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Path to Development or Road to Nowhere: Poverty, Labour Migration and Environment Linkages in Developing Countries

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PRIPODE is a programme launched in 2003 with support from the French Ministry of Foreign Affairs to foster research initiatives on PED issues in developing countries. It has sponsored 20 different research projects in 17 countries. Description of the programme and of its findings is available on PRIPODE website (pripode.cicred.org).

PATH TO DEVELOPMENT OR ROAD TO NOWHERE: POVERTY, LABOUR MIGRATION AND ENVIRONMENT LINKAGES IN DEVELOPING COUNTRIES

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1. Introduction: A livelihood approach to labour migration and poverty, migration and environment links[1]

Policy makers often reflect a sedentary bias towards migration from rural areas in developing countries. They see these flows as an exceptional response, a 'last resort,' or a 'survival strategy' for individuals or households in the face of no alternative. In receiving countries in Europe and North America, this negative view of rural migration drives evermore restrictive migration policies and, ultimately, the irregular migration, which goes with it. In developing countries from where migrants originate, this sedentary view of migration results in an emphasis on stay-at-home or rural-growth-linkage policies, which see development as an important deterrent to migration.

Since the 1990s, there has been a contrasting current of policy discussion and research on migration from a household livelihood perspective, which starts from the opposite premise that "mobile populations are the norm in

[1] This CICRED Policy Paper is based on a longer, more detailed background paper prepared for the PRIPODE International Colloquium held in Paris in March 2007. The original draft paper is available from the Colloquium's webpage: http://pripode.cicred.org/CONF/UNESCO2007/EN/Presentation.htm

human history, not the exception" (Ellis, 2003, p. 2). From this perspective, migration along with other economic and productive efforts, such as farming or fishing, is a central livelihood activity, which has always been an important part of household economic strategies. As such, migration may be a last resort, but it can also be an active response to maintain or improve household welfare.

This summary touches on the basic concepts relevant to a livelihood approach to poverty, migration and environment links. We also look at recent current empirical studies through a livelihood lens to consider briefly the positive and negative outcomes that migration as a livelihood activity may have on poverty and environment in rural sending areas. We specifically focus on international and internal labour migration as a household livelihood activity in relation to poverty and environment outcomes. To do this, we have drawn on the theoretical insights and empirical findings emerging from three recent research programs: (1) the CICRED Programme on the Interactions between Population, Development, and Environment (PRIPODE); (2) the Population Consumption and Environment Initiative in Coastal Areas (PCE); and (3) the Development Research Centre (DRC) on Migration, Globalization and Poverty.[2] We conclude by considering some key policy and research implications.

2. Migration as a livelihood activity and poverty, migration and environment links

The livelihood activity of rural households refers to the way they deploy their assets to reproduce successfully or not over time. A livelihood approach to migration revolves around four main elements: (1) household **assets** or capital, including financial, physical, environmental, social, and labour assets; (2) the livelihood **activities** and overall **strategies** or groups of specific activities households undertake in deploying their assets; (3) the **context** or specific historical, socioeconomic and especially ecological conditions within which households, their livelihood assets and activities evolve; and (4) the **outcomes** or feedback effects household livelihood activities ultimately have on (1), (2) and (3). Within a livelihood framework, migration is viewed as a livelihood activity (2), which is deeply embedded in a particular context (3).

[2] See their respective web sites: http://pripode.cicred.org/; http://www.pcebase.org; http://www.migrationdrc.org/research/keythemes/links_between_migrat.html

Within, a livelihood approach to migration, the focus is particularly on *sustainable livelihoods* and the way in which migration and other livelihood activities affect household environmental resource management and their environmental assets such as land and water. Evaluation of *both* the economic or poverty and natural resource impacts of livelihood activities such as migration is, thus implicit in a livelihood approach. A livelihood perspective also takes into account the reciprocal or endogenous links inherent in poverty, migration, and environment dynamics. It also specifically focuses on the less often considered migration impacts in *rural sending communities* and among *rural households* in sending areas. By focusing on 'households', a livelihood approach shifts attention from individual to household migration dynamics.

Rural household livelihood strategies generally have a centrepiece or main activity, which involves direct natural resource management such as farming, fishing, resource extraction and sometimes the processing and sale of their products. A key feature of rural livelihoods is thus, that they are uniquely dependent on natural resources or their 'environmental assets' and their household labour assets. Environmental assets, in particular, are the main "wealth" (World Resources Institute 2005) of most rural populations, particularly the rural poor and "ecological poverty" (Narain 2006) or environmental asset poverty is thus, a core cause of poverty in many rural areas .

