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Economically viable alternatives to tobacco growing
Diversification Program Areas Tobacco Cultivation - Brazil
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1 | Presentation

Brazil is the second largest producer and the world's largest tobacco exporter. More than 150 000 family production units, in the south region of the country, which produce virtually the entire tobacco production. Brazil is signatory of the Framework Convention on Tobacco Control, within the World Health Organization, alongside other 192 countries. On the basis of Articles 17 and 18 of the Convention, related to safeguard the interests of farmers and environmental protection, in 2005, the Brazilian government created The National Program for Diversification Tobacco Cultivation Areas, under the responsibility of the Special Secretariat of Family Agriculture and Agrarian Development.

The program's actions are aimed at developing economically viable alternatives for tobacco producers, in the case of the decreasing of demand, which has been observed in the world. In this sense, Brazil has developed a methodology based on a range of public policies, including credit, Rural Advisory Services and Extension (RAS and Extension), social and productive organization, marketing, insurance of production and price guarantee, and purchase of the food staples . This methodology was adopted by the Convention in 2014 during COP 6 in Moscow, Russia.

This publication presents a sample of actual cases of tobacco producers what have diversified their production and income, with the support of the Diversification Program, which inspired the recommendations of the Framework Convention for the countries that produce tobacco.

We are open to share our experience and wish you enjoy the reading!

José Ricardo Ramos Roseno

Special Secretary for Family Agriculture and Agrarian Development





2 | Context of tobacco production in Brazil

Creating alternatives for farmers who produce tobacco is a prerequisite for safeguarding them from the actual impacts of the implementation of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC), ratified in 2005 by Brazilian Federal Senate. The anti-smoking measures adopted by the signatory countries of the treaty have generated sharp decrease in product demand around the world.

Brazil, from the beginning, expressed concern about the issue, since it is the 2nd largest producer in the world, with an average production of 416 thousand tons of tobacco per year, and number 1 tobacco leaf exporter, allocating 87% of in natura production to over 100 countries. Nonetheless, between 2008 and 2014, according to the Ministry of Development, Industry and Foreign Trade of Brazil, there was a reduction of 43% in tobacco leaf exports.

Reduction of exports had an impact on tobacco production in Brazil, reflecting directly on the socioeconomic situation of farmers. Between 2009 and 2015, in southern Brazil, responsible for 98% of the national tobacco production, there has been a reduction in the planted area of 17.6% (Figure 1), therefore excluding 32,800 families from the tobacco production chain (Figure 2).

