

Measuring business climate for agriculture and forest investments in Angola and Brazil¹

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Abstract – For investments in agriculture to be attractive, they need to be profitable. This profitability depends not only on the intrinsic nature of the investment project and the capabilities of the promoter, but also on the conditions offered by the business climate in the country, sector, and local factors that influence the costs and benefits of investments. This article presents a model to measure the business climate for agriculture investments and uses the examples of Brazil and Angola to illustrate its use. Although both countries have major opportunities to improve their performance and become more attractive to investors, Angola faces bigger challenges. The article also discusses some policy issues that affect factors that can improve the business climate for agriculture, forest, and rural investments in Brazil. To be more useful to investors, it is recommended that the detailed development and calculation of an Agriculture Investment Attractiveness Index, as an international public good, be undertaken periodically not only for Angola and Brazil, but also for other Sub-Saharan African and Latin American countries. For the case of large countries with several administrative and/or geographical regions, such as Brazil, it is also useful to create and calculate a similar index to measure the business climate at the sub-national level.

Keywords: agriculture, Angola, Brazil, business climate, development, economics, forestry, index, indicators, investment, policy, private sector, rural.

Medindo o clima de negócios para investimentos em agricultura e florestas em Angola e no Brasil

Resumo – Para os investimentos em agricultura serem atraentes, eles precisam ser rentáveis. Essa rentabilidade não depende apenas da natureza intrínseca do projeto de investimento e da capacidade do promotor, mas também das condições oferecidas pelo clima de negócios no país e no setor, além de outros fatores locais que influenciam os custos e os benefícios do investimento. Este artigo apresenta um modelo para medir o clima de negócios para investimentos agrícolas e usa os

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exemplos do Brasil e da Angola para ilustrar o seu uso. Embora ambos os países tenham muitas oportunidades para melhorar seu desempenho e se tornarem mais atraentes para os investidores, Angola enfrenta desafios maiores. O artigo também discute algumas questões de política que afetam fatores que podem melhorar o clima empresarial para a agricultura, florestas e outros investimentos rurais no Brasil. Para ser mais útil para os investidores, recomenda-se o desenvolvimento detalhado e o cálculo de um índice de atratividade de investimentos agrícolas, como um bem público internacional, a ser produzido periodicamente, não só para a Angola e o Brasil, como também para outros países da África Subsaariana e países latino-americanos. Para países de grandes dimensões e constituídos de várias regiões administrativas e/ou geoambientais, como o Brasil, é útil também que se crie e calcule um índice similar para medir o clima de negócios em âmbito subnacional.

Palavras-chave: agricultura, Angola, Brasil, clima de negócios, desenvolvimento, economia, florestas, índice, indicadores, investimento, política, setor privado, rural.

Introduction

The success of business initiatives depend on several factors, many of which are internal to the firms. Those conditions are usually under the control of managers and success or failure of their operations depends on their capabilities and decisions. Although such internal performance is indispensable, it is by no means sufficient for the success of firms.

Entrepreneurs also operate within an external system that offers varying degrees of conditions that favor and facilitate their activities, or not. Individual firms cannot usually control those external factors such as the rules of the game (laws, regulations, tax burden, and their enforcement), input and output markets, or others that directly affect their costs, revenues, and profitability. Firms' success therefore will increase with the improvement of business climate that a given country can offer to investors.

Successful agriculture and forest businesses depend on natural resources, productive human resources, competitively priced capital and inputs, and other favorable climate conditions for investments. Without such conditions, investments become too costly and risky while benefits too small and uncertain so that profits are not sufficient to motive entrepreneurs and investors to act.

Even if a country counts with abundant natural resources such as soil, topography, and climate, which are the only resources that cannot

easily be created or hired anywhere, it may not offers other needed conditions to investors. Agriculture and forest based businesses, therefore, cannot prosper and cannot generate the benefits to society that they otherwise could.

This paper will first discuss the performance of Angola and Brazil in various indexes measured by different organizations that seek to compare the conditions that entrepreneurs face in different countries to invest successfully. These indexes show the challenges businesses in Angola and Brazil have to face to succeed and prosper.

The second part discusses a model that tries to identify the factors and relationships that affect the success of businesses in agriculture, forestry, and rural sector, which are critical for development in rural areas. To take advantage of the substantial natural resources that Angola and Brazil have and allow them to become a source of prosperity, the countries stakeholders need to understand such factors. That understanding would also allow the identification of the critical intervention leverage points to improve the conditions that facilitate the profitable and sustainable operation of private businesses. The model presents a framework that helps in the development of strategies and the identification of measures to improve such conditions.

It is beyond the scope of this paper to calculate the most recent scores for Angola or Brazil can obtain in the corresponding indicators for

agriculture related investment attractiveness. It is, however, strongly recommendable that such calculation be undertaken periodically not only for this country, but also for other nations. Besides its use in the design, monitoring and evaluation of interventions, this periodic calculation would allow several types of comparisons among countries, promote healthy competition among them, and help investors select the best countries to establish their agriculture and forest businesses.

Nevertheless, the present discussion does provide sufficient information for the preparation of a framework that includes the design of interventions to improve the business climate for agriculture, forest, and rural investments in Angola, Brazil³ as well as other countries.

