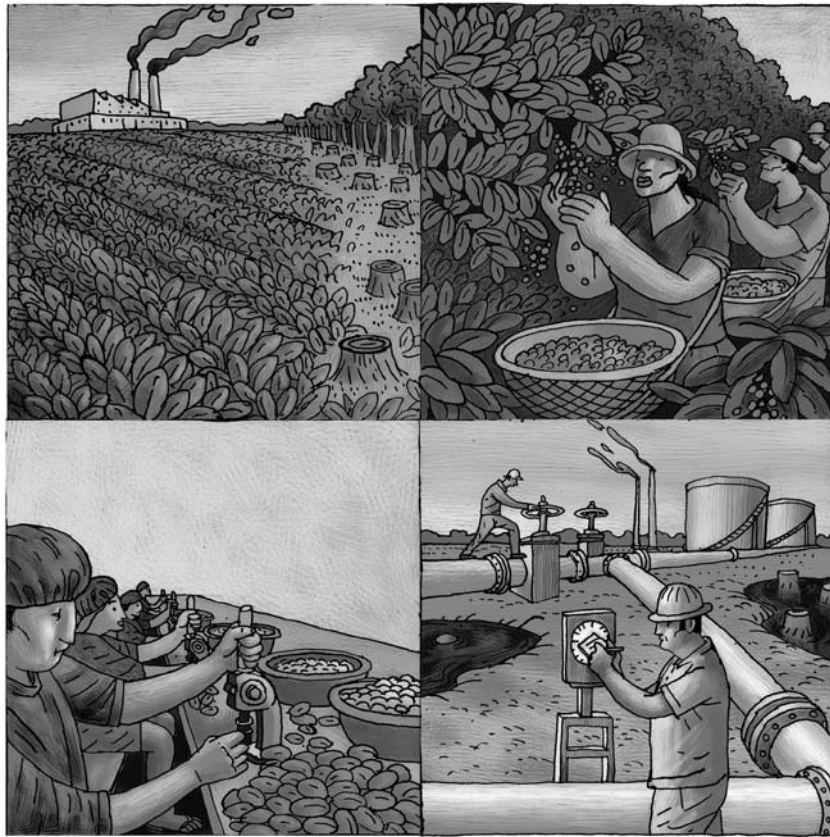


Sinopsis



Human Development Report The other frontier:

Alternative uses of naturales resources in Bolivia

THE CHALLENGE OF OUR GENERATION

Last year, the Bolivian economy grew by more than 4.5 %, but the number of people living in poverty increased by more than 166,000

1. Bolivia is trapped in a pattern of growing impoverishment. Last year the country's economy grew by more than 4.5 %, but the number of people living below the poverty line increased by 166,869. To achieve the economic growth, petroleum and natural gas and mining contributed almost US\$3 billion in exports, and the agricultural frontier was expanded by 300,000 ha. As normally occurs with economies based on primary natural resources, the Bolivian economy was unable to transform these resources into good quality jobs. With a long history of dependence on silver, tin, rubber and hydrocarbons, there is a development pattern based on few actors and sectors. Bolivia has a narrowly based economy.
2. However, there is an alternative economy beyond the frontier of primary natural resources, *the other frontier*, based on environmental services, ecotourism, forest development, natural products trade (biocommerce), and organic agriculture, which generate employment preserving the environment and improving labour conditions. Thousands of producers, communities and associations have already built this other agricultural frontier in the most varied places: coffee, Brazil nuts, and organic cacao in the northern part of La Paz and Pando; quinoa and vicuña wool producers associations in the High Plateau (Altiplano); lizard leather producers in Beni; indigenous communities that prevent the deforestation of the Noel Kempff Mercado Park, promote ecotourism in the Madidi National Park, and lead sustainable forest management in the northern Amazon and southeast forests.
3. The aim of this report is to explore potentialities of *the other frontier* in Bolivia. Those thousands of producers in this alternative economy contribute about US\$300 million in exports and generate tens of thousands of new jobs. Despite its small size and territorial fragmentation, the other frontier represents the basis of an alternative development pattern. Its high rates of return, its aggressive insertion into international markets, and ascending demand in global markets generate an enormous potential. The future challenge is to expand its impact by developing synergies between small and large producers and to join regions using a development pattern more productive and sustainable. Over time, the other frontier has the potential to define a new identity for the Bolivian economy.

Prices of oil and food constitute an additional challenge for the Bolivian economy

4. For the first time since the 70s, the world economy is facing a double crisis due to the rise in hydrocarbon and food prices. Analysts agree that in terms of poverty and welfare the most serious problem is that of food prices. At the global level, between June 2006 and June 2008 the price of cereals doubled. Wheat prices increased more than 75 % and vegetable oil prices rose 60% during the same time period. The change in food prices follows dietary changes in areas of rapid growth in the world (especially China and India). Another reason for food price increases is the change in soil use patterns, now favoring corn, sugar cane, soy, and oil seeds for use as biofuels.

GRAPHIC 1

Inflation: Consumer prices and food component, 2008



Source: CEPAL (2007-2008).