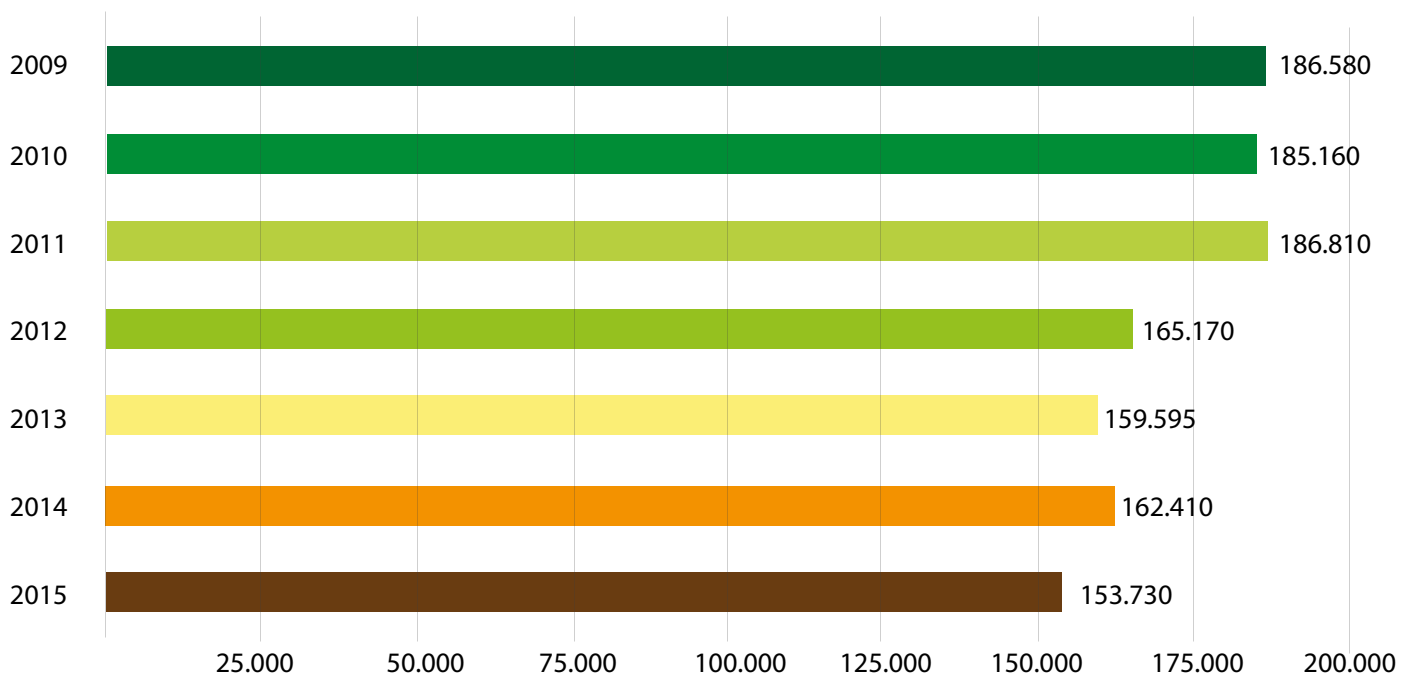


Figure 1 - Area planted with tobacco in southern Brazil. Source: Brazilian Institute of Geography and Statistics (IBGE).



