

ATTITUDES TO COTTON GROWING IN BURKINA FASO: DIFFERENT FARMERS, DIFFERENT BEHAVIOURS

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Over the past ten years, cotton growing in Burkina Faso has been expanding at a tremendous rate: from the agricultural campaign of 1980-1981 to that of 1990-1991, seed-cotton production has risen from 62,500 to 189,500 tonnes. For the farmer, this has meant an increase in gross income from CFA 3.4 to 17.9 Mrd. Although 21 of the country's 30 provinces produce cotton today (Fig. 1), the bulk of the activity is concentrated in the west, more specifically in a geographical sector straddling seven provinces: Mouhoun, Houet and Kéné Dougou entirely, and parts of Sourou, Kossi, Bougouriba and Comoé. Together, producing 95% of the tonnage marketed, they represent Burkina Faso's "cotton region", covering 57,000 km² (i.e. 20% of the country). In 1990 there was a farming population of about 1,400,000, belonging to no less than 48 different ethnic groups, 24 autochthonic and 24 allochthonic (Fig. 2).

Within the geographical sector thus defined, not all small-scale farmers behave in the same way with respect to cotton growing. According to a survey carried out during the 1989-1990 agricultural campaign among a representative sample of 12,178 farmers (A. Schwartz [1991]), it appeared that only 56.9% of the 130,000 production units listed grew this crop and that the percentage varied according to ethnic group, rang-

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Fig. 1

**Cotton growing in Burkina Faso:
1988-1989 agricultural campaign
Seed-cotton production marketed per province**

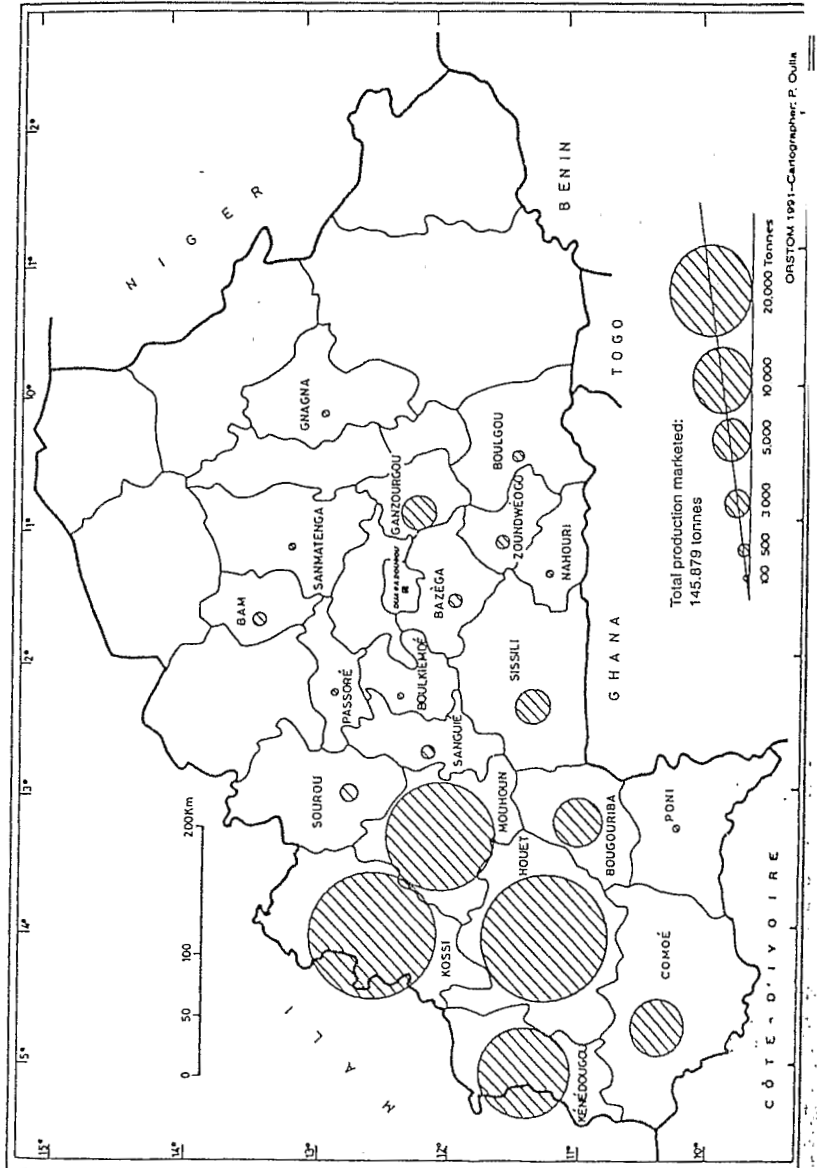
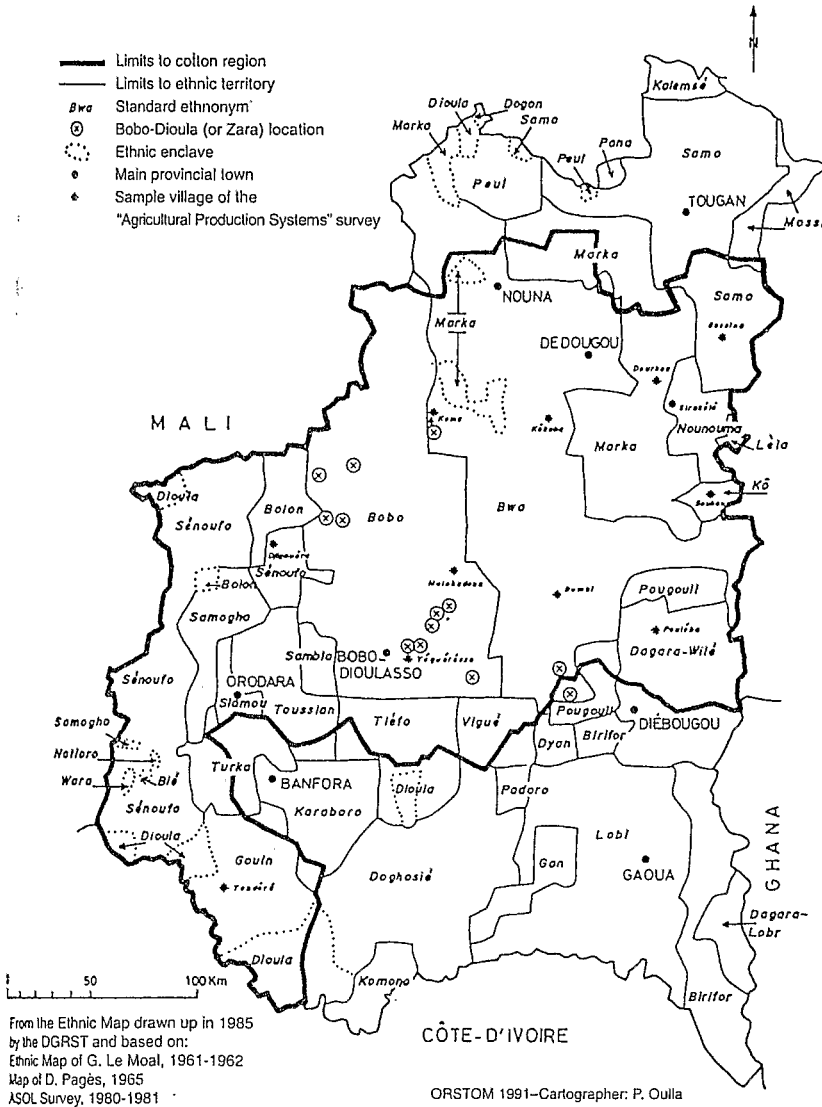


