International Coffee Organization
Organización Internacional del Café
Organização Internacional do Café
Organisation Internationale du Café

EB **3757/00**

7 September 2000
Original: English/French

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Projects/Common Fund

Executive Board/
International Coffee Council
25 - 28 September 2000
London, England

Rwanda

Development of washed processing within a framework of private investment

Final report

Background

The coffee industry in Rwanda has performed well for many years with production reaching 46,000 tons in crop year 1986/87. However, since 1987 the industry has experienced serious difficulties which have affected quality and led to a reduction in production. Moreover, the overall structure of the coffee industry and particularly the technology used in post-harvest processing and manufacture, as well as the payment system for producers and other participants, have undermined the coffee industry. The genocide of 1994 aggravated the decline in production which has been characterized by a continuing deterioration in agricultural practices and low quality coffee production. The structural constraints on the coffee sector have become more acute due to the abandonment of coffee plantations and destruction of facilities, equipment and provision of the extension services.

The present study has been undertaken to review the main problems of the coffee industry following the tragic events of 1994 and to identify strategies and actions required to restore the long-term competitiveness and the profitability of the coffee industry in Rwanda. Rwanda currently has only three wet-processing plants and needs to build additional ones. The study has therefore specified the optimum capacity and location of new wet-processing facilities and their economic and financial benefits in the context of encouraging private investment.

The study has contributed to the development of an outline project proposal to be financed by the Common Fund for Commodities or other donors.

The present document contains an executive summary of the study, as well as a summary of conclusions and recommendations. The full report is available for consultation on request.

Action

The Executive Board is requested to take note of this report.

1.0 EXECUTIVE SUMMARY

The coffee industry in Rwanda has passed through a difficult period over the last 7 years, with a sharp decline in both production and quality. The general situation is fairly well known and documented. With the start of the new season in April, 2000, there is increasing private sector activity and competition among exporters, though the world coffee market faces a period of oversupply, with increasing stocks and depressed prices.

The report examines the background of the industry, and the main influences on the quality of production, the current processing facilities and capability, the principal agronomic factors and problems. It addresses questions concerning the options for developing strategies for improving both quality and productivity in the context of the global market, focusing in particular on the primary processing, and improvement in the washing process. The report also outlines the present structure of the marketing system for the coffee, both internal and external.

a. Coffee is one of the **main cash crops** for about 470,000 Rwandan households, and has for many years been the main export earner. Individual holdings are very small, averaging less than 200 trees. Since the early 1990's both production and quality have declined.

b. In a **world market in oversupply**, with lower prices, and competition from other origins, it is of vital importance that both the quality and productivity of Rwanda's coffee be increased, so as to enable the small-holder farmers to maintain their production and income at a viable level.

c. Government policy since 1994 has moved towards the **liberalisation and privatisation** of the coffee industry. Various constraints, such as the export tax, have been progressively removed. Farmers are having to learn to live with a volatile market, no minimum price guarantee, and without the level of support in extension and inputs services which was provided during the previous 30 years. This represents a major change and it is taking time to adapt to this new environment.

d. The report examines the different sectors of the industry, in particular the primary processing of the crop. It looks at **options for improving processing** in the context of a gradual privatisation of existing manual pulping facilities (Centre de Dépulpage Manuel – CDM), along with the establishment of a private sector programme for Coffee Washing Stations (CWS) (stations de lavage), with the aim of producing 'fully washed' coffee.

e. The different **risks of an entrepreneur** entering this field are assessed, and proposals set out for providing incentives and assistance to private sector operators wishing to establish coffee washing stations. The critical factors for the success of such a project are also analysed.

f. The report also outlines an intermediate stage, called a **'Mini-Pulping Station'** (MPS). This comes between a full coffee washing station and existing hand-pulping centres (CDM), but with a capacity well above that of the manual pulping centres. The MPS would be based on new technology from Latin America. It outlines a proposal to install five such units on an experimental basis, with a view to replicating them round the country if they prove successful.

g. Since at present over 40% of the coffee is processed using **small drum pulpers** in what might be defined as the 'informal sector', this sector is also examined with a view to upgrading the processing methods in order to improve quality.

h. The **export marketing system** is analysed, and the report examines different options for the future, to optimise returns for investors wishing to produce the fully washed quality.

i. **Other factors** relating to processing and production are also covered briefly, with some proposals for support for these different sectors:

- research
- the extension services
- nurseries and new varieties
- consolidation of small-holdings
- the role of women in coffee production
- soil erosion control and coffee
- isolation and eradication of potato taste
- institutional framework of the industry, with the changing needs of the liberalised structure.
- use of radio for dissemination of information to farmers.
- establishment of a workshop for the maintenance and rehabilitation of pulpery equipment.

j. Finally an outline is made of **targets** which might be set in place over a 5 - 7 year programme for the industry, with objectives for 2, 5, and 7 years, and criteria for the measurement of the success of the programme. Pilot projects are proposed in each of the key areas covered, which it is hoped may be funded in order to facilitate the implementation of these proposals. In this pilot stage, ownership and management models would be developed in each of the areas, coffee washing stations, privatised manual pulping centres, mini-pulping centres, and improved small drum pulping. It is intended that these provide the basis for the spreading of the technology across the country.

