"PROFILING AN OUTWARD ORIENTATED STRATEGY IN TRADE, ENERGY AND ENVIRONMENT FOR BOLIVIA"

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ABSTRACT: This paper offers an in-depth analysis of the trade, energy and environmental sectors of Bolvia, one of the poorest Latin American countries with one of the richest development potentials of South America. The analysis focuses on current and future challenges of Bolivia, its strengths, weaknesses, opportunities and threats. Each of the three sectors is structured along the following heading namely analyses from a global, regional and local level including description of policy options on how the country could best achieve greater development and growth through economically, socially and environmentally sustainable policies.

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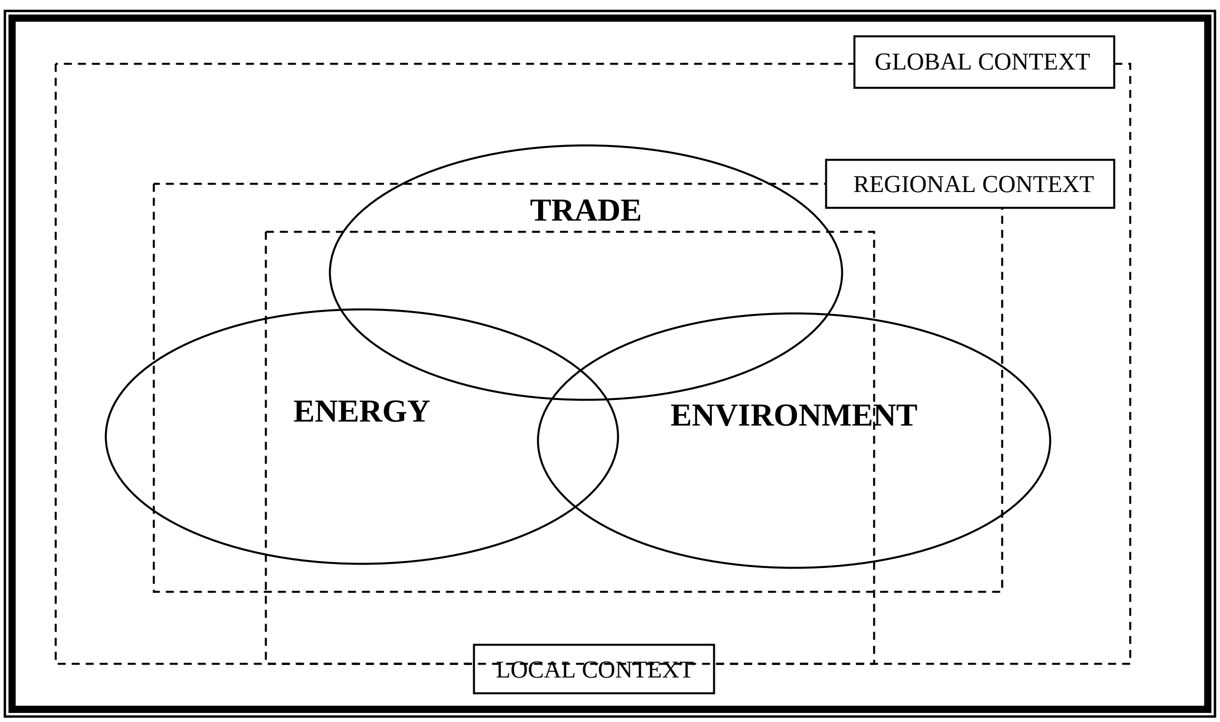
CONTENT

I. Introduction

Bolivia is one of the poorest and most underdeveloped countries in Latin America. In the past years, it has undertaken considerable decentralization reforms and adopted free market economy precepts, registering some economic improvement. However, poverty, social exclusion and unequal income distribution remain Bolivia's main stumbling blocks in achieving sustained growth and development, and above all, poverty eradication. The country's future prospects will greatly depend on political and social stability, which in turn will be determined by political decisions of economic nature. This will require a clear and coherent line of action by the government, identifying priorities when managing the country's (energy and environmental) resources, in order to maximize its opportunities stemming from international trade.

The present paper focuses on Bolivia's trade, energy and environment spheres. It looks at each of the three core sectors as well as at the positive and negative interactions between the three core sectors of Bolivia's economy and offers policy options for the current situation and future prospects in each of the three sectors (figure 1 below).

Figure 1 : Scope of Paper



For this purpose, the country's strengths, weaknesses, opportunities and threats are laid out in a simple two-by-two matrix portraying a "SWOT" analysis. Subsequently, recommendations for addressing the economy's weaknesses and threats are formulated, taking due consideration of the strengths and opportunities at hand.

The study finalizes with the proposal of a three-legged plan of action on a global, regional and local level. This will provide Bolivia with an alternative and enabling strategy to benefit from greater development and growth through economically, socially and environmentally sustainable actions.

II. The Trade Sphere

Bolivia, a developing country and member of the World Trade Organization (WTO) since 1995, recently submitted itself to an assessment of its trade policy regime in 2005, under the "Trade Policy Review Mechanism" (TPRM).[1] The present section focuses on the content and results of the latest Trade Policy Review (TPR) of this small developing economy, the poorest of the South American region.

1. Reviewing Bolivia's Trade Policy and Performance of the Past Five Years

Bolivia's first TPR took place in 1999[2], four years after the country had joined the WTO. The report issued then recognized the country's efforts in ensuring transparency of its trade regime, whilst drawing attention to the administrative weaknesses, the uneven application of law, and the dimensions of the informal economy, these being considered the main problems. Further, it recommended the government to address these issues in a second round of reforms, to consolidate the country's efforts toward a more predictable trade regime.[3]

Macroeconomic stabilization and relative trade diversification and growth in Bolivia in the 1990s, were mostly attributable to economic policy based on the precepts of a free market model initiated in 1985. Since then, the country has experienced important reforms, thanks to decentralization and the enactment of legislation. These changes have had a great impact on the society and institutions, in particular, on the international trade sphere.

The following text analyses the progress of the country trade performance of the past 5 years. A "SWOT" analysis (i.e. an analysis of strengths, weaknesses, opportunities and threats) is conducted, drawing attention to the country's particular strengths, weaknesses, opportunities and threats for trade, as summarized in Table 1 and thoroughly discussed in the following subsections.

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[1] Following the establishment of the WTO with the adoption of the Uruguay Round Agreements in 1995, all member countries committed themselves to an ongoing review process of their trade regimes under the TPRM, with a view to enhance transparency of their trade policies. The TPRM establishes procedures for a systemic assessment of a country's trade performance, evaluating the progress in complying with liberalization commitments for trade in goods, services and intellectual property. See WTO (1995).

[2] A TPR for Bolivia from 1993 also exists, under the previous provisional review mechanism before the creation of WTO. This interim TPR only focused on the country's trade policies and practices in relation to trade in goods.

[3] WTO (1999).

TABLE 1: SWOT MATRIX ANALYSING BOLIVIA'S EXPOSURE TO INTERNATIONAL TRADE	
STRENGTHS	**WEAKNESSES**
▪ Stability and progress of reforms initiated in 1985 and continued during the 1990s ▪ Deeper trade liberalization and more "openness" in comparison to the rest of the Andean region ▪ Cautious "sequenced" liberalization in services trade ▪ Considerable natural resource assets (gas & oil, minerals, rainforests) ▪ After a record of deficits, the country is registering a trade surplus thanks to natural gas exports and FDI ▪ Some achievements in reducing supply side constraints due to customs reforms	▪ Landlocked condition and poor development limit competitiveness and access to international markets ▪ Poor export diversification (gas, oil, oily seed products and zinc, silver and tin) ▪ Considerable import dependency of raw materials, inputs and capital goods for the domestic industry ▪ Minute share of world and regional trade, despite being an net exporter ▪ Few export destinies (mostly Brazil, US, Venezuela, Peru and Argentina) ▪ High dependency in external financing (loans, donations and IMF programmes finance an important share of public investment) ▪ Vulnerability to fluctuations in international energy and mineral markets
OPPORTUNITIES	**THREATS**
▪ Increasing diversification of production, processing and export destinies of non-traditional exports ▪ Reducing external and fiscal vulnerability stemming from volatile international energy markets through sustainable management of resources ▪ Despite animosities towards Chile, Bolivia could learn from Chile's export orientation strategies in regional and world markets ▪ Maintenance and use of trade preferences to access markets with new and more diversified products ▪ Strengthening of alliances in different forae, such as the G-20, Cairns, RTAs to obtain more tariff and quota free access for its agricultural products ▪ Attracting greater FDI with an investor friendly environment and transparent legal framework ▪ Active participation in services negotiations to gain access to services markets and providers of interest ▪ Participation in defining energy services classification and liberalization modalities, reflecting development and sustainability interests ▪ Development potential of niche products (ecotourism, health products, tropical timber products, forest management and Kyoto)	▪ Preference erosion in RTAs and in the general systems of preference of the EU and US ▪ Increased trade deviation in RTAs which burdens consumers and lowers competition ▪ Uncertainty of legal protection of investment may provoke capital outflows ▪ Greater dependency of gas export revenues may choke the development of non-traditional sectors ▪ Unequal bearing of adjustment costs and distribution of trade revenues may foster greater inequality ▪ Cartelization of tourism operators and of other potential niche sectors by foreign owned interests

1.1 Bolivia's Strengths in International Trade

Bolivia has shown a long-lasting commitment to an outward oriented economic model since 1985, setting the scene for economic stability and credibility in the government as a macroeconomic policy setting. This "openness" toward trade is considered an asset or strength, as depicted in Table 1. The country has been consistent, continuing on the same track, despite the political instability and social turmoil partly escalating because of unpopular reforms. This high degree of compromise and continuity, as compared to other countries in the region, has allowed Bolivia to gain prestige among the international donor community, becoming a welcome recipient of international and bilateral assistance programmes.

A second strength of Bolivia in conjunction with the country's economic reform process is its trade liberalization performance. The country has made important commitments, revealing willingness to pursue progressive liberalization in trade. Once again, the country stands out when compared to Latin American neighbors, which in addition to numerous and complex safeguards, countervailing duties and anti-dumping measures[4], often apply non-trade barriers such as lengthy customs procedures, unclear and changing, import licenses and complex rules of origin, among others.[5] (See Table 1)

It should be noted however, that the country has been trying to protect the more vulnerable sectors from opening up to trade, and continues to pursue a more cautious liberalization in sectors such as services. Indeed, the escalation of conflict due to privatization of some services such as supply of water has proven to be a deterring experience,[6] and, perhaps because of the wide gap prevailing between proponents and opponents, the current government has been rather careful in formulating further liberalization commitments in services.[7]

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[4] Bolivia has not undertaken anti-dumping, countervailing or safeguard measures, during its review history. See WTO (2005a), para. 67-73, pp. 45-46.

[5] For a discussion on the different trade barriers in Latin America see Páez (2004).

[6] The privatization of public supply of water in the city of Cochabamba in 1999 was made effective through a 40-year lease contract to a Anglo-American company, the Bechtel Corporation. Following privatization, the company undertook considerable price hikes, doubling or tripling the rates of water for over half a million people, thereby affecting the livelihood of many poor. Cochabamba citizens organized a general strike and several street marches, resulting in an escalation of conflict and violent riots and killings, when over 1000 policemen and sources tried to seize the city but were blocked by the armed forces rsulting in several deaths and injuries. See Shultz (2004) for a compilation of articles on the topic. Similar experiences have also occured in the cities of El Alto and Chuquisaca over the last two years e.g. involving the French Company Suez among others.

[7] Opposition to the past two governments has been lead Indian minorities, leftist and environmental groups, amongst others. Their critique concentrates on the slow progress in economic development and the absence of benefits attributed to trade liberalization, as well as their unequal distribution of wealth and income among the different economic sectors of society. It underscores that the "neoliberal" model adopted in the country has not improved poverty, and that it has exacerbated the rampant exclusion and marginalization of indigenous groups instead. Economic policy is viewed as "a source of all evils", where participation in political decision-making and the right of benefiting from the returns of resource exploitation – such as those resulting from the sale of gas – is only a privilege of an economic elite with a strong lobbying clout in the government. Till recently, Evo Morales – a former coca farmer leading many of the riots resulting in the destitution of his predecessor, President Sánchez de Lozada - voiced this anti neoliberal critique, and has continued to do so after being recently elected president.

Despite these difficulties, the authors consider Bolivia's cautious approach as positive, showing due regard to orderly "sequencing" of deregulation, privatization (coordinated with decentralization) and ultimately liberalization of services. Under a sequenced approach, an economy undergoes a gradual reform process leading towards market opening, whilst mitigating the costs of adjustment.[8] The objective is to avoiding shocks stemming from a brisk transition, which can be harmful to the stakeholders involved, negatively impacting the more vulnerable sectors of society. Such a sequenced approach is hence expected to cushion the transitory effects resulting from the adaptation process of the economy moving towards a more liberalized status quo. Thus, transition from publicly operated services is smoothed, whilst its negative effect on the poor is avoided or minimized. Finally, if such transition fosters competition (due to the presence of a variety of service providers), it will have a positive impact on efficiency and reduce costs. (See Table 1)

Services represent and important sector of Bolivia's economy, accounting for 54% of GDP (1999-2004) and for over 40% of employment.[9] Though Bolivia's economy is rather small, services represent an attractive market for foreign providers. For instance, publicly run services and financial services, which include real estate and business services, contribute an important share to the GDP.[10] Further, the continuous deficit in services trade since 2000 reveals a dependency on foreign services.[11] This relative attractiveness of Bolivia's service sector for foreign service provider should provide Bolivia some bargaining power which it could use as a bargaining chip during the ongoing services negotiations at the WTO, as will be discussed in a subsequent section.[12]

A fourth and very promising strength is Bolivia's growing gas export revenues. The country has registered continuous trade deficits in the past years, revealing a considerable import dependency, especially in services trade. However, thanks to a boom of gas and oil developments since the "capitalization"[13] of the hydrocarbons sector in the late 1990s, the balance of payments has registered some modest recovery during the 1999-2004 period. Both the current and capital account show positive balances, of US$285 and US$ 8 million, respectively in 2004.[14] (See Table 1)

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[8] See Mattoo (2002) for a discussion on services liberalization.
[9] WTO (2005a), para. 99, p. 101.
[10] WTO (2005a), Table I.1, p. 2.
[11] WTO (2005a), Table I.5, p. 9.
[12] See section 1.3 titled "Bolivia's Opportunities in International Trade".
[13] The capitalization of hydrocarbons is discussed in Ch. II, sections 1.2 titled "Weaknesses of the Energy Sector" and 2.3 titled "Local Considerations", respectively.
[14] WTO (2005a), Table I.5 and para. 26-29, pp. 9-10.

A final important strength of the Bolivia is the successful customs reforms and modernization, which has contributed to the reduction of its supply side constraints. Being a land-locked country, international trade and market access to foreign destinations are rather limited. Thus, lengthy and cloudy custom procedures would pose an additional burden on the economy's trade perspectives. Thanks to reforms in the sector, the country has managed to facilitate trade through modern automated mechanisms such as a single exports declaration and the elimination of pre-shipment inspections, among others.[15]

In conclusion, Bolivia's trade situation consists of some promising and positive strengths, which may provide the country with important opportunities for development and growth. However, they must outweigh the inherent weaknesses of Bolivia's current trade régime.

1.2 Bolivia's Weaknesses in International Trade

Bolivia's **weaknesses** are many, not only given its relative size and state of development. As a developing country with over 62.7% of the population living below the national poverty line and registering low levels of human development[16], with hardly any economic diversification and modest growth, it is dependent on the external supply of inputs, of goods and services and capital. Adding to the picture are overt inequalities between the different social groups. The richest 10% of the population earns 90 times as much as the poorest 10%. Inequalities are also apparent in land ownership, education and ethnical background, and have been worsening in the past years. Indeed, 88% of the indigenous population – that is, the majority of Bolivians – is poor.

