RURAL FINANCE INNOVATIONS (RFI) ESW

STUDY ON *CEDULA DE PRODUTO RURAL* (CPR) – *FARM PRODUCT BOND* IN BRAZIL

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STUDY ON *CEDULA DE PRODUTO RURAL* (CPR) IN BRAZIL[1]

Executive Summary

The principle objectives of this work were to analyze the innovative nature of the Cedula de Produto Rural (CPR) program regarding the following aspects:

- context for the development and implementation of the program (circumstances, events, drivers);
- exact nature of the program (business rationale, participants, key characteristics, operational structure, value added for customer);
- performance of the program (uptake, financial results, impact); and
- lessons learned (success factors, challenges, conditions for sustainability, replicability, and scalability).

CPR is a bond that facilitates the cash forward contract for agricultural and livestock production, enabling producers to collect resources or inputs beforehand by offering their production capacity as collateral to the financers. The performance analysis of CPR over its ten years of existence permits us to make the following evaluations: (i) the instrument has become a relevant finance and commercialization mechanism for producers of various sizes in Brazil, but especially between the middle- and large-sized producers; (ii) the instrument has proven to be extremely versatile, as much in relation to its nature (CPR – physical, cash settlement, or by index), as in relation to its utilization, which depends on the individual necessities of each producer; (iii) the consolidation of the instrument has allowed for the generation of new mechanisms derived from it, which permits the incorporation of new agents to the system and amplification of the liquidity of the operations. Indeed, over the last decade, approximately 130,000 contracts were formally negotiated thorough the formal banking system, which involved some US$ 2.5 billion. A much larger amount, though, are negotiated "under-the-counter", estimated by the market as up to US$ 5 billion yearly, over the last years. The main beneficiaries are the producers of soybean, coffee and cattle. Principal limitations are the still restricted use of agricultural insurance and performance problems due to price volatility and/or the high interest rate currently in effect in Brazil.

1) The Agriculture Sector in Brazil in Context

The agricultural and agroindustrial sector in Brazil easily has been one of the most spectacular examples of economic success over the past two decades. Agribusiness

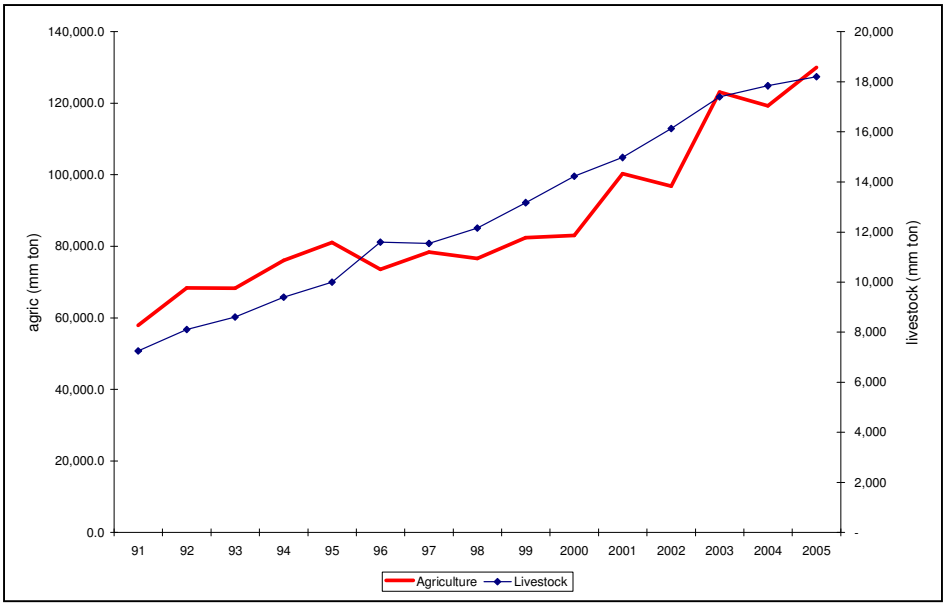
[1] The authors would like to thank the attention and aknowledge the useful commentaries received by the various public officials, private companies, and association representatives interviewed for this work - listed in the annex of this study -, especially the Ministry of Agriculture and Banco do Brasil for their support and information ceded. The authors extend their thanks to Bernardo Goncales (Banco do Brasil), Prof. Pedro Valentim Marques (ESALQ/USP), Luiz Claudio Caffagni (BM&F), Biramar Nunes (Ministry of Agriculture), and Carlos da Fonseca (Ministry of Finance) for their valuable comments during the first revision of this work. We would also like to highlight the magnificent support and contribution of Prof. Vania Guimaraes (UFPR/CEPEA-USP) and Ms. Verônica de Souza (Ministry of Finance), in supporting the organization of the mission in Parana and Brasília, respectively. Errors or omissions that remain are the sole responsibility of the authors.

represents almost 30% of the Brazilian Gross Domestic Product (approximately US $ 270 billion) of which 10% is directly derived from the agricultural sector. In addition to the production, similar performance can be observed in Brazilian agribusiness exports, which are responsible for approximately 40% of the list of Brazilian exports. Data collected by ICONE (2004) demonstrates that the economic surplus of agribusiness in Brazil was the largest among all of the countries surveyed (US$ 18 billion) and presented the second highest average annual growth rate in exports (6.3% per year) in the period between 1990 and 2003, second only to Mexico, among all the competitive countries in global agribusiness. It is important to mention also the level of diversification of the list of exports, Brazil currently being the world's largest exporter of soybean, sugar, beef, coffee, orange juice, and tobacco. It is also the second largest exporter in soybean meal, chicken, and soybean oil, and fourth in pork, corn, and cotton.

A variety of factors contribute to this performance such as remarkable productivity gains associated with the incorporation of technological development, investments in infrastructure, and the deregulation and the opening of commerce. Other aspects not directly linked to the sector, such as economic stabilization and fiscal adjustment of the country, foreign exchange policy, greater liberalization of world commerce, and a regional integration process are also pointed out as being fundamental for the sustainability of this process. As a result, grain production has doubled and that of livestock has nearly tripled over the past 15 years (see Graph 1).

Regarding population and land distribution, approximately 20% of the population lived in rural communities in 1996, and approximately 35% of labor was directly linked to agribusiness (Agriculture and Livestock Census). There were approximately 5 million farms, of which 50% consisted of small properties (smaller than 10 hectares), and other 40% were of medium size (between 10 and 100 ha).

Graph 1. Evolution of grain and meat production in Brazil between 1990 and 2004.



Source: Conab

Brazilian agricultural policy also has experienced a significant transformation that began in the seventies. Until that time, the policy model was based on a highly protected economy, was designed for the substitution of imports, had an abundant subsidized supply of credit, and used minimum price guarantees for commercialization. The fiscal insolvency of the State and the economic instability that marked the eighties, however, lead to a near collapse of the rural credit policy at the beginning of the nineties. The failure of that model of credit, associated with the rapid and unplanned economic opening of the nineties, culminated in a major crisis in the agriculture sector. On the one hand, the overall indebtedness of rural producers accumulated over harvests were made even worse by the economic-financial distortions resulting from a series of heterodoxy economic plans that artificially froze the farm prices and consequently elevated the real value of the debts. On the other hand, producers were unexpectedly hit with an abrupt shortage of official (and subsidized) credit, without which it was no longer possible to roll over debt[2].

