



Highland - Lowland Economic Linkages

Highlands and lowlands have multiple and diverse ecological and environmental linkages. This note, however, is confined to economic linkages which are influenced by biophysical conditions of the highlands (mountains) and lowlands (plains). In this context, the author examines and highlights the importance of the relationship between highlands and lowlands, proposes a framework to identify economic flows, and presents approaches to operationalise the framework. Issues that should be addressed on a priority basis are posed as questions in the end.

How Highlands Relate to Lowlands

The fundamental basis of highland - lowland economic linkages is provided by the differences in their natural resource endowments and potential production and exchange opportunities they generate. Equally important are the man-made arrangements, ranging from infrastructure and institutions to technological and human capabilities, which shape the pace and pattern of harnessing the above opportunities. Nature (i.e., biophysical conditions) also plays a crucial role in determining the above man-made arrangements. This is more so in the highlands' context in which, due to constraints imposed by a relatively high degree of inaccessibility, fragility, marginality, and even diversity, the means of and mechanisms for harnessing the 'niche opportunities' and effectively engaging in external exchange transactions are greatly restricted. Because of these very circumstances, mountain areas and communities acquire the status of marginal entities in their economic and other interactions with the mainstream, more urban-oriented economies of the plains.

The above objective circumstances, or rather their differences between the mountains and plains, have historically shaped the nature and patterns of highland - lowland economic linkages. Accordingly, in the **first** place, economic relationships between the mountains and plains have been of a hinterland - metropolis type, in which the highlands served as a source of primary products (raw material) for the mainstream, lowland economies and societies, with all the structural and operational inequities associated with such relationships.

Second, as a consequence of the above, the selective over-extraction of natural resources (e.g., timber, water, biodiversity, etc) from the highlands for uncompensated transfer to the lowlands emerged as the dominant form of harnessing highland niches.

Third, even the petty trading in special mountain products (e.g., herbs, seeds, fruits), constrained by poor mobility, perishability, and low bargaining capabilities, amounted to operating in a buyers' market. Consequently, trade in these and other products (such as timber) has been characterised by under-pricing.

In contrast (viewed from the lowland perspective), the resource and commodity flows towards the highlands have been too small and selective, making the highland - lowland linkages virtually a one-way traffic. Besides the limited supply of consumer goods (foodgrains and industrial products), the main forms of transfer from the lowlands have been in investments for infrastructure and related development. However, such resources are largely guided by the infrastructural needs of mountain-resource extraction to lowland requirements and, in some cases, by security concerns.

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Thus, from whatever perspective, the terms of trade between the highlands and lowlands have been perpetually against the former. Furthermore, if the unrecognised costs and sacrifices of highland communities in terms of the backlash from externally-driven resource extraction (e.g., through disruption of their economies and habitats) are considered, the inequities of prevailing economic linkages increase.

Emerging Importance of Economic Links

The above facts are not new but have been rarely recognised and much less responded to. On the contrary, over time, their magnitude and negative impacts have accentuated. In fact, their extent and intensity have increased with the increased physical, administrative, and market integration of historically, relatively isolated mountain areas with the lowlands.

However, of late, these inequitable linkages have become a focus of attention for those concerned with the worsening economic and environmental situation of the highlands and the associated consequences for the lowlands. Some factors directly or indirectly contributing to this awareness and concern and the need for altering the situation are given in the following passages.

- (i) **Rising awareness about the mountains:** During and following the Earth Summit in 1992, mountain awareness increased substantially. As a major source of the world's fresh water supplies, as the still surviving habitat of rich biodiversity in the global context, and as a natural regulator of downstream resource stability and productivity, the mountains have become the centre of global attention. In the process, several problems, such as rapid resource degradation and mounting poverty, and their relationship to inequitable highland - lowland linkages have also received focussed attention.
- (ii) **Economic roots of resource degradation:** Increasing recognition of the economic roots of environmental degradation in the mountains has also indicated inequities in highland - lowland economic linkages as a central component of exploitative resource-use dynamics.
- (iii) **Advances in environmental costing:** Both the conceptual and empirical work on realistic costing of natural resources and environmental services have helped to raise concerns about the uncompensated drain of mountain resources to the plains and project mountains as net donors of resources to mainstream (lowland) economies.
- (iv) **Recognition of off-site impacts:** Increasing emphasis on the recognition, measurement, and monitoring of externalities and off-site impacts of mountain resource conservation/management; helping downstream economies; and the need for sharing or partially ploughing back gains to mountain areas to compensate the highland communities for their efforts, which often help the lowlands more than the highlands.
- (v) **Rising community aspirations:** Related to the above factor is the rising ethnic consciousness and growth of unsatisfied community aspirations, which often use the unequal highland - lowland linkages as part of the highlanders' agenda to project their grievances in their struggles against mainstream/lowland domination.
- (vi) **Non-separability of the long-term development prospects of lowlands and highlands:** It is being increasingly realised that there are limits to separating the ecosystemic and economic linkages between the highlands and lowlands, and the development of either cannot be carried out in isolation from the other. Hence, the urgent need for an integrated approach to highland - lowland development.
- (vii) **Permanent under-investment:** The debate about mountain areas often links their poverty and underdevelopment to permanent under-investment in mountain areas and inappropriateness of top-down interventions which, in turn, are attributed to the unequal economic and institutional linkages between the highlands and lowlands.
- (viii) **Global liberalisation - new challenges and new opportunities:** Mountain areas, like other areas, despite their poverty and the dominance of subsistence-