The country's main sources of economic activity have been agriculture; manufactures; government services; transport, and financial services. Each of these sectors contribute more than a 10% share of the GDP and account for two thirds of national output.[17] This concentration in a handful of sectors

[15] See WTO (2005a), para.13-22, p. 28-31, for custom procedures.
[16] According to the *Human Development Report* of the United Nations Development Programme (UNDP), the "Human Development Index" ranks Bolivia as number 113 out of a total of 177 countries worldwide. Regionally, it is one of the worst performing countries, followed by Honduras, Guatemala and Haiti, according to the ranking of the. The Human Development Index is a composite measure of a country's development achievements in terms of the quality of life (i.e. life expectancy at birth), knowledge (i.e. literacy and education levels) and living (i.e. income levels). For details and data see UNDP (2005).
[17] WTO (2005a), Table I.1, p. 2.

has resulted in poor economic and export diversification, where 70% of total exports consist of gas, oil, oily seed products and zinc, silver and tin. Hydrocarbons and minerals alone account for 40% total export revenues, revealing a great dependency on exports of non-renewable resources.

This dependency is greatly exacerbated by the structure of imports in the country. Bolivia has a considerable import dependency on raw materials, inputs and capital goods needed for domestic industrial production. Indirectly, further incentives to perpetuate the relative low degree of industrialization in the country may stem from the rules of origin under the different Regional Trade Agreements (RTAs) the country is member of. Some RTAs, such as the CAN, may consider the simple assembly of foreign inputs as a process which incorporates sufficient value added to consider the final assembled good as a local product (and hence exempt the applicable import tariffs). In such a case, the rules of origin under the given RTA will naturally prolong import dependency of foreign inputs, unfinished and capital goods.[18]

The resulting outward position of the country represents a minute share of world trade. Despite being a net exporter, Bolivia's share of world exports is a mere 0.02%, which only contributes 0.4% of trade in the Latin American region. Poor export diversification partly explain this small share since 68% of exports are destined for Brazil, US, Venezuela, Peru and Argentina. Of these top five export destinations, four are regional trading partners under two RTAs, namely the Andean Community of Nations (ACN) and the Common Market of the South (Mercosur). It remains unclear whether member countries of RTAs are natural trading partners (and hence more trade is enabled under the arrangement of an RTA, a phenomenon known as "trade creation"), or whether trade is being "diverted" from global to regional trade partners due to the presence of trade barriers with distorting price effects.[19]

For the particular case of Bolivia, recent evidence points to trade diversion due to RTAs. Bolivia's membership in ACN and associated membership with Mercosur has fostered regional trade at the expense of the country's exports to the US and Europe in the past years. Mercosur alone, accounts for a trade diversion of 20% of total exports originally destined to European and US markets.

[18] For a description of the rules of origin across the different RTAs where Bolivia participates, see Páez (2004).

[19] "Trade diversion", as opposed to trade creation is the undesired outcome of preferential trade in RTAs. RTA barriers such as tariffs will raise in prices on competitive imports of products and services, and as a result, will be substituted by RTA goods which have preferential access and are not burdened by tariffs. Hence, diversion is the replacement of originally cheaper non-RTA imports by relatively more expensive imports from RTA members due to the effect of tariffs on prices imposed on non RTA trading partners. See WTI/SECO (2004), p. 29.

Membership to RTAs has also provoked a shift in the composition of Bolivian exports and some diversification, from traditional mineral products to manufactures (i.e. food, beverages and tobacco), metals and agricultural goods (i.e. animal and vegetable fats and soya). Despite these changes, regional integration does not seem to have had an overall positive effect on poverty reduction, since the negative effects linked to imports under RTAs (in terms of reduction of market share by local producers resulting in job losses and increased unemployment) have been greater than the positive effects of Bolivian exports (in terms of gain of market share in third countries resulting in employment generation in Bolivia). Overall, the impact has been rather small since the working poor are largely concentrated in the non-tradable sector and in agriculture.[20]

Although there has been some export diversification, important sectors of the economy such as the production of capital goods remain underdeveloped, which constrains growth. This also exacerbates the supply side constraints posed by Bolivia's landlocked situation, and contributes to maintaining the status quo of dependency of foreign capital goods.[21]

Bolivia is highly dependent on external financing. Alone in 2004 OECD members provided US$ 767 million Official Development Assistance (ODA), which represents 8% of Bolivia's GDP.[22] In particular, the country participated in the Heavily Indebted Poor Countries (HIPC) Initiative, a debt-pardoning programme of the International Monetary Fund (IMF) to reduce a country's foreign debt to sustainable levels subsequent to the fulfillment of a set of conditions.[23] Despite its debt relieve, a country's debt levels are substantially higher than before the HIPC.[24] This contributes to a very inflated public debt, which represents 77% of the country's GDP[25] and fosters a continuous dollarization of the economy.[26]

[20] Nina and Andersen (2004).
[21] Capital formation has been continuously decreasing, from 19.1 in 1999 to 12.6% in 2004. See WTO (2005a), pp. 3-4.
[22] Henkel (2006a).
[23] Originally, estimated total relief under the HIPC was established at US$ 2,060 million and the outlook for future sustainable debt management was assessed to be positive by the IMF. See IMF (2001), Appendix V, p. 63.
[24] In the latest IMF country report, it is argued that the failure of achieving sustainable debt management in Bolivia was not attributable to the amount of the debt waiver of the HIPC, rather, the country's decision to acquire further non concessional debt and poor fiscal management were seen as the main underlying reasons. See IMF (2005), pp. 19-22.
[25] WTO (2005a), p. vii, 6.
[26] Rennhack and Nozaki (2006) find that dollarization picked up in many Latin American economies during the 1990s, partly due to the lack of credibility and stability of monetary policy and inflationary patterns. Bolivia has shown particularly high levels of dollarization of up to 85% in 2004, measured in terms of foreign currency deposits as a share of total deposits. For a discussion on the causes of dollarization in Bolivia, see IMF (2005)

An overt dependency on foreign funds delays the opportunities for Bolivia to develop its own alternative financial sources, and more importantly, detach itself from the conditionalities tied to financial assistance by the IMF. The present situation of high indebtedness and dependency on foreign funds may generate further undesired effects, such as inflationary sequels due to the poor absorption capacity of foreign capital flows in the economy.[27] Further, conditionalities of financial aid bind Bolivia to a streamlined process of policy recommendations which may not take due regard to the country's specific situation and needs.[28]

However, in order to be more financially sound and stable, Bolivia requires a sound framework based on macroeconomic stability and credibility in its policies and institutions, in order to establish its own financial market. Since the debt crises of the 1980s, which had a devastating effect throughout Latin America,[29] Bolivia has not issued bonds or any other type of government backed instrument in international financial markets.[30] Issuing such bonds is one of the main instruments for a country to finance its short-term budgetary constraints without generating inflationary sequels. Since Bolivia does not use this alternative, it is extremely dependent on foreign aid, and remains subject to its conditionalities.

1.3 Bolivia's Opportunities in International Trade

Opportunities for Bolivia are determined by how the country will assume the challenges that lie ahead in its international trade relations. Grasping the opportunities will greatly depend on the way in which the country maximizes the use of its natural resources by applying its "strengths".

A first major opportunity of Bolivia's traditional export resides in the increased gas export revenues. There are several ways in which such use of these abundant but non-renewable resources can be maximized. The energy export potential is substantial, and provides an additional income the country could save during the current boom of international energy prices. An interesting example is of how this opportunity can be grasped and maximized is provided by Norway, which created an oil

[27] Heller and Gupta (2002) provide empirical evidence on the negative effects of foreign aid. In recipient countries inflationary sequels and increasing dollarization result from poor absorption capacity of foreign aid flows.
[28] See Saner and Páez (2006), for a discussion of conditionalities tied to financial assistance. Mourmouras and Rangazas (2006) provide further evidence on the how some (fiscal) policy choices in the "reform packages" tied to the aid do not have a positive effect on the economy, an yet are still imposed on the recipient country.
[29] For a brief discussion of the debt crisis in South America, see Páez (2003), Ch. I.
[30] Henkel (2006a).

fund to save the extra revenue stemming from its oil production.[31] The size of such an oil fund depends on a country's decision of either consuming the revenue in the present or over successive periods. It is a wealth management tool operated by the government, on the basis of rational consumption decisions and maximization of returns. Such a fund's revenues are treated like a financial asset, which reinvested in the economy in successive periods, on the basis of profit generating criteria.[32] However, under the absence of transparent and accountable management, the benefits of such a fund are considerably reduced. Nonetheless, a fund operating under similar conditions to Norway's oil fund could reduce the dependency on external financing, which, as discussed in the previous sections, is one of Bolivia's central weaknesses.

A second opportunity for maximizing Bolivia's opportunities as an international player is developing its non-traditional export sector. Areas of interest have already been discussed in the context of the "Bolivia Production and Solidarity Plan", a medium term plan for social and economic development issued in May 2005, they are: "forestry, agriculture, livestock breeding and fisheries, timber and non-timber industry, food and agro-industry, clothing, leather, and high quality jewelry".[33] These sectors are more labour intensive than the mineral or gas sector and could offer employment for an important part of the poor with low education levels, and thus improve the living perspectives of an important share of the population. By generating new and additional income sources through the development of an artisan sector geared toward export markets, trade in such non-traditional exports could contribute to lessening the degree and incidence of poverty.

A third opportunity lies in the way in which Bolivia might profile itself as a country which has unilateral liberalized its economy. In this sense, it could take the Chilean example, a unilateral and proactively liberalizing country that has managed to bridge its regional interests without sacrificing its outward relations with the European and US markets.[34] Though significant advances may have been made, Bolivia's political situation may greatly determine results. Bolivia still needs to develop more aggressive strategies to conquer new export markets. For this purpose, it needs to study the markets and be willing to adapt its processes and products to their needs. Chile is an example, showing willingness to comply with the high level of requirements to enter the world consumer

[31] See Da Costa and Juan-Ramón (2006), pp. 17-23 for technical details of Norway's oil fund.
[32] Despite the considerable success of Norway's oil fund, the same cannot be affirmed judging from other oil producing countries, according to Davis, Ossowski and Fedelino (2003). See discussion in Ch. III, section 2.3 titled "Local Considerations and Response".
[33] WTO (2005b), p. 8.
[34] For a briefing on Chile's strategy, see Páez (2004), pp. 64-65.

markets with its fruit, vegetables and wine exports. This however will require the elimination of important supply side constrains the establishment of standards and quality control mechanisms. Trade facilitation programmes, both under the UN and the WTO are helpful tools for Bolivia to master the necessary technical expertise and know how to facilitate trade in the agricultural sector.

A fourth opportunity lies in the development of the tertiary sector. In particular, services have become increasingly important, generating 54% of GDP and 46% of employment, second only to agriculture which engages the biggest share of the population.[35] Given its growth potential and being labour intensive, this sector could generate considerable job opportunities. Services have the potential of lifting an important part of the population out of poverty. However, most poor do not have the necessary level of education to engage in service activities. This makes the shift to a services based economy a challenge, and will require prioritization in terms of activities which can benefit a larger share of the population with little human capital investment and training.

Finally, though evidence on trade diversion under the RTAs exists,[36] this does not mean the country has to sacrifice its regional strategy. Rather, it should seek new partnerships in global and regional fora that complement each other through skillful negotiations and that trade creation potential.[37] This will require the interplay and balancing of Bolivia's different interests and priorities. Indeed, seeking new trade relations with other trading partners could foster competition and result in a deepening of Bolivia's export base, bearing the potential for trade creation which is not the case under its existing RTAs.

1.4 Bolivia's Threats in International Trade

The **threats** lying ahead for Bolivia are manifold. These can materialize if its vulnerabilities are not strengthened and if potential conflicts to be discussed in this section are further exacerbated rather than solved or at best mitigated.

A first threat is the country's dependency on its gas revenues. Because these revenues are determined by external market prices, drastic fluctuations in international energy markets are bound

[35] WTO (2005a), p. 82.
[36] See previous discussion on trade diversion in section 1.2 titled "Bolivia's Weaknesses in International Trade".
[37] Trade creation occurs when high cost domestic goods are replaced by cheaper imports in a RTA, resulting in lower prices on consumers and increased consumption and consumer surplus. See WTI/SECO (2004), p. 29.

to affect the economy. The recent years have shown a higher degree of fluctuations, making any predictions on probable revenues virtually impossible. Further, though current international prices may be soaring, energy markets are known to experience “boom” and “bust” cycles. Sufficient evidence is offered by the oil crises during 1973-74 and 2000, materializing after periods of flourishing perspectives.

Furthermore, the current geopolitical situation of energy markets is resulting in price instability. For instance, as the Middle East Peace process is stalling, supply of energy from one of the richest oil and gas reserves region remains uncertain. Second, Iraq’s production capacity is staggering under the continued political instability exacerbated by the continuous terrorist bombings. Third, Russia’s gas delivery to Europe is depend on Russia’ relations with the Ukraine because of their joint pipeline, posing a threat to secure delivery. Fourth, other important like Venezuela and Nigeria are affected due to the ongoing political instability.[38]

The same degree of vulnerability holds for another important traditional export sector, namely mining. Bolivia is an important producer of minerals such as such as zinc, silver, gold and tin; almost all that is extraction of these minerals are exclusively intended for export. The sector however, has been showing signs of stagnation since the end of the 1990s due to several factors. On the one hand, the sector is affected by fluctuating international mineral prices. Second, it has lost relative importance in trade, since RTA partners of Mercosur and ACN also export minerals, and are competitors in international markets.[39] This has resulted in an increase of unemployment in this sector[40], which is particularly worrisome given the already high level of unemployment and the concomitant trend of unemployed miners migrating to the forest areas and the proliferation of illicit mining, as will be further discussed below.[41]

Another threat is the erosion of trade preferences. The most important preferences for Bolivia are those offered by the US under the Andean Trade Promotion and Drug Eradication Act (ATPDEA), which account for US$ 240 million worth of exports, representing around 55% of total exports to the US. However, these are tied to stringent performance requirements in combating the production of coca, the main component of cocaine. However, Coca is also an important source of income for

[38] See Meier (2006). A thorough discussion on the energy markets is offered in Ch. III titled “The Energy Sphere”.
[39] Nina and Andersen (2004).
[40] Mining accounted for 1.4% employment in 1998 and fell to 1.2% by 2004. See WTO (2005a), p. 89.
[41] Chapter III and IV address the problem of illicit mining from an environmental and social sustainability perspective.

many farmers in Bolivia, give its medicinal attributes in combating altitude sickness, hunger and other maladies. Further, it is part of the cultural heritage of the country, deeply rooted in the everyday life of the indigenous population since ancestral times.[42]

The remaining 45% share of exports to the US is also tariff free (and does not require ATPDEA preferences to access US markets), yet, the US system of preferences is subject to change. According to the number of participating countries, the conditions for preference allocation under the ATPDEA can also vary, raising the uncertainty for Bolivia in terms of preferential market access of over half of its US exports.[43]

In addition, the ATPDEA programme is being affected by more offensive US trade initiatives with Latin American countries since the stalling of the FTAA negotiations in 2004.[44] As a consequence, bilateral negotiations with the rest of the Andean countries, with the exception of Venezuela and Bolivia have resulted in Free Trade Agreements with the US, prior to the expiration of the fast track mechanism issued to President Bush by Congress. Bolivia has foregone the same opportunities, since in the run-up to presidential elections, Evo Morales threatened suspension of the bilateral programme, arguing the US used it for imperialistic aims. The future of the US preferences under the ATPDEA is uncertain. In case Bolivia decides to withdraw, it most likely will loose the trade preferences and most probably will have to face retaliatory measures, entailing a considerable loss of export revenue.

In the case of the European Union (EU), Bolivia shares the same limited trade benefits as other Andean countries that benefit from preferential market access under a special generalized system of preferences (GSP) tied to combating of illicit drug production and trafficking. In other words, Bolivia has to cooperate combating narcotic activities and fulfill stringent procedures of the EU in order to benefit from an export quota for its traditional exports to Europe. Bolivia obtains around US$ 140 million worth of exports through the EU GSP, which roughly accounts for 90% of its total

[42] Steinich (2006).
[43] Prior the Andean Trade Promotion and Drug Eradication Act (2002), the Andean Trade Preference Act (ATPA) had been operational since 1991. ATPA offered duty free or reduced duty access to the US markets for exports of Bolivia, Colombia, Ecuador and Peru for a 10-year period. It objective was to promote alternative economic activities geared towards export, and thereby minimize the production of coca and illicit drug trafficking. The ATPDEA provides market access to 6545 products under the categories of chemicals, base metals, machinery, optical, photographic and medical instruments, textiles and wood.
[44] See Páez (2004) for a discussion on the FTAA.

exports to the region (mostly agricultural goods).[45] The EU's system of preference has been criticized for offering rather limited market access to developing countries, for discriminating amongst developing countries and for conditioning trade to European protectionist objectives fostering preference erosion through the imposition of conditions and discriminatory exclusion.[46] Further, in a recent dispute against the EC tariff preferences initiated by India, a WTO Panel established that the EU GSP system is based on an unclear set of criteria for beneficiaries, and is inconsistent with WTO regulation.[47] Hend3e, the little benefits offered by the EU preference scheme is under jeopardy.