Another common thread that runs through the livelihood strategies of rural households throughout the developing world is that they undertake a subsidiary activity in addition to their main livelihood activity –that is, they diversify. Diversification of livelihood activities is partly an imperative due to the "pervasive uncertainty" and "risk" of income failure (Ellis 2003, p. 5-6) and the high prevalence of actual failure, which characterizes rural household production systems, which depend on limited household labour and often unpredictable environmental assets. As the PRIPODE[3] study on environmental perceptions in rural Madagascar (MG2) indicates, a lack of formal social safety nets in rural areas may enhance the degree to which risk perception influences household decision-making. Diversification of economic activity in rural households thus, emerges as a response to economic incentives to increase income or production as well as to the imperatives of

[3] PRIPODE studies are referred to here by the usual code number: VN6, TG4, MA2 etc. The list is given as an appendix to this Policy Paper. See also PRIPODE's website for detailed description of research findings by research teams.

minimizing the risk of 'something bad happening' or to cope with it when it does.

Households may diversify *in situ*, for example, by combining farming with other 'on-farm' economic livelihood activities such as growing diverse types of crops or processing and selling farm products. But, the main way in which many rural households may diversify is by undertaking labour migration as a livelihood activity or sending some household members to work away from home. Labour migration is a compelling complement or alternative to *in situ* diversification for several reasons. It may be easier, especially if it involves temporary labour migration to a nearby area. Secondly, labour migration may have more payoffs in terms of risk reduction. Off-farm labour migration diversifies activity not only in economic space but in geographic space as well. Labour migration thus, releases household from the constraints imposed by the vagaries of their local environment and environmental assets.

Although labour migration may evolve in response to common risks, the role and nature of labour migration as a livelihood activity may vary widely and is highly "context dependent" (McDowell and de Haan 1997, p.l7). It is conditioned by the particular social, economic, historical and ecological context within which it emerges, as noted in (3) above. Ecological setting is a key context factor in this regard. The concept of environment generated by a livelihood perspective is a human ecological one, which see environment across two dimensions. First, it sees environment in terms of household environmental assets such as farmland or "the earth as transformed by human action" (Turner, Clark et al. 1990; Turner, Kates et al. 1994). Secondly, it accounts for environment as the larger objective ecological 'context' or setting to which livelihoods must adapt. Aspects of the ecological setting to consider in regard to livelihood adaptation include: habitat or biome type, degree of geographic isolation or access; and significant environmental change dynamics that may be in play such as natural or man-made disaster events, climate change or infectious disease transmission vectors.

Migration, in particular, has been a historically important livelihood activity that human households and societies have used to adapt to ecological settings particularly in more 'fragile' ecological settings such as arid and semi-arid areas, small islands developing states (SIDS), coastal and wetland areas, mountain regions and tropical forests. These kinds of fragile areas present severe baseline ecological constraints to human livelihoods in terms of fluctuations in natural cycles, severe climates and weather, soil fragility and productivity, water availability, geographic isolation, and vulnerability to human disturbance (The World Bank 2003, p.10). For example, for pastoral groups in the dry lands of North and West Africa, migration and continual population dispersal through nomadic movement is a central livelihood activity that allows households to adapt to seasonal patterns of water and rangeland availability (World Bank 2003). Not surprisingly, existing research that touches on the combined issues of migration, poverty and environment concentrates on fragile ecosystem areas.

Table 1 Fragile ecosystems: ecological setting, livelihood, asset and migration characteristics

	Ecological Constraint or "Fragility"	**Livelihoods Strategies**	**Key Environ-mental Assets**	**Migration Activity**
Arid **Semi-arid**	low precipitation and highly constrained water availability; desertification	agropastoralism; trading	private land and; livestock; common pool; marginal arable land; water;	nomadism; seasonal migration; trade migration; labour migration
Coastal wetland	high precipitation; subject to extreme weather (hurricanes, flooding); fragile marine ecosystems; water pollution	fishing; agriculture; trade; labour Migration	common pool fishing and mangrove areas; private land	seasonal fishery migration; labour migration
Small islands developing states (SIDS)	as for coastal; high restricted total resource base; geographic isolation	fishing; dependence on imported goods; labour migra-tion	Common pool ; fishing areas;	labour migration; seasonal fishery
Mountain	marginal agricultural land; seasonal variation; geographic isolation	agriculture; forest extrac-tion; pastoral-ism	private land; common pool forests	seasonal migration; labour Migration
Tropical Forest	geographic isolation; high precipitation seasonality; high rates of infectious disease transmission	slash and burn agriculture; agro-forestry; forest extraction	private land and forest; common pool forests	labour migration frontier in-migration