With the retraction of this type of credit, the first cash forward contracts of soybean (called "green soybean") appeared at the beginning of the nineties. In this way, the multinational trading companies, which had access to cheaper international credit and to mechanisms of hedging, through contracts in the Chicago Board of Trade (CBOT)[3], began to play a fundamental role in supplying resources to producers, as a way to stimulate production and with this to guarantee the supply of raw materials for their exports and manufacturing plants. This mechanism was fundamental at the beginning of the model transition process, from the solely public financing system to a dual one, involving both the public and private sectors. The private sector, whose participation accounted for 20% of the total resources available to agriculture in the eighties, came to account for more than 70% of the total.

With the 1994 economic package, denominated the "Plano Real," and the consequent economic stabilization that it brought, a new economic cycle began, with emphasis on agriculture, and culminated in this remarkable performance in the sector over the last decade. In addition to the benefits of a stable economy, other factors contributed to this true shock of efficiency over the second half of the 90s: the first was the event of the securitization of past rural debts, for up to 20 years, which permitted "breathing room" in relation to the financial aspect of the activity; another important factor was the repositioning of the State, which began to act in a more localized and transparent manner, for example the launching of put options, in order to guarantee minimum prices for producers in certain regions (see Box below); and, in addition, the incorporation of the private sector in the process of financing and commercializing agriculture. However, safer and more formal mechanisms and guarantees were lacking, in relation to the latter for its intervention: as a result, the CPR was created.

[2] It is important to note that, until that time, Banco do Brasil, the largest official Brazilian bank, was, by far, the largest official credit provider, with a strong presence throughout the rural community in Brazil. The retraction of credit benefiting from official support made it necessary to quickly reevaluate the strategy of the bank in relation to rural credit.

[3] On these operations, the trading companies made cash forward contracts with the producers and at the same time, fixed the prices on the futures markets, in order to avoid price risks.

Brazilian Goverment Put Options contracts:

This kind of contract is issued by the government and establishes amount, quality and target price of the product, as well as local and period of delivery. With that, the government takes "short positions" – and, therefore, assumes the obligation to buy the production at the target price. The buyers, in turn, are the farmers; while government has the "obligation" to buy, farmers get the "right" to sell their production to the government at the target price, if market price is not more atractive at the period of delivery. For that, farmers pay a premium established by electronic auctions at the Commodity Exchanges throughout the country, which guarantess the required tranparency. It is basically a minimum price guarantee for producers, as they can benefit if prices go higher than the target price. It has been largely used for corn, rice, cotton and coffee in Brazil with very good results.

The main advantages of these contracts are:

- They decrease agriculture supply pressure during harvest time, thereby decreasing seasonality and price risks

- As compared to other similar government price-support policies, the government saves resources, as it doesn't have to carry over and manage stocks during harvest time. These tasks are transferred to private initiative. The government may also close its position just paying the difference between the target price and actual market price (plus some premium).

- Transparency is ensured as contracts are sold through nationwide electronic auctions. All the market agents know the regions to which the grain is to be delivered, the number of negotiated contracts, the target prices, and the premiums paid.

- Farmers become familiar with these typical private trade instruments, stimulating the usage of Futures Market Derivates.

2. Nature of the Innovation

The CPR is basically a bond issued by the rural producer, farmers associations, and cooperatives of production, in order to obtain financing for his production and/or avoid the risk of price fluctuation for the upcoming production.. The buyers of these bonds may be traders, processors, and financial agents – all of them having different motives.

In general terms, the main objectives of the CPR are:

- To finance production through the early selling of the product of the rural producer;
- To guarantee the supply of raw materials through early selling of agro-industrial production;
- To sell inputs through the exchange of inputs for farm production by companies dealing in inputs (barter operations);
- To provide alternative investments for funds.

The CPRs are used to negotiate agricultural products such as soybean, corn, or coffee, and livestock, mainly cattle. Some cooperatives and/or vertically integrated farmers are

also issuing the bond for semi-processed products, such as soybean meal, alcohol, and sugar.

The following section (2.1) describes the kinds of CPR currently available, and the section 2.2 presents the main aspects of the innovation.

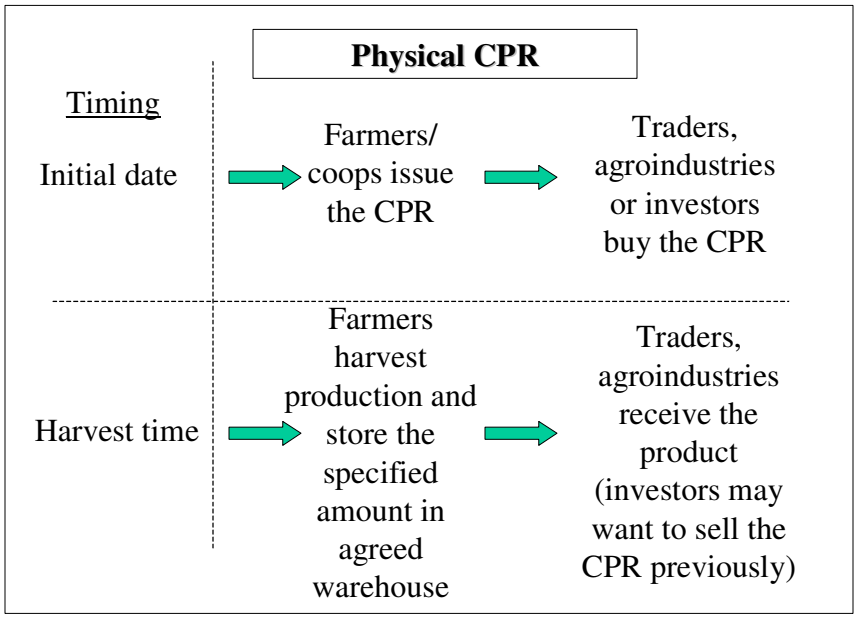
2.1. Types of CPR:

Currently, there are three types of CPR, the first being the Physical CPR, followed by the creation of Cash Settlement or Financial CPR, and finally the CPR indexed to futures markets.

a) Physical CPR:

The Physical CPR was created and is regulated by Law 8,929 of August 22, 1994. Upon the issuance and selling of the bond, the producer receives resources in advance and has the obligation of delivering the equivalent in rural production at an agreed location and future date. In this case, the physical delivery of the commodity is mandatory and, therefore, the bond should clearly define the total amount of product, its quality, and the local or warehouse to which it will be delivered. Premiums and discounts are expected in case of the delivery of different quality.

The figure below summarizes the scheme of the Physical CPR:



The CPR permitted not only crop financing but also the better handling of price risks to the producers, since their debts became fixed on the amount of product. This aspect attracted more and more producers, most of whom had been suffering over the previous years, due to the increasing disparity between their debts and the value of their products

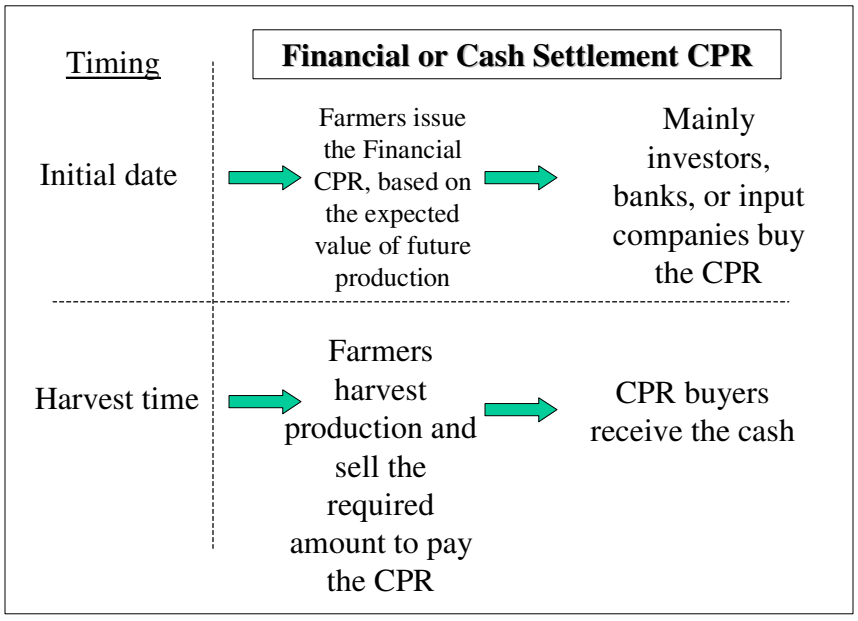
over the many years in which the Brazilian economy experienced three-digit annual inflation rates. Although the CPR was accepted well by stakeholders, a problem still persisted: the lack of interest on the part of large groups holding capital, such as pension funds, that were interested in diversifying their portfolios, and could provide more liquidity to the system and reduce operation costs. As a result, a new CPR was created.

