANCE	-	9,000.0	18,000.0	21,000.0		-	-			10,800.0
E PROJECT PREFINANCING FUND	-	-	-	-	-	-	-	-	-	-
F STUDIES	-	-		-			-	-	-	
G PILOT OPERATIONS	-	-	-	-	-	-	-	-	-	-
H TRAINING REGIONAL		272,900.0	23,760.0	4,500.0	37,250.0					
I TRAINING-CENTRAL	-	1,000.0	500.0	-	-		-	-	-	225.0
J OVERSEAS TRAINING		30,000.0	40,000.0	5,700.0	12,500.0		-		-	18,000.0
K TRAINING - LITERACY PROGRAMS	-	-	-	-	-	-	-	-	-	-
Total INVESTMENT COSTS	1,340,900.0	320,300.0	383,840.0	241,030.0	374,410.0		-		-	91,775.0
II RECURRENT COSTS										
A SALARIES				-		474,750.0	368,900.0	46,750.0	385,000.0	
B EQUIPEMENT OPERATION				-		114,000.0		106,600.0	-	
C VEHICLES OPERATION AND MAINTENANCE						1,205,000.0	290,800.0	153,700.0	63,800.0	
D GENERAL SERVICES		-	-		-	575,000.0	352,200.0	37,640.0	117,500.0	-
E LIVESTOCK CATTLE					9,600.0	-	-	-	-	
Total RECURRENT COSTS	-				9,600.0	2,368,750.0	1,011,900.0	344,690.0	566,300.0	
Total BASELINE COSTS	1,340,900.0	320,300.0	383,840.0	241,030.0	384,010.0	2,368,750.0	1,011,900.0	344,690.0	566,300.0	91,775.0
Physical Contingencies	82,436.0	12,452.0	15,233.6	8,801.2	29,664.4	75,760.0	25,720.0	11,917.6	7,252.0	3,419.0
Price Contingencies	160,896.5	41,667.2	32,481.1	23,937.2	29,101.6	322,006.4	134,424.6	50,131.5	76,031.8	8,902.1
Total PROJECT COSTS	1,584,232.5	374,419.2	431,554.7	273,768.4	442,776.0	2,766,516.4	1,172,044.6	406,739.1	649,583.8	104,096.1
Foreign Exchange	1,116,542.7	51,375.2	361,424.5	244,577.0	212,849.3	686,183.5	136,532.4	186,143.3	29,954.5	79,207.4

December 7, 1988 14:01

BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT
Summary Account by Project Component
(CFA FRANC '000)

LIVESTOCK CENTRAL VETERINARY LABORATORY (INVESTMENT)	LIVESTOCK - LIVESTOCK REGIONAL (INVESTMENT)	LIVESTOCK - CENTRAL (RECURRENT)	LIVESTOCK - CENTRAL VETERINARY LABORATORY (RECURRENT)	LIVESTOCK - REGIONAL (RECURRENT)	FUNCTIONAL LITERACY PROGRAMS (INVESTMENT)	FUNCTIONAL LITERACY PROGRAMS (RECURRENT)	STUDIES INCLUDING PPF AND PILOT OPERATIONS (INVESTMENT)	PROJECT MANAGEMENT AND ADMINISTRATION (INVESTMENT)	PROJECT MANAGEMENT AND ADMINISTRATION (RECURRENT)	Total	Physical Contingencies	
											%	Amount
71,000.0	590,000.0		-	-	306,000.0		-	20,000.0	-	1,715,400.0	10 0	171,540 0
110,650 0	78,800 0				276,500.0			14,000 0		809,200.0	4 0	32,368 0
48,970 0	258,165 0		-	-	40,060.0	-		35,260 0	-	1,571,925 0	4 0	62,877.0
					9,000 0			50,500 0		118 300 0	0 0	0 0
		-		-	-	-	442,500 0	-	-	442,500 0	0 0	0 0
							78,000 0			78,000 0	0 0	0 0
				-			65,000 0			65,000 0	0.0	0 0
	10,215 0									348,625 0	4 0	13,945 0
	-	-	-	-		-		8,700.0	25,000.0	35,425 0	4.0	1,417.0
					66,000.0					172,200 0	4 1	7,068 0
	-	-	-		266,185.0	-		-	-	266,185 0	0.0	0 0
230,620 0	937,180 0		-	-	963,745.0	-	585,500 0	128,460.0	25,000.0	5,622,760.0	5.1	289,215.0
		14,124 5	55,500 0	-	-	25,120 0		-	93,652.0	1,463,796 5	0 0	0 0
	-	-	14,000.0	-	-	-	-	-	-	234,600.0	4 0	9,384.0
		55,300.0	59,100.0	314,700.0		54,250.0		-	39,000 0	2,235,650.0	4.0	89,426 0
-	-	750 0	43,300.0	65,000.0	-	157,500.0	-	-	9,000.0	1,357,890 0	4 0	54,315.6
	-	-	-	-	-	-	-	-	-	9,600.0	4.0	384.0
		70,174.5	171,900.0	379,700.0	-	236,870.0	-	-	141,652.0	5,301,536 5	2 9	153,509 6
230,620.0	937,180.0	70,174.5	171,900.0	379,700.0	963,745.0	236,870.0	585,500.0	128,460.0	166,652 0	10,924,296.5	4.1	442,724.6
13,484.8	72,887.2	2,242.0	4,656.0	15,188.0	45,902.4	8,470.0	-	4,318.4	2,920.0	442,724.6	0 0	0.0
23,509 8	113,397.3	9,321.0	26,946.7	58,829.2	71,936.8	30,849.0	33,866 4	8,860.2	22,336.9	1,278,433.4	3 8	48,972.0
267,614 6	1,123,464.5	81,737.5	202,502.7	453,717.2	1,081,584.2	276,189.0	619,366 4	141,638.6	191,908 9	12,645,454.5	3 9	491,696.6
193,978 0	627,772.6	25,887.2	34,919.9	149,305.7	384,426.8	25,470.7	36,111.6	105,861.2	47,654.9	4,736,178.4	4.6	219,842.0

BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT
SUMMARY ACCOUNTS COST SUMMARY

	(CFA FRANC '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I INVESTMENT COSTS								
A CIVIL WORKS	1,029,240.0	686,160.0	1,715,400.0	3,659.5	2,439.7	6,099.2	40	16
B EQUIPMENT	256,895.0	552,305.0	809,200.0	913.4	1,963.8	2,877.2	68	7
C VEHICLES	157,192.5	1,414,732.5	1,571,925.0	558.9	5,030.2	5,589.1	90	14
D TECHNICAL ASSISTANCE	3,780.0	114,520.0	118,300.0	13.4	407.2	420.6	97	1
F PROJECT PREFINANCING FUND	438,075.0	4,425.0	442,500.0	1,557.6	15.7	1,573.3	1	4
F STUDIES	77,220.0	780.0	78,000.0	274.6	2.8	277.3	1	1
G PILOT OPERATIONS	39,000.0	26,000.0	65,000.0	138.7	92.4	231.1	40	1
H TRAINING-REGIONAL	348,625.0	-	348,625.0	1,239.6	-	1,239.6	-	3
I TRAINING CENTRAL	10,413.8	25,011.3	35,425.0	37.0	88.9	126.0	71	0
J OVERSEAS TRAINING	-	172,200.0	172,200.0	-	612.3	612.3	100	2
K TRAINING - LITERACY PROGRAMS	266,185.0	-	266,185.0	946.4	-	946.4	-	2
Total INVESTMENT COSTS	2,626,626.3	2,996,133.8	5,622,760.0	9,339.1	10,652.9	19,992.0	53	51
II RECURRENT COSTS								
A SALARIES	1,463,796.5		1,463,796.5	5,204.6		5,204.6		13
B EQUIPEMENT OPERATION	30,460.0	204,140.0	234,600.0	108.3	725.8	834.1	87	2
C VEHICLES OPERATION AND MAINTENANCE	1,341,490.0	894,260.0	2,235,650.0	4,769.4	3,179.6	7,949.0	40	20
D GENERAL SERVICES	1,357,890.0	-	1,357,890.0	4,828.1	-	4,828.1	-	12
E LIVESTOCK CATTLE	9,600.0	-	9,600.0	34.1	-	34.1	-	0
Total RECURRENT COSTS	4,203,136.5	1,098,400.0	5,301,536.5	14,944.5	3,905.4	18,849.9	21	49
Total BASELINE COSTS	6,829,762.8	4,094,533.8	10,924,296.5	24,283.6	14,558.3	38,841.9	37	100
Physical Contingencies	243,422.7	199,302.0	442,724.6	865.5	708.6	1,574.1	45	4
Price Contingencies	836,090.8	442,342.7	1,278,433.4	2,972.8	1,572.8	4,545.5	35	12
Total PROJECT COSTS	7,909,276.2	4,736,178.4	12,645,454.5	28,121.9	16,839.7	44,961.6	37	116

December 7, 1988 14:01

BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT
Project Components by Year