3. The labour migration-development nexus: a path out of poverty?

Having looked briefly at the basic theoretical elements involved in a livelihood approach to migration and the links between migration, poverty and environment, we now turn to consider the outcomes or impacts which household labour migration may have on poverty and environmental factors in rural sending areas according to recent research. Numerous recent studies have begun to explore the potential positive outcomes of labour migration in rural sending areas. This research responds to a growing interest among development agencies in the 'migration-development nexus' or the 'development potential of migration' (World Bank 2006). Remittances from migration –the major channel through which this development potential emerges– have grown enormously since 2000 along with increasing and diversifying migration flows. In an environment of stagnating or declining formal development flows, the growing importance of remittances has lead many policy-makers to take very seriously the question, as the title of one report states, "Can remittances reduce poverty?" (Institute for Development Studies 2006). Moreover, the question is not just 'Can remittances reduce poverty?' but 'Can remittances reduce poverty and promote sustainable development in ways that protect the natural resource base?' The potential positive outcomes of migration on poverty *and* environmental factors –and thus migration, poverty and environment links are a central concern.

Existing empirical research supports the fact that in many cases labour migration does offer a path out of poverty as well as one toward more sustainable resource use in many rural sending areas. For rural households with out-migrants these paths include ones associated with: (1) positive household consumption effects; (2) environmental and social insurance and risk reduction; and (3) positive investment effects, particularly in environmental assets such as agricultural land. In addition, migration may have positive impacts for all households in sending areas whether they have out-migrants or not due to (4) positive return migrant effects; and (5) spill over or multiplier effects in the local-community such as increasing consumption demand and production.

3.1. Positive consumption effects

Remittances can positively affect poverty via consumption by increasing income or financial assets available for spending on basic consumption needs (food, housing, clothes, fuel, and medications). This, in turn, helps to maintain or improve the physical existence of household members. Demographically, out-migration itself can lead to declines in household size and household consumption. that may also reduce pressure on household environmental assets and local resources (de Sherbinin 2006). Reduction in household size linked to migration can also increase the share of household assets and quality of life for those household members that remain behind.

Remittances may also allow households to *substitute* bought goods or services for ones produced at home with local resources, which can also reduce pressure on household environmental assets and local resources while improving living standards. For example, households can use remittances to substitute bought food products for home produced ones, the use of electricity instead of firewood, or synthetic building materials rather than wood from trees harvested locally. Substitution of bought for home-produced goods can also allow households to generate a surplus of home-produced goods that can be sold to gain additional funds for investment in environmental or other household assets (Bilsborrow and Geores 1992, p. 104). Together, these kinds of overall consumption changes and substitution effects within households can work to reduce income and living standard inequalities at the community level (Sabates-Wheeler 2003, p. 9-10).

3.2. Environmental and socioeconomic insurance and risk reduction

Migration can reduce the risk inherent in the volatility of rural household production systems based on limited household labour and fluctuating environmental assets. Remittances, for example, can provide ‘environmental insurance’ or protection against acute natural disaster. Empirical evidence for the environmental insurance effects of labour migration is strong. The PRIPODE study areas in Dominican Republic (DO1) indicated for instance that households tended to rely on remittances when faced with flooding or hurricane damage. The importance of remittances in environmental disasters such as hurricanes has also been noted elsewhere in the Caribbean (De Souza 2003; Nurse 2004). The environmental insurance provided by labour migration also applies in fragile areas or regions where environmental resources are not in crisis but are inherently more unstable, variable or limited. Remittances, for example, help households cope with recurrent food security crisis linked to drought in dry land areas in sub-Saharan Africa (Ammassari 2001 p.9).

Remittances and migration as well as the social capital generated by migration networks may also serve as an 'informal social protection' or a spontaneous social security system, which in the absence of any formal social security and safety net protects households. Migration networks can cushion sending households as well as individual migrants from the transaction costs of migration by providing housing, food, and loans. This kind of social protection may be particularly important among poorer households.

A significant amount of empirical evidence exists for the positive socioeconomic protection effects of migration, which subsequently may have related positive environmental affects as well. Evidence among poor households in Western India suggests that they use migration as a way of servicing debts linked to their subsistence or resource management activities (Black, Natali et al. 2005). On the other hand, better-off households in the same area may use migration and remittances as insurance against potential asset or inheritance loss, or to overcome investment and production ceilings due to limited formal insurance or credit markets in their local area.

3.3. Positive investment effects

By increasing overall income, remittances can generate sufficient funds for consumption as well as investment purposes. Investments of remittances in human capital enhancers such as education and health may have positive impacts on both poverty and environment in terms of improved resource management. More direct investments may also go into environmental assets as the result of remittance receiving. These include investments aimed at maintaining or improving the quantity and quality of environmental assets or investing more in the technological and physical assets used in production or resource management. The combined effects of greater investment in human and environmental assets promoted by remittances may create an overall "social capital for improved natural resource management" as well as improved productivity and welfare outcomes (ODI 2003 p. 4).

