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TRANSPORT SECTOR PROFILE: IMPACT ON AGRIBUSINESS

By

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PREFACE

The Agricultural Analyses and Design (AAD) activity is an eight-month design activity undertaken by the Chemonics International RAISE Consortium through funded supplied by USAID/Rwanda. USAID/ Rwanda is using this study and design effort to support its Strategic Objective Number Three (SO3) *to increase the ability of rural families in targeted communities to improve household food security.* Specifically, USAID seeks to obtain information and proposed intervention strategies, approaches and activities suitable for USAID/ Rwanda's support in achieving the second Intermediate Results under SO3 (IR3.2) of *creating and enhancing internal production / marketing chains that promote broad-based economic growth.* The purpose of AAD, therefore, is to provide USAID/ Rwanda directions and information for their use in future development and eventual funding of a project that seeks to revitalize agribusiness in Rwanda and recreate links between the rural sector and private sector traders and processors. This USAID project will achieve its objective by addressing identified constraints and opportunities within the commodity chain for increasing economic grown via agricultural production and agribusiness. The principal task of AAD is to identify these constraints and opportunities.

The Agricultural Analyses and Design activity is divided into three phases. The first phase (two months) is to identify and recommend for in-depth study to USAID/ Rwanda those commodity chains and interventions that have the most potential for creating increased economic growth, internal and external trade, opportunities for employment and increased income. The second phase (four months) will consist of a number of in-depth studies. Some studies will look at crosscutting issues such as transportation, finance and economic policy. An additional study will look at the creation of Agribusiness Support Centers. The remaining studies will be in-depth analysis of interventions related to commodity chains identified in phase one and selected for study by USAID/ Rwanda. The results of these studies will provide the basis for phase three of the activity, the synthesis of the studies done in phase two and development of a technical proposal and supportive design components for USAID/ Rwanda's use in developing a request for proposal (RFP) for a project to support IR3.2.

This crosscutting report on transportation by Mr. Harold Kurzman, transportation specialist, was written during a visit to Rwanda from 29 November to 13 December 1999.

EXECUTIVE SUMMARY

This study has the following purposes:

1. Identify and examine the transport related issues and opportunities for Rwanda agriculture in general,

2. Identify and examine in particular the related transport issues and opportunities for selected commodity chains, and

3. Provide specific recommendations for project interventions in the area of transport.

There are few professional trucking firms engaged in international transport based in Rwanda, and their number has declined as volumes of cargo available to public carriers has declined, operators have faced financial distress and more competition from trucks from neighboring transit countries on international routes. There are some opportunities to increase revenue /ton but national operators will remain at a competitive disadvantage for structural and institutional reasons that are unlikely to change.

Domestic trucking capacity is adequate, although temporary shortages may occur at peak harvest times, impacting mostly on those producers located in relatively inaccessible areas. Most truck owners are engaged in other commercial businesses and frequently purchase farm products at collection points roadside. They therefore combine transport and marketing services. The commodity volumes vary seasonally, so they may charge more at times of peak demand to help cover fixed costs when demand slows. There are a few opportunities for transferring commodities, now moved by enterprises' private fleets, to public carriers. Otherwise demand is conditioned by the vagaries of production volume.

There is an absence of good non-motorized means of transport for getting product to roadside collection points. In areas with difficult terrain, head-loading practices places limits on product marketing. There may be opportunities to introduce techniques commonly employed in Asian and Latin countries. This should also relieve women of much of this strenuous and time-consuming task.

The two corridors available for moving imports/exports ensure competition and security against interruptions of the logistic chain arising for natural, institutional or political reasons. There are bilateral and multilateral agreements governing transit along these corridors, which provide a framework for cooperation and consultation between nations.

There are no refrigerated facilities for preservation of perishables, except very limited capacity in Kigali. The capacity and frequency of scheduled airfreight services will place limits on the growth of perishables for export

The product chains examined most closely were for tea and coffee, the primary foreign exchange earners. There are some opportunities to increase logistics efficiency in handling of processed coffee by ORIC and for increasing truck productivity by removing the requirement that these products be containerized. Surface transportation costs account for less than 10% of total product cost delivered to ship or to auction floor. Therefore reduction in transport costs will not have a major impact on producer prices, which largely fluctuate with world market prices.

It may be desirable for groupings of producers, in organizations that have legal status, to purchase their own light cargo vehicle, using as debt collateral their income from sales of tea and coffee crops. This would enable them to direct deliver to larger markets and to tea and coffee factories, eliminating payment of agents' commissions and transport charges. They would also have a vehicle for personal transport needs, improving access to social events and public services. To be economical, the group would need to move 5-10 tons per month and to manage vehicle use and maintenance according to proper standards.