With regards to the Latin American Association of Integration (LAIA), the preferences are being permeated through the newer so-called "Economic Cooperation Agreements" (ECAs). This diminishes Bolivia's benefits from protected market access, resulting in possible job losses due to greater competition. Though such preference erosion may foster a more diversified and pro competitive export composition in the long run, the adjustment costs in the short term are unbearable by the population of a poverty-stricken country and undesirable from a welfare perspective. Unless the preference erosion leads to higher levels of trade, employment and income to offset adjustment costs, the remaining of trade barriers under the new ECAs will still result in higher prices on products borne by (Bolivian) consumers than those present in competitive international markets.[48]

An example of such erosion threatening Bolivia's export markets is the recent agreement between Colombia and the US. The estimated losses account for US$ 170 million worth of soya and soya products and the elimination of over 100.000 jobs in the sector. This could have been partly avoided, had Bolivia reacted promptly by requesting Colombia to respect existing CAN regulation. Decision 598 of the ACN establishes a legal base for respecting already acquired tariff preferences between ACN members, when negotiating with third countries. Thus, by invoking Decision 598, Bolivia could have maintained its preferential access to the US soya market, without being affected by the

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[45] WTO (2005a), p. 64, 86.

[46] See Brenton (2003) for empirical evidence on preference erosion in the EU GSP.

[47] See WTO (2004a).

[48] The tariffs imposed on non-RTA products may drive third competitors out if the resulting prices are higher than those of RTA products. Thus, even though a third country product may originally be cheaper, RTA tariffs can result in more expensive products than those produced regionally. As a result, trade with foreign competitors will shrink since consumers will prefer the cheaper regional products. This phenomenon is known as "trade diversion", and is undesirable, since the price increases are borne by consumers, and the gains from the liberalization in the RTA are captured by firms based in the regional market. See previous discussion on trade diversion in section 1.2 titled "Bolivia's Weaknesses in International Trade".

arrangements between the US and Colombia.[49] In having access to the same market as Bolivia, the US soya producers are able to outcompete the Bolivian soya producers given their geographical proximity and lower production costs. In addition to the present business concern of the RTA preference erosion, agricultural giants such as Argentina or Brazil also threaten the country's soya market.[50]

This may be a genuine reason for Bolivia to negotiate a bilateral agreement with the US, despite Morales' repeated rejections of such an idea.[51] However, the recent retreat of the Venezuelan government from the ACN on the grounds of "treason of the other ACN partners (Colombia, Ecuador and Peru) who signed bilateral agreements with the US, this may not occur in the near future, given the political ties between Bolivia and Venezuela. Indeed, Morales recently endorsed the Venezuelan retreat, by cataloguing the ACN as a "dead" RTA. Retreating from the ACN would imply a loss of 17% of Bolivia's total export market worth US$ 444 million, as voiced by notably concerned export sector representatives after Morales' statement.[52]

A final threat is posed by how trade negotiations in the ACN and Mercosur might affect Bolivia's agricultural sectors. Advances in the regional agenda on the liberalization of agricultural products have been affected by clashing political interests and lack of consensus. Progress in the regional agenda will depend on the content of the common agricultural policy and the setting of a common external tariff (CET). Given Bolivia's low tariffs compared with its regional partners, these will probably advocate for setting a higher CET to protect their products from third country competitors. Thus, a new CET may foster greater trade diversion, bearing a harmful effect on end consumers in terms of higher prices. Bolivia's challenge lies in identifying a negotiating strategy which leaves it enough space to live up to the expectations of its negotiating partners, without suffering reduction of its share of regional trade and without resulting in higher consumer prices if trade diversion takes place, as will be discussed in the following section.

2. Outlining a Strategic Position for Bolivia in International Trade

[49] IBCE (2006) and Alvarado (2006).
[50] Ammann (2006b).
[51] Ammann (2006c).
[52] El Universal (2006) and La Razón (2006).

The previous section focused on Bolivia's outward orientation perspectives and present conditions in international trade. Although the country has registered important achievements since the past TPR in 1999, there is considerable room for further improvement. The present section discusses possible strategies which could enable the country to grasp the opportunities at hand. Due consideration is given to the strengths, threats and weaknesses, to add plausibility to the strategy formulation.

TABLE 2: SETTING BOLIVIA'S INTERNATIONAL TRADE STRATEGY		
Level of Action	**Strategies**	**Bodies, entities and interest groups involved**
Global	Trade Facilitation to alleviate supply side constraints Linking environmental assets and agriculture to gain market access for environmentally sustainable agricultural niche production Advocacy in favor of development concerns, flexibility and longer time frames for implementing liberalization (reforms) Proactive participation in GATS in sectors where Bolivia requires foreign human capital expertise, and for modalities for energy services that reflect concerns/interests of gas sector development. Cautious liberalization of financial services, with a view to facilitate channels for remittances and micro credits geared to alleviate capital constraints faced by the poor Cautious liberalization in tourism sector, to protect the development of local tourism industry	WTO, UNCTAD, ITC, WB Coalition building in agriculture with similar-minded countries (e.g. Japan, Norway, Switzerland). Partnership with import promotion bodies of OECD countries Coalition building with other landlocked and small, developing countries and LDCs
Regional	Negotiation of trade preferences, longer time frames and leeway for development concerns Participating in energy transportation system Waterway developments and regional economic development along waterway to alleviate infrastructure and supply side constraints	Landlocked and insular countries in the context of the FTAA Amazon Treaty, ACN
Local	Use existing relations and liaison mechanisms of the government (internal and external) to foster participatory process by building a continuous dialogue in trade policy with grass roots organizations and local interest groups. Development of awareness and responsibility in the population, with special attention on the use and due respect of democratic mechanisms as alternatives to social turmoil to voice concerns. Long term policies geared to active microfinancing for	Civil society representing all groups Social pact between representatives of the private government and civil society sectors Governance groups with focus on accountable and transparent electoral processes (e.g. transparency international) to design guidelines for assessing the political performance

	export oriented SMEs, training and capacity building in export related sectors, investing in social capital conducive to community organization, accountability and acknowledgement Developing services industry and potential to dynamize the economy by generating jobs and income with investment in human and social capital (e.g. tourism) Alleviation of supply side constraints through local development projects, such as those offered under trade promotion agencies and donor partners	The Netherlands, Switzerland, ITC

2.1 Global

Bolivia has been invited by the WTO membership to consolidate its commitment to the adopted liberal trade policy and practices. For instance, the country has been asked to narrow the gap between bound and actual tariffs. In services, several sectors which the country has not yet bound in its schedule of commitments under the GATS agreement are also pending liberalization.

Bolivia will have to assess its general preparedness of offering offer more market access to its sectors of national interest for its European and US trading partners in return for market access for its export products, such as soya, minerals and gas. This assessment must consider how exposure to foreign presence will affect Bolivia's economy. Some local industries will not survive and die out. These are the "looser" sectors, which are unable to keep up with the lower price and higher quality products of foreign competitors. Other industries (i.e. the "winners"), will flourish thanks to greater market access in foreign countries. The government should strive for measures to minimize the undesired effects from trade liberalization, such as job losses. On the one hand, redistributive measures should seek to smooth out the allocation of the gains stemming from greater trade, and thus avoid social conflicts stemming from greater inequality. On the other, because some sectors will loose due to further trade liberalization, the reallocation of unemployed workers must be anticipated and alternative employment opportunities need to be created. Here, investment in human capital makes sense, for instance in the training of workers so that they can successfully shift to the "winner" sectors.

In conclusion, trade liberalization will determine production patters and provoke changes in the availability of factors of production. Under a careful "sequencing", the country may prepare to welcome foreign service (investment) providers in a gradual manner, mitigating the possible negative effects. Further, a process of gradual liberalization could contribute to the development and reactivation of productive sectors with export potential, and thus generate economic incentives for greater diversification and bridge the gap of supply side constraints.

A third area requiring strategic action is the threat of increasing terms of trade deterioration of traditional exports. In essence, there are two tools to combat deteriorating trade relationship and creeping sectoral vulnerabilities. First, it requires seeking to incorporate more value added components into the export of raw materials to make them more competitive in export markets generating higher profits. Second, it requires greater diversification of Bolivia's export base to reduce dependency and minimize vulnerabilities from revenue fluctuations due to commodity market price volatility.

Diversifying the rather narrow export base of Bolivia will require considerable investments in the sectors which show potential. Ideally, activities which are labour intensive (and hence can engage a bigger share of unemployed or underemployed workers) should be preferred. Tourism is a field with numerous opportunities for low qualified workers which can contribute to diversifying beyond the country's traditional exports. Further, if part of the tourism attractions can be marketed under ecotourism, it can be easily be combined with the objectives of further developing other labour intensive activities (i.e. agriculture, forestry, livestock, fisheries, clothing, leather, and high quality jewelry).[53]

Seeking less dependency of external capital may be even more challenging than reducing import dependency. Bolivia needs to develop and deepen its financial sector, requiring important structural of its finance sector. Though having a good track record with bilateral and multilateral donors is of advantage for a poverty-stricken country in need of external financing, it should not substitute a country's ability to raise capital. Furthermore, official development aid (ODA) demands considerably more from a soliciting country in terms of conditionalities than the mere servicing and repayment of a loan.[54]

Therefore, developing the financial services sector will also require action on a global front. Bolivia must push for development friendly considerations in liberalizing financial services. One of its main

[53] Section 1.3 titled "Bolivia's Opportunities in International Trade".
[54] See Saner and Páez (2006) for a critique on conditionalities of financial assistance.

interest lies in facilitating the transfer of remittances from migrant workers abroad, which alone in 2004 registered US$ 422 million. It is estimated that only 10% of the remittances is transferred through the financial system. Most recipients (and migrant workers) do not own a bank account or have access to transfer services. In addition, transaction costs are very high, currently estimated at 7% of the transferred money.[55] Bolivia can contribute to facilitating the transfer of remittances from Bolivian workers abroad by pushing for development friendly liberalization which promotes financial democracy through accessible financial services. In addition, supporting calls for a more aggressive liberalization of migratory workers (i.e. movement of persons under the General Agreement on Trade in Services at WTO), could also improve conditions of Bolivian workers abroad, and hence facilitate their access to basic financial services, and thus reduce transaction costs resulting from the transfer of remittances.[56]

2.2 Regional

On repeated occasions, president Morales has expressed strong support for the anti-imperialistic and leftist regimes of presidents Chávez (Venezuela) and Castro (Cuba), and has signed with both countries diverse cooperation agreements in the field of energy, education and health. Their ideological proximity could endanger stability in Latin America.[57] Great concern has been voiced by the US and Europe, and relations with the country's main trade and financial assistance partners have been tense. This situation could cause substantial difficulties for Bolivia, since it may distance itself from its most important trading partners and block alliances and coalition opportunities for market access for the country's exports and services negotiations in the WTO.

In this sense, rather than opting for exclusive ideological relations with Cuba and Venezuela, Bolivia should focus on joint projects generating stability with all of its neighbors. The development of a gas pipeline could be a possibility, as well as joint waterway development consisting of both port and storage facilities, as well as the development of economic activities such as value added processing plants along the riverways can both generate employment and income opportunities and reduce conflict from the different stakeholders sharing the same living space.

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[55] IMF and IADB (2005).
[56] For a discussion on policies for improving remittances, see Solimano (2003).
[57] This destabilization is considered a major threat to the outcome of FTAA negotiations. See Martin (2006).

Finally, forestry resources and TK also offer economic incentives and cooperation opportunities For instance, the maintenance of a joint database on exploitable resources and TK of indigenous groups can be a meaningful tool to ease conflict both between neighboring countries and individual stakeholder groups (e.g. indigenous groups and pharmaceutical companies). Together with monitoring of the exercise of property rights and ownership of such intangible assets, it can ensure the equitable distribution of grains from trade with these natural resources.[58]

2.3 Local

- Breaking with political tradition and strengthening participatory process

One of the main characteristics in Bolivia's recent political history is the so-called "pacted democracy". It alludes to the entrenchment of the large political parties in occupying executive power through the successive election of their respective presidential candidates. Under this system, election scenarios were often pre-determined through pre-elections agreements (pacts) between parties to alternate their candidates in the presidential chair based on negotiated support in parliamentary elections.[59]

To some extent, Evo Morales has broken with this political tradition, being a newcomer without traditional party support and being of indigenous background[60]. However, the transformation of the political system in Bolivia has its roots in the mid-80's, when new political leaders supported by the poorer sectors of society, such as Carlos Palenque and Max Fernández, advocated the ethnic heterogeneity and cultural legacy, and opposed the "elitist" and "antidemocratic" ways of traditional parties.[61] In addition, regulatory reforms of the participatory processes provided social groups with electoral leverage and the development of a political culture. The result has been increasing participatory and electoral awareness matched with regular elections, the end of military coups, and the strengthening of representative democracy through political party representation and social activism.

Despite these positive changes, there is still need for reform. Vertical political management vested in individuals (i.e. political leaders) still prevails, as well as lack of transparency, prevalence of

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[58] This discussion is also taken up in Ch. IV, titled "The Environment Sphere".
[59] Auroi (2005).
[60] The majority of past presidents in Bolivia belonged to the minority of European based immigrants.
[61] Villavicencio de Wallart (2005).

clientelism and interest groups with lobbying power, and lack of continuity in the management of government. The political tradition has done little to foster economic development, and excessive burocratization and centralization in the past has favored vested economic interest groups instead of entrepreneurial competitiveness.[62]

All of these events in Bolivia’s recent political history point to the increasing awareness of the population (and of traditional leaders and politicians) of the importance of legitimate democratic processes. Without electoral legitimacy, there is no link between the leadership and the population, and political projects will tumble through violent protest and public resistance, as history shows.

Lack of credibility and legitimacy has been the main cause behind many of the violent protest. This general dissatisfaction with political elites is shared by the population requires mending on several fronts at local level. First, political processes must be legitimate. The majority of Bolivians must be convinced that participation has an effect and that the electoral processes are transparent and fair, and deserve to be respected. Second, business activities with considerable impact in the economy must be viewed as an opportunity for all neighboring communities, not only for privileged few. Unfortunately, the latter has been the case in some economic enterprises, such as hydrocarbon development projects and water distribution systems, as previously discussed. Third, opportunities to guarantee dignified subsistence must be available to the poor, in order to ensure a minimal degree of social stability, and thus avoid the perception of political reform and new economic developments being a direct threat to survival of the poor.

The country must strengthen its democratic and participatory mechanisms. Access to the most distant regions must be assured to avoid exclusion and should foster transparency and due observance of processes. The presence of internationally active organizations in the field, such as the Organizations of American States (OAS), Transparency International or the Carter Centre in such processes are vital to guarantee credibility and stability.

Materializing strategies to position Bolivia as an international player will greatly depend on developments in the political field. Bolivia’s newly elected president, Evo Morales, has a track record of opposing globalization and rejecting relations with representatives of imperialistic hegemony, such as the US considered to be a hegemonic imperial power intent to subjugate Latin

[62] De la Fuente (2005).

American counties. Having been sworn into presidency in January 2006 he has urged the citizens to actively engage in participatory democracy and overview his political performance It remains to be seen whether he is able to undertake pending reforms and seize economic development opportunities that place Bolivia in the international setting with the necessary support and without civil unrest.

- Building opportunities for effective backward linkages

Economic opportunities stemming from trade will have more meaningful effect if they foster backward linkages. In other words, commercialization activities requiring the engagement and development of complementary and local value added goods and services, result in the engagement of more workers, greater income and economic diversification in the long run, and can have very positive effects for the excluded and poorer sectors of society.

However, direct access to international markets is particularly difficult, due to Bolivia’s bad infrastructure conditions, lack of minimum export capital and knowledge of trade procedures which constitute barriers that impede many Bolivians from seizing trade and economic opportunities abroad. Trade facilitation is an important factor in building opportunities for international trade.

Valuable initiatives are the (import) promotion activities undertaken by government or government-supported agencies of developed countries, as part of development cooperation. Though limited in the scope of outreach, these initiatives effectively target constraints and offer business orientated solutions, which can be put in practice with relative low costs. Furthermore, they generally target the smaller producers and micro enterprises who are often disadvantaged when facing the myriad of bureaucratic paperwork to access credit or even to effectively participate in government run programmes in support of export produce.