Paragraph 2 of the report summarises the main conclusions and recommendations from the report, and analyses the expected results from the implementation of these recommendations. These have not been aggregated into one project, since the different areas addressed in the report lend themselves better to being handled separately, namely the agronomic/extension

aspects, research and development, and then the primary processing under four separate headings - Coffee Washing Stations (CWS), Centre de Dépulpage Manuel, (CDM), Mini-Pulping Stations (MPS), and the 'Informal Sector' hand-pulpers.

The liberalisation of the internal market is bringing a new dynamic to the coffee sector. It seems that in certain areas farmers are quickly grasping the new environment. One of the prime objectives in these proposals is to provide the necessary incentives and motivation to encourage them to concentrate more on their coffee. By improving the processing and bringing investment closer to the farmers, it should be possible to achieve the goals of improving both quality and productivity on a sustainable basis.

2.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

In examining the present state of the industry and the processing capability in the country, various problems have been highlighted. In the preparation of this report, the objective has been to put forward proposals and recommendations with the aims of achieving an improvement in the quality of the coffee, as well as better yields and productivity from the small-holdings, while at the same time seeking private sector solutions to the problems.

The report sets out costs, objectives and goals, and it is anticipated that the implementation of these recommendations should over a period of 2, 5, and 7 years provide a significant and measured improvement in the farmers' incomes from coffee, as well as the country's foreign exchange earnings from this important crop. The principal recommendations are as follows:

2.1 Privatisation of Centres de Dépulpage Manuel (CDM) (capacity 10–20 tonnes/season)

There are about 1900 CDM in the country, of which an estimated 1400 operational. These are owned and maintained by OCIR Café, though they have inadequate resources to cover the whole country. OCIR Café has started the process of selling these to farmer groups or Associations. In order to improve performance on a sustainable basis, it is recommended to privatise all of the CDMs, by selling them to a small group of farmers round each unit. It is recommended that initially a limited number of CDM in a specific zone be selected, say 100 in all, in order to develop and test different models for this privatisation over a 12 – 24 month period. As the system is seen to work, the programme can be extended to the remaining CDM, with a view to their being entirely privatised within a 5 – 7 year period, possibly shorter.

2.2 Coffee Washing Stations (CWS) (capacity 200-250 tonnes/season)

There exist already 2 CWS, one at Nkora near Gisenyi and the other at Masaka near Kigali. Nkora has been sold to a Co-operative, and they started to operate in April 2000. First

samples were available at the time of this study, and the quality results was most encouraging. This will provide a test of the market potential and premium for this type of coffee. Masaka is in course of privatisation. In addition two new CWS are being constructed by private operators, both exporters. These should start to operate next season.

Given the cost of establishing a new CWS, the risks involved in financing such an operation, as well as in the ongoing management, it is not certain that private sector operators will be able to operate and maintain these stations. Much will depend on the premium to be achieved in the sale of the fully washed coffee. Since the initiative to increase production through CWS depends on the profitability of such operations, it is likely to take time before private operators are satisfied as to the economic viability of such operations.

It is recommended that some finance be sought, initially to be made available for the construction of new CWS by private operators. The funds to be made available through the commercial banking system, but in Rwanda Francs with a subsidised interest rate (say 6%).

In other countries which have successfully started CWS programmes, these have almost always been supported by heavy public sector subsidies. The management, market and other risks in the programme in Rwanda are being carried entirely by the private sector. Therefore in addition, it is recommended to make available some technical assistance in areas of management, quality and marketing to the private sector operators who enter this field.

2.3 Mini-Pulping Stations (capacity 50-80 tonnes/season)

There is new machinery from Latin America which scales down the size of an individual pulping station, and this becomes much more accessible to the small to medium operator/investor. This new technology is relatively simple, and also requires much less water than traditional CWS. However until it is seen how this performs in the local context, investors will be reluctant to enter this field, despite the quality and therefore value gains which can be achieved. It is recommended therefore that OCIR Café import five of these new machines, with a view to setting them up as demonstration units in collaboration with either individual business-men or else producer groups in specific areas. Once they are seen to be viable, it is expected that within a short period, private sector operators will start to import the machinery. This would bring about a significant quality improvement.