Enforcement of regionally agreed axle load limits has had a serious impact on international truck payloads and revenue, to the point where many Rwanda operators are unable to meet their fixed costs, primarily debt payments. Enforcement of these limits is intended to preserve investments in the trunk international network, and have been a condition of receiving donor financing. Shippers should increase their payments per ton accordingly, but except for the special case of petroleum movements, have not done so. Containerization of coffee especially has a negative impact on full utilization of the weight limits now enforced.

LE SOMMAIRE EXECUTIF

Cette étude se propose :

- d’identifier et d’examiner en général les problèmes et les opportunités de transport pour l’agriculture rwandaise;

- d’identifier en particulier les problèmes et les opportunités de transport pour les chaînes de matières premières; et

- de fournir des recommandations spécifiques pour les projets dans le domaine des transports.

Il existe peu de sociétés de camionnage professionnelles au Rwanda intervenant dans le transport international et leur nombre a baissé avec la réduction des volumes de chargement accordés aux transporteurs publics. Les opérateurs ont rencontré de graves problèmes financiers et ont dû faire face à une concurrence accrue sur le réseau international des camions provenant des pays de transit voisins. Il est possible d’augmenter les recettes/tonne mais les opérateurs nationaux continueront à être pénalisés en raison de problèmes structuraux et institutionnels peu susceptibles de changer.

La capacité nationale de camionnage est suffisante, même si des pénuries temporaires se produisent au moment des récoltes, pénalisant surtout les producteurs qui se trouvent dans des zones difficilement accessibles. La plupart des propriétaires de camions ont diversifié leurs activités commerciales et achètent souvent les produits agricoles aux points de collecte au bord des routes, combinant ainsi les services de transport et de commercialisation. Les volumes des matières premières varient selon la saison, par conséquent les tarifs sont plus élevés pendant la haute saison pour couvrir les coûts fixes pendant la basse saison. Il existe quelques rares opportunités de transférer les matières premières, désormais transportées par des sociétés privées, aux transporteurs publics. Autrement, la demande est soumise aux aléas de la production.

Il n'existe pas de moyens de transport non motorisés pratiques permettant de transporter les marchandises jusqu’aux points de collecte au bord de la route. Dans les zones accidentées, la pratique du portage sur la tête est un frein à la commercialisation des produits. Il doit être possible d'introduire des techniques couramment utilisées en Asie et dans les pays d'Amérique latine ; ce qui devrait libérer les femmes d'une tâche pénible et laborieuse.

Les deux couloirs disponibles pour l'importation et l'exportation permettent la concurrence et sont une garantie contre les interruptions de la chaîne logistique pour des raisons naturelles, institutionnelles ou politiques. Il existe des accords bilatéraux et multilatéraux régissant le transit dans ces couloirs, ce qui fournit un cadre de coopération et de consultation aux Etats.

En dehors de Kigali, dont la capacité est très limitée, il n'existe pas d'installations frigorifiques pour conserver les denrées périssables. La capacité et la fréquence du fret aérien prévu limitera le développement des denrées périssables destinées à l'exportation.

Les chaînes de produits étudiées concernent le thé et le café, premiers fournisseurs de devises. Il est possible d'augmenter l'efficacité logistique en faisant distribuer le café transformé par ORIC et d'accroître la rentabilité des camions en supprimant la condition exigeant que ces produits soient mis dans des conteneurs. Les coûts de transport par route ne représentent que 10 % de la totalité du coût du produit livré jusqu'au bateau ou à la vente à la criée. Par conséquent, réduire les coûts de transport n'aura pas un grand impact sur les prix au producteur, qui varient principalement en fonction des prix mondiaux.

Il est peut être plus intéressant pour les producteurs regroupés en organisations juridiquement reconnues d'acheter un petit véhicule de transport, en utilisant comme garantie leurs recettes de la vente des récoltes de thé ou de café. Cela leur permettrait de fournir directement les grands marchés et les usines de thé et de café, supprimant la commission des intermédiaires et les frais de transport. Ils disposeraient également d'un véhicule pour leurs besoins personnels, facilitant ainsi la participation aux événements sociaux et l'accès aux services administratifs. Pour rentabiliser le véhicule, il faudrait transporter 5 à 10 tonnes par mois et assurer une gestion et une maintenance conformes aux normes reconnues.

