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Productive Strategies for Poor Rural Households to Participate Successfully in Global Economic Processes

Regional Scan for the Central Andes (Bolivia, Ecuador & Peru) to the International Development Research Centre, Rural Poverty & Environment Programme Initiative

By

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1 INTRODUCTION

The goal of the International Development Research Centre (IDRC) Rural Poverty and Environment (RPE) Programme Initiative (PI) is to support participatory action-learning-research, policy and institutional innovations and reforms. RPE PI contributes to the development of networks, partnerships and communities of practice, in order to strengthen organisations, policies and practices that enhance the food, water and income security of the rural poor, including those living in fragile or degraded upland and coastal ecosystems.

In order to achieve this, RPE will support activities in four outcome areas:

1. Building effective environmental governance where all stakeholders, including marginalized groups, participate in environmental and natural resource management;
2. Enhancing equitable access and use rights to natural resources by strengthening the negotiating capacity of the rural poor to defend or expand their rights to natural resources;
3. Strengthening communities' capacity to respond to and benefit from integration within wider social and economic systems (i.e. urbanisation, globalisation and market integration); and
4. Adaptive learning.

It is in the context of the third outcome that the RPE PI is developing a programming capacity on 'Productive strategies for poor rural families to participate successfully in global economic processes'. In November 2005, IDRC invited the Overseas Development Institute in London to implement a Scoping Study in order to prepare an agenda of priority research for this RPE PI theme. The aim of the Scoping Study is to provide a conceptually robust and empirically sound rationale for the allocation of some CAD$1 to 4m in research Calls for Proposals that will be launched each year in the remainder of the five years program cycle from July 2006 to 2010. The emphasis is on transformative research that will not just study the conditions of the rural poor – but undertake the research necessary to change them. The need was articulated for a research agenda that will be concerned with diagnosis but especially with inspiration. During the study ODI will:

1. Identify and review research directions and actors by: preparing an agenda of priority research areas; highlight critical issues regarding methodologies; identify on-going working within the scope of the theme by other donors and related institutions; and, identify potential partners;
2. Provide recommendations that enable RPE to build a coherent programme of research in this area, including possible collaboration with other IDRC programmes – such as Globalisation, Growth and Poverty (GGP);
3. Identify the policies, process and institutions that will expand the potential benefits of wider linkages to the rural poor and allow the development and dissemination of these findings with researchers, NGOs and civil society groups and policy-makers in the South; and
4. Identify ways to enhance the capacity of rural communities to develop their own indigenous capacities and define their own productive strategies to improve their livelihoods.

There are four phases to the study:

- An inception phase when the study team and members of IDRC's RPE programme held discussions and made agreements on how the study would be implemented (see Inception Report);
- Regional scans for six target regions with documents produced and distributed in February and March 2006;
- A country study for each region, Bolivia will be the case study country for the Central Andes region. Results from the regional scan and country study will be presented and discussed at a workshop to be held in La Paz in April 2006; and
- Results from all regional scans, country studies and workshops will be brought together by the London based team to develop a research investment strategy which will be presented to IDRC in June 2006

The current document is a regional scan for the Central Andes region with the objective of identifying:

- Regional research themes that are related to how global economic processes can have a positive impact on rural poverty and the environment; and
- Potential IDRC RPE research partners and implementers of research in the region.

The scan is based on a methodological framework, which can be found in the study Inception report, and the document has the following structure:

- Brief overview of socio-economic development issues in the Central Andes region.
- A regional perspective on:
    - How can poor rural households adapt their livelihood strategies to benefit from participation with global economic processes?
    - How can the enabling environment be enhanced to support the successful participation of the rural poor?
- An overview of contemporary and likely future relevant research activities which that will:
    - indicate 'gaps' in the research agenda; and
    - identify potential future partners for IDRC's RPE programme initiative between 2006 to 2010 as either co-financiers or undertakers of relevant research in the 'region'.
- A list of possible research themes.

The document will be circulated within the study team, to IDRC and to people within the region for comment in order to improve its content and relevance.

2 THE CENTRAL ANDES REGION

The central Andes region is comprised of Bolivia, Ecuador and Peru, countries that have similar government structures based on being republics. The legal systems for Ecuador and Peru are based on civil law and in Bolivia on Spanish law and the Napoleonic code (see Table 6 in Annex 2). The countries have strong similarities in terms of the cultural make-up of the populations with a large proportion of the people from Quechua or Aymara descent (see Table 7 in Annex 2).

The region has similar high levels of poverty, but Bolivia is bottom of the group in all measures and is reported to have two thirds of its population in poverty and a third in extreme poverty (see Table 7 in Annex 2). Bolivia is also the poorest of the three countries in terms of total and per capita GDP. Inequality in the region is higher than expected given per capita income, and there are huge inequities in the distribution of assets, including education, land and credit. Between men and women, indigenous and other groups and urban and rural dwellers. this poor distribution of assets and spatial and social distance between people, between people and governments, and between localities are serious and wide ranging.

The proportion of the GDP from agriculture and the number people employed in this sector is low for all countries. This is related to all the countries having a large proportion of the economy in non-renewable resources such as gas, oil and minerals. There is estimated to be a large difference between urban and rural incomes in all countries (see Table 8 in Annex 2).

There is a general lack of political stability in the region, Bolivia has had 6 presidents since 1997 and Ecuador 7 since 1988. Peru has seen more stability with only 2 presidents over the last decade, but all countries have had either coups or experienced strong street demonstrations to force the resignation of presidents for reasons of corruption or general dissatisfaction of government performance. In Ecuador a macroeconomic crisis in 1999 led to the dollarisation of the economy (World Bank, 2004). The area in general suffers a lack of confidence in government and a general distrust of the private sector and big enterprise. The former is related to corruption and the ineffectual nature of state intervention and the latter is related to either being exploited or feeling that the private sector is exploitative. The political debate tends to be polarised between the strong believers in neo-liberal policies and that the private sector and economic growth with improve people's well being, and those who believe that action by state and civil society to constrain the private sector and the markets is necessary to make any real difference to the poor.

Peru is the largest of the three countries in terms of both land area and population, Ecuador has the highest population density and Bolivia has the smallest population and a very low population density (see Table 9 in Annex 2). One of the big differences in the countries is the access to the sea, and the diversity of the countries in terms of ecological zones. Bolivia is landlocked and has an ecological zones that vary from Amazonian forest, tropical pampa, a part of the Pantanal, semi-arid forest in the Chaco, Andean valleys and high Andes that ranges from the wetter highland areas around the Lake Titicaca through to highland desert in the south of Potosi. Peru and Ecuador have dry desert like condition on the Pacific coast, Andean valleys and highlands and Amazon forest. Around half the area of the countries is covered by forest and Bolivia has one of the largest protected forest areas in the world. The estimated amount of land cultivated is low at around 3% with the highest being in Ecuador, at 8.4% (see Table 10 in Annex 2).

There has been a very strong expansion of land cultivated in Bolivia and Peru during the last 15 years, but in Ecuador the cultivated land area has remained almost constant (see Table 11 in Annex 2). In Bolivia the expansion has led to a large increase in the area of land cultivated per agricultural person. There have also been increases in Ecuador and Peru, but Peru has a far lower cultivated area per person than the other two countries (see Figure 2 in Annex 2). The increase in land area per agricultural person in Ecuador must

have been caused by migration of people, whereas the increase in land area cultivated in Peru has only covered the increase in agricultural population.

The most important group of crops are food grains in terms of land area cultivated. Maize is the most important grain crop in terms of land area cultivated, but rice is the most important in terms of grain production. Bolivia has seen a rapid expansion in oil crops, in particular soybean, which has taken place in the tropical lowlands of the country. Coffee is important in Ecuador and Peru and cocoa is important in Ecuador. Surprisingly root crops, which are dominated by potato, make up just under ten per cent of the cultivated land area (see Figure 3 in Annex 2).

Bolivia is a country with a high level of investment in livestock with almost 1 livestock unit[1] per person, similar to Brazil and Argentina. The mix of livestock species is strong in this country with important populations of cattle, sheep, goats, camelids, pigs and poultry. Peru has a similar variety of species, but the number of livestock units per person is much lower. Most of the livestock units in Ecuador are concentrated in cattle and this country also has few livestock units per person (see Table 12 in Annex 2).

All countries are part of the trading pact of Andean countries[2] (Comunidad Andina, CAN) and Bolivia has agreements with MERCOSUR. There differences between the countries in terms of the main trading partners. Bolivia has strong links with the MERCOSUR countries (Brazil, Argentina and Chile), with a relatively low official import and export from and to the USA. These figures do not include the illegal export of coca and its derivatives. In Peru and Ecuador, USA, EU and Asian countries are important trading partners. In all countries the influence of the Andean Community countries varies, but is perhaps not as big as would be expected given that all countries are members of the Comunidad Andina (see Table 6 and Figure 4 in Annex 2). Recent bilateral free trade agreements with the USA are further undermining this already weak trading group.[3]

The main export products from the region are gas, oil and minerals with agricultural products being of relatively low importance, although there are some agricultural export successes. Bolivia has an important industry dedicated to the export of soya and soya products, and in the past had success in cotton. Ecuador has become an important exporter of cut flowers and Peru is having success in the export of fruit.

The recent increases in oil and mineral prices have created trade surpluses in Bolivia and Ecuador and only a small deficit in Peru. All countries report medium to low levels of debt, but Bolivia has benefited recently from being a part of the Highly Indebted Poor Countries Initiative. This country is also heavily dependent on aid and is the only country to have seen a reduction in GNI per capita between 2000 and 2004. Bolivia saw a heavy reduction in foreign direct investment in the early part of this decade, whereas Ecuador and Peru have had a slow increase in FDI (see Table 13 in Annex 2). There is also international migration from the study countries and remittances in the region have increased in recent times (IDB, 2004 see Table 14 in Annex 2).

[1] A livestock unit is equivalent to a cow weighing 500 kilos liveweight.

[2] Bolivia, Peru, Ecuador, Colombia and Venezuela

[3] Peru signed a FTA with the USA on 9th March 2006.

2.1 SUMMARY

The economies of the central Andes countries are not heavily dependent on their agricultural sector, but rely on the production of gas, oil and minerals. Therefore, the recent increases in international prices for these products has improved the trade balance, has stimulated the economies and has improved government finances. However, this is at the end of a lengthy period of low growth, with little impact on poverty levels and continuing high levels of inequality. A high proportion of the population are still found in rural areas, where levels and depth of poverty are high and there is a high dependence on agricultural activities. The result has been social unrest in the region, and in Bolivia and Ecuador very unstable governments. The challenges facing the countries are about using the improved economic climate to put in place measures that can resolve the serious social problems in the region. The benefits of reducing poverty are not just about having a healthier and happier society, according to Perry et al (2006) it will help to strengthen economic growth and allow the region to compete more strongly with the Asian economies.

3 REGIONAL PERSPECTIVE

The regional perspective section sets out to answer two key research questions relating to rural poverty and the participation of the poor in global economic processes:

- How can poor rural households adapt their livelihood strategies to benefit from participation with global economic processes? Which will be answered through looking at how the rural poor can and do engage in global economic processes.
- How can the enabling environment be enhanced to support the successful participation of the rural poor? Which will be answered by identifying the constraints of the rural poor to further engagement in the global economy and what are the appropriate policy interventions to address these constraints.

3.1 HOW CAN POOR RURAL HOUSEHOLDS ADAPT THEIR LIVELIHOOD STRATEGIES TO BENEFIT FROM PARTICIPATION WITH GLOBAL ECONOMIC PROCESSES?

3.1.1 Understanding the context

In Bolivia, the rural areas have the highest and deepest levels of poverty. Poverty levels are particularly severe in the rural areas of the Departments of Chuquisaca and Potosi, areas where there is also a higher proportion of rural people. Poverty is also more prevalent where there is a higher proportion of people from the Quechua and Aymara indigenous groups. These families rely on agricultural as their main income source and work small plots. Their contact with input and output markets is limited by poor road access. In addition their education levels and access to health care are low (Rushton, 2001; Government of Bolivia, 2001). Since 1992 the size of the rural population has changed little, which is related to rural to urban migration, and, according to the Government of Bolivia (2001), the rural areas have stagnated in economic and social terms, with living standards being well below the national average. This pattern reflects the reality in the valley and high Andes regions of the country, but does not fit well with the

tropical lowlands where soya, coca, rice, sugar, cotton and cattle production have contributed to a dynamic regional economy.

