



## Subsidy for traditional rubber production, Brazil

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**Short title:** Subsidy for traditional rubber production, Brazil

**Key Message:** The subsidy based Chico Mendes Law successfully improves the life of rubber tappers in Brazil and protects the Amazonian rainforest.

**Reviewer:** Ingrid Prem

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### Keywords:

*Biome: forest, tropical rainforest*

*Ecosystem services: materials / biomass (raw material), hydrological cycle and water flow maintenance, habitat and gene pool protection, global climate regulation by reduction of greenhouse gas concentrations, heritage, cultural, spiritual and/or emblematic*

*Sector: forestry*

*Policy tool/ instrument: PES, spatial planning/ targeting*

*Region and country: South America, Brazil*

## 1. What was the problem?

The State of Acre has an area of 153,150 km<sup>2</sup>, approx. 3 per cent of the Brazilian legal Amazon, and is still largely covered with forests (86 per cent – Anderson et al 2013). Between 2003 and 2012, deforestation rate fell by 71 per cent, however, it is uncertain, how the global demand for natural resources will affect states like Acre in the future (Anderson et al 2013). In general, Acre's forests are dominated by bamboo and palm, which makes them poor in timber resources. However, the non-timber forest products (rubber, oils, fruits etc.) have greater density which has led to an extractivist economy based on forest products, including rubber, Brazil nuts, copaíba, andiroba, buriti, açaí, patuá, murmurú, and unha de gato. This livelihood system is often combined with small scale activities such as slash and burn agriculture, hunting and fishing, and occasionally timber extraction.

Living conditions of the rubber-tappers in the Amazon have always been hard and uncertain. The situation got even more complicated when growing deforestation due to the expansion of cattle ranching and land speculation threatened the livelihoods of rubber tappers, gatherers of Brazil nuts and Indigenous Peoples (Anderson et al 2013). The conflict became internationally known when a leader of the rubber tappers, Chico Mendes, was assassinated in 1988. The assassination attracted national and global outrage. In 1999, a new government started a series of policies designed to foster sustainable development and reduce deforestation. The first extractive reserves (RESEX) were created. RESEX are protected areas designed to protect the land rights of persons dependent on the sustainable use of rubber or Brazil nut. Thereby, they also recognize the traditional knowledge of these stakeholders. Building on the example of Acre, by 2010 65 RESEX could be established in the whole Brazilian Amazon, covering a total area of more than 133,000 km<sup>2</sup>.

The policy change in Acre with a forest based development strategy included the Chico Mendes Law (1999), which provides subsidies of US \$0.40 per kilogram of rubber. Rubber tapping has relatively little impact on the forest ecosystem, since the extraction of latex rubber removes only a tiny portion of the biomass and practically maintains intact the structure of the forest. The conservation of biodiversity through sustainable rubber production is a declared goal of the law. Experts estimate that the law resulted in the protection of around 12,000 km<sup>2</sup> of rainforest (Veríssimo et al. 2002). The law is a good example of the integration of sustainable economic development and conservation. It (i) improves the income level of rubber tappers and the generation of value-added from forest products; (ii) secures co-benefits for biodiversity conservation and provision of forest-based ecosystem services.

In order to be eligible for the subsidy, rubber tappers must be registered with the Executive SEFE and the State Government. In addition, they must be members of organized associations. Extractivist associations are organized into regional cooperatives which report to the National Council of Rubber Tappers (Barnes, A. [no year]).

## **2. Which ecosystem services were examined and how?**

Securing income from provisioning services (rubber, nuts) played the central role for the justification and framing of the legal instrument. However, other ecosystem services like supporting services (habitat conservation), cultural services (traditional knowledge based management, tourism etc.) as well as to a certain extent regulating services (local climate, carbon storage etc.) were also affected. The ecosystem services were examined in an integrative process. For instance, interviews were conducted with the Executive Secretary and the staff of the Secretary of Forest and Extractivism (SEFE) responsible for the conception and implementation of the Chico Mendes Law. Additionally, the extractivist leaders, including the representatives of the National Rubber-tappers Council (CNS), and the leaders of the extractivist communities of Alto Acre and Juruá were consulted.

### 3. Did the examination of ecosystem services generate impacts on decision-making or policies and, if so, how?

The Chico Mendes Law in the State of Acre is integrated in a series of social and environmental policies that are intended to contribute stop destruction of forest ecosystems and to follow a forest based sustainable development trajectory. Noteworthy policies are for instance (Anderson et al 2013):

- ecological-environmental zoning, which serves as a basic instrument for territorial planning
- establishment and expansion of a system of protected areas that covers nearly 50per cent of the state
- development of an extremely advanced system for monitoring forest cover
- the *Sistema de Incentivos por Serviços Ambientais* – SISA (Environmental Services Incentives System) which aims to add value to other environmental services and is backed by a law (Governo do Acre 2010).

Each rubber-tapper family uses and conserves an average of 300 hectares of forest. Already in 2001 approx. 4000 families were involved in the program. Thus, the forest area directly benefiting can be estimated to reach around 1.2 million hectares or 12,000 km<sup>2</sup> (Veríssimo et. al. 2002). The subsidies, designed to encourage extractivist activities, indirectly also support the maintenance of biodiversity and carbon stocks. Expressed in terms of unit area, the annual cost of maintaining one hectare of forest under management for rubber production is less than R\$1 (one real).

The Italian tire company, Pirelli, has purchased approx. 1,500 tons of rubber annually from the state benefiting an estimated 6,000 families and protecting an estimated 90,000 hectares of forest (Barnes, A. (no year)). The government also invested in establishing a factory for the manufacture of condoms. In 2008 the factory processed 103,000 litres of latex supplied by over 400 rubber tappers (Anderson et al 2013).

Ideas of the law can also be found on national level. In the National Plan for the Promotion of Chains of Socio-Biodiversity Products (in Portuguese: *Plano nacional de promoção das cadeias de produtos da sociobiodiversidade* – MDA et al. 2009) a number of policies are compiled with the aim to promote sustainable development, livelihoods and social justice. Part of this plan and national strategy also includes the support of extractivist communities and economies by inter alia setting a fixed price on natural rubber. Within the Program of the Acquisition of Food from Small Scale Farmers (in Portuguese: *Programa de Aquisição de Alimentos da Agricultura Familiar* – PAA) from 2003 a guaranteed minimum price for commodities like rubber was installed by 2008 (MDA et al. 2009)

### 4. Lessons learned

Adding R\$ 0.40 per kilogram to the market price promoted sustainable traditional extractivist activities. It ensured the permanence of families in the forest, revitalized the activity and caused a surprising “urban exodus”, with approximately 1000 families

abandoning the periphery of cities like Rio Branco and others in Acre. These families returned to the forests. The payment of the subsidy for rubber proved favourable in terms of the distribution of resources and social equity. In 2002, it was estimated that 6,600 families, approximately 30 per cent of the economically active rubber tappers in the state of Acre, received subsidies for rubber extraction (around 1,600 families were involved when the program began). Between 1998 and 2001, rubber production increased over 300 per cent from 962 tons to 3,000 tons. Between 1999 and 2002, the total amount paid to the rubber tappers increased to \$1,600,000. The Chico Mendes Law was successful in Brazil due to its low transaction costs, and the equitable nature of payments based on measurable goods (Verissimo 2002). The continued success of the Chico Mendes Law is possible because the legalization of rubber extraction has greatly increased the tax revenue to the state government. Of the R\$1.2 million paid in subsidies in 2001, the state received nearly 70 per cent back in tax revenue (ibid).

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