L'application régionale de la charge convenue par essieu a eu un grand impact sur les recettes et la charge utile dans le secteur du camionnage international, au point que de nombreux opérateurs rwandais sont incapables d'assurer leurs coûts fixes, notamment le remboursement des dettes. Ces limites, qui ont pour but de protéger les investissements du réseau de camionnage international, ont été l'une des conditions à respecter pour obtenir des financements des donateurs. Les expéditeurs devraient augmenter leurs paiements par tonne en conséquence, mais en dehors du cas spécial du transport du pétrole, peu l'ont fait. C'est plus particulièrement la mise en conteneur du café qui a eu un impact négatif sur l'utilisation optimale de la limite de poids désormais en vigueur.

SECTION I. TRANSPORT RELATED ISSUES

A. Issues Within Rwanda

1. Role of Middlemen.

Marketing of most crops involves one or several middlemen in the logistics chain, each of which will take a payment for services, which decreases the farm-gate payment. The need for several intermediaries arises because of the small plots farmed, yielding relatively small quantities of produce at any time, the lack of storage facilities in proximity to farms, the farmers need to receive cash as quickly after harvest as possible, and the difficult terrain present in most of the cash cropped areas.

The buyer either owns the transport vehicle used or pays the transport operator for use of his vehicle. The cost of transport will normally vary seasonally according to the demand/supply situation. This condition of producer dependency on middlemen to transport and market products is a typical small farmer constraint. Only when producers join together in some marketing cooperative arrangement, can they collect sufficient quantities to by-pass some links in the logistic chain, obtain some control over marketing cost and reliability, or perhaps they own some transport capacity.

In the case of tea, distances to factories are relatively short and tea is a relatively lightweight commodity to carry manually. Therefore the middleman function is minimized. Coffee, however, is almost always purchased by buying agents contracted for by the factories. These agents are wholesale buyers, who are normally advanced working capital by the factories, are told when to buy, are located in towns and will own or hire storage facilities and medium to large trucks for transport to the factories. They in turn have agents buying at or near the farm gate, who collect and bring the coffee to the wholesaler. The margin for the marketing and transport services ranges between 20-40 Rwf/ kg or about 10% of the price to producers.

2. Availability of Transport Capacity

There appears to be few alternatives to head loading for transport of crops from farm to the nearest collection point on motorible road. Pack animals or animal drawn carts, common in other countries, are absent. Bicycles have not been adapted to maximize utility as a means of moving cargo, such as tricycles or attachment of some type of cargo carrying enhancement. Wheeled carts, either pushed or pulled are uncommon as are motorcycles. Head-loading is very time and energy consuming, a sufficient added burden on women that sometimes crops are wasted.

Motorized transport seems reasonably abundant for collection of goods placed at roadside collection points. The truck fleet has grown from 1528 vehicles in 1995 to 4899 in 1997(the last year for which data is available). There is surplus capacity for 6-7 months of the year and sometimes shortages at the peak harvest months. This is inevitable because operators cannot operate profitably if the fleet is sized to satisfy all peak season needs. Transporters need to charge higher rates in the peak season to cover fixed costs when business is slow and when the unfavorable supply/demand imbalance forces lower rates. Some of the larger vehicles have been retired, as transporters could not operate profitably.

Two of the largest volume users of large trucks are OCIR-The and the brewery. They both operate their own fleets, which effectively deprives the professional transporter of dependable year-round contract business. When the brewery shifted to enterprise trucking, the major contract carrier bowed out of the trucking business. RWANDEX collects some of coffee it purchases with its own trucks.

3. Road Conditions

Rwanda has a reasonably large and good network of national and feeder roads for a country with its size, poverty, and difficult terrain. Paved roads will soon link all prefecture centers. Maintenance is the core problem. A policy decision has been taken, supported by donors, that the Government will no longer build or maintain roads by force account. All work will be contracted to private enterprises. Moreover funding derives from Road Maintenance Fund, legally reformed in 1999 to improve accountability to stakeholders and to insure that revenues are deposited directly in its own account. This Fund is be professionally managed and audited. The Ministry's Road and Bridge Directorate function is to assist in planning, contracting and supervision of works. It no longer has field staff, except for one agent attached to each Prefecture

The implementation is in progress. Constraints include the weakness of the local small contractors' capacity in human resources, experience, and equipment. To help transition to SME contractors, larger contractors from regional countries will be permitted to tender as long as they agree to sub-contract substantially to SME's and to apprentice them. The professional Fund manager is being recruited and the restructuring of the Roads Directorate is in progress but is incomplete. Funding requirements for adequate maintenance of both the national and communal road networks are being studied. In many cases roads need to be repaired before they can be maintained through normal maintenance practice.

The World Bank's present transport sector operation is conditioned on these reforms. World Bank sources report that the Minister responsible is strongly committed to implementing the new policies. Therefore one can anticipate improvements in road maintenance will occur over the next several years and that stakeholders will participate in setting priorities and even in the manual labor involved, gaining off-farm income thereby. With the Fund, a sustainable mechanism for management and financing of road maintenance has been established. The IDA has provided $ 8.5 million to be used on rehabilitation and maintenance of about 550 km of secondary/feeder communal roads, linked to the Gitarama-Kibuye road.