Fig. 2

Simplified ethnic map of western Burkina Faso:
1990-1991 ORSTOM survey
Location of sample villages



ing from 92.4 to 10.0% (Table 1). It is this contrasting behaviour that the present paper will try to explain. Firstly, we examine the terms which the Burkina Faso farmer poses the question of cotton growing and then the socio-economic context underlying the crop's integration into the production system of just some of the numerous ethnic groups growing it in the region.

Table 1

**Cotton region of western Burkina Faso:
1989-1990 agricultural campaign
Percentage of farms growing cotton according to ethnic group**

Ethnic group of farmer in survey sample	Total number of farms in the survey sample	Farms growing cotton (in %)	Mean land area devoted to cotton per cotton farm (in ares)	Mean land area devoted to cotton per resident on the cotton area (in ares)
1. Kô	277	92.4	166.4	12.7
2. Bobo-Dioula	56	91.1	262.8	25.1
3. Bolon	217	90.3	198.6	22.7
4. Sénoufo	830	97.0	274.0	25.3
5. Bwa	2,437	75.0	217.4	24.4
6. Dioula	139	70.5	404.1	28.6
7. Dagara	803	69.0	145.1	12.3
8. Gouin	201	67.2	84.4	7.0
9. Vigué	106	53.8	86.0	8.7
10. Mossi*	2,518	53.2	174.5	14.8
11. Lélé	151	52.3	134.8	9.2
12. Marka	440	46.4	143.4	12.2
13. Bobo	1,512	46.1	178.9	17.1
14. Sambla	402	45.8	100.1	9.7
15. Silmi-Mossi*	62	40.3	130.0	11.3
16. Samo	547	36.2	97.9	8.6
17. Dogon*	42	26.2	218.2	15.3
18. Peul*	727	18.0	211.6	17.5
19. Nounouma	332	17.8	138.6	10.6
20. Samogho	249	10.0	111.0	9.6
Others (25)	130	60.0	164.7	16.4
Total sample (45)	12,178	56.9	190.5	17.7

* Allochthonic ethnic group

THE BURKINA FASO FARMER AND THE QUESTION OF COTTON GROWING AT THE START OF THE NINETIES

In which terms does the Burkina Faso farmer pose the question of cotton growing? On the sociological level, how is this cash crop perceived in the country? On the institutional level, what support do they get? On the economic level, what is it likely to pay the farmer? And what are the possibilities for those who try to earn money from other crops?

AN EMOTIONALLY LOADED CROP

The very strong emotional attachment farmers in Burkina Faso feel towards cotton can only be understood by looking at the historical background. Oral tradition of virtually all societies making up the country today are clear: cotton has always played a major role in this part of Africa. In pre-colonial times, the crop had a threefold purpose: satisfying domestic needs through the production of clothes; satisfying ritual requirements through the production of loincloths used as winding sheets; and satisfying economic requirements through the production of large quantities of woven strips for use as money to barter for goods from distant parts: rock salt from the Saharan salterns or kola from the tropical forests. The cotton plant, *Gossypium arboreum*, has probably grown in Sudanese Africa since time immemorial. Originally from east Africa and India, it was grown close to the villages in association either, as annual crop, with early corn or sorghum beneath the *Acacia albida*, or, as pluriannual crop, in fields further away but still under the cover of trees, alongside the last crop of the agricultural cycle (C. Bélem [1985]). Yield was very low: a maximum of 150 kg/ha in the former situation, and barely 50 in the latter, but it did not involve a lot of work either. Cotton was always a secondary crop and never demanded much of the peasant's attention. The cotton was ginned, spun and woven on site. Ginning and spinning were women's work, often older women, and weaving the men's, often men of the griot or blacksmith castes.

This traditional production method continued up until the present site of Burkina Faso was taken over as a colony by France. Free of foreign occupation until 1895, following a period of military conquest lasting three years, the territory proved a headache of administrative complexity until 1919 (the bulk of the area successively came under the French Sudan, 1st and 2nd Military Territories—Timbuktu and Bobo-Dioulasso—, the Senegambia and Niger Territory, and lastly Upper Senegal and Niger), when it was given the status of individual colony, with roughly the same frontiers as today, and named the Upper Volta. From the beginning of the 20th century, since the climate was particularly suited to this sort of crop, France had an obvious interest in growing cotton in its Sudanese Africa dominions. Come 1902, however, it had seriously worries

on its hand: American businessmen managed to spark off a real crisis in the European textile industry. Speculations of a somewhat questionable nature on the cotton harvest of their own country, then No. 1 producer worldwide, caused serious supply problems in French factories. In 1903, to counter the American stranglehold on the world market, the General Syndicate of the Cotton Industry, with full backing from the State, decided to create an organisation to take charge of promoting the crop in French colonies in sub-Saharan Africa, the *Association Cotonnière Coloniale* (ACC). The ACC was even granted a subsidy, allowing it to continue the experiments on cotton growing the colonial authorities had begun in the second half of the 19th century in the valley regions of Senegal (especially Richard-Toll) and Niger. For the first two decades, however, the ACC's work did not strictly affect the territory of present-day Burkina Faso, where the local populations continued to grow cotton in the old way.