Empirical evidence for the positive investment effects of remittances on poverty and environmental outcomes is widespread. Historical evidence over the last several decades from regional studies in Sub-Saharan and West Africa supports the fact that remittances can drive important investments in agricultural technology such as irrigation and livestock purchasing (Mendola 2006). Research in Sahel countries also suggests that longer term migration can positively affect labour allocation and decisions to invest in natural resource improvement activities (McDowell and de Haan 1997, p.16).

3.4. Positive return migrant and other in-migrant effects

Return labour migrants may also have potential positive impacts on poverty and environment in the communities they re-enter. These effects are related to their investment, spending and the "capital transfers" of savings accumulated during migration and the human and social capital improvements they bring home with them. The investment activity of return migrants may play an important role in small-enterprise development in their home communities and may have positive effects in terms of employment generation and market development. For example, the PRIPODE study in the Central Sahara Region indicates that return migrants may have substantial positive impacts on agricultural investment in that region (DZ1).

Small-business development by return migrants may also reduce risk and resource impacts by stimulating more diverse livelihood strategies which are less dependent on agricultural activity alone. Return migrants may also bring with them a 'brain gain' in terms of increased human and social capital, new skills, innovative behaviour and entrepreneurial aspirations. Given the high prevalence of return migration from Lagos indicated in the rural community studied within the PRIPODE project in Nigeria (NG1) these kinds of positive return migration effects are likely there.

It is important to recognize also that rural-rural labour-migration into 'sending' areas may also introduce new migrants, who can have an impact on local poverty and environmental outcomes. Rural areas as a location for sending and receiving labour migration flows may be particularly important in India and Central Asia, Southeast Asia, as well as West and Southern Africa. Another important context in which rural-rural labour flows can have significant poverty and environment implications is in forest frontier regions. Rural-rural labour migrants, like return migrants, may also have positive effects in terms of introducing new resource management activities and greater livelihood diversity in the areas in which they settle. The PRIPODE case study on Burkina Faso (BF5) shows that rural-rural migrants have had a positive impact in introducing and aiding the diffusion of more profitable cash-crop farming of cotton and fruit as well as greater economic diversification out of singular dependence on agriculture (e.g. into woodworking, shop-selling and repair services).

3.5. Positive spillover and multiplier effects

Migration flows and remittances may also have macroeconomic “multiplier” or “spill-over” effects that touch all households in sending areas. For example, increased consumption demand generated by remittance-receiving in a community may have positive community-level economic effects on overall local production, job creation and economic conditions. Migration flows may also promote stronger trade and investment ties between sending and receiving areas, which may improve structural economic conditions. At the national level, remittance flows can also positively effect the leverage sending countries have to negotiate loans, and may favourably influence exchange rates in a way that increases hard currency availability. These national level macroeconomic changes can enhance the monetary resources governments have for poverty alleviation, sustainable rural development and resource protection and conservation activity.

4. The labour migration-underdevelopment nexus: A road to nowhere?

Alongside confirmation of the ‘development potential of migration,’ concern remains over the adverse impacts that labour migration may have in rural sending areas given continuing underdevelopment and persistent poverty in these regions. The most complete regional study on the quantitative impacts of remittances on poverty, which was conducted in Latin America, suggests that the impact of remittances on poverty and presumably environmental assets have so far been moderate (Latin American and Caribbean Region 2005). Although migration may reduce risk for sending households through livelihood diversification, it also involves risk as a livelihood change. As such, migration can significantly transform, in negative as well as positive ways a household’s labour force, production, income, other livelihood activities and resource management. While migration may be part of a livelihood strategy that households undertake to increase their economic welfare, there is therefore no guarantee it will be successful. Some of the main areas in which migration may have negative economic or environmental impacts are linked to: (1) negative consumption and investment effects and economic and environmental tradeoffs; (2) new dependency and transnationalisation of poverty; (3) loss in human and social capital; (4) negative effects of return migrants and the negative spill-over effects of migration flows; and (5) increased social and economic inequality.

4.1. Negative consumption and investment effects and tradeoffs between environmental and economic welfare

By increasing income, remittances have the potential to transform spending and consumption patterns in households in negative ways with respect to both poverty and environmental impacts. Increased income via remittances among households may create reliance on bought or imported rather than home-produced ones, which may increase costs of living as well as solid waste pollution. Remittances may also drive increased fossil fuel consumption for vehicles as well as greater use of wood fuel sources for cooking since the amount of total food consumption may go up. This can also have negative environmental effects in terms of air pollution and deforestation.

The investment impacts of remittances, including those in environmental assets, may also be negative. For example, household may use remittances to invest in new technologies which, although more profitable, have long term negative environmental impacts. This is the case for example, with shrimp farming in Vietnam (Adger, Kelly et al 2002; Lebel, Nguyen Hoang Tri et al 2002). Remittance receiving households which channel funds into shrimp farming may experience higher economic benefits while common lagoon resources may become increasingly polluted by the by-products of this activity. These types of economic and environmental tradeoffs linked to remittances may be particularly likely when common pool resources such as those found in coastal areas are involved.