In Ecuador 60% of the rural population are reported to be poor. These poor people are reported to live in households with larger families, have less education, greater unemployment levels and have poor access to basic services. Their activities are concentrated in the agricultural sector, but they have poor access to land and what land they have is usually of poor quality. The worst off groups are the agricultural labourers (World Bank, 2004). In terms of geographic distribution the rural regions around Quito and Guayaquil have better opportunities and this is reflected in the possibilities of improving the productivity from the land.

In Peru the indigenous people, children and women are noted as being socially vulnerable groups. The Quechua and Aymara speaking groups have higher levels of poverty in comparison to other social groups. Women have less education than men and young children (0-5 years old) have higher poverty rates than other age groups for children. The latter indicates that poor families have larger and younger families. Families with a large or major proportion of their income from agriculture are more likely to be poor. Poor families also have lower levels of education, have a larger family size, have poor access to basic health care and credit (Japan Bank for International Cooperation, 2001). There are higher levels of poverty in the Peruvian Sierra (the valleys and high Andes) and also the Amazon region. In the Sierra it is estimated that 81% of the rural population live in poverty and 57% are in extreme poverty (IFPRI, 2006).

In all countries, women's household economy contributions are mainly from livestock (54, 41 and 47 percent respectively), in comparison with agricultural activities (16, 37 and 35 percent, respectively).

Being a rural poor person in the region is related to poor access to basic services, input and output markets, having limited access to good quality land, being reliant on agricultural as a source of income and having poor education and poor access to basic health services. These factors are made worse if the person is from an indigenous group and if they are women.

Table 1. Proportion of the urban and rural population with access to sanitation, drinking water and health services and the average number of years of education.

Country	Adequate sanitation (1990-1997)		Safe drinking water (1995)		Health services		Education mean years of schooling (1999)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Bolivia	74	37	88	43	77	52	9.0	5.6
Ecuador	95	49	81	10	70	20	NA	6.4
Peru	89	37	91	31	NA	NA	NA	7.6

All countries are experiencing strong rural to urban migration patterns. In Peru and Ecuador this has also been associated with the urban poor being a larger population than the rural poor and also being vulnerable to changes in economic growth (World Bank, 2004; Japan Bank for International Cooperation, 2001). In the late 90s both these countries saw a significant increase in urban poverty, which was reversed during the last 5 years. In Bolivia, links with the rural areas from families who moved to urban areas in the last 20 years have remained strong. Families who have moved to a nearby city or town still cultivated their rural based plots to supplement their access to basic foodstuffs. These

links, however, are not and probably cannot be as strong where people and families have moved from the high Andes rural regions to the city of Santa Cruz, purely for the reasons of physical distance. In terms of peri-urban agricultural, there are some areas where this is practiced, but it is of less importance than the continued links with rural areas as described above.

Potentially the poor links between urban populations on the threshold of poverty with rural areas is creating a vulnerability to changes in economic growth and job creation. Without rural links these people have little to fall back on.

In Ecuador there has been a very successful expansion of the cut flower export, which has generated income for rural women (World Bank, 2004). In the highlands of Peru there has been successful development of camelid wool processing and marketing systems. In Bolivia, there have been a number of successes in terms of agricultural exports, but of greatest direct significance to rural poor people has been the growing export of quinoa[4] and to some extent the export of garlic and dried and salted broadbeans. Marshall et al (2005) demonstrate the linking of non-timber forest products to global economic processes through three different routes: an informal chain that exports incense to neighbouring countries, a more formalised chain at the processing and marketing sections that export chocolate to Europe and a formal chain that sell palm craftwork products to tourist. Indirectly many poor groups, with linkages to poor rural groups, have benefited from the growth and dynamism of the agricultural sector in the Department of Santa Cruz. This has generated work in terms of seasonal harvesting of crops and service related jobs in the city of this region. The country has also generated employment in the growing of coca and it's processing, the barriers to the latter sector are about drug control and have created various social problems in Bolivia in the last 10 years.

Migration has been a common activity of many poor rural families in the region, in particular seasonal harvesting of crops. The economic crisis in Argentina created problems for many rural poor in Bolivia. However, the growth in the neighbouring countries such as Chile has created other opportunities and labour shortages have become sufficient in this country that Bolivians can move freely to Chile with only their identity card. Migration to countries outside the region are reported to be to Europe (mainly Spain) as well as to the USA. This migration is largely restricted to urban-based groups, but there may be links with rural areas and rural poor families.

It is also noted that no small town or market is without goods and products from other countries, but in particular from Asia, but there is little information on the benefits of rural, poor having access to goods that may be of a better quality and lower price than the national alternatives.

The main barriers to greater impact of the global economic processes at the rural level related to lack of capital, education and skills. In some areas there is also a lack of land, which will be discussed in more detail later. At a meso level there are difficulties with meeting export regulations for agricultural products, a lack of experience in marketing

[4] Grain crop grown in the high Andes of Bolivia close to the Salar Uyuni. The variety that is most productivity requires very salty soils to maintain seed properties that ensure that birds do not ruin the crop.

goods in different markets with different cultures and standards and in the case of migration the economic stability and growth of neighbouring countries.

At the household level, the rural poor have disadvantages in developing their own capacities in terms of education and health, which in some cases is related to a lack education and health services and in other cases a poor quality of these services. Reasons for lack of rural education quality are in part related to teacher incentives with reports of teachers living in poverty in Bolivia and Ecuador. Test scores for indigenous and non-indigenous children indicate that the former score more poorly than the latter. But of greatest concern is that the incentives of extra schooling in terms of better future incomes are lower for indigenous groups.

In addition, the rural areas suffer from poor financial services. In terms of having secure access to "basic" inputs land distribution in all the countries is very unequal, but is particularly unequal in areas with high potential. In Ecuador there is also discrimination against the indigenous groups where land ownership is low in relation to other groups (World Bank, 2004). All countries have donor efforts to resolve land rights. Bolivia has for the last eight years been implementing a modernisation of land title. This has left many indigenous groups with a communal title for land, but no individual title.

The poor rural households have no or little amounts of land and limited or no investments in livestock (Personal communication with FAO-PPLPI staff, Rushton *et al.*, 2001a, 2001b, 2001c, in press; Fairfield, 2004). The poor households are likely to have access to communal resources be they for mining (Aguilar and Rushton, 2006) or production of non-timber forest products (see Marshall *et al.* 2005). However, the security of access to these resources is dependent of local arrangements.

The lack of individual title does in turn create constraints to access formal sources of credit. It is recognised that land reform in the region and the active movement and giving land in the tropical areas has helped some groups, but the titles are often so restrictive as to not allow the establishment of open land markets.

Violent confrontation between poor rural people and the large-scale cattle ranchers and crop producers in the tropical regions of Bolivia over land rights and access have taken place over the last 5 years. The issue of land rights in these areas particularly for indigenous populations has become a serious political issue and will be addressed by the present Bolivian government (MAS, 2006). Note there are strong parallels with this situation and the political problems of land tenure in many of the tropical areas of Brazil[5] (Economist, 2006a), although in Brazil there are issues of rights for land squatters (Faminow & Vosti, 1998; Richards, 1997). In both regions there is inequitable land tenure, indigenous groups and strong drives to export crop and livestock products from the regions.

In general land reform in the region has not been successful in changing land distribution, and the continuing debate about the need for land reform creates uncertainty and a general inability to develop effective and open land markets.

[5] Note this region of Brazil is covered by IDRC, although has not been included for the RPE's scoping study.

In an analysis of Ecuadorian household survey data, Lanjouw (1998) found that 40% of the income for rural households came from non-farm rural employment. He reports that more women than men are involved in this activity, but women are not as well rewarded for their time given their education levels and other socio-economic circumstances. Trading was important in all regions of the country (Coast, Sierra and Oriente[6]), but was most important in the coastal region. Construction was important in the Sierra and craftwork in the Oriente. Business activities made up a large proportion of the NFRE income. Households that had NFRE were less poor than those who were reliant on agricultural activities. Trading was in particular more associated with non-poor household and the employment of women. Trading is a highly diverse sector, but one that appears to provide opportunities for poverty alleviation and gender equality.

Lanjouw (1999) found that landholdings per capita in Ecuador were negatively correlated with participation in low productivity occupations but had no effect on high productivity employment. In Peru, Escobal (2001) reports that the effect of education on income diversification is strong, with the higher the level of education the greater the incentive to allocate time to self-employment and wage-employment non-farm activities.

The importance in the region of NFRE is increasing (Elbers & Lanjouw, 2001)and the strength of this aspect of the rural economy is strongly related to the general strength of the agricultural sector, i.e. where the agricultural sector is strong so too is the NFRE, which given the need for support services would be expected. The implication is that to stimulate the NFRE requires an initial stimulation of the agricultural sector.

3.1.2 Distributional issues:

Quantitative evidence from the collection and processing of natural rubber in Bolivia indicate that women are involved in work that generates low levels of income per labour day than men (Rushton et al. 2004). This is supported by observations from Ecuador where NFRE was less well rewarded for women than men (Lanjouw, 1998) and in Peru where women working in sugar cane processing had salaries that were 25% those of men (FAO, 1991). In general terms female-headed households are associated with a reduction of 37% of household per capita income in urban areas and 45% in rural areas, even after allowing for differences in education, household size and age (Wodon, 1999). However, women make up 57%, 46% and 70% of the rural labour force in Bolivia, Ecuador and Peru, respectively, and women food producers contribute to the a third to quarter of the sectoral GDP in the region (IICA, 1994).

In many of the areas where poor people are found, agricultural practices are based on low input-output systems that seem to have little long-term impact on the environment. However, concerns have been raised that increasing human population pressures in the high Andes, where the land area cultivated per family has been maintaining reducing the amount of fallow land and with almost continual cropping on poor soils (Urioste, 2005). This would indicate a reducing amount of land between generations, but this has to be balanced by families almost doubling their livestock holdings over the last 30 years (data from Urioste, 2005; authors analysis). The results from these changes in livestock holdings are inconclusive, in part because official data on livestock populations are either not

[6] Amazon forest, tropical lowlands to the east of the country.

available or not reliable. Fairbairn et al (2000) carried out a long-term study of pastoral livestock systems in the Bolivian high Andes, which indicated that although grazing by animals of poor rural people had an impact on the vegetation it did not seem to have affected or changed the environment very strongly over hundreds of years. However, similar to Urioste these authors expressed concerns about changes in the production systems caused by increasing population land pressures. In the high Andes of Ecuador Podwojewski *et al* (2002) stated that overgrazing by sheep was having an impact on the natural vegetation.

In Bolivia and Peru, there are attempts to ensure that management of vicuñas[7] is both to the benefit of the poor people who live alongside this species and to conserving the vicuña population. Peru has established systems of capture and shearing of vicuñas with regulations and control of the sale of the wool to international markets. This has given an income to the people, but the market is very unstable with high prices one year and no sales the next. In Bolivia, it has taken nearly three years from the approval by CITES for the country to sell vicuña fibre on international markets to the national government approving laws to allow people to sell the vicuña fibre (Aguilar and Rushton, 2006).

In the tropical regions the strong international demand for soya has led to wide scale deforestation, monocropping and soil degradation (Urioste, 2001). The results of how people utilise non-timber forest products is very much dependent on the value chain in which they work. Marshall et al (2005) found examples where traders were not passing on the real value of the products such as incense and this in turn was having a negative impact on the management of the natural resource. Other examples of the use of the palm Jipi Japa would indicate that some natural resources were being damaged, but the management on the whole was good.

The flower exports from the valley regions of Ecuador have raised concerns over the use of insecticides (World Bank, 2004) and there have also been concerns about the use of child labour and a lack of work rights and representation (The Economist, 2006b). However, pressures from international consumers appears to be improving labour, social and environmental standards (The Economist, 2006b).