Conditions for successful investments in Angola and Brazil

The success of business initiatives depends on many challenging conditions that form the business climate for agriculture investment (DCED, 2008; WORLD BANK, 2005, 2007). Besides the internal firm conditions under the control, investors also have to operate within an external environment which may favor or hinder their chances of success. Individual firms cannot usually control the rules of the game (laws, regulations, and their enforcement), input and output markets, nor other external conditions that affect their costs, revenues, and profitability.

Table 1 summarizes the performance of Angola and Brazil in selected indexes created to compare several countries in terms of indicators that affect businesses. These indexes show not only the scores that try to quantify the performance of a country. They also rank these scores to show the relative performance of a country in relation to its peers. In a world where countries have to increasingly compete with one another, the ranking of countries and how these relative

performances vary in time, become critical for investors' decision making. Countries have not only to perform well in a given year. They also need to improve over time the conditions they offer more than other countries with which they compete for investments. This healthy competition leads to a positive feedback cycle that should benefit investors and society as a whole (NASCIMENTO, 2009; TOLLINI, [200-?]).

The indexes shown in Table 1 illustrate the conditions investors in most sectors face in Angola. Even though some of these indexes may have an overlap among some variables or factors considered, they do provide a useful indication of the absolute and relative performance of countries. Sadly, in all of them, Angola reaches low scores and ranks among the countries that face the most challenges in the specific conditions measured. Under such difficult contingencies, businesses are unlikely to prosper. This performance also demonstrates that the private sector faces severe challenges to contribute to the development of the country.

These indexes illustrate the difficulties investors face in Brazil. In many of them, Brazil scores relatively low values and ranks, and is found among the countries that face substantial challenges in several of the specific conditions measured. Businesses are unlikely to prosper as much as they otherwise could under a better business climate. This relatively low performance indicates that the private sector faces important challenges to increase its contribution to Brazil's development.

It is beyond the purpose and scope of this study to further analyze the results of such indexes. It suffices here, that they clearly show the challenges faced by investors to profitably operate in Brazil and Angola as well as the need for the adoption of strategic measures to further improve the business climate of the country.

³ For large countries such as Brazil with substantial regional differences, aggregate number in an Index brings only limited information to investors. The provision of more detailed information may improve investors decision making and can be done through the development of state level models of investment attractiveness and calculate sub national indexes such as the Brazil Index for Forest Investment Attractiveness. (IAIF..., 2012).

Table 1. Performance in selected indexes of Angola and Brazil.

Index name	Angola's score and rank	Brazil's score and rank	Brief description
Ease of Doing Business Ranking	Rank: 169 out of 183.	Rank: 127 out of 183.	The <i>Ease of Doing Business Ranking</i> is reported yearly by The World Bank, a financial assistant to developing countries. The Doing Business Ranking provides measures of business regulations and their enforcement across countries by measuring specific regulatory obstacles to doing business, such as protection of investors, protection of property rights, employment issues, and contract enforcement capabilities. The highest ranked country has the most favorable environment for conducting business in the world. <i>Data collected in 2011</i> . Source: World Bank (2012a, 2012b)
Global Competitiveness Report	Rank: 125 out of 134	Score: 4.23 out of 7 Rank: 56 out of 133	The <i>Global Competitiveness Report</i> is compiled yearly by the World Economic Forum, an independent international organization based in Geneva, Switzerland. The rankings provide a description of the economic competitiveness based on twelve pillars of competitiveness for countries at all stages of development. Some of the factors included come from publicly available data, but the majority comes from a survey the World Economic Forum sends to over 11,000 business executives worldwide. The highest ranked countries are the most competitive. <i>Data collected in 2007</i> . <i>Angola has not been evaluated since then</i> . Source: Schwab (2009)
Human Development Index	Rank: 162 out of 177.	Score: 0.699 out of 1 Rank: 73 out of 182.	The Human Development Index (HDI) which looks beyond GDP to a broader definition of well-being. The HDI provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary level) and having a decent standard of living (measured by purchasing power parity, PPP, income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as gender or income inequality and more difficult to measure indicators like respect for human rights and political freedoms. What it does provide is a broadened prism for viewing human progress and the complex relationship between income and well-being. Data: 2011. Source: UNDP (2012a, 2012b)
Index of Economic Freedom	Score: 47 out of 100. Rank: 162 out of 179.	Score: 55.6 out of 100. Rank: 113 out of 179.	The <i>Index of Economic Freedom</i> is reported annually by the Heritage Foundation, a research and educational institute. The Index of Economic Freedom analyzes a wide range of issues including trade barriers, corruption, government expenditures, property rights, and tax rates to generate an overall ranking of economic freedom. The highest ranked country is the country with the least number of restrictions and constraints on businesses. Source: Heritage Foundation (2012)

Continue...

Table 1. Continuation.