4.2. New dependency and transnationalisation of poverty

Remittances and migration may also create new forms of financial, social, and psychological dependence on external rather than local economic structures and markets, which also has negative environmental as well as economic implications. The example *par excellence* of this is the “MIRAB” or “Migration, Remittances, Aid and Bureaucracy” syndrome, which characterizes household livelihoods, and national development policy in Small Island Developing States (SIDS). (Aswani 2002).

Similarly ‘relay’ labour migration (Arizpe 1980; Morales Gamboa 2006) into low-paying temporary labour migration may sustain chronic poverty among rural households in many parts of Central America. This kind of low-wage temporary labour migration may generate exploitative "transnationalized" migration systems and impoverished border areas if they involve regular movements in areas around national boundaries, as is the case along the Nicaraguan-Costa Rican border (Morales Gamboa 2001 p.6). In these kinds of transnational poverty systems, rural households engage in a livelihood strategy that involves circular or seasonal migration into low wage occupations in frontier areas with a neighbouring country, whose economic conditions are comparatively better in terms of employment opportunities and wages. This livelihood strategy results in "transfrontier regions" near border areas, which are the geographic work base for these temporary migrants and which have living standards significantly below their surrounding areas. The PRIPODE-FLACSO project in Haiti and Dominican Republic suggests the potential for the development of these kinds of transnational poverty dynamics in this border region. Similarly, the PRIPODE study (PL8) in the Bethlehem district and the Occupied Palestinian Territory (OPT) suggests transboundary poverty dynamics may also exist between households in the OPT and surrounding border areas with Israel, Syria, and Jordan.

4.3. Loss of human and social capital

One of the key household-level impacts of labour migration that migrant sending households must absorb is the loss of household labour and potential impacts this may have on production, income and resource management. The negative economic and environmental effects of household labour loss due to labour migration may depend heavily on the 'fragility' of the local ecology since more fragile areas often involve more labour intensive forms of resource management, e.g. terrace farming in mountain hill areas. Another reason that fragile areas may experience more the loss of human capital due to migration is that these regions often have weakly developed local markets for agricultural wage labour. Households may thus, find it difficult to substitute lost household labour with wage labour. The PRIPODE research project in the Central Sahara Region found that labour out-migration from rural areas had negative impacts in terms of labour force assets, income and presumably environmental resource management and productivity (DZ1).

4.4. Negative effects of return migrants and negative Spill-over effects of migration

Return migrants and other in-migrants into rural areas also present special risks in terms of negative environmental and poverty outcomes. First, ‘innovative’ behaviours brought back by return migrants or introduced by new in-migrants are not always sustainable. For example, in the Galapagos islands, return migrants played a role in setting off the exploitation of sea cumber stocks for export, which had previously had been untouched (Bremner and Perez 2002). This resulted in a sea cucumber ‘boom’, which left stocks largely depleted, and the marine ecosystem disturbed.

The scale on which return or other migrants enter rural areas may also be crucial in shaping their negative poverty and environment impacts. For example, the project on spatial mobility in Burkina Faso (BF5) identifies negative environmental impacts in terms of increased deforestation and land fragmentation resulting from large-scale return migration to the study region from Côte d’Ivoire. There is also evidence that many return migrants may actually return with little ‘brain gain’ or improved human capital benefits. This is because while away they may likely have been in low-paying, secondary-labour-market jobs, which provided little additional training or education (Kothari 2002; Kothari 2003; Kothari 2003).

Also, over time the existence of established migration patterns out of a community can alter the social and economic landscape or context factors in ways that may work against poor and non-migrant-sending households. Long established migration flows, for example, may create a ‘culture of migration’ which focus the aspirations of younger generations on their future migrant destination rather than their local community of origin. Migration may also lead to declining social cohesion in sending areas as new tastes and values are introduced among young people, women or lower social castes. While this type of social change may be a positive force for change towards more equitable development, it may also lead to the decline of traditional social and resource management institutions and social care chains for which there is no compensatory formal or informal new institutional development. The PRIPODE study in Mali (ML2) identified negative environmental trends linked to migration and declines in traditional resource management institutions, participation in collective work projects and the contribution of younger member to households.

4.5. Increased social and economic inequality

Perhaps the most significant negative impact that labour migration may have on sending areas is that it often generates increased poverty and inequality among households. Labour migration may generate differentials, first, between (1) successful and unsuccessful migrant sending households. These inequalities arise from growing economic differentials between migrant sending households who have successful migration strategies and those that do not or in which migrants remit to little, inconsistently or not at all. Secondly, economic differentials may arise between (2) sending and non-sending households or those that benefit from migrant remittance streams and those that do not. Migrant-sending households, in short, reap the positive benefits of migration described above while those without migrants do not. Subsequently, as sending households, accrue the benefits of migration more often than non-sending ones relative poverty between them increases. Absolute poverty may also increase as more non-sending household fall into or remain in poverty.

