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Introducing intensive coffee-cultivation among

New Caledonian Melanesians

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1. - The technical characteristics

The so-called Coffee Project which was started in 1978 is an ambitious scheme that aims to renew coffee cultivation in New Calédonia through the introduction of new coffee shrubs, the modernization of cultivation techniques, and the improvement of coffee-processing (1). The plan implies the establishment of 2000 ha of high-yielding coffee plantations giving an annual yield of 3000 tons of processed coffee, together with the construction of processing factories over a period of ten years. A thousand coffee growers are to benefit from this project, most of them Melanesians. The costs are estimated upwards of two milliard C.F.P. francs (2).

The main innovation accruing from intensive cultivation is to eliminate shade trees which, for more than a century in New Caledonia, have been consistently associated with coffee-shrubs, and the changes which result will be as important whether one considers cultivation techniques or agricultural landscape. To give its best yields, the new coffee shrub has to be planted by itself and needs much tending, whereas the old coffee shrub is always interplanted with various other cultivated crops and needs no chemical fertilizer or much tending. The new shrubs are estimated to give returns of 1500 kg a hectare, whereas the old plantations produce an average of 300 or 500 kg, since they are old and overgrown.

The new plantations are to be established on a basis of 1680 *Robusta* seedlings a hectare, and of 6060 seedlings for *Arabica*. Since the lack of shade trees means that adventitious weeds will appear, a leguminous plant called *Pruraria* is sown which should both prevent weed growth and enrich the soil with nitrogen. This leguminous plant, though, necessitates constant control to prevent its smothering the young coffee seedlings. When *Pruraria* has not been sown or has not grown well, coffee growers must make frequent weedings especially during the rainy season. As the coffee trees grow bigger, *Pruraria* becomes scarcer and adventitious weeds have less opportunity to grow. Every year, three applications of fertilizer should be made, and

(1) In New Caledonia coffee production began to decline during the war. Whereas it used to amount to at least 2000 tons, the annual production of processed coffee has declined by two thirds. In 1979, it amounted to 664 tons.

(2) About US \$ 16.000.000

every five years shrubs should be pruned.

The help granted coffee growers who do not have financial backing is tremendous. They benefit from the opening up and clearing of land for plantations together with access to them ; they benefit from the preparation of the soil and the provision of seedlings and fertilizers. Technical help is granted through the Agricultural Service, the staff of which has been greatly increased.

On a technical level, though, the coffee Project still has a major drawback : while high-yielding *Robusta* varieties grow well, the introduced *Arabica* variety shows itself highly susceptible to *Hemilia vastatrix*, a cryptogamic disease which all but destroyed coffee plantations in 1910.

2. - The political and social background

Originally, the renewal of coffee growing was begun through the Territory's administration and its political body and aimed at a mere 500 ha over ten years. But fairly soon, the Territorial Assembly had to modify its views and accede to several increases in the dimension of the project, when the State Secrétariat aux Départements et Territoires d'Outre-Mer integrated this project in the Long Term Plan for the Social and Economic Development of New Caledonia. Thus the genesis of the Coffee Project focuses attention on the important part played by the French government in the project's present state. Due to its political dimension, the Coffee Project has been constituted as an integrated long-term scheme with important financial resources at its disposal. It thus fits into the Long Term Plan for New Caledonia, explicitly to allow Melanesians whose wage-earners are severely affected by unemployment to face recession through an economic activity that can both be pursued within Melanesian villages and help achieve a better integration of Melanesian agricultural production with the prevalent economic system. This massive political intervention in the social field was, according to some, to help dam the oncoming tide of Melanesian nationalism. If the Coffee Plan, when initiated through the Territorial Assembly, consisted mainly of giving a new start to a once important commercial activity, then its political dimension became as important as its commercial one when taken charge of by the French Secretary of State. To help Melanesian people acquire incomes that will permit them to catch up with those of other ethnic groups ; to alleviate the political and social crisis that results from the unemployed returning to Melanesian collectivities ; to help promote Melanesian agriculture so as to offset the consequences of an increasing belittlement of an important part of the Territory's population : those objectives, together with a trend towards social integration, provide the political and social

background of the Coffee Project. From that perspective, coffee growing was an opportune arena for a multi-dimensional political project.