Index name	Angola's score and rank	Brazil's score and rank	Brief description
Economic Freedom of the World	Score: 4.1 out of 10 Rank: 140 out of 141	Score: 6.0 out of 10.0 Rank: 111 out of 141	The index published in Economic Freedom of the World measures the degree to which the policies and institutions of countries are supportive of economic freedom. The cornerstones of economic freedom are personal choice, voluntary exchange, freedom to compete, and security of privately owned property. Forty-two variables are used to construct a summary index and to measure the degree of economic freedom in five broad areas: (1) size of government; (2) legal structure and security of property rights; (3) access to sound money; (4) freedom to trade internationally; and (5) regulation of credit, labor and business. Source: Gwartney et al. (2010)
Corruptions Perception Index (CPI)	Score: 1.9 out of 10. Rank: 158 out of 180 countries studied.	Score: 3.7 out of 10. Rank: 69 out of 178 countries studied.	The <i>Corruptions Perception Index</i> (CPI) is reported annually by Transparency International, an international civil society organization. The CPI ranks countries in terms of the degree to which corruption exists in the misuse of public power for private benefit among public officials and politicians. CPI is a composite index determined by expert assessments and opinion surveys. The highest ranked country is the country with the least amount of perceived corruption. Index units, 10=least corrupt, 0=most corrupt. <i>Data collected in 2011.</i> Source: Transparency International (2012)

Source: modified from Nascimento (2009).

Agriculture and forest businesses are also affected by many of the conditions that these indexes try to measure. However, due to their special characteristics, it is more useful to try to identify the principal factors that influence businesses in this sector, the relationships among them, and how they impact investment profitability. This modeling helps not only to understand the situations better, but also is critical for the design of actions that can improve the chances for entrepreneurs' success. These are the goals of the next section of the paper.

The model discussed here is helpful to understand the current situation of a country, how its performance compare with others, what its potential performance could be if all factors could be made to reach their maximum scores, and how to identify priority areas and actions to create an action plans to improve such business climate. To design these plans, however, it is necessary to undertake a detailed and periodic planning process that will systematically identify the priority factors, analyze their current and potential situations, and design interventions to move the future expected situation towards a desired future or vision for the sector.

One example of index that tries to measure the business climate for forest based investments is the Forest Investment Attractiveness Index (IAIF, from the Spanish acronym). The IAIF's purpose is to clarify governments, investors and other stakeholders which are the factors that affect, lead to success, and attract private direct investment, domestic or foreign, to the forestry sector.

This Index seeks to measure countries' attraction for direct investment in sustainable forestry business. The IAIF allows: (i) to compare the performance of countries in the same year and the trend over time, (ii) to assist investors to pre-identify the countries where sustainable forest business will most likely be successful, and (iii) to clarify for countries which supra, inter and intra factors most affect their business climate for sustainable forestry investments.

The IAIF methodology considers 80 variables that make up a total of 20 indicators (several of them, exclusive) that are integrated into a model that seeks to explain and predict levels of direct investment in the sector (ÍNDICE..., 2005). The IAIF was applied to the Inter-American Development Bank (IDB) borrowing countries based on data from 2004 and 2006. Table 2 shows the detailed IAIF results for indicators and sub indexes for Brazil calculated using 2006 data.

Brazil, according to this Index, is the most attractive country for investment in forest based businesses in Latin America and the Caribbean region. However, it reaches only 60 out of a total of 100 points possible, implying that there is much room for improvement in the conditions that lead to greater investments in the sector. This can best be seen by identifying the indicators that have the greatest potential for improvement when one compares the 2006 performance with the theoretical possible score which is shown in the last column of the Table 2. For instance, the IAIF indicates that Inter Sectorial factors such as Labor, Licenses and Permits, Property Rights, and Capital and Foreign Investment Flow can more than double their performance, while Intra Sectorial factors such as Favorable Support, Forest Resources and Adverse Actions can be almost three times better.

Growth potential for the Brazilian IAIF is 65%, pointing to the existence of substantial room for implementing policies aimed at improving the attractiveness of forest investment. The detailed analysis of the indicators that form the Index suggests the priority areas for intervention.

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Table 2. Brazil's performance – Forest Investment Attractiveness Index (2006).

Indicators / Sub index / IAIF	Rating in 2006	Max. rating possible	Potential growth (%)
GDP Growth rate	75	100	34
Passive real interest rate	97	100	3
Exchange rate stability	100	100	0
Trade openness	58	100	72
Political risk	67	100	50
Tax share of GDP	53	100	90
Supra Sectorial Sub Index	75	100	34
Economic infrastructure	62	100	61
Social infrastructure	79	100	26
Licenses and permits	50	100	100
Labor	39	100	156
Capital market	55	100	82
Property rights	50	100	100
Capital and foreign investment flow	50	100	100
Agricultural policies	57	100	76
Planting and harvesting restrictions	52	100	91
Inter Sectorial Sub Index	55	100	82
Forest resources	40	95	138
Favorable support	37	100	168
Domestic market	95	100	5
FVL	80	100	25
Adverse actions	42	100	137
Intra Sectorial Sub Index	59	99	68
IAIF	60	99	65

Source: Getulio Vargas Foundation and INCAE Business School (2008).

identify the priority factors, analyze their current and potential situations, and design interventions to move the future expected situation towards a desired future or vision for the sector.

