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A BRIEF HISTORY OF BRAZILIAN BIOFUELS LEGISLATION

Juscelino F. Colares*

ABSTRACT

Due to concerns with global climate change, Brazil's long and diversified experience with biofuels has captured the attention of policymakers worldwide. Yet, little is known about the history and scale of the Brazilian biofuels program in the United States. This comment provides an introduction to the history of Brazil's biofuels program and refers to the basic statutes that set it in place. Due to the unavailability of these enactments in English, an appendix provides the relevant portions of these statutes both in Portuguese and in the author's English translation.

INTRODUCTION

The growing concern with global climate change and the desire to reduce the consumption of fossil fuels has brought renewed interest in Brazil's long and diversified experience with biofuels. The term "biofuels" is often used to identify natural and renewable substitutes to petrol products that are extracted from sources of biomass (e.g., sugar cane, corn, oilseeds, animal fats) typically originating from agricultural activity.¹ Besides possibly reducing carbon emissions and diversifying the U.S. energy matrix, U.S. interest in the Brazilian experience with biofuels has increased lately due to the potential benefits it might bring to U.S. agriculture.² As a result of negotiations culminating with President George W. Bush's March 2007 visit to Brazil, the two countries signed a Memorandum of Understanding to promote

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1. See *Biofuels Can Cut Poverty, Provide Energy and Mitigate Climate Change*, UN NEWS SERVICE, Apr. 14, 2005, available at <http://www.un.org/apps/news/story.asp?NewsID=13971&Cr=&Cr1> (last visited Feb. 26, 2008).

2. This comment's focus on Brazil's use of ethanol from sugar cane is not an endorsement of current U.S. initiatives that favor production of corn-based ethanol. The use of corn ethanol has been criticized by various other authors. See, e.g., Haroldo Machado-Filho, *Climate Change and the International Trade of Biofuels*, 2 CARBON & CLIMATE L. REV. 67, 68 (2008) (indicating that sugar cane ethanol reduces greenhouse gases by up to 90 percent while corn-based ethanol "merely reduces emissions by about 13 [percent]."). This comment also does not address whether the U.S. or Brazilian biofuels programs are consistent with their obligations under the World Trade Organization's agreements.

“cooperation in biofuels.”³ Yet, little is known in the United States about the history and scale of the Brazilian biofuels program. The purpose of this comment is to promote further discussion and research on this program. It provides a brief introduction to the history of Brazil’s biofuels program and refers to the basic statutes that set it in place. Due to the unavailability of these enactments in English, an appendix provides the relevant portions of these statutes both in Portuguese and in the author’s English translation.

I. THE BRAZILIAN BIOFUELS EXPERIENCE

A. *Proálcool: Birth and Evolution of the Brazilian Biofuels Program*

The National Alcohol Program (“Proálcool”), Brazil’s first biofuels program, was the country’s response to the oil price spikes associated with the 1973 oil crisis.⁴ Proálcool essentially focused on the production of ethanol from the distillation of sugar extracted from sugar cane, a staple crop in Brazilian agriculture. The program, signed into law by President Ernesto Geisel on November 14, 1975, effectively created a nationwide ethanol production chain based on a system of government subsidies and tax rebates to sugar cane producers and distilleries.⁵

Throughout its history, Proálcool has proved to be an innovative and successful program despite the volatile nature of world energy prices. For instance, at its apex in 1985, 96 percent of automobiles sold in Brazil were ethanol-powered.⁶ This percentage would plunge to one percent by the late 1990s, a decade that witnessed oil prices undergo a significant decline.⁷ During the 1990s, the fall in ethanol consumption was partially offset by a legislated increase in the ethanol content (22%) added to gasoline, as gasoline-powered automobiles made a comeback.⁸

3. Press Release, U.S. Dep’t of State, Memorandum of Understanding Between the U.S. & Braz. to Advance Cooperation on Biofuels (Mar. 9, 2007), available at <http://www.state.gov/r/pa/prs/ps/2007/mar/81607.htm> (last visited Mar. 6, 2008).

4. Arnaldo Walter & Luis Cortez, *An Historical Overview of the Brazilian Bioethical Program*, 11 RENEWABLE ENERGY FOR DEV. 2 (1999), available at <http://www.york.ac.uk/inst/sei/1.99.red.pdf> (last visited Mar. 6, 2008).

5. See Decreto No. 76.593, de 14 de novembro de 1975, D.O.U. de 14.11.1975, arts. 2, 4–7 (Brazil). For an English translation, see *infra* appendix.