Though once forced onto Melanesians by colonial rule, coffee growing soon became an integral part of the Melanesian world and thus constituted a propitious area for large-scale intervention. Furthermore, although coffee growing continued to decline during the last decade-especially during the expansion of mining and the opening up of possibilities through sales or wage earning in more dynamic economic fields-its economic and social position should not be underrated. In fact, for most Melanesian families in the East Coast, where the bulk of them live, coffee growing remains one of the rare ways to make money in an environment where agricultural products are difficult to sell and where the possibilities for wage earning are scarce. Recently, the slowdown in mining and general economic slump have seen the unemployed revert to agriculture, and especially to coffee which will always sell. But beyond the present recession and the return of wage-earners to agricultural activities, the Coffee Project must meet two basic criteria if it is to be viable in the long run : it has to offer high-yielding varieties, the cultivation of which is technically efficient; and to provide growers' incomes that compete with those earned through other sectors of the economy.

For these reasons, the coffee scheme appears to be succeeding in the East Coast, where new varieties and cultivation methods are well based and where other incomes are scarce. The scheme is sluggish or fails in the North and in the West Coast, where technical problems with the new variety have not been solved and where money can be earned from less-exacting or better-paid activities.

3. - A priori cultural and sociological constraints and the development program

3.1. - Pragmatism and wait-and-see attitude

Three years after the Coffee Project was begun, few growers are able to discuss knowingly the advantages offered by intensive cultivation. New coffee plantations producing their first yields are far too few in number to provide a basis for judgment. It is thus no surprise that Melanesians, who tend to judge by their own actions or experiences what they see realized in their own setting, do not feel much inclined to take for granted results

that they have been told were realized on agricultural experimental stations. As far as the Coffee Project is concerned, there thus follows a pragmatic attitude which shows incredulity towards new agricultural experiments and a high tendency to wait-and-see, which follows from the necessities of Melanesian social equilibrium. As a result, technical information diffused through the media is not fully effective even when explicitly referring to these experiments. Melanesian people only believe what they see for themselves and this constitutes, in the first stage, a restraint to the spreading of an innovation. On the other hand, Melanesians are interested in new coffee varieties, as the knowledge and possession of new plants are strongly valued in their society. These conflicting tendencies explain why most Melanesian growers tend to consider their participation in intensive coffee cultivation as a *try*, rather than as a firm option, and their commitment towards technical requirements and introduced constraints follows the same principles.

Furthermore, describing their planting as nothing but a *try* is more in line with Melanesian social practise. Innovation is a critical matter for Melanesians, who may only stand out among others and not incur social opprobrium and retaliation by black magic if their position allows them to and as long as they remain within socially accepted bounds. It is for this reason that at the outset of the coffee scheme, a good many chiefs and other individuals of high standing in traditional society were found among the first planters. They were affirming their duty to show the way, so that their participation results less from a desire to accept a technical innovation, the outcome of which is deemed uncertain, but rather follows from strategies and practises inherent in the Melanesian social order. Repeated participation in ventures going beyond those defined by *custom* helps active individuals to satisfy and increase their own prestige and influence, and lessen those of their rivals. Whether the results of their actions represent economic success or failure are eventually of no account. In the wake of such men follow all those whose social position does not permit them to lead and who have to find in the actions of the first ones the necessary validation for their own planting.

3.2. - Diffusing information

The diffusion of an innovation is difficult when confronted by agriculturalists who are bent on judging any results for themselves before

thinking to undertake it. So that the Coffee Project would become widely known, the Agricultural Service resorted to various channels of information. The media-radio, television, local papers- were used, but because of the very nature of the project and the people to which it mainly applied, diffusing information necessitated other means. At the same time as placing much emphasis on the demonstrative effect of the first plantations, the Agricultural Service was organizing visits to the experimental station. Although both approaches were congenial to the social characteristics of the Melanesian environment, not too many people could be reached in this way. Thereafter the main method of conveying information was to hold meetings in Melanesian localities and eventually in town halls. But contrary to what might have been expected, these meetings never attracted large audiences although attended by traditional leaders. Although meetings are a common practise among Melanesians as a means to acquire information or discuss important matters, and although highly valued within their social organization, those convened through the Agricultural Service were quite different from those springing from the customary authorities themselves. Melanesian meetings arise from the ordinary or ceremonial needs of the community whereas meetings organized by outside authorities often focus on topics that prove of little immediate application for Melanesians who do not grasp their full meaning or overall consequences. Besides, participation or not in this kind of meeting most often has no social significance, whereas those held on customary matters are crucial to the life of the community and Melanesians know perfectly who are the performers and what really is at stake.