The World Bank (2004) cites work by Hentschel and Waters (2002)[8] and Kyle (2000)[9] which reports that poor rural families cope with shocks and stresses through temporary migration, increased female and child labour and decreased consumption. An interesting issue raised by a reviewer is that vulnerable households may minimise their exposure to hazards through choice of activity such as keeping savings in illiquid and unproductive forms. No published data were available to comment on such an idea, but the authors are aware that livestock continue to be a means in which many families hold money and

[7] A wild South American camelid species with very fine wooll that almost became extinct in the 1960s due to hunting pressure. The protection of the species in the last three decades has seen a rapid recovery in the population to the point where some areas have problems with competition between domestic livestock and the vicuña.

[8] Hentschel, Jesko and William F. Waters. 2002. "Rural Poverty in Ecuador: Assessing Local Realities for the Development of Anti-poverty programs." *World Development* v30,n1 (33-47).

[9] Kyle, D. 2000. Transnational peasants: migrations, networks and ethnicity in Andean Ecuador. Baltimore and London: Johns Hopkins University Press.

different species have different functions in terms of meeting planned and emergency expenditure.

3.1.3 Constraints to participation:

The rural poor who speak an indigenous language as their mother tongue have a disadvantage in terms of accessing different markets. Particularly with the older generations there is a difficulty of expressing themselves in Spanish and in some cases a difficulty in understanding. In the case of women in rural areas it is likely that they will have lower levels of education. The economic reality is that returns to education are low for females (Marshall et al. 2005, Lanjouw, 1998) and poor rural families are unwilling to invest in female education. The transaction costs of doing business in the rural areas are also very different from urban areas. Postal services are unreliable and in some cases not available, although people close to bus routes use these as a means to send both goods, messages and money. Telephone services are rudimentary and road infrastructure is poor. What would appear to be relatively simple transactions such as buying and receiving basic inputs such as seeds can therefore be so expensive as to make these inputs prohibitively costly.

With regards to participation and sequencing events two issues are of importance. On an inter-generational sequence the racial and educational background and asset levels of the parents has an impact on the quality of education received by the children. In this indigenous, poorly educated families are unlikely to be able to give a good education to their children. On intra-generational change, the most positive experiences have been where poor people have moved to new areas and colonised new lands in the tropical areas of the country. Initial forest clearing for cropping activities is followed by investment in livestock and then when sufficient capital has been raised investment in machine to clear other land and stop regrowth on the original cleared land (Thiele personal communication). Where this process has gone hand in hand with the opening of markets for beef and soya export poor farmers have benefited from global economic processes. There is also the possibility that entering national markets is a stepping stone to accessing global economic processes, with the camelid wool products particularly from Peru and potentially tourism around Lake Titicaca region being possible examples. Both these had strong local markets that have in recent times had international impact.

Social models and discriminations tend to be reinforced through education and training processes. For example training courses for crafts, commercialisation and the marketing products are dominated by men in Ecuador and Peru. In the classroom educational material portrays women in domestic and reproductive roles, rarely putting them in productive or community roles. Recent evidence from the UK would suggest that these subtle messages do have an impact on the job and careers sought by women.

A number of other successful value chains have been described above, where poor people are involved. In the case of non-timber forest products, the example of Jipi Japa palm products shows the importance of an entrepreneur with vision and determination to develop and maintain a value chain for a specific market. She has managed this through combining a private company that makes profits with a NGO, which has a social improvement agenda for the communities involved in making the products (Marshall et al. 2005). This arrangement has been successful for many years. The success of the flower industry in Ecuador is also related to endeavours of private business with benefits to local

workers (Economist, 2006b). The impact of the big international supermarket chains in the region is in less evidence than.

Obstacles to accessing value chains with distant customers be they tourist or in another country relate to having sufficient individuals who have the capability in terms of negotiation, training and skill and determination to develop a chain and the links. These skills can be provided for short periods of time by development projects either state or NGO, but the private sector is better suited to medium to long-term change. In countries such as Bolivia, the aid sector may be swamping the private sector in this role, by providing too much subsidised competition on the one hand and on the other employing the people who could be the entrepreneurs.

In recent work in poor isolated communities of the Bolivian high Andes and the valleys the adoption of new approaches to the agricultural production came about through discussions with outsiders and analysis of potential solutions and opportunities. The outsiders had access to methods and knowledge not available within the community, and also had the ability to bring new technologies to the zones at low cost. The early experimentation was carried out by a limited number of families and other families only showed strong interest when they saw that the changes had success. Some families, who were the poorest, remained outside the adopting group, but when asked if they would adopt with financial help and some risk sharing they showed greater interest (Rushton and Viscarra, in preparation). Observations supported by Meinzen-Dick *et al.* (2003). Rodrigo Paz (personal communication) also reports the importance of the introduction of new innovations from outside the communities and the slow spread of the methods through the communities. In general, access to new inputs and information in poor isolated communities is limited, and even if there is access the costs and risks of bringing them to the communities are high. Here there are obstacles in terms of physical access and also financial abilities to take risks.

A difficult question raised when thinking about participation and how to benefit the rural poor through global economic processes is should we be looking at ways in which the rural poor participate in global economic processes as producers, traders, workers, migrants or consumers. Work carried out recently on the socio-economic structures of rural communities would indicate that of particularly relevance is the need for a relatively large "middle" class in the communities to ensure that there is a dynamism in the rural economy (personal communication Rodrigo Paz). In global terms this "middle" class would be considered poor, but would not be the poorest of the poor. Where this "middle" class is small, indicating inequality at rural level, there is stagnation in the local economy and limited opportunities for the poorest. So perhaps the answer to the question is the need to develop and maintain a "middle" class in the rural communities, people who have the capacity and assets to search and implement new ideas. The dynamism from their activity should help to create opportunities for the poorest groups.

3.1.4 Household livelihood strategy options:

In some regions rural people have formed cooperatives and farmer associations, which have entered products into international markets. These farmer groups have been successful in using international aid agency support in these processes. The best examples would be quinoa and dried broad bean in Bolivia. Already mentioned above is the growth in the cut flower industry in Ecuador and the wool and camelid fibre cluster in

Peru. ITDG have also been involved with Peruvian producers in entering international markets (personal communication with Gonzalo de la Cruz). There are also examples of NTFPs in Bolivia (Marshall et al., 2005). However, these examples are not of rural people being directly involved in global economic processes, within their livelihood strategy they are workers within global value chains or local value chains that feed into global value chains.

In the region there are good examples of local craftwork knowledge and skills being used to access tourist markets for woollen, camelid fibre and NTFP craftwork products. These are likely to become more important if the area can continue to attract greater numbers of tourists. Political stability is key to such tourist developments. There is also potential for local knowledge to be more widely used in tourism in the Amazon forests.

At a household and individual level migration is another strategy employed by poor rural people which not only provides financial benefits, but can give opportunities to see new technology and reduce the costs of bringing the technology back to communities. Seasonal migration is related to harvesting of crops, particularly sugarcane and fruit. Medium to long-term migration are more related to construction and manufacturing. The impact of this migration is a greater stability of the general household livelihood.

If more of success stories are to be repeated then the education environment needs to create equal opportunities for every person in society to ensure that each country spreads their bets on the potential winners. Educating a section of the society, selected by racial and gender discrimination, means that the potential number of trained entrepreneurs is also reduced. In addition the business environment needs to be sufficiently supportive to encourage new entrepreneurs and sufficiently well regulated to ensure that the products they produce and market have international credibility in terms of quality. The business environment requires access to capital and insurance and assistance in innovation and entrepreneurship in order to help people enter into new ventures with confidence. One mechanism that appears to have been successful has is the formation of strategic alliances in order to have greater strength and ability in reaching new markets and value chains. The alliances might be in the form of cooperatives, links with external groups who specific skills and finance, and/or with the private sector. In all cases the creation of local groups that have a legal basis is important. These are all issues where support is needed to risk capital and effort in new ventures.

3.2 HOW CAN THE ENABLING ENVIRONMENT BE ENHANCED TO SUPPORT THE SUCCESSFUL PARTICIPATION OF THE RURAL POOR?

3.2.1 Overarching issues:

In general the rural poor have a lack of access to the State and therefore a general lack power. It is suggested that the basis of this weak relationship is

- physical isolation,
- until the recent times a cultural isolation, and
- weak organisation at rural level due to poor education levels and a lack of product focus with sufficient commercial presence.

This is gradually changing in the region with an increase in the power and organisation of the indigenous groups based around traditional hierarchical structures. In Bolivia this change has taken place with greater speed as rural producers and workers have become more tightly organised through coca growing groups.

In addition to the difficulties that the rural poor have in reaching and influencing the State, there are number of powerful economic groups who have lobbied political parties in attempt to ensure that States resources are used and rules are created for their benefit. This has to some extent been tempered by aid agencies particularly Bolivia, which is part of the Highly Indebted Countries Initiative, so that social policies are pursued which have social aims relating to poverty reduction.

The critical elements to the enabling environment to support participation in the global economic processes appear to be: education; access to communication both in terms of high technology and basic and reliable postal services; and in the case of export oriented products infrastructure and government institutional credibility. Added to this list should be mechanism to provide capital and help producers bear some degree of risk. The balance however needs to be made between giving away free money and ensuring that people taking loans use the money for realistic, productive processes.

Market failures often relate to not passing on quality demands of consumers through price signals to producers. This creates a shortage of supply of the appropriate product and no modification in production practices, and examples of such situations are the value chains of camelid products and cocoa. There are also high transaction costs in terms of physical access to both input and output markets and information on prices.

3.2.2 Access to factor markets:

Bolivia is highlighted as a country that has a successful system of credit in for traders in urban and peri-urban areas. However in the authors experience in rural Bolivia, people complain about the difficulties of receiving credit and that formal credit sources are expensive with interest rates at between 20 and 30% on national currency loans. This observation is supported by data from the commercialisation of NTFPs in Bolivia (Marshall *et al*., 2005).

Land reforms in Bolivia from 1953 onwards dramatically changed formal ownership of land in the highlands and in Peru reforms in the 1970s also had significant effects. In addition all three countries have had land settlement schemes where people have moved from highland regions to the tropical zones. These have to some extent been a safety valve for land hunger. However, access to land title is still not certain and is an important part of being able to apply for a formal loan. The recent Bolivian land reforms have created different types of land title. For land used for subsistence crops the land title cannot be used to apply for a loan. There are communal titles for communal lands that again have no value for applying for financing. No country in the region has applied a land redistribution that has reduced the level of land distribution inequality and where land has been distributed little has been given to women.

The ease of obtaining land titles and doing land transactions are generating problems with land markets, and there is certainly no open land market. With greater rural to urban migration, particularly from some areas of the high Andes, this has perhaps contributed to

the abandoning of land by the migrating families and the lack of use of that land by the people who remain.

A study in the northern high Andes of Bolivia would suggest that some of the greatest issues may be about conflicts between rural people who have migrated to the city and the community members they have left behind (Urioste, 2005). The first generation of migrants would like to retain their land rights and the use of the land, but there is much less interest in subsequent generation who have different economic aspirations. Some care has to be taken from making generalisations from this study however as this region of the high Andes is dissimilar to other regions in terms of agricultural potential[10], population density and peri-urban and urban opportunities that can still be carried out with a base in the rural areas.