With the creation of the Upper Volta colony, everything changed. In 1921, the Minister A. Sarraut brought a bill in for a general programme to make French colonies profitable. The programme stipulated that French West Africa must specialise in the production of oil-bearing seeds, wood and cotton. The natural conditions of the Upper Volta made it a perfect candidate for the latter. The head of the sapling colony since 1919 was a man with an unquestionably firm hand, Lieutenant-Governor Frédéric-Charles Hesling. Having tackled the country's administration, in 1924 he decided to deal with its economy: his programme was based entirely on building up the cotton industry. Doing this proved him to be completely in line with the central colonial administration which, in the same year, created a *Department of Textiles* for the whole of French West Africa. Each colony had its own *Local Department of Textiles* whose mission it was to carry out experiments and supervise rain-fed cotton growing, and improve the product's technical qualities. The ACC's job was limited to ginning, baling, classifying and marketing the fibre. As far as Governor Hesling was concerned, there was only one way to make the peasant produce a maximum of cotton, and that was to make it *compulsory*. As from the 1924-1925 agricultural campaign, the powers that be required that each village, under the watchful eye of civil servants and local chiefs, set up a collective field of cotton for solely export purposes. And from the 1926-1927 campaign, to try and make the system even more efficient, it was demanded that the cropped area be proportional to the number of villagers, at the rate of 4 hectares of cotton per 100 inhabitants (B. Ouédraogo [1988]). The institution of compulsory collective cotton fields came to an end in the year of 1930, and so did the nightmare for Burkina Faso peasants. Within six agricultural campaigns, cotton growing had become a dirty word; persecution and extortion were the order of the day. Production did exceed the 6,000 tonnes in 1925-1926, a yield it would not see again until 1962-1963, but in 1926-1927 production fell back to 2,000. One thing this suggests is that coercion is perhaps not the best way to achieve the desired results.

The Minister for the Colonies' decision of 1932 was not totally without blame for the failure of cotton growing. Briefly, the Upper Volta, considered economically "non-viable", was to be eliminated (G. Madiéga [1981]). The territory was shared out amongst the neighbouring colonies of Côte d'Ivoire, Sudan and Niger. For twenty years, cotton purely and simply disappeared from the list of products marketed by the component "circles" of ex-Upper Volta.

In 1947, the dismantled colony was put back together according to its former frontiers. Those in charge of the reassembled Upper Volta had one crucial question facing them: on what can the country's economic development be built? After thinking about it for four years—surprise, surprise—they come up with the idea of cotton again... In 1951, the task is handed over to the *Compagnie Française pour le Développement des Fibres Textiles* (CFDT), an organisation created in 1949 with the precise goal of promoting cotton in French overseas territories¹. Initially, the work of the CFDT covered almost the entire territory, only the "circles" of the south-west (today's provinces of Comoé and Poni), the east (today's provinces of Gourma and Tapoa), and north-eastern Sahel (today's provinces of Soum, Séno and Oudalan) being excluded. It ranged from supervision of producers in the field, through ginning and primary marketing of the seed, to selling the fibre on the world market. The CFDT was backed up by the IRCT (Institut de Recherches du Coton et des Textiles Exotiques, a 1946 offshoot organisation of the *Union Cotonnaire de l'Empire Français* which took over from the ACC in 1941) on scientific matters. The organisation researched ways of improving the varieties, crop protection and crop techniques in various field stations: Bouaké in Côte d'Ivoire from 1946; M'Pésoba in Sudan from 1948; and Bobo-Dioulasso in Upper Volta itself from 1960 (IRCT [1990]). It was a very steep up-hill start: during the first five campaigns, seed-cotton production did not reach the 1,000 tonne mark.

With time, the CFDT's scope was reduced to the geographical sectors most receptive to cotton. From 1966, when the ORD (*Organismes régionaux de développement*: regional development organisations) were set up, it dealt only with them, and, up until 1970, only with the ORD of Volta-Noire, the (future) one of Bobo-Dioulasso, and that of Nord-Mossi. In the ORDs of Volta-Noire and Bobo-Dioulasso, whose cotton "vocation" seemed to become stronger and stronger towards the end of the sixties, a cotton growing development project, the PCOV (*Projet Coton Ouest-Volta*: west Volta cotton project) was started up in 1971, funded by the World Bank and the FAC, for a period of five years. As a prelude to the project, a new supervisory body for the "cotton sector" was founded in 1970²: the *Association en participation République de Haute Volta/CFDT* (Joint Republic of Upper Volta/CFDT Association). The French organisation was no longer to work in the field directly but solely to provide technical assistance. In 1979, the Joint Association turned into the Upper Volta, then the Burkina Faso *Société des Fibres Textiles* (SOFITEX), a company held 65% by the Upper Volta State, the

CFDT 34% and the banking system 1%.... After the launch of the PCOV, other development projects began sprouting up in the west of the country: the Bougouriba integrated development project in 1975; the West-Volta agricultural development programme, taking over the same geographical area as the PCOV, in 1977; the West-Volta staples project, still in the same geographical area, in 1979; the Hauts-Bassins agricultural development project in 1982, etc., etc. Although in the sixties cotton production grew slowly but surely throughout the country (Fig. 3), its increasing importance to the west of the country's economy in the seventies and eighties was certainly due these development projects which always accorded—directly or indirectly—special attention to cotton.

The image of cotton growing, distinctly negative after the hard years of the compulsory collective cotton field in the twenties, gradually became more positive as production increased, in the western part of the country at least, where small-scale farmers could earn a lot of income from the cash crop. Be this as it may, cotton is still not a "neutral" product. Its emotional content is still heavily loaded, and producers' reactions to anything about it highly subjective.