5. What is the impact on Bolivia of the increase in food prices? Signals of food insecurity have been detected in some regions and especially in some household groups in the country. In the last 30 years, the rapid process of urbanization has led to a change in food consumption patterns. A recent study of the International Food Policy Research Institute (IFPRI) and Von Braun (2007) shows that food purchases in Bolivia's poorest households--net consumers--are five times higher than the value of sales of poor households--net producers. Therefore, the increase in food prices has had a net negative effect on the well-being of poor households in Bolivia, both in urban and rural areas. The Ivanic-Martin study (2008) for the World Bank and the CEPAL study (2008) show that food price increases will tend to raise poverty 2 to 3 % in developing countries.
6. The other side of the coin is that, to the extent that demand and prices increase, not only of basic cereals but also of organic and agroindustrial products, a seam of opportunities for the Bolivian food industry opens up. The growing demand for cereals and oils will probably translate into opportunities for expansion among national producers. The potential for food production can be developed through competitive advantages generated during the last two decades in such varied areas as soy, cereals, and vegetables. However, a change in the model of natural resources use is required in order for them to enter markets of growing added value.
7. A recent study projects world prices for oil seeds and cereals for the period 2008-2015. The study finds that many cereals will show a price trajectory similar to an inverted "U" for that period. It is estimated that base prices, in some cases, particularly soy and soy oil, will be lower in 2015 than in 2008. This is in part because the rate of conversion of soy into a biofuel is low. According to a World Bank study, it is four times lower (in US\$ per gallon) than corn or sugar cane ethanol. For this reason, food and biofuel expansion opportunities should be subject to careful and specific analysis to guide decision-making.

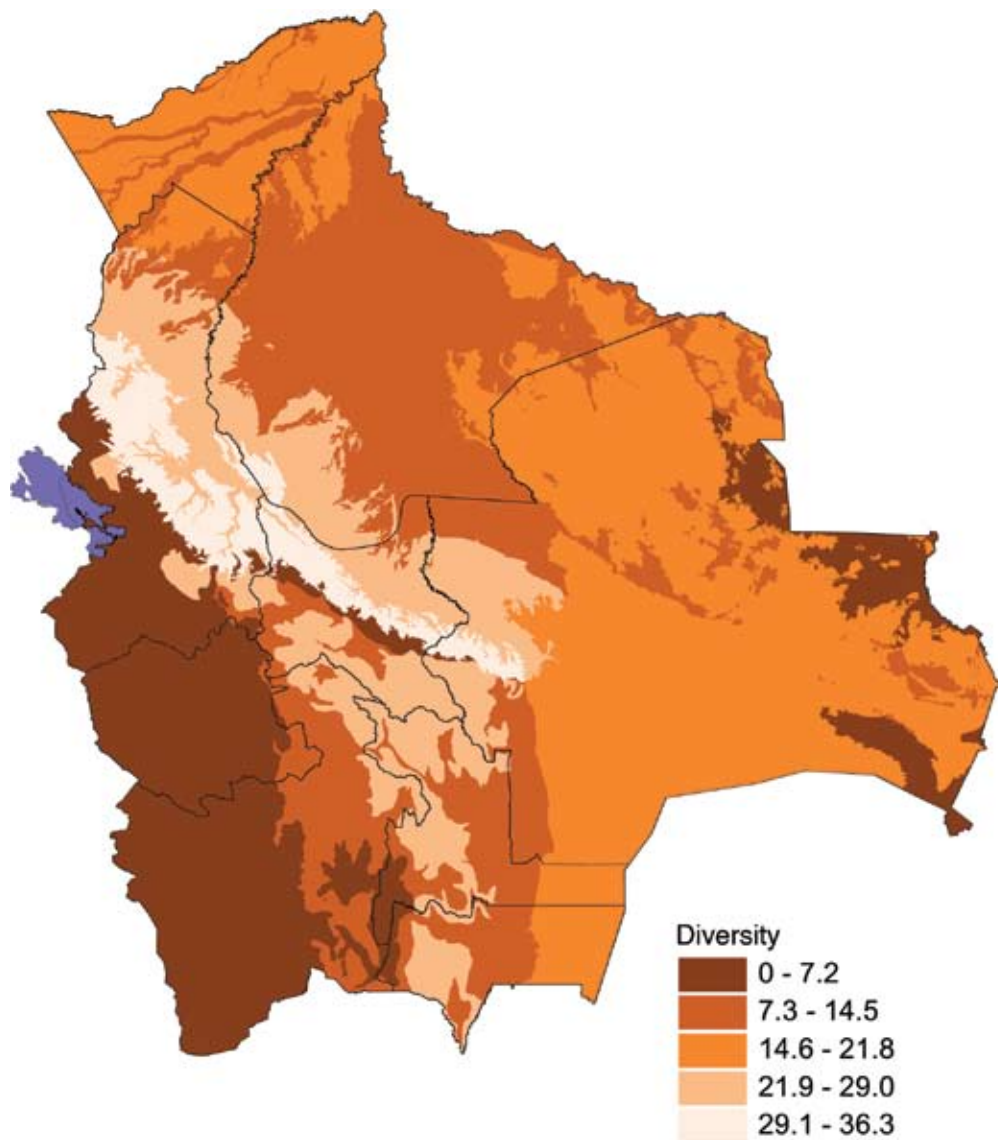
Our generation's challenge is to build an economy not based on cheap labour and primary natural resources