An example of such initiatives is the “Swiss Import Promotion Programme” (SIPPO). SIPPO pursues the objective of eliminating market access constraints for SMEs in transition economies of Eastern Europe and developing countries in each of its activities and projects. In order to achieve its objective, SIPPO offers market-specific information for exporters addressing their needs in an exporter-friendly manner. For instance, general information on specific markets is offered in different languages, which is detailed enough to be considered a market study, often inaccessible in the first place because of its costs, ability to access recent and reliable information of the whole sector and level of technical expertise it requires. Additionally, valuable information is given on how to penetrate the market through image and standard setting advice offering a platform for business-to-business matchmaking and networking, through client meet activities such as trade fairs, the keeping of contacts with producers and trader guilds and associations.[63]

A second way of fostering effective backward linkages and alleviating possible supply side constraints relates to public administrative reforms. Decentralization can allow communities to initiate self-driven processes on the basis of local realities and needs. Bolivia has undergone a process known as “participatory decentralization”, where state instances have become locally accessible to the people, promoting civil activism since 1994.[64] Participatory decentralization provides the State with the necessary foundations to establish a dialogue with the local citizenship and economic actors in order to identify opportunities to engage in international trade, as well as concern, and thus include the different stakeholders in a participatory and legitimate process.

The process of popular participation at municipal level is considered a vital process and has shown initial positive outcomes. Today, the adoption of regulation and policies without such participation unthinkable. Indeed, recent studies of municipal activity in Bolivia have found that the efficiency and performance of effective public management is not so much a question of size or capacity of the local government, rather it is a question of involvement and popular participation in municipal activities. Lack of coordination and conflicts leading to lower efficiency tend to arise where there is no link between the local government and the community in question.

The international community can contribute to the improvement of these processes by fostering the development of local government capacities and performance. In the past, foreign assistance has financed capacity deficiencies of local governments, or developed joint projects with localities, even though priority setting of the agencies rendering cooperation and that of the communities might have varied considerably. Under such initiatives, greater focus on the social and cultural capital embedded in communities should be made, and, ideally, more use should be made of the organizational traditions and cultural heritage to maximize outcomes of decentralized processes in eradicating poverty.

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[63] Wehrli (2006).
[64] Guevara Ávila (2005).

Furthermore, even though local communities may enjoy more discretion thanks to decentralization, the lack of government funding renders their new liberties ineffective. More importantly, the efficiency of poverty reduction strategies lies in accessible funding directly addressing poverty constraints identified by the communities themselves. However, sustainable funding is an area showing meek progress and questionable results when assessing recent Bolivian experiences. Concretely, the decentralization process under the National Dialogue (2000-01) established poverty reduction priorities identified at local level, followed by the adoption of a social agreement, which established a direct transfer of 70% of the HIPC resources to local communities.[65] In the first years, this should have corresponded to US$ 70 million, representing about a third of the government transfers to the localities. With these funds, the local communities would promote economic activities to reduce poverty, such as small-scale farming, craftsmanship and micro enterprises.[66]

Despite these meaningful efforts, an IMF retrospective assessment of the HIPC in Bolivia recognizes the shortcomings of the initiative. For instance, though fiscal decentralization through the National Dialogue improved the local public finances of the municipalities on the basis of local poverty levels, it also generated imbalances in the central government since it had comparably less revenues to ensure its expenditures. Efforts to alleviate poverty have been partially neutralized through the stagnation of average per capita income growth, registering less than 1.5% per year. Indeed poverty has not been significantly reduced, according to the reports. The IMF report also underscores the need for governance and institutional reforms, but also recognizes that their success requires social and political consensus.[67] Thus, a redistribution of HIPC resources (or any form financial assistance) to reduce inequalities and conflict impeding reforms is highly desirable.[68]

A similar recommendation is made by the United Nations Development Programme,[69] which stresses that social dialogue efforts cannot solve the overt inequalities that prevail, nor reduce conflict when economic policies that determine the subsistence of many Bolivians are applied. This has been the case when decisions on the distribution and management of natural resources, the privatization of public services and the eradication of coca have lead to civil unrest.

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[65] Bolivia reached the completion point under the original HIPC initiative in 1998. A second round of assistance under the "Enhanced HIPC" was approved and implemented in 2001. See (IMF, 2005).

[66] Thévoz (2005).

[67] IMF (2005).

[68] A proposal for the redistribution of HIPC resources focusing on the minimization of inequalities forms part of a dialogue strategy of the International Labour Organization (ILO). See ILO (2005), Table e.

[69] UNDP (2005), Box 5.5, p. 166.

Therefore, participatory decentralization should tackle the deficiencies that lead to inequality at local level, and generate backward linkages that address problems such as unemployment. The activation of small and medium sized enterprises (SME) development is viewed as one of the most effective alternatives to lift the poor out of their misery.[70] In particular, programmes geared to the creation of SME that focus on the development of capacities are highly desirable. A greater human capital component will not only have positive effects on competitiveness, it will also enable the poor to increase their income through the greater value added in the production of goods and services.

Such efforts may be additionally accompanied by the availability of financing, for instance through the creation of cooperative banks, financed with part of the transfers made to the local municipalities. Trade negotiations in the context of the WTO can also play an important role in this field. As mentioned previously, in liberalizing financial services, Bolivia can use the schedule of commitments as an effective tool to promote the presence of foreign banks which offer accessible credit or financing opportunities.[71] For instance, in offering countrywide market access to foreign banks, it can set require easier facilitation and a credit allocation share for the start up of SMEs.

3. Preliminary Conclusions on the Trade Sphere

In conclusion, the country still needs to conduct substantial regulatory reforms in order to ensure an enabling environment for greater trade and investment flows and thus integrate itself successfully into the global economy and use some of the revenues from exported energy products to develop new products with high value added potential (e.g. health and agriculture products and eco-tourism) thereby generating badly needed jobs for the mostly underqualified poor. Decentralization has positively affected participation local level, and the future challenge lies in strengthening the participatory processes. This will enable the identification of meaningful economic activities that allow the poor and traditionally excluded sectors of society to capture opportunities resulting from trade liberalization, whilst at the same time, reduce the destabilizing factors which interfere with reforms. Greater governance and transparency in decision-making may help strip away vested interests and render results which contribute to long-lasting development and growth.

[70] ILO (2001).
[71] See section 2.1 titled "Global".

III. The Energy Sphere

Bolivia has recently made several international headlines with regards to its hydrocarbons sector. These news items have often been linked with civil unrest uncertainty for foreign firms operating in the gas and oil industry. Bolivia requires considerable technical, human and capital resources in order to fully reap the profits and benefits of its energy assets. More importantly, it needs to develop the industrial capacity which will enable the country to maximize revenues stemming from the energy sector. However, this cannot be achieved in the absence of enabling conditions. Without a transparent and predictable legal framework, political and social stability, and strong and reliable institutions, a profitable and sustainable exploitation of these resources will not be possible.

The present section analyses the country's energy potential by means of a SWOT analysis. Taking due regard of the global, regional and local developments in the energy field, it offers strategies to enhance Bolivia's strengths and opportunities, and minimize the weaknesses and threats.

TABLE 3: SWOT MATRIX: BOLIVIA'S ENERGY CONDITIONS	
STRENGTHS	**WEAKNESSES**
▪ Considerable proven gas and oil reserves ▪ Uncertain (political) situation due to competing gas suppliers, such as Russia ▪ Attractive foreign energy markets seeking greater diversification of suppliers and sources of energy ▪ Greater demand for gas, as an energy source of the future ▪ Projections of increasing global energy consumption, especially in industrialized and emerging markets	▪ Gas prices are greatly determined by the major consumer (and producer) – the U.S., which sets prices according to internal political interests ▪ Lack of local expertise in the energy industry ▪ High production costs raise price of Bolivian gas in international markets ▪ Inefficiencies and lack of clarity in gas revenue collection, in the management of the state-owned oil industry and participation of foreign companies ▪ Need for external financing, technology and know-how for the exploitation of gas resources
OPPORTUNITIES	**THREATS**
▪ The enactment of new legislation establishing a clear and coherent energy policy which enjoys legitimacy considering all stakeholders (communities, government and firms). ▪ Increasing funds and participation of foreign corporations in social and environmental responsibility projects to minimize conflicts with affected communities ▪ Regional opportunities for solving Bolivia's landlocked situation, smoothing conflicts with neighbors, greater regional stability ▪ Greater integration and coalition building through energy cooperation in RTAs	▪ Poor investment protection and threats of nationalization may trigger capital outflows ▪ Irresponsible use of gas resources, leading to depletion, and environmental degradation ▪ Existing competitors and their drives toward market dominance. ▪ Escalation of social conflict due to lack of unanimity on the use and distribution of returns/profits of gas ▪ Environmental and social impact of the gas development projects ▪ Increased dependency on gas revenues, greater vulnerability to fluctuations in international energy prices and fiscal imbalances

1. Bolivia's Energy Assets, Interests and Challenges

1.1 Strengths: Bolivia's Hydrocarbon resources

Bolivia is blessed with an incredible amount of hydrocarbon resources, topped only by a few countries worldwide. According to government estimates beginning 2005, (proven, probable and possible) reserves amount to 1,111 million barrels of crude oil and 48.7 trillion cubic feet natural gas.[72] Bolivia holds the second largest hydrocarbon assets after Venezuela, one of Bolivia's regional competitors. It is estimated that the country could supply the whole of South America for over the next ten years with it hydrocarbons resources.

Bolivia extracts around 35 million cubic meters of gas on a daily basis, of which 70% are directly produced by Brazil's "Petrobras", the major foreign oil company operating in the country, which holds 890 billion cubic meters of estimated gas resources.[73] Daily oil output is estimated at 38,192 barrels and 952 million cubic feet of natural gas, resulting in 6.7% contribution to the GDP.[74]

Leaving numbers aside, several international and regional factors make Bolivia's hydrocarbons particularly attractive. There is a high degree of uncertainty linked to internationally competing gas suppliers. (See Table 3)

For example, Russia's Gazprom company cut off gas supply to pipelines running across the Ukraine in early 2006, arguing the neighboring country had been appropriating gas originally destined for European markets, without paying for it. Subsequent to this, Russia stopped delivery of gas to Ukraine thereby cutting off Europe's main supply of gas in the deepest winter months in 2005-2006. Such unilateral action showed the degree of vulnerability of Western Europe with regards to security of energy supply. Further, Russia has expressed interest in diversifying its export destinations, and now seeks to position itself as a major energy supplier to Asian markets and to the US, which translates into decreasing availability of gas for Western Europe.[75]

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[72] WTO (2005a), p. 98.
[73] Henkel (2006b).
[74] WTO (2005a), p. 95.
[75] See Hil. (2006a, 2006b).

Second, this uncertainty with regards to traditional energy suppliers has increased Western Europe's resolve to diversify the sources and types of energy supply so as to mitigate the risk of future shortcuts due to political or other factors. As such, discussions have been underway to promote the development of alternative sources, such as nuclear, solar, wind or thermal energy, but also to tap alternative suppliers which do not deliver European markets.[76]

A third important reason for an increase in the relative attractiveness of gas as an energy source is based on the theory of "Peak Oil". This theory foretells the end of the oil era in the short term, where after the peak in oil production is reached, production will start to shrink rapidly since the profit-making share of oil will have already been extracted. What is left for exploitation after reaching the peak becomes increasingly expensive. An important assumption of the theory is that oil consumption occurs at a faster rate than the identification of new reserves, meaning oil will eventually dry out. This will raise oil prices as production costs and demand increase, whilst positively affecting the price of alternative sources, such as gas, making these more attractive.[77]

Fourth, gas has been cataloged as one of the energy sources of the future even though gas exploitation requires considerable investment and technological development. It is less polluting than oil, given the lower CO_2 emissions, and can substitute oil consumption to some extent. In particular, "liquefied natural gas" (LNG)[78], is an expensive procedure requiring technical expertise and equipment. However, its advantages lie in the easier transportation of LNG, and the lessening of dependency, costs and risks stemming from the maintenance and vulnerabilities of pipeline systems. Further, LGN allows for other forms of transportation, less prone to be used as pressure mechanism in conflicts between countries sharing pipelines, as seen between Russia and the Ukraine, and is less subject to boycotts and terrorist activities that can provoke the collapse a whole supply chain.[79]

Fifth, consumption patterns of the two biggest energy users – the U.S. and China – show increasing import dependency in the future. The US has decreasing gas reserves and China accounts for 1,200 million people with increasing energy demands, given its economic and industrial development. Together, the increased consumption of these nations may lead to higher oil and gas prices, given

[76] Meier (2006).
[77] GHO. (2006), "Wenn der Gipfel nicht das Ziel ist. Die "Peak Oil", *NZZ*, p. 27.
[78] Liquefying gas is a chemical and physical process which transforms natural gas from its gaseous state into a liquid known as liquefied natural gas (LNG).
[79] Gho. (2006), "Das Erdgas, das aus der Kälte kommt", *NZZ*, p. 22.

the dimension of both economies and its effect on world prices. Indeed, the International Energy Agency (IEA) has projected gas consumption to increase from a current 21% to 26% of the total world energy demand by 2030.[80]

At regional level, energy demand has also increased. Brazil for instance, an industrial hub of South America, covers 40% of its gas consumption with Bolivian gas. This represents 7% of its total energy demand, currently covered by the supply through a US$ 2 billion pipeline connecting the two countries. Brazil is expected to triple its gas consumption by the end of the present decade,[81] whilst Chile and Argentina are also increasing their respective energy demands. These two countries are keen on securing alternative sources of supply. However, conflicts between both countries continue to rise due to Argentina's limitations in supplying both the local and Chilean growing gas markets. Bolivia is not supplying Chile with gas due to the territorial disputes going back to a war lost by Bolivia against Chile.

1.2 Weaknesses of the Energy Sector

Because the US is both the biggest producer and consumer worldwide, it has a considerable influence on gas prices. It determines prices according to its internal and international political interests. Thus, prices are no set merely according to market conditions or profitability considerations, thereby making fiscal planning and budgeting on the basis of gas revenue projections rather difficult for countries like Bolivia

A second factor which also influences Bolivia's gas prices is the payment arrangements with Brazil and Argentina. These conditions result in a competitive disadvantage for Bolivia as costs of production and ultimately prices are already high due to the lack of a direct sea exit for gas shipments exports. Concretely, the cost of gas is determined by specific contracts between Bolivia's state-owned hydrocarbons company – Yacimientos Petrolíferos Fiscales Bolivieros (YPFB) – and the foreign companies operating in the country, such as Petrobras which controls the distribution of Bolivia's gas exported abroad. This bargaining disadvantage vis-à-vis foreign energy firms came about after the regulatory reforms accompanying privatization.

[80] Gho. (2006b).
[81] Henkel (2006b).

Prior to privatization, foreign companies operating on a contractual basis with the YPFB were allowed to operate in the upstream sector for a 30-year period, under the previous Hydrocarbons regime of 1990[82]. Participation was based on profit sharing agreements, where profits were equally allocated between the companies and the YPFB. The ownership, exploration and exploitation of the gas resources remained in the hands of the state, whilst the development of upstream sector[83] was tied to a defined investment and work programme, executed by the foreign firms. Further, downstream activities remained under the exclusivity of the state, such as the commercialization and transport of gas.[84]

After privatization, this clear delimitation of functions and ownership were dropped. Under the new hydrocarbons regime[85], the State with no longer owned of production and commercialization of gas. This left the state the only benefit of tax revenues, as opposed to its participation and control of value added and production chain processes under the former regulatory regime. Second, downstream activities were also opened or privatization. Following these privatizations, enactment, companies invested in the energy sector and intensified exploration, given the favorable conditions at hand. Both proven gas and oil reserves rose spectacularly, from 5.69 to 52.29 trillion feet in the case of gas, whilst oil increased from 200 to 929 proven million barrels since 1997.[86]

Foreign companies can now conclude risk-sharing agreements with YPFB and have access to the downstream activities[87], being placed on a level playing field with YPFB. As YPFB did not have the institutional strength nor the management capacities to function efficiently under such a liberalized regime, it was constrained to exercising a secondary role as mere supplier of energy sources.