Finally differentials can arise between (3) poor and non-poor households in sending areas. A consensus of current studies points to the fact that non-poor households migrate more than poor ones, particularly in the case of international migration flows, which have higher economic returns (Katseli 2006; Ellis 2003). At the same time, poor households comprise generally all of the households that participate in more ‘negative’ migration flows, such as those linked to low-wage seasonal and temporary migration, economic last resort migration due to landlessness, and much irregular migration. The PRIPODE case study in Laos (LA1), for example, documents how government re-zoning, and reallocation of forest land in the mountainous North created a pool of poor landless labour that began to migrate to the lowlands for temporary agricultural work in low-paying work on rubber and other plantations. In these cases, the pay offs from migration for poor households are low but often necessary given their lack of other options.

The poor may thus, be differentially excluded from more positive types of labour migration flows, which generate sufficient remittance income to finance investment and result in human capital improvements. On the other hand, they make up virtually all of the households in more negative migration flows. ‘Migration selectivity’ for economically better off households into more positive flows and poorer household into more negative flows thus, can intensify rather than reduce differentials between poor and non-poor households while also widening and deepening poverty in sending areas.

5. Policy and research implications

Labour migration may be *either* a path out of poverty and towards greater environmental or a road to nowhere. It is most often a path out of poverty and toward greater environmental sustainability for sending households when their migrants migrate legally and enter higher paying and human capital enhancing work often, but not exclusively, internationally. Remittances from this type of 'positive' labour migration may have beneficial impacts on poverty and environmental outcomes among sending households via increased consumption, investments in environmental and other assets, and informal environmental and social insurance effects. It may also generate spill over or multiplier effects that can positively affect all households in sending areas by encouraging local production, consumption and development.

Promoting positive labour migration flows and facilitating the positive feedback effects of remittances in rural sending areas may thus, reduce poverty and increase sustainable resource use in sending communities. The greatest policy challenge resides in making labour migration this kind of path out of poverty for more households given that migration itself may generate inequality in sending areas, that poorer households participate less in more positive flows, and that they make up most of more negative migration flows (last resort migration, irregular migration, and low-wage temporary labour flows). The efforts needed to reduce the inequality generating effects of migration, increase participation by the poor in more positive flows, and reduce more negative migration flows are nothing less than *rural development per se.* In fact, the potential for migration to become a path out of poverty rather than a road to nowhere is strongly conditioned by underlying development processes. These processes reduce the transaction costs of migration (e.g. transport infrastructure development) and the relative poverty differentials that exclude the poor from positive migration flows to begin with.

While some see a contradiction or conflict between stay-at-home development and pro-migration policies (Taylor 2006: Ellis 2003), they are in fact complementary. 'Stay-at-home' rural development can generate important local options for livelihood activities other than migration while also reducing more negative labour migration flows of the last resort or into low-wage temporary labour migration. At the same time, the human and other asset building effects of rural development put the poor in a better position to enter more positive migration flows. In this context, it is vital to recognize that labour migration and remittance transfers are not a substitute for rural development, especially for poor households. Nor, are the informal social safety or protection systems generated by remittances a substitute for formal social safety nets. The positive welfare impacts and development potential of labour migration are not grounds for governments to pass the burden of social welfare onto the shoulders of individual households. There is no substitute for human and economic development in rural areas and current research on the impacts of labour migration on economic and environmental welfare in rural sending areas uniformly leads back to this recognition. Positive migration flows may enhance economic development but cannot replace it.

Because legal international migration is often a more positive migration pathway in terms of human capital and income payoffs, less restrictive migration policies in international receiving areas and freer mobility of labour must be an essential part of efforts to promote more positive migration flows and their development enhancing impacts. Freer movement of labour means that more households can participate and benefit from positive flows while more negative irregular flows are reduced. Despite this recognition, there is, at present a significant "decoupling" of migration and development policy by major receiving countries (Ellis 2003). While Europe, Canada and the United States commit themselves to international development abroad, they implement continually restrictive migration policies at home. This bifurcation undermines their formal international development efforts in two ways. It stifles more positive migration flows and thus, the greater participation of all households in these flows. It also provokes more irregular flows, which have more negative implications for individual migrants and their sending communities, as well as receiving countries themselves. There is thus, a need for greater alignment of migration and development policies in receiving areas, guided by the recognition that freedom of human mobility and development go together. As one analyst observes, "Migration may not be able to eradicate all types of poverty, and may even exacerbate some, but the alternative of attempting to limit or restrict migration is likely to be much less productive" (Skeldon 2002, p.80).