b) Cash Settlement of Financial CPR:

The obligation of the physical delivery of the product to settle the operation discouraged the entrance of the financial system into these operations. If fund managers weren't able to resell the CPR to a trading company for a reasonable price (in order to leave its "long" position), they would take the risk of receiving, for instance, 10,000 heads of cattle or 20 trucks of soybean in front of their offices. Moreover, many of these operators were also prohibited by law from holding contracts or bonds that required physical delivery as part of their asset portfolios.

To solve this, beginning in February of 2001, Law 10,200 was enacted. This law created the CPR with Cash Settlement. This new instrument, though very similar to the previous one, presented one basic difference: its settlement did not call for the physical delivery of the product, although it did call for the securing of the farm product, in the same manner that the Physical Delivery CPR did. This allowed for a huge increase in operations through the incorporation of new financial agents. This instrument increasingly has been used with predetermined interest rates and has been useful in collecting resources for producers and cooperatives.

The figure below summarizes the scheme of the Financial CPR:



c) CPR indexed to futures market:

Finally, as a further improvement to this last instrument, Banco do Brasil created a financial CPR, the settlement of which would be made according to the value of a determined price index that was transparent and that had widespread circulation (CPR indexed to futures markets). In this case, the settlement is based on the amount of production established on the bond, multiplied by that price practiced at the time of settlement: this price can be, for instance, the quotation of the commodity negotiated on the local or foreign futures market prices[4] or the price calculated by a reliable source, such as a University. In most cases, the price should be the one verified on the eve of the settlement date of the contract. This instrument incorporates into one product the advantages of both its predecessors: on the one hand, it guarantees to the seller the indexation of his debt to the value of the product (the advantage of the physical delivery CPR), on the other, it continues to attract the investor since settlement is done financially (the advantage of the financial CPR). Another indirect benefit is the increased interest in transactions in the futures market since this is one of the potential indicators for settling these contracts.

Various potential forms of operations exist. Annexed to this report are descriptions of types of operations, as well as the role and benefit that each of the potential agents of the system offers in relation to both the physical and financial CPR.

2.2. Characteristics of the CPR

The most important attribute of the CPR is, by far, the reduction of risks to the buyers. As stated in the law, CPR is a bond that provides for out-of-court dispute settlements; in other words, the bond guarantees rapid execution in case of non-performance or breach of contract on the part of the bond issuer, and therefore avoids endless discussions in the courts about the merit of the loan. This is definitely a major incentive for the buyers of CPRs, as it reduces risks of moral hazard and it speeds the recovery of the loans, when needed. In many cases, a bank guarantee is also required, which decreases risks and, consequently, reduces costs of the operation. . Finally, the CPRs should always be registered with the Register of Deeds Office together with the registration number of the property where the crop was planted. This generates a control over how many CPRs are issued on the same property. The market monitors the production capacity of a determined property with the volume of production given as collateral to creditors. The size can be easily obtained at the National Institute of Colonization and Land Reform (INCRA). The information is reliable and available to the public for consultation.

Another important factor in the development of the CPR is due to a shift in how Banco do Brasil has come to view the CPR. The bank now views the CPR as an opportunity to

[4] Ideally, this hedge should be done in local futures markets in order to minimize basis risks. Currently in Brazil, it is quite possible to use this source for coffee and cattle, as these two contracts have had a reasonable liquidity on the Brazilian futures market – BM&F.

improve the performance of their portfolio on rural credit through regulating and the replicating the model used with soybean for other cultures/commodities. This was particularly important at a time in which a large part of traditional guarantees continued to be linked to the renegotiation of the agricultural debt. Therefore, the CPR, through its nature, reduced the risk not only of the trading companies and other private agents, but also of the financial institutions that directly financed the producer or offered guarantees for the operations. This was fundamental in the dissemination of the instrument given the widespread reach of Banco do Brasil in rural communities[5]. Other characteristic important to increase the liquidity of the system resides in the fact that the bond is endorsable to third parties.

An environment that would guarantee the visibility, transparency, and security of the operations was still lacking. These are fundamental requirements for incorporating financial agents, as well as for reducing the costs involved. At the initiative of BM&F, (Brazilian Futures Market) and seven regional commodity exchanges, the Brazilian Commodity Exchange (BBM) was created, which has as its objective the generation of an electronic registration environment and clearing house for the transactions with agricultural contracts including the CPR operations. This system permits electronic access to information and business opportunities to nearly 400 traders throughout Brazil. Through this system, it is possible to offer and buy contracts, register the operations, and guarantee the custody of the bonds. Up to the end of October 2004, nearly 70,000 contracts had been registered with BBM, with a total financial volume of approximately US$ 900 million (in little less than one year of operation). The BBM does not eliminate the requirement of registering with the Register of Deeds Office but it does increase agility of over-the-counter transactions thereby providing transparency, reliability, and trust to the secondary market of the CPRs. One of the major advances of the BBM system is that it permits potential investors to see the bonds that are guaranteeing their operations.

Another important aspect in the business environment is that it may facilitate the entrance of credit insurers that guarantee the performance of the CPRs and, therefore, spread the distribution of risk among the agents of this market. In this sense, it is important to note the state control of agricultural reinsurance in Brazil. The state reinsurer, IRB, in no way contributes to the evolution of this market, which is fundamental to the sustained growth of Brazilian agriculture. Except in the case of funds, the credit insurance is not obligatory in the transactions with CPR whether they are financial or physical, but the market as a whole has strongly increased its demand for mechanisms of risk mitigation, especially for default. Today, credit and guarantee insurers' participation is well below the total volume transacted in CPRs in Brazil – lower than 0.5% of the total number of transactions.

Different costs are also associated to the various alternatives of contracts. In Table 1, the associated costs of each of these operations are noted.

[5] Banco do Brasil currently accounts for approximately 60% of the total rural credit provided by the banking system in Brazil.