To be more useful to investors, it is recommended that the detailed development and calculation of an Agriculture Investment Attractiveness Index, as an international public good, be undertaken periodically not only for Angola and Brazil, but also for other Sub Saharan African and Latin American countries. Besides its use in the design, monitoring and evaluation of interventions to their respective business climates, this calculation would allow several types of comparisons among countries, promote healthy competition among them, and help investors select the best countries to establish their agriculture and forest businesses.

For the case of large countries with several administrative and/or geographical regions, such as Brazil, it is also useful to create and calculate a similar index to measure the business climate at the sub-national level.

Business climate model for agriculture investment

A model has been developed to better understand and serve as the basis to improve the conditions for successful investing in agriculture and forest based sustainable businesses. It assumes that a country will be more attractive for agriculture and forest based sustainable business investments, the more profitable such investments are likely to be. The profitability of these businesses in a country depends on the costs investors have to face and the expected benefits from their operations.

The model shown on Figure 1, proposes that costs investors have to face and the expected benefits from their operations are affected by three groups of factors: the supra sectorial, the inter sectorial, and the intra sectorial factors. Combined, the supra and the inter sectorial factors are also called extra sectorial conditions since they are variables that are not considered as part of the agriculture or forest based sector. The following sections will discuss briefly the principal factors that constitute each of these three groups.

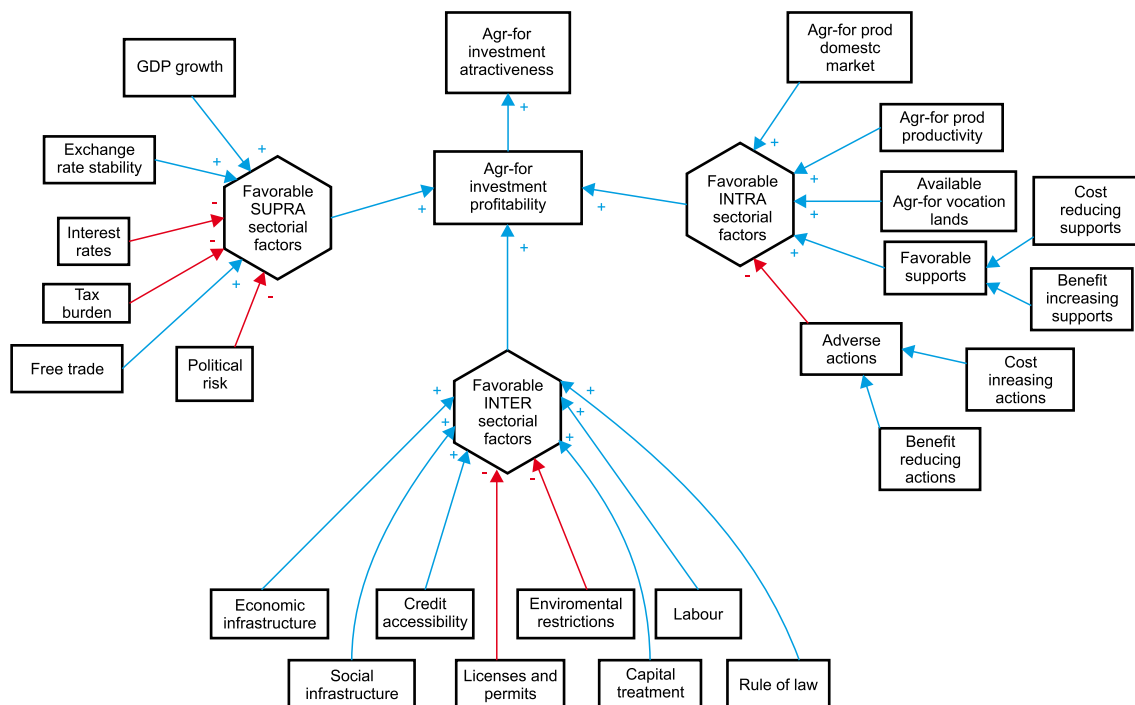


Figure 1. Model of factors influencing the attractiveness of direct investments in agriculture and forest businesses.⁴
Source: modified from Nascimento and Tomaselli (2007).

Supra sectorial factors

Supra sectorial factors influence the performance of firms in all sector of the economy, including the agriculture, forestry, and rural based ones. They include macro economic conditions and political risk. There are six main factor in the supra sectorial group that are found to affect substantially the conditions for the success of agriculture or forest based businesses: a) Gross domestic product growth; b) Exchange rate stability; c) Interest rate; d) Tax burden; f) Free trade; and g) Political risk.

There are two hypotheses relating these factors and how they affect the profitability of agriculture or forest based business. The first indicates that, as the factor increases (decreases),

then the profitability is also expected to increase (decrease); that is, they move in the same direction. Therefore, the model states that profitability is expected to increase the faster GDP grows, the Exchange rate is more stable; and/or the economy is more open allowing for cheaper transaction costs for import and export. On the other hand, profitability is expected to decrease as GDP shrinks, the Exchange rate is more unstable; and/or the economy is more closed allowing for more expensive transaction costs for import and export.