Another major policy insight that emerges from our discussion is that even 'positive' labour migration flows produce tradeoffs between poverty and environmental outcomes and these tradeoffs need to be minimised. The positive welfare impacts of migration do not always coincide with positive environmental impacts, particularly with regard to changes in consumption patterns. From a policy perspective, the challenge is to direct new or emerging consumption patterns in sending areas triggered by labour migration and increased income in the most sustainable ways, just as developed countries have been struggling to do in recent decades through for example, car emissions standards, developing sustainable solid waste disposal systems, and recycling. Similarly, technological or agricultural innovations driven by remittance may be more profitable but less sustainable with regard to resource use (e.g. shrimp farming). In this case, as well, the policy challenge is to create profitable alternative investment activities for migrant sending households, return migrants, or in-migrants to rural areas –that are also more sustainable.

We also conclude that fragile areas need to be a particular focus of concern with regard to policies that aim to promote the development potential of labour migration as a livelihood activity, while reducing more negative migration flows. Fragile areas being more isolated are also often neglected areas in terms of policy efforts in general. Thus, there is need first for policy makers to more fully recognize the particular and intense links that exist between poverty, migration and environment in these regions in the course of poverty alleviation and conservation activity. For example, protected areas may be more prevalent in fragile or high biodiversity areas such as forest or mountain settings. Protected areas in these regions can thus, limit access to migration and seasonal use of environmental assets, two key elements of livelihood strategies in many fragile regions. This is the case in the study region within the PRIPODE project in Burkina Faso (BF5) where protected areas significantly limit access to higher quality productive land as well as migration destinations. Protected area and conservation activity thus needs to take into account the structure of local household livelihoods– and the role migration plays in them.

Our discussion also stresses the importance for polices that support resource management institutions as well as more equitable access to environmental assets in fragile areas (coasts, SIDS, rangelands) and densely settled agricultural areas. In addition, given the key role played by environment assets in rural household livelihoods, poverty alleviation, development and conservation policy needs to take into account the importance of 'ecological poverty' as well. There is a need therefore, to go beyond poverty alleviation measures that only aim to increase income to include support for institutional structures and practices that govern resource access and management also. Changes in community level resource management institutions and practices linked to migration are an important focus of attention and need to be closely monitored.

Our consideration of labour migration as a livelihood strategy and its impact on poverty, migration and environment links have important implications for international poverty alleviation strategies, in particularly for Goal 7 on environmental sustainability within the Millennium Development Goals (MDGs). Several recent assessments of the relevance of "population aspects" to the MDGs have concluded that there has been, to date, no "coherent or comprehensive" analysis or integration of migration issues into MDG-7. This has lead to a "revised formulation" of MDG-7, which brings more attention to the unique livelihood asset structure of rural households, which is heavily dependent on environmental assets or natural resources and human labour (United Nations 2002; Carolini 2005; Martine 2005; World Resources Institute 2005; World Resources Institute 2005; ActionAid 2006; Narain 2006). Our discussion here clearly supports this revision and the importance of directly integrating labour migration concerns into the MDGs. It also underlines the importance of 'targeting' poverty alleviation efforts in ways that bear in mind geographic differentials in poverty distribution, which may occur because of differences in relative poverty generated by labour migration.

Based on our discussion we also identify some areas for future research in terms of specific topics, geographic focus and areas which may help expand livelihood analysis of poverty, migration and environment links. In this context, particularly important areas for future research include linking social capital theory on migration with the development and livelihoods literature on migration. It is also important to undertake more 'class' analysis of migration as a livelihoods activity in terms of considering how poor and non-poor households may differentially use it (e.g. participation in more positive versus negative flows) and the outcomes that their differential use of migration may have in terms of poverty as well as environmental outcomes.

There is also a need for more detailed research and data collection on remittances in terms of their impacts on consumption patterns, spending and the changing relationships between consumption and investment that labour migration may induce in sending households. General comparative study of the role of migration as a livelihood activity and its impacts in different ecological settings, particularly in fragile areas, is also important. In terms of geographic focus, major migrant sending regions such as Africa and Latin America need to remain an important focus given the magnitude of migration flows in these regions and the prevalence of fragile lands in these areas. However, the expansion of research on Asia, particularly in China and Southeast Asia, and the Pacific Rim islands is also important, especially since environmental indicators in these regions may be much lower.

There is one important topic to consider in relation to poverty, migration and environment links, which we have not been able to address. This is the gender dimensions of labour migration as a livelihood activity and the implications this may have for poverty and environment outcomes. This may be particularly important to consider in Africa given the major role played by women in resource management in that region, particularly when male household members may be away on migration. In Latin America and Asia, gender dimensions are particularly important to consider due to the growing role of women in migration flows and the fact that women may remit larger amounts than male migrants.