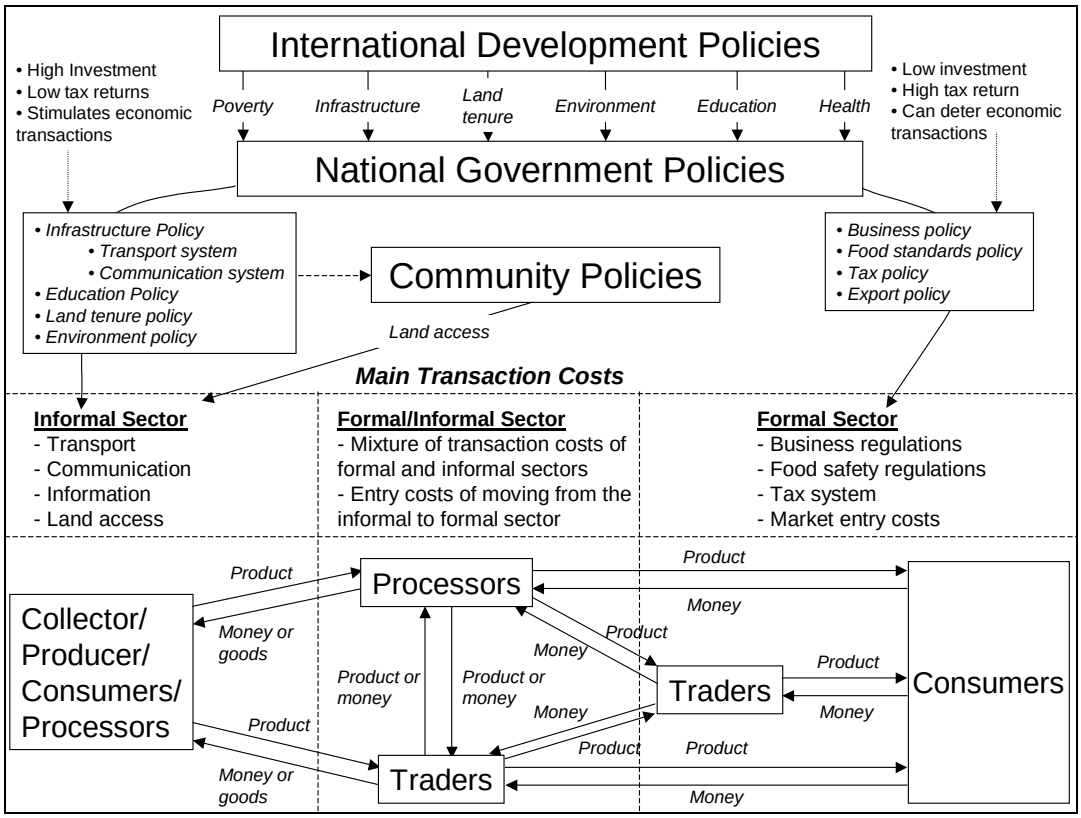
3.2.3 Processes:

Recent changes in the laws of movement across the Bolivian-Chilean border and Bolivian-Peruvian border provide a background to see if relatively free movement of people between countries will allow migrants the ability to plan trips and have the freedom to return when they want.

Informal markets, that through intermediaries reach global markets, have high transaction costs relating to transport and information. These costs can be influenced by government policies on infrastructure and education. In all countries as shown in Table 10 the institutional situation for the formal sector is not favourable to starting businesses, registering land or trading across borders. Weaknesses or difficulties at any point in the value chain will affect how poor rural households access global economic processes. Here an unnecessary bureaucratic procedure for exporting goods implemented by corrupt officials may be enough to discourage a budding entrepreneur and ensure that a value chain that could reach the rural poor does not exist. Figure 2 developed from NTFP research suggests the balancing act that a government has to make on policies and transaction costs.

[10] For example Urioste (2005) talks about dairying becoming the most important agricultural activity in the Bolivian high Andes. Whilst this may be true in the area he studied, many parts of the high Andes particularly to the West and South have no cattle, in some areas even sheep cannot be supported, they are simply too high and too dry. Note that high yielding dairy cows tend to suffer altitude sickness.

Figure 1. How transaction costs are related to policies (from Rushton et al. 2004).



The rural poor are heavily disadvantaged in that even entering the informal sector requires investment in time and money because of poor infrastructure, the lack of communication and information and the poor quality of organisations to improve levels of education and health. If they manage to overcome these numerous barriers within the informal sector, passing into the formal sector also requires significant investments in money and time as indicated by the low standing in the region in terms of starting a business. Peru has the best international ranking for doing business in the Central Andes, where as Bolivia and Ecuador are similar across most indicators except trading across borders. Here Bolivia scores very badly (see Table 2).

Table 2. World ranking of "Doing Business" in Bolivia, Ecuador and Peru. (World Bank, 2006b).

Country	World rank (155 countries)				
	Selected indicators				Doing business
	Starting a business	Registering property	Getting credit	Trading Across borders	
Bolivia	132	109	79	116	111
Ecuador	122	102	81	77	107
Peru	106	32	73	93	71

The advantages of joining the formal sector are minimal for small scale producers or traders as the taxes paid for being part of the formal sector are given to a State that has proven to be inept and corrupt in delivering services. The major advantages of being part of the formal sector can only be reaped when a producer or trader is sufficiently large or is part of a group of producer or traders who are sufficiently large to lobby for and receive

political favours. It is hardly a surprise that there is so little movement from informal to formal sectors and for this reason so little dynamism in the private sector economy.

All the countries have international support for natural resource management and have considerable influence from environmental NGOs. The macro level results would suggest that there has been reasonably successful control of deforestation to date (World Bank, 2006a), and there have been some examples of success in the conservation of endangered species. However, the reasons for these successes in many case are due to low population densities and isolation of conservation areas than effective government control and action.

3.2.4 Access to markets

Emerging international value chains, as mentioned above, appear to be dependent on entrepreneurs for their development (te Velde *et al*., 2005). In general the rural poor have access to thin input markets due to the high transport costs of reaching potential clients and the fact that many of these clients are poor and produce low quantity, low quality products. In some areas these problems are partially overcome by access to input markets is through weekly local markets. There are limitations in terms of importing new technologies, which require specialist skills in terms of obtaining permits. This often creates monopolies for importers who charge a premium for having the sole right to import and distribute a product. While this can create a comfortable living for the importers, it means that the products are supplied to the local market at a relatively high cost and their use is limited.

There is a combination of barriers, but it is not possible to qualify their order of importance. In many areas there is poor road access. In all areas there is social discrimination, which is ethnic and gender related. In terms of reaching global markets, the scale of production of poor people creates higher transaction costs for buyers.

3.2.5 Government support:

A key aspect of government activity to improve capacities for the rural poor to participate successfully in global economic processes are education and health and all governments in the region claim to be supporting these aspects (World Bank, 2004; Government of Bolivia, 2001; Japan Bank for International Cooperation, 2001). These measures need to be supported by better access to road infrastructure in order to improve access to input, service and output markets. There also needs to be a process to reduce and eliminate racial and gender discrimination. Strengthening of government organisations in terms of eliminating corruption and patronage based employment systems, is also important as the credibility of government organisations that support the agricultural sector is a key factor in ensuring that private sector investments in innovation are fully realised. These actions focus on the agricultural sector, but as stated above diversification into NFRE is a key strategy for poor rural households. An important mechanism for the NFRE would be support for small, rural businesses, and for all sectors of the rural economy improved access to input, output and labour markets in order to benefit from global economic processes. Here stronger mechanisms to connect rural and urban markets are important such as better transport systems, communication including postal services and security.

Bolivia has a long history of reforms which appear to resolve one problem, but expose another. However, there are some grounds for optimism, decentralisation has created local governments who have invested in local projects and in some cases stimulated local economies. The implementation of such works has fostered a new generation of politicians with experience in the management of public money and some of this has played a role in changing the political parties in the country.

However, not all decentralisation processes have produced positive impacts. For example, Bolivia has a very patchy government extension and advisory service for the agricultural sector, which was a role was given to the Prefectures and the Municipalities during decentralisation. The quality of the human resources within local governments and community organizations is a factor that limits the pace of progress in decentralized rural development. Experience has shown that the process of using central government resources is slow to get under way and that the capacity for management of local programmes is insufficient. Training and improvement of the professional competence of central officials and leaders of popular organizations are therefore necessary to consolidate and strengthen the process of decentralization.

In Peru has a large World Bank funded programme has been implemented to provide extension services, which is aimed at meeting local demands and is being led by the private sector. The pilot IDB project EXPIDER that is aimed at offering technical advice is still in the process of being assessed (IDB, 2004a). At a research level the general investment in agricultural research in the region is low and what is invested tends to be towards solutions for richer producers. A lack of research investment and hence capacity is in part a result of government financial difficulties in the 80s and 90s.

Bolivia has a network of health posts that reach the rural areas and also rural schools. These provide basic services, but both the quality of both health and education are variable.

3.3 SUMMARY

To summarise the diverse information presented in the section within the conceptual framework of the inception report Table 3 and 4 presents how the rural poor can and do connect with global economic processes. This takes the form of being producers of agricultural and non-agricultural products, workers in different activities, and as traders, migrants and consumers. To complete the picture the Table contains information on how these different activities interact with the five capitals of the sustainable rural livelihoods framework. These interactions relate to the enabling environment, and help identify where there are gaps in policy, actions and research.

In terms of the groups:

1. Who are the most numerous?
2. Who are the most difficult to reach or who have the most difficulty in reaching global economic processes?
3. Is there are stepwise process to reach global economic processes? For example from poor agricultural producer to poor non-agricultural worker to trader.
4. Who have the easiest access to global economic processes?

Underlying assumption as shown in the conceptual framework in the inception report is that access to global economic processes can improve poor, rural people's livelihoods and also help them use their environment in a way that is sustainable.

Table 3. How the rural poor can and do engage in global economic processes and what are the constraints to their engagement.

Capitals	The rural poor can and do engage in global economic processes by being:									
	Producers		Workers			Traders	Seasonal Migrants		Permanent or semi-permanent Migrants		Consumers
	Agricultural, forestry (wood and NTFP)	Non-agricultural	Agriculture	Non-agricultural rural	Non-agricultural urban		National	International	National	International	
Human	Poor education levels, poor health with high levels of racial and gender discrimination										
Natural	Poor land with little potential. Exceptions are the colonists in tropical regions	Access to primary materials from local collectors and producers	Dependent on agricultural potential of the land (positive examples of soya in Bolivia, cut flowers in Ecuador)			Dependent on agricultural potential of the area	Maintaining original land rights, possibilities of purchasing, using and investing in additional land (are there constraints in the land market? Environment, land title, etc.)				
Financial	Limited access to credit		Investment climate in rural areas		General investment climate	Limited access to credit	General investment climate, Costs of sending remittances, range of investment options (investment in livestock are there environmental issues?)				Access to credit
Physical	Poor road access, health and education services		Road access, communication network		Road access, transport costs (how close do rural areas need to be to benefit from urban based employment?)	Road access, communication network, transport costs	Information on labour markets?? Transport and communication reliability and costs				Road access, transport costs, market infrastructure
Social	Historically a weak political voice due to poor organisation and a lack of focus due to weak demand for products. The rise of the coca growing groups in Bolivia and the increasing importance of indigenous groups in general has increased political power.		Largely an informal arrangement with little or no social benefits (are there differences between local, national and international firms in benefit provision, racial and gender discrimination? Is there any monitoring and regulation of how firms employ and reward such workers?)			Traders at this level are informal with little or no organisation	Low status, little protection	Low status in some cases illegal status, no protection. Changes in controls on crossing borders may help this.	Low status, little protection	Low status in some cases illegal status, no protection. Changes in controls on crossing borders may help this.	Weak political voice to argue for open access to imports that may be of better quality and lower price

Table 4. The relationship between how the rural poor can and do engage in global economic processes and the context in which they are found.

Context	The rural poor can and do engage in global economic processes by being:									
	Producers/Collectors		Workers			Traders	Seasonal Migrants		Permanent or semi-permanent Migrants		Consumers
	Agricultural, forestry (wood and NTFP)	Non-agricultural	Agriculture	Non-agricultural rural	Non-agricultural urban		National	International	National	International	
Access to factor inputs	Official land titles are not always available. The poorest have little land and what they have is of poor quality	Access to credit. Access to improved technologies.	Not applicable			Poor access to credit. There are successes with credit in peri-urban and urban areas	Not applicable				Poor access to credit, but may be a gap in knowledge on informal credit sources in the region
Processes (institutional environment)	Weak application of phytosanitary regulations reduces the ability to export products. Physical distances from markets	Largely informal production and marketing systems. Difficulties to enter and exit formal processes. Physical distances from markets	Gender and racial discrimination, social benefits unlikely, work and contracts tend to be informal								
Access to markets	Most important markets are household and local. Road and communication access is poor	Generally weak internal demand. Successes relate to entrepreneurs	Dependent on the strength of agricultural sector	Dependent on physical proximity to transport services			Informal, seasonal labour market dependent on demand for product and local economic strength	Informal, seasonal labour market dependent on demand for product and country's economic strength. Argentinean	Informal labour market dependent on economic growth which was low in the 90s, but	Informal labour market dependent on economic growth of mainly neighbouring countries. Crisis in Argentina in late 90s, slow	NA

							crisis had a negative impact in Bolivia.	has improved in this decade	regional growth in the same time period. Recent relaxing of rules on crossing borders and economic growth in the larger economies should improve prospects.	
Government Support	Very weak extension services. Research fragmented. Generally poor quality school and education services	Generally poor quality school and education services	Little or no support for each activity. Generally poor quality school and education services.			Little	Nil	Depends on health and education services in the area where they have moved	Nil	Nil maybe negative through the existence of inefficient customs groups and import taxes that protect local industries

4 AN OVERVIEW OF CONTEMPORARY AND LIKELY FUTURE RELEVANT RESEARCH ACTIVITIES

Annex 3 presents an analysis of the activities of major donors, NGOs and foundations. In summary the multilateral and bilateral donors have a heavy focus on good governance, general rural development issues, management of natural resources and the environment, food security efforts and general infrastructure. Specific technical interventions at the level of producers are limited. The analysis of the NGOs, research organisations and the private sector have a strong level of activity in the coordination of groups of researchers and research organisations. There is also support for rural development initiatives.