8. This is a propitious time to analyze the potentialities of alternative uses of natural resources in Bolivia. The Tropical Andes constitute the epicentre of the Western Hemisphere's greatest biodiversity. It is estimated that the Andes area hosts from 15 to 17 % of all the vascular plant species of the world on only 0.84 % of its total terrestrial surface. A large part of Bolivian territory is included in this area, meaning that Bolivia is one of 15 countries with the greatest biodiversity in the world. The Amboro-Madidi conservation corridor possesses the highest levels of species richness and endemism in the world.

9. Bolivia is among the 11 countries in the world with the highest number of vascular plant species and also among the 10 countries richest in bird species. Forest surface surpasses 53 million hectares, equal to 48 % of the national territory and 10% of tropical forest in all of South America. This forest richness places us as the country in the world with the sixth greatest quantity of natural tropical forest in the world.

MAP 1

Species Diversity
(average of the ecoregional percentages of diversity)



Source: Own elaboration, based on Ibisch y Mérida (2003).

*From market niches to market pockets: No. 25
in natural gas but No. 1 in certified forest*

10. Bolivia is the world leader in certification of natural tropical forest and is one of 12 countries with the most organic agriculture, by surface area, in the world. Bolivia ranks today, with its tiny exports of specific products, among the ten major exporters of organic coffee and cacao, the five major exporters of certified tropical timber, and the three major exporters of Brazil nuts.
11. The size of alternative trade markets has in actuality shown accelerated growth. Those born as niches have now been transformed into markets with considerable transaction volume. In 2006, the value of organic trade worldwide reached US\$40 billion, four times the size of the Bolivian economy registered for that year. The *International Federation of Organic Agriculture Movements* (IFOAM) has 689 members distributed in 108 countries around the world. The expansion of this market between 2005 and 2006 implied a growth of US\$5 billion, equivalent to the total value of Bolivian exports in 2006. The expansion of the organic market registers an annual average growth rate of 16 % and a price that exceeds by about 20 % that in the conventional market. The Bolivian Association of Ecologic Producers (Asociación de Productores Ecológicos de Bolivia) (AOPEB) calculates that the value of Bolivian organic exports could reach US\$450 million in 2016.
12. According to the latest report of *Fairtrade Labelling Organization International* (2007), the value of global fair trade reached 2.3 billion Euros, equivalent to US\$3.39 billion. In 2007, fair trade almost doubled with an expansion of 47 % of the value recorded at the end of 2006. The actors who benefit from this market -- farmers and producers--now total 1.5 million, and the direct beneficiaries are estimated at 7.5 million in over 58 developing countries grouped into 632 organizations.
13. The challenge of finding a new place in the global economy in the coming decades is added to the challenge of transcending the growth of impoverishment and taking advantage of biological megadiversity. The dynamic effects of global change make more difficult the task of promoting economic growth, generating employment, and reducing poverty in economies based on primary natural resources. At the same time, they make it more urgent to think about strategies to articulate small economies into the global economy. Bolivia requires an international insertion *not* based on abundant natural resources or cheap labour resources.

THE CHALLENGE OF THE FIRST LINK

The wealth of the natural resources is not in the first link of the chain

14. In this report we concentrate attention on the first link in the economic chain, the place where soil, land, water, forest, and biodiversity use is defined. Despite its strategic importance, this is not the place where greatest value for the economy is generated. Let's think about the case of specialized coffee. The hundreds of families who pick coffee beans receive approximately US\$0.33 per kg. Unprocessed coffee has a price of US\$ 0.75 per kg; usually this is a local process. As value is added through processing and transformation, the price increases to US\$1.63 per kg for parchment coffee, US\$1.98 for golden coffee (in factory) and US\$2.64 for the same coffee upon export. From that point the price rises to levels around US\$10 per kg for international wholesalers and US\$17 in European and North American supermarkets. How can we generate more aggregate value and at the same time retain more value in Bolivia? This is the challenge of the first link in the economy chain.
15. The most visible result of an extractive vision of the first link is the ongoing conflict over natural resources ownership and control and the targeting of political and media debate on this issue. However, beyond this, access to natural resources should be understood as the right of possession, use, and exploitation of these resources in relation to the first link--the earth--but vertically linked to the next links until the last one, where greatest benefits from earth richness are captured. Hence the term "access" should be understood as a concept broader than "property".
16. The possession of natural resources must be analyzed within the framework of a broader debate linked to the process of transforming production structures as a whole. The challenge is to articulate these new production structures or this new society that goes beyond the rural, with thousands of small and medium actors from the popular economy and competitive actors of the new economy externally coordinated. The idea is to redistribute rather than articulate, but now the challenge is to think of an agrarian reform coordinated to the popular urban economy and the international economy, in order to chain the first link to the next in the chain. The ultimate goal is that peasant and indigenous families generate surpluses in their economic activity.