The red arrows with a negative sign at their points (-) indicate the second hypothesis. In this case, as the factor increases (decreases), then the profitability is expected to decrease (increase); that is, they move in opposite directions. There-

⁴ In this figure, causal relationships between variables were represented in two forms:

- 1) Variable A → (+) Variable B – This relationship should be read: if A increases (decreases), then B increases (decreases) more than it would without the change in A. The variables generally move in the same direction.
- 2) Variable J → (-) Variable K – This relationship should be read: if J increases (decreases), then K decreases (increases) more than it would without the change in J. The variables generally move in opposite directions. The rounded shape at the beginning of the Inward flow and the end Outward flow means that the model does explain where these flows come from or go to.

fore, profitability of agriculture or forest based business is expected to increase as Interest rates get smaller, the Tax burden is less expensive; and/or the political risk reduces. On the other hand, profitability is expected to decrease as Interest rates get larger, the Tax burden is greater; and/or the political risk increases.

Inter sectorial factors

The inter sectorial factors are those that are managed by other sectors of the economy but which have substantial impacts on the cost and benefit structures of agriculture or forest based businesses. The model identifies eight of these factors: 1) Economic infrastructure; 2) Social infrastructure; 3) Credit accessibility; 4) Licenses and permits; 5) Environmental restrictions; 6) Capital treatment; 7) Labor; and 8) Rule of law. Table 3 provides a summary of explanations of these factors.

Here too there are the same two hypotheses relating these inter sectorial factors and how they affect the profitability of agriculture or forest based businesses. Thus, the blue arrows indicate that, as factors like economic infrastructure, social infrastructure, credit accessibility, favorable capital treatment; competitively priced and productive labor; and rule of law effectiveness increases (decreases), then the profitability is also expected to increase (decrease); that is, profits tend to move in the same direction these factors move.

On the other hand, the red arrows indicate that as factor like environmental restrictions and licenses and permits (decreases), then the profitability of agriculture or forest based business is expected to decrease (increase); that is, they move in opposite directions.

Intra sectorial factors

The intra sectorial factors are those that are managed by public or private actors found in-

Table 3. Brief description of the inter sectorial factors.

Factors	Brief description
1 - Economic infrastructure	Includes availability of economic infrastructure services at competitive prices and quality such as those provided by roads, communications, energy, ports, railroads, airports
2 - Social infrastructure	Includes availability of social infrastructure services at competitive prices and quality related to human development such as education; health; water, sewage & waste disposal
3 - Credit accessibility	Includes the sophistication of financial and capital markets, availability of credit at competitive terms as well as other capital markets instruments
4 - Licenses and permits	Includes bureaucratic procedures and legal requirements to open, operate, and even close firms and that take much time, efforts, and other resources to comply with
5 - Environmental restrictions	Unfounded or useless environmental restrictions that increase firms' costs without generating environmental benefits
6 - Capital treatment	Includes barriers and restrictions to the movement of capital into, out of, or within the country
7 - Labor	Includes the costs generated by labor legislation, the level of general productivity and the availability of skilled workers at competitive prices
8 - Rule of law	The existence of favorable legislation, enforcement, and justice services. Includes clear definition and protection of property legislation; respect to the letter of contracts, and timely justice at reasonable cost

Source: adapted from Nascimento and Tomaselli (2007).

side the agriculture or forest based sector of the economy. These factors, by definition are under the control of these actors and can be intervened more directly by them. The model identifies five of these factors: 1) Agriculture or forest products domestic market; 2) Agriculture and forest productivity; 3) availability of agriculture and forest vocation lands; 4) Favorable supports; and 5) Adverse actions. Table 4 provides a summary of explanations of these factors.

Except for Adverse Actions, all other INTER sectorial factors move profitability in the same direction as they move. That is, as these factors increase (decrease), then the agriculture and forest based businesses profitability is also expected to increase (decrease).

The bigger the domestic market for agriculture and forest products, including those used as input for export products or directly sold overseas, the more profitable the agriculture and forest businesses can be, *ceteris paribus*. Conversely, the smaller the domestic market for agriculture and forest products, including those used as input for export products or directly sold overseas the less profitable. However, the size of the domestic market is not easily modified by public policy. It can change only if agriculture or forest products prices times the quantities consumed

increase. To consume more implies a change of taste of consumers and/or an increase of income, assuming the products are income elastic. Especially when markets are small and its growth is not expected to be fast, countries have to consider the regional and/or world markets as their targets, and seek to increase export of competitive products. This vision of an agriculture or forest products exporting country requires the adoption of interventions to increase the attractiveness of direct investments in the sector. So policies that seek economic and trade integration or free trade agreements can potentially increase this factor substantially. However, this indicator is based on actual exports, which means that domestic producers are competitive to be able to export.

Agriculture and forest productivity are critical factors that are important for the competitiveness of a country. Among other factors, productivity depends on the availability and adoption of appropriate technology; production inputs such as seeds, fertilizers, machinery; skilled labor and professionals; and supporting services. Research, technical assistance, adaptation of technologies, and other innovations are key to increase productivity.

Table 4. Brief description of the intra sectorial factors.