Table 1. Costs associated with the principal alternatives of financing crops

	Cost of Operation	**Comments**
Cash forward contract for soybean	Opportunity cost of capital of the companies + rate of risk of the operation + spread for base variation + Register of Deeds Office fee (varies by state 0.2% to 1%)	Cost is not transparent to the producers; It represents, simultaneously, financing and insurance of pricing to the producer.
Physical CPR	Opportunity cost of capital of the companies; plus guarantee or insurance rate; plus brokerage fees: 0.3% to 0.5%; plus contract registration: 10% of the value of the brokerage fees + registration with the Register of Deeds Office (varies by state: 0,2% to 1%)	The fee generally is lower than that of cash forward contract since the operation is more competitive and involves lower risks (due to the legal nature of the CPR). It represents, simultaneously, financing and insurance of prices to the producer.
Financial CPR	Cost of 21% to 25% per year, when bought directly by the banks[6]; (Higher if the bank only gives the guarantee) + registration with the Register of Deeds Office (varies by state 0.2% to 1%)	Higher rate than that of rural credit, but the rate is fixed (the producer does not run the risk of floating rates, but runs the risk of price fluctuations); Less bureaucracy for the producer when compared to rural credit.
Rural credit with floating rates	Cost of long-term interest rate (TJLP) (at present, this rate is 9.75% annual percentage rate) + 6% annual percentage rate	Banks run higher risks in case of breach of contract since ordinary collection is slower than that of the CPR (for collecting the debt).

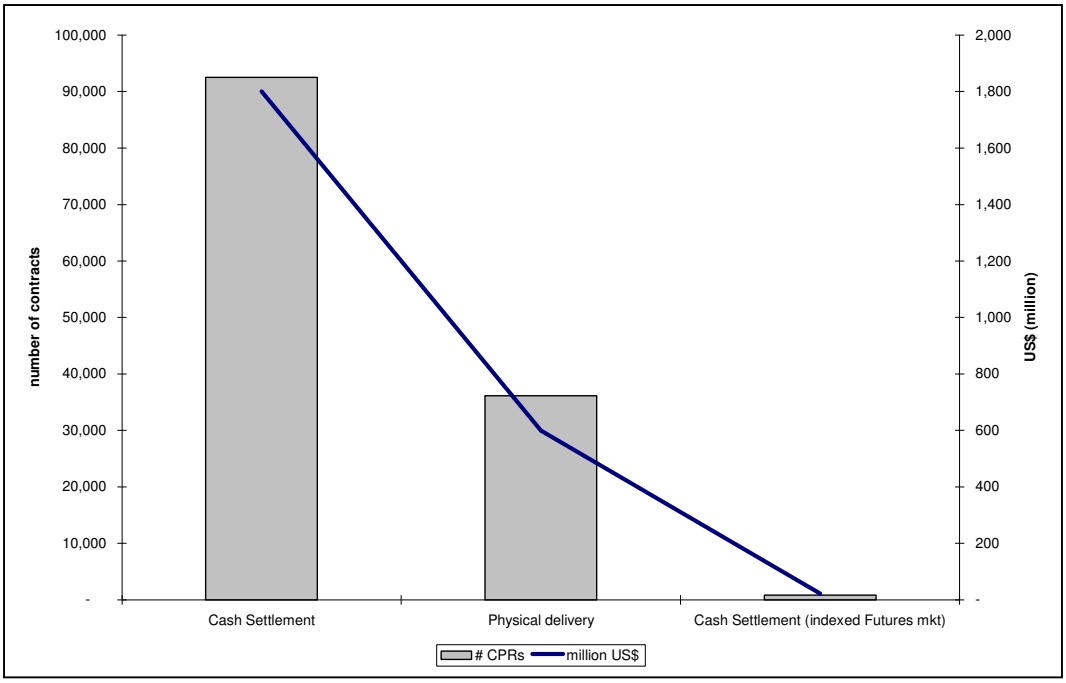
3) Performance analysis of the CPR

During these ten years of operations, the use of the CPR has steadily increased. The formal system has registered approximately 130,000 contracts, which, together total US$ 2.5 billion, an average of US$ 20,000.00 per operation. Just during the first ten months of 2004, around 40,000 CPRs had been registered. It is also important to note, the low frequency of indexed operations. This is due to the imperfection of the hedging of some commodities or to the combination of low prices that inhibit pre-fixing values. The predominance of financial CPR operations is presented in Graph 2. It is worthy of note that, according to Banco do Brasil, the level of default in this period was a mere 0.78%, which permits a significant reduction in costs of the operation due to the low transaction risk.

The market estimates that there are approximately US$ 5 billion in additional CPRs that are not registered per year, also called "under-the-counter" CPRs. In these cases, the bonds are issued to reinforce the guarantee of credit operations between private individuals.

[6] It is important to note that although these rates may be considered extremelly high for developed country patterns, it is much lower than the interest rates currently being offered on the Brazilian market.

Graph 2. Number of negotiated CPR contracts and total value (in millions of US$) by type of CPR for the period covered between 1994 and 2004.



Source: Banco do Brasil

A vision of the producers from the Brazilian state of Parana

In carrying out this study, a group of grain producers in the municipality of Maringa in the Brazilian state of Parana were interviewed for a practical assessment.

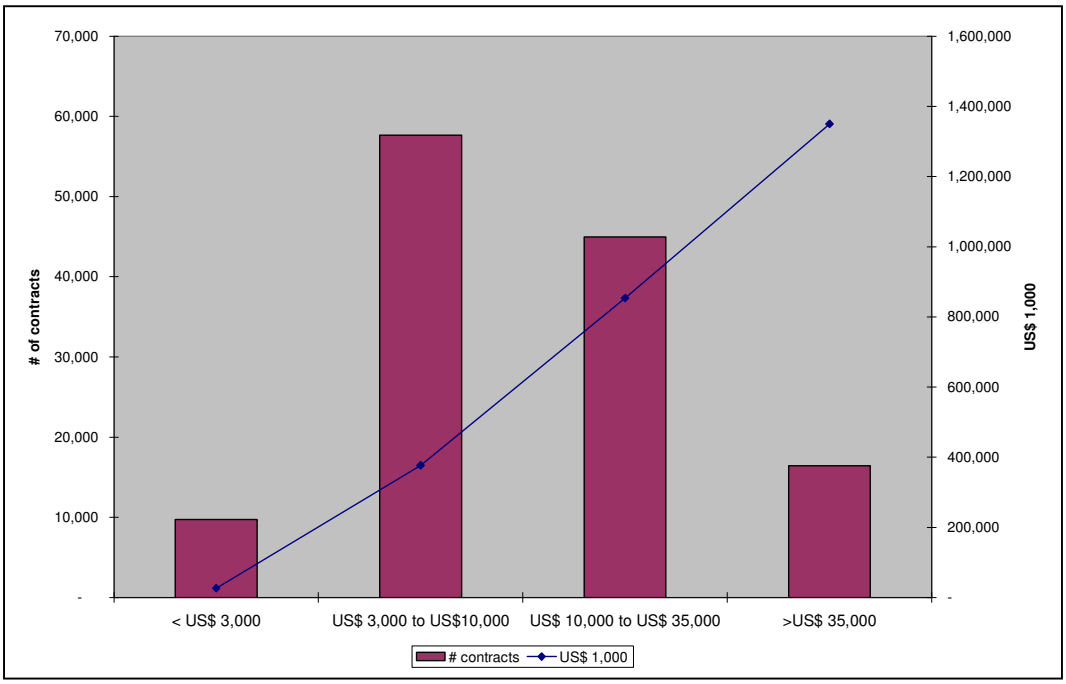
Some leading characteristics of the state of Parana are its fertile soil, its cultural diversity, and the importance of agriculture and agribusiness to its economy. It is one of the largest producers of grains, fiber, and cattle in Brazil. Its strong and dynamic cooperativist system allows for a better organization of its producers, made up of small, medium, and large producers. It is the "birth place" of the no-tillage system in Brazil and provides an example to the world in the implementation of micro basin systems of soil conservation.

The producers interviewed, who had, on average, 100 hectares cultivated, highlighted the benfits and the versatility in the utilization of the CPR. If the expectation of the market is of increasing prices, the producer can opt for the financial CPR (without indexation); in other words, get the resources at a fixed rate and speculate with the price of the product over time. If the expectation is a decline in prices, there is a preference for the physical CPR or financial indexed; in other words, the producer establishes the price or the exchange ratio of inputs/product beforehand.