oriented production systems are unable to escape the impact of emerging market-driven global liberalisation.

A primary apprehension about this change is that, being driven by market forces which help the stronger party in exchange transactions, globalisation may accentuate the historical bias of economic linkages against the highlands. Furthermore, since markets favour selectivity and specific criteria-based efficiency, the selected niches of the highlands may be over-extracted through external agencies at the cost of diversified, local perspective and need-centred opportunities.

At the same time, at the national level, promotion of liberalisation may encourage the entry of formal private sector entities with their capital and enterprise - to promote enterprises and their linkages with the lowlands. Thus the new change may greatly alter the complex of highland - lowland linkages.

The above developments in their respective ways have helped to highlight the importance of highland - lowland linkages in explaining poverty, resource degradation, and other problems of mountain areas. They only broadly indicate how economic linkages operate and influence mountain areas. They cannot provide a concrete basis for policy and programme intervention to alter the situation. This calls for concretisation of economic links, understanding their processes, and development of approaches to make them equitable and promote their complementarities and sustainability. The next important step, therefore, is to develop and use the methodologies to achieve these goals. ICIMOD, as a part of its on-going work, has taken some steps in this direction. The immediate focus of the work is on exploring concrete manifestations of economic linkages and on understanding their nature and impacts.

Manifestation of Economic Linkages: Resource and Product Flows

In a concrete manner, economic linkages are manifested by flows of products, services, and resources. An understanding of these flows, i.e., their nature and magnitude as well as their processes and impacts, can help evolve approaches to make them more equitable and sustainable. This can strengthen highland - lowland economic complementarities based on their comparative advantages. In view of the vast diversity of biophysical and socioeconomic circumstances and the varying degrees of physical and market inaccessibility characterising mountain areas, any attempt to inventorise the economic flows is a daunting task. However, a broad idea of two-way flows manifesting economic linkages between the mountains and plains, based on the observation and understanding of the situation in many parts of the HKH can be presented. Accordingly, Table 1 presents the major activities and their relevant features to indicate the highland - lowland economic linkages.

Framework to Identify Economic Flows

As summarised under Table 1, as an initial step towards understanding and subsequent documentation and quantification of highland - lowland economic linkages, we can group the flow of items (manifesting links) into the following categories.

Traded Commodity and Service Flows

This includes the following: (a) special mountain products such as herbs, flowers, seeds, fruits, and vegetables in which the mountains have a naturally-endowed comparative advantage. Initially a part of petty trading, these items are increasingly becoming a major component of trade. To the above (a) one can add (b), timber and other forest products. Historically and contemporarily these items represent a major (underpriced) export from the highlands to the lowlands. The next item (c) includes hydropower, which is a new item on the list but produced and exported without direct involvement of and benefit to highland communities in most cases. Finally (d), tourism, is a major high-value service provided by the highlands, again with very marginal involvement of highland communities in managing the service or securing gains therefrom.

Dominant General Features and Possible Approaches

The dominant general features of the above activities/product flows include: export of unprocessed products and hence little local value additions (retentions); under-pricing and unfavourable terms of trade for the highlands; and activities having (uncompensated) backlash effects on mountain communities which exceed the gains to them.

The possible approaches to altering the above features call for deliberate efforts and mechanisms to alter prevailing unfavourable terms of trade; realistic resource/product pricing; encouragement to local processing; improving local skills and infrastructure to facilitate the above; and suitable sharing and compensating mechanisms to reduce the adverse impacts of trade on the highlands.