	Totals Including Contingencies (CFA FRANC '000)						Totals Including Contingencies (US$ '000)					
	89	90	91	92	93	Total	89	90	91	92	93	Total
.. EXTENSION - EXTENSION SERVICES - CENTRAL AND REGIONAL (INVESTMENT)	507,813.2	142,310.8	313,976.9	456,712.0	163,419.6	1,584,232.5	1,805.6	506.0	1,116.4	1,623.9	581.0	5,632.8
. TRAINING - CENTRAL AND REGIONAL (INVESTMENT)	76,679.3	77,436.0	77,865.7	69,498.2	72,940.1	374,419.2	272.6	275.3	276.9	247.1	259.3	1,331.3
:. EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (INVESTMENT)	235,156.8	34,284.4	31,199.6	121,072.1	9,841.9	431,554.7	836.1	121.9	110.9	430.5	35.0	1,534.4
). EXTENSION - COMMUNICATION AND AUDIO-VISUAL - CENTRAL AND REGIONAL (INVESTMENT)	128,658.3	17,865.2	5,488.8	116,298.1	5,458.0	273,768.4	457.5	63.5	19.5	413.5	19.4	973.4
:. RESEARCH - RESEARCH AND DEVELOPMENT (INVESTMENT)	199,781.7	119,759.0	94,711.1	25,893.9	2,630.3	442,776.0	710.3	425.8	336.8	92.1	9.4	1,574.3
". EXTENSION - EXTENSION SERVICES - CENTRAL AND REGIONAL (RECURRENT)	501,306.9	526,746.7	552,669.4	579,064.6	606,728.7	2,766,516.4	1,782.4	1,872.9	1,965.0	2,058.9	2,157.3	9,836.5
. EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (RECURRENT)	234,239.0	217,819.0	228,627.5	239,812.5	251,546.6	1,172,044.6	832.8	774.5	812.9	852.7	894.4	4,167.3
:. EXTENSION - COMMUNICATION AND AUDIOVISUAL - CENTRAL AND REGIONAL (RECURRENT)	64,175.3	67,473.4	70,748.2	99,877.4	104,464.8	406,739.1	228.2	239.9	251.5	355.1	371.4	1,446.2
. EXTENSION - RESEARCH AND DEVELOPMENT (RECURRENT)	117,586.1	123,481.8	129,637.8	136,065.6	142,812.6	649,583.8	418.1	439.0	460.9	483.8	507.8	2,309.6
J. LIVESTOCK - CENTRAL (INVESTMENT)	36,672.8	29,900.1	5,173.9	26,684.1	5,665.2	104,096.1	130.4	106.3	18.4	94.9	20.1	370.1
:. LIVESTOCK - CENTRAL VETERINARY LABORATORY (INVESTMENT)	67,496.4	108,601.4	19,899.5	57,273.0	14,344.3	267,614.6	240.0	386.1	70.8	203.6	51.0	951.5
.. LIVESTOCK - LIVESTOCK REGIONAL (INVESTMENT)	200,780.7	284,950.3	301,724.7	305,584.7	30,424.1	1,123,464.5	713.9	1,013.2	1,072.8	1,086.5	108.2	3,994.5
:. LIVESTOCK - CENTRAL (RECURRENT)	16,388.2	15,205.4	15,950.5	16,702.7	17,490.7	81,737.5	58.3	54.1	56.7	59.4	62.2	290.6
:. LIVESTOCK - CENTRAL VETERINARY LABORATORY (RECURRENT)	28,030.2	32,355.6	33,958.2	52,804.5	55,354.3	202,502.7	99.7	115.0	120.7	187.7	196.8	720.0
). LIVESTOCK - REGIONAL (RECURRENT)	51,198.0	65,012.3	103,350.6	114,379.4	119,776.9	453,717.2	182.0	231.2	367.5	406.7	425.9	1,613.2
. FUNCTIONAL LITERACY PROGRAMS (INVESTMENT)	523,570.4	328,087.4	81,923.3	84,773.9	63,229.1	1,081,584.2	1,861.6	1,166.5	291.3	301.4	224.8	3,845.6
. FUNCTIONAL LITERACY PROGRAMS (RECURRENT)	62,027.5	50,591.8	51,930.8	54,481.4	57,157.6	276,189.0	220.5	179.9	184.6	193.7	203.2	982.0
.. STUDIES INCLUDING PPF AND PILOT OPERATIONS (INVESTMENT)	453,569.1	19,373.3	74,598.9	28,425.0	43,400.0	619,366.4	1,612.7	68.9	265.2	101.1	154.3	2,202.2
. PROJECT MANAGEMENT AND ADMINISTRATION (INVESTMENT)	92,006.1	11,349.5	8,486.5	24,278.4	5,518.0	141,638.6	327.1	40.4	30.2	86.3	19.6	503.6
. PROJECT MANAGEMENT AND ADMINISTRATION (RECURRENT)	34,774.9	36,539.7	38,337.9	40,168.8	42,087.7	191,908.9	123.6	129.9	136.3	142.8	149.6	682.3
al PROJECT COSTS	3,631,911.0	2,309,143.2	2,240,259.7	2,649,850.2	1,814,290.5	12,645,454.5	12,913.5	8,210.3	7,965.4	9,421.7	6,450.8	44,961.6

ANNEX 4

Table 4

BURKINA FASO
AGRICULTURAL SUPPORT SERVICES PROJECT
Project Components by Year
(CFA FRANC '000)