The model of the other frontier revalues alternative uses of natural resources

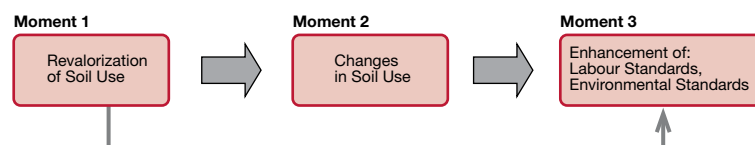
17. In Bolivia the current configuration of soil and natural resources use resulted from expanding the agricultural, mining and hydrocarbon frontier throughout the 20th century. There is a

procedure, a “frontier model” behind the expansion of the natural resources frontier. This model describes the process that resulted in current uses and exploitation of natural resources. The model emerges from the demographic, technological, and economic changes that marked changing land use in the last century.

18. The model of the current frontier reproduces a traditional land use pattern of low returns on investments and low productivity. We can observe three moments: the first is that of frontier expansion driven by population pressures and technological or economic changes that make expanding the frontier profitable. The second moment emerges due to soil productivity loss. In some cases, the intensive use of fertilizers and pesticides help extend a piece of land’s life until falling productivity creates new incentives for expansion. The third moment relates to the new expansion of the frontier and a vicious growth cycle with little value added.

GRAPHIC 1

Three-moment model of the other frontier



Source: Own.

19. The other frontier is also based on a three-moment model. The first moment is the economic valuation of land use. In order to change land use at local, municipal, regional or departmental levels, economic incentives aimed at patterns of sustainable use should be in place. Only if the profitability of producing certified timber or organic Brazil nuts is greater than that of producing rice, cattle meat, or sugar will a new frontier model be sustainable. The second moment is that of value aggregation in global production chains. The value added of high-profit products emerges from qualities of the productive process (labour and environmental standards, among others) and from intangible and symbolic qualities incorporated during the marketing process (certifications and labeling, among others). The third moment involves medium- and long-term sustainability with higher labour and environmental standards.

*The value of the intangible or symbolic
allows skipping stages in development*

20. An important trend in the microanalysis of natural resource value chains is to distinguish between the tangible or material determinants of the value for a product or service--such as taste quality or sanitary controls--and the intangible or symbolic determinants of the value of these products--for example, if they are produced without child labour or if they preserve tropical forest. Revaluation of the first link requires questioning of how to capture more value added. The literature is concentrated on three areas that determine a greater redistribution of intangible or symbolic value. The first is related to certification processes that are critical for price discrimination according to labour and environmental standards and native species or place of origin. The second aspect is related to intellectual property and the potential to confirm denominations of origin at the local or regional level. Finally, the third aspect is related to the development of appropriate information about the distribution of value added in global value chains.
21. Countries in the first stage of development base their competitiveness on the endowment of production factors, unskilled labour, and natural resource exploitation. Bolivia belongs to this group, along with 41 other national economies. In the second stage of development, the economy's competitiveness is based on efficient use of its factors. Countries move to this stage when they need to develop efficient production processes and improve the quality of their products. In the third stage of development, innovation is the engine of the economy and the promoter of competitiveness. Sophisticated production processes allow the sustainability of high income associated with standards of living, whenever these products are able to compete with new and unique products.
22. Why can't we imagine a Bolivian economy with international labour and environmental standards by 2025? The small size of the Bolivian economy makes it possible to think about "skipping stages", thanks to the vast intangible value of a small economy that does not plunder its environment or exploit its workforce. This does not mean turning its back to the world, nor to sectors, fields, or actors that the Bolivian economy already possesses. Rather, it means to strengthen competitiveness with new kinds of exports--products that will be able to attract socially responsible investment capital that never used to come to Bolivia and the green and fair initiatives that never succeeded because standards were very low.