AN INSTITUTIONALLY PRIVILEGED CROP

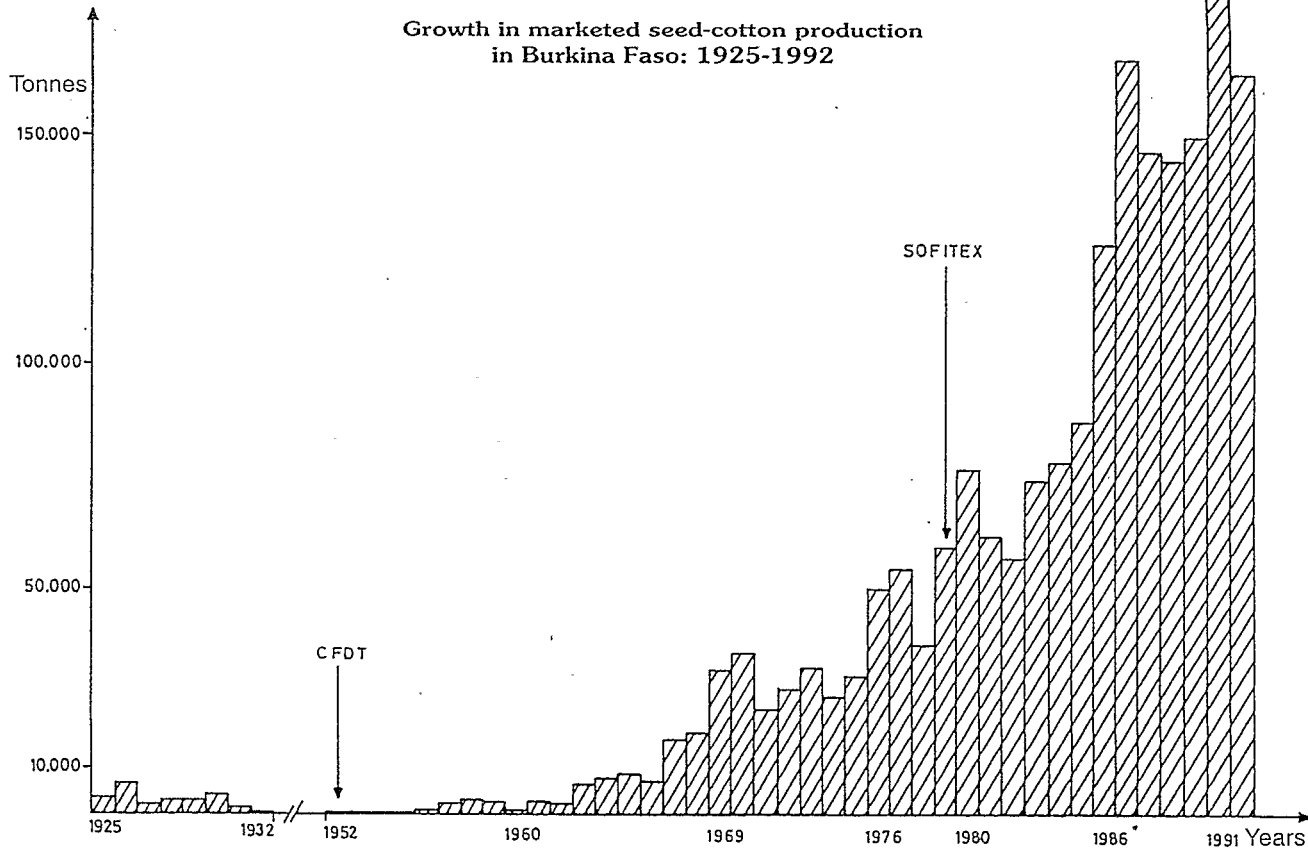
Although it is no longer a specific supervisory body, cotton growing in Burkina Faso is still without doubt a special crop. At least five different institutions provide direct or indirect support: the CRPAs, SOFITEX, INERA, CNCA and the Village Groupings.

First of all, a small-scale farmer wanting to grow cotton can get technical advice from the supervisor of the CRPA (*Centre régional de promotion agro-pastoral*: regional centre for the agro-pastoral promotion) in charge of the UEAP (*Unité d'encadrement agro-pastoral*: agro-pastoral management unit) his village comes under³. The supervisor, however, is not in charge of cotton alone: his task is to "supervise" all crops grown on farms under his zone of operations.

Secondly, the farmer will also get support from SOFITEX, an institution specific to the cotton sector (*cf.* above). SOFITEX is involved with the producer at two stages. Before the agricultural campaign, they provide the inputs (seed, fertiliser and pesticides) and any crop protection equipment (sprayers of various types) that may be needed. In western Burkina Faso, these are bought by means of short-term loans, guaranteed by the Village Grouping (*cf.* below) and repayable on marketing. Just over half the loans are provided by SOFITEX (the CNCA providing the remainder). Afterwards it ensures the full or partial (in classical or self-managed markets respectively) primary marketing of the harvest: purchase of the cotton seed, collection and paying the producers. Cotton's distinct superiority over other crops (as we shall see later) lies in the certitude of SOFITEX marketing the production.

Fig. 3

Growth in marketed seed-cotton production
in Burkina Faso: 1925-1992



Thirdly, the cotton farmer can obtain scientific assistance from the INERA (*Institut d'Études et de Recherches Agricoles*: agricultural research institute, one of the five institutes coming under Burkina Faso's national scientific and technical research centre). One of the INERA's specific contributions is through the "Cotton Programme" it has been conducting alongside the IRCT since the eighties. Working along the lines of the IRCT's main research since its founding, the programme includes three parts: "genetic", working on cultivar selection; "entomological", working on crop protection; and "agronomy and agro-economics", working on improving small-scale farm production systems. It is due to the research results in these various areas that the producer's cotton crop yield has been growing constantly.

Fourthly, farmers deciding to grow cotton can obtain loans from the CNCA (*Caisse nationale de crédit agricole*), Burkina Faso's "peasants' bank", open since 1980. The loans are of three types: 1) loans for production factors—short-term loans in kind and intended, like those of the same type made by SOFITEX where the CNCA does not yet operate, to pre-finance the agricultural inputs and equipment needed to work the cotton crop; 2) bridging loans—short-term cash loans half way through the campaign (August-September) to help the farmer cope with the period's constraints under the best possible conditions; and 3) loans for tillage by animal traction—a medium-term loan (over five years) for financing traction equipment and draught animals. All loans are granted with backing of joint guarantee by the farmer's relevant Village Grouping and reimbursed by deduction at source when the cotton harvest is marketed. Although, in theory, all farmers have access to these three types of loan, in real life only rarely will a Village Grouping guarantee a loan to farmers of other crops than cotton.

Finally, farmers growing cotton, and far more than those who do not, also benefit from all the advantages that belonging to an association of the pre-cooperative type can offer on the community level: the Village Grouping found in virtually all villages in the cotton region. We have already stressed the part that Village Groupings play in making SOFITEX and CNCA loans accessible to cotton producers through their guarantees. Village Groupings can even make loans to their members out of their own capital. Obviously, they prefer to do so to those they consider the most solvent: *i.e.* cotton producers. One of the main reasons Village Groupings can offer these benefits is because for the past few years it is they who have been organising the bulk of the cotton primary marketing operations. This is done in the form of a self-managed market: the cotton is weighed and packaged by specially trained members of the Grouping, in exchange for which the SOFITEX allows a rebate proportional to the amount of cotton produced. The money is paid into an often sizeable account.

With such a favourable institutional environment behind it, it is not surprising that Burkina Faso cotton growing has developed so spectacularly since the early eighties.

AN ECONOMICALLY ATTRACTIVE CROP

The third component of the "peasant" question of cotton growing in Burkina Faso at the start of the nineties could be expressed by the following question: what income can the person deciding to grow cotton really earn?

Take an African farm which grows cotton and a number of other crops. Since cotton is clearly just one component among others in a production system which operates as a whole, establishing the exact trading account for this crop alone is not easy. Apart from this, teasing out specific costs is often without major significance in any case. Despite these problems, we have tried to do so for Burkina Faso. However, given the present state of progress in processing the field data, the results are still rather uncertain. Similarly, the complexity of the various situations is so great—according to whether the farm is mechanised or not, whether it uses outside labour or not, whether the manager has a good technical understanding of the crop or not, etc.—that the economic results of cotton growing can give rise to slightly or totally different interpretations.