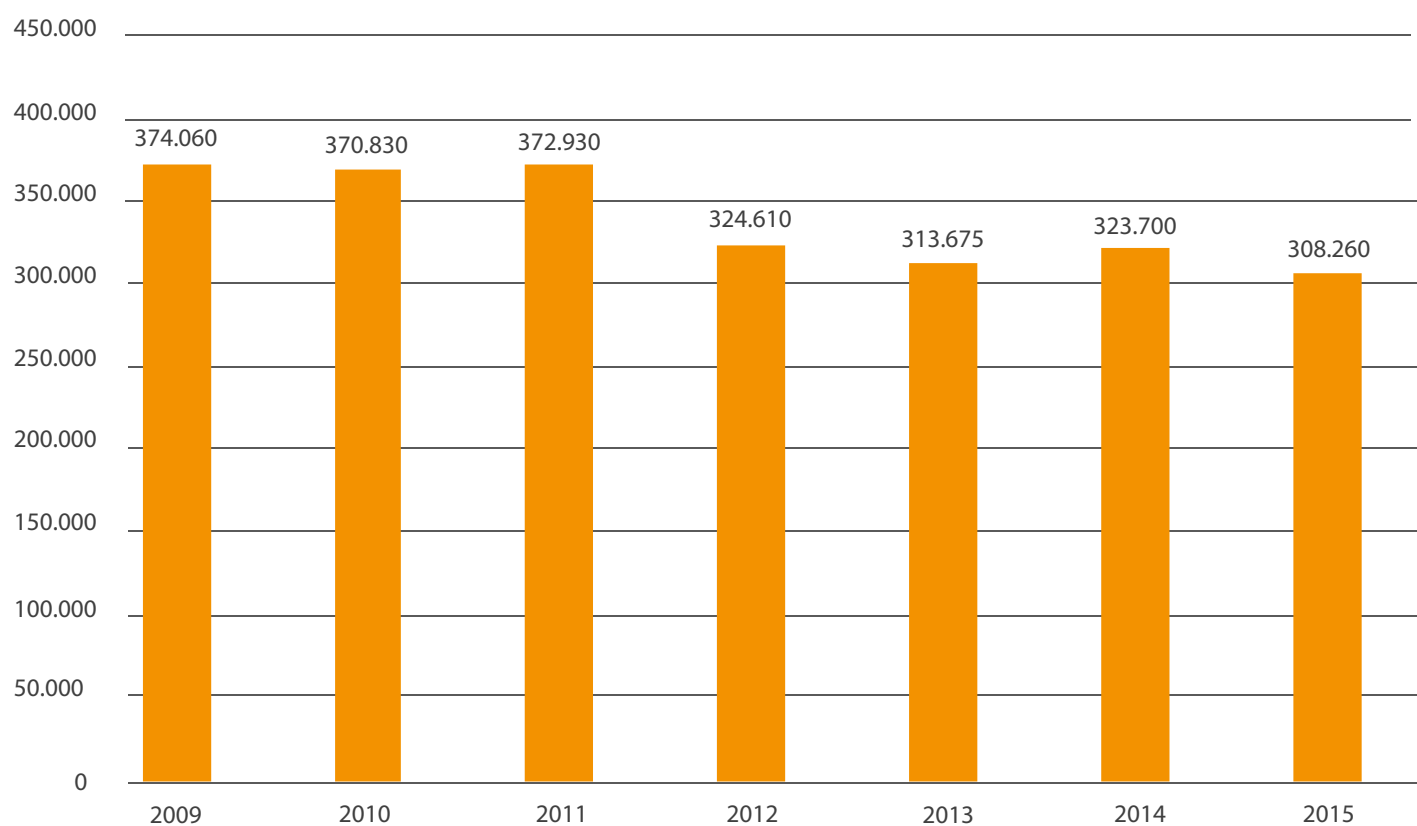


Figure 2 – Tobacco family farmers in southern Brazil. Source: Brazilian Institute of Geography and Statistics (IBGE).

Given the fall in Brazilian exports, successful experiences of the National Program for Diversification in Tobacco Growing Areas have become essential because they show that there are economically viable alternatives to tobacco.

3 | National Program for Diversification in Tobacco Growing Areas

The Diversification Program was launched in October 2005 in Brazil in the context of the ratification of the Framework Convention on Tobacco Control (FCTC). Its goal is to “support the implementation of rural extension projects, training and research for the development of product diversification strategies that apply to family farmers that grow tobacco and for the creation of new opportunities for income generation and life quality improvement for families.”

Launching the program was a joint effort of six ministries: Agrarian Development; Agriculture, Livestock and Supply; Health; Presidency Chief of Staff; Institutional Relations; and Finance. Coordination was undertaken by the Ministry of Agrarian Development (Extinct), presently Special Secretary of Family Farming and Agrarian Development (SEAD), responsible for the public policies for family farming and agrarian reform, in an effort to articulate the process of diversification in tobacco growing areas in compliance with articles 17 and 18 of the WHO FCTC.

The Diversification Program defines four basic axes that guide policies for the strengthening of family farming in harmony with sustainable rural development strategies. These axes are: rural poverty alleviation; food security and sovereignty; sustainability of production systems; and family farmers organization, income and value generation.

Over 11 years, the actions of the program have been streamlined by the partnership between the Brazilian government and a network of institutions, rural extension workers and farmers. This strategy for diversification encompasses agricultural as well as non-agricultural incomes, leaving the role of decision-making, as to which alternative to adopt, to family farmers and the existing socio-technical network in their communities.

This process takes place by means of an endogenous discussion, it should be irradiated across communities, cities and regions, generating a horizontal movement. Thus, the diversification process induces farmers and other interested parties to join forces to structure new chains and marketing channels, from local to global.

To this end, diversification requires a range of public policies and actions that integrate the three levels of government (federal, state and municipal), joining forces and leveraging resources. Such methodology, as applied by the program, has allowed the results to be even more significant.



4 | Methodological proposal (Livelihood)

The implementation of Article 17 of the FCTC that determines the search for “economically viable alternatives” for tobacco growers affected by the effects of smoking reduction supported the design of the Diversification Program. The debate deepened when Brazil took a detailed proposal for the 2nd meeting of the Ad Hoc Study Group on Articles 17 and 18 of the FCTC, held in Mexico City in 2008.

The Diversification Program incorporated concepts of “Livelihoods¹” and “sustainability”, particularly developed by the Institute of Development Studies (IDS), based at the University of Sussex. Two Brazilian professors contributed to the topic’s formulation: Sergio Schneider, from the Federal University of Rio Grande do Sul (UFRGS), and Miguel Angelo Perondi, from the Federal Technological University of Paraná (UTFPR).