6. ANFAVEA, ANUÁRIO DA INDÚSTRIA AUTOMOBILÍSTICA BRASILEIRA 68 (2007), available at http://www.anfavea.com.br/anoario2007/Cap00_2007.pdf (last visited on Feb. 26, 2008) [hereinafter ANFAVEA 2007 YEARBOOK].

7. *Id.*

8. See Lei No. 8.723, de 28 de outubro de 1993, D.O.U. de 29.10.1993, art. 9 (Brazil). For an English translation, see *infra* appendix.

This adjustment was required by Law No. 8,723 of October 28, 1993.⁹ Once again, the Brazilian government resorted to innovative legislation to cope with oil price swings.

More importantly, this piece of legislation effectively saved the Brazilian ethanol program, which would become very useful to Brazil a decade later. With the steady upward trend in oil prices in the early part of this century,¹⁰ the Brazilian vehicle fleet returned to ethanol in a new way. The introduction of “flex fuel” engine technology in Brazil has allowed motorists to safely switch between consumption of either gasoline or ethanol depending on prices at the pump.¹¹ In 2006, 83 percent of automobiles sold in Brazil could run on either fuel.¹² Working in tandem with efforts to increase oil production, Brazil’s ethanol program gradually moved the country toward oil self-sufficiency—a goal Brazil finally achieved in early 2006.¹³

B. *The Brazilian Biodiesel Program*

The National Program on Biodiesel Production and Usage (“PNPB”) is Brazil’s newest foray into biofuels. Law No. 11,097 of January 13, 2005 prescribes that in an initial stage (from 2008 until 2012) two percent of Brazilian consumption of petrol-based diesel be replaced with oilseed- and animal fat-derived biodiesel.¹⁴ The law also provides that this percentage will increase to five percent starting in 2013.¹⁵ As with Proálcool, the Brazilian federal government took the lead in organizing the chain of production, providing credit finance and basic technology to willing industry participants.¹⁶ This time the

9. *Id.*

10. *See More of Everything*, *ECONOMIST*, Sept. 16, 2006, at 20, available at http://www.economist.com/surveys/displaystory.cfm?story_id=E1_SRSRDVD (last visited Mar. 6, 2008).

11. David Luhnnow & Geraldo Samor, *As Brazil Fills Up on Ethanol, It Weans Off Energy Imports*, *WALL ST. J.*, Jan. 16, 2006, available at <http://yaleglobal.yale.edu/display.article?id=6817> (last visited Mar. 6, 2008).

12. ANFAVEA 2007 YEARBOOK, *supra* note 6, at 68.

13. *See generally The Economy of Heat*, *ECONOMIST*, Apr. 12, 2007, at XX, available at http://www.economist.com/surveys/displaystory.cfm?story_id=8952496 (last visited Feb. 26, 2008); Paulo Prado, *Brazil’s Oil Giant is Drilling Far from Home Waters*, *N.Y. TIMES*, July, 7, 2006, at C1, available at <http://www.nytimes.com/2006/07/07/business/worldbusiness/07petrobras.html> (last visited Feb. 26, 2008).

14. *See* Lei No. 11.097, de 13 de janeiro de 2005, art. 2, § 1 (Brazil). For an English translation, see *infra* appendix.

15. *See id.* art. 2, § 1.

16. *See generally id.*

innovation is a concern with supporting family farms.¹⁷

Pursuant to a nearly contemporaneous statute, the Brazilian Ministry of Agrarian Development (“MDA”) is to administer a “Selo Combustível Social,” a social best practices certification program designed to encourage companies involved in this new industry to enter into commercial arrangements with small-scale family farms.¹⁸ To obtain the certification and thus be eligible for special tax benefits and financing, industry participants must execute raw material supply agreements with family farmers.¹⁹ Such contracts must contain standard clauses setting forth the duration of the agreement and a price term.²⁰ Industry participants are also required to provide technical assistance and training to such small scale producers to obtain the seal of approval.²¹ This certification program highlights the evolution that biofuels policy has undergone in Brazil where economic concerns now coexist with environmental and social development concerns.