2.4 OCIR Café Structure

The GOR has already approved the restructuring scheme of OCIR Café, and the appropriate legislation has been tabled to put this into effect. It is beyond the scope of this report to go into the detail of this subject, though clearly the future structure of OCIR Café will have a considerable influence on the industry, as the privatisation process progresses. The recommendations in the earlier reports need to be adapted to the new realities of the coffee

industry, but this could be done within a short period. The main issues relate to the separation of the commercial functions of the organisation from the regulatory and industry supervision functions, such as quality certification, licensing, statistics, and liaison with the research and development institutions.

2.5 Other recommendations

The report includes other recommendations concerning:

- **Improvement of varieties** available for replanting. It is estimated that about 30% of the crop is lost each year because of the impact of leaf-rust. Effective chemical control is virtually impossible with the wide dispersion of small-holdings. New resistant varieties are very important therefore for improved productivity.
- **Assistance to research** institutions to move forward in their work on coffee, especially the disease resistant and improved varieties, as well as testing of processing technologies.
- Potential for use of **coffee in erosion control** programmes
- **Assistance to women's' groups** in coffee production, since 24% of coffee farms are owned and managed by women. This also has potential as a marketing niche overseas.
- Further work to **eliminate the 'potato taste'**, which alone probably accounts for a reduction in value of the crop by about 10%.
- Development of **radio programmes** as a means of extensive and rapid dissemination of information to growers.
- The establishment of a workshop with the capability of reconditioning pulper discs and repairing coffee machinery.

2.6 Consolidation of small-holdings

There is increasing competition for good land, as population growth increases food demand. According to the 1999 National Coffee Census, average coffee holdings are about 150-170 trees per farmer. It is very difficult to make these truly productive. Under a programme organised by World Vision, experience at Gikongoro with potato producers has shown that consolidation of holdings has had a dramatic effect on improving farmer incomes and productivity. This can only be achieved provided farmers willingly co-operate to do it, and it is in small groups around 5, but maximum 10 farmers. Once one group is seen to achieve results, the idea rapidly catches on.

In an increasingly competitive coffee world, improved productivity and quality are vital for survival. It is recommended that a scheme be put in place to test this in the field, and the report outlines how such a scheme could be stared. This is closely linked to possible

developments in the extension section of OCIR Café, and it is recommended that assistance be sought for the technical support from World Vision, with a proven track record in this field, to bring this part of the programme forward.

2.7 Targets and objectives

The report sets out specific 2, 5, and 7 year targets for the various areas covered, with a view to achieving concrete and measurable results in all the areas covered. It should be noted that the establishment of a sector to produce fully washed coffee, undertaken as it will be by private investors, will take longer than that which might have been achieved if large sums of finance were available for immediate investment. The preliminary targets are, therefore, modest in their scale, but reflect what is believed to be a sustainable and achievable level of production of improved quality.

Once the initial stage has been proven successful, it is expected that subsequent stages will move much more rapidly. If the recommendations set out in this report are adopted, and the finance is available within a reasonable period, it is anticipated that the following results should be achieved:

a. Support in training, management and marketing to existing CWS which should ensure their sound establishment and development to produce 800 – 1000 tonnes of fully washed coffee within 2 years. It is recognised that this is a very modest quantity, but since it falls to the private sector to make the investment, the economic viability of the CWS must first be proven It is expected that within the first 12 – 18 months it should become clear what premiums may be expected from the fully washed coffee. Improved value of 1000 tonnes fully washed estimated at $ 440,000. (20 cents/lb on 1000 tonnes)

b. Provided premiums justify the investment and risk, establishment within 2 – 3 years of 5 further CWS, which together with the existing facilities should increase production of fully washed coffee to 2000 - 2500 tonnes per year, improving export values by over US$ 1 million per year.

c. Technical documentation and information available to private sector investors through OCIR Café on CWS design, management and control systems, as well as small MPS units. This should facilitate access into these fields by entrepreneurs willing to invest.

d. Establishment within 2 years of 5 MPS producing around 250 tonnes per year of fully washed coffee. This will permit the testing of this system, both for local production conditions, as well as to establish market values and premiums which may be obtainable. Estimated improvement in value of these 250 tonnes $ 66,000. (12 cents/lb on 250 tonnes). Again it should

be noted that once established, it is anticipated that there would be a rapid growth in the number of these MPS units installed and operational within the country, increasingly significantly the quality and value of production.