The privatization of the Bolivian gas industry has resulted in multiple conflicts. Some domestic critiques argue that the a new energy policy is needed to overcome the negative impact resulting from privatization of the national oil industry, since the YPFB was sold off under President Sánchez de Lozada well below market price estimated at US$ 843.9 million (when estimated

[82] Hydrocarbons Law No. 1194, 1 de noviembre de 1990.
[83] Upstream activities of the sector refer to the exploration and exploitation of hydrocarbons.
[84] Villegas Quiroga (2004).
[85] Hydrocarbons Law No. 1.689 of 30 April 1996.
[86] Villegas Quiroga (2004).
[87] Downstream activities of the hydrocarbon sector are those occurring down the production chain, such as refining, industrialization, transports and storage.

proven reserves had a value of US$ 13,000 million), and later through president Banzer, who sold off the refinery and commercialization networks for mere US$ 122 millions, these being the more lucrative downstream activities of the national industry.[88] It therefore is not surprising that a majority of Bolivians link foreign oil companies with an opportunity foregone due to political irresponsibility and abuse of the executive's discretion in opening and privatizing the hydrocarbons industry.

Since the hydrocarbons sector was privatized, no unanimous agreement could be reached on the distribution of the profits and the conditions for foreign participation. The former two presidents (Lozada and Mesa) were forced to resign after popular unrest and violent uprising mostly linked to the perception of both presidents having "sold out" to foreign oil and gas companies. Following a national referendum in May 2005, a majority of Bolivians approved a new hydrocarbons law which raised taxes and royalties on oil and gas production from 18% to 50%.[89]

However, the new hydrocarbon law does not include a revision of the existing contracts with foreign energy firms operating in the country, and therefore cannot address the underlying structural disadvantages discussed before. Though a revision of the concessions is necessary, as recently announced by Morales,[90] due process of law has to be ensured to avoid the outflow of foreign capital and attract further investment in the future. This said, foreign oil companies have recourse to arbitral procedures in the event a dispute, under the Arbitration and Conciliation Law, and have already protested against the tax raise and threatened with judicial measures.

Adding to the cost inefficiencies is the complex structure of taxes and royalties of the hydrocarbons legal framework. In essence, the regulatory framework[91] sets a new tributary system based on the classification of hydrocarbon resources on the basis of either "existing" or "new" hydrocarbons. These new definitions give room for tax evasion, another reason for inefficiencies in the management of the resource. This system envisaged 5 different types of taxes, namely: (i) a Value Added Tax (13%); (ii) a tax on transactions (3%); (iii) a tax of 25% on net utilities; (iv) a tax on utility remittances (3%), and (v) a 25% surtax on exceptional profits. These taxes applied to the

[88] CEJIS (2004), Editorial.
[89] Hydrocarbons Law No. 3.058 of 17 May 2005.
[90] Henkel (2006b).
[91] Capitalization Law No. 1554 of 21 March 1994, Hydrocarbons Law No. 1689 of 30 April 1996 and Law No. 843 of 20 May 1986, (amended by Supreme Decree No. 26.077 of 19 February 2001) established the taxing regime on the hydrocarbons sector.

downstream and upstream sector, where specific activities were subject to a given combination of the 5 taxes, making the overall system rather confusing and the effective tax collection rather complex.[92] Topping it all is a special tax on hydrocarbons and their by-products ("Impuesto Especial a los Hidrocarburos Derivados" (IEHD), an indirect tax on the profits from downstream activities (mostly commercialization) to the State, with a complex calculation methodology of its own.[93]

Further, royalties consist of 11% being allocated to the producing department (i.e. a department royalty), 6% to the Bolivian treasury, 1% national compensatory royalty to the state and the Hydrocarbon Superintendency, respectively, and an additional 13% national complementary royalty.[94] Though the new regime of royalties may have sought to foster a more equal distribution of the profits at departmental level, with the decentralization reforms, both the transparency and certainty of such transfers have been reduced.[95]

Privatization under Lozada fostered poor profit distribution. First, it generated suboptimal returns to the national oil industry, since the extracted oil sent to the refineries was sold at international prices, which were naturally higher than the cost price at the direct production source. This raised the production costs and ultimately the final price of oil derivatives. Second, the new regulation set deregulated gas prices, which favored the Argentinean export market since the neighbor's gas prices remained regulated, at the expense of Bolivian gas exports. Third, operating companies could avoid the payment of a higher (50%) tax if they reported that their output stemmed from "new" instead of "existing" hydrocarbon fields. By registering their output accordingly, they could pay a lower tax of 18%. Indeed, it is estimated that the tax evasion during the period the Loyzada law amounted to US$ 3,400 million. Fourth, the impact of the industry on the environment was considerable due to irresponsible oversight and management of the networks. For instance, an oil spill of over 40,000 barrels in 1999 caused severe damages to the River Desaguadero. The government did not take immediate action to penalize the responsible parties, despite the significant environmental impact.[96]

In conclusion, underlying all of these weaknesses is the uncertainty of the present regulatory regime and the absence of due process of law, underscored by the institutional and political instability of the

[92] Villegas Quiroga, (2004).
[93] Law No. 1.606 of 22 December 1994 introduced the IEHD. Currently, Supreme Decree No. 27.422 of 7 April 2004 sets the methodology calculations of the IEHD for hydrocarbon derivatives. See WTO (2005a), p. 98.
[94] Villegas Quiroga, (2004).
[95] See WTO (2005a), p. 97.
[96] Mariaca Bilbao (2004).

past years. Though the regulatory reforms following the law of 1990s were conducive to an opening up of the sector and welcomed foreign investment (through the enactment of laws and international investment treaties). The privatization process has been perceived as a failure, where the national oil company handed over a substantial part of the control and ownership of the industry to foreign oil companies. With this transfer, the YPFB became increasingly inefficient in the management of the resource, by giving up profit generating activities and solely concentrating on rent seeking (i.e. tax and royalty collection).

1.3 Opportunities in the Hydrocarbons Sector

The gas sector reveals opportunities for energy development which could provide Bolivia with an alternative to reduce its focus on traditional agriculture, manufactures and mining, and instead concentrate on more promising returns, economic diversification and employment opportunities. Many agree that the greatest benefits of exploiting gas for Bolivia lie in developing an industrial infrastructure that could generate value added income on gas exports, thereby l ultimately increasing export revenues. Such an alternative strategy would however require three important inputs, namely investment, diversification of applications and end users, and the access to new export markets.[97]

As formerly mentioned, in addition to the already existing export markets for Bolivian gas (i.e. Brazil, Chile, Argentina, US, China and SE Asian economies), a second front of opportunities are countries seeking new energy sources and suppliers. Europe for instance, for both security of supply reasons and environmental concerns could be an important new export market,[98] especially if Bolivia opts for joint development of technological infrastructure with capital investment from foreign partners.

LNG represents around a fourth of total gas trade and shows great potential for expansion. Countries such as China and other SE Asian hubs have growing LNG demands (i.e. Japan, Taiwan, and South Korea). These importers, together with the US will represent a yearly increase of 3.5% of gas demand till 2020. According to the IEA, LNG will have a double digit growth rate for the same period.

[97] CEJIS (2004), Editorial.
[98] For a previous discussion, see section 1.1 titled “Strengths: Bolivia’s Hydrocarbon resources”.

Currently, there are around 50 facilities which liquefy gas on a worldwide basis. The biggest LNG producers worldwide (i.e. Qatar Petroleum, Pertamina and Royal Dutch Shell, among others) have shown interest in the development of downstream activities (such as refining, industrialization, transport and storage) in other regions. In the past, there have been problems with the investment of LNG plants, associated with uncalculated risks and the harsh conditions of the different locations,[99] which in turn may raise the attractiveness of alternative locations, such as Bolivia.

Traditionally, foreign participation has limited itself to core upstream activities of exploration and extraction. However, under the new capitalization regime, more joint opportunities and foreign capital became available, For instance, the French company Total and the state-owned oil company Yacimientos Petrolíferos Fiscales Bolivieros (YPFB) recently agreed to develop new gas fields, despite the increase of oil taxes. Second, Bolivia has also recently granted a license for the operation of the first petrochemical plant to a US company, known as The Austin Power Co. In opening up the downstream sector, the country is allowing for a wider based industrialization through foreign capital flows destined to diversify activities, thereby moving away from the traditional upstream sector. A third example is the MOU of YPFB with the Shaw Group, an American oil servicing company. This shows further willingness to not only develop downstream, but also to provide foreign companies with the possibility to outsource services in the energy field.

Since the election of Morales as president of Bolivia, already foreseen projects have been reactivated. Discussions with the leaders of Argentina, Brazil and Venezuela for the construction of a 5000-mile regional pipeline (connecting Caracas to Buenos Aires through the Amazon rainforest and branching out to Uruguay and Paraguay in a later stage) have advanced considerably. The cost of such a pipeline is estimated to be around the US$ 18-20 billion, and has been assessed as being highly improbable. This project is set in a broader political context of greater regional integration to a counterweight the hegemonic power of the US in the Western hemisphere.[100] In undertaking such an endeavor, Bolivia would be trying the development of its gas sector to its natural regional competitors supplying gas, namely Argentina and Brazil.

A final interesting opportunity relates to alternative energy in the context of the recent dialogue between Bolivia and Chile to sell thermoelectric energy. Though Bolivia has linked the discussion

[99] Gho. (2006), “Das Erdgas, das aus der Kälte kommt”, *NZZ*, p. 22.
[100] See Reel (2006).

with the request to obtain direct access to the Pacific Ocean, and informal negotiations are still underway, the project is part of the new energy plan of Bolivia. The project envisages the construction of two pipelines crossing the country, at an investment of US$1300 million. One of these pipelines would be linked to the future thermoelectric plants.[101] However, such cross-border projects are highly uncertain due to the lingering and unfinished territorial conflicts between both countries going back to the period when Bolivia lost its access to the Pacific Ocean in the "Nitrate War" (1879-83) . Though relations seem to be improving through diplomatic channels (Lagos, the former Chilean president was one of the guests at the presidential ceremony of Morales), it remains to be seen whether cooperation with Chile could be substantially improved to ensure viable commercial cooperation between both countries.

1.4 Inherent Threats to the Exploitation and Development of Gas

The Presidents of Brazil, Argentina and Venezuela, beginning this year, originally outlined their plans of constructing a continental pipeline in early 2006. They also considered the inclusion of Chile, Peru and Bolivia at a later stage. The construction of a 7,000 km long pipeline could last 10 years and require US$ 20 billion investment, and has been catalogued as a highly improbable project, given the technical, geographical and environmental difficulties and risks. Further, the countries involved have divergent interests. For instance, though currently Brazil is a net importer, it is heavily investing in the development of its own gas sector and could become a natural competitor of Bolivia and Venezuela in the upcoming years.[102] Thus, Bolivia's clients of today may themselves become considerable competitors in the near future, and the pipeline could then become a source of conflict. The country hence must assess to what extent the joint business opportunities really favor its development and ensure security of supply in the future, not only in the short term.

Other neighboring countries are also looking for alternative opportunities. Peru, for instance is conducting explorations of probable gas fields in the Andes, with the objective of exporting liquefied gas by 2007. Once again, if both countries were to share a pipeline, it would be a competitive quest. Finally, though Argentina may be interested in a pipeline, it is considering the expansion of its own current supply of gas to cover the local demand. However, this demand may be

[101] El Mercurio (2006).
[102] Henkel (2006c).

subject to change in the future, a scenario once again carrying the potential of direct competition over the use of a joint pipeline.

One of the greatest challenges linked to the investment in the gas sector is undoubtedly its potentially negative environmental impact. Many of the gas development projects envisaged would require crossing one of the most fragile ecosystems of the world: the Amazon rainforests. Bolivia shares these natural resources with its neighbors. Adding to the present threats of deforestation and degradation through timber exploitation, mining and farming, gas developments (i.e. exploration, exploitation and pipelines) would certainly increase the severity of the environmental impact on endangered animal and plant species, as well as on the indigenous groups living in the rainforests.

Past records of oil companies' activity point to severe infringement of environmental protection, exacerbating the conflict between the foreign firms and local indigenous groups. For instance, ENRON and SHELL, two oil multinationals, were allocated licenses for the construction and operation of a gas pipeline system during 1999 and 2001, known as the Bolivia-Brazil Lateral Cuiabá Pipeline. Once built, the pipeline crossed the Chiquitano swamps and dry forests, two protected and very fragile ecosystems. They are inhabited by various indigenous groups which live off the region's biodiversity resources whilst respecting the fragile balance of their habitat. With the construction and operation of the pipeline, these groups were severely affected. The environmental impact posed a direct threat to their subsistence by polluting their drinking water, animals and crops. Further, an undesired spillover effect of the pipeline was the increased presence of illegal timber exploitation, hunters and miners, which had easier access to the Chiquitano forests through the clearing of numerous access routes to the pipeline. This underscored the environmental degradation already taking place and increased the violence and aggression towards the indigenous groups by the illegal exploration by foreign energy companies.

In 2000, following inquiries on the impact of the Cuiabá Pipeline, the government established that only 7 indigenous communities had been affected, based of an ENRON report on the impact of its activities. Subsequently, several indigenous groups initiated legal procedures under the ILO Convention 169, claiming severe violations of their rights by ENRON and SHELL. A public consultation process was established where the 38 affected communities voiced their accusations and demanded compensation. The foreign companies were sued a US$ 2.2 million, destined to fund the “Plan de Desarrollo Indígena” (PDI), a plan for the mitigation of the social and environmental impact of the pipeline.

Despite having acknowledged their responsibility and agreed to issue compensation, the foreign companies did not disburse the established fine, violating the consultation agreement. Instead, they created a “Plan de Conservación del Bosque Chiquitano” (PCBC), alternative forest conservation plan to the existing PDI, without the involvement of the communities. This contributed to an escalation of conflict, where the different communities initiated several resistance actions, such as the taking of camps and machinery, and blocking off roads, thereby obstructing the companies’ business operations. In addition, the affected communities elaborated a report on the severity of the impact caused by the presence of ENRON and SHELL and supported by the former government of Sánchez de Lozada. The serious allegations of corruption, the misuse of financial resource and the severe irregularities linked to the construction of the pipeline and the questionable conditions of the PCBC, placed both the government and the foreign companies in a very disfavoring position, drawing considerable national and international critique and rejection.[103]

During his electoral campaign and recently after assuming the presidency, Evo Morales announced that he would nationalize the gas industry. Initially restraining himself from actually seizing the assets of the bigger companies present in the country, such as those of Petrobras, British Gas BG Group PLC and Total, Repsol YPF and Vintage Petroleum,[104] he first called for a revision of the existing gas production contracts. Further, he also showed interest in reacquiring two Petrobras refineries worth US$ 150 million.

Following such proclamations, negotiations with Petroleo Brasileiro SA (Petrobras) for further investments worth US$ 5 billion stalled, given to lack of uncertainty on the status of the contracts and investor protection. Brazil is the most important foreign partner of Bolivia’s hydrocarbon industry. Since privatization in 1996, it has invested around US$ 1.5 billion, almost half of the total investments in the sector by foreign companies. Petrobras exports amount to US$ 700 million, and the company has disbursed US$400 million worth of taxes and royalties in the past years.[105]

[103] Cortés and Tito (2004).
[104] These are companies from Brazil, Great Britain, France, Spain and the U.S. respectively, with investments worth US$ 3.5 billion in Bolivia.
[105] Henkel (2006b).

Though Morales assured Petrobas that it would not be nationalized, he has stated that the company has to work in closer cooperation with the YPFB. Even though the concept of “nationalization” may range from an increase in royalties and taxes to the complete physical and managerial takeover of facilities and operations, considering the most recent developments, nationalization is taking place.[106]

A milder form of nationalization, such as that of being forced into tighter cooperation through revised joint-venture (JV) contracts would not improve the situation. Instead, it would shy away further foreign investment, since the inefficiencies of the YPFB would probably obstruct the normal conduct of business operations, raising transaction costs of gas exploitation. This would reduce Bolivia’s chance to industrialize the sector and increase its gas revenues.