CONCLUSION

Although historically the Brazilian experience with biofuels can be understood as largely a reaction to increased oil prices, this rationale has subsided as the country achieved self-sufficiency in oil. However, enthusiasm with biofuels remains unabated. As a consolidated democracy, Brazil recognizes that positive spillovers might result from an ambitious biofuels policy, such as fostering environmental best practices while promoting socioeconomic programs. Yet, if Brazil intends to fully embrace a broader environmental agenda, it might be wise to consider contributions that go beyond substitution of fossil fuels by other renewable fuel sources. For example, the natural carbon sequestration taking place in Brazil’s massive, though threatened, rain forests remains to date Brazil’s biggest contribution to global environmental health. A good question for environmental policymakers and for further research might be whether a global carbon-trading scheme could provide Brazil with enough economic incentives to reduce forest clearing. Certainly, it would be a pity if current trends in natural forest clearing in Brazil turned out to be linked to private efforts

17. *See id.* art. 2, § 2, cl. II.

18. *See* Decreto No. 5.297, de 6 de dezembro de 2004, art. 2 (Brazil). For an English translation, see *infra* appendix.

19. *See id.* art. 2, § 1.

20. *See id.* art. 2, § 1, cl. II.

21. *See id.* art. 2, § 1, cl. III.

responding to Brazil's own biofuels initiatives.²² Only by integrating innovative biofuels programs within a broader natural carbon sequestration policy framework will Brazil be able to maximize its contribution to global climate conditions.

22. One report suggests that a portion of the forest clearing currently taking place in the southeast of the Brazilian Amazon region is being cleared for soybean production, a potential biofuels source. See Kelly Hearn, *Ethanol Production Could Be Eco-Disaster, Brazil's Critics Say*, NAT'L GEOGRAPHIC NEWS, Feb. 8, 2007, available at <http://news.nationalgeographic.com/news/2007/02/070208-ethanol.html> (last visited Feb. 13, 2008).

Appendix

Decreto N° 76.593, de 14 de novembro de 1975

Institui o Programa Nacional do Álcool, e dá outras providências.

O Presidente da República, usando das atribuições que lhe confere o artigo 81, item III, da constituição decreta:

Art. 1°. Fica instituído o Programa Nacional do Álcool visando ao atendimento das necessidades do mercado interno e externo e da política de combustíveis automotivos.

Art. 2°. A produção do álcool oriundo da cana-de-açúcar, da mandioca ou de qualquer outro insumo será incentivada através da expansão da oferta de matérias-primas, com especial ênfase no aumento da produtividade agrícola, da modernização e ampliação das destilarias existentes e da instalação de novas unidades produtoras, anexas a usinas ou autônomas, e de unidades armazenadoras.

...

Decree No. 76,593, November 14, 1975

Establishes the National Alcohol Program, and prescribes other measures.

The President of the Republic, pursuant to his competence under Article 81, section III, of the Constitution hereby decrees:

Art. 1. The National Alcohol Program is hereby instituted, having as its objective the satisfaction of domestic and foreign market needs and those of the national policy on automobile fuels.

Art. 2. Production of alcohol sourced from sugar cane, yams or any other input shall be stimulated by the expansion of the supply of such raw materials, with special emphasis on the increase in agricultural productivity; the renovation and expansion of existing distilleries; the construction of new production facilities, jointly or independently operated; and the construction of warehousing units.

...

Art. 4º. As propostas para modernização, ampliação ou implantação de destilarias de álcool, anexas ou autônomas, serão apresentadas pelos interessados ao Instituto do Açúcar e do Alcool, com conhecimento imediato da Comissão Nacional do Alcool. No prazo máximo de 30 (trinta) dias, o Instituto do Açúcar e do Alcool emitirá parecer para apreciação final da referida Comissão.

Art. 5º. Os investimentos e dispêndios relacionados com o Programa serão financiados pelo sistema bancário em geral, especificamente:

a) os destinados a instalação, modernização e/ou ampliação de destilarias, pelo Banco Nacional do Desenvolvimento Econômico - BNDE, pelo Banco do Brasil S. A., pelo Banco do Nordeste do Brasil S. A., pelo Banco da Amazônia S. A., pelos Bancos Estaduais de Desenvolvimento ou pelos Bancos Comerciais Oficiais Estaduais possuidores de Carteira Industrial, quando nos respectivos Estados não existam Bancos de Desenvolvimento.

b) os destinados à produção de matérias-primas, pelo Sistema Nacional de Crédito Rural;

Parágrafo único. O Conselho

Art. 4. Proposals for renovation, expansion or construction of alcohol distilleries, jointly or independently operated, shall be submitted by the interested parties to the Sugar and Alcohol Institute, with immediate notice to the National Commission on Alcohol. Within a maximum of 30 (thirty) days, the Sugar and Alcohol Institute shall issue a determination which shall be referred to the Commission for final deliberation.