Table 1: Major Flows of Products, Services, and Resources Manifesting Highland - Lowland Economic Linkages

| 1. Broad Categories of Flows | Traded Commodity and Service Flows | Managed/Semi-managed Natural Resource (NR) Flows | Human Resource Flows | Social Transfers: Public Sector Investment Flows |
|---|---|---|---|---|
| 2. Major items under (1) | <ul style="list-style-type: none"> - Special mountain products (herbs, flowers, fruits, etc) - Timber/forest products - Hydropower - Tourism | <ul style="list-style-type: none"> - Managed NR flows (e.g., irrigation water) from the mts. - Semi-managed NR flows (nutrients, environmental resource/services) from the mts | <ul style="list-style-type: none"> - Seasonal/periodical migration of mtn. labour - Managers of external interventions in mountain areas | <ul style="list-style-type: none"> - Cash/kind relief, subsidy flows to mts. - Development, welfare investments from the lowlands |
| 3. Dominant features, i.e., processes, impacts of (2) | <ul style="list-style-type: none"> - Traded as un-processed primary products; little local value additions; unfavourable terms of trade for the mountains - Designed – developed externally, mainly for lowland use, very little local gains - High value activity with very little local gains - more backlash effects than gains to mts., likely to accentuate with global liberalisation | <ul style="list-style-type: none"> - Largely uncompensated use of water resources by lowlands; backlash effect for mtn., but little sharing plough-back of gains - Costs/effects of local resource management (i.e., conservation), benefiting lowlands never compensated | <ul style="list-style-type: none"> - Migration of unskilled labour represents a mix of gains/losses as local labour shortage compensated by higher and more regular earning - Salaried, lowland workers as part of dev. interventions to help implementation, bulk of their earnings get back to lowlands | <ul style="list-style-type: none"> - Has limited development orientation - Low effectiveness; the extent disproportionately low compared to resource/product flows from mtn. to lowlands; terms decided by lowlands |
| 4. Possible approaches to alter (3) | Alter terms of trade by realistic pricing; local processing (value adding); improving local skill levels and infrastructures; and suitable sharing or compensatory mechanisms | Using environmental costing techniques evolve/implement appropriate compensatory mechanisms for both "managed", and "semi-managed" resource flows | Build infrastructure, enhance local skills, and encourage local development of local micro-enterprises to reduce migration; impart higher skills for higher earning from migration | Appropriate and enhanced investment in mts. to raise their productivity and comparative advantage, local participation in development decisions |

'Managed' (and 'semi-managed') Natural Resource Flows

Because of the very nature of landscapes (particularly verticality and slope), the flow of natural resources, such as water and nutrients, from the highlands to downstream lowlands, has been as eternal as the mountains. However, these natural flows became part of the managed flows through human efforts in terms of controlling and regulating the flows for planned downstream use, e.g., water for irrigation.

Besides the above, there are semi-managed natural resource flows from the mountains. They include invisible environmental services or gains in terms of groundwater discharge, nutrients, biodiversity elements, silt-free water flows, physical stability of downstream farmlands, and so on which are directly related to conservation and protection of highland watersheds by the mountain people. For want of proper economic assessment and lack of pricing, these services involving cost and efforts for the highlands remain uncompensated. Their gains downstream are never shared with the highlands.

The inequity impacts of the above natural resource flows would further increase once the backlash effects of managed natural resource flows (through physical structures, etc) on the economy, sustenance system, and productive habitats of highland communities are considered.

Another side effect of the specific orientation of lowland-biased management of natural resource flows is the disregard of multiple, locally-beneficial micro-niches, be they small-scale highland irrigation systems or micro-hydropower production.

Approaches to altering the above situation should focus on multiple fronts. They may include use of environmental/natural resource costing methods to evolve appropriate

compensatory (gains sharing) mechanisms for both managed and semi-managed natural resource flows from the highlands to the lowlands and emphasis on small-scale, location-specific works with greater local benefits and lower backlash and higher local linkages and spread effects.

Human Resource Flows

If one ignores the lowland migrants to the highlands (as in the Chittagong Hill Tracts, or rich people from the plains acquiring summer homes in the hills in some cases) and lowland salaried workers managing public interventions in the mountains, the seasonal or periodical migration of male adults from mountain areas to the plains is a well-known form of human resource flow. Depending on how one looks at it, its impacts for the highlands are mixed. Besides creating labour scarcity and increasing mountain women's work burdens, the migration also generates a more regular flow of income for mountain families.