The EEC is now preparing an Ecu 40 million transport sector project. A sector study will be commissioned shortly which will help in design of the project, which is likely to include some financing of the Road Maintenance Fund and some for rural roads repair.

4. Cost/pricing of Transport

The payments made to coffee traders normally ranges between 25-40 Rwf /kg of which about 10 Rwf is considered to be commission and the remainder for transport. If one assumes 20Rwf transport cost for goods transported 75km and an empty return in a small truck, then the transport cost is 3000Rwf for 150 km or 20/kg/km or 20,000/ton km. If the transporter can find a payload backhaul his average costs are reduced. In the off-peak season prices will be less, as there is more capacity than work. Operators with large trucks, carrying > 3.5 ton will have lower costs, assuming they have sufficient loads to take advantage of economies of scale. Most transporters cannot accurately estimate their annual revenue per vehicle. Moreover, vehicles are frequently owned and operated by persons who are not simply in the transport business and therefore who use the vehicle to support other commercial activities and as a personal and/or public passenger vehicle.

5. Constraints for Transport of Perishables

There are no public-use facilities for refrigerated storage of farm produce outside Kigali. Magerwa has small capacity facilities at its central Kigali warehouse and at the airport. A flower exporter has also acquired a reefer container for his own product use. There are no refrigerated vehicles.

It makes no sense to consider investments in insulated and refrigerated vehicle bodies, without provision of facilities for a total logistic cold chain from producer to processor to collection point for sale. Final destination for exports probably would be the airport and for internally consumed chilled fish and dairy products, primarily in Kigali.

B. International Surface Transport

1. Alternative Transport Routes

Rwanda's foreign trade moves either through the port of Dar es Saleem, on the Central Corridor or Mombasa, using the Northern Corridor roads, shown on the accompanying map. There is no significant use of road/rail inter-modal. The transit countries are encouraging setting up a dry port in Kampala to make this attractive and to relieve heavy vehicle use of the main corridor highway.

For shipments through Dar there are two alternatives, all road or road/ rail. A transfer terminal was built with EEC funding at the TRC railhead at Isaka, Tanzania in 1990 to be leased and operated by MAGERWA. It is about 500 km from Kigali on paved road and is equipped with a crane for handling containers. RWACOF ships inter-modally on this route and SICAF entirely by road. The former has a C&F agent as part of its regional parent corporation, which handles transfers at Isaka and Dar and makes all arrangements for wagon supply with the railroad. RWANDEX has warehouse facilities in Mombasa ands ships by road on the Northern corridor. Tea shipments are usually sent to the major auction and blending floor in Mombasa.

There is a Northern Corridor Transit Agreement governing conditions of movement along the corridor and frequent consultations between transport and customs authorities of Rwanda, Burundi, DRC, Uganda and Kenya. The main goals of the agreement are to: 1) avoid delays, 2) minimize incidence of customs fraud and avoidance, 3) simplification and harmonization of documents and procedures relevant to movement of goods in transit. An Authority (TTCA), with Secretariat in Nairobi, administers policy and operational coordination. Decisions are taken by consensus and are binding on all Contracting parties. Protocols include:

- Maritime port facilities
- Transit routes and facilities
- Customs
- Documentation and procedures
- Transport by rail
- Transport by road
- Handling dangerous goods
- Facilities for transit agencies and employees
- Third party motor vehicle insurance

Movements on the Central corridor are regulated by bi-lateral agreement between Tanzania and Rwanda in a more informal manner. Under the framework of COMESA, there are committees that meet to discuss transport regulations, customs issues and documentation. The leadership of Rwanda is keen to encourage further use of the Central corridor and especially of the Isaka transfer infrastructure. Cost of transport road/rail are reported to be about 10% lower than all road to Dar and road transport up to 20% cheaper than on the Northern corridor. The port costs at Dar are somewhat lower than Mombasa and security somewhat better. Transit distance is 1,300 km about 200 km less than to Mombasa and transit time generally faster because only there is only one set of border documentation and security procedures instead of two required via Mombasa.

The advantages of the Northern corridor include more choice of trucking firms, the Central being almost completely taken by Tanzanian operators, and more import cargo for Kigali is moved through Mombasa directly or from wholesalers in Nairobi. Therefore back loads that reduce transport prices and containers needed for transport of Rwanda's coffee and tea exports are more available at times.