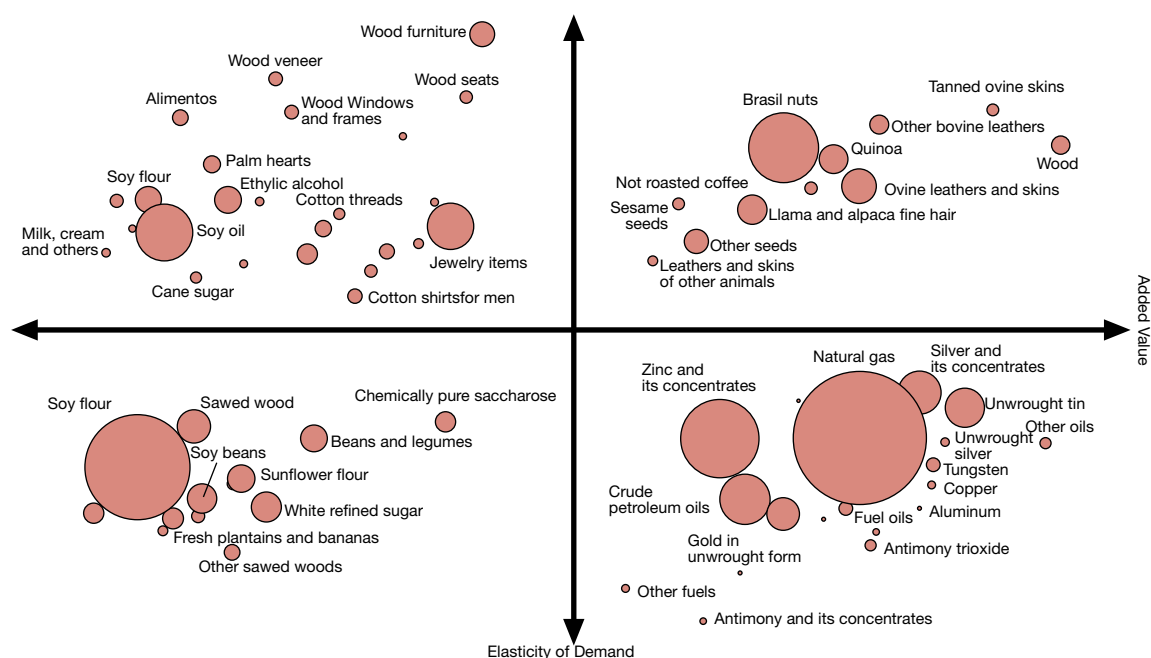
There are successful examples of Bolivian alternative products and services that have reached global markets

23. How can alternative products and services be described? Let's think for a moment about a typology of products and services based on supply and demand characteristics. Graph 2 shows how the Bolivian economy looks when supply and demand characteristics intersect. We can observe four quadrants, one of them (that of the other frontier) showing incipient but encouraging and highly competitive markets. It includes products and services that are highly profitable and not easily substituted in international markets. Depending on the size of the final market, it describes market niches or veins. Without a doubt, the Bolivian economy cannot depend only on these products, because among its current comparative advantages are primary natural resources (gas, mines, extensive agriculture, livestock) and manufacturing (agroindustry, textiles, jewelry, leather processing, among others). However, it can expand supply and the impact on employment and income generated by the alternative use of natural resources.
24. What features are common to the products and services from successful experiences of the other frontier? There are three. First, that their competitiveness is based more on the quality of the production process than on the final quality of each product. High quality is critical to enter into the international markets, especially for some exports, such as quinoa, coffee, and reptile leather, but most of their price markup derives from the quality of processing: these products do not use chemical additives, are environmentally sustainable, and do not use child labour, among other features. Therefore, their aggregate value increases more from labour and environmental standards certification than from productivity increase, technology adoption, or product innovation.
25. Second, many products have demand characteristics that make them and their substitutes relatively impervious to price changes. The inelasticity of demand means two things for a first-link producer. On the one hand, he or she can better navigate the ups and downs of international consumer markets because the product has a high brand differentiation. On the other hand, due to the product's wide profitability margin, the producer can improve labour and environmental standards, which, in turn, will position the product in markets with higher economic return. The producer is in a virtuous circle where he or she competes "upward" because of the product's demand characteristics.

26. Third, most products from the other frontier have supply characteristics that in the long term involve changes in land use. Expanding supply of these products and services is not based on expansion of the agricultural frontier but on capacity to improve the value of the economy's first link. This means better environmental conservation and sustainable land use. Together, these attributes describe a "mosaic" policy of sustainable conservation. To the extent that the first link of the larger economy is more highly valued, the return on the other links will be higher, provided that there is an insertion into markets with high environmental and labour standards. Therefore, a model for stopping the plundering of the environment and degradation of the frontier has great economic importance.

GRAPHIC 2

Typology of products for export



Fuente: Own elaboration, based on IBCE (2008).

THE CHALLENGE OF SPREADING SUCCESSFUL EXPERIENCES

27. How could the impact be expanded beyond a few local pockets of alternative production in rural areas? How could the impact of these pockets added together be spread on a national level? And, to what extent are we anticipating a national agenda of policies on natural resources, manufacturing, and international commerce? These three questions are interrelated and pose a great challenge for the future of alternative uses of natural resources in Bolivia.

28. The cases described in this report show that seeds of the alternative economy already exist. These cases make visible half a million producers who generate US\$300 million in exports and have the potential to base their competitiveness on higher labour and environmental standards. The central challenge for public policy in Bolivia is to spread this impact beyond pockets, market niches, and pilot experiences. There has been no better opportunity in recent economic history for doing so than now. High prices for oil and food create an economic incentive to switch sources of employment and income generation, and climate change creates an incentive for structural change in development patterns.