The gaps in research that appear from the analysis would appear to

1. There appears to be a lack of innovative mechanisms to support and provide incentives for the rural poor to attend health clinics and to ensure that children from poor rural families attend school.[11] In particular areas dominated with Aymara and Quechua cultures continue to suffer from high levels of poverty and deprivation.
2. Although there is much support for land rights in all countries the land right situation in the tropical region of Bolivia appears to have insufficient support and is creating serious conflicts. These problems resemble the problems in the Amazon region of Brazil. Whilst the work of Fundacion Tierra on this subject is recognised these problems are potentially becoming more acute through global economic processes relating to demand for products such as soya and beef.
3. The change in research funding strategy with a greater reliance on direction and financing from the private sector has only partially been discussed. There appear to be gaps in the region between the demands of value chains for technical solutions and the capacity of nationally based universities, research groups and NGOs to research and produce solutions. These gaps can in some cases be filled by international research groups, but where problems are specific there are often difficulties in finding research funding.
4. There is a lack of a clear understanding of dissemination pathways within poor rural communities with relatively low levels of adult literacy and unstable local organisations.
5. Value chain analysis began in the region around 5 years and has produced many documents and analysis. Concrete results from the analysis in terms of changes in regulations, identification of key technical problems or market failures have been relatively limited.
6. A general lack of capacity in technical and market analysis at local level organisations.
7. Innovative support for rural production in terms of rural financial services, support for the creation of rural enterprises and the marketing of rurally produced products.
8. In the region there are examples of successful poverty reduction, perhaps the best example is the Bolivian city of Santa Cruz, which has successfully absorbed people

[11] Compare this with the conditional transfer programmes implemented in Chile and Mexico.

from all regions of Bolivia, including poor rural areas and continued to reduce poverty. There has been no research on why these centres have been successful in poverty reduction and whether there are generic lessons to be learnt.

5 POSSIBLE RESEARCH THEMES

On the basis of the previous sections Table 5 presents possible research themes for the Central Andean region with suggestions of potential partners.

Table 5. Possible research themes for the Central Andean region.

No	Theme	Potential partner(s)
	Human Capital	
1.	Given that reading, writing and numeracy skills are fundamental in the ability to participate and benefit from global economic processes, and that basic education skills in the rural areas of the Central Andes region are of low quality – ***"How can rural education systems be improved in terms of the quality of teaching and their ability to ensure that all rural children regardless of gender or race complete at least primary levels?"***	**Chile** and **Mexico** have significant experience in "conditional transfer programmes" where financial incentives are given to women when children attend school.
2.	Given that being healthy is a fundamental aspect of being able to participate in global economic processes and poverty statistics for the Central Andes region indicate that the rural poor have low levels of health – ***"How can rural health services be improved in order to have a positive impact on maternal, child and adult health levels?"***	**Chile** and **Mexico** have significant experience in "conditional transfer programmes" where financial incentives are given for attending rural health clinics**.**
	Access to basic inputs	
3.	The growing global demand for soya and beef, plus the recent freedom from FMD in large areas of Brazil, have created new pressures and demands for land in the tropical area of the Central Andes. These relatively new global economic processes have fuelled existing land right conflict between indigenous groups and commercial farmers in the tropical areas of the Central Andes region with implications in the Amazon region of Brazil[12]. They have also raised issues of deforestation	**GGP** particularly with relation to how changes in export taxes regimes and animal health status have created strong demands for crop and livestock products, how this impacts on rural poverty and the environment. Should build on the work of on land rights in the tropical areas of Bolivia (Urioste & Pacheco, 2001), colonists in Brazil (Richards, 1997) and cattle production in the western Amazon (Faminow, 1998). **CIARA** (Foundation for Training and Applied Research in Agrarian Reform

[12] An area also covered by IDRC.

	and general land use in the Amazon. – ***"How can land rights be resolved to ensure fairness for indigenous people, economic returns for commercial producers through export markets and have least impact on the environment?"***	**IFAD** partner)
	Organisations and organisational support	
4.	Given that meeting international requirements are important to the successful participation in global economic processes, that rural poor receive little technical support at agricultural production level and that there is a low level of investment in research specific to poor rural producers needs in the Central Andes region – ***"What is best in small, poor countries with low abilities to finance research: imitation of technologies, research coordination with neighbouring countries with similar problems or investments in new research units?"***	**DFID** as part of its change in research focus to regional centres. **CG** centres on technical research. **IAF** **FONTAGRO**
5	Given the weakness in the provision of State rural extension services, and that poor rural people are dependent on the private sector for advances in agricultural and craft skill methods - ***"Is there a gap in technology provision for poor rural people? Would such a gap prevent successful participation in global economic processes? How could such a gap be filled?"***	**PROCIANDINO** (Regional cooperative specialising in agricultural technology and innovation)
6.	Given that the ability to organise and the capacity to implement production and marketing plans appear to be critical aspects of successfully participating in global economic processes in the Central Andes region – ***"How can local organisations be strengthening in supporting participatory research methodologies and market research in order to identify and support the development of value chains for niche markets?"***	**ICT** in creating links with local technical staff to information networks. Some work is being carried out by **ITDG** in Peru and has been carried out by **SNV**. **IFAD** through its The Rural Micro enterprise Support Programme in Latin America and the Caribbean (**PROMER**)
7.	Given that credit and risk sharing organisations have limited coverage in rural areas of the Central Andes and that such organisations play an important facilitation role in reaching	**IFAD** through its partners and programmes such as Foundation for International Community Assistance (**FINCA** International) and the Rural Financial Services Support Programme

	global economic processes – ***"How can credit and risk sharing organisations be encouraged to participate in the rural economies and offer their services to the rural poor?"***	(**SERFIRURAL**).
	Overall institutional environment	
8.	Given that the overall business and private sector environment is weak in terms of creating small and medium scale enterprises that can participate in global economic processes and generate stable job opportunities where the rural poor may benefit – ***"How can the business environment be improved to reduce transaction costs in establishing and maintaining a formal sector business?"***	**World Bank** business study project.
9.	Given that the city and department of Santa Cruz has successfully absorbed people from different areas, including rural areas, of Bolivia and reduced poverty, and that part of this success has come from global economic processes, such as exports of soya, beef and coca – ***"Are there general lessons to be learnt from this example in terms of linkages between rural and urban areas; reducing urban poverty and having a positive impact on rural poverty?"***	**UPE** and **GTZ**. Potential link with the IDRC funded project on productive Municipalities, which is understood to be using input-output models to assist in developing Municipality investment plans.
	Structure of the rural economy	
10.	Given that the strength of the agricultural economy is related to the opportunities within the global economic processes and the ability of the rural communities to participate in these processes is related to the social structure of the community, where the relative size of the rural "middle" class can be related to the dynamism of the rural economy in terms of trading and NFRE opportunities - ***"How can the rural "middle" classes be stimulated to make rural investments and strengthen the rural economy in general?"***	**Imperial College** who are studying rural socio-economic dynamics with financing from DFID's FIT programme.

6 REFERENCES

Alguilar, S. & Rushton, J. 2005. The Economics of Vicuña Capture and the Commercialization of Vicuña Fiber in Bolivia with a Focus on the Communities in the Apolobamba. Final report for the project "The conservation and economic management of vicuñas in Bolivia" financed by the University of South Florida, USA. 62 pages.

CIA 2005. http://www.cia.gov/publications/factbook/geos Date accessed: 1 Jan 2006.

Economist 2006a. Brazil's Indians: Land Wars. The Economist February 4th 2006. Pages 34 and 36.

Economist 2006b. The search for roses without thorns. An industry tries to clean up its image. The Economist February 18th 2006. Page 38.

Economist 2005. Special Report Brazilian Agriculture. The harnessing of nature's bounty. The Economist November 5th 2005. Pages 95, 96 and 98.

Elbers C. & P. Lanjouw. 2001. "Intersectoral Transfer, Growth, and Inequality in Rural Ecuador." *World Development* 29(3):481-496.

Escobal J. 2001. "The Determinants of Nonfarm Income Diversification in Rural Peru." *World Development* 29(3):497-508.

Fairfield, T. 2004. The politics of the livestock sector and the rural poor in Bolivia. FAO-PPLPI working paper No. 15. Pages 40.

FAO 1991. Informe de la mesa redonda regional para constituir una red de cooperación técnica de instituciones y organismos de apoyo a la mujer rural. El Salvador: FAO

FAOSTAT 2005. http://faostat.fao.org/ Accessed 10 February 2006.

Government of Bolivia 2001. Poverty Reduction Strategy Paper. Government of Bolivia, La Paz, Bolivia. Pages 223

IDB 2004a. Informe Rural 2004. IDB, Washington, USA. Pages 21

IDB 2004b. Sending Money Home: Remittances to Latin America and the Caribbean. IDB, Washington, USA. Pages 35

IFPRI 2006. http://www.ifpri.org/themes/peruvian/peruvian.htm Date accessed 12 Feb 2006.

IICA 1994. Políticas agropecuarias frente a las mujeres productoras de alimentos en América

Instituto del Tercer Mundo 1992. Third World Guide 93/94. Instituto del Tercer Mundo, Montevideo, Uruguay. Pages 631

Fairbairn, J., Preston, D., Paniagua, N. & Maas, G. 2000. Grazing and environmental change in the Tarija Altiplano. Working paper 00/04. Policies for sustaining livelihoods in the Andes. Research funded by DGXII, Commission of European Communities, Brussels, Belgium. Pages 24

Faminow, M.D. 1998. Cattle, Deforestation and Development in the Amazon. An Economic, Agronomic and Environmental Perspective. CAB International, Wallingford, UK. Pages 253.

Faminow, M.D. & Vosti, S.A. 1998. Livestock – Deforestation Links: Policy Issues in the Western Brazilian Amazon. In the proceedings of the International Conference on

Livestock and the Environment held in Ede/Wageningen, the Netherlands 16-20 June, 1997. IAC, Wageningen, the Netherlands. pp 88-103

Japan Bank for International Cooperation 2001. Poverty Profile Republic of Peru. JICA, Lima, Peru.

Lanjouw, P. 1998. Ecuador's Rural Nonfarm Sector as a Route Out of Poverty. World Bank Policy Research working paper No 1904. Pages 54

Lanjouw, P. 1999. "Rural Nonagricultural Employment and Poverty in Ecuador." *Economic Development and Cultural Change* 48(1):91-122.

Marshall, E., Schreckenberg, K. & Newton, A.C. (editors) 2005. Commercialization of non-timber forest products. Factors influencing success. UNEP-WCMC, Cambridge, UK. Pages 148

MAS 2006. Programa del Gobierno del MAS para el Desarrollo Rural y Agropecuario en Bolivia. MAS, La Paz, Bolivia. Pages 16.

Meinzen-Dick, R., Adato, M., Haddad, L. & Hazell, P. 2003. Impacts of agricultural research on poverty: Findings of an integrated social and economic analysis. IFPRI EPTD Discussion Paper No 111 and FCND Discussion Paper No. 164. IFPRI, Washington, USA Pages 74

Mita, L.L. 2005. Los pobres se comerán a los ricos. ABC Economia y Finanzas No 52 pp 26-27.