Petrobras alone has estimated output increments through greater investments, from 35 to 100 million cubic meters of gas by 2010, an opportunity that is now foregone under the current wave of nationalizations. Brazil’s pipeline system of 3150 km is worth US$ 2000 million dollars and exports 30 billion cubic meters on a daily basis. The company Transportadora Brasileña del Gasoducto (TGB) also operates the 557 km of the pipeline built on Bolivian ground. Brazil managed to obtain certain exclusivity rights to which other participating foreign companies did not have access during the privatization phase under the presidency of Banzer (1997-2002). These rights pertain to the development and exercise of downstream facilities and activities, and in particular, the building of transport networks and the commercialization of gas. Brazil was not obliged to sign joint profit sharing agreements under the privatization law of 1996. Instead, it had exclusivity arrangements for the direct control and operation of upstream activities.[107] The tributes deemed to be paid by TGB were passed on to the producing departments, thereby exempting it from a direct supervision of the central government through the YPFB.[108]

[106] On May 1st, Evo Morales officially decreed the nationalization of all the foreign assets in the gas industry, followed by a military taking and the announcement of no due compensation to the affected companies. See Ammann (2006a).
[107] The preliminary export contract to supply Brazil was signed under the supervision of the IMF, which required the privatization of Boliva’s hydrocarbons industry in the context of its Enhanced Structural Adjustment Facility (ESAF) programme during 1998-2001. The ESAF tied financial assistance of the IMF to strict observance of policy conditionalities by the recipient country. The operating contract signed with Brazil gave excessive concessions, beyond the property rights of the new legislation. Thus, Brazil, like no other foreign operating partner in enjoyed ownership rights of the pipeline constructed on Bolivian ground. See Mariaca Bilbao (2004).
[108] Villegas Quiroga (2004).

Reacting to the uncertainty in the region, oil companies made cuts in the bookings they had registered with the US Securities and Exchange Commission. Repsol for instance, announced a total cut of 1.25 billion barrel of reserves, of which 660 million correspond to the production in Bolivia, whilst 580 million pertain to production in Venezuela. These have not been the only company undertakings. Before the presidency of Morales, foreign oil companies conducted talks with the government of Mesa, the predecessor of Morales, in protest about the raise in oil taxes in mid 2005 (32% raise of tax on the already existing 18% royalties on production). These objections voiced against such a raise and threatened with legal arbitration procedures claiming a violation of their 30-year concession contracts.

Following the tax raise, an arrest warrant for two the executives of the Spanish Repsol was issued, based on of charges of having smuggled 230,000 barrels of oil out of the country worth US $9.2 million and evading taxes. Though the order of raiding Repsol's offices in March this year came from the judiciary and not the Executive, it is argued that there is no real separation between Executive and Judicial power, nor respect of private property. The former Hydrocarbons minister rejected accusations of lack of transparency and integrity of such procedures, arguing that these accusations came from the senior ministers, that the judiciary wishes to please the recently elected government and since Repsol has willingly paid the fine, fearing the loss of is investments in Bolivia, despite the dubious and unjust arrest procedures.[109], the accusations were not taken seriously.

The presence of vast proven gas reserves and the incredible profits linked to their exploitation, constitute opportunities that are incomparable with those of any other economic activity in the country. Bolivia faces the threat of becoming heavily dependent on its gas resources. This dependency may lead to important fiscal imbalances, where the external sector could outweigh and choke other sectors of the economy. Gas revenues are subject to unpredictable fluctuations due to the volatile prices of international energy markets. Thus, the more the fiscal income is determined by gas revenues the greater are the chances of fiscal imbalances due to external price volatility.

Such circumstances lower the scope of predictability and sustainable management of gas revenue inflows. During gas price "booms" this may lead to excessive fiscal spending, generating greater

[109] Weitzman (2006).

import dependency and economic overheating as the economy is unable to absorb all the excess reserves at once. Likewise, in "bust" periods where gas prices fall, the government is forced to severely minimize fiscal spending, leading to cuts in the financing of important investment projects and economic recession.

In addition to volatile gas prices and their effect on revenues, a second source of unpredictability for Bolivia relates to the non-renewable property of gas resources. These resources are limited, and their abuse can lead to a premature depletion. Future generations will be unable to benefit from their exploitation if this is the case. Thus, sustainable management and use of gas resources would instead focus on long term planning to ensure a more equitable and sustained distribution of profits among several generations.

Traditionally, oil funds (either in the form of "stabilization" or "savings" funds) have been used to address the problems of volatility and unpredictability of revenues in many oil-producing countries. The idea behind an oil stabilization fund is to save part of the revenues for future generations. If the energy markets experience a rise in price, then excess revenue can be placed in the fund. When prices fall, the fiscal gap caused by the shrinking revenues could be financed by fund allocations. Thus, the objective of such a fund is to stabilize budgetary expenditures. However, the way in which such funds have been operated has not resulted in the desired results. It is argued that since prices are the root of instability, by linking the budget to prices, market fluctuations are affecting fiscal balance directly and stabilization is therefore impossible to achieve.[110]

2. Outlining Bolivia's Strategy for a Sustainable Use of Energy Resources

There are several important opportunities for Bolivia to develop its hydrocarbon sector, as discussed in the previous subsections. Indeed, gas is viewed as the most important strategic asset of the country in present times, and is the launching platform for Bolivia's industrialization and participation in international world markets.[111] Expectations on the sector's industrialization are based on the design and implementation of a hydrocarbon legal and policy regime. Since the choice

[110] See Davis, Ossowski, Daniel and Barnett (2001). Also see supra, discussion in previous chapter on oil funds.
[111] CEJIS (2004), Editorial.

of a regime will have a decisive influence on the economic development of the country, the trade offs and risks linked to the different regulatory and policy alternatives must be factored in. Social and environmental considerations should therefore be part of the decisions about allocation of resources to ensure the success of any chosen strategy. The following section discusses possible strategies, their advantages, justifications and shortcomings.

TABLE 4: SETTING BOLIVIA'S ENERGY SECTOR STRATEGY		
Level of Action	**Strategies**	**Bodies, entities and interest groups involved**
Global	▪ Seeking export markets with a view to long-term supply relations	Europe, U.S., China, Asia
	▪ Energy cooperation with other producers to foster know-how, joint development and coalition building	Middle East, Canada,
	▪ Developing uniform strategies across different forae, which coherently link trade, environment, energy	WTO, UNCTAD, MEAs, Kyoto Protocol, etc.
	▪ Seeking foreign partners for the development of downstream activities (i.e. transport networks, apart from pipelines), and consolidate upstream partnerships	Europe, U.S., China, Asia, Middle East
Regional	▪ Consolidating regional supply relations vested on energy cooperation and network development systems	Mercosur and CAN
	▪ Cautious participation in regional energy transportation system, seeking alternatives to pipeline	Neighbors and regional partners
	▪ Regional economic development along waterways to alleviate infrastructure and supply side constraints	Amazon Treaty, ECAs, local governments & communities
Local	▪ Devising transparent and sustainable fiscal policy for an efficient distribution and management of gas revenues	Government (Congress, fiscal authority, Central Bank, YPFB, local governments)
	▪ Macroeconomic & monetary policy consistency to avoid the transmission of fiscal imbalances from gas revenues	
	▪ Strengthening institutional capacity, improving mechanisms to facilitate investment, revenue collection and profit distribution to smooth out inequalities	
	▪ Use of existing institutional and legal mechanisms to foster participatory and inclusive processes to obtain legitimate support of global and regional strategies	Central & local government, civil society, governance groups
	▪ Generating participatory awareness and responsibility sharing, drawing attention to the intergenerational, social and environmental trade offs linked to gas exploitation.	Central & local government, civil society, communities, firms
	▪ Encouraging foreign firm participation, geared toward generating social and human capital at community level.	Central & local government, communities, firms
	▪ Building opportunities for more equity in the distribution of gas revenues which promote effective backward linkages	Central & local government, communities, firms, banks

2.1 Global Considerations

A central question to the maximization of gas profits for Bolivia will necessarily relate to the end use of exploited gas resources. Whether these resources are destined for local consumption or for export, will determine the extent of profit gains from the sale of gas. Currently, Bolivians cover 25% of their energy needs with gas, whilst basically all of their oil production is destined for local demand.[112]

The local gas consumption in the country can be interpreted as foregone export revenues.[113] It is more efficient to sell gas to the best paying consumer, in this case, the foreign consumers which would pay in foreign currency, allowing Bolivia to stock up on reserves. Subsidization can be inequitable, since not everyone will benefit from gas consumption the same way. Further, keeping track of subsidized fuel is extremely difficult, which can foster undesirable rent seeking activities such as oil smuggling. Further, subsidies of oil consumption are generally not recorded as expenditures of fiscal budget, which in turn may pose a burden on the accountability and transparency of fiscal management.[114]

However, it is understandable that a share of gas exploitation should be destined to supply the local market. Though it may be socially desirable, the government should seek to avoid assuming part of the costs of local consumption through a subsidy. There are more effective ways to enhance social welfare that may benefit the poor more directly. For instance, instead of directly subsidizing national gas consumption, a more efficient way of letting Bolivians benefit from gas exploitation would be by converting the fiscal income generated by gas exports to financial assets. This would create more value added, since the transformation of gas revenues to financial capital has a multiplier effect, through leveraging and arbitraging in financial markets. The profit gains could in turn be made available in the form of microcredits or soft credits to sectors excluded from Bolivia's current financial sector. This in turn would increase the availability of credit and financing for capital goods,

[112] WTO (2005), p. 95.
[113] Da Silva (2006) argues in economies where the local consumption of the (oil) export is subsidies, fiscal inefficiencies arise. It can be interpreted as a foregone opportunity to generate more income.
[114] Gupta, Clements et al. (2003).

with dynamic effects in the economy by fostering long term investment, employment generation and diversifying the supply of goods and services.

Despite these benefits, the chances of this occurring are minimal under the populist regime of Morales. Further, given that the population is mostly poor, direct subsidization of gas is most likely to be considered an attractive political measure to maintain high levels of popularity and support for further discretionary actions such as the nationalization of the gas industry in May 2006. This will not necessarily improve the living and working conditions of the poor, and without the necessary oversight, mismanagement and abuse of gas resources (and revenues) could foster more corruption and fiscal fraudulence, under the present situation.

Furthermore, if the infrastructure and equipment of the recently nationalized gas industry are not maintained by the government, the sector could rapidly suffer from decreasing productivity, leading to the closure of plants and loss of many jobs.

In conclusion, it may therefore be more realistic to seek the efficiency of gas export revenues through a sustainable fiscal management for the present and future generations. Important policy choice alternatives for fiscal management are discussed below.[115]

Concretely, seeking investment for petrochemical plants which liquefy gas (i.e. converting gas into LNG) is highly desirable. This would enable transporting the resources per tanker or lorries, more flexible forms of transport as opposed to pipelines. However, this would require the sufficient transparent of legal framework, the respect of due process of law (through the existence of a transparent independent judicial system. Only with an investor friendly framework, will the country be able to attract the capital needed to build such plants and industrialize its gas sector. Further, in having flexible transport alternatives, Bolivia would not solely rely on the political stability under regional cooperation agreements with neighboring countries. Finally, investing in good infrastructure development (such as roads and river ways) will be necessary, and will generate positive externalities for the rest of the economy and society, in the form of greater interconnectedness among the country's region.

[115] See section 2.3 titled "Local Considerations and Response".

2.2 Regional Considerations

In choosing among the different energy development projects, Bolivia must also consider the regional dimension. In particular, how it may best benefit from regional energy development projects, will require a detailed evaluation of project feasibility, emphasizing the environmental and social risks and costs. Many of such projects are overly ambitious, requiring considerable financial resources, but also political will, strong institutional capacity and public support. This is the case of projects such as a regional interconnected pipeline system, as the pipeline experience in Bolivia has shown.

A regional pipeline would mean the sharing of joint transport facilities among competitors, such as Bolivia, Brazil and Venezuela. Under such conditions, any conflicts arising or rekindling between the countries could considerably obstruct business operations and lead to a waste of gas profits for Bolivia. It is doubtful whether the region counts with the necessary institutional strengths, if we consider the gradual permeation of the CAN and the continuous disagreement among neighboring countries.

Bolivia should seek diplomatic channels to explore joint opportunities based on balanced concessions, where negotiating parties have more incentives to remain in the country than to abandon the process. Such processes must be detached from personal aspirations and political grand standing could underscore the benefits at country level. An example of prior diplomatic efforts under the Minister of Foreign Affairs of Lozada's government – Carlos Saavedra Bruno – was the joint development of an ECA (Economic Complementation Agreement with the Chilean Foreign Service.[116] However, negotiations have stalled and to date no concrete agreement on a sovereign access to the sea has been achieved.

2.3 Local Considerations and Response

In order to account for part of the inefficiencies readily fostered under the previous privatization legislation, the State must develop institutional strengths on several fronts. First, it must build fiscalization capacities, with particular emphasis on the supervision and management of collection

[116] Mariaca Bilbao (2004).

and allocation of tributes stemming from the gas taxes and royalties paid by foreign companies. A second relevant measure must be the clarification of terms such as “proven”, “probable” and “possible” reserves, to avoid tax evasion and fraudulent reporting practices. A third element for improving transparency and accountability of foreign participation would be the disclosure of financial company information, such as the publishing of financial statements and external audits. This would enable the government to monitor profit gains and effective tax collection on a continuous basis.[117]

A fourth aspect for regulating foreign participation in the energy markets relates to price calculations and other operative aspects established in the business contacts. As previously discussed, there are different export contracts with operators in the upstream sector such as those with firms representing Brazilian or Argentinean interests. The participation of the Bolivian State in these types of upstream activities is necessary to avoid the escalation of social conflict and gain legitimacy among Bolivians. Even if State participation is in the form a minor shareholder stake of 10 to 20% of publicly trade companies,[118] this would eliminate the disconnect of the country from gas development activities. It would widen the scope of YPFB’s former rent-seeking role under the previous privatization regime by demanding a more active involvement in the development of downstream activities.

The main challenge for Bolivia resides in what is to be considered as sustainable exploitation of its energy resource. Since resources are limited, Bolivia is obliged to administer them in the most efficient and profit maximizing way. However, because it is a poor country, there is the incentive to overexploit the resources to quickly obtain profits. If abused, the resources will expire quickly and Bolivia could end up perpetuating its present poverty conditions in the future. Thus, there is an intergenerational trade off that must be considered to establish a sustainable consumption rate. Because of the fiscal instability of resource dependent economies, as will be discussed below, it is actually in Bolivia’s best interest to be cautious and not repeat the same mistakes which could render lower levels of development and poverty, as evidenced in some oil producing countries.[119]

Given that the oil and gas resources are exhaustible and subject to volatile prices, so are their revenues. Bolivia’s opportunities reside in optimizing these revenues in the present to continue

[117] Villegas Quiroga (2004).
[118] Villegas Quiroga (2004).
[119] Davis, Ossowski and Fedelino (2003).

providing benefits in the future. Fiscal imbalances can be minimized and avoided if the non-gas sector is given priority in fiscal design. In other words, given the strains that the non-oil sector suffers from the dominance of the gas sector in the economy, fiscal policy should be geared to ease these strains. Two fiscal tools are at hand: first, to accumulate as much revenue as possible (instead of letting these seep into the economy and generate inflationary sequels) and secondly, to avoid procyclical fiscal policy responses that reflect the volatility of international gas prices.[120]

The first tool focuses on the decision whether to consume a limited resource now or in the future. By opting for consumption in the future, Bolivia would be able to accumulate considerable capital which in turn could be used as a wealth management tool. By considering the gas revenue as a financial option rather than an immediate consumption good, fiscal instability can be minimized.