e. Privatisation within 2 years of 100 CDM units, with the establishment of Common Interest Groups (GIC) or Associations to own and manage them. The objectives will be not just to improve management and quality from these units, but also to stimulate improved productivity by closer contact with the farmers. Estimated improved value of coffee from these improved units US$100,000/year. (4 cents/lb on 1200 tonnes). Once again, the purpose of the first stage would be to establish the model and pattern for such privatisations, with a view to the subsequent privatisation of the remaining units within a 5 year period thereafter.

f. Import and sale of 100 'Baby Bentall' drum pulpers, to start the task of improving quality of production from the informal sector.

g. Training in liquoring and quality control of OCIR Café staff, as well as quality control staff from exporting firms. Training in agricultural practice, pruning, mulching, plantation maintenance etc. of the agricultural staff of OCIR Café, so as to provide a better service to farmers.

h. Assistance to women's groups involved in coffee production.

i. Test of a system for consolidation of small-holdings over a 3 year period, to establish if this could be a viable means of improving yields and productivity as has been achieved in other crops.

j. Assistance to ISAR for the expansion of their plant breeding and improvement activities. Also the rehabilitation of the CWS at the research station, to be used as a test installation for developing systems and procedures for use in the industry.

k. Radio programmes to facilitate the dissemination of information to as wide an audience as possible of coffee growers in the country.

l. Study of the potato taste, it is to be hoped in conjunction with neighbouring countries facing the same problem, and the development of a programme to reduce its incidence. If this is successful, and a programme is established, the revenue improvement for Rwanda could be as much as 10% of the value of the entire crop, and could have a similar impact on neighbouring countries.

m. Establishment of workshop with private sector control for purposes of reconditioning and rehabilitating coffee pulping machinery. This should considerably reduce maintenance costs of pulperies, and improve operating efficiency of the units, both large and small.

If these recommendations therefore can be implemented, (and the scale of the proposals is at a pilot level in all cases), the net benefit to Rwanda would be well over US$ 1 million per annum within a 2 – 3 year period, and this on a sustainable basis, and increasing thereafter. Once the results from this level of investment were established, it is expected that private sector investment in improved processing would escalate rapidly, provided the general economic and investment environment is positive.

2.8 Comparative results – Fully Washed Coffee – Burundi

In considering the above premiums, it is of interest to note the comparative results of the Fully Washed Coffee from Burundi compared to their normal production. In the 1999/2000 season, for the figures up to early May 2000, the results are as follows:

18,057 tonnes of Fully Washed Coffee sold average price	FBU1,063.96/kg
9,932 tonnes of Washed Coffee sold average price	FBU 800.14/kg
Premium for all fully washed compared to washed therefore	FBU 263.83/kg
	= approx USCents 19.00/lb

(prices ex auction, Bujumbura)
(Source*: Office du Café du Burundi, Bujumbura*)
(FBU 263.83/kg at an approximate average rate of exchange for this season of say FBU 6.25/US$ this gives an average premium for all the Fully Washed of US Cents 19.00 per lb.)

Whether this premium would be sufficient to justify private sector investment in Coffee Washing Stations is questionable. The actual cost of operation, assuming a generally low price environment, is US$ 398 per metric tonne (see Appendix IX of the report). A premium for all qualities together of 19cents/lb is equivalent to $418 per tonne. The factors which remain to be clarified are:

a. The price for the purchase of cherry from growers, since this will largely determine the viability or otherwise of the CWS. Since the grower price of cherry will be fixed ultimately by market forces, it remains to be seen whether the CWS will be profitable.

b. The decline in world markets will probably result in a realignment of differentials for washed arabicas. The cost of production of this type of high quality coffee will eventually result in the finer grades, including the fully washed Rwanda coffees, selling at a premium to the New York market. There will be a period of uncertainty over 6-24 months while these new price relationships are established.

The Burundi figures may not be a reliable comparative guide as to the premiums which might be achieved from fully washed Rwandan coffee. We were advised that the percentage of the finer qualities in Burundi this season had been lower due to internal problems. There is little doubt that the production of an improved quality of Rwandan coffee would be beneficial to the country

in terms of overall foreign exchange revenue and improved marketability of the crop. However it is not yet clear whether the individual entrepreneur will be able to rationalise the investment, given the risk/reward potential from the production of fully washed coffee through CWS.

However it seems highly probable that using the intermediate technologies of the Mini-Pulping Stations, the investor could make a significant return, justifying the investment and risk, and bringing almost the same benefit to the country.