For the moment, then, we shall limit ourselves to examining a single indicator in the producer's trading account, one which strikes us as being of capital importance: the margin after reimbursement of inputs (MARI). According to G. Raymond, CIRAD agro-economist and father of the indicator: "the MARI is calculated by deducting the cost of inputs the farmer must buy from the gross income" (G. Raymond [1989], p. 531). According to our information, the indicator may be understood in two ways. 1) By reference to a real situation: it then corresponds to the monetary income the farmer owns in concrete terms after deducting the cost of inputs actually used from his gross cotton production income. In this case, it is the *real* MARI. 2) By reference to a purely theoretical calculation: it then corresponds to the monetary income the farmer can hope to have—after deducting the cost of inputs virtually needed (applying the corresponding technical recommendations) to achieve an expected cotton production—from the income from this expected production (at a given yield and purchase price paid the producer). In this case, it is the *theoretical* MARI. We shall be looking at the theoretical MARI to try and understand the economic profitability of cotton growing to a Burkina Faso farmer for the 1990-1991 agricultural campaign.

The first component of the calculation is the gross product of cotton growing. This depends on two variables: expected production and price paid the producer. The expected production is dependent on yield: in 1990-1991, the mean yield of cotton in Burkina Faso was to the order of 1,100 kg/ha (SOFITEX, primary marketing department). As we saw earlier, the price paid the producer is set by the government at the beginning of the campaign: in 1990-1991, it was CFA 95/kg for

grade 1 cotton and CFA 65/kg for grade 2. Hence, for the reference campaign in question, if we accept that the entire production is grade 1, the Burkina Faso farmer can expect to earn a gross product of CFA 104,500 per hectare of cotton.

The second component of the calculation is the cost of inputs. In 1990-1991, if he follows the official technical recommendations, the cotton farmer will have the following expenditure in inputs per hectare⁴:

—seed: one 40-kg sack at CFA 8/kg, *i.e.* CFA 320;

—fertiliser: three 50-kg sacks of NPK at CFA 5,650/sack, *i.e.* CFA 16,950, one 50-kg sack of urea at CFA 5,050/sack, *i.e.* a total for these two entries of CFA 22,000;

—pesticide: 12 litres at CFA 1,720/litre of ULV type product⁵, *i.e.* CFA 20,640;

i.e. a grand total of CFA 42,960.

With a gross product of CFA 104,500 and CFA 42,960 expenditure in inputs, the theoretical MARI is thus CFA 61,540. Such a margin, after reimbursement of inputs, makes cotton a very attractive proposition indeed. If we consider that the MARI, for farms operating under manual labour (just over half of them), is very roughly equivalent to the added value, *i.e.* wages, and cotton requires labour to the order of 120 days/person/hectare, a margin of CFA 61,540/ha corresponds to a day of farm labour being valued at CFA 500. In Burkina Faso's context, this may be considered as perfectly satisfactory⁶.

A CROP WITH NO REAL RIVAL

The last component of the "peasant" question of cotton growing in Burkina Faso at the start of the nineties is: is it really possible to earn money with other crops? Comparatively, what can other crops earn, be they classical cash crops or others tending more and more to become that way in west Burkina Faso, such as market garden produce or fruit, or quite simply surpluses of staples?

The only cash crop likely to threaten cotton, and it has already done so in the past, is peanuts. In Comoé province, located in the southernmost part of the cotton region, we met small-scale farmers who said they preferred growing peanuts to cotton. Admittedly, peanuts do require less work than cotton: 85 days/person/hectare on manual farms as against 120. On the other hand, the level of payment is not particularly inspiring: in 1990-1991, the SOFIVAR (*Société de financement et de vulgarisation de l'arachide et des oléagineux*) officially paid CFA 3,000

per 10-tine (i.e. 70 kg) bag of unshelled peanuts, i.e. CFA 43/kg, and the yields are relatively low: in Comoé (CRPA annual report 1990-1991) for example, 713 kg/ha. Consequently, in no way do peanuts represent an economically viable competitor to cotton. As cash crop for the small-scale farmer, it seems to be losing more and more ground.

The complete opposite is true for market garden produce and fruit. In the Bobo-Dioulasso region (the ZEAs of Bama and Bobo-Léna especially), the country's major vegetable growing region, market gardening has become a definite rival to cotton with an estimated production for the 1990-1991 campaign of some 20,000 tonnes of tomato, watermelon, cabbage, aubergines, onions, etc. (Hauts-Bassins CRPA annual report 1990-1991). Fruit competes with cotton in the south of Kéné Dougou province. With the 1990-1991 production estimated at some 100,000 tonnes—mainly citrus fruit and mangoes, but also bananas and guava (Hauts-Bassins CRPA annual report 1990-1991)—Kéné Dougou has indeed become the country's "orchard". A problem common to both sectors, however, makes the cash crops very vulnerable: selling the products. Although a part of the tomato, mango and guava production is bought by an industrial plant in Bobo-Dioulasso, Savana, and turned into fruit juice, most producers have to sort themselves out in finding outlets. Merchants do come from Ouagadougou, Abidjan and even Lomé to buy but, even so, tonnes of fruit and vegetables regularly rot in the fields...

How much money can a Burkina Faso farmer hope to earn from marketing his staple food production surplus? In the west of the cotton region, food production is essentially based on three cereals: sorghum, in the lead with 277,000 tonnes produced in 1990-1991 for the four CRPAs the cotton region comes under, followed by corn and pearl millet, at 180,000 and 175,000 tonnes respectively. Lagging very far behind is rice, at 37,000 tonnes of paddy rice, 12,000 of which irrigated (CRPA 1990-1991 annual reports of Boucle du Mouhoun, Comoé, Hauts-Bassins and Sud-Ouest). Sorghum, corn and pearl millet can be marketed in two ways: selling to the State, i.e. the OFNACER (*Office national des céréales*), which buys at a rate officially set at the beginning of the marketing campaign, or selling on the private market, i.e. to merchants who buy with no set rate. At all events, whoever the buyer, the price will effectively depend on the year's production, and this on the climatic conditions characterising the agricultural campaign. In "good" years, when harvests are abundant, the prices will be low, if not very low (in December 1991, the cereals in question could not even command CFA 30/kg in the west). In "bad" years, when harvests are low, the prices are obviously higher. In the first situation, the farmer, if he manages to sell at all, will sell at a loss; in the second, he will sell nothing at all, because only rarely will he have a surplus. Without a marketing system ensuring the producer a stable and certain income, neither sorghum, corn nor pearl millet will seriously compete with cotton. As to rice, under present production conditions, a number of factors make it a serious competitor to cotton: 1) It is subsidised locally out of the (substantial) profits the *Caisse*