Art. 5. Investments and expenditures related to the Program shall be funded by the government banking system in the following manner:

(a) spending related to construction, renovation and/or expansion of distilleries shall be funded by Banco Nacional de Desenvolvimento Econômico - BNDE, by Banco do Brasil S.A., by Banco do Nordeste do Brasil S.A., by Banco da Amazônia S.A., by State-Owned Development Banks or by State-Owned Commercial Banks authorized to provide industrial loans, whenever Investment Banks are not present in that particular State.

(b) spending related production of raw materials shall be funded by the National System of Agricultural Credit;

Sole paragraph. The National

Monetário Nacional definirá as fontes de recursos a serem utilizadas e estabelecerá as condições de realização dos financiamentos.

Art. 6º. O Conselho Nacional de Petróleo - CNP, dentro do prazo de 60 (sessenta) dias, passará a assegurar aos produtores de álcool anidro, para fins carburantes e para a indústria química, preços de paridade, baseados na realça de 44 (quarenta e quatro) litros de álcool por 60 (sessenta) quilogramas de açúcar cristal (standart), na condição PVU (posto veículo na usina) ou PVD (posto veículo na destilaria)

...

Art. 7º. Para a garantia de comercialização do álcool anidro de qualquer origem, para mistura carburante, o Conselho Nacional de Petróleo - CNP -, estabelecerá um programa de distribuição entre as empresas distribuidoras de petróleo, que receberão o produto a um preço a ser decidido por esse Conselho.

Monetary Council shall define the sources of funding to be used and shall establish the conditions for the approval of such financing.

Art. 6. The National Petrol Council - CNP, shall, within 60 (sixty) days, guarantee price parity to producers of anhydrous alcohol for motoring and chemical industry purposes; such price being based on a ratio of 44 (forty-four) liters of alcohol to 60 (sixty) kilograms of (standard) crystallized sugar, on either a PVU (vehicle delivery at the sugar refinery) or PVD (vehicle delivery at the distillery) basis.

...

Art. 7. To ensure the sale of anhydrous alcohol of whatever origin for motoring purposes, the National Petrol Council - CNP -, shall establish a distribution program among the petrol distributing companies, which shall receive the product at a price to be determined by this Council.

Lei Nº 8.723, de 28 de outubro de 1993

Law No. 8,723, October 28, 1993

Dispõe sobre a redução de emissão de poluentes por veículos automotores e dá outras providências.

Provides for the reduction in automotive vehicle pollutant emissions and prescribes other measures.

O PRESIDENTE DA REPÚBLICA

THE PRESIDENT OF THE REPUBLIC

Faço saber que o Congresso Nacional decreta e eu sanciono a seguinte Lei:

Let it be known that the National Congress enacts and I hereby sign the following Law:

Art. 1º. Como parte integrante da Política Nacional de Meio Ambiente, os fabricantes de motores e veículos automotores e os fabricantes de combustíveis ficam obrigados a tomar as providências necessárias para reduzir os níveis de emissão de monóxido de carbono, óxido de nitrogênio, hidrocarbonetos, álcoois, aldeídos, fuligem, material particulado e outros compostos poluentes nos veículos comercializados no País, enquadrando-se aos limites fixados nesta Lei e respeitando, ainda, os prazos nela estabelecidos.

Art. 1. As an integral part of the National Environmental Policy, producers of automotive engines and vehicles and producers of combustible fuels shall take the necessary measures to reduce the emission levels of carbon monoxide, nitrogen oxide, hydrocarbons, alcohol and aldehyde derivatives, carbon particles, particulate matter and other pollutant substances from vehicles sold in the Country, by complying with the limits established in this Law and respecting, also, the implementation periods prescribed for such measures herein.

...

...

Art. 9º. É fixado em vinte e dois por cento o percentual obrigatório de adição de álcool etílico anidro combustível à gasolina em todo o território nacional.

§ 1º. O Poder Executivo poderá elevar o referido percentual até o limite de vinte e cinco por cento ou reduzi-lo a vinte por cento.

§ 2º. Será admitida a variação de um ponto por cento, para mais ou para menos, na aferição dos percentuais de que trata este artigo.

Art. 11. O uso de combustíveis automotivos classificados... como de baixo potencial poluidor será incentivado e priorizado, especialmente nas regiões metropolitanas.