A major constraint in using the Isaka facility has been lack of dependable capacity and scheduling by the railroad. TRC has pledged to improve performance. There is also the possibility that Isaka could be made a customs bonded facility (dry port). In this case Rwandan cargoes could be way-billed FOB or FOT Isaka, with ocean shipping companies taking responsibility for cargo between Isaka and for positioning sufficient containers at Isaka. A major advantage of rail is that it bypasses a long stretch of poor, unpaved road susceptible to damage by heavy vehicles and flooding between Isaka and Didoma.

Most importantly, a land-locked country needs to have alternative access corridors that are regularly used. This provides security over shipment interruption, for whatever natural or man-made reasons this may occur. It also assures a level of transport pricing competition.

2. Impact of Regulations

Load Restrictions.

All of the transit states have agreed to a common set of axle load limits, which in its most simplified form is between 8-9 tons per axle. These limits have only been enforced for about one year and most especially in Kenya. The need for limits is to preserve investment in international roads, slowing wear and tear to rates for which pavements were designed. Rwanda has tender for the purchase and installation of 8 weigh bridges to be located near border posts and at MAGERWA. This regulation effetely limits heavy trucks to loads of 28-30 tons, whereas overloading practices were commonly 40-45 ton and occasionally greater.

This effectively reduces payload substantially. Since shippers are unwilling to compensate the transporter at a substantially higher rate, there is a severe reduction in revenue per trip, often insufficient to cover fixed costs. The exception is for petrol products in tankers, which are always one directional loads, where rates have been increased by about 60%. This has undermined the viability of trucking business. In Rwanda many loans from banks, which were extended on the assumption of higher loads, have had to be rescheduled or are non-performing. Where cargoes are containerized, as for coffee, only one container with a gross weight of about 22 tons can be loaded or two not fully loaded, which is an inefficient use of containers, which are in scarce supply in Rwanda. And adds about 2 tons of dead weight to gain 4-6 tons of commodity.

The requirement that all coffee exports be containerized is imposed to make loss and theft in transit more difficult. Given load restrictions, however, it is impossible for a shipper to use the full 28-30 ton load limit unless two partially filled containers are used, which is inefficient.

Customs and Documentation

This is an area we are told has improved but still requires attention. Trucks carrying transit goods are required to move in convoys through Uganda and Kenya to reduce theft and customs evasion. There are sometimes delays in organizing and moving these. Documentation needs streamlining in conformity with best international practice and then automated software packages, well tested elsewhere, can be used. Customs personnel need more training and professional work practices, recognizing that delays of goods in transit have an inventory cost.

The COMESA-CD (Customs Document) is now used by all Treaty Contracting Parties. Implementation of ASYCUDA, Automated Systems for Customs Data, developed by UNCAD, has been agreed. Kenya has agreed to waive the requirement that transporters hold customs bonds. Actions to facilitate transit are thus progressing.

OCIR-Coffee

This organization’s role is now largely quality control of coffee exports. However instead of inspection of coffee lots ready for shipment on the factories’ premises, the bagged coffee has to be transported to OCIR warehouses, where, after inspection it is loaded into containers. This involves extra transportation, storage, and handling costs.

3. Transport Operator Problems

Trucking by professionally operated companies in Rwanda is fast disappearing. After the genocide, the assets and human resources required were largely absent. In response to need to restore the economy and to move the large quantities of relief goods, a large number of companies were established and vehicles acquired by persons who perceived a profitable business, as investors or operators, in a relatively non-competitive environment. Many of these companies purchased heavy vehicles, suitable only for international transport, which requires a great deal more technical skills, management and finance than domestic transport. Credit was readily available.

There are many reasons for the problems these enterprises face among which are:

1. A sharp fall in demand for cargo movements, especially attributable to the decrease in relief goods and consumer imports.

2. An operating cost structure which is substantially higher than operators in neighboring countries, especially Tanzania.

3. Lack of marketing knowledge and networking leverage with agents in ports and overseas who select the carriers used.

4. High exposure to risk of theft and damage coupled with a presumption of liability based on Belgian law. Companies in neighboring anglophone countries are governed by legal practice, which places most of the risks on the owner of the cargo, not the carrier.

5. Relatively small fleets, which to not permit economies of scale or undertaking of large contracts. Consequently they often have to operate as sub-contractors, accepting the least desirable trips and at discounted rates, which allow the prime a good profit margin.

6. The enforcement since 1998 of axle load limitations, especially in Kenya, designed to preserve highway pavements from serious damage and deterioration. These load limiting measures have decreased payload and revenue per vehicle Fixed costs have remained constant, operating costs have been only slightly reduced, and with the special exception of petrol product carriers, rates have not risen to compensate for the loss of revenue. Rwanda is about to institute similar enforcement measures on it major international road network.