Bolivia can be a global leader in policies for the reduction of carbon emissions through deforestation

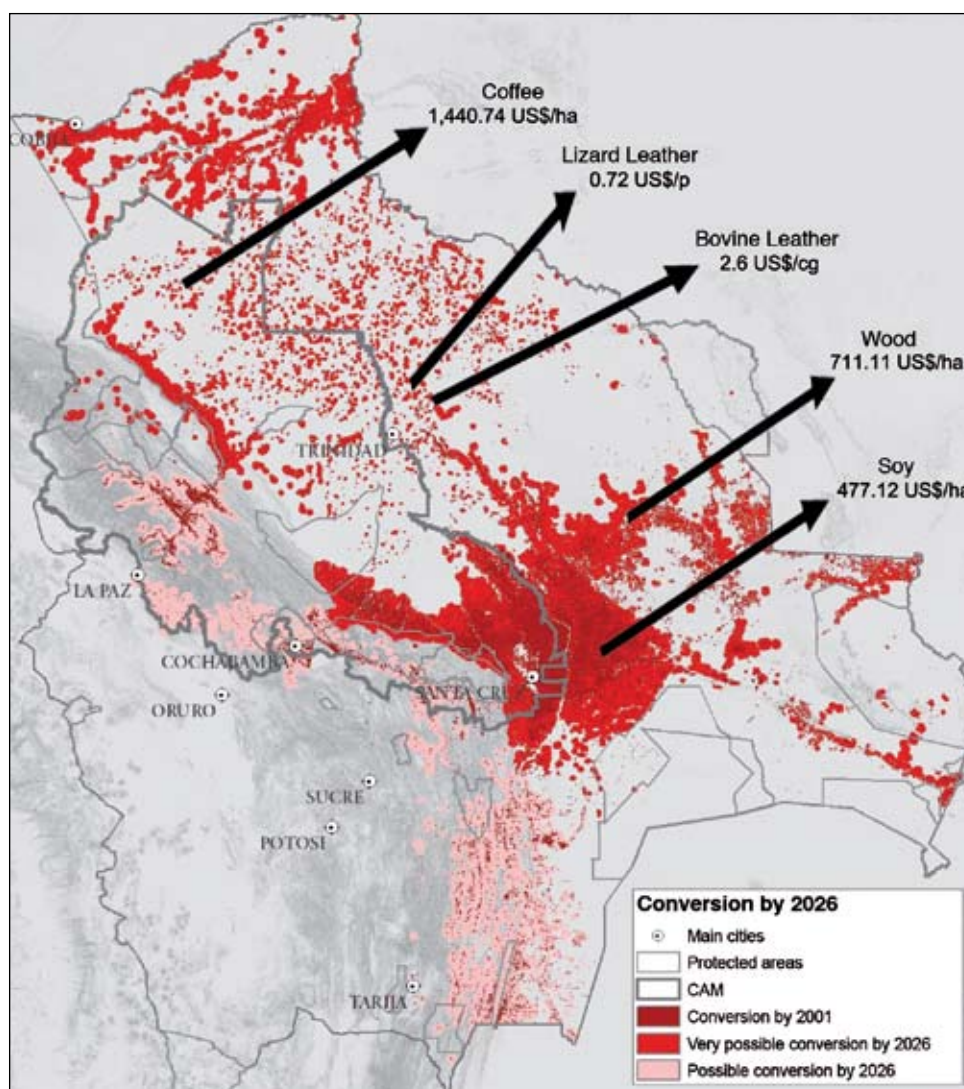
29. Deforestation in Bolivia proceeds at a rate of around 300,000 ha per year. The main reasons for this deforestation are land use changes for agriculture and livestock, forest fires, illegal logging, and new settlements. This change in land use represents an intangible value of US\$1,500 per hectare of biodiversity with a tangible value of US\$200-500 per hectare for cattle, soy, or coca leaves. It is time to give an economic value to the intangible and thus initiate a shift in the pattern of economic development. This is not about saving the forest only to remain in poverty but to reduce poverty to save the forest. The successful experiences of deforestation avoided in Mato Grosso (Brazil), Nicaragua, and the Bolivian Noel Kempff Mercado National Park suggest not only that this is possible but also that there are financial and institutional instruments capable of making the change.
30. How can we take the first step? The Bolivian government can unilaterally move forward by creating a fund for the reduction of emissions from deforestation and degradation. The fund would focus its first actions in the areas most vulnerable to frontier advance--the Madidi Amboro corridor and vulnerable forests of Amazon and Chaco. The expected impact is double: first, induce a gradual change in relative prices of land so that the value of a hectare of biodiversity forest would be higher than that of a hectare of cattle or soy; second, spread a protective economic umbrella over 45.3 million hectares identified by the National Program on Climate Change as potential carbon sequestration, resulting in annual payments to communities and indigenous people who use the forest in a sustainable way.
31. How much would it cost to induce a gradual change in land prices, and what are the institutional channels for accomplishing this? According to the National Program for Climate Change, the potential surface for implementing afforestation and reforestation projects in the framework of clean development is 45.3 million hectares. If Bolivian carbon certificates were commercialized in the new emerging market, using the average price of the European carbon market in 2007, the price of one metric ton of

carbon would be around \$20. This is equivalent to almost US\$550 million per year expressed in current net value. In order to move forward with this agenda, it will be necessary, first, to establish a fund that will have value on international markets; second, to develop an international program to certify carbon emission reduction by deforestation avoided; and third, create a national fund to administer payments to communities that are part of this plan for avoided deforestation.