The methodology was approved by the Conference of the Parties, held in Moscow, Russia in 2014 and is based on mechanisms of diversification to generate employment and income. It stimulates the resilience to deal with crises, shocks and vulnerabilities and considers the approach of “Livelihoods” as a comparative study method of sustainable rural livelihoods as an alternative to tobacco cultivation in Brazil and other signatories to the FCTC. In addition to the analysis of the diversification of production systems, allows monitoring and evaluation of the performance of public policies that promote or are potential promoters of diversification in tobacco production areas.

This methodology considers multiple aspects of the reality of family farmers producing tobacco and incorporates the understanding that the diversification process must overcome bottlenecks, such as market access or marketing, followed by social and productive organization of family farmers.

To overcome such obstacles, families should have access to public policies interrelated with a socio-technical network, to promote the endogenous development of their communities, allowing a local arrangement. The support of Rural Advisory Services and Extension (RAS and Extension) and equalized rural credit is essential to adapting the infrastructure of tobacco production in structures that allow expanding alternative production and income as well as adding value to agricultural and non-agricultural products.

The implementation of the methodology in Brazil is based on the application of a questionnaire to 11,000 tobacco growers’ families who receive RAS and Extension services of the Federal Government. This procedure seeks monitoring, systematization and analysis of the socioeconomic, environmental and health situation of these families, based on the concept of Livelihoods, for the construction of economically viable alternatives to tobacco production.

¹ From the theoretical assumptions of the "Livelihoods", which propose the study of the livelihoods and living conditions of farmers, expanding the development focus to dimensions beyond income or economic gain. Farmers should be the protagonists in making the decision to diversify.

4.1. | Evidence of the situation of tobacco producers

Applying analysis of the questionnaires, at the time T°, before receiving the RAS and Extension services, shows and points to a very worrying situation regarding health. Skin diseases, from simple allergies to cancer, are present in 19.5% of the families interviewed. Vomiting and fainting related to the disease of Green Tobacco Leaf, were reported by 49.3% and 15.2% of households, respectively. Much of the respondents (43.8%) indicated depression table in the family.

The relationship between diversification and availability of land is critical to the construction of alternatives, since the smaller the area available, the fewer your options to diversify production. According to analysis of questionnaires in tobacco-producing families, 71.1% of have up to 20 hectares and only 4.6% have more than 40 hectares (Table 1).

Table 1 - Area Stratum of tobacco producers versus level of diversification. Source: Research SEAD

Area (hectares)	Total	Level of diversification			
		Sem	Low	Average	Good
<5,0	11,4%	20,7%	7,6%	4,2%	0,7%
5,1 – 10,0	23,1%	27,6%	25,1%	18,5%	10,9%
10,1 – 20,0	36,6%	32,6%	40,6%	40,2%	34,7%
20,1 – 40,0	24,3%	16,6%	24,6%	31,5%	38,1%
>40,1	4,6%	4,6%	2%	5,6%	15,6%

As for the level of diversification, it is observed that 38.1% of the properties between 20.1 and 40 hectares has good diversification and only 11.6% have less than 10 hectares.

The remuneration of family labor in the tobacco activity is low, on average 37.6% of family members working in the smoking activity receive less than a minimum wage, the groups with the lowest compensation depend exclusively on tobacco (44.5% receive less than a monthly minimum wage), especially when you consider that this is an unhealthy and exhausting activity because, at the time of drying the leaves is required work at night.

When asked about the desire to stop producing tobacco, 76% said yes. The alleged reasons are many, the main ones being the drudgery and the high demand for hand labor (52.8%), low financial return (22.7%), health problems (20.8%) and the high use of pesticides (13.5%).



5 | Public Policies Articulation

As the adopted methodology proposes, to succeed in diversification, family farmers should have access to public policies, both federal, state and municipal level. Such policies refer to Rural Advisory Services and Extension (RAS and Extension), access to credit, the existence of marketing channels to transport their products, be organized socially and productively, and to process the products of plant and animal origin produced in property as a way to add value and obtain more income preferably through the use of infrastructure originally organized to tobacco production, turning it into family farmers.