Özden, Ç & Schiff, M (editors) 2006. International Migration, Remittances & the Brain Drain. World Bank, Washington, USA pages 274.

Perry, G.E., Arias, O.S., López, J.H., Maloney, W.F. & Servén L. 2006. Poverty Reduction and Growth: Virtuous and Vicious Circles. World Bank, Washington, USA. Pages 222

PNUD 2005. La economia mas alla del gas. PNUD, La Paz, Bolivia. Pages 308.

Podwojewski, P.; Poulenard, J.; Zambrana, T.; Hofstede, R. 2002. Overgrazing effects on vegetation cover and properties of volcanic ash soil in the paramo of Llangahua and La Esperanza (Tungurahua, Ecuador). Soil Use and Management, Vol.18, No.1, pp.45-55

Richards, M. 1997. Missing a Moving Target? Colonist Technology Development on the Amazon Frontier. ODI, London, UK. pages 94

Rushton, J. 2001. La selección de las ubicaciones de investigación: El Municipio de Tomave, Potosí y el Municipio de Monteagudo, Chuquisaca. Report for Concerted Action on Livelihoods and Livestock (CALL) project financed by DFID's Livestock Production Programme. Coordinated by Imperial College, London, UK. Pages 53.

Rushton, J.; Hoyos, G.; Sonco, M. 2001a. Análisis de la Economía Pecuaria en Bolivia. MAGDR, La Paz, Bolivia.

Rushton, J.; Viscarra, R.; Villegas, F.; Orozco, C.; Hoyos, G.; Eulert, E. 2001b. Estudio de las Enfermedades Animales en el Chapare. DAI, Cochabamba, Bolivia

Rushton, J.; Viscarra, R.; Baptista, R; Lucuy, M. 2001c. Estudio Epidemiológico y Socio Económico en Sanidad y Nutrición Animal en los Seis Municipios de las Provincias Nor y Sud Cinti del Departamento de Chuquisaca. PASACH, Camargo, Bolivia.

Rushton, J.; Perez, L. and Viscarra, R.C. 2004 *Marketing chains for a range of non-timber forest products in Bolivia and Mexico* Report for the research project "*Commercialisation of non-timber forest products: factors influencing success"* Overseas Development Institute, London, UK. 107 pages.

Rushton, J., Viscarra, R.E. & Paz, R. (In Press) Desarrollando soluciones a las demandas de los productores ganaderos en zonas pobres y aisladas. Las experiencias del proyecto CALL en Bolivia. Proceedings from a conference on "Agricultura, Pobreza y Crecimiento Económico" Santiago, Chile September 27 and 28, 2005.

te Velde, D.W., Rushton, J., Sckreckenberg, K., Marshall, E., Edouardo, F., Newton, A., & Arancibia, E. 2005. Entrepreneurship in value chains of non-timber forest products. *J. of Forest Policy and Economics*

Urioste, M. 2001. Bolivia: Reform and Resistance in the Countryside (1982-2000). University of London, Institute of Latin American Studies, Occasional Papers No. 23. 25 pages

Urioste, M. 2005. Los Nietos de la Reforma Agraria acceso, tenencia y uso de la tierra en el altiplano de Bolivia. Fundación Tierra, La Paz, Bolivia. Pages 56.

Urioste, M. & Pacheco, D. 2001. Las Tierras Bajas de Bolivia a fines del Siglo XX. Fundación PIEB, La Paz, Bolivia. Pages 437.

Wodon, Q. (1999). Poverty and policy in Latin America *and the Caribbean*. World Bank Discussion draft: Washington DC.

World Bank 2003. Bolivia Estrategia de Asistencia al País. World Bank, Washington, USA. Pages 148.

World Bank 2004. Ecuador Poverty Assessment. World Bank, Washington, USA. Pages 164

World Bank 2006a. http://www.worldbank.org Country reports. Date accessed 12 February, 2006.

World Bank 2006b. http://www.doingbusiness.org Date accessed 14 February, 2006.

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7.3 ABBREVIATIONS

AGROSALUD	Red de Sanidad Agropecuaria e Inocuidad de Alimentos
AGUILA	Red Agricultura Urbana Investigaciones Latino América
ALOP	Asociación Latino Americana de Organizaciones de Promoción
BMZ	German Federal Ministry for Economic Co-operation and Development
CAFOD	Catholic Agency for Overseas Development
CamBioTec	Red Internacional sobre Biotecnologia
CAPGERnet	Red de Recursos Fitogenéticos del Caribe
CCRP	The McKnight Foundation on Collaborative Crop Research Programme
CIDA	Canadian International Development Agency
CIP LAC	Center for Potato Improvement Latin America and The Caribbean
CIMMYT	Centro Internacional de Mejoramiento del Maíz y el Trigo
CLAYUCA	Consorcio Latino Americano y del Caribe de Apoyo a la Investigación y Desarrollo de la Yuca
CONDESAN	Consorcio para el Desarrollo Sostenible de la Ecoregión Andina
DED	Deutscher Entwicklungsdienst
DFID	Department for International Development, UK
DGIS	Dutch Development Cooperation Programme
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FLAR	Fondo Latinoamericano Para El Arroz De Riego
FODEPAL	Proyecto Regional de Cooperación Técnica para la Formación en Economía y Políticas Agrarias y de Desarrollo Rural en Latino América
FONTAGRO	The Regional Fund For Agricultural Technology
FORAGRO	Foro de las Américas para la Investigación y el Desarrollo Tecnológico Agropecuario
GGP	Globalisation Growth and Poverty
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
GVC	Global Value Chains
IAF	Inter American Foundation
ICCO	Organización Interclesiastica para Cooperación al Desarrollo
IDB	Inter American Development Bank
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IICA	Instituto Interamericano de Cooperación para la Agricultura
IICD	International Institute for Communication and Development
INFOTEC	Sistema de Información Cientifica y Tecnológica del Sector Agropecuarioen las Americas
JICA	Japanese International Cooperation Agency
LACPA	Asociación Latinoamericana para la Protección de los Cultivos
Livestock Unit	Equivalent to a full grown cow in the USA, around 500 kg liveweight.

(LSU)	Conversion factors for the region are 0.71 per head of cattle, 0.1 for a head of goat or sheep, 0.26 for a head of pig and 0.01 for a head of poultry
MOFA	Ministry of Foreign Affairs of Japan
MUSALAC	Red de Investigación y Desarrollo de Plátano y Banano para América Latina y el Caribe
NAFTA	North American Free Trade Agreement
NFRE	Non-Farm Rural Employment
OIKOS	Cooperación y Desemvolvimiento
PPP	Purchasing Power Parity
PRM	Programa Regional del Maíz
PRECODEPA	Programa Regional Cooperativo De Papa
PROCIANDINO	Programa Cooperativo de Investigación y Transferencia de Tecnología Agropecuaria para la Subregión Andina
PROCITROPICOS	Programa Cooperativo de Investigaciony Transferencia de tecnologíapara los Trópicos Suramericanos
PRODAR	Programa de Desarrollo dela Agroindustria Rural en América Latina y el Caribe
REDARFIT	Red Andina De Recursos Fitogeneticos
REDBIO	Red de Cooperación Técnica en Biotecnología Vegetal
REDCA	Red Regional de Cooperación en Educación e Investigación Agropecuaria y de los Recursos Naturales
REDCAPA	Red de Instituciones Vinculadas a la Capacitación en Economía y Políticas Agrícolas en América Latina y el Caribe
REDECO	Red Ecoregional para America Latina
RELACO	Red Latinoamericana de Agricultura Conservacionista
REMERFI	Red Mesoamericana De Recursos Fitogeneticos
REPIDISCA	Red Panamericana de Información en Salud Ambiental
RIFALC	Red de Información Forestal para America Latina y el Caribe
RIMISP	Latin American Center for Rural Development
RLAB	Red Latino Americana de Botánica
RPE	Rural Poverty and the Environment
SIDA	Swedish International Development Assistance
SIHCA	Sistema Hemisferico de Capacitación para el Desarrollo Agrícola
Simbiosis	Sistema de información especializada en Biotecnología y Tecnología de Alimentos para América Latina y el Caribe
TROPIGEN	Red Amazonica de Recursos Fitogenéticos
UNDP	United Nations Development Programme
UPE	Urban Poverty and the Environment
USAID	United States Agency for International Development
VC	Value Chains
WB	World Bank
WFP	World Food Programme

8 ANNEX 2 – SUPPORTINGTABLES AND FIGURES FOR THE INTRODUCTION

Table 6. Summary of the government structure, legal system, trade focus and agricultural strengths.

Country	Government Structure	Legal system	Trade Focus	Agricultural Strengths
Bolivia	Republic	Based on Spanish law and Napoleonic Code; has not accepted compulsory ICJ jurisdiction	Strong links with Brazil, Andean region and USA. Agreements with MERCOSUR, but not a full member. Part of CAN	Soybeans, coca, cotton, maize, sugarcane, rice, potatoes; timber
Ecuador	Republic	Based on civil law system; has not accepted compulsory ICJ jurisdiction	Strong links with USA and Andean region. Part of CAN	Bananas, coffee, cocoa, rice, potatoes, plantains, sugarcane; balsa wood; fish, shrimp
Peru	Constitutional republic	Based on civil law system; has not accepted compulsory ICJ jurisdiction	Strong links with USA, EU, Asia and Chile. Part of CAN	Coffee, cotton, sugarcane, rice, potatoes, maize, plantains, grapes, oranges, coca; poultry, fish

Table 7. The people and languages, social indicators and poverty levels in the study countries (data from World Bank, 2006a except where stated).

Country	People and Languages (Instituto del Tercer Mundo, 1992)	Literacy levels (above 15 years old)	Life expectancy	Under 5 mortality rate (per 1000 births	Poverty levels
Bolivia	Half the population are from the Aymara and Quechua speaking groups. Possible a quarter are mixed indigenous and European race and the rest are of European descent. There are groups of Guarani in the Tropical areas and also some native indian groups. The official language is Spanish with Quechua, Aymara or Guarani spoken by over half the population.	Not available. Primary completion rates are quoted as being 101.3% overall and 99.1% for females (2003)	64.1 (2003)	66 and reducing (2003)	Estimated to be 65% in 2002 with 32% in extreme poverty (World Bank, 2003)
Ecuador	The majority of the population are of Quechua descent with a high proportion of mixed Quechua and European descent. There are native indian groups in the Amazon region. The official language is Spanish, 40% speak Quechua	Not available. Primary completion rates are quoted as being 99.9% overall and 100.8% for females (2000)	71 (2003)	27 and reducing (2003)	Estimated to be 45% in 2001 for the country and 60% in the rural areas where 40% of the population live in extreme poverty (World Bank, 200?).
Peru	Half the population are from the Aymara and Quechua speaking groups. People who live on the coast are mixed indigenous and European race. There are some native indian groups in the Amazon areas. The official languages are Spanish and Quechua and Aymara is also spoken.	Not available. Primary completion rates are quoted as being 103.5% overall and 103.2% for females (2000)	70 (2003)	34 and reducing (2003)	54.8% with 24.4% in extreme poverty (data from 2001 World Bank, 2006)

Table 8. The economy and employment data for the study countries (FAOSTAT, 2005; CIA, 2005, authors analysis).

Country	GDP (PPP$)		% GDP from agriculture	Labour force		GDP per capita (2004 PPP$)		GDP per capita in rural areas as a % of	
	Total (billions)	Per capita		Total (millions)	% in agriculture	Urban*	Rural**	GDP per capita	GDP per capita in urban areas
Bolivia	22.330	2,600	13.0	3.8	NA	3,304	891	34.3	27.0
Ecuador	49.510	3,700	8.7	4.53	8	5,382	865	23.4	16.1
Peru	155.300	5,600	8.0	11	9	6,848	1,749	31.2	25.5
Total	**227.140**	**4,499**	**8.6**	**19.33**		**5,905**	**1,280**	**28.4**	**21.7**

* Urban GDP per capita - All aspects of the economy except agriculture divided by the urban population ** Rural GDP per capita - The agricultural economy divided by the rural population

Table 9. Land area, human population and population density in the study countries (FAOSTAT, 2005; CIA, 2005, authors analysis)

Country	Land area ('000 KM2)	Human Population ('000)		% of the population rural	Population density
		Total	Rural		
Bolivia	1,099	9,138	3,258	35.7	8
Ecuador	284	13,379	4,980	37.2	47
Peru	1,285	27,968	7,105	25.4	22
Total	**2,668**	**50,485**	**15,343**	**30.4**	**19**

Table 10. Land area, forest and cultivated land in the study countries (data FAOSTAT, 2005; World Bank, 2006; authors analysis).