Following the discussion on oil stabilization or savings funds in the previous section[121], this is easier said than done. However, despite the failed experiences of oil funds such as those implemented in countries such as Venezuela or Nigeria, Norway offers a stark and positive contrast. The country's State Petroleum Fund (SPF) finances the budget on the one hand, and avoids imbalances caused by oil shocks, and on the other. It is considered as an effective tool, since it decouples fiscal income from price fluctuations in international oil markets, and helps avoid the inflationary and Dutch disease effect on the economy as the fiscal savings are held abroad (thus are not factored in as an integral part of the fiscal budget and are held in a separate account controlled by the Ministry of Finance).[122]

In addition to keeping a sound macroeconomic and fiscal performance, Norway's success may also be a consequence of the relative small share of oil income of total government revenues. Indeed, empirical evidence suggests that greater dependency on oil revenues together with poor macroeconomic management results in low oil fund performance.[123]

In addition to the economic efficiency considerations, socially desirable outcomes must also be part of sustainable fiscal management. In other words, even if wealth management options may have a greater rate of return rather than immediate consumption through capital investment, if the social

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[120] Barnett and Ossowski (2002).
[121] See supra, section 1.4 titled "Threats".
[122] For a technical discussion of the Norwegian SPF, see Da Costa and Juan-Ramón (2006).
[123] See Davis, Ossowski, Daniel and Barnett (2001). Also see supra, discussion in previous chapter on oil funds.

utility of investing in infrastructure contributes to social welfare, then it may be more desirable to allocate a share of the revenue to the consumption of durable goods. Thus, even though returns for capital investment may not be as profit maximizing as those stemming from wealth management of gas revenues, it may be socially desirable.[124]

Current spending (in the form of increased present fiscal expenditure) must be distinguished from capital spending. Capital expenditure in the form of investment is desirable, as opposed to current expenditure. If the Bolivian government focuses on productive investments and dedicates a share of gas revenues to capital expenditure, unproductive current spending could be avoided. The decision of whether to invest or save, however, must be taken by the government on a profit seeking basis.[125]

Concretely, the second measure means that the government should not increase expenditure during gas booms and instead undertake severe cuts during periods of low gas prices. This type of response is procyclical, and increases Bolivia's external vulnerability and relative dependency on international markets. Further, since it transmits and replicates the volatility of the external markets on the local economy, it chokes the non-gas sectors. This in turn fosters greater foreign currency and import dependency, which can lead to heavy dollarization of the economy. In addition, Bolivia's government must seek to align its fiscal policy (as discussed above) to it macroeconomic management goals, with the objective of seeking short-term macroeconomic stability, and minimize the presence of transmission mechanisms.[126] Here, the design and sustainable management of a foreign exchange rate is key, to avoid the currency volatility, capital flight, misalignments in the balance of payments and other forms of financial disruptions.[127]

Especial attention should be given to the policy advice issued by the Bretton Woods institutions. The experience of Eastern European "CIS" countries (Commonwealth of Independent States)[128]

[124] Barnett and Ossowski (2002).
[125] Barnett and Ossowski (2002).
[126] A typical transmission mechanism in oil producing countries is the current account of the BOP. It reflects the financial balance of export revenues stemming from trade and serves as a source for short term financing of government expenditure. For instance, if there is a sudden fall in gas prices, the current account will receive shrinking revenues from gas exports and, if government spending (fed from such resources) continues at a high rate, an eventual depletion may occur. If in addition, there are insufficient reserves to maintain the foreign exchange rate parity this will increase the expectations for devaluation, and may lead to capital flight and ultimately to a currency crisis.
[127] This type of heavy bias towards the external sector is known as the "Dutch disease", which implies that the export competitiveness of the non-oil export sector is suffocated by the effect of the gas revenues on their terms of trade. See "Russian Crisis" for further discussion.
[128] Armenia, Azerbaijan, Georgia, Kyrgyz Republic, Modolva, Tajikistan, Ukraine and Uzbekistan.

following the IMF and World Bank's policy advice during 1993-2003 points to the lack of substantial contribution of such reform policies in correcting fiscal and financial imbalances stemming from the energy sector or in fostering greater efficiency. Policy recipes for CIS countries envisaged: (i) the selling of assets to investors; (ii) the establishment of predictable and transparency regulations; (iii) a tariff rise to cover cost-recovery levels; (iv) the expansion of metering and cutting off nonpaying customers, and (v) introducing competition in the generation, transmission and distribution networks.[129] Though some of these policies may be desirable for Bolivia, they must be assessed in light of the country's vulnerabilities and priorities.

It is argued that the former project of the Hydrocarbons law weighed too heavily on gas exploitation, whilst largely ignoring environmental and social impact considerations. Indigenous communities living close to hydrocarbon resources were not involved in the decision and design processes of pipeline projects. Furthermore, despite the existence of mechanisms for consultations amongst the different stakeholders involved, these were largely ignored under former presidencies.

Concretely, a technical proposal for indigenous communities to initiate consultation procedures has been formulated on the basis of the ILO Convention 169.[130] It contains concrete mechanisms for consultation, participation and agreement that can be activated every time an administrative or legislative measure affecting indigenous groups. This legislative proposal requires a previous impact analysis on indigenous communities when projects that target exploration and exploitation and transport of non renewable resources across indigenous land are being considered, as well as public works, development and research, and property rights which affect the land ownership or other legal dispositions of indigenous groups.[131]

The proposal has been jointly developed with indigenous groups which already have undergone consultation procedures in the context of energy development projects.[132] The agreements reached in consultations are binding, as established in the proposal in Article 38, which effectively allows groups to protect themselves and their habitat. Further, it enables communities to undertake legal procedures when no agreement can be reached (Art. 39). In addition, the enactment of laws and orders at municipal level are also subject to public debate prior to approval (Art. 42).

[129] Saavalainen, and ten Berge (2006), p. 11.
[130] Full name of Convention.
[131] Betancur (2004).
[132] The proposal is titled: "Proyecto de Reglamento de Consulta, Participación y Concertación".

In conclusion, the legislative project fosters an accessible form of participatory process, incorporates greater transparency in political decision-making, and acknowledges the rights of indigenous minorities by building on legal and institutional capacities through its ad hoc instrumentation. This strengthens community awareness and greater activism in local processes of conflict resolution.[133]

Although Bolivia may share ideological considerations and proximity with regional partners such as Venezuela or Argentina it may drive projects such as a South American pipeline and the region's history and recent relations underscore very dissonant positions, which may continue rekindling political and social tensions, as evidenced in the past.

Indeed, the former gas industrialization project known as "Pacific NLG" was abandoned since it meant the sharing of a pipeline with Chile, where Bolivian gas would be liquefied prior heading for US markets across the Pacific Ocean. The project lacked legitimate support due the border delimitation conflict with Chile since the Nitrate War and the US involvement, as discussed previously.[134]

Further, sharing a pipeline with natural competitors is a risky business which may set pressures on Bolivia when tensions with the neighboring countries escalate. A recent example of such pressure was felt by the Ukraine, when Russia accused its neighbor of diverting part of the gas running through the main shared pipeline for its own use. As conflict escalated, Russia cut the supply of gas destined for Western Europe, and almost provoked an energy crisis in the depths of an extreme winter.

Though interest from the Chilean side may still persist, it is doubtful whether the country would be willing to venture into a joint partnership with the government, given the recent nationalization wave and the legal uncertainty of investment protection. Part of the resistance and mistrust toward seeking foreign partnerships was curbed under the two former presidencies. First, president Carlos Mesa refused to increase taxes on foreign oil companies, and, by taking their side, ignited street protests with thousands demanding the nationalization of the oil industry. Second, President Lozada privatized the hydrocarbons sector, without invoking a public consultation process, nor including

[133] The alternative of applying the same legislation to the development and exploitation of other resources such as timber is discussed in the following Chapter IV titled "The Environment Sphere".
[134] See *supra*, section titled "weaknesses"

representatives of the different stakeholders groups during the process of reforms. Once again, this lead to an early abandoning of his presidential mandate under civil riots, as was the case with Mesa. The presidential decisions then showed complacency toward foreign firms, and did not reflect genuine national priorities.

A prior example of a development project without the necessary public endorsement of Bolivians can fail, was the Pacific NLG project, developed by Repsol-YPF, British Gas and Panamerican Energy (representing Argentinean, British and American interests, respectively). It envisaged the construction of a pipeline from Bolivian gas fields to a port of exit in Chile; a liquefaction plant and fleet of cargo ships for the transport of LNG to Mexican port close to the US; a gasification plant in Mexico, and a gas pipeline network between Mexico and the US. Originally, the investment was estimated at US$ 5,500 – 7,000 million.[135]

The project was heavily opposed by the public under the government Lozada, be considered as a project representing foreign economic interests. It is argued that Bolivia could have used the opportunity to demand a sovereign exit to the Pacific Ocean through direct negotiations with Chile.[136] Further, the lack of transparency and information on the government negotiations with the companies involved increased the notion of the threat of foreign intromission. Ultimately, this contributed to the general support to nationalizing the hydrocarbon sector and rejecting foreign participation in the development of gas.[137]

On a local level, the example of the gas pipeline of Cuiabá discussed in a previous section also provides important lessons about the critical aspects of energy development in Bolivia. It showed how marginalized communities threatened by the presence of foreign firms, undertook both legal and physical action, leading to clashes and violence.[138] But how can the escalation of conflict between the "intruding firm" and local communities be avoided? There are several ways in which conflict can be curbed, for instance through development cooperation mechanisms which tie in the different stakeholders.

[135] Mariaca Bilbao (2004).
[136] Mariaca Bilbao (2004).
[137] CEDIB (2003).
[138] See *supra*, section 1.4 titled "Inherent threats ".

An important example is found in the midst of development cooperation of the Dutch government. The Netherlands offers development assistance for trade promotion, industry and environmental projects under its "Oret/Miliev Programme".[139] This programme supports the developing countries with tied-aid grants. Projects can be submitted by Dutch enterprises, in coordination and with prior approval of the country in question, and once approved, these projects are provide with funds for capital goods, services and works. Eligible projects are those which are economically feasible, (financially, institutionally and technically), sustainable, do not harm the environment and generate employment. The programme fosters social responsibility and corporate accountability, since only projects which have been jointly developed with local institutions and which respect the due process of law of the host country are accepted. Unruly behavior of the foreign firm is subject to penalization, if for instance corrupt practices are used to obtain contracts. Further, the programme also fosters the generation of backward linkages by requiring that the project positively affects and generates economic relations in its formulation. In this way, foreign companies develop social capital and partnerships with local communities, thereby converting tensions stemming form the perception of intrusiveness into a constructive interface.

An interesting proposal for the distribution of the gas revenues, would be to allocate a given tax base on the basis of production the sub national governments, in addition to a fixed revenue transfer. In previous legislation and legislative proposals for a Hydrocarbons law, different royalty sharing formulas have been applied and discussed.[140] Being a better alternative than the subsidization of gas consumption, this would directly include the communities in the allocation of gas revenue.[141] Special attention should be given to equalization mechanism to account for the regional disparities of oil revenue income. Only some regions in the country are effectively involved in the production of gas.[142] Local priorities and needs of public services should also determine the allocation share. The country has also experienced difficulties with the management and allocation of revenue at local level, as discussed in previous sections.[143] There is a need for the building of institutional capacity, and greater transparency and accountability on behalf of local and regional authorities in order for such a model to function effectively.

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[139] Ministry of Foreign Affairs (2000).
[140] For an array of proposal on the hydrocarbons regime see CEJIS (2004), Chapter 2, pp. 77-188.
[141] Ahmad and Mottu (2003).
[142] Brosio (2003).
[143] See section 1.2 titled " Weaknesses of the Energy Sector".

By acquiring technologies that incorporate value added into the gas extraction processes, Bolivia would benefit from the increasing market for gas and gas products. Such technologies go beyond the mere liquefaction of gas, and require physical and chemical processes to derive products as diverse as diesel, gasoline, urea, special oils and plastics from methane, the main gas component.

The backward linkages of these industrialization processes would come in terms of fostering technological development and human capital in house. The existence of petrochemical plants would generate greater employment and knowledge transfer. Further, value added processes of diversified gas products would foster the development of auxiliary industries, such as the metal mechanic, iron, transport and related services, as new sources of employment and the development of an industrial base.

3. Preliminary Conclusions on the Energy Field

Bolivia is facing several challenges in the development of its energy sector. These are tightly linked to the recent experiences of past hydrocarbon regimes, their shortcomings, inefficiencies and failure bridge tensions arising from the interplay with other sectoral interests. There have been heated discussions about the design of a new hydrocarbons regime. The choice of a regime must contemplate correcting the shortcomings and inefficiencies which proliferated in the past, and also remove the sources of tensions to ensure continuity and sustainability in the development of Bolivia’s energy assets.

Transparency and accountability must be an integral part of a hydrocarbon legal and policy framework. A more efficient and manageable tax collection and allocation system will not leave room for a wasteful use of revenue, nor corruption or tax evasion, but requires strong institutional development and human capital investment. Fiscal policy plays also a crucial role in this context, since it will determine the distribution of revenues stemming from the hydrocarbon exploitation. Depending on national priorities, resources will be destined to current and capital spending, and savings. Revenue allocation will necessarily reflect a trade off between socially desirable outcomes (i.e. income distribution) and profit maximization objectives (i.e. wealth management). The resulting distribution will determine the present and future of all Bolivians and has the potential to foster economic development, greater equity and poverty reduction.

Bolivia needs to be less vulnerable to regional political developments and respond more flexibly to the needs of energy markets. This requires important reforms on a legal level, to shift from a gas rent-seeking to a value added producing State and the necessary investments for the development of its own petrochemical industrial base.[144] Legal security and due process of law are a prerequisite to attract investment, if the country seeks to attract the necessary capital. Substantive rules on investor protection and access to an impartial, transparent and efficient judicial system must be part of any regulatory framework in the hydrocarbons sector.

The legal framework and resulting contract law with foreign company should also be conducive to increase competitiveness in the sector. First, the costs of gas production must be reduced, in order to lower export prices of Bolivian gas and gain attractiveness in potential export markets. Second, the national industry should seek to move away from its rent-seeking role. Instead of concentrating on tax collection, participating in value-added processes through the development of downstream activities with foreign partners and simplifying the tax and royalty system, the YPFB could eliminate considerable inefficiencies and costs.

Environmental sustainability must also be addressed in the definition of an energy regulation. Substantive obligations on environmental and cultural heritage protection must also be operational at all levels, through accompanying policies and rules. A functioning legal framework will offer conflict resolution when economic and social or environmental interests clash. Further, in shaping consonant policies for the protection of the environment and the indigenous communities, oil companies must be made accountable for their environmental impact. The screening of environmental security by the local authorities and their active interface between firms and neighboring communities will reduce existing tensions. Active involvement of the firms in developing social capital and foster backward linkages in the economy will allow for the establishment of a continuous dialogue over the sustainable management of energy resources.

[144] According to some estimates, a petrochemical plant alone would require an investment of US$ 1,575 million, with a production capacity of 800.000 tons yearly output of polyethylene and polypropylene. A diesel plant with an output of 100.000 barrels per day would require US$ 2427 million. See Fundación para la Industria Energética y Resguardo Ecológico de Bolivia (2004).

IV. The Environment Sphere

Bolivia has one of the world's richest environmental resources in the form of vast tropical forests rich in biodiversity. However, decisions on the exploitation, profit allocation and end uses of these resources often result in a conflict of interests between the government, private companies and communities involved. Furthermore, these decisions often weigh in favor of either government and/or private interests, in detriment of the environment (and the local communities). To maintain this valuable natural heritage, Bolivia must exercise a sustainable management of environmental resources that eliminates conflicts and avoids the abuse and degradation of its biodiversity. The tools and possibilities at hand are manifold. It is a question of identifying priorities, and designing and implementing effective strategies at a global, regional and local level which complement each other.

The present section discusses two of the natural resources which are exploited in Bolivia. The first – tropical timber – counts with a long-dated exploitation tradition and has deep rooted implications and impact on the environment. The second – traditional knowledge – has become increasingly attractive to the pharmaceutical and chemical industries in recent years. However, it does not lack polemics given the considerable profits that result from intellectual property rights and the existence of a heritage of traditional knowledge. The section draws parallels to the previous chapter on energy in Bolivia, given the inherent environmental impact considerations tied to hydrocarbons exploitation.[145]

TABLE 5: SWOT MATRIX: BOLIVIA'S CONDITIONEXPOSURE IN TERMS OF ENVIRONMENTAL	
STRENGTHS	**WEAKNESSES**
▪ Rich biodiversity resources, forestry and animal plant material ▪ Member of the Amazon Pact and other international agreements	▪ Relative little effort in linking environment to ADPIC and Agriculture Agreements
OPPORTUNITIES	**THREATS**
▪ TK linked to the use of plants and animals ▪ CDM/ Kyoto Protocol ▪ Social responsibility and corporate governance of firms in the energy/environmental security field ▪ Exploitation of genetic (plant & animal) material for the pharmaceutical and chemical industries	▪ Irresponsible use of gas resources ▪ Environmental and social impact of the energy development

[145] See *supra*, Chapter III, titled "The Energy Sphere".