	Base Costs					Total	
	89	90	91	92	93	CFA FRANC	(US$ '000)
A. EXTENSION - EXTENSION SERVICES - CENTRAL AND REGIONAL (INVESTMENT)	475,750.0	120,000.0	260,000.0	365,150.0	120,000.0	1,340,900.0	4,767.6
B. TRAINING - CENTRAL AND REGIONAL (INVESTMENT)	72,140.0	69,240.0	66,240.0	56,340.0	56,340.0	320,300.0	1,138.8
C. EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (INVESTMENT)	219,742.0	30,752.0	26,752.0	98,842.0	7,752.0	383,840.0	1,364.8
D. EXTENSION - COMMUNICATION AND AUDIO-VISUAL - CENTRAL AND REGIONAL (INVESTMENT)	120,535.0	16,300.0	4,800.0	94,995.0	4,400.0	241,030.0	857.0
E. RESEARCH - RESEARCH AND DEVELOPMENT (INVESTMENT)	181,860.0	102,380.0	76,630.0	21,110.0	2,030.0	384,010.0	1,365.4
F. EXTENSION - EXTENSION SERVICES - CENTRAL AND REGIONAL (RECURRENT)	473,750.0	473,750.0	473,750.0	473,750.0	473,750.0	2,368,750.0	8,422.2
G. EXTENSION - MONITORING AND EVALUATION - CENTRAL AND REGIONAL (RECURRENT)	222,540.0	197,340.0	197,340.0	197,340.0	197,340.0	1,011,900.0	3,597.9
H. EXTENSION - COMMUNICATION AND AUDIOVISUAL - CENTRAL AND REGIONAL (RECURRENT)	60,490.0	60,490.0	60,490.0	81,610.0	81,610.0	344,690.0	1,225.6
I. EXTENSION - RESEARCH AND DEVELOPMENT (RECURRENT)	113,260.0	113,260.0	113,260.0	113,260.0	113,260.0	566,300.0	2,013.5
J. LIVESTOCK - CENTRAL (INVESTMENT)	34,275.0	26,950.0	4,400.0	21,750.0	4,400.0	91,775.0	326.3
K. LIVESTOCK - CENTRAL VETERINARY LABORATORY (INVESTMENT)	60,845.0	96,650.0	16,000.0	45,895.0	11,230.0	230,620.0	820.0
L. LIVESTOCK - LIVESTOCK REGIONAL (INVESTMENT)	184,125.0	241,710.0	247,025.0	241,860.0	22,460.0	937,180.0	3,332.2
M. LIVESTOCK - CENTRAL (RECURRENT)	15,474.9	13,674.9	13,674.9	13,674.9	13,674.9	70,174.5	249.5
N. LIVESTOCK - CENTRAL VETERINARY LABORATORY (RECURRENT)	26,700.0	29,300.0	29,300.0	43,300.0	43,300.0	171,900.0	611.2
O. LIVESTOCK - REGIONAL (RECURRENT)	48,000.0	58,000.0	87,900.0	92,900.0	92,900.0	379,700.0	1,350.0
P. FUNCTIONAL LITERACY PROGRAMS (INVESTMENT)	481,565.0	288,900.0	71,750.0	70,780.0	50,750.0	963,745.0	3,426.6
Q. FUNCTIONAL LITERACY PROGRAMS (RECURRENT)	58,374.0	45,374.0	44,374.0	44,374.0	44,374.0	236,870.0	842.2
R. STUDIES INCLUDING PPF AND PILOT OPERATIONS (INVESTMENT)	442,500.0	18,000.0	66,000.0	24,000.0	35,000.0	585,500.0	2,081.8
S. PROJECT MANAGEMENT AND ADMINISTRATION (INVESTMENT)	85,980.0	10,500.0	7,500.0	19,980.0	4,500.0	128,460.0	456.7
T. PROJECT MANAGEMENT AND ADMINISTRATION (RECURRENT)	33,330.4	33,330.4	33,330.4	33,330.4	33,330.4	166,652.0	592.5
Total BASELINE COSTS	3,411,236.3	2,045,901.3	1,900,516.3	2,154,241.3	1,412,401.3	10,924,296.5	38,841.9
Physical Contingencies	129,803.7	96,523.7	81,016.3	86,137.3	49,243.7	442,724.6	1,574.1
Price Contingencies	90,871.0	166,718.2	258,727.1	409,471.6	352,645.5	1,278,433.4	4,545.5
Total PROJECT COSTS	3,631,911.0	2,309,143.2	2,240,259.7	2,649,850.2	1,814,290.5	12,645,454.5	44,961.6
Foreign Exchange	1,604,758.6	779,895.4	769,146.8	1,160,616.9	421,760.6	4,736,178.4	16,839.7

December 6, 1988 16:14

ANNEX 5

BURKINA FASO
Agricultural Support Services Project

Estimated Schedule of Disbursements

Fiscal Year/Semester (ending dates shown)	Disbursements Semester	Disbursements Cumulative	Cumulative Disbursement (%)	West Africa Agricultural Projects (Profile %)
	(US$ million)			
FY 1989				
December 31, 1988 a/	0.0	0.0	-	8
June 30, 1989 b/	0.0	0.0	0	8
FY 1990				
December 31, 1989	1.0	1.0	2	2
June 30, 1990	2.0	3.0	7	6
FY 1991				
December 31, 1990	2.0	5.0	11	12
June 30, 1991	3.0	8.0	19	19
FY 1992				
December 31, 1991	3.0	11.0	26	27
June 30, 1992	4.0	15.0	35	36
FY 1993				
December 31, 1992	4.0	19.0	45	46
June 30, 1993	4.0	23.0	54	55
FY 1994				
December 31, 1993	4.0	27.0	64	64
June 30, 1994	3.0	30.0	71	72
FY 1995				
December 31, 1994	3.0	33.0	78	79
June 30, 1995	3.0	36.0	85	86
FY 1996				
December 31, 1995	2.0	38.0	90	90
June 30, 1996	2.0	40.0	95	96
FY 1997				
December 31, 1996	1.0	41.0	97	98
March 31, 1997	1.0	42.0	100	100