32. Maps 2 and 3, simulated for 2026, show a significant change in the profitability of different uses of biodiversity at a national level. Map 2 shows an order of profitability that responds to the traditional use of natural resources. By superimposing profitability estimates on

MAP 2

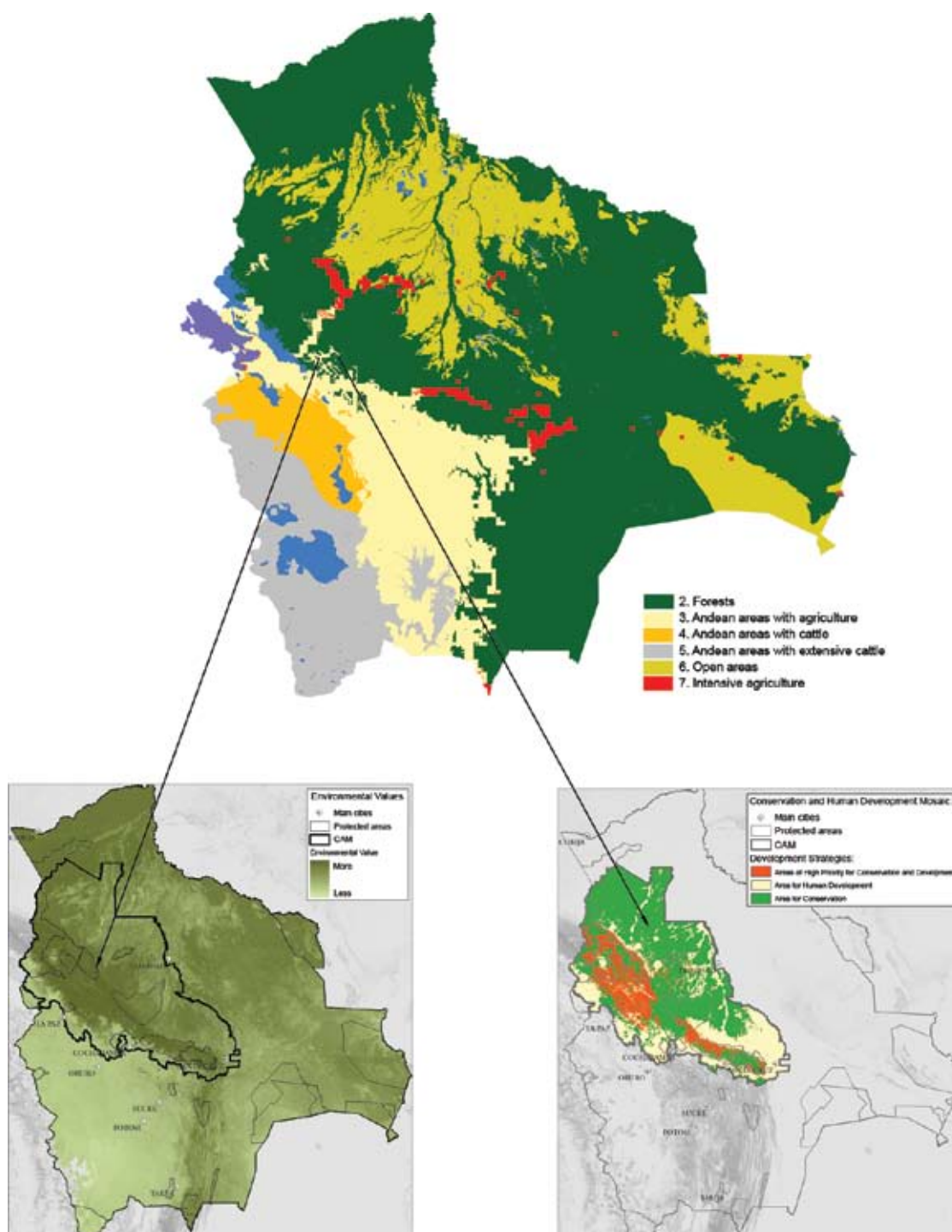
Conversion of soil by 2026 by erratic expansion of the agricultural frontier.



Fuente: Own elaboration, based on Andersen (2006).

MAP 3

**Change in use of soil by alternative use
of natural resources.**



Fuente: Own elaboration, based on Andersen (2006).

land use tendencies, the map highlights erratic frontier expansion to ecosystems not suitable for agriculture. Map 3 shows a gradual change in the order of profitability. It involves three changes in the current map: the first, an emerging market for conservation uses in areas of forest frontier (payments for environmental services and avoided deforestation); the second, a market for clean development mechanisms and organic, forest, and fair trade certification for agricultural frontier areas, including urban areas; and the third is a conservation corridor strategy in mosaic areas that combines high conservation profitability with opportunities for economic development.