The principal obstacles are the high cost of guarantee and registration with the Register of Deeds Office, the lack of storage facilities in general in the region (in the case of the physical CPR) and the lack of transparency of the values involved in the contracts, in the case of exchanges of inputs for products. As is true throughout the rest of the country, there is a preference for the financial CPR, especially in years when commodity prices are not really attractive to the producers, in this period of initial planting.

Graphs 3 and 4 present, respectively, the total number of operations by value of the contracts and its evolution over the period. The analysis of these two graphs demonstrate that (i) there is a predominance of contracts in the US$ 3,000.00 to US$ 10,000.00 range, which represents approximately 45% of the total number of contracts, and (ii) this is one a category that presents one of the largest growth rates in recent years. Merely to demonstrate, considering an average cost of soybean production of US$ 400.00 per hectare and assuming that the producer sells 30% of the crop in advance[7], the values mentioned above (from US$ 3,000.00 to US$ 10,000.00) would be sufficient to finance between 25 to 83 hectares, which shows that the medium-size producer has effectively been the greatest beneficiary of the CPR system. It is interesting to point out that this affirmation, in a certain manner, contradicts the perception of diverse agents interviewed for this study, which is that the greatest users would be concentrated almost exclusively in the large producer segment.

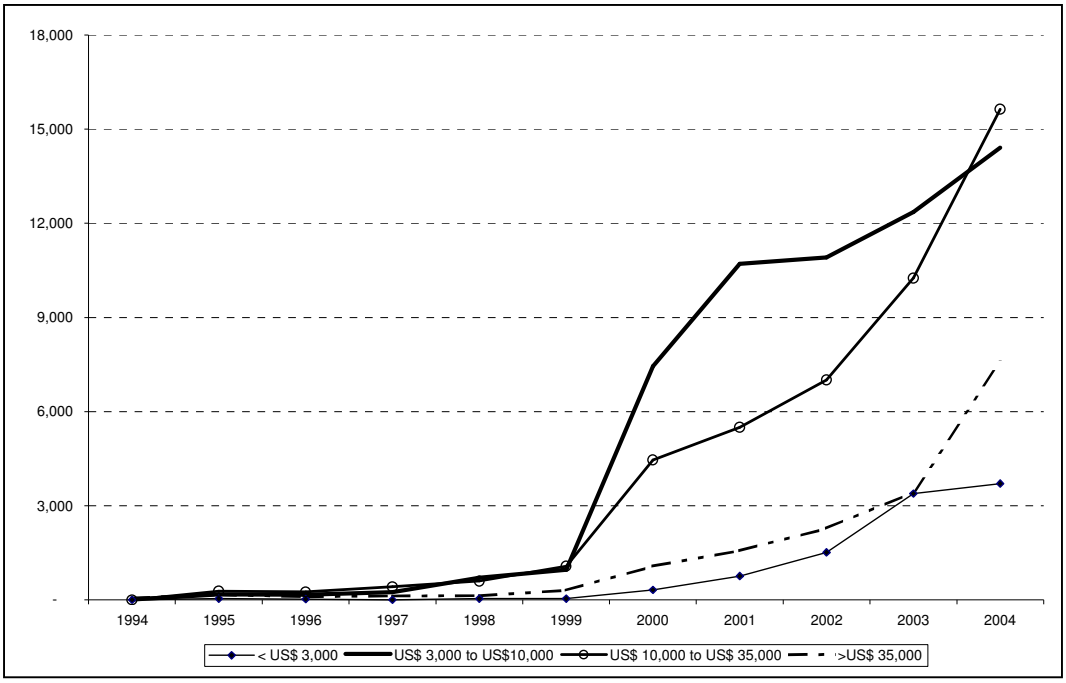
Graph 3. Number of contracts and total values negotiated of CPR between 1994 and 2004.



Source: Banco do Brasil

[7] This assumption of 30% is based on one or more of the following factors: (i) the producers usually compose their working capital requirements with more that one source, such as the formal credit (which is usually not enough for their individual needs) and their onw resources, (ii) the producers may want to distribute their sales according to their demands during the season, and (iii) the producers may not be able (or may not want) to commit all his expected production in advance. On the one hand, this would increase his credit risk for the CPRs buyers and, on the other, the producer usually prefers to speculate with part of the production.

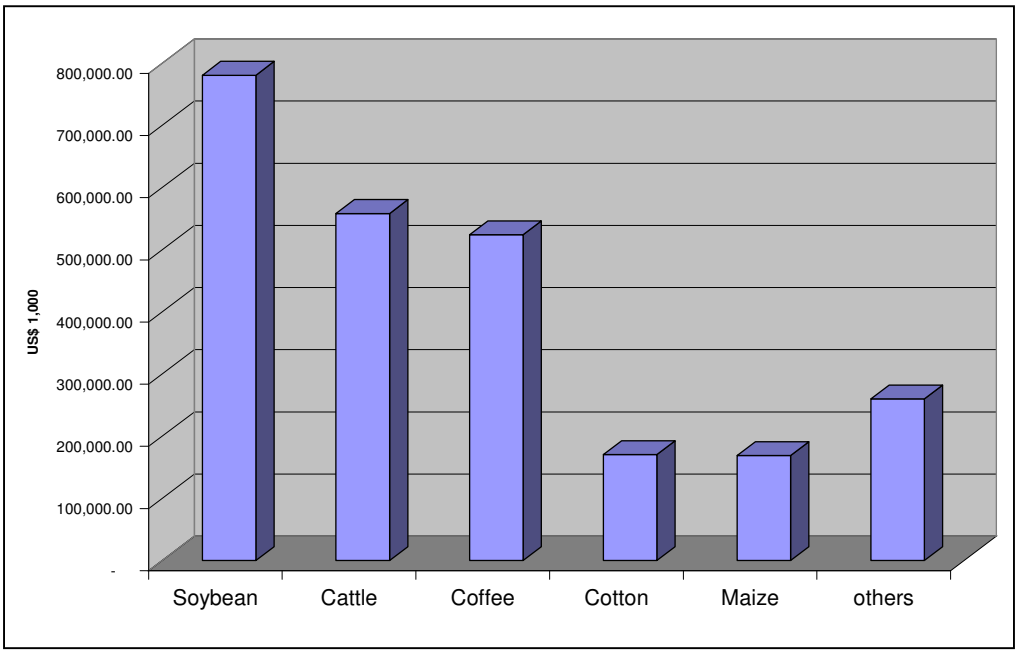
Graph 4. Evolution of contracts according to value between 1994 and 2004.



Source: Banco do Brasil

Another important analysis is that of the association between the most negotiated commodities and the reasons for this preference. Graph 5 identifies the most negotiated products, namely soybean, cattle, and coffee, which, together, represent nearly 65% of the total deals. One common characteristic of these three products resides in the fact that there are three commodities that present a better indication of future prices if compared with the other commodities in Brazil. In fact, price behavior of soybean in Brazil has a high correlation with the futures market of the Chicago Exchange (CBOT), whereas the last two (coffee and cattle) present a market relatively active and with liquidity in the Brazilian Futures Market, BM&F. This characteristic easily reduces risk and prices, and therefore, is a decisive factor in the success of this instrument.