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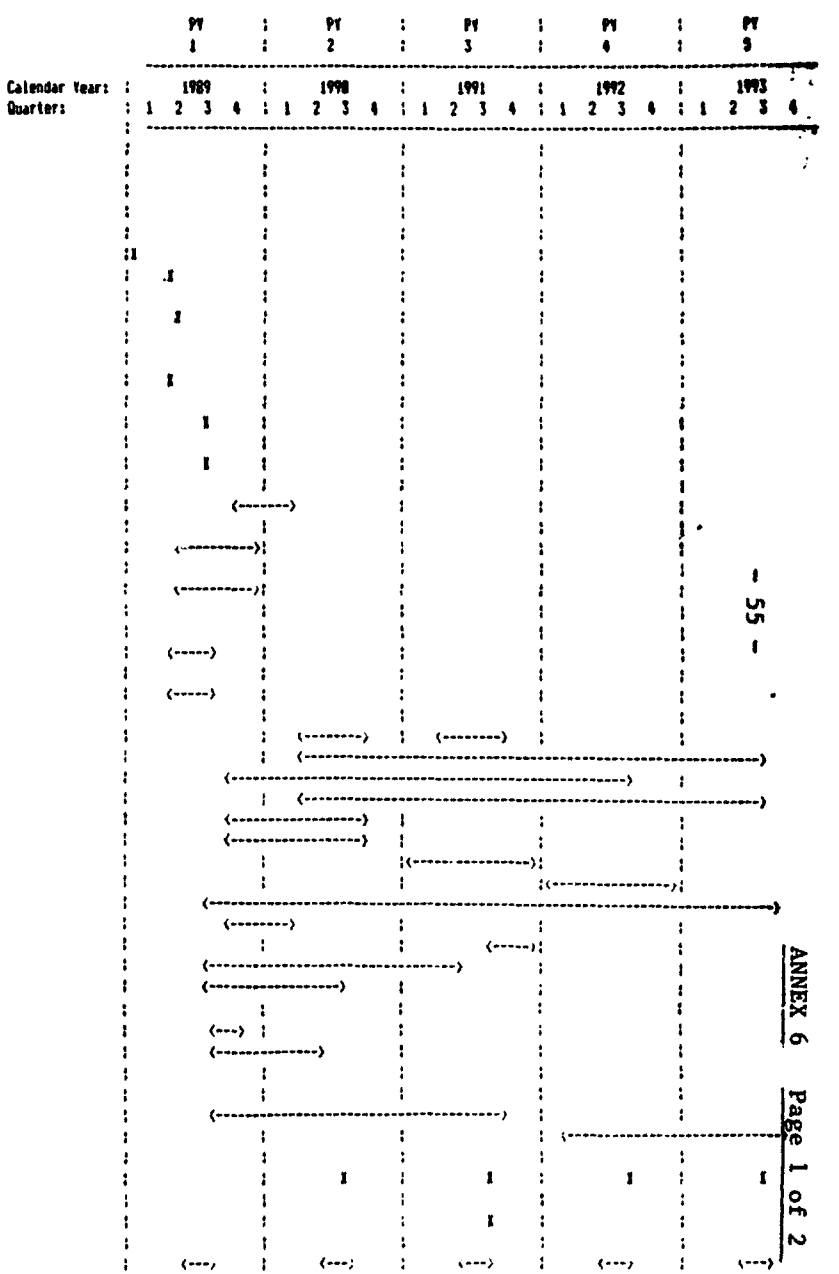
a/ Expected date of Board Presentation: January 1989
b/ Expected date of Credit Effectiveness: June 1989

BURKINA FASO
AGRICULTURE SUPPORT SERVICES PROJECT
IMPLEMENTATION SCHEDULE

		NEGOTIATIONS	9/12 - 9/16/88
1.	1.	Shortlist Consultants Fin.Mgt./Acct.System	October 1988
	2.	Invite Proposals	October 1988
	3.	Select Consultants	December 1988
	4.	Signed Contract	January 1989
	5.	Fin.Mgt.& Acct.System in place (incl. training of local accounts staff)	
		EFFECTIVENESS DATE	3/31/89
2.		Nominate Project Coordinator	9/31/88
3.		CAPU in place: Head, Accounts staff & Procurement officer recruited	
4.		Implementation Seminar (organized by P.C. and DEP/MAE)	
5.		M&E Comite de Coordination meeting (organized by DEP/MAE)	
6.		Establish CRPA monitoring units	
7.		Training Specialists (TA) for Extension and Livestock Services recruited	
8.		Training Specialists (TA) for MOP (staff training & functional literacy)	
9.		CAPU consolidates procurement needs of implem. agencies, prepares packages and schedules (based on central and CRPA/DROP programs & budgets)	
10.		MAE/CRPA's and MOP/DROP's prepare construction programs	
11.	1.	Construction 20 village warehouses (livestock services)	
	2.	Construction 400 field staff houses (extension)	
	3.	Construction 42 livestock posts (livestock services)	
	4.	Construction 100 vaccination pens	
	5.	Construction virology unit (Ouagadougou Central Laboratory)	
	6.	Construction field diagnostic units: Ouahigouya & Tenkodogo (rehabilitation)	
		Bobo-Dioulasso (new)	
		Fada-N'gourma (new)	
	7.	Repair of existing livestock services infrastructure (>=100 structures)	
	8.	Rehabilitation PHARMAVET cold storage facilities Ouagadougou	
	9.	Rehabilitation PHARMAVET cold storage facilities Bobo-Dioulasso	
	10.	Rehabilitation existing farmer training centers (70 CFJA's MOP)	
	11.	Rehabilitation existing teacher training centers (3 CFFA's/MOP)	
12		REORGANIZE PAPER NETWORK	
	1.	Topo and soil surveys	
	2.	Construction and equipment	
13		ESTABLISH MASS COMMUNICATION/AUDIO-VISUAL REGIONAL UNITS	
	1.	Strengthen existing 8 teams	
	2.	Create new units in 4 remaining CRPA's	
14		ANNUAL AUDITS AND REVIEWS	
15		MID-TERM REVIEW (organized by DEP/MAE)	
16		WORKING AGREEMENTS (various, e.g. IMERA/CRPA's/GV's; DVA/DAFP;etc.)	