In this regard, the Special Secretary of Family Farming and Agrarian Development (SEAD) has a range of programs and convergent actions with the methodology for the implementation of diversification process, namely:

- 1-** Rural Advisory Services and Extension (RAS and Extension): non-formal education service, continuous nature, in rural areas, which promotes management processes, production, processing and marketing of agricultural and non-agricultural activities and services, with the objective of improve the income and quality of life of rural families in a sustainable manner.
- 2-** Credit: Access to credit is given by the National Program for Strengthening Family Farming (Pronaf), which funds individual or collective projects that generate income for family farmers. The program has the lowest rural financing interest rates among the country's credit systems and financing of crop costing projects and investment in machinery, tools and infrastructure on the property.
- 3-** Marketing: support the marketing process of the products of family farming, through institutional markets, such as the Food Acquisition Program (PAA) and the National School Feeding Programme (PNAE). The PAA is an action of the Federal Government that uses marketing mechanisms that favor the direct purchase of products from family farmers or their organizations by stimulating the production of value-added processes. PNAE, established by Law n. 11.947/2009, provides that the purchase of at least 30% of public schools meals must be acquired from family farming.
- 4-** Social and Productive Organization: promotes actions focused on strengthening family farming cooperatives through the qualification of its management systems (organization, production and marketing, qualifying and ensuring market access, especially to the National School Feeding Programme (PNAE).
- 5-** Adding Value: The Agribusiness Program supports the inclusion of family farmers in agro-industrialization process and marketing of their products in order to add value, generate income and employment opportunities in rural areas, ensuring the improvement of living conditions of populations benefited by the program directly and indirectly.
- 6-** Infrastructure: Funded by Pronaf with investment resources, promoting improvements in the property for production and / or agro-industrialization of primary products generated by diversification.

When these conditions are met, the farmer can diversify their income sources, as can be seen in the successful experiences in diversification underway in Brazil.

6 | Successful and economically viable experiences

The livelihood methodology, world reference for the implementation of art. 17 of the Framework Convention, points out that economically viable alternatives to tobacco production should provide the families of tobacco growers, freedom for new opportunities, seeking satisfaction and happiness.

In this sense, respecting the wishes of farmers to choose to diversify is the basis of the proposal of Brazil. For this, the questionnaire under the Diversification Program, farmers answered the question: “What other activities different from tobacco, would your family like to accomplish?”

This information is essential to build, with the active role of producers, diversification alternatives of production and income for family agriculture, expanding the opportunities for families for productive inclusion, overcoming rural poverty and achieving sustainability with quality of life. In first place came horticulture (19.7%), followed by fructiculture (14.3%) and milk production (11.2%), as shown in Graph 3.