Factors	Brief description
Agriculture or forest products domestic market	Includes the size of the domestic consumption of inputs and outputs of the agriculture and forest based sector. It also includes the domestic consumption associated with the export of outputs from the sector
Agriculture and forest productivity	Includes the land productivity of agriculture or forest based businesses. It is directly associated with the technologies used for production in the country
Availability of agriculture and forest vocation lands	Includes the size of lands in the country that are arable, or are forest vocation lands. Agriculture production is often, but not always, more competitive in arable lands than forest production, while the opposite is true for forest vocation lands. (NASCIMENTO, 2005)
Favorable supports	Includes policies and measures taken the public or private sectors that reduce costs or increase benefits for investors
Adverse actions	Includes policies and measures taken the public or private sectors that increase costs or decreases benefits for investors

Source: adapted from Nascimento and Tomaselli (2007).

Available agriculture and forest vocation lands (FVL)⁵ are a critical factor for the attractiveness of a country for sustainable investments in the sector. The greater the land area a country has that can potentially be used for agriculture or forest production, the greater the contribution of this factor to the INTRA sectorial conditions that favor successful agriculture or forest businesses. However, the physical existence of such lands is not enough. They have to be accessible to investors through secure and relatively flexible mechanisms that allow long term investments to be made as well as easiness of exit if so desired.

Favorable supports are divided in two groups: those policies, and actions or inactions by governments that reduce investors' costs, and those that increase benefits. These supports are identified usually as a result of detailed analyses of surveys of the perceptions of investors, producers, academics, and other stakeholders.

Adverse actions are also divided in two groups: those policies, and actions or inactions by governments that increase investors' costs, and those that decrease benefits. However intriguing, government's mostly good intentions not always result in favorable conditions for investors. Using the same methods described for Favorable supports, it is possible to identify such situations which need to be corrected to improve business climate.

Improving business climate critical factors in Brazil

This section tries to provide a more detail though short discussion of some of the critical issues and factors that affect the business climate for FDI in agriculture and forest sector (CHADDAD; JANK, 2006; OECD, 2009). The discussion is structured using the same Supra, Inter, and Intra classification of factors used in the above.

Improvement in supra sectorial factors

Supra sectorial factors are those which affect all sectors of an economy and, therefore, are no likely to be changed just because of their adverse effect in one sector. However, it is necessary to show society and officials the consequences in a given sector of these factors and to contribute to the corresponding policy debate.

Among the supra sectorial factors that have most affected investments in the agriculture and forest, the following are highlighted and discussed here: overvalued Brazilian Real *vis a vis* US Dollar; very high interest rates; and excessive tax burden.

Exchange rate

Since 1998, Brazil has adopted a flexible exchange rate, which overcomes the traditional implicit taxation on the agricultural sector due to the overvaluation the national currency with respect to the US Dollar, and to the currencies of other major trade partners. The flexible exchange rate allows for a great competitiveness of Brazilian agricultural products in the international markets and, as a consequence, exports increased and flow of FDI for the agribusiness also increases as shown earlier in this case study. The abundance of US Dollar at low interest rates due to the stimulus policies in the USA combined with high interest rates practice in Brazil have attracted investors and resulted in the devaluation of that currency. This devaluation, when not compensate by increases in commodity prices, has adverse consequences of competitiveness of Brazilian agriculture, reducing exports, and increasing imports.

Interest rate

Interest rate in Brazil has been persistently high as a consequence of an easy fiscal policy, which allowed for huge fiscal deficit in the government accounts. After 1994, with the imple-

⁵ Forest vocation lands are those that, due to their physical site features such as soil, topography, and the rainfall it receives, should be kept under forest cover or other sustainable land use if soil or water related negative externalities are to be avoided. FVL classification does not depend on the type of cover the land actually has, nor does it depend on the requirements it may have for agriculture crop or forest production. Therefore, lands with no forest cover or use can still be classified as FVL if their physical features so indicate; while lands covered with forest may not be FVL. (NASCIMENTO, 2005).

mentation of Real Plan in 1994 that drastically reduced inflation rate in Brazil, interest rate has been strongly reduced in nominal terms. However, it continues high in real terms due to large spreads associated with the risk premium for private investment (Box 1). However, in the last ten years, nominal and real interest rates have been persistently declining, which has stimulated investment in the agricultural sector. On a worldwide basis, they are still very high, affecting the cost of doing business, including agriculture, in the country and reducing its competitiveness.

Tax burden

The tax burden in Brazil has been growing in the last two decades as a result of an easy fiscal policy adopted by the government, mainly due to increase in current expenditure and the exploding costs of the socio security pension fund. This situation has been one of the major factors also contributing to the loss in competitiveness of the Brazilian business. Only to have

Box 1 - Credit Market

BNDES, the government national development bank, is the primary Brazilian source of longer-term credit, and also provides export credits. FINAME (the Special Agency for Industrial Financing) provides foreign and domestic companies operating in Brazil financing for the manufacturing and marketing of capital goods. FINAMEX (Export Financing), which finances capital good exports for both foreign and domestic companies, is a part of FINAME. One of the goals of these financing options is to support the purchase of domestic over imported equipment and machinery.

PROEX, an export credit program financed by the National Treasury offers assistance in the areas of interest rate equalization, capital and other goods exports, and service exports).

Source: United States (2010).

an idea, in the last eight years the internal public debt has almost doubled, reaching around USD 1 trillion. This situation will put a heavy burden on the next generation and will be a deterrent to international investment in Brazil. Therefore, international investment in the agricultural and related sectors is also expected continue to suffer from this situation.