BURKINA FASO
AGRICULTURE SUPPORT SERVICES PROJECT
IMPLEMENTATION SCHEDULE

	FY 1	FY 2	FY 3	FY 4	FY 5
Calendar Years	1989	1990	1991	1992	1993
Quarters	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
REORGANIZE PAPER NETWORK					
1. Topo and soil surveys	(..)				
2. Construction and equipment	(.....)				
ESTABLISH MASS COMMUNICATION/AUDIO-VISUAL REGIONAL UNITS					
1. Strengthen existing 8 teams	(.....)				
2. Create new units in 4 remaining CRPA's				(.....	
ANNUAL AUDITS AND REVIEWS		X	X	X	X
MID-TERM REVIEW (organized by DEP/MAE)			X		
WORKING AGREEMENTS (various, e.g. INERA/CRPA's/GV's; DVA/DAFP, etc.)	(..)	(..)	(..)	(..)	(..)

BURKINA FASO

AGRICULTURAL SUPPORT SERVICES PROJECT

GOVERNMENT PROJECT RELATED CASH FLOW 1/

(CFAF million)

Inflows	PY0 1988	PY1 1989	PY2 1990	PY3 1991	PY4 1992	PY5 1993	PY6-10 1994	PY11-20	PY21-50
External Financing									
IDA Credit	140	3,396	2,159	2,094	2,477	1,696	-	-	-
Outflows									
Project costs 2/	140	3,632	2,309	2,240	2,649	1,814	1,637	1,637	1,637
Commitment charges and Services Charges 3/	-	42	56	63	65	76	88	88	118 4/
Principal Repayment	-	-	-	-	-	-	-	151	302
Total Outflows	140	3,647	2,365	2,303	2,714	1,890	1,725	1,876	2,052
Surplus (Deficit)	-	(278)	(206)	(209)	(237)	(194)	(1,725)	(1,876)	(2,052)

1/ In current terms throughout the project thereafter in constant terms.

2/ From 1994 onward recurrent expenditures and some vehicles replacement every 4 years, motorbikes, motorcycles every 3 years.

3/ Standard IDA terms with 40 years maturity.

4/ Average over 30 years.