Graph 5. Financial volume of negotiated CPRs by product



Source: Banco do Brasil

Finally, special attention should be given to the fact that new instruments, derived directly from the high performance of the CPR, have been being developed, which should strengthen and consolidate its use even more. If the trend of falling interest rates, on the one hand, has a positive effect on the diversification of the portfolios of the financial agents, caused by the loss of attractiveness of government bonds, on the other, it makes the acquisition of CPR through trading companies and input companies, which have been benefiting from the actual interest rates, less attractive. In this way, the creation of more attractive conditions for the entry of financial agents is fundamental for the sustainability of credit operations and commercialization for agriculture (See box below).

BOX: New bonds and business opportunities

At present, a series of new products promises a new dynamic in the commercialization and financing of agriculture.

The first of them, object of a new law published in last October, regulated the Farm Deposit Certificate (CDA) and the Warrant (WA) within the framework of the new Law of Warehouse. These bonds permit the offering of funding to comercialize crops, thereby making it unnecessary for the producer to sell his production at the beginning of the harvest to settle his financial CPR. The harvested grain is stocked in a warehouse or elevator facility and serves as a guarantee to the financer. Subsequently, the producer, under more favorable price conditions, sells his product thereby settling his debt with the financer and paying the guarantee in full.

Another measure that should bring important improvements to the CPR mechanisms concerns the new bonds of comercialization recently announced by the Brazilian Minister of Agriculture. Among these is the Certificate of Receivables of Agribusiness, or CRA. This credit instrument, which will be issued by cooperatives and storage facilities, commercialization, processing, and agricultural input companies, will have the CPRs as a guarantee; in other words, it will function as an envelope for the commercialization of CPRs from diverse producers. It is expected that the CRA can increase system liquidity, providing the following benefits: (i) the finance agents and investors will begin to buy on a business-risk rather than a producer-risk basis, which will permit a better and more agile evaluation of credit risk involved (through the companies financial statements); (ii) the risk begins to be spread over a higher number of producers and regions, thereby diminishing the risk created by climatic uncertainties; (iii) these companies can act as first-loss, thereby increasing the guarantee of the system; (iv) finally, this instrument can be a fundamental factor in reaching the smaller producers through the characteristics already mentioned.

The Brazilian government has already signalled that it will offer exemption on the Tax on Financial Operations (which can reach up to 1.5%), which will increase the attractiveness of the bond and represent one more comparative advantage when the investor analyzes his investment portfolio. It should be noted that during a tendency of declining interest rates, investors tend to look for new investment alternatives, which, at present, strongly favor government bonds.

4. Conclusions

Diverse factors were critical to the success of the CPR in Brazil. Among these are:

- The substantial reduction of subsidized credit mechanisms, which gave incentive to private industry to enter into the system;
- The legal nature of the instrument, which amplifies the capacity of the judicial system's ability to enforce the law, which is traditionally relatively weak and slow; as mentioned above, the bond guarantees rapid execution in case of non-performance or breach of contract on the part of the bond issuer, as it provides for out-of-court dispute settlements;
- The adoption of the instrument by Banco do Brasil as a way to diversify its performance in the credit system; the fact that BB's branch network is widespread throughout rural areas, and due to its rich risk evaluation system of the producer based on long historical data, was fundamental in the reduction of transaction

costs of the operations. It provided the required scale to reduce transaction costs and justified larger investments on IT systems. ;
- A process of coordination of the agents of agribusiness;
- The possibility of an indicator of future prices, established by the expectation of the market agents (principally through futures markets) facilitates the establishment of present prices on a transparent manner. It also allows CPR buyers to hedge at the futures market to avoid price risks.
- A relatively well-developed and robust financial system;
- The existence of a warehouse system, even though it is poorly distributed geographically;
- The possibility of quality standardization of the products and market liquidity. This system may be either public or private; however, it must be reliable, feasible and measurable.

Principal challenges to the development and strengthening of the CPR are:

- Cultural resistance to early selling; the rural producer, by nature, is fundamentally a speculator;
- The creation of a business environment that is transparent and that is adapted to the conditions of the business, solved by the creation of the BBM.

The principal lessons of the CPR are:

- Effectively, the guarantee of the product tends to be more acceptable than traditional guarantees; banks and companies prefer higher levels of liquidity in guarantees;
- The producer has begun to better administer the price risk and has begun to look at future prices;
- Cultural resistance should not be underestimated; it should be taken into account that it is a slow process and depends a great deal on vertical and horizontal coordination within the supply chain;
- The dynamism of the markets and of the financial environment requires that there be constant improvement and the creation of new instruments that take advantage of new market opportunities;
- Problems of breach of contract can occur, principally with the physical CPR when prices rise; and, because of this, it is necessary that the judicial sector be prepared (based on themes such as hedging and agricultural commercialization) to guarantee success of the suits;
- Transparency and competition in the process were crucial to decrease interest rates (this was made possible through the electronic auctions and the BBM);
- Finally, it is essential that more sustainable and accessible agricultural and credit insurance (reinsurance) mechanisms be developed. This challenge still remains unmet in Brazil.

Finally, the conditions for sustainability, replicability, and scalability of the CPR are presented:

a) Sustainability: one of the conditions of sustainability is based on the individual benefits of the producers, who begin to count on additional sources of financing and on risk management. Moreover, we should mention the effect of the reduction of the seasonal effects of prices, as well as the currency fluctuation, more sensitive particularly in emerging economies. In other words, currency exchange shocks and global volatility of the agricultural prices have their effects on the producers weakened when they opt to sell in advance part of their production. Another important contribution for the sustainability is the attraction of foreign investors, who depend on the liquidyty of the system, the cost of doing business and and on an enabling environment.

b) Replicability: the conditions to enable the development of the instrument are, among others: that there be a combination of high agricultural demand, with a latent demand for credit, and a low public capacity of financing; a relatively efficient legal/judicial structure; a developed financial system; products with indicators of future prices (preferably commodities negotiated in futures markets with some liquidity – desirable characteristic, but not obligatory) and that can be standardized;

c) Scalability: The conditions of scalability are directly associated to: the creation of mechanisms to incorporate middle- and small-sized producers (for example, the CRA, described in the Box); the existence of capital and a well distributed physical structure and logistics for market integration; and furthermore, the existence of liquidity in the agricultural markets.

To conclude, the human aspect must also be highlighted in the development of the CPR: its success is surely a consequence of the persistence and creativity of those who study and execute the formulation of agricultural policies of the country. The markets are extremely complex and dynamic and their correct evaluation and perception of the necessities and transformations are key factors in the development and sustainability of the model. Finally, without the engagement and commitment of the sectors involved in the process, we would unlikely be celebrating ten years of success of the CPR today.