Bolivia can also be a leader in the certification of organic, forest, and fair trade standards

33. The impact of setting up a fund for avoided deforestation does not lie in the forest itself. It is only the first step helping to generate a new “order of prices” for the first link of the Bolivian economy. The second step is to extend certification for organic, forest, and fair trade standards to places where the agricultural frontier has already advanced, potentially *all* the suitable agroforest territory of the country. In this way, the existing products of agriculture can enter new markets demanding environmental, organic, specialized, and fair standards. In this regard, the Bolivian government also has the potential to be a leader in Latin America.
34. To achieve success, the certification programs should be voluntary as well as profitable. The estimated cost of certifying *all* the peasant economic organizations (OECA) in the country--about 775 at the national level--is US\$1,360,000 per year. The certification cost is very small compared to the potential benefit of attracting investments with high environmental standards and with a higher price differential. For instance, the price of coffee in fair and organic trade markets is US\$3,090 per ton, which is the price obtained by coffee cooperatives associated with the Bolivia Federation of Coffee Producers (FECAFEB); the profit obtained is US\$1,682 per hectare, far above the profit obtained with conventional uncertified coffee, US\$1,440 per hectare.
35. A comprehensive agenda for certification will need to include changes in the current system of certification, one that moves forward by bits and pieces, one sometimes opposing the other. How will it be possible to capture greater value added in the home countries of organic, fair or specialized trade? The first aspect is related to certification processes providing the key to price discrimination according to labor and environmental standards, as well as species endemism and place of origin. The countries of origin need to achieve greater harmonization and control of procedures involved in international certification. The second aspect is related to intellectual property and the potential to establish denominations of origin at the local or regional level.

This is a critical subject in the negotiation of international trade rules. There has been progress in bilateral agreements but there is still much to achieve in the multilateral agenda. The third aspect is related to generation of appropriate information on value-added distribution in global value chains. In many countries, both generation of primary information and its distribution among producers, traders, and financial entities have characteristics of public benefit. Government support is frequently required for the generation of reliable and accessible information in real time for decision-making.

***We can retain greater added value
by betting on “fair trade zones”***

36. The objective of promoting alternative uses of natural resources is to raise living standards of the Bolivian population. For incentives generated in the first link to produce profits, it is necessary also to generate economic incentives in the industrial and trade links of the value chain. To close the circle of economic incentives, we can learn from dozens of successful experiences of industrial clusters, manufacturing parks, and trade areas with a twist: raise environmental and labor standards instead of lowering them. Raising standards has two desired effects: first, generating incentives to get out of market niches based on cheap labor and primary natural resources and, second, generating incentives to attract new investments in socially responsible and green portfolios.
37. “Competing upwards” also means to stimulate international insertion *not* based on abundant natural resources or on inexpensive labor. The experiences of Costa Rica in environmental standards and of Cambodia in labor standards show a range of possibilities for countries willing to effect market change. From the internal point of view the transformation of a narrowly based economy, with few actors and few sectors, into one widely based continues to be a fundamental challenge of the Bolivian economic agenda. The coordination of small- and medium-sized producers with rural and indigenous communities and with associations of producers and cooperatives should be central to the current agenda and could stimulate a pattern change in natural resource use. International experience shows that the so-called “curse of natural resources” is not fatal for countries that intend to diversify their productive basis, be inserted into the global economy with added value, and create institutions for medium- and long-term development.
38. Bolivia has potential to be among the top countries in the world with an economy of labor standards, fair trade, and sustainable environmental standards. That’s why action is so urgent. Construction of the other frontier begins with visibility of the actors, development of the instruments, and establishment of territorial agreements. The greatest obstacle, however, lies in connecting

alternative uses of natural resources to an agenda for better living conditions, human development, and well-being of the population. The thousands of Brazil nut, organic coffee, and cacao producers, the hundreds of communities and people managing forests, and the dozens of organizations that provide environmental services in Bolivia suggest that we are on schedule.

*The institutional challenge is multileveled:
It is necessary to develop “packages” of public policies
appropriate for each municipality, region, and prefecture.*

39. The new packages of public policy should be based on feasibility studies, investment and pre-investment profiles, and social and environmental impact assessments for each region in Bolivia. The “packages” will bring new public-private instruments to the regions and will be adapted to specific needs of producers and of emerging categories in each territorial space. Leadership in the development and dissemination of public policy packages will be the responsibility of the government and of the social and production actors linked to the regions. Over time, each region will not only acquire a private “productive identity” but will also generate local knowledge.
40. Decentralized agendas will facilitate establishment of regional production agreements. Around half a million producers constitute the critical mass of traditional and alternative production sectors in four poles of territorial development in the country. These agendas include around 300 exporters, hundreds of rural and indigenous communities, and thousands of small producers in each region. They also have an indirect impact on thousands of productive actors linked to trade, transportation, and manufacture in the main cities of the country. These actors are the heart of a different development pattern, with the potential to produce with higher labor and environmental standards and to generate a greater distributive impact at the base of the pyramid. Each pole of territorial development requires a new production pact based on goals and objectives. This is the first task required to make thousands of actors visible and develop a new type of relationship between the government and production and social actors in the regions.
41. The other frontier describes successful experiences of environmental services management, sustainable forest management, use of clean development mechanisms, biocommerce, and organic trade. Isolated, they tell fragmented stories of community, business, or governmental success. Together, they can depict the heart of an alternative development pattern. They show that it is possible to construct an economy not based on the use of primary natural resources and prove that there is a place for high-value Bolivian products in the global economy. They give a unique identity to the Bolivian economy, anchored in the multiculturalism of its society and the megadiversity of its natural resources.