1. Bolivia's Environmental Assets, Interests and Challenges

1.1 Strengths

1.1.1 Forestry resources

Bolivia is known for its rich biodiversity, consisting of numerous endangered animal and plant species. Vast tropical rainforests extending over almost half of the country, totaling 22 million hectares, which represent 10% of the Amazon basin surface. The country shares these assets with its neighboring countries, namely Ecuador, Colombia, Brazil, Peru and Venezuela), which together span a total 8 million km^2 surface of tropical rainforest of the Amazon region.[146]

According to the Forestry Superintendency, Bolivian forests cover 53.4 million hectares, with production capacity of 20 million m^3/annually. Thus, slightly less than half of these assets are considered commercial timber, which means they are economically exploitable resources. Forestry is an important economic activity, which, together with agriculture and livestock, engages 42% of the population and accounts for 14% of the GDP.[147]

1.1.2 Traditional Knowledge

Bolivia is considered to be very rich in terms of natural resources. The country counts over 40 different types of ecosystems, 1.300 bird, 18.000 plant and varieties, respectively. Inhabiting these ecosystems are 319 mammals and 155 amphibians, revealing an exceptional biodiversity.[148] Furthermore, the country's cultural diversity of the multiple indigenous groups and ethnicities is intrinsically linked to the rich in biodiversity.

Part of the cultural heritage of these groups stems from the experience and familiarity in the medicinal applications and end uses of different animal and plant varieties. This acquired experience often builds on ancient traditions, passed on from generation to generation and can be defined as "traditional knowledge" (TK). For example, knowledge in the form of technical know-how, or traditional ecological, scientific and medicinal knowledge are forms of TK, which does not solely envisage the processes and methods, but also de substance and content of the knowledge which is

[146] Hufty and Bottazzi (2005).
[147] See WTO (2005a), pp. 83-89.
[148] Hufty and Bottazzi (2005).

passed on to younger generations.[149] In this sense, the TK based on the use of biological resources such as plant materials, found in the natural habitat of the indigenous groups and local communities, adds to a greater value of the exploitable biodiversity in the country.

1.2 Weaknesses

1.2.1 Forestry resources

Due to Bolivia’s landlocked situation, one of the main hinges of the forestry sector is the export cost of timber. In addition, the sector suffers from low technological capacities and the legal uncertainty of ownership and proprietary rights. As is the case with some agricultural export products (e.g. soya) neighboring countries have a more competitive advantage than Bolivia in exploiting their timber resources, such as Brazil.

According to the Forestry Superintendency, woodlands under concession amount to 7,900,000 hectares and are never fully exploited,. However, despite the regulatory framework[150] protecting forests, the institutional framework lacks the necessary capacities.[151] This shortcoming leads to the illicit exploitation (and smuggling) of the very valuable tropical wood varieties which also threaten the fragile ecosystem through aggressive deforestation practices.

1.2.2 Traditional Knowledge

One of the main weaknesses of preserving the TK of local indigenous groups and communities relates to the insufficient protection of their property rights. TK of indigenous groups and local communities has an economic attractiveness for outsiders such as pharmaceutical companies, which have been keen on acquiring and commercializing TK. However, when the latter seek to profit from the industrialization and commercialization of local TK (i.e. by developing a pharmaceutical product on the basis of the healing properties of a plant variety known and widely used by an indigenous

[149] WIPO (2004).
[150] The regulatory framework of forestry resources is the Forestry Law (1996), the Environment Law (1992) and the Law on the National Agrarian Reform Service INRA (1996).
[151] WTO (2005), p.88-89.

group), this might imply an abuse of property rights of the holders of TK, especially if their ownership (indigenous people) is not recognized and compensated.[152]

It is argued that legal enforcement can only render effective protection if it considers the customary practices and social systems. However, it is often difficult to bridge the gap

1.3 Opportunities

1.3.1 Forest Resources

Several considerations underlie sustainable management of tropical resources. First, sustainable management of natural resources must consider the degree of inclusiveness of an economic activity. The greater the scope of involving local communities in the exploitation of natural resources, the lower the severity of the environmental impact, since the local population has a personal interest of preserving their natural habitat and will react to any severe degradation in a timely manner.

The exclusion from the exploitation and profits of natural resources can generate conflicts since firms operating in the surroundings of local indigenous groups directly compete over the use of non-renewable resources, or undertake activities which diminish the livelihoods of such groups (i.e. pollution and deforestation). Thus, they are often perceived as a direct threat. Further, since exercising ownership control over environmental assets such as timber or TK is extremely difficult, these resources tend to be misappropriated and overexploited.

This presupposes a difficult balancing act of diverging interests over the end use and profits of natural resource exploitation.[153] An alternative for bridging the gap between diverging interests (and thus avoid conflict) is by developing joint economic activities. If exploitation rights and profits are shared, interests are more readily aligned and an escalation of conflict will render sub optimal outcomes for both parties.

Given the high costs in the export supply chain of timber, waterway development could allow for a more sustainable and profitable joint exploitation of forest resources. Further, backward linkages to

[152] WIPO (2004).
[153] Hufty and Bottazzi (2005).

the economy could be developed, such as transport system, port and landing services, but also timber processing units along the riverways.

At international level, Bolivia has also signed numerous international agreements, such as the Convention on Biological Diversity (CDB), the Climate Change Convention and the Kyoto Protocol, CITES, and the International Tropical Timber Agreements (1983, 1994), among others. The result of Bolivia's regulatory efforts both at national and international level has been the protection of 66 areas of forest conservation, of which 21 are considered to have national character. Despite these efforts, the sustainable management of forestry assets is greatly determined by the numerous administrative hurdles and lack of capacities and resources. These shortcomings trump the effective implementation of regulation, and greatly diminish the governance of sound resource management.

1.3.2 Traditional Knowledge

The protection of biodiversity is tightly linked and has a direct effect on the conservation of TK. Bolivia has promoted the protection of TK through regulations and membership to relevant intellectual property agreements. For instance, the International Convention for the Protection of New Varieties of Plants (UPOV Convention), the International Plant Protection Convention (IPPC) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) directly address TK concerns and offer protection.[154]

At regional level, Bolivia counts on two instruments which have the potential to protect and foster the economic profits of TK. These are the Amazon Pact of 1978 and the ACN regulation comprising Decisions 345 and 366.[155] The former is an international cooperation agreement to protect and jointly benefit from the resources of countries[156] sharing the Amazon basin through sustainable practices, whilst the latter two decisions legislate over account the property rights and economic exploitation of intellectual proterty vested in plant varieties. In particular, Decision 345 offers

[154] WTO (2005a) p. 77

[155] Decision 345, *Common provisions on the protection of the rights of breeders of new plant varieties*, 1993 and Decission 366, *Modification of the Third Transitory Provision of Decision 345*, 1994.

[156] Together with Brazil, Colombia, Ecuador, Guyana, Surinam and Venezuela, Bolivia is one of the Amazon Pact Nations.

protection for an extension of 20 to 25 years, though it is rather limited since it only protects new plant varietes, which can still be used by third parties with non-commercial purposes.

1.4 Threats

1.4.1 Forest Resources

Given the diversity and rich ecosystems in Bolivia, there are multiple economic opportunities of exploiting the different ecosystems. However, some of the opportunities threaten or may lie in direct competition with each other. For instance, timber is a primary and vital resource that can generate income and employment opportunities for the poor, such as local small-scale farmers, indigenous groups and communities, and (local and migratory) workers in the tropical woodlands. However, the forest surface is also viewed as potential land for agriculture. In indigenous groups living off the tropical rainforest are threatened by forestry exploitation. Because of these potential conflicts, economic actors may seek to exclude competitors thereby eliciting conflicts leading to rather unsustainable environmental and socially exclusive outcomes.

In particular, two economic activities can pose very severe negative environmental impact. These are industrial (large-scale forestry) of tropical timber and hydrocarbon development. They pose more potential threats than other activities because of the magnitude of the potential profits and the leverage of economic interest groups who know how to extract exploitation contracts from the government. Because these practices are environmentally unsustainable, they are also socially incongruent with poverty alleviation objectives in Bolivia. In the past, such economic interests severely damaged the environment, for instance in the case of the Chiquitano forests, as previously discussed.[157]

Different laws govern the protection and exploitation of environmental resources. For example, the Forestry Law of 1996[158] establishes strict certification requirements to control the timber exploitation on publicly owned land. It dictates the application of an ad valorem tax on the amount of exploited timber, as well as the payment of an additional royalty on the basis of the extension of land concessions. Ann export certificate for certain kinds of tropical wood and a certificate of origin

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[157] See Ch. III, section 1.4 titled “Inherent Threats to the Exploitation and Development of Gas”.
[158] Law No. 1.700 of 12 July 1996.

on non-cultivated timber products are some of the requirements.[159] Land concessions are limited to 40 years and renewable every 5 years. Thus, these provisions diminish he possibility of illegal of timber smuggling and control the degree or rate of deforestation. Since the enactment of the law, exploited land shrunk from 20 to 5 million hectares.

Another threat to the forestry resources is the production of coca. There is considerable civil strife linked to the production of coca. The numerous violent encounters between the coca farmers and the government underscores and worsens the situation, as formerly allowed production is now considered illicit activity in some regions. This naturally raises the incentive to produce coca in hidden spots of land, contributing to greater deforestation. The government's campaign against coca production came abvout as a consequence of direct pressures from the US.[160] In January 2002, under Lozada's government, specific measures to ban the commercialization of coca in the region of Cochabamba were made effective, leading to the closure of the market. Subsequently, violent protests by the coca farmers ("cocaleros") followed, given that their only form of subsistence was threatened. Clashes between the cocaleros and police forces left considerable death tolls on both sides. Back then, Evo Morales was one of their leaders. His representation as leader of the cocaleros was withdrawn by the government who accused him of having fostered public violence. It remains to be seen how the present government will deal with illicit production of coca, but banning or allowing the farming of coca will require accompanying protection measures to ensure sustainability of forest resources.

1.4.2 Traditional Knowledge

The "traditional knowledge" (TK) embedded in the application and use of biological resources such as plant materials is affected by the same threats as forestry resources. These are deforestation through excessive timber exploitation, agriculture, mining and hydrocarbon developments. These activities threaten plant and animal species that can only survive in protected forest environments, and once extinct, the TK linked to the use of such species is lost. Since indigenous groups living off their natural habitat require these species for their subsistence, their livelihood is also endangered by the different intrusive economic activities.

[159] WTO (2005a), p. 56.
[160] Lavaud (2005).

Forests are not only viewed as agricultural land for crops such as rice, citric fruits, sugar cane and maize. They are increasingly becoming an alternative for industrialized soya production and cattle raising, especially if located close to roads and colonized areas.[161] Further, privatization of mining activities may also lead to greater deforestation (i.e. endangerment of species) since unemployed workers in the highland regions relocate to the tropical woodlands in the search for subsistence opportunities. The resulting migration would mean greater population density in very fragile ecosystems, and could provoke a faster rate of loss of plant materials, and hence TK.

2. Outlining a strategy for a sustainable exploitation of environmental assets in Bolivia:

2.1 Global Context

2.1.1 Forestry

The most urgent task lies in the identification of potential environmental conflicts and related incentives that foster unsustainable environmental practices lie. A good indication of potential conflict is the effectiveness of exercising property rights. If a good (such as timber) is easily accessible to others for its benefit, there is a tendency to overexploitation and abuse leding to a rapid consumption of the good, where the benefits to the original owner are minimized and shared against his will. This naturally increases the likelihood for conflicts between those exercising ownership rights and those benefiting illegitimately from the good.

In identifying the sources of conflict, Bolivia can correct such negative externalities leading to overt deforestation. Deforestation results from illicit mining activities and farming undertaken by migratory workers. Second, negative externalities also result from timber exploitation and hydrocarbon development, both being legal activities if covered by concession contracts, however, there is also a tendency toward overexploitation in the former, and to understating the environmental impact in the later.

The government can correct the negative externalities by generating incentives and subsistence opportunities for the poor migratory workers and indigenous people in several ways. First, by creating alternative employment for migratory workers engaged in illicit mining activities, and greater control on the trafficking of precious stones and minerals. Second, stricter certification

[161] Hufty and Bottazzi (2005), p. 160.

procedures for exploitation of non-renewable timber resources, and greater financial and infrastructure facilities for the development of renewable timber resources.

2.1.2 Traditional Knowledge

High incentives exist for converting natural resources into agricultural land. This threatens to destroy important biodiversity assets, and with them, valuable TK. Part of the trade off in favor of agricultural development rather than preserving aboriginal plant materials lie in the immediacy of profit gains, and the accessibility to farming crops or raising cattle. In contrast, exploiting TK is rather exclusive, since it requires know how, sophisticated technology, supply chains to the pharmaceutical and chemical industries, and well as market access. In addition, only effective ownership control will allow capturing the benefits from such activities.

2.2 Regional Context

Bolivia should also make use of the regionally existing alliances under the Amazon pact, the Andean Regulation and the TRIPS agreement, in organizations such as the UPOV to launch an aggressive and proactive position in the field of intellectual property. This framework ccould later help the country develop further coalitions in the WTO and other international trade forae. Ideally the country should not wait for proposals, but rather develop a modality itself which best reflects its needs of TK protection. Such a document, if sufficiently flexible, will allow other countries with similar concerns regarding a database of TK to align themselves with the Bolivian initiative, with a view to seeking a development and sustainably oriented exploitation of such resources.

A first step has already been taken in the right direction, through joint contributions on the clarification between the relationship between the TRIPS agreements and the Convention on Biological Diversity which seeks to promote a sustainable approach to the protection of traditional knowledge.[162]

Perhaps through a similar channel, sufficient leverage could be attained to achieve an international compromise with regards to the exploitation of the coca plant. Important is how the registry of end uses of TK and is adapted to incorporate coca, in way which protects the deeply rooted traditions, as

[162] See WTO (2004b, c, d) and WTO (2005c).

previously discussed.[163] By pushing for greater distinction in the type of TK embedded in coca plant, for instance and by advocating for the recognition of “traditional medicinal knowledge”, Bolivia could foster the protection of patentable end uses at international and regional level. Perhaps, another solution might lie in the use of coca in food products rather than for pharmaceutical products, reducing in this way the controversy caused by the discredit the plant has received due to the illicit cocaine industry.[164]

2.3 Local Context

Crucial for the success of any international and regional efforts to recognize the TK component – and hence allocate the benefits resulting from its commercialization to the proprietors – is the local regime protecting TK and plant materials. It must necessarily contemplate mechanisms for the patenting of TK and hold the necessary enforcement tools in the event of biopiracy. The patenting process must be user friendly, accessible to indigenous groups on a local level, and contain examination procedures which avoid the misallocation of patent rights to parties which may not be legitimate stakeholders.

Such procedures could contemplate the provision of evidence on the benefit sharing by the communities requesting a patent, in addition to documenting and describing the processes which lead to TK and genetic plant material, and a so-called “prior informed consent” (PIC), which certifies the applicant for a patent has received permission to use TK and biological resources (i.e. plant materials). A PIC would not only avoid the proliferation of biopiracy, since a certificate would contain source of origin and imply compliance with national law. If cleverly linked to benefit sharing arrangements between the holder and the owner of TK (e.g. an indigenous community), a PIC could also be used as a mechanism to ensure a more equitable distribution of TK profits, by requiring the payment of royalties or the allocation of a profit share.

These considerations are not new, and have already been formulated in the joint submissions with other countries with rich biodiversity. Patenting of biological resources which have a TK component has already been successfully achieved in cases such turmeric, neem tree hoodia and ayahuasca, just to name some of the most renowned cases.[165] With time, a complete database with the existing TK

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[163] See Chapter , section titled “”.
[164] Steinich (2006).
[165] See WTO (2004b, c).

resources that have been registered and patented will allow for a better screening. It will enable Bolivia to fight more effectively against the misappropriation of it biodiversity assets, not only locally, but also worldwide.

V. Conclusions

The previous sections offered a thorough discussion of the context of the trade, energy and environment spheres, whilst considering the opportunities and threats at hand to formulate a strategic positioning for Bolivia at global, regional and local level. Some of the strategies discussed prove to be more readily achievable whilst others seem rather challenging and unrealistic. Much however will depend on the internal and external factors and developments which determine the present situation.

Invariably, the three spheres of trade, energy and environment are linked, as can be appreciated in the analysis of the previous sections. The challenge lies in a concerted approach which balances the priorities of each sphere, without sacrificing or harming the remaining sectors. Furthermore, the social and political fragility of the country much determine and depend on the approach that will be taken, and have to be woven into the strategy in order for it to be successful. Otherwise, as it was sufficiently and sadly evidenced, the outcome will be continued havoc, turmoil and riots with as built in destabilizers, no matter how good-willed the propositions from the outset might be.

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