The diverse nature of household livelihoods and the ways in which they may use migration as a livelihood strategy present a challenge to governments, which generally respond regionally and sectorally in their poverty alleviation as well as environmental activity. A livelihood approach points to the need to balance regional and sectoral approaches with more decentralized policy, development and poverty alleviation activity. Governments as well as development agencies need to tread a balance between promoting migration as a path out poverty and protecting poor households from having migration become a road to nowhere. This calls for balancing 'stay at home' policies which keep households vested in sending areas and gives them options other than 'migration as a last resort,' exploitative temporary labour migration or irregular migration. At the same time, it calls for policies, which support and do not restrict movement into more positive labour migration flows. The central policy challenge from a livelihood perspective centres on maximizing the positive synergies between migration, poverty, and environment in sending areas while minimizing the negative ones as well as trade-offs in human welfare and environmental sustainability. In other words, the challenge is one with that of sustainable development in general –to foster livelihoods that include positive migration yet promote economic productivity, socioeconomic equity *and* environmental sustainability.

Abbreviations used

DFID - UK Department for Development
DRC - Development Research Centre on Migration, Globalization and Poverty,
GDP- Gross Domestic Product
MIRAB -Migration, Remittances, Aid and Bureaucracy
MDGs – Millennium Development Goals
NAFTA – North American Free Trade Agreement
ODA – Official Development Aid
OTP – Occupied Territories of Palestine
PCE – Population Consumption and Environment Initiative in Coastal Areas of Developing Countries
PRIPODE- Programme on the Interactions between Population, Development, and Environment
SIDS – Small Island Developing States
UN – United Nations

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Code	Country	Principal investigator	Research programme
BF5	Burkina Faso	OUATTARA Ardjouma	• Mobilité spatiale de la population : nécessité de développement et risques de dégradation de l'environnement dans l'Est et le Sud-Ouest du Burkina.
CG1	Congo	DEFOUNDOUX Hyacinthe	• Brazzaville, pauvreté et problèmes environnementaux.
CM1	Cameroon	NGWE Emmanuel	• Les déterminants socio-environnementaux de la morbidité diarrhéique des enfants de moins de 5 ans en milieu urbain camerounais : les villes de Ebolowa et Maroua.
DO1	Dominican Rep.	MEYRELES Lourdes	• Environmental degradation, disaster risk construction and vulnerability in the Caribbean.
DZ1	Algeria	SPIGA Sassia	• Circulations migratoires transsahariennes et développement urbain au Sahara Central.
GH1	Ghana	ANARFI John K.	• Population, development and environment in metropolitan Accra : a two-phase study.
LA1	Laos	THONGMANIVONG Sithong	• Study on dynamic resource use and land cover transition in Northern Laos.
MA2	Morocco	CHAREF Mohamed	• Interaction entre migrations internationales, croissance urbaine et développement durable au Maroc.
MG2	Madagascar	RAKOTONDRAFARA Charles	• Perception de l'environnement et attitudes des paysans malgaches face aux projets de développement rural.
ML2	Mali	CISSE Ibrahima	• Croissance démographique, développement de la culture du coton, et gestion durable des ressources naturelles en zone Mali-Sud.
NE1	Niger	BANOIN Maxime	• Quelles transitions agraires en zones semi-arides à forte croissance démographique : le cas du Niger.
NG1	Nigeria	OKUNEYE Peter Adebola	• Rural-Urban migration, poverty and sustainable environment: the case of Nigeria.

Code	Country	Principal investigator	Research programme
NG2	Nigeria	OLOMOLA Aderibigbe	• Population dynamics, real sector development and environmental consequences: a comparative analysis of the Nigerian agricultural and industrial sector.
PL8	Palestine	JAD E. Issac	• Policy tools towards sustainable land use and urban environmental management at municipal level under a transitional political context-the case of Bethlehem district, Palestine.
TG4	Togo	VIGNIKIN Kokou	• Peuplement, mobilité et développement dans un milieu défavorisé : le cas de la région des savanes au Togo.
UG1	Uganda	MUWANGA James	• Population, development and environment linkage at farm level in Uganda.
UG4	Uganda	NYAKAANA Jockey Baker	• Urban Development, Population and the Environment in Uganda. The Case of Kampala and its Environ.
VN5	Vietnam	Le Van Thanh	• Développement économique, urbanisation et changements de l'environnement à Hô Chi Minh Ville, Vietnam : interrelations et politiques publiques.
VN6	Vietnam	DAO Thê-Tuân	• Développement économique et problèmes de l'environnement au Vietnam dans un contexte de forte pression démographique.
ZA1	South Africa	TWINE Wayne	• Household characteristics in rural South Africa: implications for natural resources and development.