Improvement in inter sectorial factors

Inter sectorial factors are those that belong to non-agriculture and forest sector of the economy, but affect substantially the profitability of these businesses. They usually affect the costs in several stages of the value chain. Although these factors are beyond the mandate of agriculture and forest authorities, they do have a major role in trying to persuade the corresponding officials to provide better conditions for the businesses.

Among the inter sectorial factors that have most affected investments in the agriculture and forest, the following are highlighted and discussed here: economic infrastructure, social infrastructure, environmental restrictions, and environmental restrictions.

Economic infrastructure

Economic infrastructure services are an unavoidable cost for most agriculture or forest based businesses. When they are too expensive they can reduce profitability to the point that investments are not feasible. Investors are not going to create and operate businesses successfully if economic infrastructure is not available at competitive prices, in good quality, and reliable. It is, therefore, critical that entrepreneurs can count with such services (BATISTA, 2008).

With few exceptions, Brazil has neglected its transportation network be it highways, railroads, ports, airports, and waterways. This need is understood in the country but much has yet to be done to accomplish the goal of having a competitively priced transportation network.

Another type of infrastructure that needs to be available at competitive prices is energy. Brazil has a varied energy matrix and count with commercial bioenergy, hydroelectricity, and has encountered abundant deposits of petroleum in deep sea deposits. However, population and income growth have increased demand to a point that requires additional supply if prices are to be competitive for investors.

Social infrastructure

As mentioned in Table 1, Brazil has a very low performance in the Human Development Index scoring only 0.699 points out of 1 possible and ranking 73rd in a total of 182 countries evaluated.

This low performance increases costs for investors that may need to supplement public provision of health and education services with their own resources. Low levels of health of works decreases productivity, increases costs and reduce competitiveness. Low levels of education and training has similar consequences for businesses. It is, therefore, critical that policies be adopted and investments be made to improve these conditions.

Environmental restrictions

Forest code, and conservation and forest policy in Brazil is in conflict and affect land use and profitability of forest and agriculture businesses. It goes beyond the task of this study to provide a full discussion of these complex issues. Here it will be briefly presented the case of the designation of land for biodiversity Preservation. The obvious conflict here is that more land for biodiversity protection, less will be available for production, however large the country is.

Brazil is known for its important biodiversity resources. Agriculture and, to a lesser extent, forest uses of the land have adverse impacts over the ecosystems where they are located. If these ecosystems themselves, or species within them, are at risk of extinction, investors' socially responsible will be reluctant to participate. To do otherwise may bring a reputational risk which

can affect their image and businesses anywhere they operate.

For many reason including these, it is critical that the country counts with an effective biodiversity preservation and conservation system. The system needs to protect a self-sustaining ecosystem samples so that species can continue to survive and indeed evolve. That means that the size of those samples needs to be technically determined and legally established as a protected area, and management plans be developed and implemented. These units may generate their own revenues based on ecotourism. However, the main concern here is to assure that there will not be conflicts between the use of lands for agriculture and forest based businesses and the need to protect the nation's biodiversity resources. The GoB has the legal means and can take a leadership role to involve third parties, including the private sector, to address this concern.

Brazil has 77 million Ha in nature protection areas, 124 million Ha of Federal Community Forests, 239 million Ha of public forests, and 106 million Ha of Indian lands (FLORESTAS..., 2009), representing 64% of the total area of the country. When combined with the environmental restriction imposed on landowners rights to use their resources, and the prohibitions of production of certain crop in the Amazon region, it turns out that the quantity of land available for investment is much less. In a recent evaluation, Miranda et al. (2008) has estimated that 606 million hectares are set aside for Indian lands, conservation units, legal reserves, and permanent preservation areas, representing 71% of the nation's territory. According to this estimation, 246 million hectares are available for production, cities and infrastructure. However questioned these number may be, it is clear that Brazil needs to reflect on the priorities and policies for efficiently distribute the available land resources among different uses.

Most of the biodiversity protection areas are not very effectively managed and protected, and in fact may be excessive for the protection of the resource. The system need to be reevaluated and effectively protected.

Improvement in intra sectorial factors

Intra sectorial factors are those that belong to agriculture and forest sector of the economy. They usually affect directly the costs, benefits and profitability in several stages of the value chain. These factors are under mandate of agriculture and forest authorities, therefore, they have the power to address them, or at least the policy and other actions. So as to provide better conditions for the businesses.

Among the intra sectorial factors that have most affected investments in the agriculture and forest, the following are highlighted and discussed here: Available Agriculture and Forest Vocation Lands; and Reconciling Agricultural and Forest Uses, and Environmental Protection.

Available agriculture and forest vocation lands

Land in Brazil for agriculture and forest based businesses investment is becoming increasingly more scarce. Prices are rising due to increased demand, but also because of artificial reductions in supply.

Physical availability of land well located and with acceptable levels of fertility is not enough for entrepreneurs to be able to invest in forest or agriculture businesses. Since these investments require time to mature, it is critical that investors have the certainty that they will be able to harvest the products of their efforts in the future. This certainty in many countries is derived from a clear and titled property rights regimen that is protected by the state. It is also important that these rights can be traded in market so that investors do not feel trapped into the business and are able to exit if needed.