Générale de Péréquation des Prix des Produits Agricoles makes on selling the rice it monopolises; 2) Purchase price: in 1990-1991, the producer earned CFA 85 per kg of paddy rice; 3) Production expenses: in extreme situations, they may reach CFA 35/kg (e.g. irrigated rice grown in the valley of Sourou); 4) Yields range from 2,300 kg/ha/harvest (rain grown rice: Comoé CRPA, 1990) to 5,700 kg/ha/harvest (irrigated rice: *Autorité de mise en valeur de la vallée du Sourou*, 1991 "wet" campaign for the pilot region), and, lastly, 5) the smaller amount of labour involved. Be this as it may, there is no certainty that, when it overflows its present (and very limited) boundaries under the projected rice growing programme, the competitive conditions will be the same. The programme, geared towards popularising the production of high-yield rain-fed rice varieties in today's cotton region, is intended to counter the increasing volumes of rice imports the country has to buy to satisfy demand (72,500 tonnes in 1989-1990). With Burkina Faso's application of the Structural Adjustment Policy and the wind of liberalism infusing price realism into the domestic economy, it is likely that rice prices to the producer will soon drop and it will lose a lot of its interest as a cash crop.

At the start of the nineties, the cotton question for the Burkina Faso farmer is thus more one of advantages. Little by little, after the teething troubles in making it a cash crop, and incidentally turning it into a highly sensitive product, cotton has earned its stripes. The institutional environment is comfortable, it is economically attractive, and it seems one of the best ways, if not *the* best way, of earning money. Cotton is at last seen as a worthwhile crop.

However, not all Burkina Faso farmers have adopted it with the same zeal nor, for those who have, to the same extent. It is these differing behaviours we now propose to examine.

THE BURKINA FASO FARMER AND COTTON GROWING AT THE START OF THE NINETIES: CASE STUDIES

To try and understand the Burkina Faso farmer's behaviour with respect to cotton growing at the start of the nineties, we decided to use a distinctly cultural approach. Doing so pre-supposes we accept two postulates: 1) that there are specific social groups in Africa, each with their own common history, language and way of life, which we shall call ethnic groups, and 2) that the agricultural production system is just one individual component of the cultural environment each group has built up through time. As one of the best connoisseurs of Sudanese societies has so wisely remarked: "ethnicity in Africa commands not only culture, in the strictest sense of the word, but also a large number of life's material aspects—habitat, production techniques, etc.—and the socio-political

organisation of space" (J. Gallais [1984], p. 23). Given our two postulates, examining the farmer's behaviour towards cotton growing means examining what it is in each group's cultural environment that facilitates its integration into their agricultural production system or, alternatively, prevents it.

As stated earlier, there are no less than 48 different ethnic groups present (or represented) in Burkina Faso's cotton region. The survey we carried out in 1989-1990 amongst a sample of 12,178 farms gave us significant statistics on cotton growing percentages for 20 of them (cf. Table 1). These, according to their land rights, may be divided up into two major categories: the autochthonic ethnic groups, with full rights, and the allochthonic, with the mere right to use. The two types of rights do not have the same implications in terms of production system management. The case studies have been selected according to these categories since they seem best able to express the farmers' behaviour towards cotton growing on the ethnic level.

AUTOCHTHONIC ETHNIC GROUPS AND COTTON GROWING

Among the autochthonic ethnic groups—16 out of the 20 in Table 1—the percentage of farms growing cotton ranges from 92.4 (the Kô) to 10.0 (the Samogho). Briefly, it seems possible to divide them up into three different sets:

- Ethnic groups with high rates of cotton growing: those with at least two thirds of the farms growing cotton, *i.e.* the 8 ranging from 92.4 to 67.2% in Table 1 (1 to 8);
- Ethnic groups with medium rates: those with more or less one half of the farms growing cotton, *i.e.* the 5 ranging from 36.2 to 45.8% in Table 1;
- Ethnic groups with low rates: those with more or less one third of the farms growing cotton, *i.e.* the 3 ranging from 36.2 to 10.0% in Table 1.

Ethnic groups with high rates of cotton growing: The Sénoufo and the Bwa

Among the ethnic groups with high rates of cotton growing, the Sénoufo (87.0%) and the Bwa (75.0%) are examples which, each in their own way, well illustrate the weight the cultural factor may have on integrating a new cash crop, cotton, in their production system.

When the CFDT started up in Burkina Faso in 1951, the *Sénoufo*, located in the western part of the country along the present-day frontier

with Mali, were positively disposed towards cotton growing. In the eyes of observers, they have been seen as remarkable farmers since as far back as the 17th or even 16th century (J. Ki-Zerbo [1971]). Their traditional production system was based on four main staples. Ranked according to their value as food by those concerned, they were corn, white sorghum, pearl millet and rice. As far as the immediate question is concerned, the singular nature of the Sénoufo system⁷ lies in the place occupied by corn. Nowadays, in a food-crop/cash-crop rotation system where rice follows on the heels of cotton to benefit from the "good" after-effects of the latter's fertilising, corn is unquestionably the crop producing the best agronomic results. The Sénoufo were very quick to understand the advantages of such a system: by growing cotton, not only did they gain access to cash income but also significantly increased the production of their favourite food. The results of integrating cotton into their production system were far beyond their expectations. Before, their system was broadly pluralistic, involving a number of different types of end product. During the eighties (in the southern part of the country at least), it gradually moved towards a twofold system. Today, the end products are restricted to cotton and corn; white sorghum, pearl millet and rice were purely and simply dropped. Systems such as these raise a lot of comments, and, as far as soil fertility is concerned, they are certainly not the best. For the moment, however, they can carry on doing it because of the large amounts of land available; as soon as the results on one plot start trailing off, they simply move on to another... for the moment.

The *Bwa*, settled in the south-western region of today's Burkina Faso since time immemorial, were also among the first to take up the CFDT's invitation in the fifties. Their fast, and all-out, adoption of cotton as a crop is a completely different situation to that of the Sénoufo. First of all, it seems important to stress the importance this ethnic group attributes to manual labour. In ancient *Bwa* society, farming was seen as an eminently "noble" activity (J. Capron [1973], p. 228), and working the land, in its then extensively community-based form, "the most suitable expression of belonging to the world of tillers of the soil" (*ibid.*, p. 334). In such a "metaphysics of labour" (*ibid.*, p. 334), a crop such as cotton demanding manual labour would undoubtedly find a healthy soil for growth. For a long while, this was only done on the collective fields of the "house"; but since the past ten years or so, on individual fields. The *Bwa*, however, added another, utterly revolutionary asset to this "good soil". In the seventies, they switched to corn as basic staple instead of white sorghum and pearl millet (which is still grown, unlike what happened among the Sénoufo, although production is seriously falling). The positive effect that cotton/corn rotation can have on the yield of corn has already been described. With maximised integration of cotton into their production system, the *Bwa* have turned this marriage into the cornerstone of their economic world.

ethnic groups with medium rates of cotton growing: the Marka

Out of the five ethnic groups in our sample with medium rates (more or less 50%) of cotton growing, two are located in the major market garden region of Bobo-Dioulasso: the Bobo and the Sambla. Two more, the Vigué and the Léla are found on the southern and eastern marches of the cotton region, and hence in somewhat fringe areas. The fifth, however, the Marka—located in the eastern lands of the big cotton producing Bwa—with their relatively modest degree of cotton growing (46.4% of farms), cannot fail to raise the observer's eyebrows. The surprise is all the greater when we realise that an important part of Marka life, not only in former times but still today, is weaving and dyeing. If we are to find an explanation, we have to look at the history of this people and their relations with their Bwa neighbours since their rival in the region.