To be efficient over the long corridor distances, transporters need to balance their inbound and outbound loads as much as possible. Fixed costs are the same whether loaded or unloaded, except for the latter involving no delays at borders or in convoy. Variable costs are marginally higher when loaded. Balancing of loads is a function, which the C&F agents perform. But if exports exceed imports at certain times of the year, it is not possible to achieve the balance, which is profitable to the transporter and usually to the shipper gains a lower rate because costs are shared.

Unbalanced cargo directional volume, with exports exceeding imports, has reduced carrier efficiency in the last two years, as imports of commodities donated by aid agencies has substantially declined without a recovery in other consumer imports. For Rwandan transport companies, this means that they have to try to recover most of the round-trip costs from the export cargo or wait in port as long as needed to secure a backhaul. Kenyan and Tanzanian transporters, delivering imported cargo to Rwanda, can be confident of securing a backhaul of tea or coffee and can accept a lower rate. The enforcement of truckload limits on the Northern corridor has reduced permitted loading to 28 tons, whereas previously loads up to 40 tons (being 2 lots) were normal. Since rates per ton were not raised, trip revenue of the carrier was substantially reduced. Rwandan transporters do not compete for cargo on the central corridor because of the risk of damage and breakdowns to their vehicles and because Tanzanian carriers have a lower operating cost structure. The seasonal nature of coffee shipments, concentrated over about 5 months, also affects carrier viability.

Rwandan transporters are therefore competitively disadvantaged. Their operating cost structure is higher than for transporters in transit countries, especially Tanzania. Many regional firms are large fleet operators who can take advantage of economies of scale in purchasing and maintaining their vehicles. Costs of inputs such as spares and tires are lower. They often have business ties to C&F agents who favor them. They have operational bases in the port countries. Their inbound load is usually of higher value goods for which they charge shippers a higher rate. They can then offer lower prices on the export backhaul.

C. Air Freight

1. Existing Operations

Sabena offers two passenger flights weekly from Kigali to Brussels with a stop in Nairobi. The Airbus 320 can lift about 10 tons of cargo. The Nairobi offices control the amount of freight that may be loaded in Kigali. This is the only scheduled freight carrier to Europe. A 3rd flight may be available if service to Burundi is resumed. Swisscargo books and Alliance handles the cargo. There are two all cargo operators, DAS with a weekly flight to London, but its arrival day varies and another, Demavia, with service to Brussels when sufficient cargo is available. Sabena rates for perishables are: for flowers > 500 kg, $1.98; for fruits and vegetables > 1000 kg, $1.65; and for plants > 1000 kg., $154, all excluding handling cost and documentation. MAGERWA operates warehouses at the airport and charges 3 Rwf/kg/week for refrigerated storage.

2. Constraints for Perishable Cargo Exports

The capacity and frequency available on Sabena's scheduled services is too limited to support larger quantities of perishables. There is too much risk of damage and spoilage to transfer such cargoes at a connecting regional airport. The capacity of MAGERWA cold storage would need to be expanded and their cold store staffed and accessible on whatever schedule needed by flight schedules. Airfreight accounts for most of the cost of product delivered to European markets. Therefore marketing is very sensitive to changes in rates over which the small volume shipper has little control.

SECTION II. TRANSPORT OF SELECTED COMMODITIES

A. Coffee

Coffee is first purchased by factory buying agents located in villages or in local markets. These agents then arrange transport to the factory [Rwandex operates a few buying centers from which it transports in its own vehicles]. The minimum farm gate price is set daily by OCIR-CAFÉ and is broadcast by radio. The agents purchase the product usually with funds advanced to them by the factory. The agents either own or hire the transport vehicle, which is usually a 10-15 ton truck. The agents are paid a commission of 10-15 Rwf /kg plus transport allowance, the latter ranging from 10-20 Rwf per kg, depending on distance. This averages about 100 Rwf/ton/km, except for short trips in or near Kigali/Giterama, where the rate is double. The internal transport cost plus commission averages about Rwf 35/kg, or about 7% of the farm gate price, and only 2% of the NYC final delivered price.

Some farmers will deliver and sell directly to a factory, thereby earning the equivalent of the transport and agent commission allowance, thereby gaining an extra 20-35 Rwf.
The Government has been encouraging farmers to form producer associations and 47 have been formed. Once these have established their legal status, they will be in a position to seek credit. They may then purchase a truck, deliver and sell directly to the factories, freeing themselves from dependence on middlemen.

Occasionally there will be temporary imbalances of supply and demand in a regional market, at which times producers may sell at lower than the minimum, if they are unable or unwilling to wait for more favorable conditions.