Country	Total land area ('000 KM2)	Forest		Cultivated land				
				Land Area ('000 KM2)	%	Hectares per		
		000 KM2	%			Person	Rural Person	Agricultural person
Bolivia	1,099	531	48.3	26.85	2.4	0.30	0.83	0.72
Ecuador	284	106	37.2	23.82	8.4	0.18	0.48	0.72
Peru	1,285	652	50.8	28.49	2.2	0.10	0.40	0.37
Total	**2,668**	**1,289**	**48.3**	**79.17**	**3.0**	**0.16**	**0.52**	**0.53**

Figure 2. Estimation of the land area cultivated per agriculture person in the study countries in 1990, 1995, 2000 and 2005 (data from FAOSTAT, authors analysis)

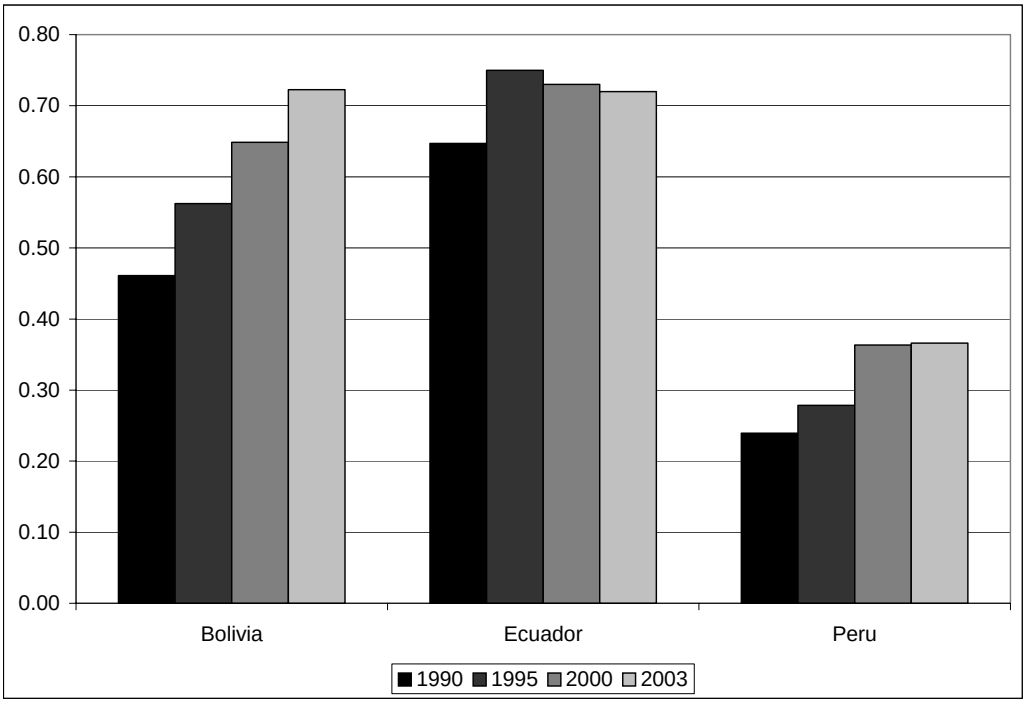

Table 11. Total land area (hectares) cultivated in the study countries (FAOSTAT, 2005; Authors analysis)

Country	Year							
	1990		1995		2000		2005	
	Total	%	Total	%	Total	%	Total	%
Bolivia	1,402,800	1.3	1,863,537	1.7	2,319,228	2.1	2,685,320	2.4
Ecuador	2,335,570	8.2	2,669,601	9.4	2,495,686	8.8	2,382,368	8.4
Peru	1,843,510	1.4	2,172,624	1.7	2,841,521	2.2	2,848,938	2.2
Total	**5,581,880**	**2.1**	**6,705,762**	**2.5**	**7,656,435**	**2.9**	**7,916,626**	**3.0**

Figure 3. Proportion of cultivated land dedicated to different crops in the study countries (data from FAOSTAT, 2005; authors analysis).

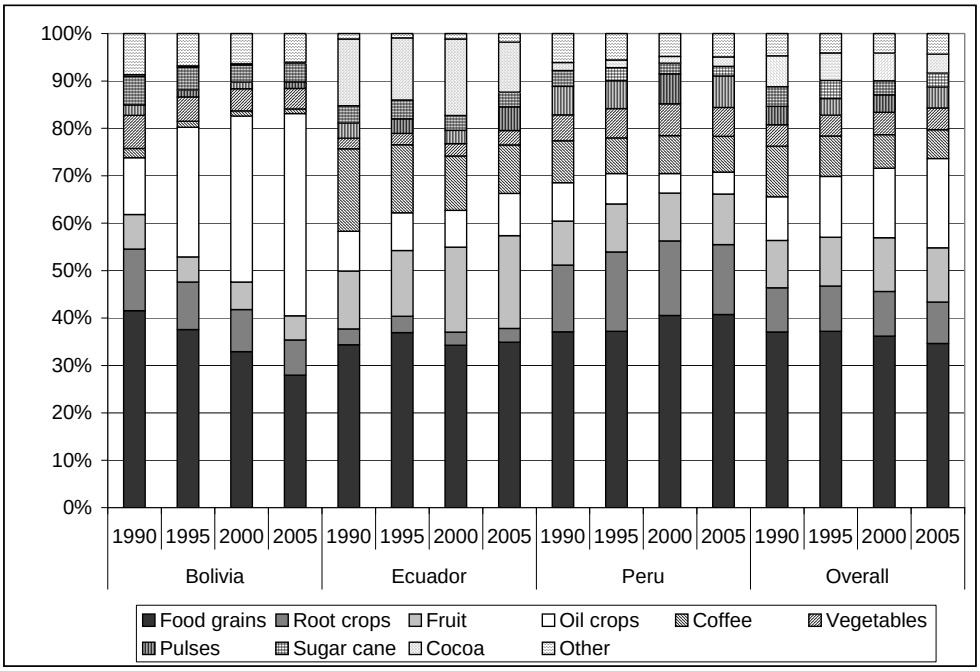

Table 12. Livestock units in the study countries by species, per person and land area (Modified from Rushton and Viscarra, In press).

Country	LSUs	% of the LSUs from:					LSUs per	
	Total ('000)	Cattle	Sheep and Goats	Camelid	Pigs	Poultry	Person	Km2
Bolivia	7,324	58.47	13.11	11.25	8.47	8.69	0.9	6.7
Ecuador	4,070	77.15	3.19	0.17	9.38	10.11	0.3	14.3
Peru	6,641	47.39	21.21	13.76	10.47	7.17	0.3	5.2
Sub-total	***18,035***	***58.6***	***13.9***	***9.7***	***9.4***	***8.5***	***0.4***	***6.8***

Figure 4. The main trading partners of the study countries (data from CIA, 2005).

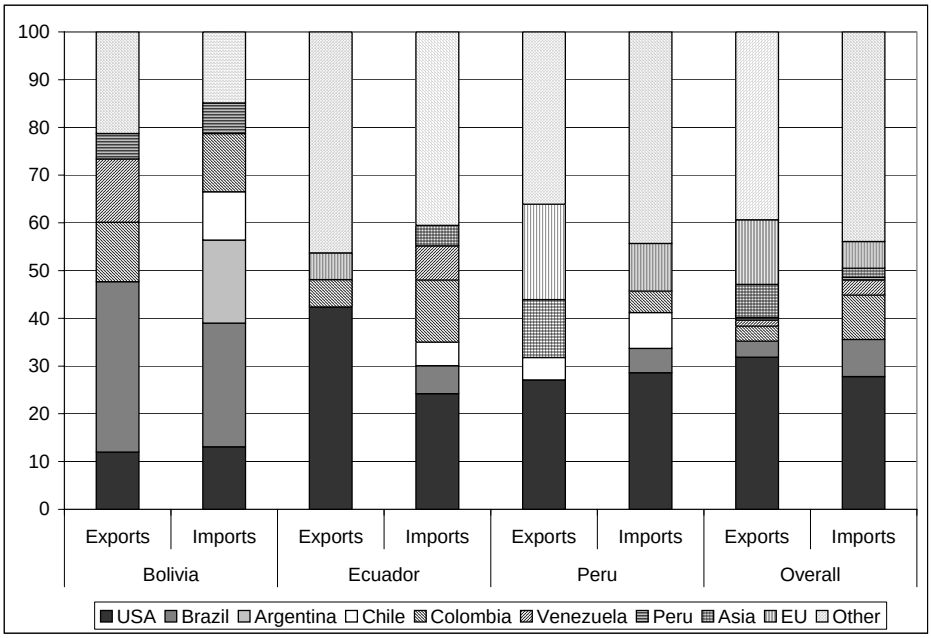

Table 13. Import and exports products, trade deficit summary and aid dependency of the study countries (data from CIA, 2005; World Bank, 2006; authors analysis).

Factor	Bolivia	Ecuador	Peru
Exports	natural gas, soybeans and soy products, crude petroleum, zinc ore, tin	petroleum, bananas, cut flowers, shrimp	copper, gold, zinc, crude petroleum and petroleum products, coffee
Imports	petroleum products, plastics, paper, aircraft and aircraft parts, prepared foods, automobiles, insecticides, soybeans	vehicles, medicinal products, telecommunications equipment, electricity	petroleum and petroleum products, plastics, machinery, vehicles, iron and steel, wheat, paper
Trade deficit	A trade surplus that is between 4 to 5% of GNI.	Small trade deficit of less than 1%	A trade surplus that is between 4 to 5% of GNI.
International trade in goods and services	Recently there has been a surplus. The trend data indicate that there has been a slow increase in the importance of imports and a reduction in the importance of exports. The latter trend was before gas was being exported to Brazil and mineral prices began to rise.	Deficit, with a similar importance of exports and increasing importance of imports in the economy. Again these data are before oil and mineral price increases.	Deficit, with a similar importance of exports and increasing importance of imports in the economy. Again these data are before oil and mineral price increases.

Factor	Bolivia	Ecuador	Peru
Foreign Direct Investment	8.8% of GDP (US$736 million) in 2000 and 2.1% in 2003 (US$167 million)	4.5% of GDP (US$720 million) in 2000 and 5.9% in 2003 (US$ 1600 million)	1.5% of GDP (US$810 million) in 2000 and 2.3% in 2003 (US$1400 million)
Debt	Reasonable (25% of GNI)	Heavy (105% of GNI)	Medium (54% of GNI)
Aid dependency	High (around 10% of GNI)	Relatively low (1.2% of GNI)	Low (0.9% of GNI)
GNI per capita Atlas method (current US$)	US$1,000 in 2000, 920 in 2003 and 960 in 2004	US$1,330 in 2000, 1,830 in 2003 and 2,180 in 2004	US$2,050 in 2000, 2,140 in 2003 and 2,360 in 2004

Table 14. Remittances to the study countries in 1999 and 2003 (data World Bank, 2006a; IDB, 2004b).

Country	1999			2003		
	GDP (US$ billions)	Remittances		GDP (US$ billions)	Remittances	
		Total	% of GDP		Total	% of GDP
Bolivia	8.4			8.1	0.340	4.2
Ecuador	15.9	1.247	7.8	27.2	1.656	6.1
Peru	53.1	0.819	1.5	60.6	1.295	2.1
Total	**69.0**	**2.066**	**3.0**	**95.9**	**3.291**	**3.4**

9 ANNEX 3 – ANALYSIS OF THE AID AGENCIES, NGO AND RESEARCH GROUPS

There is a great deal of aid activity in the study region with multilateral and bilateral donors, NGOs, international, regional and national research groups. Plus, in some rural sectors there are active private organisations working on research. In addition, aid in Bolivia make up a significant component of the national economy. This implies that there are many projects and much to summarise. To simplify this process key issues for rural poverty and the environment have been identified on the basis of the previous two sections, which are as follows:

1. Rural development with agricultural being a component of this process
2. Crops, livestock, forestry and fisheries with subsistence and food crops being a component.
3. Assets – Physical assets – land and houses, access to inputs and financial services, natural resources
4. Capacities of the poor people – education and health
5. Discrimination – racial, gender and geographic
6. Trade and migration
7. Capacity of government and private organisations.
8. Coordination of government, non-government and private sector
9. Disaster management and safety nets – natural and markets
10. Infrastructure

These issues will be used as column headings in the following three matrices:

1. Multilateral donors
2. Bilateral donors
3. NGOs, research organisations and the private sector

Within each matrix activities were identified for the different organisations and the geographic focus indicated (see Tables ?? to ??).