Recently the issue of foreign ownership of land beyond the traditionally limited regions (Box 2) has been raised and the legal system is addressing it bringing some uncertainty to investors.

However, property rights themselves are just one solution that provides investors with the

Box 2 - Restriction to foreign ownership of lands

A 1995 constitutional amendment terminated the distinction between foreign and local capital in general, yet there are laws that restrict foreign ownership within some sectors, notably media and communications, and aviation.

Foreign investment restrictions remain in a limited number of other sectors, including highway freight (20 percent) and mining of radioactive ore. Foreign ownership of land within 150 km of national borders remains prohibited unless approved by Brazil's National Security Council. In October 2009, the Brazilian Chamber of Deputies approved legislation that would further restrict foreign ownership of land along Brazil's borders, and within the Amazon. The legislation still requires committee review and passage in the Brazilian Senate, followed by presidential approval to become binding. Annex 4

In August 2010, the Nation's General Attorney issued a directive, approved by the Country's President, changing legal interpretation that indicates limitations to the ownership of land by foreigner of Brazilian firms controlled by foreigner. The directive limits the size of the properties that foreigners can own.

assurances they need. These rights have to be protected by the State as part of the Rule of the Law that must reign in a society which intends to promote FDI and other investments in agriculture and forest businesses. Uncertainty brought by invasions of the Landless Movement can reduce the interest of investors, increase transaction costs for secure titling and possession, and worse scenarios lead to divestment.

Reconciling agricultural and forest uses, and environmental protection

Decisions on agriculture or forest uses on the same land often generate conflicts not only

for landowners themselves but also for neighbors, society in general, and even for the international community. At a highly competitive commercial level, agriculture and forest uses of a given piece of land are frequently mutually exclusive alternatives. In many cases, lands covered with native forests are converted into agriculture land uses, resulting in deforestation. Traditionally, deforestation in a first steps in the slash and burn agriculture process, which is a major source of greenhouse gases that may affect the climate. Misused land often generates erosion, and runoff which deteriorate the quality of the environment, reduce natural fertility of the soils, and pollute waters. All these situations exemplify the need for clear rules of the game so that the decision about land in the country, can be made taking private and social considerations into account.

It is, therefore, critical that economic and scientifically sound rules that promote efficient solutions and clarify roles and procedures be adopted. Combined with an effective Biodiversity Preservation System, as discussed above, one alternative solution to reconcile these conflicts and establish clear rules is the adoption of a Forest Vocation Land (FVL) policy⁶.

This policy, briefly discussed above, helps to avoid the potential conflict of choice among land uses in a very simple manner. It simple identifies lands that are more at risk of erosion and runoff and requires that landowners adopt measures needed to conserve soil and water and their costs.

It is often the case that the additional conservation cost make agriculture less profitable in forest vocation lands. On the other hand, forest covers (which are themselves natural protectors of soils) become the most competitive use for those lands. The natural competitiveness of forest uses or cover on those lands, gives the policy its name.

The lands which are not under such erosion and runoff risks, the so called non-forest vocation lands, can have any use, including forest uses, land owners opt without the need for

any restriction or controls from the state. Only FVL need to be monitored and controlled to assure the proper internalization of soil and water conservation costs into the land use decisions of landowners.

Under this policy, landowner are free to use their forest vocation lands for sustainable agriculture which does not erode soil or generate runoff, or for any type of forest cover, such as native forests, plantation forest, or simply let the natural regeneration reestablish a forest cover.

Forest Vocation Land policy is intuitive, simple and inexpensive to establish and enforce, and promotes the most efficient use of the land. Its adoption creates conditions and rules that enable investors to plan, predict costs, and more flexibly select the most profitable land use for a given piece of land.

Conclusions

For investments in agriculture to be attractive, they need to be profitable. This profitability depends not only on the intrinsic nature of the investment project and the capabilities of the promoter, but also on the conditions offered by the business climate in the country, sector, and local factors that influence on the costs and benefits of the investment over its life time.

This article presented a model to measure the business climate for agriculture investments and uses the example of Brazil and Angola to illustrate its use. Although both countries have major opportunities to improve their performance and become more attractive to investors, Angola faces bigger challenges. It discusses some policy issues that affect factors that can improve the business climate for agriculture, forest, and rural investments in Brazil. It also provided sufficient information for the preparation of a framework that includes the design of interventions to improve the business climate for agriculture, forest, and rural investments in Angola.

⁶ See footnote 5.

To be more useful to investors, it is recommended that the detailed development and calculation of an Agriculture Investment Attractiveness Index, as an international public good, be undertaken periodically not only for Angola and Brazil, but also for other Sub Saharan African and Latin American countries. Besides its use in the design, monitoring and evaluation of interventions to their respective business climates, this calculation would allow several types of comparisons among countries, promote healthy competition among them, and help investors select the best countries to establish their agriculture and forest businesses.

For the case of large countries with several administrative and/or geographical regions, such as Brazil, it is also useful to create and calculate a similar index to measure the business climate at the sub-national level.

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