Factories complain that the OCIR's charges for inspection and handling indexed at 3% of the NYC FOB, equivalent to about Rwf 30/kg is too high. OCIR has proposed that it to rise to 4.3%, with the additional to be set aside to subsidize farm inputs, and that farm gate prices be reduced accordingly. Processors want inspections to take place on their premises instead of the present requirement that all products be delivered to OCIR warehouses before shipment, which involves unnecessary handling and cost.

Each of the processors arranges for its own international transport. Rwandan regulations require that all coffee be containerized for reasons of security. Rarely does the ownership of an available empty container match that of the shipping company designated for the ocean shipment. Therefore at the port the container must be emptied, coffee stored and repacked in another container for ocean shipment.

RWACOF ships to Dar via Isaka railhead of Tanzanian Railways. A subsidiary C&F agency, UGAFreight , arranges for transfer to rail, books rail wagons and handles the containers in the port. It hires truckers to move product between Kigali and Isaka, a distance of about 500 km over paved road at a rate of about $ 40-45/ton. These usually carry an import cargo on arrival in Rwanda. RWACOF switched from all road to inter-modal after the El Nino flooding destroyed sections of the road between Isaka and Didoma. It is now working smoothly with rail cost ($45/ton) plus road costs equal to or slightly less than by road alone. An effort is made to position at Isaka containers owned by the shipping company on which the cargo is booked. In such cases the product is transferred between containers at Isaka and de-stuffing at the port is avoided.

Tanzania has begun to enforce axle weight limits of 28-30 cargo tons, causing loads to be decreased from two containers each containing 19.5 tons of coffee, gross cargo weight of about 43 tons, to a single container. One can only load up to the new limit if additional non-containerized product is added to a truckload carrying one container. Rwandan laws require all coffee to be shipped in containers.

Tanzania has plans to develop a dry port at Isaka. This would permit coffee to be delivered to ships' agents in this "port", FOB Isaka, instead of Dar es Saleem. The coffee company's ownership and liability for cargo would transfer there, and payment would be received earlier.

Routing through Tanzania for export has become preferred by SICAF processors because transit time and costs are up to 25% less than to Mombasa. The distance is 10% shorter over poorer roads but delays due to customs procedures are less and loading limitations have not been as rigorously enforced. Dar es Salaam port seems to work more effectively and at lower cost than Mombasa. RWANDEX processor has warehouse facilities in Mombasa and therefore always uses the Northern Corridor road to this port. .

Table I illustrates a typical cost build up along the coffee logistics chain. One notes that land transport costs are a relatively small component in the delivered to NYC price.

B. Tea

Tea processing and export is a Government monopoly of the parastatal OCIR. It operates its own fleet of trucks (Mercedes 15Mt capacity) to bring tea from factories to Kigali warehouses. It contracts with Rwandan transporters for delivery to the Mombasa auction floors, the second largest in the world. It is the owner of the product until sold there. A smaller amount is sold to ex- Kigali, in which case the buyer arranges transport. A foreign transporter, desiring to move tea, must sub-contract with one of the contracted transport companies

The normal contract rate for 1999 was $ 110/ton. However a temporary incentive rate of $ 120 is being offered in order to move a backlog of inventory. Tea quality deteriorates in storage. The trip takes 4-8 days. Since risk of theft in-transit is small, trucks carrying tea are usually exempted from the convoy system. The contracts specify that tea will be containerized to preserve quality and reduce losses in handling. However there is a deficit of empty containers, so much has to be carried bagged.

C. Perishables

There is very little movement within Rwanda of perishable agro products. This consists mainly of milk, fish, and meat. None are moved in vehicles equipped to keep them chilled. There are not ice plants, which could permit cooling at collection points and in transit in insulated vehicles. It is probable that a producer of perishables, whether for domestic consumption or for export (cut flowers, fruits and vegetables) will have to organize and invest in cooling infrastructure appropriate to his needs. MAGERWA may be asked to expand its airport cold storage or to concession this to a private operator.

D. Other products

Other major products selected for study include potatoes, sweet potatoes and beans. These food staples are sold widely throughout Rwanda at markets large and small. No particular transport constraints have come to our attention but some may become apparent as these commodity chains are studied in more depth.

SECTION III. RECOMMENDED INTERVENTIONS

A. Appropriate Technology in Rural Transport

In section I.A we noted that there were capacity problems in moving produce from farm gate to the nearest collect point where it can be loaded onto a motor vehicle. This is especially a problem in hilly and mountainous terrain, where to head-load for distances of several kilometers can be very time and energy consuming. Traditionally this burden has been accepted by women, who are already over-tasked with farm and household duties.