The real lack of basic information that prevails among most Melanesian coffee growers is a sign that important details either do not reach their destination or only very slowly. On the whole, all available channels were utilized to make the Coffee Project known and a large amount of information was diffused. But that information was being heard by people who were not sensitive to it, especially since more often than not Melanesians only listen to the minimum of detail they feel is necessary. It consequently follows that few growers really had good control of all the necessary information. Even in local communities where planting proceeds at a satisfying pace, technical details dealing with fertilizers or the general conditions of participation are still poorly mastered. Some agriculturalists remain ignorant that fertilizers, which are given them the first three years until the first crop, will always remain a necessity for which henceforth they

will have to pay. Other growers keep on wondering or become needlessly anxious about having to repay the Administration for the expense of establishment, about the ownership or control of lands planted intensively to coffee trees, and about their economic return on coffee cultivation. In places where the cultivation of a new variety meets with difficulties, there arises a diffuse feeling of uncertainty about the intentions of the Agricultural Service. This is especially the case in places where *Arabica* was planted and where widespread failures result from delays in planting and beyond the appropriate season, as well as because of *Hemilia vastatrix* attacks. Conversely in places where planting went its normal pace, the lack of basic information gradually was overcome as a result of practical necessity.

3.3. - Melanesian social relations and technical norms

Generally, Melanesians tend the old type of coffee plantations once or twice a year. Compared with European coffee growers, they choose a high density of shade trees that prevents the growth of adventitious weeds but does not allow the shrub to produce a full crop. Though the amount of tending given old plantations varies highly among individual Melanesians, it is always secondary to that afforded subsistence activities which are far more valued. Not only are subsistence activities carried out first but also they demand elaborate horticultural techniques, whereas coffee cultivation is given little more than picking. Not being used to investing more than a few days a year in their plantations and having, as far as the agricultural calendar is concerned, a certain flexibility to do that, coffee-growers feel little inclined to adopt new cultivation techniques, the principal characteristic of which appears to be their highly-increased presence in the plantation and more regular work (1). Most growers who object to intensive cultivation do so on account of it being time consuming.

(1) It is estimated that working time amounts to 80 hours per hectare per month during the first two years, decreases to 20 to 30 hours in the third year, and continues to decrease thereafter.

This issue has become most controversial with respect to the use of *Pruraria* which, if allowed to grow unchecked, constitutes a permanent threat to young seedlings. The effort needed to control this leguminous plant, or any other weeds, accounts for the bulk of working time. So as to reduce the time needed to deal with *Pruraria*, many growers deem it more advantageous to deal with the adventitious weeds, rather than the legume, a solution which is contrary to technical advice. This way they regain some of the freedom they have in their old plantations for carrying out coffee maintenance and such freedom of operation is what is desired in Melanesian economic and social activities, as well as in their working habits.

Beyond the particular problem created by the use of *Pruraria*, opinions vary widely on duration of work and technical constraints and can prove contradictory. Some growers will only do the least and yet say that *it is too much work*, while others follow the technical advice and will not think that at all. Melanesian reserves are all the more easily appeased when the first plantations appear a success and when economic pressure is strongest. In that situation there may emerge a positive dynamism that gives birth to new conceptions of agricultural husbandry. On the other hand, if the new techniques do not demonstrate their efficiency or if the economic climate does not favor coffee growing, then inertia will develop towards introduced methods of cultivation and the changes in working habits that must accompany them. So it has been with fertilizing. Whereas not checking the growth of the leguminous plant rapidly ends up in the loss of the whole plantation, not fertilizing appears a constraint of more abstract character. Though Melanesians are used to weeding and tending in both subsistence agriculture and with the old coffee plantations, they do not use manure and utilizing chemical fertilizers is previously unknown to them. Hence many tend to use such fertilizers irregularly or to discontinue them altogether, with deleterious consequences for the coffee shrubs.

Introducing high yielding coffee trees means important changes in cultivation habits, which are bound in the initial stages to result in difficulties of adaptation. Even allowing for these, certain other discrepancies existed between the technical norms of intensive production and the social characteristics of the people who were to apply them, all of which were ingrained in the very decisions that gave the Coffee Project its orientations. Purporting to place Melanesian incomes on a par with those of other ethnic groups (1), the initial scheme relied on three hectares of plantation per coffee grower. This norm bore no relationship to social realities, and

(1) About US \$ 392

took no account of all the different factors that shape the lives and working habits of Melanesians : land access and land availability, social obligations and the small dimensions of the ground cultivated by horticulturalists . From the start, the 3 hectares of land given to be cultivated by every grower was too great and it was found impossible to cope with. Nevertheless, the utilization of bulldozers did not make it possible on economic grounds to have plantations amounting to less than quarter of a hectare. Some growers still deemed that too much, whether because they simply wanted new coffee for a *try* or whether they considered the ratio of 6000 *Arabica* seedlings a hectare to be too much work. Growers who cultivated new coffee according to their knowledge of the old plantations were not always able to adjust the area being opened up to the man power at their disposal. And since the Agricultural Service lacked experience in such matters, they were not always able to make the appropriate recommendations to these growers.