Table 15. Multilateral donor activities in the study region.

Organisation	Country	Rural Development	Crops, livestock & forestry	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure

Organisation	Country	Rural Development	Crops, livestock & forestry	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
WB	Bolivia	Rural Markets, rural investments		Management of protected areas			Rural Markets	Delivery of infrastructure service in a decentralised system, protected area management			Urban infrastructure (La Paz, El Alto, Santa Cruz) Service delivery
	Ecuador	Improving local services		Access to assets, urban land access	Encourage investment in human capital of poor families	Empowerment of people					Hydro electric, telecommunications, rural water and sanitation
	Peru	Rural development in the Sierra	Agricultural research & Extension	Management of protected areas, Property rights		Involvement of indigenous people in the management of protected areas	Trade facilitation	Decentralisation and accountability, M&E, protected area management by government and indigenous people, strengthening of local rural organisations	Rural alliances for better market access		Transport
IADB	Bolivia	Incentives for development of VC coffee, chocolate, wine, Support for micro, small and medium enterprise and entrepreneurs		Credit			Incentives for development of VC coffee, chocolate, wine, Support for micro, small and medium enterprise and entrepreneurs	Management of water resources			Water
	Ecuador	Support to rural businesses, various VCs, private sector		Village banking, deepening of rural financial services							
	Peru		Organic mango production, Coffee production	Credit		Support for vulnerable populations	Valuation of remittances, knowledge and capacity building FTAA	Prioritisation of investment in the sierra, management and transparency of government			Water, sanitation

Organisation	Country	Rural Development	Crops, livestock & forestry	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
IFAD	Bolivia	Stimulation of a technical assistance market		Management of natural resources (Chaco and valleys)							
	Ecuador										
	Peru	Stimulation of a technical assistance market, diversification, support for small businesses		Management of natural resources, preservation of local knowledge							

Table 16. Bilateral donor activities in the study region.

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
BMZ & GTZ	Bolivia		Sustainable agriculture					Administration and judicial reform			Water & sanitation
	Ecuador			Sustainable management of natural resources				Modernisation and decentralisation of government			
	Peru	Adding value to production chains	Sustainable agriculture					Democracy			Water
JICA & MOFA	Bolivia	Support for Japanese colonists in Santa Cruz	Rice, Coffee		Health, Education						
	Ecuador		General agricultural production through volunteers		Health, education through volunteers						
	Peru	Support for small businesses	Fishing industry	Protecting the natural environment	Health, Education	Training of women				Disaster prevention	Water, sanitation, electricity
Spanish	Bolivia	Tourism, alternative development			Education, health						

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	Ecuador										
	Peru										
USAID	Bolivia	Alternative development to combat coca		Management of natural resources, Financial services			Trade opportunities			Food security	
	Ecuador			Management of natural resources, Credit			Trade capacity	Cooperative support and institutional strengthening	Direct support to communities in need		
	Peru										
DFID	Bolivia	Support to research foundations			HIV		Trade and poverty	Agricultural research policy	Donor coordination and effectiveness of WB and IADB projects		
	Ecuador										
	Peru										
CIDA	Bolivia	Mining industry reform particularly for small scale mines						Management of water and sanitation infrastructure, management of natural resources, mining industry reform			Water & sanitation
	Ecuador										
	Peru										
COSUDE	Bolivia	Support to research foundations, PROINPA				Economic growth with equality		Local democracy and governance			
	Ecuador	Support to small businesses		Financial services, managing natural resources and the environment				Local democracy and governance			
	Peru	Support to rural development in Apurimac, Cajamarca and Cusco				Support for access to legal systems in rural areas					
DANIDA	Bolivia	Support in La Paz, Potosi, Chuquisaca						Government planning for agricultural sector			

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
DGIS	Bolivia	Support to research foundations, support to VCs	Quinoa, wine, hardwoods	Environment	Education	Gender		Governance			
	Ecuador			Environment		Gender			Support to CSOs		

Table 17. NGOs, research organisations and the private sector.

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
IFPRI	Bolivia										
	Ecuador										
	Peru							Improving rural development and poverty reduction in the sierra. Donor coordination			
CIP	Bolivia		Research in potato, sweet potato, Andean roots and tubers (ARTCs), and natural resource management (NRM). Development and evaluation of more efficient pig feed from sweet potatoes						Advanced research laboratories and farmers		
	Ecuador										
	Peru										
CIMMYT	Bolivia		Oilcrops		Training on wheat and maize improvement and production				With the oilseed and wheat producers association and small scale producers		
IDRC	Bolivia				Support for MScs in natural resources and gender			Water laws, Social Analysis System development	Strengthening regional network of scientists		

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	Ecuador	Biodiversity Based Livelihoods in Cloud Forest	Impact of pesticide on potato production, environment and health	Management of natural resources	Support for masters in natural resources and gender, Health impacts of mining	Application of gender analysis to environmental and natural resource management		E commerce for eco-tourism	Community networking		
	Peru			Protecting traditional knowledge, managing ecosystems and natural resources	Support for masters in natural resources and gender	Application of gender analysis to environmental and natural resource management	Inclusion or exclusion of competition policy in international trade agreements	Forestry decentralisation	Networking of research groups, Linking indigenous groups to communications		
FONTAGRO	Bolivia				Participatory priority setting for funding of strategic agricultural research projects						
	Ecuador										
	Peru										
MUSALAC	Bolivia	Enhance productivity and competitiveness of banana value chains through scientific and technology development							Interrelationship of different actors of the value chain from the different countries		
	Peru										
RELACO	Bolivia		Contribution of scientist to develop conservational technologies and production agricultural techniques						Coordination between scientists and FAO		
	Ecuador										
	Peru										
OIKOS	Bolivia							Strengthening of small agricultural cooperatives		Emergency relief, preventive of natural disasters	
	Peru										
ACDI/VOCA	Bolivia	Technical assistance in		Management of natural					Agribusiness alliances between		

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
		agriculture production, processing and commercialisation of products.		resources, national parks and protective areas					enterprises from the countries where the institution is working and with north American enterprises		
CARE International	Bolivia				Training in preservation natural resources			Policy making		Emergency relief when needed	
	Ecuador		New agricultural techniques		Health						Water, sanitation
	Peru				Health						
CLAYUCA	Bolivia		Improve production systems, post harvesting management, animal nutrition		Training and extension				Coordination among universities, NGOs and producers		
	Ecuador										
	Peru										
LACPA	Bolivia								Crop protection		
	Ecuador										
	Peru										
SIHCA	Bolivia				Coordinate the efforts of countries to upgrade the skills of people working in agriculture and related fields						
	Ecuador										
	Peru										
PROCIANDINO	Bolivia								Coordinate national		
	Ecuador										

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	Peru		Research in production systems, Technology transfer						agricultural research institutes in order to develop joint technologies, exchange information. Coordination with CIP, CIAT/leguminous, CIMMYT, BIB		
CONDESAN	Bolivia	Management of water and soil, research on relationship between rural poverty and damage on the environment, agro tourism	Research on Andean roots and tubers, production systems		Training			Policy making			
	Ecuador										
	Peru										
FORAGRO	Bolivia								Facilitate the coordination and exchange of experiences between the National Agricultural Research Institutes of the region, facilitate links with the international research institutes		
	Ecuador										
	Peru										
REDARFIT	Bolivia								Coordinate activities with international research institutes		
	Ecuador										
	Peru										
PROCITROPICOS	Bolivia								Coordinate activities and		
	Ecuador										

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	Peru								research in the Amazon basin between the Agricultural National Research Institutes (INIAS)		
TROPIGEN	Bolivia								Coordinate Activities with International Research Institutes		
	Ecuador										
	Peru										
Papa Andina	Bolivia		Research on innovation technologies						Coordination between CIP, COSUDE and the National Agricultural Research Institutes		
	Ecuador										
	Peru										
Ashoka	Bolivia				Grants to fellows who can contribute with innovative ideas in the fields of education, agriculture, gender, discrimination and human rights and environment						
	Ecuador										
	Peru										
Fundación AVINA	Bolivia				Training on effective management of natural resources			Development and support to community organizations and cooperatives			
	Ecuador										
	Peru										
DED	Bolivia	Support projects on agricultural and forestry economy, conservation of natural resources, small agribusiness			Training and technology transfer						
	Ecuador										
	Peru										

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
ICCO	Bolivia	Support projects on sustainable management of forest and environment				Gender discrimination					
	Ecuador										
	Peru										
IICD	Bolivia	Support remote rural communities and Municipalities in the use and establish of Information and Communication Technologies ICTs									
	Ecuador										
	Peru										
The McKnight Foundation on CCRP	Bolivia		Research on quinoa the use of new genetic techniques and improved management								
	Peru										
World Neighbours	Bolivia			Programmes on environmental conservation, credit and saving						Programs on food security	
	Ecuador										
	Peru										
Christian aid	Bolivia					Gender discrimination				Emergency preparedness	
	Peru										
AGROSALUD	Latin America and The Caribbean							Facilitate the communication, exchange and coordination of activities to promote the commercialisation of agricultural products regarding the WTO requirements			
AGUILA	Latin America and The Caribbean		Aquiculture, small animal production					Policy making, prioritisation of research in the region			Sanitation
ALOP	Latin								Integration of		

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	America and The Caribbean								regional NGOs and support in the bidding of proposals		
CAFOD	Latin America	Support to agricultural development projects and small agribusiness								Emergency relief	
Cam BioTec	Latin America								Support between Canada and Latin America in biotechnology filed		
FLAR	Latin America and the Caribbean		Rice production of HYV and low environmental varieties						Research coordination between the countries members		
FODEPAL	Latin America and The Caribbean				Internet teaching focus on rural development, food security, sustainable management of natural resources, international agricultural trade						
FORAGRO	Latin America								Coordination among National Agricultural Research Institutes, International Research Centres and the regional and sub regional aid programmes		
IAF	Latin America and The Caribbean	Support to community projects based on prioritisation of									

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
		problems									
IICA	Latin America and The Caribbean	Promote technological innovations						Promote agribusiness, food safety, animal and plant health, extension and education, institutional reforms	Coordination among private and public institutions		
INFOTEC	Latin America and The Caribbean							Support institutional reforms	Promote links between research institution working in innovation technologies		
PRM	Central America and the Caribbean countries		Release maize varieties adapted to local environments						Coordination with the member countries and CIMMYT		
PRODAR	Latin America and The Caribbean	Promote and strengthening rural agro industry							Promote the coordination between CIRAD, CIAT, FAO		
REDBIO	Latin America and the Caribbean countries		Crop biotechnology for production, storage and phytogenetic resources						Coordination with the different actors, FAO and associated laboratories of USA, France, Spain, Italy, Holland, UK and Japan		
REDECO	Latin America and The Caribbean	Sustainable agricultural and environmental conservation									
REPIDISCA	Latin America and The Caribbean								Exchange information on toxic residues, water supply, waste water, air pollution		
RIFALC	Latin America and The							Compile publications, statistics,			

Organisation	Country	Rural Development	Crops and livestock	Assets	People capacity	Discrimination	Trade & migration	Government & Private Capacity	Organisational coordination	Disaster management & Safety Nets	Infrastructure
	Caribbean							documents, reports			
RIMISP	Latin America countries	Rural innovations			Strengthen research capacities				Coordination with universities, research institutes, public and private institutions, NGOs		
Simbiosis	Latin America and The Caribbean								Information system about specialization biotechnology and food technology		