Art. 9. A twenty-two percent mandatory ethyl alcohol anhydrous fuel content is to be added to gasoline in all national territory.

§ 1. The Executive Branch may increase the above ratio up to the limit of twenty-five percent or reduce it to twenty percent.

§ 2. A one-percent variation, upwards or downwards, shall be allowed when monitoring the percentages prescribed in this article.

Art. 11. The use of automotive fuels classified... as having low polluting potential shall be encouraged and prioritized, especially in metropolitan areas.

Lei Nº 11.097, de 13 de janeiro de 2005

Dispõe sobre a introdução do biodiesel na matriz energética brasileira... e dá outras providências.

O PRESIDENTE DA REPÚBLICA

Faço saber que o Congresso Nacional decreta e eu sanciono a seguinte Lei:

Art. 2º. Fica introduzido o biodiesel na matriz energética brasileira, sendo fixado em 5% (cinco por cento), em volume, o percentual mínimo obrigatório de adição de biodiesel ao óleo diesel comercializado ao consumidor final, em qualquer parte do território nacional.

§ 1º. O prazo para aplicação do disposto no caput deste artigo é de 8 (oito) anos após a publicação desta Lei, sendo de 3 (três) anos o período, após essa publicação, para se utilizar um percentual mínimo obrigatório intermediário de 2% (dois por cento), em volume.

§ 2º. Os prazos para atendimento do percentual mínimo obrigatório de que trata este artigo podem ser reduzidos em razão de resolução do Conselho Nacional de Política Energética - CNPE,

Law No. 11,097, January 13, 2005

Provides for the introduction of biodiesel in the Brazilian energy matrix... and prescribes other measures.

THE PRESIDENT OF THE REPUBLIC

Let it be known that the National Congress enacts and I hereby sign the following Law:

Art. 2. Biodiesel is hereby introduced in the Brazilian energy matrix, with a mandated 5% (five percent) minimum biodiesel content to be added to diesel oil sold to the final consumer in any part of the national territory.

§ 1. Full implementation of this article shall occur within 8 (eight) years following the publication of this Law, with an intermediate 2% (2 percent) minimum content requirement being adopted within the 3 (three) year period following this publication.

§ 2. The implementation periods for the minimum content percentages prescribed in this article may be reduced as a result of a National Council on Energy Policy - CNPE resolution, subject

observados os seguintes critérios: to the following criteria:

I - a disponibilidade de oferta de matéria-prima e a capacidade industrial para produção de biodiesel;

I - availability of raw material supply and industrial capacity for the production of biodiesel;

II - a participação da agricultura familiar na oferta de matérias-primas;

II - participation of family agriculture in the supply of raw materials;

III - a redução das desigualdades regionais;

III - reduction of regional inequalities;

IV - o desempenho dos motores com a utilização do combustível;

IV - engine performance while utilizing the fuel;

V - as políticas industriais e de inovação tecnológica.

V - the national industrial and technological innovation policies.

Decreto N° 5.297, de 6 de dezembro de 2004

Dispõe sobre os coeficientes de redução das alíquotas da Contribuição para o PIS/PASEP e da COFINS incidentes na produção e na comercialização de biodiesel, sobre os termos e as condições para a utilização das alíquotas diferenciadas, e dá outras providências.

O PRESIDENTE DA REPÚBLICA, no uso da atribuição que lhe confere of art. 84, inciso IV, da Constituição . . . DECRETA:

...

Decree No. 5,297, December 6, 2004

Provides reduction coefficients on rates charged for collection of PIS/PASEP and COFINS Excises on biodiesel sales; including the terms and conditions for utilization of differentiated rates; and prescribes other measures.

THE PRESIDENT OF THE REPUBLIC, pursuant to his competence under Art. 84, clause IV of the Constitution . . . hereby DECREES:

...

Art. 2º. Fica instituído o selo “Combustível Social”, que será concedido ao produtor de biodiesel que:

I - promover a inclusão social dos agricultores familiares . . . que lhe forneçam matéria-prima; e

II - comprovar regularidade perante o Sistema de Cadastramento Unificado de Fornecedores - SICAF.