4. - Coffee Project : an evaluation

Because of its dimensions and its financial possibilities, because of the new cultivation techniques that it introduces, the Coffee Project may result in deep transformations in agricultural habits as well as within the social sphere of Melanesian relationships. On the East Coast, the anxiety that could be felt at the time the new varieties and new techniques were introduced seems to be fast disappearing : *Robusta* is proving its fitness through its hardiness and high yields and the various technical methods should mean that intensive cultivation is substituted for the pricking techniques characteristic of old plantations. Here and there new methods of cultivation have begun : intensive husbandry, mecanization, watering, fertilizing. Some people already talk of restructuring their agricultural holdings by changing old plantations for new ones and utilizing additional lands for subsistence horticulture. Though the Coffee Project too, the agricultural sector in New Caledonia is benefiting from a large increase in the staff of the Agricultural Service that leads to the formation of a new category of personnel in closer contact with coffee-growers. There begins to emerge a new type of communication between these proslytizers and the Melanesian agriculturalists that expresses some need for transfers in technical knowledge. Commercialisation and coffee processing are being reorganized.

Nevertheless, in the long run, the success or failure of the Coffee Project rests with stable and high prices. When set within this context, old

plantations are still a major asset : they remain despite long lack of tending when coffee plantations are abandoned for better paid activities. By contrast, a new burst of mining activity or a sudden fall in coffee prices could prove lethal to the new plantations.

If one were to admit that beyond this initial period, Melanesian growers conclude that coffee growing is positive, there still remains to be evaluated its impact on the Melanesian system of production. In this respect one must note that the Coffee Project was elaborated through the untimely transfer to the Melanesian social system of the western concept of agricultural exploitation, and that this initial flaw was absolutely impossible to overcome. Since both the support for and the aims of the Coffee Project were inappropriately defined, the Melanesians and the Agricultural Service speak a different language although using the same words, and also keep on following divergent if not contradictory strategies to attain their quite different aims. Thus, among Melanesians, access to land, social rather than economic types of relationship, formation of work groups according to various activities, and the circulation of agricultural products do not correspond to the western concept of agricultural exploitation. Consequently all the various calculations and projections of the Coffee Project that relate to ground under cultivation, duration of work, manpower, and the economic behaviour of the Melanesian agriculturalists and families are without any real significance and introduce distortions to the realities of the whole operation.

Before attempting to transform the existing system of Melanesian production, one should try and understand the way it really is. As the Melanesian social system is built according to a rationale that differs widely from the one postulated in the various development programs defined by the technical services, the differences and contradictions that arise from both rationales pave the way for failure. One should realise that agricultural activities for Melanesians do not simply constitute a separate sector which can be severed from the range of various daily activities. *Yam work*, agricultural activity par excellence, is an integral part of the entire range of horticultural efforts and integrated in the same way with effort dictated by kinship and by the entire social organization—such as *custom work*, *chiefdom work*, *Church work*. It is highly significant that all these activities should be designated by the same term : *work*. Although this term may have the meaning of labour, above all it conveys the existence of an intricate network of social obligations and is pervaded with tremendous emotional potential. Although coffee work does not compare with *yam work*,

which is paramount because of its central function in subsistence activities and social recognition, nonetheless it can be part of the same symbolic set of values along with the various other *works* that shape the Melanesian life. This undoubtedly happened with the old plantations which became part of the Melanesian material and cultural environment. Given these tightly integrated symbolic values, any innovation becomes an intrusion that demands the reorganisation of ideological and behavioural structures once recognized that it does not fit with existing ones. To change to or adopt new techniques, in the long run one must change one's way of life, but to do so, one must be compelled. And even when compelled, the whole process takes time.

Consequently the introduction of intensive coffee cultivation in New Caledonia should be recognized as producing a qualitative change that the old type of plantation never did. The results from high-yielding varieties realized on experimental stations belong to a technical universe fundamentally divergent from the Melanesian one and communication between them cannot be established simply or speedily. Compared with societies characterized by a high diversification in technology and social division of work, traditional societies form a tightly-knit universe that cannot be disaggregated into autonomous units, and when any change occurs in any of their particular component parts, they must entirely modify themselves accordingly. Choosing to introduce high yielding coffee plantations, does not just mean a simple change in cultivation techniques. It risks upsetting the entire social order by changing the particular relations that unite the different activities of Melanesian life, and by modifying the hierarchy of values which cement them all. For instance, since controlling the growth of a leguminous plant signifies to the Melanesian doing away with his desired freedom, that activity amounts to a change in his whole social being. Traditionally, nothing could be of more account than the freedom to express social relations through custom feasts and gatherings. Having to subordinate these social obligations to agricultural production means to change one's way of life.