Originally, the Marka were a trading people from the Soninké region of present-day Mali. Apparently, their migration began some time in the 12th century when the small but—judging by its capital, Djenné—flourishing kingdom wanted to extend its economic influence beyond its political boundaries. From the Niger valley, they reached the valleys of today's Sourou and Mouhoun, where they set themselves up to the east of the Bwa and started trade relations. During their migration, which continued up until the 19th century, they also introduced Islam to the rest of the country in the 17th. With time, the trade relations between Bwa and Marka began to concentrate on products based on cotton, a raw material the former knew how to grow and the latter how to work: "... weavers and dyers; the Marka supply the Bwa in exchange for spun cotton, the loincloths with the blue strips that Bwa villagers still wear to this day, the black and white checkerboard patterned covers used by the head of the family, fabrics decorated with cowry shells used for mask apparel..." (J. Capron [1973], p. 64). In turn, the Marka began to work the soil. However, although they produced a certain amount of cotton themselves, they still used the Bwa to supply a lot of the thread they use in their weaving, a craft still very lively today (at the beginning of the nineties, there was nothing unusual in finding up to fifteen looms per Marka village). The hesitant adoption of cotton growing by these sons of traders strikes us as being more than partly due to this former functional division of labour in the textile industry between producers of raw material, the Bwa, and transformers, the Marka.

ethnic groups with low rates of cotton growing: the Nounouma

For some of the ethnic groups in our sample, explaining the low rate of cotton growing is easy. The Samogho (10.0%), in southern Kénéougou, simply prefer to grow fruit, and the Samo (36.2%), on the north-eastern edge of the cotton region where the climate is already far more

arid, prefer to concentrate themselves on food crops. The Nounouma (17.8%), on the other hand, remain somewhat more enigmatic.

Like the Bwa, the Nounouma are one of the genuinely autochthonic populations of Burkina Faso and, also like them, have the reputation of being excellent farmers. Cotton growing was something their forefathers already did, but it was considered an old person's job, restricted to tiny plots on the outskirts of the village. What the Nounouma demand from the earth, and what they have always demanded, is to supply them with enough of the three staples in their basic diet: pearl millet, white sorghum and red sorghum. Once harvested, the cereals are stored in granaries of very impressive architecture—tall, rectangular, earthen towers, sometimes magnificently decorated, and looking like the minarets of mosques—and often conserved for many years (up to nine, we are told, if the hatchways are properly sealed). The granaries are lined up in batteries on the concession held by the family group, alongside which the dwellings seem minuscule. Although it may happen that a single harvest is not always enough to feed the entire production group for a whole year, it is out of the question for the stocks to run out, no matter what. Consequently, producing in order to keep the granaries filled is a never-ending concern of vital importance to the Nounouma. "It's hard to do both millet and cotton together" as they say in the villages. "Doing millet" in this case means growing enough to cover the year's food requirements and also to complete or even increase the stock, and hence grow "a lot". Nevertheless, such a system make it possible—at least, whenever the agricultural campaign is good—to sell off the oldest surplus of the safety stock, and earn some cash. The economic behaviour of the Nounouma, and especially with regards to cotton, seems only understandable from the sociological viewpoint of its granaries.

To show to what extent the cultural dimension can control the villagers' behaviour, we shall end this section with a short disquisition into the case of the Lobi, an ethnic group to the west of Burkina Faso with an almost total allergy to cotton. They are, in fact, outside the cotton region defined here, but the region they do live in, the province of Poni, offers natural conditions ideally suited to producing successful cotton crops. Why then do they reject it so categorically? It was after twenty years' research on this people that Madeleine Père, the anthropologist, discovered what really lay behind this behaviour. Following a series of misunderstandings of various sorts, the colonial apparatus was set up here at the turn of the century. And it went remarkably badly, bouncing back and forth between rebellion and repression. The Lobi found themselves caught up in such a cycle of violence that the ancients decided, in utmost secrecy, to "blackball the white man", *i.e.* to swear before their ancestors to refuse *en bloc* everything from the outside: tax, schooling, forced labour, new crops, etc. The veto was to be respected up until today, and cotton was obviously one of the prime targets. It is only recently that the Lobi have begun—with all due ritual—to lift the "blackball" instituted by their forefathers (M. Père [1988]).

ALLOCHTHONIC ETHNIC GROUPS AND COTTON GROWING

At the beginning of 1990, the allochthonic farming population of Burkina Faso's cotton region numbered around 490,000, representing 35.1% of the total farming population (A. Schwartz [1991]). The west of the country has always been a major zone of immigration: through the centuries, peoples of various origins have established themselves alongside the few genuinely autochthonic populations or on uninhabited areas. Today, most of them have full rights on the land and may thus be considered "autochthonic" as well. Over the past forty years, but especially since the major droughts that hit the land in 1972-1973 and 1983-1984, people from the country's most climatically depressed regions, the north-centre and north, have been flooding in to look for land able to provide them with food, if nothing else. During our survey of 1989-1990, 24 allochthonic ethnic groups were counted in the cotton region alone, most of which admittedly in very small numbers. The bulk of the category is made up of two ethnic groups: the Mossi, 63.6% (*ibid.*), with a population of 310,000, and the Peul, 18.5%, with 90,000. Some 90,000 other individuals are divided up among the remaining 22 groups, only two of which are present in any great number: the Silmi-Mossi (thought to descend from the union between a Peul male and Mossi woman) numbering 7,000, and the Dogon 4,000.

Cotton growing has never been a major concern among these allochthonic populations. The four numerically largest ethnic groups of the category listed among the 20 of the sample in Table 1 have rates ranging from 53.2% (Mossi) to 18.0% (Peul) *i.e.* medium to low. We shall look at these two cases to illustrate allochthonic farmers' behaviour towards cotton growing.