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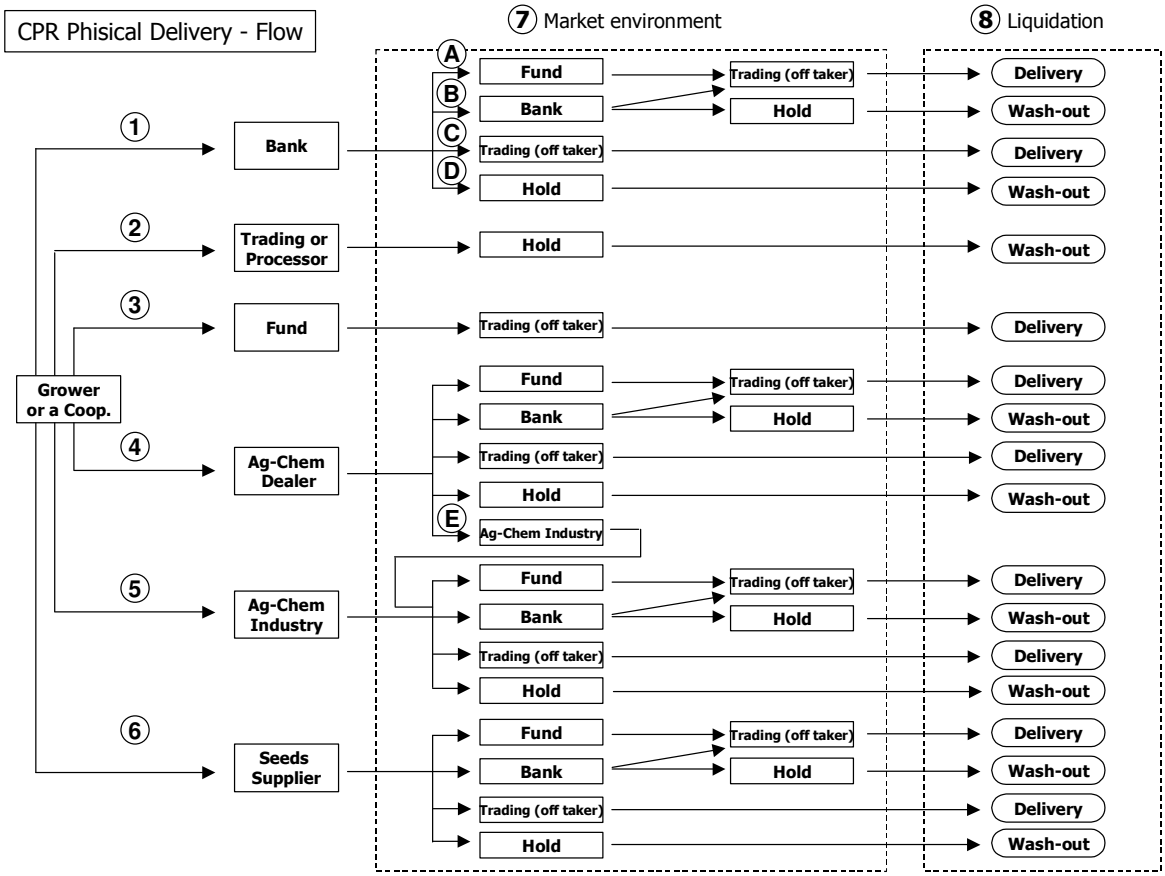
Persons met during the mission:

Ministry of Agriculture	
Celio Porto	Head of Cabinet of the Minister of Agriculture
Ivan Wedekin	National Secretary of Agricultural Policy
Regis Alimandro	Advisor to the Secretary
Biramar Nunes de Lima	Advisor to the Minister
Wellington Soares de Almeida	Advisor to the Secretary
Savio Pereira	General-Coordinator of Food Supply
Ministry of Finance	
Gerardo Fontelles	Minister Advisor for Agriculture
Carlos Fonseca	Head of Agricultural and Agro industrial Products
Evandro Fazendeiro de Miranda	Head of Agricultural Policy
Gilson Alceu Bittencourt	Minister Advisor for the Rural Development
Gustavo Bracale	Advisor
Kichiro Mandai	Advisor
Banco do Brasil	
Jose Carlos Vaz	Executive manager
Victor Hugo	Advisor
Farmer Representatives and Cooperatives	
CNA BRAZILIAN FARM BUREAU Getulio Pernambuco	Head of Economic Department of the (CNA)
COCAMAR (Cooperative) Jackson Silva	Financial specialist
FARM BUREAU OF MARINGA: Claudio Schmitt, Dirceu Aceti, Fabio Kuroda, Itamar Fabri, Jose Borghi e Marco Bruschi Neto Salvador J. M. Stefano Julyerme M. Tomin	Producers Regional supervisor Economist
Commodity Exchange and Business Environment (BBM)	
Edilson Alcantara	Executive Director
Roberto Machado (Bob)	Advisor
Marco Antonio Ribeiro	Regional Director
Private Sector	
MAPFRE (Insurance company) Andre Corsini Afonso Miguel Gallego	 Commercial manager for agribusiness Deputy-Director for Rural insurance
RIO BRAVO (Fund management company) Marcelo Michalua Luis Claudio Garcia de Souza	Director
BANCO RURAL Glaucio Toyama	Agribusiness Superintendent
BASF Patricia Ambrosio Marco Aurelio Ribeiro	Business Development Manager Trader
HEDGING GRIFFO Mauro Kochen Flávio Pereira	Market Managers
SICREDI (financial cooperative) Gilberto Rauber	Advisor
SWISS RE Rogerio de Castro	Senior Analyst - Agribusiness
ICONE Andre Nassar Maria Helena Tachinardi Joaquim Cunha	Executive Director Director of Communication Economist

ANNEX

Physical CPR: Flow diagram and description of the role of divers agents:



Description of the principal transactions carried out by the market having as a base the CPR of physical delivery:

1) The issuers want to capture bank resources through the cash forward of their production. In this case, the correct thing to do would be to pre-define the prices which obligates the buyer of the CPR (the bank) to hedge in the futures market or pass the CPR to a trading (off taker) who would offer a pre-defined value for the product that is the object of the CPR (hedging against the physical market) and would remain with the price risk. As it is not always possible to make a hedge of quality in some commodities, a modality of buying back the bond was created. In other words, the producer does not effectively sell his production but does offer a guarantee against a loan. This is not the original objective of the CPR, but despite this, this

operation has been useful in leveraging resources for producers. Going back to the flow diagram, the bank can:

a) Transfer the CPR to a fund, which, due to regulations of the *Commissão de Valores Mobiliários* (CVM) (The Securities and Exchange Commission) cannot keep a physical CPR in its portfolio; in this case, this fund should operate in partnership with the trading (off taker).
b) Transfer to a second bank that can, in turn, operate as a trading in partnership.
c) The bank can sell directly to a trading, which, upon receipt of the grain, can settle with the bank or in some cases can assume the credit risk and pay the bank before the issuer delivers the product.
d) The bank can simply wait until the maturity date of the CPR and its financial settlement (wash-out). In this case, the issuer pays off the loan and withdraws the CPR.

2) In this case, the issuer offers the CPR to an agent that depends on the delivery of the product to operate his business. The processors and the trading companies operate more frequently with this modality, selling its foreign exchange contracts for exportation to provide capital for the early buying of production[8]. Except on rare occasions, these operations are settled by the delivery of production. Producers, in turn, will receive the payment upfront to buy inputs.

3) As previously described, the funds can operate with the physical CPRs only indirectly, selling these bonds to trading companies partners (off-takers) and operating other types of contracts with them to guarantee the loan that will be given to the issuer.

4) The distributors of inputs can generate CPRs when selling their inputs to the rural producers. In the case of the physical delivery CPRs, they are originators of the exchange of inputs for grains and fibers. These operations have basically two objectives for the distributors of inputs: to reduce credit risk, which, under normal market circumstances[9], can drop to less than half in comparison to sales without guarantees. Create a differentiation in its sales adding services of hedging.

   In this case, in addition to the sales already described above, the input distributor can sell the CPRs to their suppliers, in particular the companies of agrochemicals that, in many cases, require the selling of CPRs to open new lines of credit, since

[8] This may be considered a typical Brazilian operation. In Brazil, all the currency exchanges caused by exports or imports are made through the Central Bank, where all these operations are registrered and centralized. When a company exports any good, the foreign currency should go to the Central Bank, who converts it to the local currency, based on the daily exchange rate, and pay the company, through the commercial banks. On the abovementioned operation, the companies are allowed by the Central Bank to receive cash in advance from local banks (therefore, before the physical exportation) based on that day's current exchange rate. In short, this is basically a hedge against future exchange rate fluctuations.