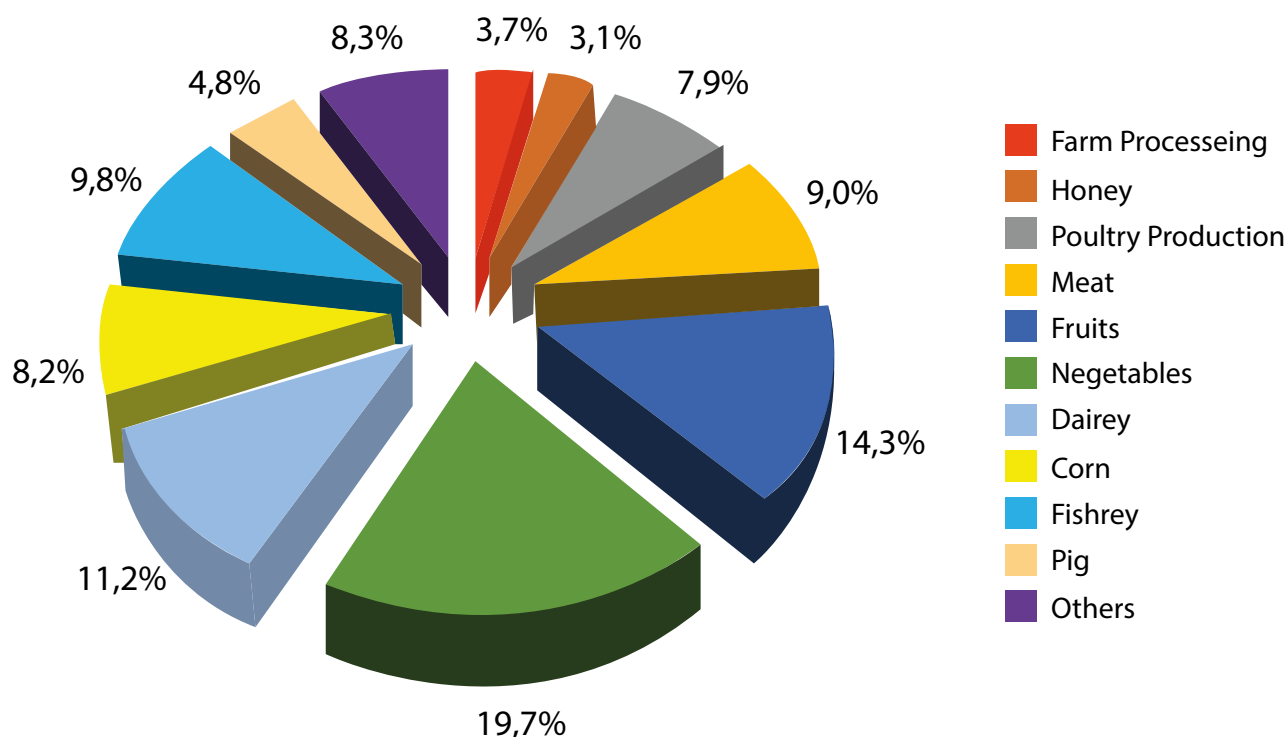


Figure 3 – Production alternatives chosen by Family farmers. Source: MDA Research.



Table 2 – Desired production by family farmers to diversify from tobacco

Olericulture	The area of horticulture covering cultivation of vegetables which includes leafy crops, roots, bulbs, tubers, various fruits and edible parts of plants. For research, the Cucurbitaceae such as melon, watermelon and poaceae (such as corn, rice and sugar cane) were classified separately. Among the most frequently mentioned vegetable crops are cucumbers, tomatoes, squash and sweet potatoes.
Fruticulture	The most frequently mentioned fruits were strawberry and grape. However, other fruits also emerged as alternatives, namely: banana, watermelon, peach and fig.
Milk	An alternative with immediate financial return compared to fruticulture, since most properties have milk production for subsistence and can increase the herd, with subsidized rural credit and earn daily income.
Other crops	highlights were the production of soybeans, seedlings, crafts, flowers and small livestock (goats and sheep).

In face of the answers, it is necessary to understand the dynamics of diversification of tobacco within the family unit. It is important to understand that on the one hand, the production systems employed by farmers, result from objective parameters, such as availability of means of production and profitability of crops, but on the other hand, they also stem from subjective and social issues, being the base of RAS and Extension, hired by the Brazilian government.

6.1 | Milk production: RAS and Extension, Organization and Credit

The property of José Eramildo Abich Garcia, has 14.5 hectares in rural General Câmara, Rio Grande do Sul. He began planting tobacco in 1997, in an area of 4.3 hectares. In the 2014/2015 season, already taking part in the Diversification Program, he decreased production by 80% and invested in dairy cattle. “The problem with tobacco is that the money isn’t enough for the whole year, I had to work outside the property to survive the rest of the year,” says José.

In 2016, the Abich family abandoned the tobacco farming and went on exploring a herd of 42 animals, 10 heifers and 32 cows. The daily production reaches 500 liters and is entirely sold to the Dália Dairy Cooperative, in which they take part. Gross monthly income is R\$ 22,500 and the cost of production reaches 55%. The milking structure was expanded two years ago. The milking machine and the containment of animals, were funded by the rural credit program of the federal government, Pronaf.



Milking cow herd.



6.2 | Fruticulture: RAS and Extension, Organization and Value aggregation.

The property of the Luiz Carlos Laux and Eliana Hollas Laux couple is in Sertão Santana, Rio Grande do Sul. The family declined 70% of the tobacco production and has been diversifying with Grape and Peach. They are increasing their investments in fruit production to add value through the structuring of a plant to produce sweets and juices.