§ 1º. Para promover a inclusão social dos agricultores familiares, o produtor de biodiesel deve:

I - adquirir de agricultor familiar, em parcela não inferior a percentual a ser definido pelo Ministério do Desenvolvimento Agrário, matéria-prima para a produção de biodiesel;

II - celebrar contratos com os agricultores familiares, especificando as condições comerciais que garantam renda e prazos compatíveis com a atividade, conforme requisitos a serem estabelecidos pelo Ministério do Desenvolvimento Agrário; e

III - assegurar assistência e capacitação técnica aos agricultores familiares.

...

Art. 2. The “Social Fuel” certification seal is hereby instituted, and shall be awarded to the biodiesel producer that:

I - promotes social inclusion of family farmers . . . who supply him with raw materials; and

II - can prove his good standing according to the Unified Registry of Suppliers - SICAF.

§ 1º. To promote social inclusion of family farmers, the biodiesel producer shall:

I - purchase from family farmers a quantity of raw materials to be used in the production of biofuels that is not less than the percentage to be established by the Ministry of Agrarian Development;

II - enter into contracts with family farmers, specifying commercial conditions that ensure income and deadlines compatible with the activity, in accordance with requirements that shall be established by the Ministry of Agrarian Development; and

III - ensure technical assistance and training to family farmers.

...

Art. 4º. Os coeficientes de redução da Contribuição para of PIS/PASEP e da COFINS . . . ficam fixados em:

I - 0,775, para o biodiesel fabricado a partir de mamona ou fruto, caroço ou amêndoa de palma produzidos nas regiões norte e nordeste e no semi-árido;

II - 0,896, para o biodiesel fabricado a partir de matérias-primas adquiridas de agricultor familiar enquadrado no PRONAF;

III - um, para o biodiesel fabricado a partir de mamona ou fruto, caroço ou amêndoa de palma produzidos nas regiões norte e nordeste e no semi-árido, adquiridos de agricultor familiar enquadrado no PRONAF;

§ 1º. Com a utilização dos coeficientes determinados nos incisos I, II e III do caput deste artigo, as alíquotas da Contribuição para of PIS/PASEP e da COFINS incidentes sobre a receita bruta auferida pelo produtor, na venda de biodiesel, ficam reduzidas para:

I - R\$ 27,03 (vinte e sete reais e três centavos) e R\$ 124,47 (cento e vinte e quatro reais e quarenta e sete centavos), respectivamente, por metro cúbico de biodiesel fabricado a partir de mamona ou fruto, caroço ou amêndoa de palma produzidos nas

Art. 4. Reduction coefficients for the PIS/PASEP and COFINS Excises . . . are hereby set at:

I - 0.775, for biodiesel made from castor beans or from the fruit, seed or nut of dende palm, grown in the north and northeast regions or in semi-arid areas;

II - 0.896, for biodiesel made from raw materials purchased from PRONAF-qualified family farmers;

III - one, for biodiesel made from castor beans or from the fruit, seed or nut of dende palm, grown in the north and northeast regions or in semi-arid areas, and purchased from PRONAF-qualified family farmers;

§ 1. Using the coefficients established in clauses I, II and III of this article, the rates charged for collection of PIS/PASEP and COFINS Excises on producers' gross revenue, resulting from the sale of biodiesel, shall be reduced to:

I - R\$ 27.03 (twenty-seven reais and three cents) and R\$ 124.47 (one-hundred twenty-four reais and forty-seven cents), respectively, per cubic meter of biodiesel made from castor beans or from the fruit, seed or nut of dende palm, grown in the north

regiões norte e nordeste e no semi-árido;

II - R\$ 12,49 (doze reais e quarenta e nove centavos) e R\$ 57,53 (cinquenta e sete reais e cinquenta e três centavos), respectivamente, por metro cúbico de biodiesel fabricado a partir de matérias-primas adquiridas de agricultor familiar enquadrado no PRONAF; e

III - R\$ 0,00 (zero), por metro cúbico de biodiesel fabricado a partir de mamona ou fruto, caroço ou amêndoa de palma produzidos nas regiões norte e nordeste e no semi-árido, adquiridos de agricultor familiar enquadrado no PRONAF.

and northeast regions or in semi-arid areas;

II - R\$ 12.49 (twelve reais and forty-nine cents) and R\$ 57.53 (fifty-seven reais and fifty-three cents), respectively, per cubic meter of biodiesel made from raw materials purchased from PRONAF-qualified family farmers; and

III - R\$ 0.00 (zero), per cubic meter of biodiesel made from castor beans or from the fruit, seed or nut of dende palm, grown in the north and northeast regions or in semi-arid areas, and purchased from PRONAF-qualified family farmers.