Ethnic groups with medium rates of cotton growing: The Mossi

At first glance, the Mossi, with only just over a half of their farms growing cotton, would seem to contradict the rather stereotype image of their being particularly greedy immigrant farmers. Looked at more closely, however, it turns out that the Mossi immigrants, 61.2% of which originally from two provinces with particularly difficult conditions of agricultural production, Yatenga and Passoré (A. Schwartz [1991]), left their homelands with the essential goal of providing for their daily food more easily elsewhere. With the ever-increasing stream of immigrants over the past years, the Mossi are becoming more and more hemmed in to areas that are a) small, often barely large enough to grow food for the family group; and b) of poor quality, and thus unlikely to grow satisfactory cotton. As concerns this last point, an agronomist (Ph. Tersiguel [1992]) working in the Houndé region, in the heart of Burkina Faso's cotton region, has shown that the boom in tillage by animal traction today allows autochthonic farmers to set off and conquer new land: slopes of heavy, clay-rich soil, of greater agronomic value, and ideally suited to cotton. The

allochthones, on the other hand, often find themselves relegated to land the autochthones no longer work: light soil of lesser agronomic value. This land dependency, which seriously holds the allochthonic back seems to be one of the basic reasons as to why Mossi pioneers are only moderately interested in growing cotton.

Ethnic groups with (still) low rates of cotton growing: The Peul

Given the specific niche the Peul occupy no matter where they are in Africa, associating their name with cotton growing could come as quite a surprise. And yet, the Peul of western Burkina Faso grow cotton. Admittedly, not in vast quantities, since only 18.0% of their farms grow it, but enough, and in such an unusual way that a brief excursion into their world could prove of interest.

The Peul community in the Burkina Faso cotton region is actually made up of two distinct sub-groups of different origins. The first have been there for quite a long while, since the migrations which followed the foundation of the Peul Muslim State of Macina in 1818. Part of the new State's dominions were in the north-western horn of modern-day Burkina Faso. Peul animists in this region refusing to convert to Islam packed their bags and went to beg refuge from the Bwa and Bobo of the Mouhoun valley (J. Capron [1973]). Members of this group are easily identifiable, due to their patronyms and due to the fact they were born here. In 1990, they represented about 30% of the Peul community. Farmers rather than stock breeders, today they resemble their former hosts more than they do "real" Peul. These are the ones where we find the most cotton growing. The second group includes all Peul of more recent immigration: most of them are stock breeders from the northern parts of Kossi and Sourou provinces, from the provinces of Yatenga, Passoré and Sanmatenga, and as far afield as Mali. Over the past twenty years or so, especially during the major droughts of 1972-1973 and 1983-1984, they have arrived with their herds, settled in the cotton region and, as secondary means of subsistence, started working the land. The two Peul sub-groups thus have the common trait of being both farmers and stock breeders, even if they invest more in the former occupation than the latter. Another practice they both have is mobile night paddocking, and that includes using cotton fields. Adding the effect of this to the standard mineral fertilisers used results at times in spectacular yield. This is the unusual aspect of their culture and could well act as an example to autochthonic farmers who wish to combine farming and stock breeding. The Peul could teach them a lot about the rational management of herds of cattle.

For the Mossi as for the Peul, the essential factor holding them back from growing cotton today is land. To say their status in terms of land rights is precarious would be ridiculous: apparently, it is out of the question for those with full rights to revoke rights to use already accorded. But if they want to take up cotton growing and make serious go of it, the

rights being accorded nowadays, to shrinking pockets of increasingly barren land, will certainly be of no help at all.

Whether it concerns the autochthonic or the allochthonic populations, the question is the same. If the small-scale farmer's behaviour towards cotton growing is to be understood, it is of capital importance to understand the socio-historic context behind cotton and its place in production systems first. Without this fundamental social background, not one of the explanations as to why cotton growing attitudes differ so much among the various ethnic groups would be plausible. Similarly, under conditions such as these, we are hardly likely to see any spectacular trends of change towards behavioural unity in the near future unless farmers are given the right sort of guidance.

CONCLUSION

Given the objective of the present paper, the conclusion will be brief. From the operational viewpoint of agricultural policy, if we really want to get to grips with the reality in the field and avoid running the risk of heading straight into failure, it is vital we take the diversity of the target milieu and, above all, of human nature, into account. For some, this conclusion will be nothing but a truism. However, if we look at the results of the deterministic development policies in rural Africa over the past thirty years, there are plenty of examples to show we still have a lot to learn. How many operations have failed simply because the objectives were not suited to the socio-historic contexts of the societies they were intended to "transform"? Of course, not all these environments have the same extraordinary complexity of western Burkina Faso, and not all ethnic groups are conditioned by their history as much as the Lobi. Attention to otherness, to difference, and, when identified, incorporating it into the agricultural policy must be a real and on-going concern of all those, at all levels, whose job is to work towards the well-being of Africa's rural world.

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Notes

1. The CFDT is a semi-public company of which the initial capital was held 64.2% by the *Caisse centrale de France d'outre-mer*, the future CCCE, and 35.8% by the main syndicates of textile fibre producers and users.
2. The World Bank could hardly refuse to contribute towards an operation geared at increasing production for sale on the world market, especially when a French organisation gains substantial benefits from it...
3. The 11 CRPAs in Burkina Faso took over from the ORDs (*Organismes régionaux de développement*: regional development organisations) in 1987-1988. A CRPA works on the scale of one or more provinces, each one constituting an SPA (*Secteur provincial de l'agriculture*: provincial agricultural sector). The SPA is itself divided up into ZEAs (*Zones d'encadrement agricole*: agricultural supervisory zone), themselves divided up into UEAPs corresponding each to a geographical area of 1 to 10 villages according to local demographics. This system is the framework for Burkina Faso's national agricultural supervisory system.
4. The costs given correspond to the "credit sales" tariff applied by the CNCA. Those practised by SOFITEX are a little different, but to the same order.
5. ULV type pesticide is the most commonly used in Burkina Faso today. The cost of an EC type pesticide is CFA 2,160 per litre.
6. We must insist in the fact that this calculation is entirely theoretical. In real life the quantities of inputs are far lower than those recommended. For the reference campaign, they would cost somewhere in the region of CFA 30,000 per hectare (G. Raymond, personal communication, work in progress). If the technical recommendations were actually followed for the inputs, the cotton yield per hectare would certainly be higher and, with it, so would the MARI... The calculation nevertheless seems to be in agreement with the mental calculations the farmer makes before launching himself into this crop.
7. In western Burkina Faso, as far as we are aware, only the Gouin in southern Banfora traditionally rank their food products in this order. Admittedly lagging far behind the *Sénoufo*, they too have recently leapt onto the cotton bandwagon, to what extent, figure speak louder than words: 67.2% in 1989 (cf. Table 1).

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