The family takes part in the local cooperative, which markets their fruit production. In addition to selling to the cooperative, they market directly to the consumer on their property.

With the increase of fruit production and structuring of the plant, the couple's daughter, Lisandra, who is trained in food technology and was living in town, returned to the property to assist in the fruit processing.



Bordô Grape.

6.3 | Horticulture: RAS and Extension, Credit, Commercialization

The couple Ivonice Bujes and Cristian Bujes live in Barão do Triunfo, a city in Rio Grande do Sul country state, in a property of 10 hectares, of which 6 are destined to livestock. Before 2013, the Family used to grow 60 thousand tobacco plants, what corresponded to 3.5 hectares. In the following year, there was a cut down by 42% on it, as they started to cultivate strawberry under the guidance of the RAS and Extension service provided by the Federal Government.

Other than that, the Bujes Family accessed the Federal Government's rural credit programme, "Pronaf", to build up three greenhouses aiming to cultivate semi-hydroponics strawberries. In 2015, that production reached 8,5 tons and was totally sold either to the local programme of food purchase from the small holders, the "PAA", or straight to the final consumer. The total income was of R\$90 thousand (around USD\$27.000). "With the tobacco we had to plant 3 hectares to have the same income we made with the strawberries (for the strawberries we used 1/10 hectare), explains Ivonice.



Strawberry production.



6.4 | Vegetable Crop and sweet potatoes: RAS and Extension and Credit

Nearby the Bujes is located the Bedum Family property. They have cut down tobacco production by 30% and are managing to diversify it with the cultivation of sweet potato and tomato. In the 2014/2015 crop, they harvested 25 tones of sweet potatoes in 1 hectare generating a gross revenue of R\$ 52,2 mil (around USD\$15.500). “handling sweet potato requires less effort than tobacco, what must have the greenhouse dried, so we must watch out the fire all night long and harvest during the day. It’s a huge sacrifice”, says Leomar Mileski Bedum. The Family is building up two greenhouses with Pronaf credit.



6.5 | Fruit and Vegetable crops: RAS and Extension, Credit and Added value

The couple Elso Miguel Raymundo and Angela Raymundo live along with their son Éricles in Passo do Sobrado, a municipality in Rio Grande do Sul country state. The family is assisted RAS and Extension. According to Éricles, who has concluded his studies at “Escola Família Agrícola” (EFA) school, “diversification was essential for the decision we made to come back to the property”. The family has reduced the tobacco production by 80% and transformed one of the greenhouses, used before to dry tobacco leaves, into an agroindustry to process fruit and vegetables, what was made possible by Pronaf funding.



Reutilization greenhouse for tobacco drying structure for fruit production.



6.6 | Bakery: RAS and Extension, Credit, Comercialization and Added Value

The property of Gildo Rech and Borgo Rech is located in Guamiranga, Paraná country state, and is taken as reference as a non-agriculture business producing breads, cakes and cookies. The Family managed to reduce tobacco production by 60%. The big change was made possible with funding of Pronaf Investments programme, through a credit line specific for women, “Pronaf Mulher”[Women Pronaf], focused on the agroindustry.

According to Gildo, with the agroindustry it is possible to pay for all the family’s expenses, including the ones with tobacco. “Now we can buy whatever we want in the market. Our dream is to increase the agroindustry and quit planting tobacco!”



Agroindustry of bakery.

6.7 | Mushrooms: RAS and Extension and Infrastructure

'Nilton and Rosane Maria Amorim's Family live in São João Batista, in Santa Catarina state country, and has abandoned tobacco growing. The family is diversifying the production with mushrooms by using the infrastructure used to dry the tobacco leaves already existing in the property. They are supported by the RAS and Extension programme and trade their products both within and outside the region. The mushroom production is consistently increasing.



Production of edible mushrooms in drying cabinet of the tobacco.



Final notes

The experiences mentioned before allow us to say that the coordination of policies focused on diversification is an essential condition to seek economically viable alternatives to tobacco production, providing the farmers with a better quality life and health and fostering the region's rural development.