[9] In the case of high increases of prices (>20%) problems can occur in relation to breach of contract due to price, which should be mitigated by intensive monitoring in these cases.

approximately 90% of the market of agrochemicals operates under “harvest-period” payments for their distribution channels. This occurs with some of the sales since not all sales of the channels can count on the use of CPRs.

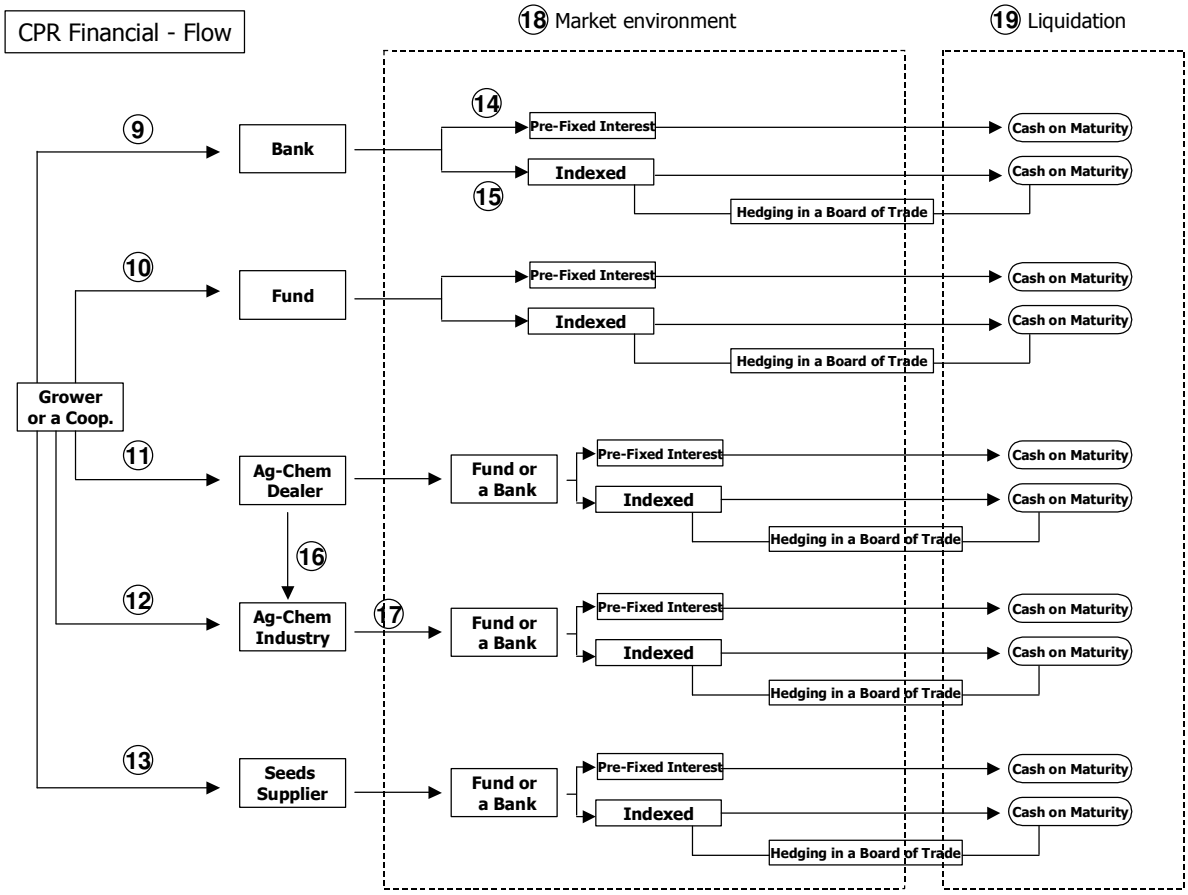
5) The input industry use CPRs to improve the risk profile of its operations and also to offer hedging services and to differentiate its sales as much for its distribution channels as for its direct sales to large producers. As the network of input distribution in Brazil is composed of local companies, and these companies do not always have capital that is compatible with the lines of credit contracted against suppliers, the agrochemical industries have come to require the transfer of the CPRs to redistribute the risk throughout the producer base. In this way, risk is substantially reduced in the distribution channels.

6) Does not differ from the flows already described above.

7) Practically all of the CPRs issued are registered in local Register of Deeds Offices together with the registration number of the property where the crop was planted. .

8) The settlement of these operations is accomplished in two ways: by physically delivering the merchandise by the due date to the location stipulated and with the level of quality defined in the CPR, or by what is called in the physical delivery of soybean a “wash out,” in which there is a buy back of the obligation to deliver with the corresponding financial settlement of the amount owed. In theory, this would not be an operation foreseen in the scope of the Law that regulates the CPR, but the market created this variation in due to the necessity already mentioned above, which can be better met through the use of the financial CPR, which will be described below.

Financial CPR: Flow Diagram and description of the role of diverse agents:



Description of the principal transactions carried out by the market having as their basis the physical delivery CPR:

9) The issuer captures resources in the bank and delivers the Financial CPR (CPR-F) as "payment." At this moment, *how* settlement will be made is defined – if it will be by an index, coffee, or cattle at the BM&F or by the price of corn referenced at a local information agency, etc. The other alternative, without indexation, basically defines the currency Brazilian Real R$ + pre-fixed interest or a pre-fixed value at the maturity date of the CPR-F.

10) The same procedure described in item (9) above, but in the case of the funds, the local Securities and Exchange Commission determines that this cannot run the credit risk of a non-financial entity, therefore it is obligatory that a financial entity give a guarantee or that guarantee insurance is contracted.

11) The issuer can acquire inputs from a distributor by delivering an indexed CPR-F to simply guarantee the line of credit. Distributors rarely use the CPR-F.

12) In the same way described in item (5) the agrochemical industry can use the CPR-F in marketing campaigns though the indexation of its sales with the agricultural commodities produced by its clients and producers. These campaigns are offered directly to the producers or through their distributors. Campaigns of option or indexation on the part of these companies are increasingly common. The objective, as described in item (5) is to reduce credit risk, to aggregate hedging services differentiating the sale and the demand for a natural hedging for the local currency.

13) Same as last description

14) When the bank pre-fixes the interest, there is no necessity of hedging and the operation appears more like a financing with the guarantee in production or a commercial paper.

15) The indexed operation requires the management of risk through hedging in a futures market or an operation on terms of the same nature but with inverted exposition with another client (more complex). Either way, the financer (bank or fund) should transfer this risk to the market.

16) Until now, the distributors only operate with the CPR-F, through orientation of the suppliers in specific sales campaigns. Therefore, this transfer is due to these operations.

17) In this case, the raw materials and supplies industry can be looking for resources at local rates or might want to transfer part of its receivables to the market to meet its goals in reducing exposure. Normally, the large multinationals look for the second alternative, which can be met by a credit and guarantee insurer without the necessity of funding.

18) Basically, the business environment is the same as described in item (7).

19) The settlement should always occur on the date of settlement of the CPR-F instead of the CPR, which is settled gradually within a period that normally coincides with the harvest. On the date of the settlement of the CPR-F, the calculation of the index should already have been done. In the same way, if the operation were post-fixed financing, it is on this date that the value to be paid should be defined.

As much in the case of the CPR as in the case of the CPR-F, once the bond is settled, the creditor should register the payment with the Register of Deeds Office or send a document so that the issuer can proceed to prove that settlement was made. If the operations were registered with the BBM, the creditor of the bond should register settlement electronically so that the custodial bank of the CPR can return it to the issuer.