To address the negative aspects of human migration (i.e., minimise its magnitude and increase its gains through greater earnings for migrants), one needs an integrated approach. First, it requires an alteration of circumstances which force outmigration by creating local, gainful employment opportunities through infrastructural development and local resource-based micro-enterprises; improving local skills and capabilities to benefit from the above changes. Improved skills can increase earnings during migration as skilled migrants can command higher wages.

Social Transfers and Public Sector Investment Flows

Unlike product and resource flows, the economic flows discussed below are the only major flows that move from the lowlands to the highlands. They consist of: (i) cash and kind supplies as welfare relief and the bulk of subsidies would fall into this category and (ii) public sector investment flows for development projects.

The outstanding feature of these welfare-cum-development focussed resource flows is that, despite their increase (through foreign aid and national resources), these flows continue to be disproportionately lower than the economic flows from the mountains to the plains. Consequently, the highlands, besides being net donors to lowland economies, continue to suffer from a state of permanent under-investment with its consequential mounting poverty and underdevelopment.

An equally important feature of public sector investment flows (largely confined to infrastructural developments) is their focus on the areas and locations from where niche opportunities (e.g., irrigation and hydro-projects, mining activities, tourism, horticultural potential) are harnessed to meet the lowlands' needs and priorities. Even when development interventions in the highlands are free of a lowland bias, they lack a mountain perspective, implying a lack of understanding and incorporation of the imperatives of mountain-specific conditions (e.g., fragility, diversity, etc) in the design and mechanisms of development projects. This reduces the relevance and effectiveness of investment flows to the highlands.

Changes in the above situation require a higher priority to be given to highland needs in development investment and designing development strategies with a mountain perspective. A gradual elimination of under-investment should be another priority.

Future Steps: Operationalising the Framework

This briefly sketched approach to highland - lowland economic linkages needs further work in terms of refining and quantifying the issues involved and analysis to guide policies and programmes in order to alter existing patterns. In this respect, future work on economic linkages can be grouped into two broad categories. The first involves developing approaches to and methodologies for understanding and addressing the different aspects

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and issues discussed above. The second, using the tools provided by the first, involves assessing and analysing substantive issues, i.e., economic flows that manifest highland - lowland linkages.

The following are some of the steps required.

- (i) Development of an integrated approach which can put highland - lowland economic relations in a proper perspective and provide an operational framework for identifying specific issues and issue-specific methods to analyse them.
- (ii) Another methodology-related aspect involves identifying and applying tools and techniques (e.g., a method of assessing off-site impacts of highland resource conservation) to concretise and quantify economic flows and their processes. Using the above method, focussed studies and analyses of substantive aspects of economic linkages can be attempted.

Under the category of substantive issues, i.e., parameters of highland - lowland economic relationships, the list could be quite long. However, on a priority basis, the following issues (presented as focussed questions) should be addressed.

- (i) What are the biophysical and socioeconomic factors making the highlands unequal partners in economic exchange relations with the plains, and how can they be altered?
- (ii) To the extent that there is under-investment in the highlands, low investment absorption capacities and underpriced or uncompensated flow of resources to the lowlands are different facets of the same phenomenon, i.e., unequal economic linkages and their consequences, how can an integrated approach which can simultaneously address the issues of infrastructural development, human and institutional capacity building, and partnership with the lowlands as equals evolve?
- (iii) In view of the vast spatial and temporal diversities and complexities of economic flows, how can they be quantified (particularly the 'managed' and 'semi-managed' natural resource flows) to establish norms of compensation for the highlands? Can one work out proxies to serve the purpose?
- (iv) How to address the involved dilemmas and inevitabilities associated with development processes affecting highland - lowlands linkages, as indicated below?
 - Due to fragility, inaccessibility, and diversity, the mountains can never have the advantage of scale and intensity of production activities available to the plains.
 - As long as the mountains remain less attractive in the context of economics and habitat, both the increased human skills and increased investable surplus generation mean their flow to the plains. Can there be options for minimising the above processes?
- (v) How will global and local liberalisation influence highland - lowland linkages? What are the criteria for identifying the positive and negative implications?

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Established in 1983, ICIMOD is dedicated to the cause of poverty alleviation and environmental conservation in the Hindu Kush-Himalayan range of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. ICIMOD is a focal point for documentation and information exchange, training, applied research, and demonstration on a wide range of issues affecting mountain people.

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