NOTES

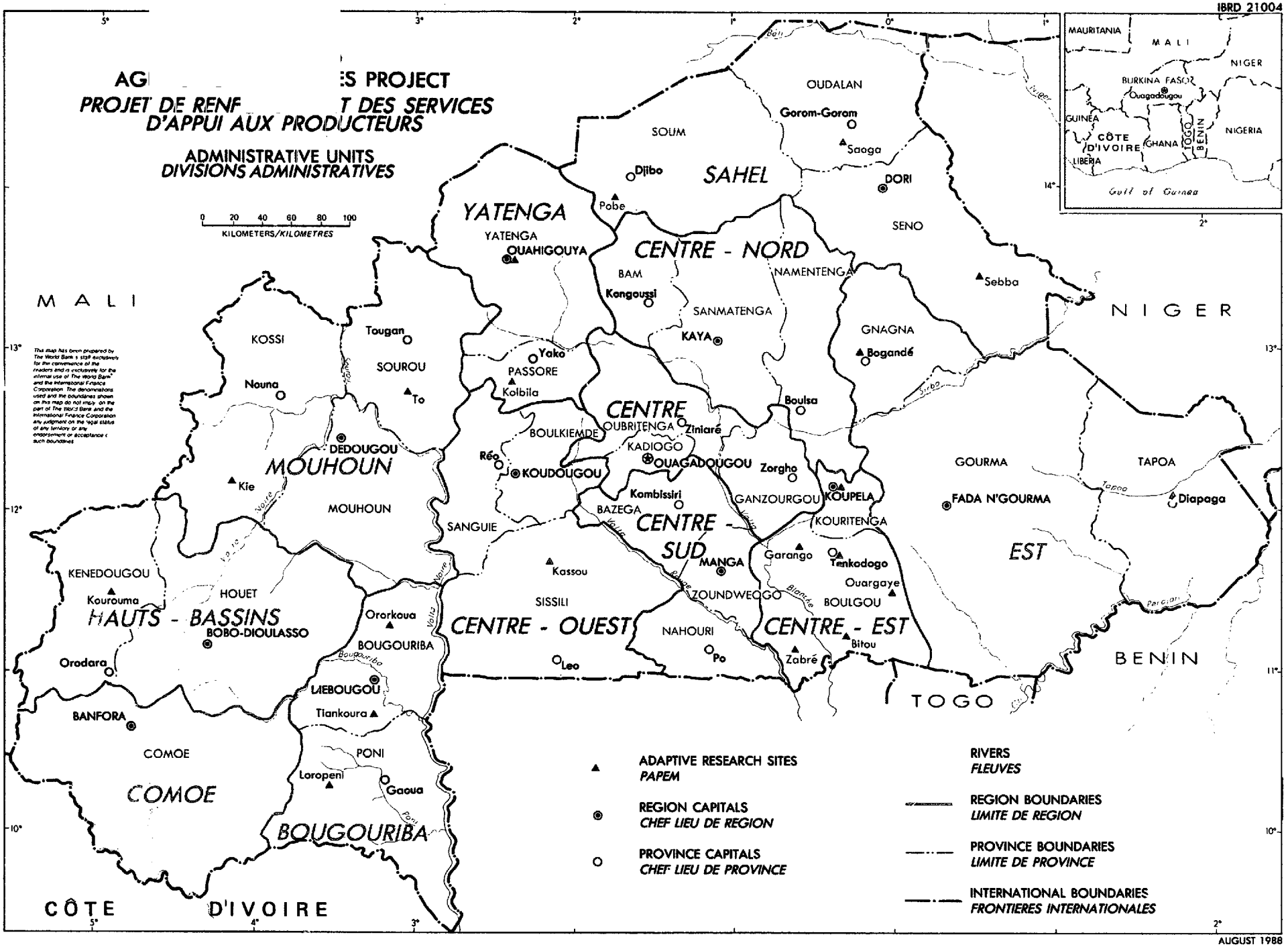
NOTES

MAP SECTION

IBRD 21004

AG ES PROJECT
PROJET DE RENF T DES SERVICES D'APPUI AUX PRODUCTEURS

ADMINISTRATIVE UNITS
DIVISIONS ADMINISTRATIVES



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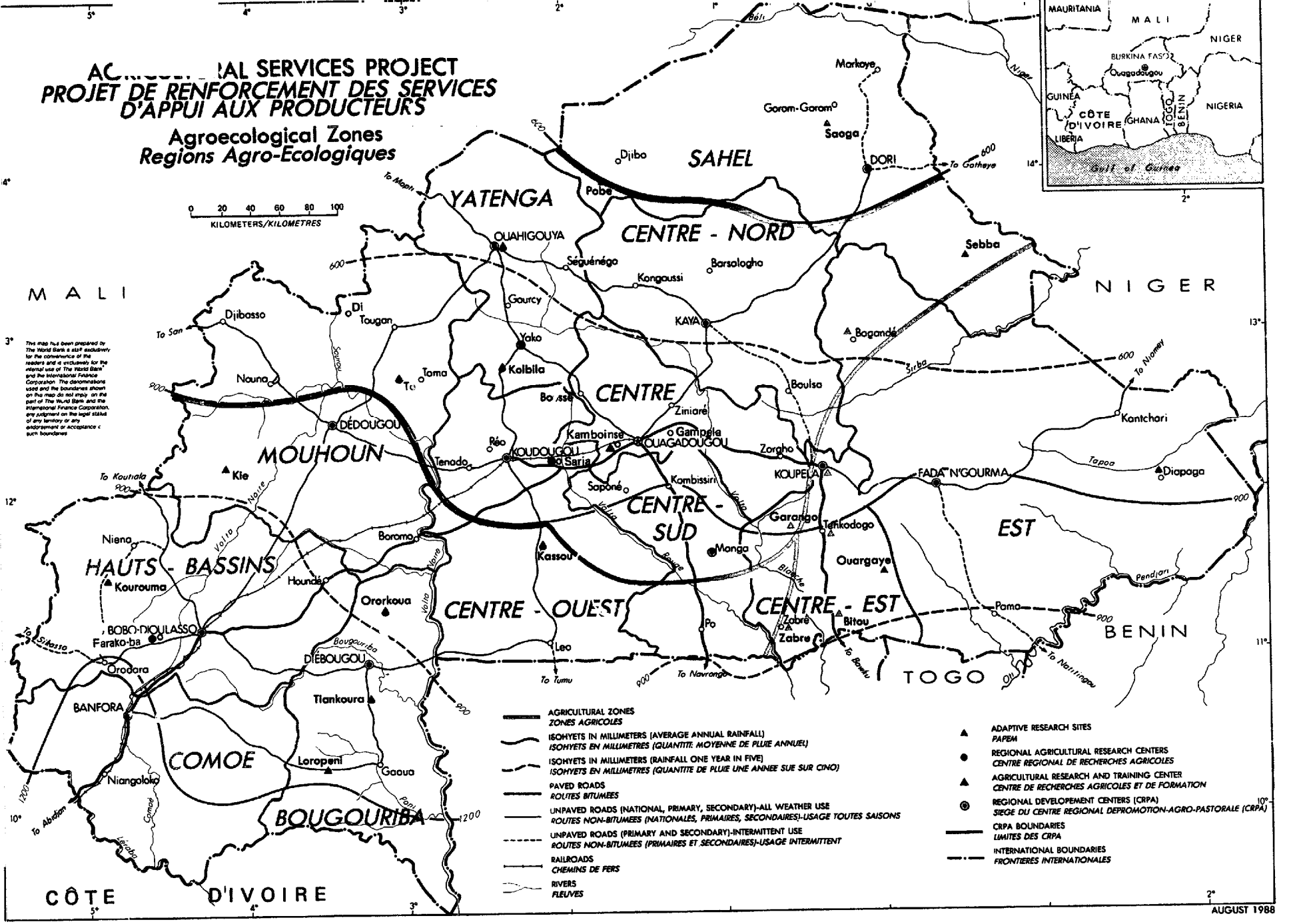
AUGUST 1988