B. Policy Initiatives

1. Remove Regulation Requiring Tea and Coffee Exports be containerized

Each container has a net weight of 2 tons, and both tea and coffee has to be unstuffed at Mombasa, Dar, or Isaka, detracting from the effectiveness of the container, designed to facilitate inter-modal [truck to ship or truck to rail] transport. Moreover, the regulation has already been relaxed in the case of tea because of insufficient numbers of in-bound containers. Most importantly with enforcement of axle load limits, the trucks now providing transit service cannot utilize fully allowable loads. This is because a single full container will weigh up to 22 tons, wasting capacity, whereas the 2 previously loaded results in cargo weights substantially exceeding the limits. The only reason for the regulation is security of cargo from the point of view of customs.

The convoy system, which is already onerous for transporters, is designed to take care of this problem. It is therefore recommended that the regulation be lifted. Then shippers would have the option of loading to full truck capacity, either as one container plus break-bulk or entirely break-bulk. This would in part restore revenues previously enjoyed by transporters.

2. Allow Coffee to be Inspected at and Shipped from Processors

There seems to be no reason why the added handling and storage costs are incurred by the current requirement that all coffee lots have to be delivered to and inspected on ORIC premises. Lifting of this requirement would save costs for both processors and ORIC, and should result in the latter reducing its relatively high service fees which are a percentage of the price delivered NYC, thus fluctuating, rather than a flat fee.

3. Consider Removing ORIC-Tea responsibility for the internal transport service between factories and Kigali warehouses

An objective, full cost study of this transport service should be undertaken to evaluate its efficiency. If this work were contracted to the private sector, it would strengthen the domestic trucking business by guaranteeing a substantial volume of work year round. If several were contracted servicing different factories, there would be competition to provide a satisfactory level of service. The existing fleet, if in good condition, could be leased to operators. There could even be a transitional requirement that vehicles be serviced in ORIC's or the Mercedes agent's workshops, taking advantage of facilities in place, experienced mechanics and the economies of fleet maintenance. If this enterprise were privatized, the new owners would likely consider this option.

4. Seek opportunities to enable producers associations to own their own truck.

One means for ensuing that transport is available on demand to meet producers' needs is to help them obtain a small truck, primarily for their own use. There are issues of financial feasibility and ensuring that the vehicle is driven and maintained properly. Where used by producers of tea and coffee, and where organized in associations having a legal status, it should be possible to use the production as loan payment collateral, with payments going directly from the factories to the creditor. The volume threshold at which producers are likely to save money by operating their own pick-up would be in the range of 5-10 tons/month, depending on whether these volumes are carried year-round or seasonally. Additionally, the vehicle would likely serve as a passenger conveyance, earning extra income. More importantly it would improve members' access to social activities and public services, thereby increasing their well-being.

5. Commodity Export Identification and Logistic Study

The findings of this 1998 study, sponsored by MINICOM's PDSP, were endorsed at a workshop that followed report preparation. No implementation has occurred, though the proposals are still valid According to Mr. Syril, under whose direction the study was undertaken, implementation will be a high priority next year. Other policy reform priorities, under the World Bank funded export promotion project had already been set. Action on the subject study could not be incorporated under the ongoing project, which Mr. Ndengeyigoma directs, and which will be completed mid-2000.

The study included an analysis of the logistic chain for ten traditional and potentially new export products including tea, coffee, beans, fruits, flowers, vegetables, pyrethrum, hides and skins.

The logistic streams were examined under 5 sub-categories, namely**: production marketing, transport, trade, and regulations and standards.** Transport includes: domestic and international transport, storage in-transit, and freight forwarding.

ANNEX A: PERSONS CONTACTED

Bayigamba, Robert	Managing Director	Manumental
Bizimugu, Alexis	Representative	SwissCargo
Bugado, Aloys	Attaché for International Transport	MINITRACO
Clerebaut, Didier	General Manager	East African Cargo
Goubau, Robert	Responsible for Transport Sector	CEE
Guebels, Thierry	Director	PANALPINA
Haguma, Léon	Chief of Commercial Services	OCIR - Café
Kayijire, Agnès	Director of Industry	MINICOM
Kivunangome, Eugène	Director of Transport	MINITRACO
Mutijima, Jean Bosco	Operations Officer	Transintra Rwanda
Ndengeyingoma, Cyrille	Project Coordinator, PDSP	MINICOM
Nugawela, Patrick	Senior Technical Advisor	MINICOM / UNIDO
Rusanganwa, Xavier	Administrator	TRANSCORWA
Rwigamba, Wilfrid	License Section	OCIR – Café
Swany, Anbalagan	General Manager	RWACOF
Uwanyirigira, Marie Chantelle	Infrastructure Operations Officer	World Bank
Vandenkerckhove, Thierry	Interim Representative	Sabena