AGRICULTURAL SERVICES PROJECT
PROJET DE RENFORCEMENT DES SERVICES D'APPUI AUX PRODUCTEURS
Agroecological Zones
Regions Agro-Ecologiques
0 20 40 60 80 100
KILOMETERS/KILOMETRES
MALI
NIGER
BENIN
TOGO
CÔTE D'IVOIRE
SAHEL
YATENGA
CENTRE - NORD
CENTRE
MOUHOUN
CENTRE - SUD
EST
HAUTS - BASSINS
CENTRE - OUEST
CENTRE - EST
COMOE
BOUGOURIBA
Djibo
Pobe
Markoye
Gorom-Gorom
Saoga
DORI
To Gotheye
OUAHIGOUYA
Séguénégo
Barsalogho
Kongoussi
Sebba
Gourcy
KAYA
Bagandé
Djibasso
Di
Tougan
Yako
Kolbila
Toma
Nouna
Boulsa
Ziniaré
Kamboinse
Gampela
OUAGADOUGOU
Zorgho
KOUPELA
Kantchari
DÉDOUGOU
Réo
KOUDOUGOU
Saria
Tenado
Kie
Saponé
Kombissiri
FADA N'GOURMA
Diapaga
Garango
Tenkodogo
Niena
Boromo
Kassou
Manga
Ouargaye
Kourouma
Houndé
Ororkoua
Po
Zabré
Bitou
Pama
BOBO-DIOULASSO
Farako-ba
Orodara
DIÉBOUGOU
Leo
Tiankoura
BANFORA
Loropeni
Gaoua
Niangoloko
To San
To Mopti
To Koutiala
To Sikasso
To Abidjan
To Tumu
To Navrongo
To Bawku
To Natitingou
To Niamey
Sirba
Tapoa
Pendjari
Volta Noire
Volta Rouge
Volta Blanche
Bougouriba
Comoé
Léraba
Pont
Oti
Béli
Niger
Sourou
AGRICULTURAL ZONES
ZONES AGRICOLES
ISOHYETS IN MILLIMETERS (AVERAGE ANNUAL RAINFALL)
ISOHYETS EN MILLIMETRES (QUANTITE MOYENNE DE PLUIE ANNUEL)
ISOHYETS IN MILLIMETERS (RAINFALL ONE YEAR IN FIVE)
ISOHYETS EN MILLIMETRES (QUANTITE DE PLUIE UNE ANNEE SUE SUR CINO)
PAVED ROADS
ROUTES BITUMEES
UNPAVED ROADS (NATIONAL, PRIMARY, SECONDARY)-ALL WEATHER USE
ROUTES NON-BITUMEES (NATIONALES, PRIMAIRES, SECONDAIRES)-USAGE TOUTES SAISONS
UNPAVED ROADS (PRIMARY AND SECONDARY)-INTERMITTENT USE
ROUTES NON-BITUMEES (PRIMAIRES ET SECONDAIRES)-USAGE INTERMITTENT
RAILROADS
CHEMINS DE FERS
RIVERS
FLEUVES
ADAPTIVE RESEARCH SITES
PAPEM
REGIONAL AGRICULTURAL RESEARCH CENTERS
CENTRE REGIONAL DE RECHERCHES AGRICOLES
AGRICULTURAL RESEARCH AND TRAINING CENTER
CENTRE DE RECHERCHES AGRICOLES ET DE FORMATION
REGIONAL DEVELOPEMENT CENTERS (CRPA)
SIEGE DU CENTRE REGIONAL DEPROMOTION-AGRO-PASTORALE (CRPA)
CRPA BOUNDARIES
LIMITES DES CRPA
INTERNATIONAL BOUNDARIES
FRONTIERES INTERNATIONALES
MAURITANIA
MALI
NIGER
BURKINA FASO
Ouagadougou
GUINEA
CÔTE D'IVOIRE
GHANA
TOGO
BENIN
NIGERIA
LIBERIA
Gulf of Guinea
AUGUST 1988